Programmatic Environmental Assessment Considering Deployment of Unmanned Aerial Vehicles by the Office of Border Patrol, Customs and Border Protection, in Arizona and New Mexico

Customs and Border Protection
Department of Homeland Security

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CBP Mission Statement and Core Values

Protecting our Borders against Terrorism

The Office of Border Patrol (OBP), United States (U.S) Customs and Border Protection's (CBP) priority mission; keeping terrorists and terrorist weapons from entering the U.S., places CBP on the frontline of the war on terrorism. As the nation's unified border agency, CBP is strategically positioned at and between our ports of entry to prevent further terrorist attacks on our nation. This includes carrying out our traditional border-related responsibilities, such as stemming the tide of illegal drugs and undocumented aliens, securing and facilitating legitimate global trade and travel, and protecting our food supply and agriculture industry from pests and disease. CBP includes more than 41,000 employees to manage, control and protect the nation's borders, at and between the official ports of entry. Commissioner Robert C. Bonner stated,

> *U.S. Customs and Border Protection has accomplished a lot to secure our borders, but there is much more we are doing. We understand that as America's frontline, the security of a nation rests on our shoulders. We have learned the lessons of 9/11 and are working day and night to make America safer and more secure.*
>
> *For the first time in our nation's history, one agency has the lone responsibility of protecting our borders. As the single, unified border agency, CBP's mission is vitally important to the protection of America and the American people. CBP's priority mission is preventing terrorists and terrorist weapons from entering the United States, while also facilitating the flow of legitimate trade and travel.*

U.S. Customs and Border Protection can point to a myriad of accomplishments since 9/11 to better secure our Nation's borders. They are astonishing in scope and the speed with which we have implemented them. Our borders are more secure than they were on 9/11 -- keeping terrorists and their weapons out of our country is the most vital mission of any law enforcement agency – a mission we must succeed at.

CBP uses multiple strategies and employs the latest in technology to accomplish its dual goals. CBP's initiatives are designed to protect the homeland from acts of terrorism, and reduce the vulnerability to the threat of terrorists through a multi-level inspection process.

Protecting the Miles of Open Border between Official Ports of Entry

CBP Border Patrol agents are enhancing security in those areas between the ports of entry by implementing a comprehensive border enforcement strategy, expanding, integrating, and coordinating the use of technology and communications through:

- An Integrated Surveillance Intelligence System that uses remotely monitored night-day camera and sensing systems to better detect, monitor, and respond to illegal crossings.

- Unmanned Aerial Vehicles (UAVs) that are equipped with sophisticated on-board sensors. UAVs provide long-range surveillance and are useful for monitoring remote land border areas where patrols cannot easily travel and infrastructure is difficult or impossible to build.

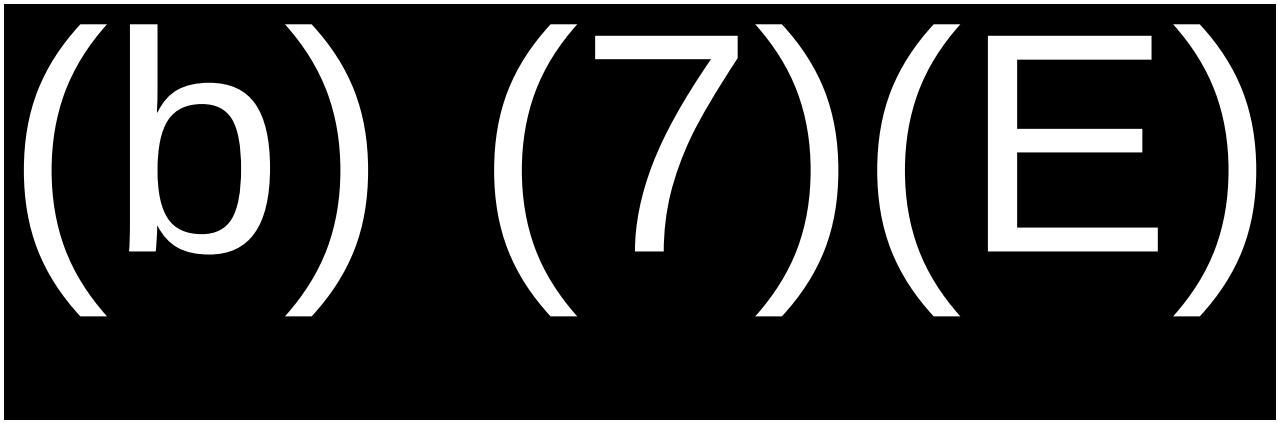
- Remote Video Surveillance Systems that provide coverage 24 hours a day, 7 days a week to detect illegal crossings on both our northern and southern borders.

- Geographic Information System (GIS) - a CBP Border Patrol southwest border initiative to track illegal migration patterns.

Executive Summary

Background

The purpose of the proposed action is to enhance the capabilities of the Office of Border Patrol (OBP), United States (U.S.) Customs & Border Protection (CBP) to secure the borders of the U.S. in Arizona and New Mexico, through deployment of Unmanned Aerial Vehicle (UAV) systems.



Purpose and Need for the Proposed Action

The purpose of this programmatic environmental assessment (PEA) is to review the potential for significant environmental impacts that may result from the implementation of the proposed action. This PEA represents analysis in consideration of UAVs as a tool in securing the borders of the U.S. As directed by Congress, CBP is considering the proposed action.

Alternatives Considered and the Proposed Action

The proposed action is to deploy UAV systems to enhance the capability of CBP to secure the borders of the U.S. This analysis includes consideration of the proposed action and the No Action Alternative. The No Action Alternative continues CPB operations with present technologies and does not employ UAV systems.

The project area for this assessment consists of a corridor along the U.S – Mexico border, which extends 25 miles north of the border, Yuma Arizona to El Paso, Texas, an expanse of approximately 535 miles.

Environmental Impacts of the Proposed Action

The analysis included in this PEA shows that no significant impact is anticipated with the implementation of the proposed action if the UAV systems and staff are located in areas that are not within the San Pedro River Basin. Deployment of additional personnel in support of UAV systems within the San Pedro River Basin (Sierra Vista Municipal Airport/Libby Army Airfield and Bisbee Municipal Airport) could result in induced impacts related to water consumption, and

further depletion of water resources in this area. Mitigation options are available (purchase of additional water or contribution to water mitigation funds) to reduce these impacts should it be determined that UAV systems should be based in this area. Deployment of UAV systems in the remainder of the project area would result in no significant impact.

Conclusions

Analysis of impacts in this document is presented in a dual-framework. First, impacts are addressed as they would occur throughout the entire project area. This analysis is organized according to the resources (land use, air quality, biological resources, noise, etc…) that would be impacted by the implementation of the proposed alternative. This analysis is general in nature, as it addresses the entire project area, or essentially the "fly over" area. Second, localized impacts are identified for each of the airports considered for the location of UAV systems. Specific descriptions of each airport are provided, along with an analysis of impacts that would occur on the ground, primarily from the ground-based components of the systems. This includes descriptions and analysis for the following airports:

- Yuma International Airport, Arizona
- Ajo Municipal Airport, Arizona
- Nogales International Airport, Arizona
- Sierra Vista Municipal Airport/Libby Army Airfield, Arizona
- Bisbee Municipal Airport, Arizona
- Cochise College Airport, Arizona
- Douglas Municipal Airport, Arizona
- Bisbee-Douglas International Airport, Arizona
- Lordsburg Municipal Airport, New Mexico
- Playas Air Strip, New Mexico
- Deming Municipal Airport, New Mexico
- Las Cruces International Airport, New Mexico
- Dona Ana County Airport at Santa Teresa, New Mexico

1 Purpose and Need

1.1 Purpose

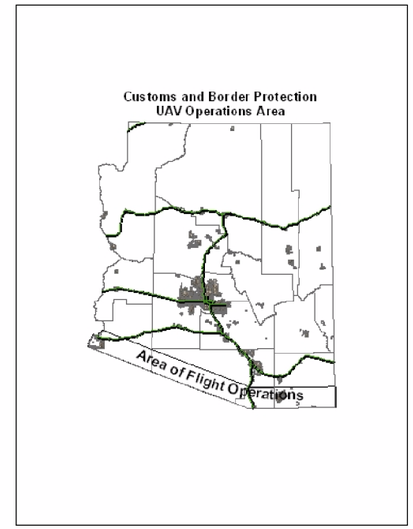
The purpose of the proposed action is to enhance the capabilities of the Office of the Border Patrol (OBP), United States (U.S.) Customs & Border Protection (CBP) to secure the borders of the U.S. in Arizona and New Mexico, through deployment of Unmanned Aerial Vehicle (UAV) systems.

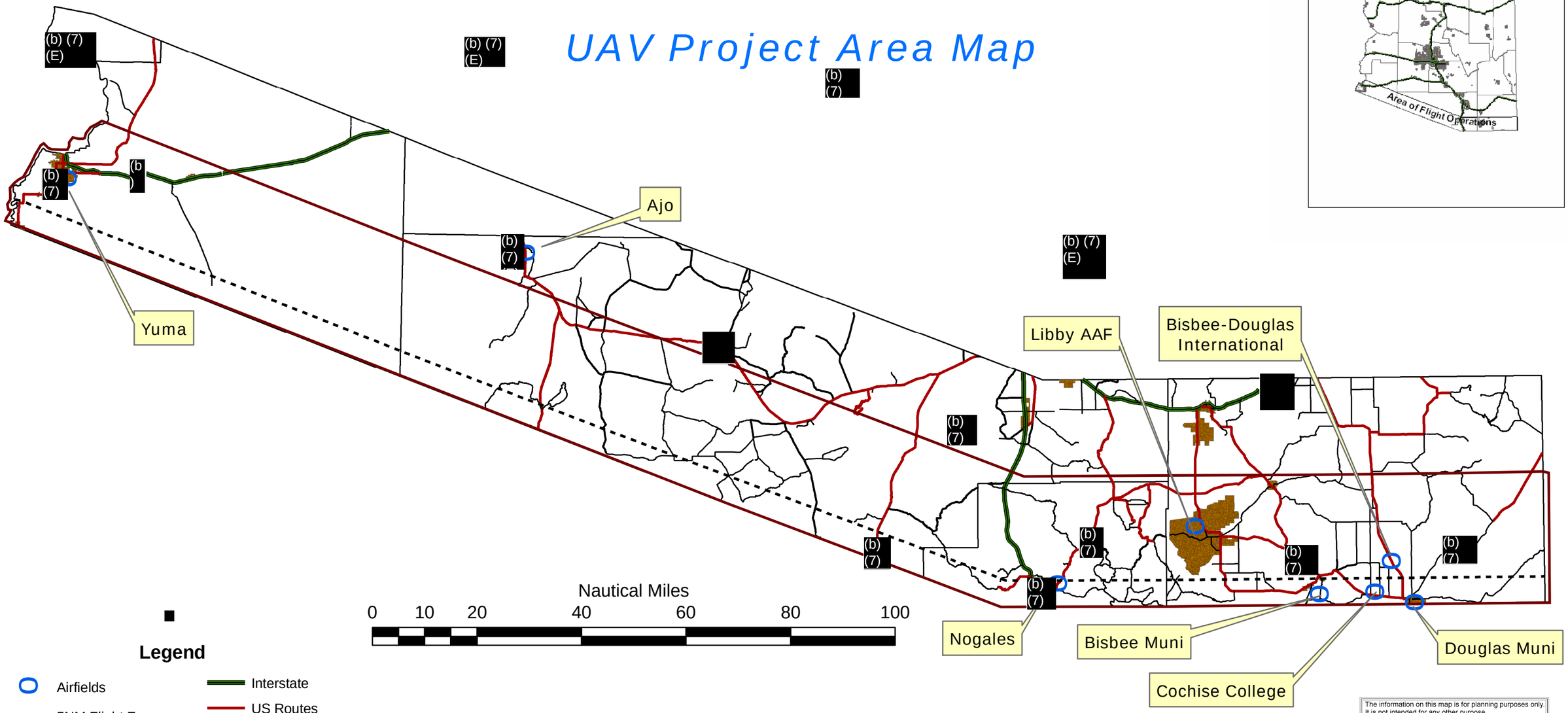
The purpose of this programmatic environmental assessment (PEA) is to review the potential for significant environmental impacts that may result from the implementation of the proposed action. The proposed action is to deploy UAV systems to enhance the capability of CBP to secure the borders of the U.S. This PEA includes consideration of the proposed action and the No Action Alternative. The No Action Alternative continues CPB operations with current technologies and does not deploy UAV systems.

The project area for this assessment consists of a corridor along the U.S. – Mexico border, which extends 25 miles north of the border, from Yuma Arizona to El Paso, Texas, an expanse of approximately 535 miles. The project area does not extend into Texas. Figures 1 and 2 illustrate the project area.

Department of Homeland Security
Customs and Border Protection

UAV Project Area Map





(Figure 1)

The information on this map is for planning purposes only. It is not intended for any other purpose.

Information was derived from the following sources:

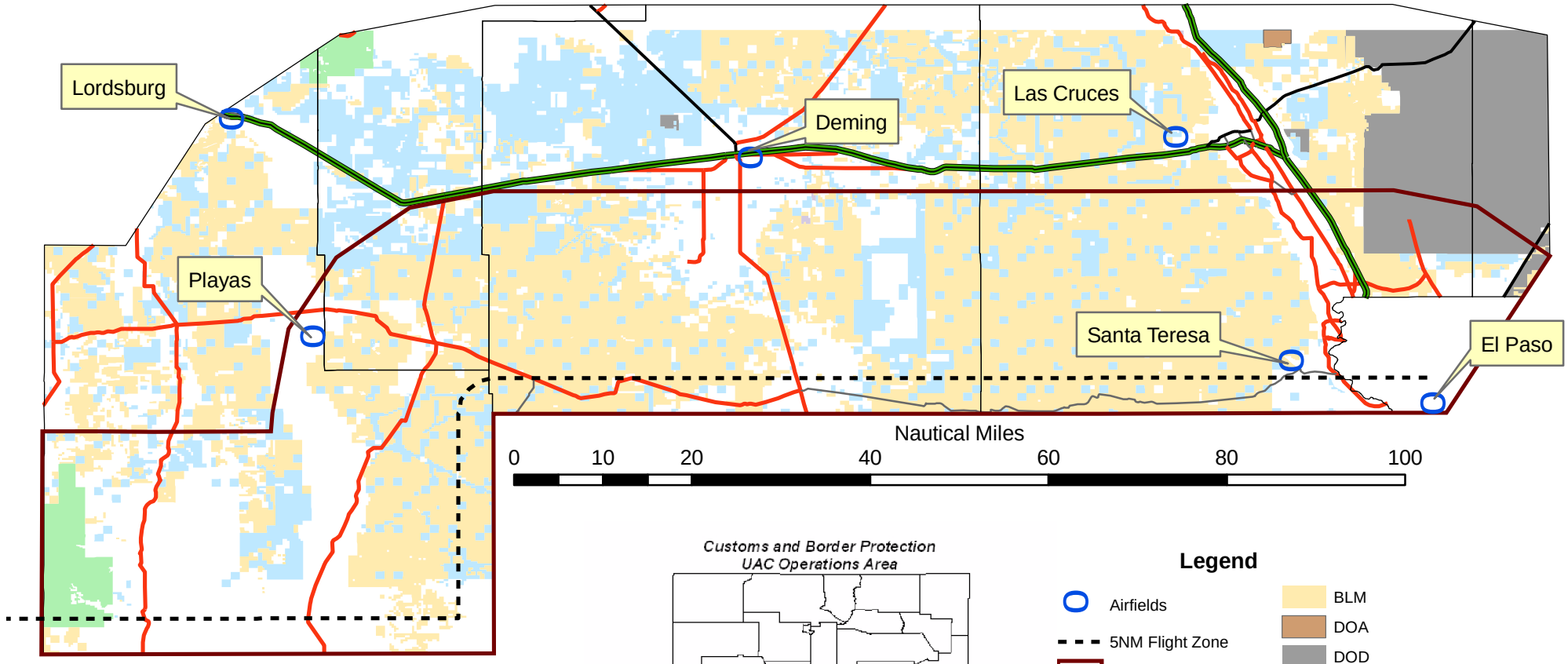
University of Arizona, Tucson
Southern Arizona Data Services Program
Arizona Department of Game and Fish
Arizona State lands Department, Resource Division
Arizona Department of Transportation
Arizona Department of Water Resources
Southern Arizona GIS Consortium

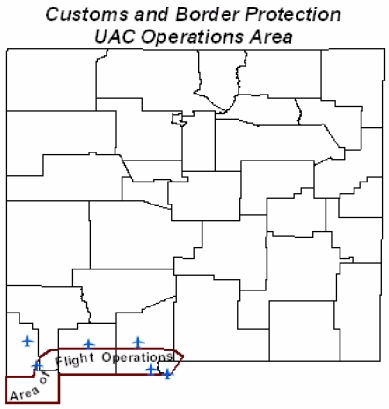
Metadata is available from the sources above.

The Buffer Zones were created by clipping the southern Arizona border at 25 and 45 Natutical Miles.

Department of Homeland Security
Customs and Border Protection

UAV Project Area Map - New Mexico





Legend

- Airfields
- 5NM Flight Zone
- 25NM Operations Area
- Interstate
- US Routes
- NM Routes
- County
- County lines
- BLM
- DOA
- DOD
- USFS
- Private
- State Trust
- State Park

The information on this map is for planning purposes only.
It is not intended for any other purpose

Information was derived from one or more of the following sources:

New Mexico Resource Geographic Information Systems Program
http://rgis.unm.edu/intro.cfm
New Mexico Department Game and Fish
Bureau of Land Management
New Mexico State Lands
New Mexico Cooperative Fish and Wildlife Research Unit
US Fish and Wildlife Service

Metadata is available from the sources above

The Buffer Zones were created by buffering the southern New Mexico border from Arizona to Texas at 25 and 45 Nautical Miles.

(Figure 2)

Key Components of Proposed action

- Deploy and operate (b) (7)(E) UAV systems
- UAV systems will be (b) (7)(E) (b) (7)(E)
- (b) (7)(E) upport Staff for each system
- Systems will be deployed at selected airports within project area
- UAVs will fly at least (b) (7)(E) feet above ground level
- UAVs will fly (b) (7)(E), typically from (b) (7)(E)
- UAVs will be used to support other CPB operations, including ground

1.2 Need

The Southwestern Border continues to be the most heavily trafficked section of border in the entire U.S. Illegal immigration in this area brings with it a serious risk to border security and the nation as a whole. When sections of the border are not effectively controlled due to the number of undocumented aliens, the likelihood exists that opportunistic criminals will begin to exploit the chaotic border environment.

This high intensity area fosters inherently higher levels of migrant deaths and migrant related crimes. The numbers of undocumented aliens (UDAs) that fall into distress in the inhospitable terrain of the southwest border, particularly during the summer months has increased. As the number of UDAs increases, so does the number and frequency of UDA deaths, primarily due to heat exhaustion and overexposure. The majority of these deaths are directly related to smugglers that lead groups of UDAs through remote and treacherous desert terrain where migrants are ill-prepared to survive the harsh climatic conditions.

Although public information programs target migrants to warn them of the dangers, thousands of migrants ignore these cautions and proceed across the border. There is a need, therefore, to deter the UDAs and to provide rapid detection, apprehension and/or rescue of those who do cross the border.

The UAVs represent an innovative and ambitious new approach toward border enforcement. The Arizona border with Mexico is over 350 miles long and contains vast and unpopulated expanses. The New Mexico international border area is over 185 miles long. These are some of the most remote border areas in the U.S., a region where UAV systems may be most effective as a force multiplier; that is a capability that compliments and significantly increases the effectiveness of existing resources, in support of CBP (b)(7)(E) and resources.

1.2.1 Background

In June 2004, CBP began an operational pilot program to determine whether UAVs could enhance the CBP border mission and, if so, to evaluate the costs and benefits of a long-term UAV program. The pilot program was designed to test the limits of UAV capabilities and resource allocations in some of the more remote regions of the southwestern border.

Demonstration of UAV capability was conducted through direct support of the Arizona Border Control Initiative's Operation Skywatch, from June 2004 to January 2005. The purpose of Operation Skywatch was to deter undocumented aliens that attempt to enter the U.S. in the harsh and remote desert regions of Arizona. Operation Skywatch also provided assistance to identify and rescue UDAs at risk of exposure.

The potential environmental affects of these operations were documented in, "*Supplemental Environmental Assessment to Operation Skywatch II – Initial Field Test of the Unmanned Aerial Vehicle* and *Supplemental Environmental Assessment Operation Skywatch II Unmanned Aerial Vehicle Initial Field Test* (b) (7)(E) " (CBP 2004a).

As a result of the operational pilot program, CBP has concluded that UAVs are effective and has directed that CBP develop a UAV initial operational capability within the Yuma, Tucson and El Paso Border Patrol Sectors. The initial operating capability would allow the CBP the opportunity to gather additional information relative to capabilities of UAVs, performance of various (b) (7)(E) in extreme climatic and (b) (7)(E) , communications requirements for (b) (7)(E) and logistical and infrastructure requirements for operations across an expanded border frontage. The results obtained from the initial operational capability program will be used to determine whether to proceed to UAV full operational capability.

1.3 Public Involvement

Public involvement is a critical and indispensable component of the National Environmental Policy Act (NEPA). A Notice of Availability (NOA) will be published in local newspapers and copies of this PEA will be made available to the general public at local libraries. This PEA and the resultant decision document; either a Finding of No Significant Impact (FONSI) or a Notice of Intent (NOI) to complete an Environmental Impact Statement (EIS), will be made available to agencies and the general public for review and comment. Additionally, the entire document will be made available on a governmental website, details of which will be advertised through a variety of media, both locally and nationally.

For further information on the proposed action or to request a copy of the PEA, please contact (b) (6)

1.4 Framework for Analysis

NEPA requires that agencies of the federal government implement an environmental impact analysis program in order to evaluate "…major federal actions significantly affecting the human environment." This PEA is intended to be a concise public document that provides sufficient data and analysis to determine whether such significant impacts will result from the proposed action. This analysis then becomes the basis to prepare either a full EIS or issue a FONSI.

Analysis involves establishment of significance criteria that distinguish whether an impact to a particular resource is significant or not, as defined in the context NEPA, implementing regulations, 40 CFR 1508. What is considered to be significant to one person may not be significant to another. NEPA regulations do not define significance criteria, but do suggest that such criteria be developed in light of both the context and intensity of a particular impact, in accordance with 1500 CFR 1508.27. The significance criteria in this document employ definitions frequently seen in the field of NEPA analysis that have been developed in view of that regulation:

Significantly as used in NEPA requires considerations of both context and intensity:

(a) Context. This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.

(b) Intensity. This refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluating intensity:

(1) Impacts that may be both beneficial and adverse. A significant effect may exist even if the federal agency believes that on balance the effect will be beneficial.

(2) The degree to which the proposed action affects public health or safety.

(3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

(4) The degree to which the effects on the quality of the human environment are likely to be highly controversial.

(5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

(6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

(7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

(8) The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

(9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

(10) Whether the action threatens a violation of federal, State, or local law or requirements imposed for the protection of the environment.

This PEA was prepared in compliance with specific regulations and directives:

- National Environmental Policy Act (NEPA), (42 USC 4321)

- Council on Environmental Quality (CEQ) Regulations (40 CFR parts 1500-1508)
- Legacy Immigration and Naturalization Service (INS) Procedures Relating to the Implementation of NEPA (28 CFR 61, Appendix C).

This PEA responds to each Executive Order (EO):

- EO 13045 – "Protection of Children from Environmental Health Risks and Safety Risks"
- EO 12898 – "Federal Actions to address Environmental Justice in Minority Populations and Low-Income Populations
- EO 11990 – "Protection of Wetlands"
- EO 11988 – "Floodplain Management"
- EO 13007 – "Accommodation of Indian Sacred Sites"

This PEA complies with other environmental laws, which include but are not limited to:

- Clean Air Act (CAA)
- Clean Water Act (CWA)
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- Endangered Species Act (ESA)
- Farmland Protection Policy Act (FPPA)
- Migratory Bird Treaty Act of 1918 (MBTA)
- Native American Graves Protection and Repatriation Act (NAGPRA)
- Resource Conservation and Recovery Act (RCRA)
- National Historic Preservation Act (NHPA)

To reduce paperwork and facilitate public involvement, NEPA regulations encourage environmental analyses to incorporate prior environmental documents by reference. Where appropriate, incorporation by reference will be specified in the text of the document. Section 7, References, contains a list of documents that are incorporated by reference into this PEA, as well as other references sources used in the analysis

In addition to the evaluation for potential direct and indirect impacts on the above resources, the proposed activities were also evaluated for cumulative impacts on the environment as described in 3.14, Cumulative Impacts.

2 Description of the Proposed Action and Alternatives

2.1 Introduction

The Department of Homeland Security (DHS), CBP, and associated agencies have a need to detect, apprehend, and identify all individuals attempting to illegally gain access to the U.S. Due to the threat to the continental U.S. posed by international terrorists, now more than ever CBP must utilize all available technology to deny terrorists the ability to cross the international borders. Manned aircraft, sensors, cameras, and ground vehicles are currently being employed to conduct these tasks.

The UAV systems have demonstrated the ability to enhance the effectiveness of interdiction elements in the conduct of these operations. The UAV concept exploration flights were flown from June 18 through September 30, 2004 with (b) (7)(E) UAVs and November 3, 2004, through January 31, 2005 with (b) (7) UAVs in support of border enforcement operations as part of the Arizona Border Control Initiative.

Based on the favorable performance of UAV systems, the Secretary of Homeland Security directed CBP to establish a UAV initial operating capability along the southern border. A procurement effort has been initiated to obtain the UAV Systems required for CBP operations.

In responding to the above listed direction from the Secretary of Homeland Security, two alternatives have been prepared for analysis in this PEA. These include the proposed action, to field and operate UAVs in Arizona and New Mexico, and the No Action Alternative, to not field and operate UAVs in Arizona and New Mexico. Other alternatives to fielding of UAVs have not been analyzed, as the Secretary has provided direction specifically regarding deployment and operation of UAVs in support of the CBP mission. Consequently, other alternatives do not require consideration or analysis.

2.2 Project Description

2.2.1 Alternative 1 – Fielding and Operation of UAVs in Arizona and New Mexico

CBP proposes to develop an UAV initial operational capability to enhance the CBP border mission. CBP proposes to maintain and operate Medium Altitude Long Endurance (MALE) UAVs for aerial reconnaissance missions along the U.S./Mexico Border within the Arizona and New Mexico portions of the Yuma, Tucson, and El Paso Border Patrol sectors. UAV support personnel for the proposed action would number approximately (b) people per system, and include pilots, mechanics, data analysts, and sensor operators. These aircraft could be operated at established airfields in New Mexico and Arizona.

(b) (7)(E)

CBP will employ a flexible rapid response plan to interdict illegal traffic identified by the UAVs. If a fatality appears to be imminent without immediate rescue efforts, emergency measures will be enacted and helicopter search and rescue units will be called in. Similarly, if the UDAs are spotted in locations that are too remote or rugged for ground vehicles, helicopters will be used to rescue UDAs.

The CBP recently conducted a test program to evaluate the safety and usefulness of medium-to-large UAVs on a permanent basis at Libby Army Airfield (LAAF). The test program confirmed that UAVs can be an effective force-multiplier in CBP's efforts to detect, track, and apprehend UDAs. The proposed action makes this a permanent program that deploys UAV systems out of selected airports/airfields within the project area on a year-round basis. This permanent operation would potentially require additional facilities that would be combined with the proposed facilities expansion for CBP manned aircraft operations.

Environmental impacts from the 2004 UAV test program at LAAF were evaluated in "U.S. Customs and Border Protection, 2004. *Supplemental Environmental Assessment: Operation Skywatch II -- Initial Field Test of the Unmanned Aerial Vehicle*. Final Report, June 2004," (CBP 2004a). Additional environmental analysis on the impact of (b) (7)(E) on the UAVs was presented in "U.S. Customs and Border Protection (CBP), September 2004, *Supplemental Environmental Assessment Operation Skywatch II – Unmanned Aerial Vehicle Initial Field Test with* (b) (7)(E) ." (CBP 2004b). Analysis and details of the environmental impacts included in these documents are incorporated herein by reference in accordance with NEPA regulations, 40 CFR 1502.21.

The analysis presented in the PEA for "Operation Skywatch II," included the some basic details of UAV operations and flight corridors. UAVs will generally fly within a narrow, 5 nautical mile (nm) band north of the border, and cover a predetermined segment of the Area of Operations (AO) from Yuma to El Paso. The FAA-issued Certificate of Waiver or Authorization (COA) will stipulate the actual width and length of the corridor. All parties recognize that due to the law enforcement nature of the UAV mission, the UAVs may need to move out of the patrol corridor in response to certain situations, to track a moving target, for example.

(b) (7)(E)

The border region contains a number of small mountain ranges (b) (7)(E) (b) (7)(E) Such mountain ranges would include, among others, the Huachuca and Patagonia Mountains in Arizona and the Big Hatchet Mountains in New Mexico. UAV operations over these mountain ranges are also complicated by the existence of wilderness and recreational areas as well as sensitive wildlife species. Generally speaking, the (b) (7)(E) should preclude serious

impacts on recreation users or wildlife in these mountainous areas. Noise impacts on wildlife and humans from UAVs flying at this range will be evaluated in more detail below.

Aircraft Noise: It is not possible to make definitive statements about noise levels from UAV operations for a number of reasons, including the lack of hard test data on decibel levels, the propriety nature of such information, and the constantly changing design of engines and aircraft configurations. However, enough information is available to make some general statements. Noise tests have been run at LAAF on the (b) (7) UAV, which determined that the decibels levels from this aircraft were 54.0 L_{max} at (b) (7)(E) and 57.6 at (b) (7)(E). The L_{max} measurement represents the peak noise level that is generated during a flyover event for a one-second period. These levels are fairly close to other aircraft that have also been tested, such as the UH-60 Black Hawk helicopter, which generates 53.6 L_{max} at 5,000 feet. In view of these tests, noise impacts from UAVs deployed under the Proposed Action will be evaluated at 55 L_{max} or less.

The duration of a noise event is an important factor to consideration in evaluated overall noise impacts. Again, it is hard to make definitive statements about UAV noise since the program is intended to be adaptive to OBP needs and to move from area to area. However, it is reasonable to state that UAVs would move fairly rapidly across any one particular area, so the noise levels at 55 L_{max} would be of short duration and fall to lower levels very quickly. An exception to this general statement would be those occasions where a (b) (7)(E). In that event, it would be possible that a sensitive receptor would be exposed to the 55 L_{max} noise level several times in a relatively short period. It is not possible to predict where or how often such exposure would occur, but it cannot be ruled out entirely.

UAV Crash Rates: Early UAVs had a mishap rate much higher than other aircraft, an issue that relates to a number of resource categories in this document, such as biological impacts from fire and hazardous materials, as well as human health and safety. Mishap rates for UAVs still remain somewhat higher than rates for other aircraft; however, mishap rates are currently far below the more extreme numbers reported in the media in the recent past. There are a number of reasons why UAVs have traditionally had high failure rates, such as: a) the dangerous wartime environments where they have often been deployed; b) the lack of pilots in the aircraft has made safety a less critical issue; c) inadequate operator training; d) too little emphasis on mishap reduction; e) the need and willingness to deploy aircraft under dangerous weather conditions and dependency on associated ground control equipment for flight commands.

These historical explanations for high UAV failure rates either do not apply to the CBP UAV deployment or are otherwise being addressed. For instance, UAVs purchased by the CBP will be required to have redundant safety and guidance systems, and UAV operators are now much better trained than operators in the past. Additionally, mishap reduction has become a major emphasis of UAV producers.

Other factors reduce the probability that UAV mishaps will impact resources in the border region. First, the majority of UAV mishaps occur on landing or takeoff, near the airfields where fire suppression equipment is available or where sensitive lands and species would be far less likely to exist. Officials at Fort Huachuca, who have extensive experience with UAV operations,

have stated that in the past 10 years of UAV operations at the fort, only one aircraft had a mishap off the fort's premises and none of the mishaps have resulted in fires (telephone conversation, (b) (6) (b) (6) March 4, 2005). Second, UAV operators do not necessarily lose control of the aircraft during a mishap event. In the event of engine failure, for instance, the operator can still guide the aircraft away from populated areas, critical habitat, or other environmentally sensitive areas. The CBP will work with resource agencies and other public officials to define the most desirable locations for ditching an aircraft in the event of breakdown.

2.2.1.1 Mitigation associated with the proposed action

In order to eliminate the possibility that the proposed action will result in significant impacts to the human environment, the CBP will commit to certain mitigation measures. Some of these measures involve training CBP personnel in the location and importance of environmental and cultural resources and adopting strategies that keep personnel and UDAs away from these resources where possible. As an example, CBP personnel will be educated about the location of cultural resources and critical habitat located in and near Garden Canyon on the premises of Fort Huachuca and tactics will be employed to prevent harm to resources and allow personnel to operate effectively in the area. All of the mitigation measures to be adopted by the Border Patrol are specified in more detail in the individual resources chapters below and summarized in Appendix A.

In addition to mitigation committed to in this PEA, other requirements may also be specified in future agreements between the CBP and the U.S. Fish and Wildlife Service (USFWS). Currently, the CBP is engaged with the USFWS in an informal consultation process, as prescribed under the Endangered Species Act (ESA), with respect to CBP activities across this border region.

2.2.2 No Action Alternative

This analysis considers a "No Action Alternative." The No Action Alternative is a continuation of current policy and operational capability, without use of the proposed action. This includes use of present tactics to achieve the mission of the Border Patrol, without use of UAVs. Current Border Patrol operations include ground-based agents that use multiple forms of transportation, such as trucks, cars, all-terrain vehicles, bicycle, motorcycle, foot patrol and horseback, to name a few. Additional air support; both rotary and fixed wing aircraft, provides additional support in the project area. Though UAVs have been tested for use to complement the Border Patrol's mission, they are not an established component of their tactical infrastructure.

3 Affected Environment and Environmental Consequences for the Border Region

3.1 Description of Project Area

The affected environment; or area of operations (AO), is generally defined as the area where impacts might reasonably be expected to occur from the flights of UAVs, the installation of communications towers and equipments and the movement of Border Patrol vehicles, horses, and personnel in response to UAV images and data. In this analysis, the border AO is distinguished from the AO that is specific to individual airports, which will be examined in detail in chapter 4. The UAV border AO is approximately 25 miles wide and 535 miles long, extending from Yuma, Arizona, to the Rio Grande River near El Paso, Texas. Of those 535 miles, 350 miles comprise the Arizona border and185 miles comprise the New Mexico international border (see figures 1 and 2 above).

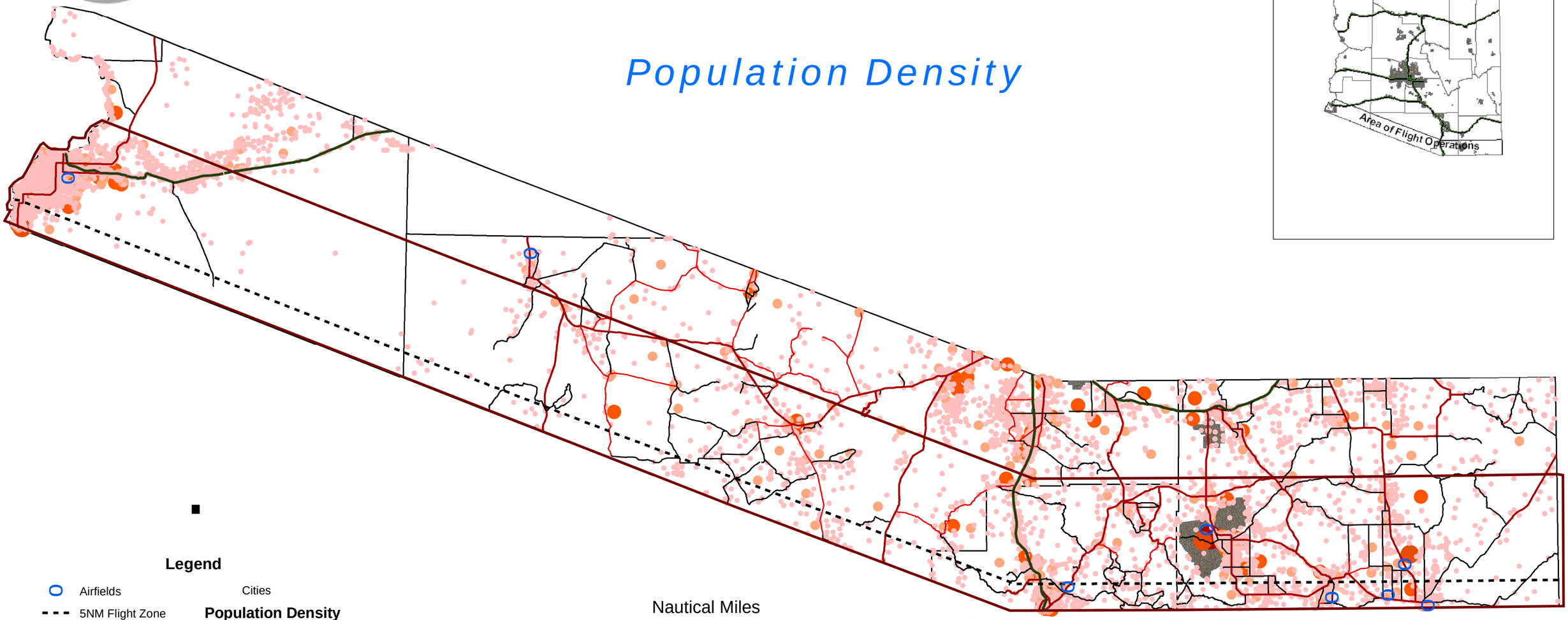
Flight paths of UAVs would encompass a flight corridor from each airport south to the U.S.-Mexico border, as well as the zone parallel to the border where UAV surveillance operations would normally occur. This operational zone is roughly considered to be 25 miles in width, extending north from the international border itself, running from Yuma to El Paso, Texas. The project area will not extend into Texas. UAV flights could be used in support of Border Patrol operations beyond this 25 mile zone, since their attitude allows for a large vista.

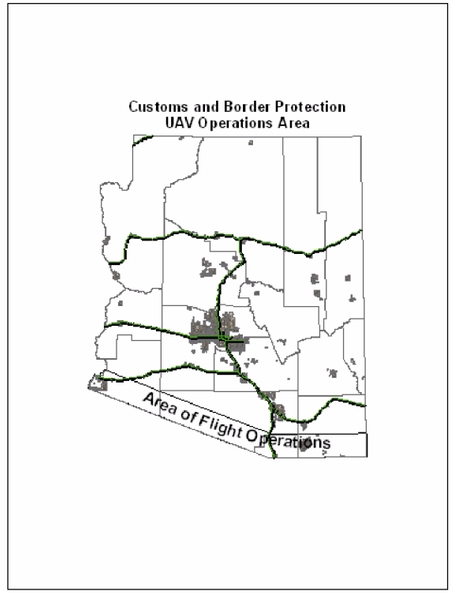
Although the AO for this analysis extends 25 miles north of the border, the vast majority of flight operations are expected to occur within 5 nm of the border. Within this range, (b) (7)(E) [redacted]. The (b) (7)(E) may be deployed to (b) (7)(E) [redacted]. Accordingly, this analysis will evaluate impacts within the 25 mile zone with greater emphasis on potential impacts within 5 nm of the border.

The AO also includes areas where communication towers might be constructed or otherwise utilized to provide data links between the UAV, the control centers, and the CBP agents. Since these potential sites are not yet identified, additional site-specific environmental analysis will be prepared at a later date and tiered off this document when individual locations are ultimately chosen.

Department of Homeland Security
Customs and Border Protection

Population Density





(Figure 3)

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Arizona State lands Department, Resource Division
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Arizona Department of Water Resources
Southern Arizona GIS Consortium

Metadata is available from the sources above.

The Buffer Zones were created by clipping the southern Arizona border at 25 and 45 Natutical Miles.

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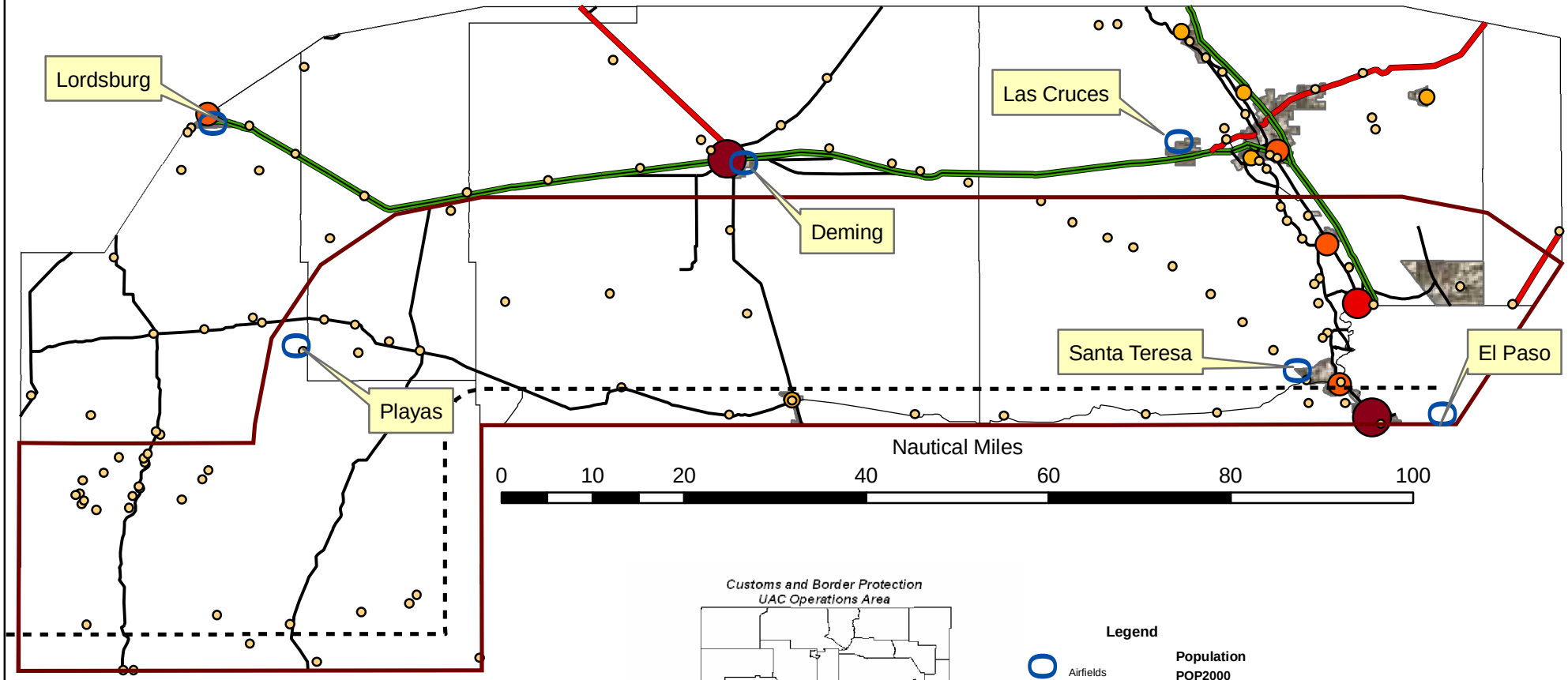
Customs and Border Protecton

Population Densities



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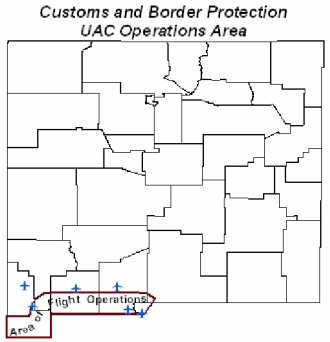

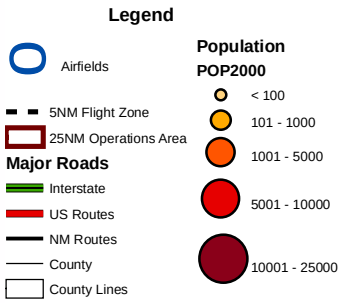

(Figure 4)

The border AO is an extremely diverse area that contains a limited number of population centers interspersed with unique and sensitive ecological areas. Population densities within the AO are represented above in figures 3 and 4. The largest city in the AO is Yuma, Arizona, with a population of 77,515 (U.S. Census Bureau 2000). The eastern edge of the AO in New Mexico is also a sizeable population center that lies on the outskirts of El Paso, Texas, and contains a number of New Mexico communities along the Rio Grande River such as Santa Teresa and Sunland Park. These populated areas at the far edges of the AO will have little influence on the analysis since UAVs will primarily be utilized in the remote areas in between. Other cities in the AO in Arizona include Nogales, Sierra Vista, Bisbee, Douglas, and numerous other small towns and communities. UAVs may occasionally pass over these population centers, especially those close to the border such as Nogales and Douglas, but generally the UAVs will stay in remote areas. New Mexico has no large cities in the AO other than the aforementioned communities along the Rio Grande River.

The Arizona portion of the AO is notable as one of America's most distinctive ecological regions. Two major ecoregions exist along the border, the Sonoran Desert ecoregion, which extends from Yuma to the mountains east of Nogales, and the Chihuahuan Desert ecoregion, which covers the remainder of the AO from the Huachuca Mountains to El Paso. Each of these ecoregions contains numerous subdivisions and biotic communities, from the extremely hot Sonoran desert region around Yuma to the ponderosa pine alpine environment in the upper Huachuca and Santa Rita mountains. Major features of the region are the numerous small mountain ranges that dot the area, many of which are characterized as "sky islands." These mountain ranges support an extraordinary abundance of rare wildlife and plants and are a favorite destination of bird watchers and other outdoor recreationists.

The Arizona portion of the AO features nearly 30 unique and sensitive areas which are managed by federal and state agencies. Land management status within the affected area is detailed in figures 5 and 6. Major features along the Arizona border include the Barry M. Goldwater Range (BMGR), the Cabeza Prieta National Wildlife Refuge (NWR), Organ Pipe Cactus National Monument, the Tohono O'odham Indian Reservation, Fort Huachuca and the Huachuca Mountains, the San Pedro Riparian National Conservation Area (NCA), and the San Bernardino NWR. Of additional importance in terms of this analysis are the numerous recreational, wilderness, and wilderness study areas along the border, where UAV over flights may disturb people seeking quiet and solitude.

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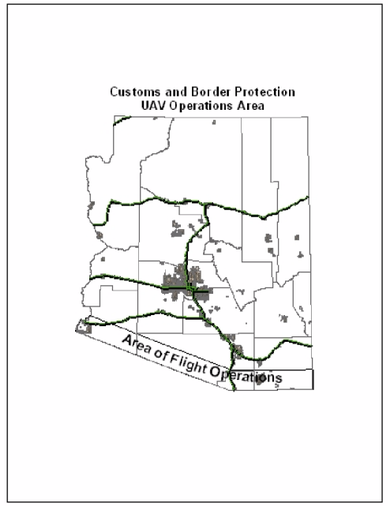
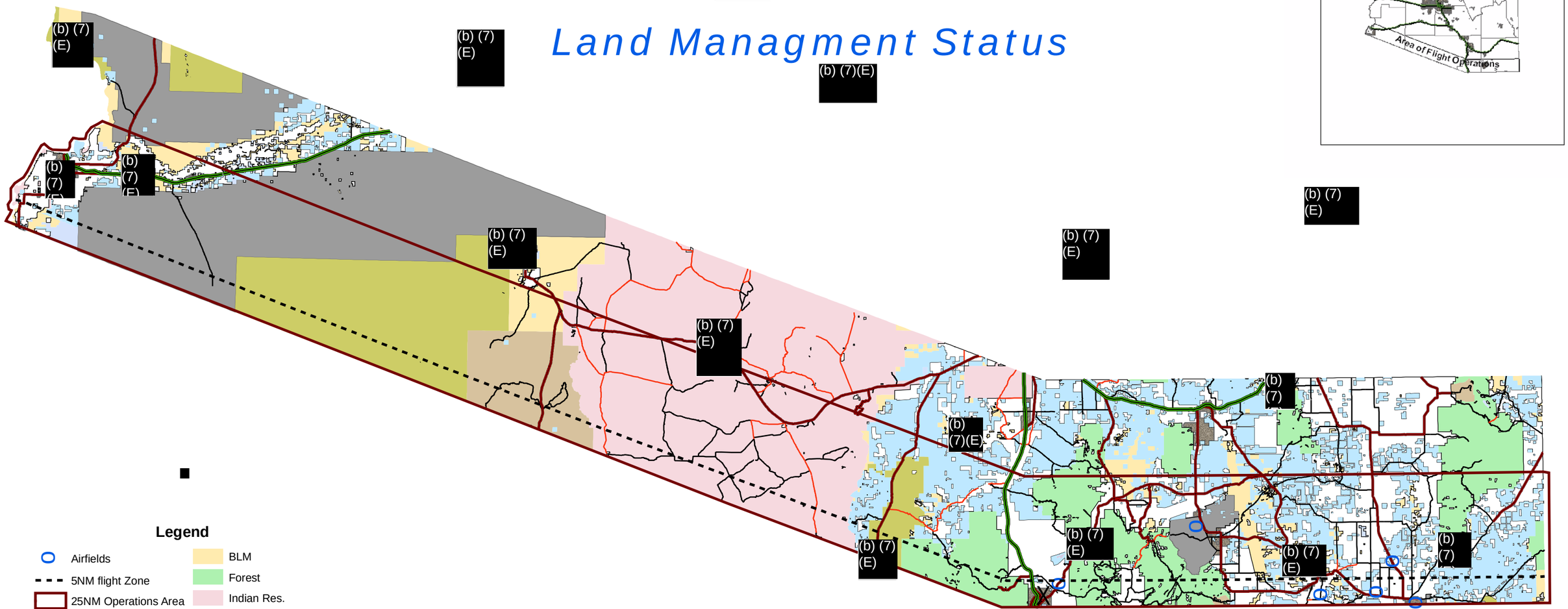


Land Managment Status

(b) (7)(E)



Legend

- Airfields
- 5NM flight Zone
- 25NM Operations Area
- (b) (7)(E)
- Interstate
- Major Routes
- State Roads
- County Roads
- BLM
- Forest
- Indian Res.
- Military
- Natl. Parks
- State Trust
- Wildlife
- Local or State Parks
- Other
- Private
- Cities

Nautical Miles

0 10 20 40 60 80 100

(Figure 5)

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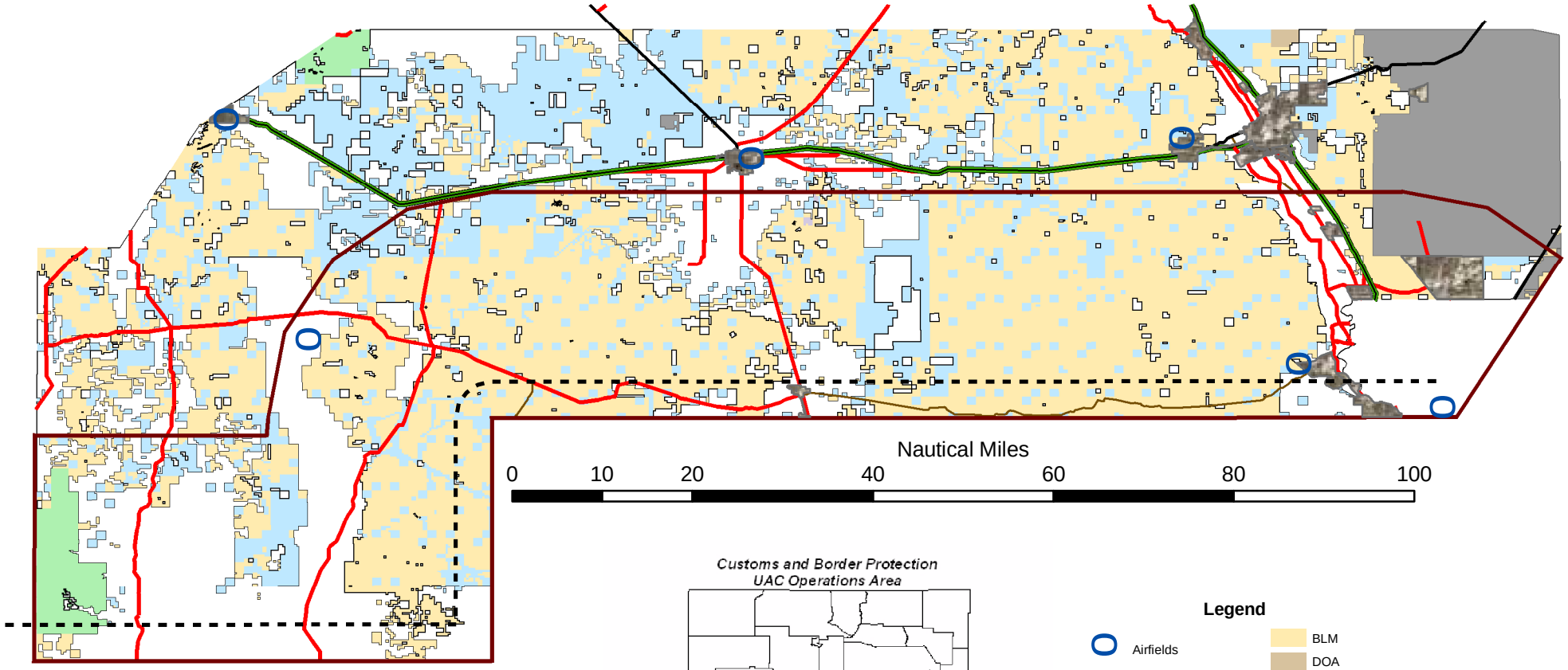
Department of Homeland Security
Customs and Border Protection

Land Management Status



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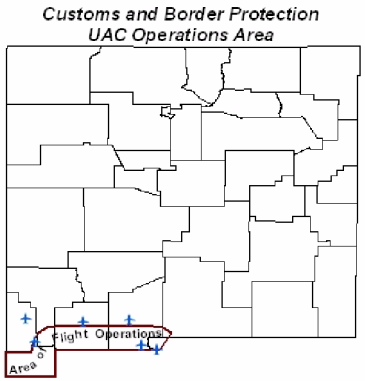

Legend

- Airfields
- 5NM Flight Zone
- 25NM Operations Area
- Cities
- Interstate
- US Routes
- NM Routes
- County
- BLM
- DOA
- DOD
- USFS
- Private
- State Trust
- State Park

(Figure 6)

In comparison to Arizona, the New Mexico portion of the AO does not contain as much complexity in terms of landscapes and ecosystems. Most of the region is regarded as part of the Chihuahuan Desert ecoregion. Land ownership is a patchwork of private lands, BLM lands, state lands, and a small section of the Coronado National Forest in the Peloncillo Mountains. The Grey's Ranch is a unique, 500-square mile private ranch in the bootheel of New Mexico that contains a tremendous variety of plant and animal life and is managed to preserve the ranching lifestyle that once characterized the region. The New Mexico border region also contains a number of small mountain ranges that have been designated as Wilderness Study Areas (WSAs) or Areas of Critic Environmental Concern (ACECs) by the BLM. These include the Big Hatchet Mountains WSA and ACEC, the Cedar Mountains complex, and the West Potrillo Mountains, which is one of the largest relatively undisturbed stretches of Chihuahuan Desert landscape in New Mexico.

The following table provides a listing of sensitive lands, sorted by county, that lie along the border AO of Arizona and New Mexico.

Table 1 – Parks, Wildlife Refuges, Wilderness and Other Sensitive Areas in the AO

AREA	ACREAGE	MANAGEMENT
Yuma County, Arizona		
Barry Goldwater Air Force Range	2,700,000	USAF, USMC
Cabeza Prieta National Wildlife Refuge	860,010	USFWS
Pima County, Arizona		
Organ Pipe Cactus National Monument	330,689	NPS
Tohono O'odham Reservation		
Baboquivari Peak Wilderness Area	2,040	BLM
Buenos Aires National Wildlife Refuge	118,000	USFWS
Cabeza Prieta National Wildlife Refuge		
Santa Cruz County, Arizona		
Appleton-Whittell Research Ranch	8,000	NAS
Coronado National Forest		USFS
Parajita Wilderness Area	7,553	USFS
Mt. Wrightson Wilderness	25,260	USFS
Pena Blanca Recreation Area	49	USFS
Canelo Hills Cienega Preserve	260	Nature Conservancy

AREA	ACREAGE	MANAGEMENT
Las Cienegas National Conservation Area	42,000	BLM
Patagonia Lake State Park	640	ASP
Patagonia-Sonoita Creek Preserve	850	TNC
Sonoita Creek State Natural Area	5,000	AZ
Tumacacori National Historic Park	16	NPS
Wild Chile Botanical Area	2500	USFS
Cochise County, Arizona		
Coronado National Forest	2,475,000	USFS
Miller Peak Wilderness	20,228	USFS
Coronado National Memorial	4,750	NPS
Ft. Huachuca	72,000	DOD
Ramsey Canyon Preserve	560	TNC
San Bernardino/Leslie Canyon Wildlife Refuges	3,549	USFWS
San Pedro Riparian National Conservation Area	56,500	BLM
Baker Canyon Wilderness Study Area	4,812	BLM
Hidalgo County, New Mexico		
Guadalupe Canyon/Cowboy Spring WSA		USFS
The Gray Ranch	321,000	Animas Foundation
Cowboy Spring WSA and ACEC (Animas Mountains)		
Alamo Hueco Mountains WSA and ACEC	13,020	BLM
Big Hatchet Mountains WSA and ACEC	29,180	BLM
Grant, Luna, Donna Ana Counties		
Cedar Mountains Wilderness Study Area		BLM
Florida Mountain Wilderness Study Area, ACEC		BLM
West Potrillos Mountains (West Potrillo WSA & ACEC, Aden Lava Flow WSA, Mount Riley, WSA)		BLM

All of these areas present unique challenges to CBP in terms of enforcement, jurisdictional conflicts, and endangered species issues. Moreover, many of the most sensitive areas suffer serious degradation from the movement of UDAs across the landscape, such as the creation of hundreds of miles unwanted roads and trails; damaged or destroyed water resources; tons of garbage, clothing and human waste; and wildfires.

3.2 Impact Matrix – Initial Review of Resource Categories and Potential Impacts

The table below contains a list of resource categories that are commonly evaluated in NEPA analysis. Each resource is accompanied by a brief assessment of potential impacts the proposed action might have on those resources in the border AO. The purpose of this matrix is to initially determine whether a particular resource category has potential issues that require further analysis. Where it is easily determined that effects on a resource from the proposed action are expected to be minimal or nonexistent, no further discussion will be provided in this PEA. Where potential effects or the "significance" of effects is more complex or less obvious, additional analysis and clarification will be offered later in this chapter. The third column indicates which determination was made.

Table 2- Impact Matrix

Resource	Potential for Impact in Border AO	Retained (Yes/No)
Land use	Land use impacts that are related to construction and operation of UAV facilities will be evaluated for each airport in chapter 4. Land use conflicts from Border Patrol enforcement actions in response to UAV data, such as Border Patrol vehicles that enter wilderness areas, have been addressed in other documents and MOUs such as the Programmatic Environmental Impact Statement (PEIS) for CBP operations in the Yuma and Tucson Sectors. No further evaluation is warranted in this document.	No
Air Quality	Air quality impacts, direct and indirect, that are related to construction and UAV operations at individual airports will be addressed in chapter 4. UAVs would emit minor amounts of air pollution when they are flown in the border AO, but this would not be significant. Dust from Border Patrol vehicles that respond to UAV data will not be increased due to the proposed action. Dust is expected to decrease because the UAV can be sent to (b) (7)(E) in place of ground response. Dust impacts of this type will be evaluated in the PEIS for Tucson and Yuma operations, as well as other documents. No further evaluation is warranted.	No
Geology / Soils / Topography	Construction and UAV operations at specific airports may result in impacts to geology and soils that will evaluated for each individual airport in chapter 4. UAV flight operations in the border AO will have minimal impact on soils as Border Patrol vehicles generate dust when agents track UDAs that are spotted by UAVs. Alternatively, there may be a positive benefit to soils as UAV data provides for faster and more precise pursuit operations, and consequently reduce movement of vehicles across the landscape. Regardless, potential soil impacts would not be measurable and would be expected to be minimal. No further evaluation is warranted.	No

Resource	Potential for Impact in Border AO	Retained (Yes/No)
Water Resources	Water resource impacts related to construction and operation of UAV facilities, such as water consumption by Border Patrol personnel and families, will be evaluated for each individual airports in chapter 4. No water resource impacts are expected from UAV flight operations in the border AO or from Border Patrol enforcement actions in response to UAV data. No further evaluation is warranted.	No
Biological Resources	UAV flight operations in the AO, in conjunction with Border Patrol enforcement actions on the ground, have the potential to impact biological resources, such as threatened and endangered species and critical habitat. Impacts could include direct collisions with individual species, UAV mishaps that burn or contaminate sensitive habitat, dust from vehicles, and other potential effects. Further evaluation will be provided in section 3.3.	Yes
Floodplains	Potential impacts to floodplains from construction of new facilities or UAV operations at individual airports will be evaluated in chapter 4. UAV flight operations in the border AO, and enforcement actions in response to UAV imagery will have no measurable effects on floodplains. No further evaluation is warranted.	No
Noise	Noise impacts to adjacent communities from facilities construction, airport operations, and UAV flights will be evaluated for each individual airport in chapter 4. UAV flight operations in the border AO will almost exclusively be conducted at or above (b) (7)(E) [redacted]. At this distance, decibel levels from UAV flights should be in the range of 54 dBA. Potential impacts to wildlife from this noise will be evaluated in section 3.4. Noise impacts on humans from this level of sound will require further evaluation.	Yes
Cultural & Archeological Resources	Impacts to cultural and archeological resources from facilities construction and operation will be evaluated in chapter 4. If it becomes necessary to install communication towers as part of this UAV effort, site-specific evaluation of potential cultural impacts will be conducted at that time. UAV flights will not affect resources on the ground; however, enforcement actions in response to UAV imagery may impact resources on the ground. Further evaluation will be provided in section 3.5.	Yes
Utilities & Infrastructure	Impacts to utilities and infrastructure from facilities construction and UAV operations at individual airports will be evaluated in chapter 4. Flight operations in the border AO will not impact utilities and infrastructure, except in the improbable event that a UAV or Border Patrol vehicle were to mishap into utility lines, water towers, or other component of established infrastructure. However, this possibility is	No

Resource	Potential for Impact in Border AO	Retained (Yes/No)
	so remote that it can be discounted. No further evaluation is warranted.	
Roadways / Traffic	The construction and operation of UAV facilities at specific airports may impact traffic and roads in the communities where the airports are located. These potential impacts will be evaluated in chapter 4. UAV flights will not impact established roads. Border Patrol vehicles that track suspects in response to UAV imagery will utilize established roadways. Patrol patterns may change to some extent, but overall use of the road system should not increase, and may actually decrease as patrols become more efficient with UAV support. No further evaluation is warranted.	No
Hazardous Materials	Construction and operation of UAV facilities at airports have the potential to generate impacts from hazardous materials, such as petroleum, oil, and lubricants. This will be evaluated in chapter 4 in site specific analysis for each individual airport. UAV flight operations have the potential to release hazardous materials into the environment in the event of a mishap. Further evaluation will be provided in section 3.6.	Yes
Socio-economics	Socioeconomic impacts may occur in communities where new UAV facilities are located and new personnel and families locate in the community. These potential impacts will be evaluated in chapter 4 of this document in site specific analysis for individual airports. UAV flights and enforcement operations in the border AO are not expected to generate significant socioeconomic impacts. No further evaluation is warranted in chapter 3.	No
Environmental Justice and Protection of Children	Executive Orders 12898 and 13045 require evaluation of the impacts of federal actions on minority populations and the health and safety of children, respectively. These issues will be evaluated in chapter 4 with respect to facilities construction and UAV operations at individual airports. UAV flights in the border AO will not disproportionately impact the environment or health of children and minority populations. Potential impacts to children and minority populations from Border Patrol ground enforcement actions will be evaluated in the PEIS for Tucson and Yuma operations. No further evaluation is warranted in chapter 3.	No
Health and Human Safety	UAV over-flights and Border Patrol enforcement actions may affect human health and safety. Further evaluation is warranted. See section 3.7.	Yes

Resource	Potential for Impact in Border AO	Retained (Yes/No)
Cumulative Impacts	The proposed action has the potential to contribute to cumulative impacts as UAV operations cause shifts in UDA movement across the border. Further evaluation is warranted. See section 3.10.	Yes

3.3 Potential Biological Impacts

3.3.1 Introduction

This section evaluates potential impacts from implementation of the proposed action on biological and wildlife resources in the border AO in Arizona and New Mexico. Potential biological impacts that might occur from the construction of facilities and UAV operations at individual airports will be evaluated in chapter 4. The AO for these biological impacts is the border zone where UAVs are expected to fly and where Border Patrol vehicles and personnel pursue suspected UDAs in response to images and signals sent from UAVs. See section 3.1 above for more detail on the border AO.

UAV flights in the border AO could generate biological impacts in several different ways. First, there is always a possibility of a UAV mishap, which could result in fires in sensitive vegetative communities, contamination of the water and soil, or harm to humans and structures. Air operations could result in collisions between aircraft and bats or migratory birds, direct mishaps into critical habitat, and noise and disturbances to sensitive species. All of these potential impacts will be evaluated in this section below.

3.3.1.1 Avoiding and Mitigating Harm to Biological Resources

The CBP is committed to cooperation with other agencies and jurisdictions in the border region to ensure that harm to sensitive habitats and species is kept to minimum while at the same time allowing CBP the widest possible latitude to fulfill its enforcement mission. The impact analysis below will specify or reference these mitigation commitments to present a complete picture of potential impacts to biological resources expected from the proposed action. This is especially important where mitigation measures are necessary to reduce harm to threatened and endangered (T&E) species and critical habitats below levels that are determined to be significant. See NEPA regulation 40 CFR 1508.21 for definition of significance. Additionally, Appendix A provides a complete list of mitigation commitments, harm avoidance measures, resource management plans, MOUs, section 7 consultations and other commitments made by CBP with other agencies to minimize harm from UDAs and enforcement actions in the border region.

3.3.1.2 Water Mitigation in San Pedro River Basin and elsewhere

Population growth in the AO, especially in areas along the Arizona-Mexico border, has placed an increased burden on the scarce water supplies of this desert region. In view of this, CBP may need to comply with state and local ordinances aimed at water conservation and protection of water supplies in different areas. Of particular concern is additional water consumption in the San Pedro River Basin, home of the San Pedro Riparian NCA. This area is a unique, federally-

protected, river corridor to the east of Fort Huachuca that is a rare remnant of the desert riparian ecosystem that once existed throughout the Southwest. Federal activities, such as CBP operations, that bring new personnel to this area must mitigate for any new water consumption. This issue will be discussed in more detail in chapter 4, relative to each individual airport in this river basin.

3.3.1.3 Section 7 Consultation Process

In accordance with the Endangered Species Act (ESA) of 1973; 16 USC 1531 et seq; as amended, the expanded CBP activities being evaluated in this document will be included in a section 7 consultation process between the CBP and the USFWS. As a result of those discussions, expanded CBP activities identified in the proposed action will need to adhere to certain guidelines so that these actions will not adversely affect or jeopardize the continued existence of any federally listed threatened or endangered species or designated critical habitat. Copies of correspondence received to date are available for review in Appendix B.

3.3.1.4 MOUs and Management Plans

The CBP maintains several Memoranda of Understanding (MOUs) with other agencies, such as the USFWS, which identify protective measures for sensitive lands and species such as the Sonoran pronghorn. In addition, the CBP is committed to adherence to protective guidelines, where feasible, in management plans for different jurisdictions in the border region. As an example, the following language is taken from the Yuma Sector Biological Assessment (BA) of 2002: "While operating on the Barry M. Goldwater Range (BMGR) and Cabeza Prieta NWR, the CBP will comply with existing and revised natural resource management guidance established by these federal landholders to the maximum extent possible in an effort to avoid and minimize impacts to threatened and endangered species and the environment" (INS 2002a).

3.3.2 Baseline Environment – Biological Resources

The ESA 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 use their authorities to "insure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat." 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.

Appendix C presents the species included on the federal list of threatened or endangered species that are known or presumed to occur in the AO in Yuma, Pima, Cochise, and Santa Cruz counties of southern Arizona and in Hidalgo, Grant, Luna, and Dona Ana counties of southern New Mexico. Figures 7, 8 and 9 show critical habitats and sensitive lands established to protect certain species listed as threatened or endangered.

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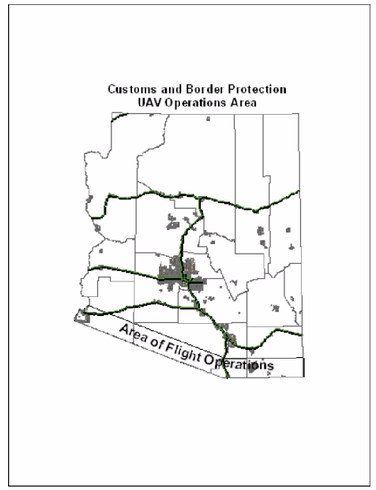
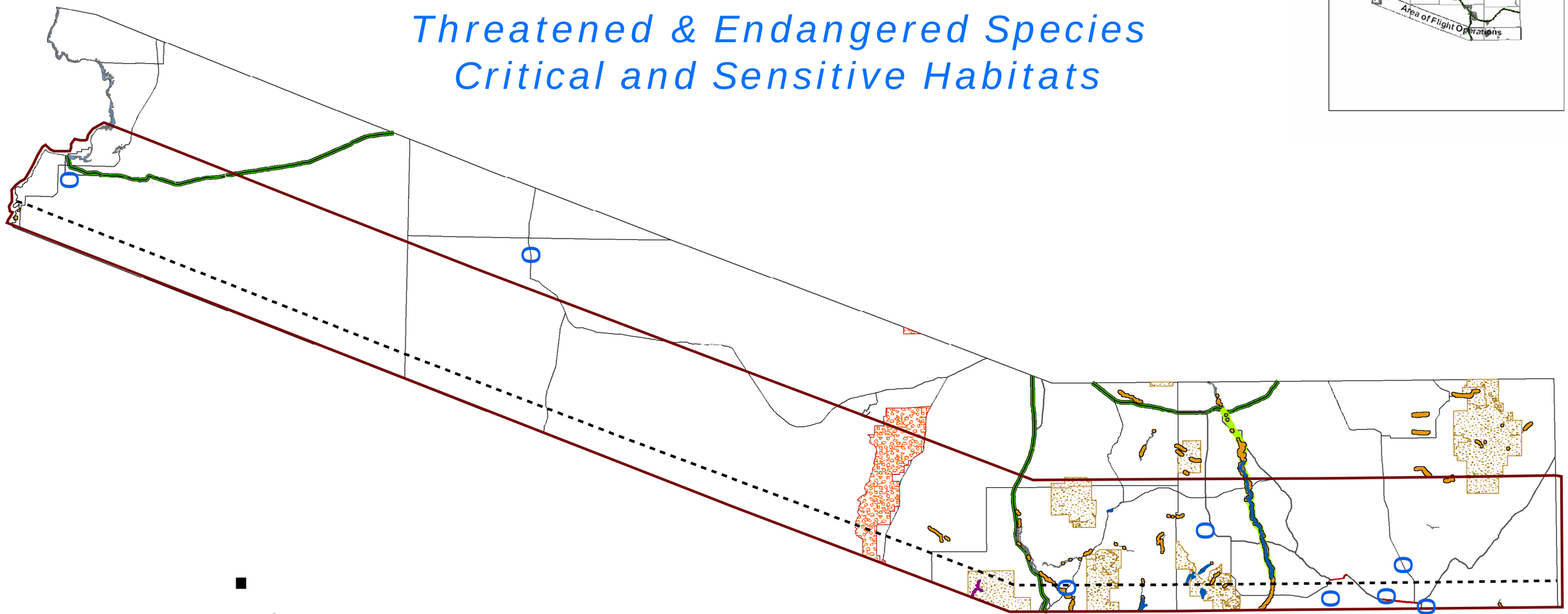


Threatened & Endangered Species
Critical and Sensitive Habitats



(Figure 7)

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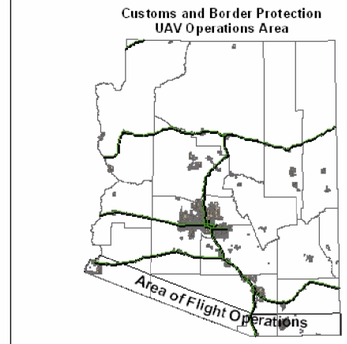
Customs and Border Protection

Sensitive Lands
Wilderness and Conservation Are
National Monuments



Imperial Refuge Wildnerness
Trigo Mountains
Kofa Refuge
Muggins Mtns
Cabeza Prieta NWR
Organ Pipe National Monument
Coyote Mtns
Mt Wrightson
Las Cienegas NCA
Chiricahua WA
Baboquivari Peak
Buenos Aires NWR
Pajarita
Miller Peak
San Pedro Riparian NCA
San Bernardino WA/NWR
Baker Canyon WSA

Legend

- Airfields
- 5NM Flight Zone
- 25NM Operations Area
- Interstate
- US Routes
- AZ Routes
- County
- County Lines
- National Conservation Areas
- Sensitive Lands
- Cities

Nautical Miles
0 10 20 40 60 80 100

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Southern Arizona GIS Consortium

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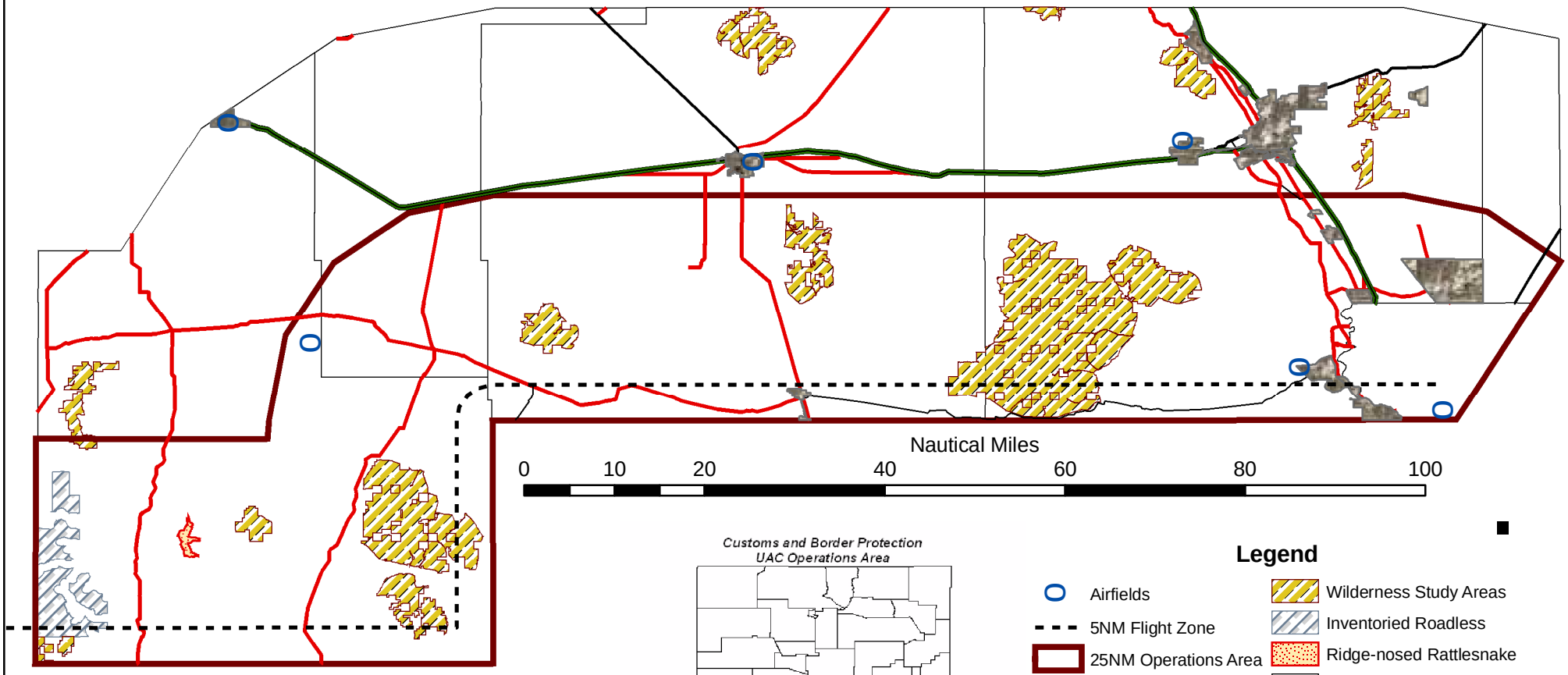
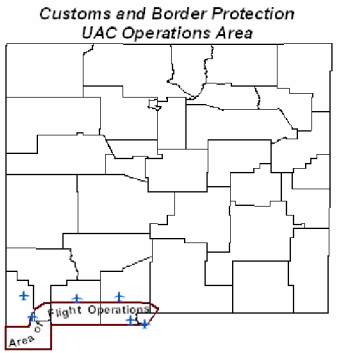
(Figure 8)

Department of Homeland Security
Customs and Border Protection

Sensitive Lands and Critical Habitats





Legend

- Airfields
- 5NM Flight Zone
- 25NM Operations Area
- Interstate
- US Routes
- NM Routes
- County
- Wilderness Study Areas
- Inventoried Roadless
- Ridge-nosed Rattlesnake
- County lines
- Cities

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(Figure 9)

3.3.3 Arizona Threatened and Endangered Species

A brief description follows of threatened, endangered, and candidate species in the four Arizona counties and the four New Mexico counties that comprise the AO. Emphasis will be placed on Threatened and Endangered species in particular, since federal agencies have legal duties to those species that do not apply to candidate species. Also, species that are found in the counties north of, but outside of the AO itself will not be evaluated since impacts to these species would not be expected. More detailed information about all of these species can be found on the websites of the Arizona and New Mexico offices of the USFWS at http://arizonaes.fws.gov/, and http://ifw2es.fws.gov/NewMexico.

3.3.3.1 Acuna Cactus (candidate)

The acuna cactus *(Echinomastus erectocentrus acunensis)* is a small cactus, that varies in height from three to nine inches, which is generally found on well-drained knolls and gravel ridges at 1,300 to 2,000-feet above MSL elevation in the Sonoran desert scrub. Of the four known populations in Arizona, three occur in Pima County on federal, state, and private lands (USFWS 1992a). Organ Pipe Cactus National Monument has the largest and healthiest known population (Johnson 1992). The population acuna cactus may be threatened by illegal take and natural causes such as parasitism. A population may occur on BMGR (USFWS 1992a).

The acuna cactus is a candidate species for the Threatened and Endangered list. The plant is protected by the Arizona Native Plant Law, and is protected for international trade by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (USFWS 1992a).

3.3.3.2 Bald Eagle (threatened without critical habitat)

The bald eagle *(Haliaeetus leucocephalus*) is federally listed as threatened (USFWS 1995a). Most of the Arizona's major river systems, including the main stem of the Colorado, support wintering bald eagles. The entire state is considered within the range of wintering bald eagles; however, the important habitat characteristics are not present within the AO for the proposed action. This species would be uncommon in the AO, if it were present at all. The bald eagle is also considered a Species of Special Concern by the State of Arizona.

3.3.3.3 Beautiful Shiner (threatened with critical habitat)

The beautiful shiner *(Cyprinella formosa mearnsi)* is a small fish, usually less than 3.5 inches in length, which inhabits riffles of smaller streams or intermittent pools of creeks that have a high percentage of riffles (Hendrickson et al. 1980). The beautiful shiner was extirpated from the U.S. in 1970, but was re-introduced in 1990 into four ponds on the San Bernardino NWR. Decline of the species can be attributed to a number of factors, such as habitat erosion from overgrazing and the removal of riparian vegetation, ground water withdrawal, dams, and the introduction of exotic species (USFWS 1995b). The beautiful shiner is currently only found in San Bernardino Creek within the San Bernardino NWR, where its population is relatively low.

The beautiful shiner was listed as a threatened species in the 1984 Federal Register (USFWS 1984). Critical habitat was established in 1984 and includes all aquatic habitats on the San Bernardino NWR. This species was also listed in 1996 as "Wildlife of Special Concern" by the

Arizona Game and Fish Department (AGFD), in 1988 as "sensitive" in Region 3 by the U.S. Forest Service (USFS).

3.3.3.4 Cactus Ferruginous Pygmy-owl (endangered with proposed critical habitat)

The cactus ferruginous pygmy-owl *(Glaucidium brasilianum cactorum)* is a small (less than 7 inches long, 2.2-2.6 ounces), diurnal owl that is nonmigratory throughout its range. The pygmy-owl's diet includes birds, lizards, insects, small mammals and frogs. The species nests in cavities found in trees or large columnar cacti. In Arizona, cactus ferruginous pygmy-owls are known to occur in streamside riparian forests and mesquite bosques, as well as in Sonoran desertscrub plant communities that are typical of the Arizona Upland subdivision. Common features of these biotic communities are fairly dense woody thickets or woodlands with trees and/or cacti large enough to provide cavities for nests, diversity of the vegetation, and an abundance of prey (USFWS 1997a, Duncan 1998a). The cactus ferruginous pygmy-owl does appear to be susceptible to disturbances from helicopters and people and may abandon nest sites when disturbed.

The cactus ferruginous pygmy-owl is listed as an endangered distinct vertebrate population in Arizona with proposed critical habitat (USFWS 2002a). Historically, the cactus ferruginous pygmy-owl has been documented across most of the AO from sites along the San Pedro River to the Cabeza Prieta NWR. Present populations in Arizona appear to be considerably diminished from historic levels. Surveys in 2000 and 2001 identified only 34 and 36 adult individuals, respectively, although many sites have not been surveyed. Present-day owl locations have been documented in Pima and southern Pinal Counties. These owls inhabit areas within Organ Pipe Cactus National Monument, Buenos Aires NWR, Tohono O'odham Nation, and privately-owned lands in the northwest Tucson area and southern Pinal County (Duncan 1998b).

Critical habitat for the species has been proposed in the Altar Valley and in both Organ Pipe Cactus National Monument and the Cabeza Prieta NWR on the western edge of the AO. Additional information on the species, as well as maps of proposed critical habitat and various related legal decisions can be found on the USFWS website at http://arizonaes.fws.gov/.

3.3.3.5 Canelo Hills Ladies' Tresses (endangered without critical habitat)

The Canelo Hills ladies' tresses *(Spiranthes delitescens)* is a slender, white-flowered orchid that may reach as much as 20 inches in height when in flower. Mature plants flower in consecutive years and in some years have no visible above ground structures. The species has been identified at five sites in the San Pedro River watershed in Santa Cruz and Cochise counties, Arizona. These sites consist of finely grained, highly organic soils that are seasonally or perennially saturated, usually by springs, but in one location by a nearby creek. The species was listed as federally endangered on January 6, 1997 (USFWS 1997b). Primary potential threats to this species include activities or wildfires that could degrade or dewater its wetland habitat.

3.3.3.6 Chiricahua Leopard Frog (threatened without critical habitat)

The Chiricahua leopard frog *(Rana chiricahuensis)* is one of seven known leopard frogs found in Arizona. The species lives in a variety of water sources such as rocky streams with deep rock-bound ponds, river overflow pools, oxbows, permanent springs, stock tanks, and ponds (AGFD 2001a). Of all of Arizona's leopard frogs, the Chiricahua leopard frog has undergone perhaps the largest, most dramatic decline (Sredl 1995). The USFWS identified a number of threats to

the species, which include habitat alteration, destruction, and fragmentation. Habitat loss has resulted from water diversions, dredging, livestock grazing, mining, degraded water quality, and groundwater withdrawal.

The Chiricahua leopard frog was listed as threatened without critical habitat on July 15, 2002 (USFWS 2002b). It was also listed in 1996 as "Wildlife of Special Concern" by the AGFD, in 1988 as "sensitive" for Region 3 by USFS.

3.3.3.7 Cochise Pincushion Cactus (threatened without critical habitat)

The Cochise pincushion cactus *(Coryphantha robbinsorum)* is a small, unbranched cactus that occurs in semi-desert grasslands associated with small shrubs, agave, grama grass (Bouteloua sp.), and other cacti. Soils are composed of thin, gravelly loam over Permian limestone rock, usually with fist-sized limestone rocks, or rubble. The plants require high calcium limestone substrates, and may also require the well-drained substrate offered by the coarse limestone chips and rock crevices in bedrock. Most individuals of the species are in the open and exposed to bright sunlight (USFWS 1993a). The total range of the Cochise pincushion cactus is southeastern and southwestern Cochise County, Arizona and northern Sonora, Mexico (AGFD 2001b).

The Cochise pincushion cactus is known to occur on private or state land in the San Bernardino Valley, southwestern Cochise County, Arizona (USFWS 1993a). The species was listed as a federally threatened on January 9, 1986. The USFWS did not designate critical habitat for this species because of its restricted distribution, accessibility, and the potential threat of poaching by cactus collectors (USFWS 1986a). The Cochise pincushion cactus was listed as "highly safeguarded" by the Arizona Department of Agriculture in 1993 and "sensitive" by the USFS for Region 3 in 1990. Threats to this species include illegal collection, habitat degradation from cattle and wildlife, and extended periods of drought.

3.3.3.8 Desert Pupfish (endangered with critical habitat)

The desert pupfish *(Cyprinodon macularius macularius)* is a small, 3-inch long, fish that is found in shallow water of desert springs, small streams, and marshes below 5,000 feet in elevation. It was once common in desert springs, marshes, backwaters, and tributaries of the Rio Sonoyta, lower Gila River, and lower Colorado River drainages in Arizona, California, and Mexico. However, there are no natural populations of this subspecies remaining in Arizona. Reintroduced populations exist in small springs, streams, and ponds in Pima, Pinal, Maricopa, Graham, Cochise, La Paz, and Yavapai Counties, Arizona. The Quitobaquito pupfish (*Cyprinodon macularis eremus*) is a subspecies of *Cyprinodon macularis* and only exists in ponds at the Quitobaquito Springs in the Organ Pipe National Monument (USFWS 1993b).

The desert pupfish was listed as an endangered species in the 1986 Federal Register with designated critical habitat. Critical habitat was designated at Quitobaquito Springs in Pima County, Arizona (USFWS 1986b). This species was also listed in 1996 as "Wildlife of Special Concern" by the AGFD, and in 1988 as "sensitive" in Region 3 by the USFS.

3.3.3.9 Gila Chub (proposed endangered with critical habitat)

The Gila chub *(Gila intermedia)* is a chunky fish between 6 and 8 inches in length that normally inhabits the smaller headwater streams, cienegas, and springs or marshes of the Gila River basin.

The species is usually found in association with the Gila topminnow, the desert and Sonora sucker, and the longfin and speckled dace (AGFD 2001c). In the AO, the species is found scattered in a number of small, localized populations that are characterized as 'stable-threatened' or 'unstable-threatened.' Cienega Creek in Pima and Santa Cruz Counties contains the only extant population of Gila chub that is 'stable-secure'. Threats to the species include the cumulative effects of exotic fish, land management activities, erosion, lack of stream flow, as well as other factors.

The Gila chub was listed as a proposed endangered species in its entire range on August 9, 2002 in the Federal Register. Critical habitat was proposed in 200.5 miles of stream segments in Arizona and New Mexico (USFWS 2002c). This species was also listed in 1996 as "Wildlife of Special Concern" by the AGFD, in 1988 as "sensitive" in Region 3 by the USFS.

3.3.3.10 Gila Topminnow (endangered without critical habitat)

The Gila topminnow *(Poeciliopsis occidentalis occidentalis)* is a small (1 to 2 inches), guppy-like fish that lives in shallow, warm, waters at an elevation generally below 5,000 feet. Eleven of the 13 locations currently supporting the Gila topminnow are in the Santa Cruz River system, many of which are in the AO (Weedman 1998).

The Gila topminnow was listed as an endangered species in the 1967 with no critical habitat designation (USFWS 1967). This species was also listed in 1988 as threatened by the AGFD, in 1996 as "Wildlife of Special Concern" by the AGFD, in 1988 as "sensitive" in Region 3 by the USFS.

3.3.3.11 Huachuca Springsnail (candidate)

The Huachuca springsnail (*pyrgulopsis thompsoni*) is known to occur in shallow areas of cienegas, often near the rocky seeps of springs. It is exists in southern Santa Cruz and Cochise counties as well as northern Sonora, Mexico, and has been identified from nine sites in the Canelo Hills and Patagonia Mountains. In 1992, nine populations were identified in higher elevation locations on Fort Huachuca in Garden, Sawmill, McClure, Huachuca, and Blacktail Canyons. Potential habitat also exists in other locations on the fort where spring-fed cienegas exist as well as in the San Pedro Riparian NCA. The springsnail is subject to impacts from direct mortality, human disturbance, fire, and water use.

3.3.3.12 Huachuca water umbel (endangered with critical habitat).

The Huachuca water umbel (*Lilaeopsis schaffneriana var. recurva*) is a federally listed endangered species with designated critical habitat and was also listed as "highly safeguarded" by the Arizona Department of Agriculture in 1993. The plant is an herbaceous, semi-aquatic to aquatic perennial plant belonging to the parsley family that can be found in mid-elevation wetland communities known as cienegas. It grows at an elevation of 4,000 to 6,500 feet and requires perennial water, gentle stream gradients, and small to medium sized drainage areas. It is vulnerable to flooding but is known to withstand occasional trampling from livestock and is capable of rapidly expanding in disturbed sites (USFWS 1997b).

Critical habitat for the Huachuca water umbel was designated on August 11, 1999. On the premises of Fort Huachuca, 3.8 miles of Garden Canyon were designated. Several other stream segments in the Huachuca Mountains were also designated, although not on fort property.

Additionally, 33.7 miles of the San Pedro River east of Fort Huachuca were designated. The decline of this species can generally be attributed to its limited distribution and the destruction of its wetland habitat, which has been affected by grazing, property development, trampling by livestock, diversion of water, and the lowering of the water table (AGFD 1997).

3.3.3.13 Jaguar (endangered without critical habitat)

The jaguar *(Panthera onca)* is the largest and most robust of the North American cats and is usually found near water in the warm tropical climate of savannah and forests. Sightings in Arizona are extremely rare, but individuals have been found in Sonoran desertscrub up through subalpine conifer forests (AGFD 1998). The most recent U.S. sighting was made in the fall of 2004 in southwest Arizona by a motion-activated camera. A confirmed sighting of a jaguar was also made in 1996 near the Baboquivari Mountains in Pima County, Arizona (INS 2002b). There are no known breeding populations in the U.S. and individuals of the species are believed to be transients that cross into Arizona and New Mexico from Mexico.

The jaguar was designated as an endangered species by the USFWS on August 21, 1997 (USFWS 1997c). Critical habitat has not been designated for this species. The jaguar is listed as a "Wildlife of Special Concern" by the State of Arizona.

3.3.3.14 Kearney's Blue Star (endangered without critical habitat)

Kearney's blue star *(Amsonia kearneyana)* is a perennial herb in the dogbane family that grows up to 2.3 feet in height and nearly 3.3 feet across. The species has an extremely limited range, and occurs naturally only in South and Sycamore Canyons on the west slope of the Baboquivari Mountains. The species has also been introduced into Brown Canyon on the east side of the Baboquivari Mountains. Habitat elevation ranges from 3,750 to 4,500 feet above MSL. The Kearney's blue star was listed as an endangered species in the 1989 with no designated critical habitat (USFWS 1989). It was also listed in 1993 as "highly safeguarded" by the Arizona Department of Agriculture.

3.3.3.15 Lemmon Fleabane (candidate species).

Lemmon fleabane (*Erigeron lemmonii*) is a perennial aster found growing in dense clumps in crevices and on ledges of vertical cliffs. It is known only from Scheelite Canyon in the Huachuca Mountains, where a total of 108 clumps can be found on shady cliffs of the canyon walls and on the tops of large boulders in the canyon bottom. This species is a candidate for federal listing, but its remote location reduces the probability of human disturbance.

3.3.3.16 Lesser Long-Nosed Bat (endangered without critical habitat).

The lesser long-nosed bat (*leptoncycteris curasoae yerbabuenae*) is a medium-sized bat that is designated as endangered without critical habitat. It is equipped with a long muzzle and tongue adapted to collecting nectar from the flowers of columnar cactus and paniculate agaves. The bat is generally known to exist across the southern region of Arizona from eastern Yuma County to the New Mexico state line. These bats migrate into Arizona in the spring, starting in early April, following the flowering of the cacti. Maternity colonies are formed at lower elevations near concentrations of flowering columnar cacti. After the young are weaned, some females and young move to higher elevations, primarily in the southeastern parts of Arizona near concentrations of blooming paniculate agaves. They migrate south in the fall, leaving Arizona in

September or early October. In general, foraging takes place from dusk to dawn in the summer months between May and September.

The lesser long-nosed bat is known to roost in the Canelo Hills, the Patagonia Mountains, and the premises of Fort Huachuca (Howell 1996). Specifically, Manilla Mine and Pyeatt Cave have been determined to be active day roosts for the bats, while the Wren Bridge and Manilla Cave have been identified as important night roosts.

A Federal Register notice dated February 3, 2005 announced a 5-year review for a number of species in Arizona, including the lesser long-nosed bat (USFWS 2005a). Current population estimates appear to be higher than when the bat was first listed as endangered. This review may ultimately lead to the down-listing of the bat or a change in viewpoint about what constitutes an adverse impact on the species.

3.3.3.17 Loach Minnow (threatened, critical habitat vacated by court order)

The loach minnow (*Tiaroga cobitis*) is a small, slender, elongated fish that is found in small to large perennial streams of the Gila River drainage in Arizona and New Mexico. The historic range of the loach minnow consists of the Verde, Salt, San Pedro, San Francisco, Blue and Gila rivers. The present range of the species is now limited to the upper reaches of the Salt and Gila rivers, the San Francisco and Blue rivers and Aravaipa Creek (USFWS 1991a).

The loach minnow is federally listed as threatened in 1986. Critical habitat was designated in April of 2000, but this designation was vacated by a court order on August 31, 2004. Of this vacated critical habitat, the only portion that was in the Arizona AO was the San Pedro River extending from the confluence with the Babocomari River upstream to the U.S.-Mexico border (USFWS 1986c, 2000c).

3.3.3.18 Masked Bobwhite (endangered without critical habitat)

The masked bobwhite (*Colinus virginianus ridgwayi)* is a small to medium-sized quail that is about 8-10 inches in height. It was extirpated from the U.S. around 1900 (AGFD 1998), but has been reestablished as a refuge population at the Buenos Aires NWR in Pima County, Arizona. Buenos Aires NWR, which comprises approximately 130,000 acres in the Altar valley adjacent to the U.S.-Mexico border, was purchased by the USFWS in 1985 for the specific purpose of restoring this species. A number of management practices, including the elimination of grazing and the restoration of native plants through prescribed burns and seeding, have been instituted to provide ideal habitat for the masked bobwhite. The population of the species was estimated between 300 and 500 individual birds at the refuge in 1996.

Historically, the masked bobwhite inhabited the Sonoran savanna grasslands, the Sonoran desertscrub, and the Sinaloan thornscrub of extreme south central Arizona and adjacent central Sonora, Mexico (AGFD 1998). The species was listed as endangered by the USFWS in 1967 with no designated critical habitat. A recovery plan was completed in February 1978 and revised in 1984 and 1985 (USFWS 1967, 1995c). The masked bobwhite is listed as a “Species of Special Concern” by the State of Arizona.

3.3.3.19 Mexican Spotted Owl (threatened with critical habitat).

The Mexican spotted owl (*Strix occidentalis lucida*) is medium-sized owl that was listed as threatened on March 16, 1993 and is one of three spotted owl subspecies. The regional director of the USFWS published and approved critical habitat for the Mexican spotted owl in 1995. Since that time, critical habitat has been proposed and rescinded on several occasions with the most recent designation being made on August 31, 2004. Approximately 8.6 million acres were designated as critical habitat in Arizona, Colorado, New Mexico, and Utah on federal lands (USFWS 1993c, 1995d, 2004a).

The Mexican spotted owl nests in certain habitats found in the Sky Island mountain ranges of southeastern Arizona and northern Sonora, Mexico. The critical habitat designated in 2004 includes 4 major areas that are within the AO: 1) The Coronado National Forest around the Pajarito Wilderness; 2) the Santa Rita Mountains, including Madera Canyon and the Mt. Wrightson Wilderness; 3) The Patagonia Mountains; and 4) the Huachuca Mountains. Additionally, the Fort Huachuca territory in the Huachuca Mountains is managed as critical habitat for the Mexican spotted owl as part of the fort's Integrated Natural Resource Management Plan (INRMP). There are over a dozen designated Protective Activity Centers (PACs) in the Huachuca Mountains and three in the Patagonia Mountains.

Owls are usually found in or near their respective PACs throughout the year, although owls do disperse during the fall. This is especially true of immature owls, known to move between mountain ranges. Dispersing owls can be expected to roost almost anywhere in the Canelo Hills, Patagonia, and Huachuca Mountains where there is sufficient cover such as in larger oaks and riparian vegetation. Nesting occurs in canyons and older forests of mixed-conifer or ponderosa pine/Gambel's oak (*Quercus gambelii*) with a multi-layered foliage structure, usually at elevations between 4,100 and 9,000 feet above MSL (USFWS 1995e).

3.3.3.20 New Mexico Ridge-nosed Rattlesnake (threatened with critical habitat)

The New Mexico ridge-nosed rattlesnake *(Crotalus willardi obscurus)* was not known to exist in Arizona until a 1996 documented sighting in the Peloncillo Mountains (Holycross 1997). The New Mexico ridge-nosed rattlesnake was listed as threatened by the USFWS on August 4, 1978 (USFWS 1978). See New Mexico sensitive species description for further information.

3.3.3.21 Northern Aplomado Falcon (endangered without critical habitat)

The northern aplomado falcon *(Falco femoralis septentrionalis)* is a long-tailed falcon that is somewhat smaller than a prairie falcon. It was designated as endangered in 1986, but without critical habitat. Essential components of the historic habitat of this falcon include open terrain with scattered trees, relatively low ground cover, an abundance of small to medium sized birds, and suitable nesting platforms. Aplomado falcons are endangered because their grassland habitat has been altered by overgrazing, conversion of native habitat to farmland, and brush invasion fostered by decades of fire suppression. A species recovery plan was completed in June 1990. The northern aplomado falcon is also listed as a "Species of Special Concern" by the State of Arizona (USFWS 1986d, 1990a).

The southeastern corner of Arizona is regarded are native habitat for the species, but the falcon has not been observed nesting in the state since 1887. On February 9, 2005, the USFWS published a proposed rule to establish a non-essential experimental population of the northern

aplomado falcon in southern Arizona and New Mexico. This will require federal agencies to consult with the USFWS concerning potential impacts of their actions on the species, but results of these consultations are advisory and do not impose mandatory constraints on agency actions (USFWS 2005b).

3.3.3.22 Ocelot (endangered without critical habitat)

The ocelot *(Leopardus pardalis)* is a medium-sized cat measuring 30 to 41 inches and weighing 15 to 40 pounds (AGFD 1998). Suitable habitat for the species exists in the AO, but very little is known of the ocelot in Arizona and sightings are rare. The one indispensable component of ocelot habitat appears to be very dense cover. Ocelots rely upon thick vegetation for hunting, resting and establishing dens. Additionally, biological corridors such as rivers, shorelines, and natural drainages are essential for travel between core habitat areas. Habitat fragmentation, whether from road building, agriculture, or other causes, is the greatest threat to these constituent components.

The ocelot was listed as endangered by the USFWS on July 21, 1982. Critical habitat has not been designated for this species (USFWS 1982a). This species is listed as a "Wildlife of Special Concern" and "Prohibited Wildlife" in the State of Arizona.

3.3.3.23 Pima Pineapple Cactus (endangered without critical habitat)

The Pima pineapple cactus *(Coryphantha scheeri var. robustispina)* measures between 4 and 18 inches in height and between 3 and 7 inches in diameter, and flowers in mid-July with the onset of summer rains. The range of the cactus in Arizona is bounded on the east by the Santa Rita Mountains in Santa Cruz County, on the west by the Baboquivari Mountains in Pima County, in the north by Tucson, and on the south by the Arizona-Mexican border. Only five to ten percent of species range is on federal land. Small isolated tracts of Bureau of Land Management (BLM) land are critical to the survival of species. Off-road vehicle use and road constructions are listed among the primary threats to the species (AGFD 2001d).

The Pima pineapple cactus was listed as an endangered species in the 1993 with no critical habitat designation (USFWS 1993d). It was also listed as "highly safeguarded" by the Arizona Department of Agriculture in 1993, and as "sensitive" in Region 3 by the USFS in 1990. A Federal Register notice dated February 3, 2005 announced a 5-year review for a number of listed species in Arizona, including the Pima pineapple cactus (USFWS 2005a).

3.3.3.24 Ramsey Canyon Leopard Frog (species protected by a Conservation Agreement).

The Ramsey Canyon Leopard Frog (*Rana subaquavocalis*) is a medium-sized brown or green frog that is 2.5 to 4 in long that has historically existed in aquatic systems in pine-oak and oak woodlands and in semi-desert grassland habitats in extreme southeastern Arizona. Habitat includes springs, cienegas, earthen cattle tanks, small creeks, and slack water of main-stem rivers, typically at an elevation from 1,501to 1,829 meters (4,924 to 6,000 feet). The frog exists on the premises of Fort Huachuca in a single pond in Tinker Canyon, and the remaining populations are restricted to a handful of canyons on the east slope of the Huachuca Mountains, including Ramsey Canyon.

In addition to its natural habitat, the frog is being reintroduced into artificial ponds as part of a 1996 Conservation Agreement that includes Fort Huachuca, the USFWS, the BLM, the USFS, the Arizona Game and Fish Department, and the Nature Conservancy.

3.3.3.25 Sonoyta Mud Turtle (candidate)

In Arizona, the Sonoyta mud turtle *(Kinosternon sonoriense longifemorale)* is known from one pond and limited stream habitat at Quitobaquito Springs in Organ Pipe Cactus National Monument (USFWS 2004b). The population of approximately 130 turtles at Quitobaquito is relatively stable. However, dredging activities reduced the area of previously available habitat and recently examined, dead turtles have shown signs of inadequate diet and exposure to agrichemicals. The Sonoyta mud turtle was listed as a candidate species on September 19, 1997.

3.3.3.26 Sonora Chub (endangered with critical habitat)

The Sonora chub *(Gila ditaenia)* is a fine-scaled, medium-sized fish of the minnow family that lives in Sycamore Creek (Bear Canyon) and two of its tributaries in the Pajarito Mountains, approximately 15 miles west of Nogales, Arizona. The species inhabits the largest and most permanent pools. The major threat to the Sonora Chub is the modification of Sycamore Creek by human activities including grazing, mining, recreation, and the introduction of exotic taxa (USFWS 1992b).

The Sonora Chub was listed as a threatened species in 1986. Critical habitat for the Sonoran chub was designated along 5 miles of Sycamore Creek north of the U.S.-Mexico border, the lower 1.2 miles of Penasco Creek, Yanks Spring, and 0.25 miles of an unnamed tributary to Sycamore Creek (USFWS 1986e). The species was also listed in 1996 as "Wildlife of Special Concern" by the AGFD, in 1988 as sensitive in Region 3 by the USFS.

3.3.3.27 Sonora Tiger Salamander (endangered without critical habitat)

The Sonora tiger salamander (*Ambystoma tigrinum stebbinsi*) is a large, stocky salamander that occurs only in the San Rafael Valley in Santa Cruz County, Arizona. Studies have identified 53 "breeding localities" for the species in the county, which tend to be either ponds or stock tanks (Collins 1996). While it is known that these salamanders move away from the breeding sites, very little is known about their existence away from the sites or the extent to which they travel. There is some anecdotal evidence they can move at least a mile from the breeding sites and that they are active on the surface (USAG 2002).

The species can potentially be impacted in several ways: human disturbance, loss of aquatic habitat, disease, predation by introduced nonnative fish and bullfrogs, reduced fitness due to inbreeding, and increased probability of random extirpation due to the limited range and population of the species. By 1988, the Sonora tiger salamander was extirpated from at least three of the 18 known colonies (AGFD 2001e). It was listed as an endangered species in 1997 with no designated critical habitat (USFWS 1997b). It was also listed as "Wildlife of Special Concern" in 1996 by the AGFD, and as "sensitive" for Region 3 by USFS.

3.3.3.28 Sonoran pronghorn (endangered without critical habitat)

The Sonoran pronghorn *Antilocapra americana sonorienses)* is a distinct subspecies of the American pronghorn (*Antilocapra americana*) that is more common throughout the western U.S.

and southern Arizona. *Sonorienses* is distinguished from other subspecies by its small size, pale coloration and distinctive cranial features. Additionally, it does not congregate in large groups at any time of the year (AGFD 1981). Sonoran pronghorn range from the plains of central and western Sonora, Mexico north to southwestern Arizona (AGFD 1986). Within the AO, Sonoran pronghorn occur on the Cabeza Prieta NWR and Organ Pipe Cactus National Monument west of Highway 85 (Snow 1994, USFWS 1982b). Recent unconfirmed sightings suggest that some animals may also occur on the Tohono O'odham reservation.

The Sonoran pronghorn was listed as an endangered species on March 11, 1967. The primary reasons for decline of the species have been conversion of habitat to other uses and barriers that restrict movement of the animal, such as roads, canals, train tracks, and fences. Other important impacts to the species include overgrazing, diseases introduced by domestic livestock, and over hunting, primarily in the first half of the 20th century (USFWS 1967).

The decline of the species has been attributed to a number of factors. In terms of this analysis, the most important of these factors would be the disturbance of habitat resulting from military ground-based activities. In recent years, it appears that human factors have had less impact on population fluctuations than natural drought. Lack of rainfall resulted in the loss of all the fawns produced in 2002, and the adult population decreased 85 percent. A 2002 survey identified only 18 remaining individuals in the U.S. herd; however, the 2004 biennial survey revealed a substantial improvement to 39 animals, with a healthy number of pregnant does. In view of previous analysis suggesting that the critical population number for the species is approximately 50 individuals (Bright 2001), increasing the current population levels is vital to avoid extirpation of the species.

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

3.3.3.29 Southwestern Willow Flycatcher (endangered with proposed critical habitat).

The southwestern willow flycatcher (*Empidonax traillii extimus*) is approximately six inches long with a grayish-green back and wings, whitish throat, light gray-olive breast, and pale yellowish body. It occurs in riparian habitats with dense growths of willows, marsh broom, arrowweed, buttonbush, tamarisk, Russian olive, and often with a scattered overstory of cottonwood. These habitats tend to be rare, widely separated, or small and usually separated by vast expanses of arid lands. The migration routes and wintering grounds of this species are not well known. The species is endangered due to the extensive loss and modification of its habitat as well as from brood parasitism by the brownheaded cowbird. The southwestern willow flycatcher has historically occurred in southern California, southern Nevada, southern Utah, Arizona, New Mexico, western Texas, southwestern Colorado, and northwestern Mexico.

The species was listed as federally endangered on February 27, 1995. Critical habitat for the southwestern willow flycatcher was first designated on July 7, 1997 along 599 river miles within Arizona, California, and New Mexico (USFWS 1995f, 1997d). However, this designation was overturned by the courts. The USFWS developed a recovery plan for the species in August 2002, and once again designated critical habitat on October 12, 2004. The public comment period for this critical habitat designation has been extended and will run through March 31, 2005 (USFWS 2004c). There is no proposed critical habitat in the border area that comprises the AO. The nearest proposed critical habitat that might potentially be impacted by the proposed action would be along the lower San Pedro River approximately 40 miles north of Fort Huachuca.

Infrequent sightings of the species have been recorded in the San Pedro Riparian NCA within the AO. However, for reasons that are not entirely understood, this area does not presently support populations of southwestern willow flycatchers and therefore was not included in the most recent designation of critical habitat.

3.3.3.30 Spikedace (threatened, critical habitat vacated by court order)

The spikedace (*meda fulgida*) is a small, slim fish, approximately 3 inches long, which is found in moderate to large perennial streams where it inhabits shallow riffles with sand, gravel, and rubble substrates (USFWS 2000a). It was once common throughout the upper Gila River basin of Arizona and New Mexico, occupying suitable habitat in both the mainstream reaches and moderate-gradient perennial tributaries, up to about 6,500 feet. Presently, the fish is common only in Aravaipa Creek and some parts of the upper Gila River in New Mexico. Habitat destruction, competition and predation by non-native aquatic species have reduced the range and abundance of the spikedace.

Critical habitat for the spikedace was been designated throughout the Gila River basin, in conjunction with critical habitat designation for the loach minnow(USFWS 2000a). However, this designation was vacated in August, 2004, by a court order in the case of New Mexico Cattle Growers verses USFWS. The San Pedro River, extending from the confluence with the Babocomari River upstream to the U.S.-Mexico border, is the only segment in the Arizona AO that was part of the previous critical habitat designation.

3.3.3.31 Yaqui Catfish (threatened with critical habitat)

The Yaqui catfish *(Ictalurus pricei)* is a moderately large member of the Ictaluridae family of fishes, often reaching 16 inches in length and 5 pounds in weight. The species is similar in appearance to the channel catfish, but is distinguished by a pattern of wrinkles on the skin (USFWS 1995b). Habitat for the Yaqui catfish includes ponds or streams, but is primarily in larger rivers in areas of medium to slow currents over sand and rock bottoms. This species was formerly found in extreme southeast Arizona to include San Bernardino Creek as far up as San Bernardino Ranch. The species has declined due to diminishing flows attributable to groundwater pumping, habitat degradation by livestock, and competition from other catfish (AGFD 2001f).

The Yaqui catfish was listed as a threatened species in 1984. The USFWS has designated all aquatic habitat in the San Bernardino NWR as critical habitat and a recovery plan has been approved for this fish (USFWS 1984, 1995b). This species was also listed in 1996 as “Wildlife

of Special Concern" by the AGFD, in 1988 as "sensitive" in Region 3 by the USFS, and a "Special Concern Species" by the American Fisheries Society.

3.3.3.32 Yaqui Chub (endangered with critical habitat)

The Yaqui chub *(Gila purpurea)* is a relatively small (less than 6 inches) fish found only in Arizona, where it is limited to San Bernardino NWR and Leslie Canyon NWR in Cochise County. The species inhabits deeper pools of small streams near undercut banks or debris and is also found in swifter areas with clean, gravel bottoms and abundant growths of algae. Threats to the Yaqui chub include water development and excessive pumping of underground aquifers, nonnative species, and overgrazing with subsequent erosion (AGFD 2001g).

The Yaqui chub was listed as an endangered species in 1984. Critical habitat was established in 1984 and includes all aquatic habitat on the San Bernardino NWR. The Yaqui chub is included in the recovery plan for the fishes of the Rio Yaqui approved by USFWS in 1995 (USFWS 1984, 1995b). This species was also listed in 1996 as "Wildlife of Special Concern" by the AGFD, in 1988 as "sensitive" in Region 3 by the USFS.

3.3.3.33 Yaqui Topminnow (endangered without critical habitat)

The Yaqui topminnow *(Poeciliopsis occidentalis sonoriensis)* is a small fish, less than 2 inches in length, with a range limited to the portion of the Rio Yaqui (San Bernardino Creek) basin in the San Bernardino NWR (AGFD 2001h). The species typically inhabits vegetated springs, brooks, and the margins and backwaters of larger bodies of water (Minckley 1973). The main threats posed against the subspecies are loss of habitat from water development, ground water pumping, and erosion, as well as competition and predation by the mosquitofish.

The Yaqui topminnow was listed as an endangered species in the 1967 Federal Register with no designated critical habitat (USFWS 1967). This species was also listed 1996 as "Wildlife of Special Concern" by the AGFD, in 1988 as "sensitive" in Region 3 by the USFWS. The Yaqui topminnow is included in the recovery plan for the fishes of the Rio Yaqui (USFWS 1995b).

3.3.3.34 Yellow-billed Cuckoo (candidate).

The yellow-billed cuckoo *Coccyzus americanus*) is a medium-sized bird that is approximately 12 inches in length and about 60 grams in weight. The species is restricted to large, continuous blocks of mature cottonwood/willow riparian habitat and is regarded as having one of the most restrictive macro-habitat requirements of any bird species (Laymon 2004). In Arizona, the preferred habitat (migration and breeding) is found in streamside cottonwood, willow groves, and larger mesquite bosques (Corman 1992). The San Pedro Riparian NCA has been documented as having the highest breeding population of the species anywhere in Arizona.

The yellow-billed cuckoo is a candidate species which is warranted for listing as a "distinct vertebrate population segment" west of the crest of the Rocky Mountains. The primary threat to western cuckoos, both historically and recently, is loss of habitat suitable for breeding grounds. This habitat loss can be attributed to a number of factors, including conversion to agricultural and other uses, dams and river flow management, stream channel alteration, and livestock grazing. Other serious threats include habitat fragmentation, degradation of riparian woodland due to agriculture, residential development, and invasion of non-native tamarisk (Huges 1999).

3.3.4 New Mexico Threatened and Endangered Species

The following provides a brief description of threatened, endangered, and candidate species in the four New Mexico counties that comprise the AO. Emphasis will be placed on Threatened and Endangered species in particular, since federal agencies have legal duties to those species that do not apply to candidate species. Also, species that are found in the counties but not in the AO itself will not be evaluated since impacts to these species would not be expected. More detailed information about all of these species can be found on the website of the New Mexico office of the USFWS at http://ifw2es.fws.gov/NewMexico/.

3.3.4.1 Bald Eagle (threatened, without critical habitat)

Found in all New Mexico Counties in the AO. See Arizona description for further information.

3.3.4.2 Black-Footed Ferret (endangered, without critical habitat)

The black-footed ferret (*Mustela nigripes*) is a member of the weasel family (mustelidae). The ferret is characterized by a long, slender body, a black-brown mask over the eyes, black legs and feet, and a black tipped tail. The northern portion of Grant County, New Mexico is considered to be within the range of the black-footed ferret. However, there are no experimental or known wild populations are located within the AO (USFWS 1988a).

3.3.4.3 Beautiful Shiner (threatened without critical habitat in New Mexico)

The beautiful shiner (*notropis formosus*) was listed as threatened across its entire range in August of 1984, with critical habitat designated as all aquatic habitats in the San Bernadino NWR in Arizona. No critical habitat exists in New Mexico for the species, although it formerly existed in certain watersheds in Grant and Luna County (USFWS 1984). See Arizona species description above for more information.

3.3.4.4 Chihuahua Chub (threatened, without critical habitat) Grant

The Chihuahua chub is (*Gila nigrescens*) a small, slender fish, approximately 6 inches in length at maturity, that is associated with sheltered areas of shallow pools, such as submerged trees and undercut banks (USFWS 1983a, 1986f). The historical range of the chub is the Mimbres River drainage of New Mexico. There are no known populations of Chihuahua chub within the AO.

3.3.4.5 Chiricahua Leopard Frog (threatened, without critical habitat)

The Chiricahua (*Rana chiricahuensis*) leopard frog is found in Grant, Hidalgo, and Luna counties. See Arizona species descriptions above for additional information.

3.3.4.6 Gila Chub (proposed endangered with critical habitat)

The Gila chub (*Gila intermedia*) is found in the Gila River drainage of Grant County but is not known to occur in the AO in New Mexico. See Arizona species descriptions above for additional information on the species.

3.3.4.7 Gila Topminnow (endangered, without critical habitat)

The Gila topminnow (*Poeciliopsis occidentalis occidentalis)* was found historically throughout the Gila River drainage, including Grant County. However, is does not occur in the AO. For additional information on the species see the Arizona species descriptions above.

3.3.4.8 Gila Trout (endangered, proposed reclassification to threatened, without critical habitat)

The Gila trout (*Oncorhynchus gilae*) is a native fish of the upper Gila River drainage in Grant County New Mexico. The Gila trout might have also occurred historically in Arizona. The fish occurs in mountain streams, primarily in riffles and pools. They depend on cover such as woody debris, undercut stream banks, boulders and overhanging vegetation. The fish are found above 5,400 feet elevation, in moderate to high gradient perennial mountain streams, typically flowing through steep canyons and valleys (USFWS 2003a).

The Gila trout is federally listed as endangered. The decline of the trout is historically attributed to uncontrolled grazing and timber harvest, and introduction of non-native predatory and hybridizing fish. These practices resulted in severe degradation of habitat, intense predation and hybridization with non-native species. In May 2005, the USFWS proposed to reclassify the Gila trout from endangered to threatened (USFWS 1967, 2003a, 2005c).

The northern portion of Grant County, New Mexico is considered to be within the range of the Gila trout. However, there are no known wild populations or historical habitat located within the AO.

3.3.4.9 Jaguar (endangered, without critical habitat)

New Mexico is part of the historic range of the jaguar (*panthera onca*); however, it has been driven from the area and is not known to exist in the AO. The jaguar was listed as endangered in 1997 but without critical habitat. No recovery plan currently exists for the species. See Arizona description above for additional details on the species.

3.3.4.10 Least Tern (endangered, without critical habitat)

The least tern (*sterna antillarum*) is a migratory bird that depends upon riparian habitat for breeding, which takes place from late May to early August. The historical range of the least term consists of the Mississippi and Rio Grande river basins. The current range is similar to historical, although the birds are generally restricted to river segments with minimal alterations. The least tern is federally listed as endangered (USFWS 1990b, 1985a).

In New Mexico, the least tern is known to breed only in the Pecos River Valley at two to three sites in the Roswell area and south. It is considered a rare migrant in the rest of the state (USFWS 2005d). There are no known least tern populations that occur in the AO.

3.3.4.11 Lesser Long-Nosed Bat (endangered, without critical habitat)

The far southwestern portion of Hidalgo County is within the range of the lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*), although major roosts sites were not identified in New Mexico in the Recovery Plan of 1994 (USFWS 1994a). A Federal Register notice dated February 3, 2005 announced a 5-year review for a number of different species, including the lesser long-nosed bat. Current population estimates appear to be higher than when the bat was first listed as endangered (USFWS 2005a). For additional information on the species see the Arizona species descriptions above.

3.3.4.12 Loach Minnow (threatened, without critical habitat)

The loach minnow (*Tiaroga cobitis*) is a small, slender, elongated fish that is found in Gila River drainage in Grant and Hidalgo counties in New Mexico, as well as other places in Arizona. It does not exist within the New Mexico portion of the AO. For additional information on the species, see the Arizona species descriptions above.

3.3.4.13 Mexican Gray Wolf (endangered, without critical habitat)

The Mexican gray wolf (*Canis lupus baileyi*); is the southernmost occurring subspecies of the gray wolf. At one time, the range of gray wolves extended over most of the continental US. Wolves were considered detrimental to livestock and were methodically exterminated. The gray wolf (all subspecies) was listed as endangered in 1967. Presently, the range of the Mexican gray wolf lies in the southeast Arizona and southwest New Mexico and extends into Mexico. The wolf requires habitat that supports its prey, such as elk and deer (USFWS 1967, 1982c, 2005e).

There is no critical habitat for the Mexican gray wolf. However, the recovery of the Mexican gray wolf relies on the reintroduction of captive wolves into the wild, into the Blue Range Wolf Recovery Area in the Apache-Sitgreaves and Gila National Forests. Released wolves and their offspring are designated as nonessential experimental population. The Mexican gray wolf is endangered, except where designated as a Non-Essential Experimental Population (USFWS 2005e).

Cochise, Pima and Santa Cruz counties of Arizona and Hidalgo, Grant, Luna counties of New Mexico are considered to be within the range of the Mexican Grey Wolf. However, there are no known wild or experimental populations located within the AO.

3.3.4.14 Mexican Long-Nosed Bat (endangered, without critical habitat)

The Mexican long-nosed bat *(Leptonycteris nivalis)* is approximately 2 ¾ to 3 ¾ inches long with an elongated snout and a long, protruding tongue. The coloration may be black, pale brown or gray. The bats are nomadic and follow the availability of food sources, roosting in caves and abandoned mines. The species needs several roost sites distributed over their seasonal range, as well as large areas of agaves and other night-blooming plants for foraging (USFWS, 1994b).

The historic range of the species is primarily in Mexico. A small portion of the range extends into Hidalgo County, New Mexico and the Big Bend region of Texas. However, no roosting sites have been identified in New Mexico to date, and the population has not been delineated (USFWS 1988b, 1994b).

3.3.4.15 Mexican Spotted Owl (threatened, with critical habitat)

No critical habitat has been designated for this species in the AO in New Mexico, although it is known to occur in Grant and Hidalgo counties. See Arizona species description for additional information on the species.

3.3.4.16 New Mexico Ridge-nose Rattlesnake (threatened, with critical habitat)

The New Mexico ridge-nose rattlesnake (*Crotalus willardi obscurus*) is distinguished by a ridge on the tip of its snout. The snake is considered small relative to other rattlesnakes. The species

can be found at elevations above 5,000 feet in limited forested regions of southeastern Arizona and southwestern New Mexico (AGFD 2001i).

The historical range of the species is the extreme southeastern Arizona and extreme southwestern New Mexico and limited areas in Mexico. The species is found only in the Animas and Peloncillo mountains in New Mexico and the Peloncillo Mountains of Arizona. Habitat loss and over-harvesting by collectors are thought to be the causes behind the decline of the ridge-nose rattlesnake (NMGFD 1985b, AGFD 2001i).

The New Mexico ridge-nose rattlesnake is federally listed as threatened. Critical habitat is designated for the species in Hidalgo County, New Mexico, at elevations between 6200 feet and 8532 feet in Bear, Indian and Spring Canyons of the Animas Mountains (USFWS 1978).

3.3.4.17 Northern Aplomado Falcon (endangered, without critical habitat)

The northern aplomado falcon *(Falco femoralis septentrionalis)* is a long-tailed falcon that is somewhat smaller than a prairie falcon. It was designated as endangered in 1986, but without critical habitat. On February 9, 2005, the USFWS published a proposed rule to establish a non-essential experimental population of the northern aplomado falcon in southern New Mexico and Arizona. This will require federal agencies to consult with the USFWS concerning potential impacts of their actions on the species, but results of these consultations are advisory and do not impose mandatory constraints on agency actions. See Arizona species descriptions above for further information.

3.3.4.18 Rio Grande Silvery Minnow (endangered, with critical habitat)

The Rio Grande silvery minnow (*Hybognathus amarus*) is a small silver fish, approximately 3.5 inches long, with a lifespan of approximately one year. The historic range of the minnow consisted of the Rio Grande River from Espanola, New Mexico, to the Gulf of Mexico and the Pecos River from Santa Rosa, New Mexico to the Rio Grande. However, the present range is limited to the Rio Grande, between the Cochiti Dam to the Elephant Butte Reservoir. Critical habitat is designated in the Rio Grande, from Cochiti Dam, to the utility line crossing the Rio Grande in Socorro County (USFWS 1999c, 2003b).

The Rio Grande Silvery Minnow is federally listed as endangered. The decline of the species is likely due to river modifications that reduced flow and water availability (USFWS 1994c). Although the Rio Grande River of Dona Ana County is considered to be within the range of the silvery minnow, the critical habitat of the minnow is outside of the AO and there are no known populations located within the AO.

3.3.4.19 Sneed Pincushion Cactus (endangered, without critical habitat)

The Sneed pincushion cactus (*Coryphantha sneedii var. sneedii*) is a small cactus that grows primarily in limestone in areas of broken terrain and steep slopes (NMRPTC 1999). All populations of the Sneed pincushion cactus are found the northern Chihuahuan Desert ecoregion in Dona Ana County, New Mexico and in El Paso County, Texas. Specific locations have been reported from the southern Organ mountains and Bishop's Cap east of Las Cruces and from the Franklin Mountains north of El Paso (USFWS 1979).

The Sneed pincushion cactus is federally listed as endangered. The main threats to the species have been urban development and plant collectors. The cactus is locally common within its area of distribution and readily cultivated commercially (USFWS 1979, NMRPTC 1999). Dona Ana County is considered to be within the range of the Sneed pincushion cactus, but there are no known populations located within the AO.

3.3.4.20 Southwestern Willow Flycatcher (endangered, without critical habitat)

The southwestern willow flycatcher is a small, migratory bird that is known to occur in all four counties in the New Mexico portion of the AO. Critical habitat for the species was proposed by the USFWS on October 12, 2004, but none of the proposed habitat occurs in the AO in the state. See Arizona species description above for further information on this flycatcher.

3.3.4.21 Spikedace (threatened, without critical habitat)

The spikedace (*meda fulgida*) is a small, slim fish, approximately 3 inches long, characterized by bright, silvery sides and spines in the dorsal and pelvic fins. It was once common throughout the upper Gila River basin of Arizona and New Mexico occupying suitable habitat in both the mainstream reaches and moderate-gradient perennial tributaries, up to about 6,500 feet. However, at present the fish is only common in Aravaipa Creek and some parts of the upper Gila River in New Mexico (USFWS 1991b).

Critical habitat for the spikedace was designated throughout the Gila River basin in 2000 (USFWS 2000c), but that designation was vacated by court order in August of 2004. None of the previously designated critical habitat for the species occurred within the AO in New Mexico.

3.3.4.22 Yuma Clapper Rail

The Yuma clapper rail (*Rallus longirostris yumanensis*) is a marsh bird, that breeds in freshwater marshes in the U.S. as well as brackish marshes of Mexico. The species probably winters in Mexico (USFWS 1983b).

There are some ambiguity regarding the historical range and distribution of the Yuma clapper rail. The USFWS recovery plan indicates that the species' range exists along the lower Colorado River of Arizona, to the Gulf of California of Mexico. The Colorado River of the U.S. probably did not support the species until the river was dammed and resultant habitat favorable to the species formed. The Arizona Game and Fish department includes the Bill Williams River drainage, the Lower Gila River, from Phoenix to the Colorado River, the lower Salt and Verde rivers and Picacho Reservoir.

The Yuma clapper rail is federally listed as endangered. The USFWS is in the process of reviewing the status of a number of listed species in Arizona, including the Yuma clapper rail. (USFWS 1967, 2005a, 2005f).

3.3.5 Critical habitat – Arizona and New Mexico

Section 7(a)(1) of the Endangered Species Act states that federal agencies shall insure that their actions are not likely to "result in the destruction or adverse modification of designated critical habitat." Additional regulations have further clarified this by stating that "destruction or adverse modification means a direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species. Such alterations include, but are

not limited to, alterations adversely modifying any of those physical or biological features (constituent elements) that were the basis for determining the habitat to be critical," in accordance with 50 CFR 402.02.

The primary constituent elements for the species includes, but are not limited to: space for individual and population growth, and for normal behavior; food, water, or other nutritional or physiological requirements; cover or shelter sites for breeding, reproduction, or rearing of offspring; and habitats that are protected from disturbance or are representative of the historical geographical and ecological distribution of a species.

Critical habitat for species in the AO was described in the T&E species analysis above. The following list and accompanying maps (see figures 7, 8 and 9) provide a summary description of those areas to assist in identifying and understanding potential impacts. Potential impacts of Border Patrol operations as described in the proposed Action on critical habitat will be evaluated in ongoing section 7 consultations with the USFWS. Moreover, the Border Patrol will continue coordination with the USFWS and incorporate any future designated critical habitat for listed species such as the jaguar in future consultations.

3.3.5.1 Arizona Species with Critical Habitat

3.3.5.1.1 Beautiful Shiner

Critical habitat for the beautiful shiner was established in 1984 and includes all aquatic habitats (except Leslie Creek) on the San Bernardino NWR. According to the USFWS, the constituent elements for the Rio Yaqui fishes include: clean, small, permanent streams and spring pools without any exotic fishes; deep pool areas separated by riffles and flowing areas with moderate current; backwater areas of streams and springs with overgrown cut banks and accumulations of detritus that will provide habitat for feeding and shelter (USFWS 1984).

3.3.5.1.2 Cactus Ferruginous Pygmy Owl

Critical habitat for the species has been proposed in the Altar Valley and in both Organ Pipe Cactus National Monument and the Cabeza Prieta NWR on the western edge of the AO. The cactus ferruginous pygmy-owl previously had designated critical habitat of 730,000 acres (USFWS 1999d), but a U.S. District Court ruling in 2001 removed this designation. On November 27, 2002, the USFWS once again proposed designating critical habitat for the owl, amounting to 1.2 million acres of critical habitat for the cactus ferruginous pygmy-owl (USFWS 2002a).

The USFWS enumerated the constituent elements of the critical habitat as: space for individual and population growth, and for normal behavior; food, water, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, or rearing of offspring; and habitats that are protected from disturbance or are representative of the historical geographical and ecological distributions of a species. More detailed discussion of these constituent elements can be found in the Federal Register, Volume 67, Number 229, November 27, 2002.

3.3.5.1.3 Desert pupfish

Critical habitat for the desert pupfish has been designated to include the Quitobaquito Springs and a 100-foot riparian buffer zone around the spring and pond located there. These springs are located on the Organ Pipe Cactus National Monument in Pima County. This designation was made on March 31, 1986 (USFWS 1986b).

3.3.5.1.4 Gila Chub

Critical habitat for the Gila chub has been proposed in approximately 208 stream miles within the Gila River Basin. In the AO, this proposal incorporates seven stream segments in the lower San Pedro River area and the lower Santa Cruz River area (50 CFR 17). These areas include 3.4 miles in Bass Canyon, 0.69 miles in Hot Springs Canyon, 2.2 miles in Redfield Canyon, 19 miles of Cienega Creek, 2.4 miles of Mattie Canyon, 3.2 miles of Empire Gulch, and 7 miles of Sabino Canyon Creek (USFWS 2002b)

3.3.5.1.5 Huachuca water umbel

The USFWS designated seven areas (units) as critical habitat for the Huachuca water umbel in Arizona on July 12, 1999 (USFWS 1999b). All seven units are located within in Santa Cruz and Cochise counties and include the following: approximately 1.25 miles of Sonoita Creek southwest of Sonoita; (2) approximately 2.7 miles of the Santa Cruz River plus approximately 1.9 miles of an unnamed tributary to the east of the river; (3) approximately 3.4 miles of Scotia Canyon upstream from near Forest Road 48; (4) approximately 0.7 miles of Sunnyside Canyon in the Huachuca Mountains; (5) approximately 3.8 miles of Garden Canyon on Fort Huachuca; (6) small segments in Lone Mountain Canyon, Rattlesnake Canyon, Bear Canyon, and an unnamed tributary to Bear Canyon; and (7) approximately 33.7 miles of the San Pedro River north of Hereford. These areas include stream courses and adjacent areas out to the beginning of upland vegetation.

Primary constituent elements for the Huachuca water umbel include: sufficient perennial base flows to provide a wetted substrate; a stream channel that is relatively stable, but subject to periodic; a stable riparian plant community with little or no competition from invasive species; and, refugial sites in each watershed that allow each population to survive catastrophic floods and recolonize larger areas (USFWS 1999b)

3.3.5.1.6 Mexican Spotted Owl

Critical habitat for the Mexican spotted owl has been designated and then vacated on several different occasions, with the latest designation being made on August 31, 2004 (USFWS 2004a). Approximately 8.6 million acres were designated in Arizona, Colorado, New Mexico, and Utah on federal lands. Four major areas are within the border AO: 1) The Coronado National Forest around the Pajarito Wilderness; 2) the Santa Rita Mountains, including Madera Canyon and the Mt. Wrightson Wilderness; 3) the Patagonia Mountains; and 4) the Huachuca Mountains. Additionally, the Fort Huachuca territory in the Huachuca Mountains is managed as critical habitat for the Mexican spotted owl as part of the fort's INRMP. Primary constituent elements are considered to exist in canyons and mixed conifer forests, pine-oak forests, and riparian habitat types that typically support nesting and/or roosting.

3.3.5.1.7 Sonoran chub

Four areas were designated as critical habitat for the Sonoran chub in Arizona on April 30, 1986 (USFWS 1986e). These areas are located in the Coronado National Forest within the Tucson and Nogales stations' AO, Santa Cruz County. The critical habitat for Sonoran chub is defined as Sycamore Creek, and a riparian zone 25-feet wide along each side of the creek, from Yank's Spring downstream approximately five stream miles to the international border with Mexico; Yank's Spring; Penasco Creek, including a riparian zone 25-feet wide along each side of the creek from its confluence with Sycamore Creek upstream approximately 1.25 miles; and an unnamed tributary to Sycamore Creek upstream approximately 0.25 miles.

3.3.5.1.8 Yaqui Catfish, Yaqui Chub

The USFWS designated one area (complex) as critical habitat for the beautiful shiner, Yaqui catfish, and Yaqui chub in Arizona on August 31, 1984 (USFWS 1984). This area encompasses all aquatic habitat of San Bernardino NWR, which is located east of Douglas on the U.S.-Mexico border. The features of this habitat include small permanent streams with riffles, or intermittent creeks with pools and riffles and clean, unpolluted water. See description of beautiful shiner above for information on constituent elements for the Yaqui catfish and Yaqui Chub.

3.3.5.2 New Mexico Species:

3.3.5.2.1 New Mexico Ridge-nosed Rattlesnake

The New Mexico ridge-nosed rattlesnake is federally listed as threatened. Critical habitat for rattle snake has been designated on private property in the Animas Mountains in Hidalgo County, New Mexico. This critical habitat is at elevations between 6200 feet and 8532 feet in Bear, Indian and Spring Canyons. Primary constituent elements for the snake were not identified in the listing notice; however, it was stated that the designated critical habitat met the general requirements of space, food, shelter, and breeding sites that are necessary for critical habitat (USFWS 1978).

3.3.6 Biological Impacts in Border Region

Potential biological impacts from UAV operations in the border region can be divided into two main categories. First, there are potential impacts on the ground, which can occur from aircraft mishaps or from Border Patrol operations that are responding to images and information transmitted from the UAVs. Alternatively, there are potential impacts from the aircraft while they are in the air, either from direct collisions with birds or bats, or from noise that might frighten or disturb animals on the ground. These different impacts will be assessed separately below.

3.3.6.1 Criteria for Significance

Impacts to biological resources, including vegetation, wildlife and protected species, could be considered "significant" if one or more of the following conditions were to result:

- Jeopardy to one or more populations of a federally listed threatened or endangered species or serious conflict with the objectives of an official recovery plan for the species;

- Adverse modification or harm to designated critical habitat;
- Substantial loss of a resource of critical importance to a federally listed threatened or endangered species;
- Substantial increase in impact from vehicular or human activity on generally pristine or sensitive vegetation resources in the project area;
- Substantial fragmentation of important wildlife habitat or interference with heavy-use wildlife movement corridors.

3.3.6.2 Potential Environmental Consequences

3.3.6.2.1 Potential Impacts – Mishaps

General Discussion: Aircraft mishaps could theoretically result in significant biological impacts in several different ways. There is a possibility of a mishap directly into one or more individuals of a protected species in an instance where species numbers are extremely low, such as the Sonoran pronghorn. There is the possibility of a mishap into critical habitat where such habitat is highly limited in size, such as the pond at Quitobaquito Springs. More likely than these events, however, would be a mishap that ignites a fire that results in loss of individuals of a T&E species or destroys or degrades an area of critical habitat. These potential impacts will be evaluated separately below.

Prior to an evaluation of potential significant biological impacts, it is import to initially understand the probability of UAV mishaps. According to federal regulations implementing NEPA, 40 CFR 1508.27, the question of significance must be viewed in terms of the intensity of a particular impact. The uncertainty or improbability of an impact is one of many factors to be taken into account in determining the question of intensity, in accordance with 40 CFR 1508.27(5)).

The probability of a UAV mishap cannot be determined with high accuracy, but rough estimates are possible. First, it should be stated that media reports have greatly exaggerated UAV mishap rates, although it remains true that UAVs have higher mishap rates than other aircraft such as helicopters and manned aircraft. Presently, mishap rates vary widely depending on the particular UAV under consideration. The (b) (7)(E) an example of one type of UAV that could be deployed as part of the proposed action, has undergone an extensive reliability improvement program and has achieved a mishap rate of 16 mishaps per 100,000 hours of flight (DoD 2004). The (b) (7)(E) another example of the type of UAV that could be deployed, has a current mishap rate of 32 mishaps per 100,000 hours of flight. It is anticipated this rate will be reduced to around 20 mishaps per 100,000 hours with improved training of operators and other engineering improvements (DoD 2004). For comparison, rates for manned aircraft are approximately 3 mishaps per 100,000 hours when aircraft that are operating under guidelines of Part 135 on-demand operations (NTSB, 2001).

If it is assumed that 2 UAVs with mishap records of 20 mishaps per 100,000 hours of flight fly (b) (7)(E) along the 5 nm border zone AO, it is probable there will be (b) mishaps per year. Given the approximate size of the border zone; 535 miles by 5 nm, the odds are

approximately one in two million that a UAV mishap would strike any particular plot of ground 100 feet by 100 feet. Given these probabilities, is appears highly unlikely that such mishaps would directly strike individuals of a sensitive species or a vulnerable parcel of critical habitat.

Several other factors reduce these odds even further. Most UAV failures occur during landing and take-off, which reduces the odds of mishaps in remote areas away from airport. Additionally; other than at extremely low altitudes such as take of and landings, should a mechanical failure of a UAV occur, the UAV operator often retains control of the aircraft during a mishap event and can direct the aircraft away from sensitive areas and population centers. UAV operators will be trained to direct UAVs away from population centers and sensitive habitat on those occasions where they retain control over the aircraft during a mishap event. Accordingly, only a small fraction of the statistically expected UAV mishaps would be out-of-control events with the potential to strike sensitive areas away from the airfields.

The chances and implications of an aircraft mishap igniting a fire must be in viewed in light of a different set of factors. Large areas along the border AO are susceptible to fire at certain times of the year. Such areas would include desert grassland communities such as the Altar and San Rafael valleys in Arizona or the Animas Valley in New Mexico, as well as a variety of other biotic communities. A recent fire history of the Huachuca Mountains indicates that four major fires of at least 2,000 acres have occurred in or around those mountains since 1988. Another factor to consider is that desert biotic communities that have been invaded by exotic species such as buffelgrass (*Pennisetum ciliare*) are highly vulnerable to fire since the plant communities in those areas are not adapted to periodic fires (USGS 2004).

Although serious fires from UAV mishaps are theoretically possible, there are several reasons why a CBP aircraft mishap is unlikely to start a fire, and even less likely to start a fire with significant biological impacts. Although the odds of a UAV starting a fire after a mishap are difficult to assess due to a lack of statistical information, anecdotal evidence from UAV operations at Fort Huachuca indicates that the incidence of fire upon mishap is very low with UAVs (telephone conversation, (b) (7)(E) March 4, 2005). Even on those rare occasions where a UAV mishap results in a fire, significant impacts may not result for a number of reasons. First, landscapes along the border region are not susceptible to fire at all times during the year. Second, fire is not necessarily an unwelcome event in all areas due to the fact that many of the plant communities in the area are fire-adapted and benefit from periodic fires. Third, a fire would not necessarily be harmful to sensitive species in the area. For instance, the Mexican spotted owl appears to be highly adapted to periodic fires and successfully relocates in fire-damaged areas (See section 3.3.3.19 above). Obviously, other plants and animal species might not necessarily have similar survival strategies that allow them to cope with periodic fires, but many do.

It is certainly possible to envision circumstances where a UAV mishap would ignite a fire and impact a sensitive or endangered species. For instance, a mishap in the Altar Valley during a dry and windy period could start a fire that would destroy habitat for the cactus ferruginous pygmy owl and result in a take of individual owls. However, in view of the factors described above, the odds of this happening appear to be so low that it cannot be considered a significant threat. An additional factor to bear in mind is that UAV operations are part of an ongoing section 7 consultation process between the CBP and the USFWS that will specify, if necessary, additional

mitigation measures to further reduce the threat of significant fire impacts to Threatened and Endangered species and critical habit.

The significance of potential fires from UAV mishaps must also be viewed in the context of the entire border situation. It is well documented that UDAs start numerous fires in sensitive areas, often due to cigarette smoking or in order to stay warm. As an example, the Tohono O'odham Fire Department was reported to have responded to nearly 100 fires set by UDAs in the first 8 months of 2004 (Steere 2003). In view of this, it is entirely possible that UAV operations in the border region could have the net effect of reducing UDA traffic and fires in highly sensitive areas and result in an overall net decrease in fire threats to sensitive species and habitats in the AO. Viewed in the context of the overall border situation, these potential fire impacts from UAV operations along the border appear less than significant and may actually be beneficial.

3.3.6.2.2 Impact Analysis and Conclusions – Collisions with Bats and Birds

UAVs have the potential to collide with birds and bats during all stages of flight. For a number of reasons, however, such collisions should be relatively rare. Studies have determined that 90 percent of all birdstrikes occur at or below 3,000 feet AGL (FAA 2005). The elevation of UAV flights will vary somewhat depending on the type of aircraft and the nature of the operation being conducted. However, the vast majority of operations will be at least (b) (7)(E) above MSL, which in most areas is at least (b) (7)(E) AGL. At this altitude, collisions with bats will not occur and collisions with birds will be extremely rare. Generally, the only birds at this altitude would be ducks and geese, which should be infrequent in the area due to the fact that the AO does not transect any major bird flyways.

The potential for collisions with birds and bats during takeoff and landing will be evaluated in chapter 4, relative to each individual airport. There may be occasions where sensitive species inhabit or frequent areas adjacent to airfields, such as lesser long-nosed bats feeding on agave plants in the vicinity of Libby Army Airfield in Sierra Vista. In cases such as this, it may be necessary for CBP to adopt measures that will reduce the chance for collisions between UAVs and sensitive species. Such measures will be specified through section 7 consultations between the CBP and the USFWS. With the adoption of such measures, when necessary, there should be no adverse impacts to sensitive bird or bat species from collisions with UAVs.

3.3.6.2.3 Impact Analysis and Conclusions – Noise impacts from UAVs on sensitive species:

Aircraft generate noise that has the potential to impact sensitive species. The studies that have been conducted on species that can be found in the AO have involved the effects of jet aircraft noise on bats or helicopter noise on Mexican spotted owl or Sonoran pronghorn (Dalton 1993, 1998. Delaney 1997). The general conclusion of these studies is that these species often show a response to aircraft noise but are not adversely disturbed unless the aircraft get within a few hundred feet. Additionally, it appears that Mexican Spotted Owl and Sonoran pronghorn become rapidly acclimatized to such noise, an adjustment that likely occurs with other species as well. As stated in the description of the proposed action, UAVs will exclusively fly at (b) (7)(E) AGL or higher, where noise levels are 55 dBA or less. No studies exist that have documented significant species impacts from intermittent noise at that level. Accordingly, it appears highly unlikely that UAV noise will adversely impact any sensitive species.

3.3.6.2.4 Potential Impacts – Enforcement Action on Ground

(b) (7)(E)

Although the UAV represents a new technology, on-the-ground biological impacts from these pursuit operations should not be different than impacts from current ongoing operations, which have been previously addressed in various environmental documents. The UAV system is intended as a force multiplier, but will not by itself increase patrol operations or cause such operations to occur in more sensitive areas or habitats. CBP agents respond to disturbances of a wide assortment of (b) (7)(E) (b) (7)(E) requiring a visual search by CBP agents on foot or by various vehicles. The UAV can respond to those (b) (7)(E) with far less impact than ground response. This may reduce the non-directed movement of CBP agents and thereby reduce impacts to sensitive species and habitats.

Since UAV operations will not result in new or different on-the-ground impacts, other documents and consultations have addressed such impacts. The CBP is currently preparing a PEIS on CBP operations for the Tucson and Yuma Sectors. Additionally, there is a completed BA for Yuma Sector activities as well as draft BA for Tucson Sector activities. These documents have identified, or may yet identify, a number of mitigation measures. See Appendix A for examples of existing mitigation commitments, such as the training of personnel in avoiding sensitive areas that will reduce or eliminate adverse impacts to T&E species and critical habitat from Border Patrol enforcement operations in general. This analysis will also encompass Border Patrol enforcement in conjunction with UAV operations. The analysis and conclusions provided in these documents are incorporated into this document by reference in accordance with 40 CFR 1502.21.

3.3.6.3 No Action Alternative:

Biological effects in the border AO under the No Action Alternative would remain substantially the same as at the present time. There would be no risks to critical habitat or sensitive species from UAV mishaps or fires resulting from such mishaps. Alternatively, no positive benefits to biological resources would occur under the No Action Alternative because UAVs would not be employed to (b) (7)(E)

3.3.7 Baseline Environment

The terrain of the entire project area is varied, from playa to mountains regions, with varying soil types. The geology/soils/topography at the potential airports is relatively flat, with most of the areas previously disturbed

3.3.8 Criteria for Significance

Significant impacts to soil resources or topographical features could result if any of the following conditions result from the implementation of the proposed action:

- Erosion is increased resulting in an appreciable loss of topsoil that cannot be mitigated
- Increased sedimentation caused by grading or impervious surfacing impedes the function of drainage facilities and watercourses

3.3.9 Potential Environmental Consequences

As noted in the individual airport tables, no impacts are anticipated with either alternative.

3.3.9.1 Potential Environmental Consequences from the No Action Alternative

Implementation of the No Action Alternative would have no significant impact.

3.3.9.2 Potential Environmental Consequences from the Proposed Action

Implementation of the proposed action will have no significant impact.

3.4 Noise

3.4.1 Baseline Environment

The baseline environment for noise impacts would be the 25 mile border AO where UAV over flights are expected to occur, with the majority of noise impacts occurring within 5 miles of the U.S.-Mexico border or along flight paths from a particular airport to the border region itself. The border AO, which contains small, populated areas intermixed with a diverse array of sensitive lands and recreation areas, is described in more detail in section 3.1 above. Noise impacts to sensitive species that may exist in this region are evaluated in section 3.3.6.2.3. In terms of noise impacts to humans the principle issues of concern would be noise disturbances to people who are enjoying the recreation areas and wilderness areas or people living in quiet residential neighborhoods. Potential noise impacts to people exposed to UAV operations at the airport facilities will be evaluated in chapter 4.

3.4.2 Criteria for Significance

An increase in noise levels due to a new noise source can create an impact on people. Unfortunately, it is not a simple matter to determine whether such impacts are significant due to the highly subjective character of an individuals' reaction to changes in noise. Noise that may irritate some people may be viewed as inconsequential or even welcome by other people. In accordance with standard NEPA practice, the significance of such noise impacts must be evaluated in terms of both the context and the intensity of such impacts.

Noise impacts would be considered significant if:

- There was a substantial increase in ambient noise levels (more than 10 dBA) above levels existing without the project;
- Sounds from UAV over flights disturbed the solitude of wilderness and recreational areas consistently over an extended period of time.

UAVs are not expected to generate noise in the border AO that would violate any community noise ordinances or harm anyone's hearing, so those issues will not be evaluated herein.

3.4.3 Potential Environmental Consequences

At (b) (7)(E) AGL, UAV over flights will generate noise that will briefly reach 55 decibels at ground level and then dissipate rapidly. Such noise levels could occur several times in a given evening over a particular spot in the border AO. This level of sound is approximately equal to the sound of a normal human conversation.

In terms of people living in communities, a single event sound exposure of 55 L_{max} would not normally be significant even if it occurred several times in one evening. People indoors with the windows closed would not likely hear the sound at all. The only people who might notice such sound would be those sitting outside or inside near an open window. Although sound levels are measured differently depending on the community, 55 dBA is often a target level for background community noise, and a single noise event of 55 L_{max} would blend into background noise of this level and be barely noticeable. The exception to this would be remote residential areas, including the Tohono o'Odham Nation, where people are living in sparsely populated areas where background community noise is at a very low level. In such areas, the UAV noise at 55 L_{max} will probably be noticeable to someone sitting outside on a quiet evening, although it would be unlikely to wake a sleeping person.

Although certain people living in quiet, remote locations may occasionally be bothered by UAV noise it is reasonable to state that such disturbances would not be significant. Several factors reduce the probability that a significant number of people would be impacted by these noise events. First, the (b) (7)(E) . AGL standard is a minimum elevation. All UAVs will be capable of flying at an elevation of (b) (7)(E) MSL, and most UAV operations will be conducted at elevations greater than (b) (7)(E) AGL. At these greater distances, sound levels quickly attenuate to levels that are almost imperceptible.

UAV noise could also have an effect on people who camp or hike in the WSAs and and recreational sites within the AO. See Table 1 above for a more detailed listing of these areas. In certain instances, the problem may be aggravated by the fact that these recreational areas are at higher elevation where UAVs will likely fly closer to ground level, such as the Miller Peak Wilderness in the Huachuca Mountains. As stated above, (b) (7)(E) . At this distance, UAV noise could reach a decibel level of 58 L_{max}, which would be noticeable in a quiet outdoor environment.

Numerous studies have been done on recreationists in outdoor settings, and the general conclusion is that noise from aircraft and helicopters, even at the 40 dBA level, has a negative impact on perceptions of beauty, solitude, tranquility, and naturalness (Mace, Bell, and Loomis, 1999). In view of such studies, UAV flights at 55 decibels will be noticeable to outdoor recreationists and could be an irritant to a some of these individuals. Whether or not this represents a significant impact is a question that must be viewed in terms of the intensity of the impact and the context in which it takes place.

In terms of intensity, UAV noise would (b) (7)(E) By way of comparison, studies have determined that visitors to the Grand Canyon can be exposed to as many as 43 aircraft noise

events in a 20 minute period (Horonjeff 1993. Also, UAV operations are conducted in the (b) (7)(E) of have left the area. In view of these factors, the total number of UAV noise events will not be high with respect to any particular individual.

A more important factor to consider in determining the significance of UAV noise impacts is the context of the overall border situation. Due to the tremendous number of UDAs moving through the borderlands of Arizona and New Mexico, there has been a great deal of environmental degradation to sensitive lands and the perception of physical safety of outdoor users has been compromised. In view of these factors, it is likely that many recreational users exposed to UAV over flights will not view the noise as an unwanted intrusion but rather as part of a broader program to reduce environmental destruction and improve the safety of those enjoying the landscapes in the border AO. Another related factor, which is difficult to quantify but nonetheless important, is that UAVs will have the effect of reducing the amount of time that Border Patrol officers spend in pursuit of UDAs across the landscape. This could have a positive impact on the amount of noise caused by vehicles in the remote areas of the border AO.

In summary, it does not appear that significant numbers of people will hear UAV noise and at the same time view that noise as a serious degradation of their lifestyle or recreational experience.

3.4.3.1 Potential Environmental Consequences from the No Action Alternative

UAV noise under the No-Action Alternative will not increase, but will remain at current levels. There will be no corresponding decrease in ATV noise as a result of more efficient search methods provided by UAV data.

3.5 Cultural & Archeological Resources

3.5.1 Baseline Environment

The National Historic Preservation Act (NHPA), as amended in 1992;16 USC 470 et seq. and NEPA require federal agencies to consider the possible effects that their undertakings, or proposed actions, could have on the cultural resources listed or eligible for listing in the National Register of Historic Places (NRHP). The implementing regulations of the NHPA, 36 CFR 800, provide the criteria for agencies to review their undertakings and complete consultation for the purpose of identifying historic properties that might be affected.

The appropriate State Historic Preservation Office (SHPO), and Tribal Historic Preservation Officer (THPO), if one has been officially appointed must be consulted prior to initiating a proposed action. Federal agencies must make reasonable and good-faith efforts to identify Indian tribes that might attach religious and cultural significance to historic properties in the area of potential effect, or the AO, whether or not the undertaking is on tribal lands and invite their input. In the event that a tribe does not have a THPO, the agency must consult with the appropriate representative, designated by the tribe in addition to SHPO consultation.

In accordance with the requirements above, CBP has initiated section 106 consultation with the Arizona SHPO, New Mexico SHPO, and twenty-nine Indian tribes believed to have interest in the AO. CBP has also consulted the Bureau of Indian Affairs, the USFS, the BLM and the USFWS regarding the cultural resources within each agency's jurisdiction. Consultation is

ongoing at this stage of this PEA. Data and comments will be incorporated into this assessment as they are received. The tribes that have been identified are listed in the table below.

Table 3 – Native American Tribes Consulted

Ak Chin Indian Community, AZ	Navajo Nation, AZ (THPO)
Chemehuevi Indian Tribe, CA	Pascua Yaqui Tribe, AZ
Cocopah Tribe, AZ	Pueblo of Isleta, NM
Colorado River Indian Tribes, AZ, CA	Quechan Tribe, CA, AZ
Comanche Nation, OK (THPO)	Salt River Pima-Maricopa Indian
Fort McDowell Yavapai Nation, AZ	San Carlos Apache Tribe, AZ
Fort Mojave Indian Tribe, AZ	San Juan Southern Paiute Tribe, AZ
Fort Sill Apache Tribe, OK	Tohono O'odham Nation, AZ
Gila River Indian Community, AZ	Tonto Apache Tribe, AZ
Havasupai Tribe, AZ	White Mountain Apache Tribe, AZ
Hopi Tribe, AZ	Yavapai-Apache Nation, AZ
Hualapai Tribe, AZ (THPO)	Yavapai-Prescott Tribe, AZ
Kaibab Band of Paiute Indians, AZ	Ysleta del Sur Pueblo, TX
Kiowa Indian Tribe, OK	Zuni Tribe, NM (THPO)
Mescalero Apache Tribe, NM	

The area of potential effect, is approximately 13,375 square miles, and consists of the international border within the states of Arizona and New Mexico, extending from the border to 25 nm inland to the U.S. The lands within this corridor are under the jurisdiction of various federal and state agencies, as well as private ownership. Because the area is so large, it is not feasible to address each cultural resource that exists or might within the area. It is known from previous efforts by various agencies that the area is rich in cultural resources and there is probability of discovering resources, many of which are pre-historic.

The index of properties listed by the National Park Service in the NRHP represents a portion of the sites that exist within the corridor (NRHP 2005). The majority of these places are considered historic properties such as courthouses, churches and forts. Few prehistoric sites are presently listed in the register.

3.5.2 Criteria for Significance

Impacts to historic and archeological resources would be considered significant if:

- The proposed action caused adverse effect on properties listed on, or determined eligible for, the NRHP
- Proposed construction activities were to disturb or damage cultural resources and/or cultural resource sites.

3.5.3 Potential Environmental Consequences

Cultural resources for each airfield are discussed in chapter 4. Many of the airfields have features that might be of historical significance. Other cultural resources, such as prehistoric artifacts, might exist at some airfields. However, the proposed action will not affect these

resources, if present. If construction or any other activity that could affect cultural resources is later proposed at any airfield, then compliance with NHPA would be required in order to protect and preserve cultural resources.

The environmental consequences described below are applicable to the area of potential effect in general. Centuries of human presence have produced historic and prehistoric cultural resources that remain undiscovered in the area of potential effect. Consultation with the Arizona SHPO, New Mexico SHPO and Indian tribes is ongoing, in order to identify and protect culturally significant resources.

3.5.3.1 Potential Environmental Consequences from the No Action Alternative

Under the no action alternative, no direct, indirect or cumulative impacts on historic or cultural resources are anticipated other than those which will occur due to illegal traffic that would continue to move through the area of potential effect.

3.5.3.2 Potential Environmental Consequences from the Proposed Action

Direct consequences could occur to cultural resources from ground-disturbing activities such as grading and excavation. However, these types of activities are not included in the proposed action.

As discussed in section 3.3.1, there is a remote possibility for a UAV mishap to occur within the area of potential effect and directly impact resources, either by collision or as a result of a mishap-related fire. The analysis for UAV mishaps and biological resources is applicable to cultural resources as well. Though a serious fire resulting from a UAV mishap is theoretically possible, several factors such as reliability improvements, FAA safety requirements the UAV mishap characteristics typically observed, make it unlikely that a UAV-related fire would adversely affect cultural resources. See section 3.3.1 for a full discussion of UAV mishaps.

Cultural resources could be affected by CBP personnel responding to UAV surveillance data. The majority of such actions will occur in close proximity to the border, where (b) (7)(E) . However, on infrequent occasions the UAVs may be used to (b) (7)(E)

Although the UAV represents a new technology, cultural resource impacts from these pursuit operations should not be different than impacts from current ongoing operations, which have been previously addressed in various environmental documents (INS 2001, CBP 2004a). The UAV system is intended as a force multiplier, but will not by itself increase patrol operations or cause such operations to occur in more sensitive areas or habitats. CBP agents respond to disturbances of a wide assortment of (b) (7)(E) requiring a visual search by CBP agents on foot or by various vehicles. The UAV can respond to those (b) (7)(E) with far less impact than ground response. This may reduce the non-directed movement of CBP agents and thereby reduce impacts to cultural resources.

Since UAV operations will not result in new or different on-the-ground impacts, other documents and consultations will address impacts from these operations. The "Supplemental Programmatic Environmental Impact Statement for INS and JTF-6 Activities, Final Report (INS

2001) addresses the impacts of CBP ground operations on cultural resources throughout the entire U.S. Mexico international border, including Arizona and New Mexico. Additionally, the CBP is currently preparing a PEIS on CBP operations for the Tucson and Yuma Sector (CBP 2004). These documents will identify a number of mitigation measures that will reduce or eliminate adverse impacts to cultural resources from CBP enforcement operations in general. The analysis and conclusions provided in these documents are incorporated into this document by reference in accordance with 40 CFR 1502.21.

Implementation of the preferred alternative is expected to deter illegal traffic and increase the detection and interception of illegal traffic and consequently reduce the volume of traffic that could otherwise pass through culturally sensitive areas. Therefore, the preferred alternative may have a beneficial impact to cultural resources by curbing illegal traffic in general, including traffic that might pass through and damage culturally sensitive areas.

No impacts to cultural resources are anticipated through the implementation of the proposed action. CBP's continued policy of avoidance of culturally sensitive resources, training regarding sensitive sites such as the Garden Canyon near Fort Huachuca and ongoing compliance with NEPA and section 106 requirements will adequately facilitate the identification and protection of such resources within the area of potential effect.

3.6 Hazardous Materials

3.6.1 Baseline Environment

A number of laws regulate the use, transportation, handling, release or spills and disposal of hazardous materials. These laws prevent unnecessary exposure to humans and the environment, prevent accidents, and specify responses to be taken in the event of an accident or release.

The U.S. Department of Transportation regulates the transport of hazardous materials in accordance with 49 CFR parts 100 to 185. These regulations provide specifications for containers, markings, labeling, training and spill response. Parties involved in transporting hazardous materials; such as aviation fuel, must do so in accordance with these regulations.

The U.S. Environmental Protection Agency (EPA) regulates the release of hazardous materials to the environment through various laws, such as the Clean Water Act (CWA), the Clean Air Act (CAA) and the Resource Conservation and Recovery Act (RCRA).

This section addresses hazardous materials as in the context of the border AO. Hazardous materials are discussed for each airfield in chapter 4.

3.6.2 Criteria for Significance

A determination of a significant impact to humans or the environment from hazardous waste generated by the proposed action would be found if:

- Exposure of humans to unsafe levels of hazardous materials and hazardous waste
- Generation of hazardous materials or hazardous waste in quantities or of a type that could not be accommodated by the current disposal system

- Increase in likelihood of an uncontrolled or unauthorized release of hazardous materials that could contaminate soil, surface water, or groundwater
- Create a situation involving endangerment or unusual risk to personnel, visitors, nearby residents, and the general public off-site

3.6.3 Potential Environmental Consequences

3.6.3.1 Potential Environmental Consequences from the No Action Alternative

Under the no action alternative, no hazardous materials would be involved and there would be no direct, indirect or cumulative impact would occur to the environment.

3.6.3.2 Potential Environmental Consequences from the Proposed Action

Chemicals and hazardous substances that could be used for the proposed action are limited to common aviation uses, such as fuel and petroleum lubricants. These substances are not used in large quantities and are generally consumed through use except during certain maintenance procedures where fluids are exchanged. In these situations, the fluids are disposed of in accordance with applicable laws, such as used oil regulations, and hazardous waste regulations and in accordance with hazardous materials handling policies of each airfield. See chapter 4 for further discussion of hazardous materials in the context of airfields.

There is no potential to introduce asbestos, radon, lead-based paints, polychlorinated biphenyls, underground storage tanks or unexploded ordnances into the general border environment through implementation of the proposed action. UAV operations within the border AO would not generate any hazardous waste or hazardous materials.

As discussed in section 3.3.1, there is a remote possibility for a UAV mishap to occur within the general border area. A UAV mishap could theoretically affect individuals or structures on the ground or release fuel into the environment; or in the event of a fire, release hazardous fumes. However, several factors make it unlikely that such a mishap would occur. These factors include reliability improvements, FAA safety requirements and operational safety procedures.

To the extent possible, UAVs are operated outside of populated areas to prevent a mishap that could affect the general population. UAVs are generally employed in environments where they provide advantage, that is the remote and rough terrains where UDAs attempt to cross the border undetected.

Because the border AO is so large, it is not feasible to predict the probability or location of a UAV mishap. As with other, similar sized aircraft, it is not possible to predict the extent, if any to which human exposure to hazardous materials or contamination of surface water, ground water, soils or air quality could occur.

If a mishap that affects the general public, or releases fuel or fumes to the environment occurs, then emergency and recovery response will depend on the magnitude and location of the mishap. Assessment and remediation of the affected environment might be required, and would be accomplished in accordance with applicable federal and state regulations and local ordinances. Outside of the unlikely event of a UAV mishap, there are no direct, indirect or cumulative effects are expected to occur with respect to hazardous materials.

3.7 Health and Human Safety

3.7.1 Baseline Environment

Presently, there is considerable risk to undocumented aliens who attempt to enter the U.S. through the region of interest, including the risk of heat exhaustion, dehydration, accidents, and violent crime. Alternatively, there are risks to CBP personnel attempting to intercept UDAs, along with risks to law enforcement personnel.

3.7.2 Criteria for Significance

A determination of a significant impact to humans or the environment from hazardous waste generated by the proposed action would be found if:

Actions resulted in impacts to the health and safety to area residents and Border Patrol staff implementing the action.

3.7.3 Potential Environmental Consequences

3.7.3.1 No Action Alternative

Most aspects of public health and safety will remain at current baseline conditions if the proposed action is not implemented, and there would be no direct, indirect or cumulative effects. There will be no increased risk from UAV operations or increased danger to CBP agents or residents. There will also be no positive impacts on human safety as a result of increased detection and response to UDA traffic.

3.7.3.2 Preferred Alternative

The proposed action does not involve significant chemical, physical, behavioral or psychological stresses that could impact health and human safety. Noise, hazardous materials and potential UAV mishaps have been discussed in other sections. Due to the nature of the proposed action and safety procedures already in place and laws such as FAA and Occupational Health and Safety Administration regulations, no direct, indirect or cumulative impacts to health and human safety are anticipated.

The proposed action may have a positive impact on the safety of UDAs, CBP agents and residents within the region of interest due to the anticipated increase in detection, deterrence and interception of UDAs. With a potential reduction in the number of UDAs in the area, there may also be a reduction in crimes or threats of harm against area residents.

Adequate controls and procedures are in place to protect human health and safety. No significant impacts are expected to affect human health and safety through the implementation of the proposed action.

3.8 Socioeconomics

3.8.1 Baseline Environment

The project area includes Yuma, Pima, Santa Cruz and Cochise Counties in Arizona, and Hidalgo, Grant, Luna and Dona Ana Counties in New Mexico. This area has a total population of 1,396,540 as determined in the 2000 Census by the U.S. Census Bureau). The largest cities in the region include Yuma (77,515) and Tucson (486,699) in Arizona, and Las Cruces (74,267) in

New Mexico. Specific population figures for towns where potential airports are located are noted in the specific airport tables.

3.8.2 Criteria for Significance

Defining significance criteria for socioeconomic impacts is an inherently subjective process that is based on professional judgment as well as accepted standards in the field of NEPA analysis. One accepted standard is to measure significance in terms of a percentage change in one or more socioeconomic parameters, such as housing, employment, income, etc. According to this standard, a significant impact would occur when the proposed action:

- Induces substantial growth or decline (5 percent) in local or regional population either through provision of employment or permanent housing
- Causes a 5 percent change in one of the following economic variables: personal income, rental housing, local taxes, business or personal income, employment, general economic activity, or real estate market values.

3.8.3 Potential Environmental Consequences

3.8.3.1 Potential Environmental Consequences from the No Action Alternative

Implementation of the No Action Alternative would result in no change in socio-economic conditions.

3.8.3.2 Potential Environmental Consequences from the Proposed Action

Implementation of the proposed action would result in the injection of (b) new full-time equivalent (FTE) jobs for each UAV system deployed. This injection would result in a total of (b FTE directly attributable to the proposed action.

Overall, impacts to the socioeconomic conditions are considered on an aggregate as well as localized level. It can be assumed that potential additions of FTEs resulting from implementation of the proposed action will occur somewhere within the project area. Therefore, the direct injection of a total of (b new FTE will not be considered significant in the context of 1.396 million people. Additionally, injection of (b FTE per system would not result in a significant impact if the FTE are located in or near the larger towns in the project area. However, if a UAV system is installed in a more remote location, the context of (b direct FTE would result in significant impacts. In these contexts, the net increase in FTE in the localized economy would be viewed as a positive impact. See section 1.4 for a discussion of the meaning of the term, significantly.

The following table identifies the different scales and locations of potential impacts that could result from the implementation of the proposed action.

Table 4 – Water Mitigation Matrix

Area	Population* (all numbers reflect 2000 Census data unless otherwise noted)	Impact (Each UAV system requires (b) FTE to support and maintain the system. Analysis assumes that up to (b) systems may be deployed at any one location)	Mitigation
Entire Project Area	1,396,540 population 698,569 labor force (2002 BEA REIS data)	(b) FTE (total for deployment and operation of (b) UAV systems) Not Significant	Mitigation would be required for location of FTE within the San Pedro River Basin.
Yuma, Arizona (includes Yuma International Airport)	77,515 population 33,904 labor force	(b) FTE (one UAV system) Not Significant Would result in 0.(b) percent increase in employment base.	None required
Ajo, Arizona (includes Ajo Municipal Airport)	3,705 population 1,079 labor force	(b) FTE ((b) UAV system) Not Significant Would result in (b) percent increase in employment base.	None Required
Nogales, Arizona (includes Nogales International Airport)	20,878 population 7,007 labor force	(b) FTE (one UAV system) Not Significant Would result in 0.(b) percent increase in employment base.	None Required
Sierra Vista, Arizona (includes Sierra Vista Municipal Airport/Libby Army Airfield)	37,775 population 19,277 labor force	(b) FTE (one UAV system) In the context of overall population, this would not be significant. However, due to issues related to adjudication of water resources within the San Pedro River Basin, any action resulting in a net increase in water use is considered significant. This socioeconomic impact is tied directly back the impacts to water resources, as the increase in population resulting from the proposed action will result in an increase in water use.	Mitigation would be required for location of FTE within the San Pedro River Basin.
Bisbee, Arizona (includes Bisbee Municipal Airport)	6,090 population 2,660 labor force	(b) FTE (one UAV system) In the context of overall population, this would not be significant. However, due to issues related to adjudication of water resources within the San Pedro River Basin, any action resulting in a net increase in water use is considered significant. This socioeconomic impact is tied directly back the impacts to water resources, as the	Mitigation would be required for location of FTE within the San Pedro River Basin.

Area	Population* (all numbers reflect 2000 Census data unless otherwise noted)	Impact (Each UAV system requires (b) FTE to support and maintain the system. Analysis assumes that up to (b) systems may be deployed at any one location)	Mitigation
		increase in population resulting from the proposed action will result in an increase in water use.	
Douglas, Arizona (includes Bisbee-Douglas International Airport, Douglas Municipal Airport, and Cochise College Airport)	14,312 population 4,931 labor force	(b) FTE (one UAV system) Not Significant Would result in (b) percent increase in employment base.	None Required
Lordsburg, New Mexico (includes Lordsburg Municipal Airport)	3,379 population 1,298 labor force	(b) FTE (one UAV system) Not Significant Would result in (b) percent increase in employment base.	None Required
Playas, New Mexico (includes Playas Airstrip)	No Census data is available for Playas. Presently however, less than 50 people live in the town.	(b) FTE (one UAV system) Significant Impact. Would result in approximately (b) percent increase in employment base.	None Required
Deming, New Mexico (includes Deming Municipal Airport)	14,116 population 4,798 labor force	(b) FTE (one UAV system) Not Significant Would result in (b) percent increase in employment base.	None Required
Las Cruces, New Mexico (includes Las Cruces International Airport)	74,267 population 34,935 labor force	(b) FTE (one UAV system) Not Significant Would result in 0 (b) percent increase in employment base.	None Required
Santa Teresa, New Mexico (includes Dona Ana County Airport at Santa Teresa)	2,607 population 1,336 labor force (Santa Teresa is part of the larger El Paso, Texas, metropolitan area, with approximately 700,000 people)	(b) FTE (one UAV system) Not Significant Would result in (b) percent increase in employment base. (considers only Santa Teresa labor force, not the entire El Paso metropolitan area.)	None Required

3.9 Environmental Justice

3.9.1 Baseline Environment

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*, directs federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental impacts of their program, policies, and activities on minority or low income populations in the surrounding community.

Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, requires federal agencies to identify and assess the environmental health risks and safety risks of policies, program, activities and standards that may disproportionately affect children.

3.9.2 Criteria for Significance

Impacts would be significant if:

- A disproportionate share of the high and adverse socioeconomic and/or human health impacts are borne by minority and/or low-income communities.

3.9.3 Potential Environmental Consequences

3.9.3.1 Potential Environmental Consequences from the No Action Alternative

Implementation of the No Action Alternative is not expected to adversely impact any minority or low-income populations or disproportionately affect children.

3.9.3.2 Potential Environmental Consequences from the Proposed Action

The proposed action is not expected to adversely impact any minority or low-income populations or disproportionately affect children.

3.10 Cumulative Impacts

3.10.1 Introduction

This section analyzes the potential cumulative impacts from UAV flights in the border AO. As defined in 40 CFR 1508.7, a cumulative impact is an effect on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions that take place over a period of time. The analysis focuses on whether the proposed action, considered together with any known or reasonable foreseeable actions by Border Patrol, other federal or state agencies, or some other entity might combine to cause a significant effect on the human environment.

As indicated by the analysis in different sections above, the flights of the UAVs in the border AO and the related Border Patrol enforcement actions will have minimal effects on the human environment, none of which is regarded as significant. With respect to UAV flights themselves there will be small amounts of air pollution, noise, and occasional birdstrikes, but none of these effects could realistically combine with other effects in the border AO to reach a defined level of significance. Similarly, UAV crashes have the potential to cause more serious impacts, but the rarity and unpredictable location of such crashes makes cumulative effects highly unlikely.

Alternatively, on-the-ground enforcement actions in conjunction with UAV operations may combine with other actions in the border AO to generate cumulative impacts on various resources. These actions are not expected to be qualitatively or quantitatively different than current enforcement actions; nonetheless, these potential cumulative impacts will be addressed

briefly in the discussion below. Cumulative impacts that could result from construction and operation of UAV facilities at various airports will be discussed in chapter 4.

Based on the analysis in resources sections above, it appears reasonable to conclude that cumulative impacts in the border AO from UAV flights will not occur in the resources areas below:

- Land use
- Air Quality
- Human Health and Safety
- Hazardous Materials
- Cultural Resources
- Roads, Public Services, Utilities, Energy and Water
- Noise
- Environmental Justice, Other Issues
- Socioeconomics

There is some potential from cumulative impacts to biological, soils, hydrology and water resources. The potential cumulative effects will be evaluated below.

3.10.2 Other Actions in the Border Region

A wide array of entities in the border region have or plan to institute actions that could combine with effects from the proposed action to create a cumulative effect on biological resources. Of primary concern are actions that would impact sensitive lands or species or would cause an increase or decrease of UDA traffic in a particular area. Border Patrol actions themselves are predominant among agency actions that generate such impacts. The Border Patrol has undertaken and proposed a wide range of actions in the border area with the potential to impact sensitive lands and wildlife, either directly or indirectly by causing shifts in the movement UDAs into different areas. To summarize, these actions include:

- Construction of new facilities, such as the proposed expansion of the Ajo Station and new headquarters for the Wellton Station
- Addition of camp details on the Cabeza Prieta NWR and other areas
- Proposed installation of remote video surveillance systems and emergency beacons along the US-Mexico border
- Construction of temporary and permanent vehicle barriers along with new roads adjacent to the Cabeza Prieta NWR, the Tohono o'Odham, and numerous other locations
- Implementation of Operation Skywatch (a seasonal search and rescue mission that uses helicopters and fixed-wing aircraft)
- Installation of a relays tower US-Mexico border in Pima, Santa Cruz, and Cochise counties, Arizona (CBP 2004a); and
- Expansion of aircraft and helicopter operations at LAAF and other locations as well as insertion of helicopter sites within the Miller Peak Wilderness (currently being coordinated with the Coronado National Forest);

- Use of high intensity portable lights along the border
- Expansion of Border Patrol operations on the premises of Fort Huachuca
- Proposed use and maintenance of all existing roads and some administrative and illegal trails on the Cabeza Prieta NWR and BMGR;
- Operation Skywatch during summer heat in the Tucson Sector for a period of approximately (b)(7)(E) days.
- Operation Desert Grip to provide a 24-hour presence along the border to deter UDAs in an effort to save lives.
- Deployment of additional Border Patrol officers

In addition to these Border Patrol actions, there are a variety of other past and present federal and non-federal activities in the border AO that could be summarized as follows:

- Various resource management plans from agencies along the border
- Cattle grazing, mining, hunting and poaching
- Land development, including residential, commercial, and agricultural
- Population increases, notably in the Arizona portion of the AO
- Military training (land and air)
- Road construction and maintenance
- Increasing recreational use of wilderness and public lands
- Wildlife and habitat management, law enforcement
- Off-road vehicle use
- Trail building, fires, garbage, human waste from UDAs entering area
- Controlled burns, weed and invasive plant management programs
- Development of the CANAMEX highway and trade corridor through Nogales

3.10.3 Cumulative Impacts to Soils, Water, and Biological Resources:

Cumulative impacts to these three resource categories would basically occur through the same combination of factors and can therefore be evaluated collectively. Such impacts would be expected to occur in several different ways. First, the movement of personnel and vehicles that respond to UAV guidance, especially off-road pursuits, could combine with other actions to affect wildlife, critical habitat, soils, riparian habitats, and other sensitive landscapes. Erosion that might result from such movement could also lead to loss of soil and as well as siltation in adjacent water bodies. Second, there is the potential for UAV operations, in conjunction with other enforcement actions on the border, to redirect UDA traffic into or away from areas with sensitive landscapes or wildlife. This could lead to either positive or negative cumulative effects on soils, water quality, riparian habitat, and biological resources.

Potential cumulative biological impacts related to these interrelated actions will be discussed below. As mentioned above, UAV crashes would be so rare and unpredictable that associated cumulative impacts would not be expected.

CBP infrastructure and operations, along with movement of UDAs across the landscape, continue to disturb native soils, denude areas of vegetation, disrupt wildlife corridors, and cause other resource damage. UAV operations could theoretically cause additional harm to these

resources if UAV data were used to direct pursuit actions through sensitive areas or cause UDAs to move to more remote areas to avoid UAV detection. However, UAV operations should actually generate positive cumulative impacts to these resources for a number of reasons. First, a reduction in resource impacts would result when UAV data and images allow Border Patrol pursuit actions to be more focused and direct, in many cases reducing the amount of time Border Patrol officers need to spend traversing the landscape. Moreover, UAVs can be used as a deterrent to keep UDAs from entering more remote and sensitive landscapes.

These efficiency gains from UAV deployment should also be reinforced by the implementation of other new technologies by the Border Patrol, including lighting, sensors, and fences. Potential negative impacts to soils will be partially offset by Border Patrol road improvement projects and other erosion control measures such as re-seeding and silt fences.

UAV operations may also combine with other Border Patrol operations to drive UDA traffic away from or into different areas along the border, generating unforeseen resource impacts. While it is clear that this phenomenon exists, it is not clear whether the cumulative effects are either positive or negative. Generally, it is not possible to quantify how all Border Patrol operations in the border area are impacting the total flow of UDA traffic or to predict the locations through which it moves. In specific instances such as the construction of border fences, it is clear that UDA traffic has moved into adjacent, usually more remote, areas. However, it is not necessarily clear how a UAV deployment would impact such a shift in traffic since UAVs may or may not be deployed in response to such situations. The deployment of UAVs in conjunction with other Border Patrol operations could result in positive cumulative resource impacts if UAVs are specifically deployed to deter UDAs to direct traffic away from sensitive areas.

Positive cumulative impacts could, however, be rendered inconsequential in the face of changing economic conditions in Mexico, changing laws in the U.S. and other factors that influence the flow of UDA movement. There are too many unknown and unforeseeable variables to forecast the totality of resource impacts in the border AO with any degree of reliability. Notwithstanding this fact, such UAV deployment itself should not contribute to cumulative impacts, either positive or negative, that would be regarded as significant.

3.10.3.1 No Action Alternative

Cumulative resource impacts to soils, wildlife, and sensitive habitat would not be affected by UAV deployment under the No Action Alternative. UAVs would not be used in conjunction with other technologies to increase the effectiveness of enforcement actions, so agents spend more time crossing the landscape without knowing the location of the UDAs. This may result in a slight increase in resource damage as opposed to the proposed action.

4 Affected Environment and Environmental Consequences for Potential Airports

Thirteen airports in and near the project area have been identified for potential bases of operation for the proposed UAV systems. The impacts that would result from deployment and operation of UAV systems are identified in this section.

Below is a brief comparison table showing the 13 airports considered in Arizona and New Mexico. Following the table are further, narrative descriptions of each airport.

Table 5 – Airfield Summary

Airport	Runway Length	Hangar Space	Nearest CBP Station	Average Operations Per Day	Issues
Yuma International Airport Yuma, Arizona	3 runways 13,300 ft 6,146 ft 5,711 ft	None available	Yuma, Arizona	474	Joint use civil/military airport – High use with other operations.
Ajo Municipal Airport Ajo, Arizona	1 runway 3,800 ft	None available	Ajo, Arizona	6	
Nogales International Airport Nogales, Arizona	1 runway 7,199 ft	Space available	Nogales, Arizona	83	
Sierra Vista Municipal Airport – Libby Army Airfield Fort Huachuca/Sierra Vista, Arizona	3 runways 12,001 5,366 4,285	CBP maintains current operations and hangar space	Fort Huachuca, Arizona	305	Increases of staff/population in the San Pedro River basin requires compliance with mitigation strategies. Air traffic will require increased coordination with other airport tenants.
Bisbee Municipal Airport Bisbee, Arizona	1 runway 5,929 ft	None available	Naco, Arizona	6	Increases of staff/population in the San Pedro River basin requires compliance with mitigation strategies. Air traffic will require increased coordination with other

Airport	Runway Length	Hangar Space	Nearest CBP Station	Average Operations Per Day	Issues
					airport tenants.
Cochise College Airport Douglas, Arizona	1 runway 5,303 ft	Northrop Grumman hangar on site. No other space available	Douglas, Arizona	151	-UAV operations at airport with Northrop-Grumman
Bisbee-Douglas International Douglas, Arizona	2 runways 7,311 ft 5,000 ft	Hangar space available	Douglas, Arizona	15	One WWII vintage hangar vacant and available after repairs
Douglas Municipal Airport Douglas, Arizona	1 runway 5,760 ft	Hangar space on site but none available	Douglas, Arizona	30	Airport is less than 500 yards from U.S.-Mexican border
Lordsburg Municipal Airport Lordsburg, New Mexico	1 runway 5,011 ft	Hangar space on site but none available	Lordsburg, New Mexico	10/week	
Playas Air Strip Playas, New Mexico	1 runway 4,865	Hangar on site, but may be too small.	Lordsburg, New Mexico	Less than 1/day	Very remote location.
Deming Municipal Airport Deming, New Mexico	2 runways 6,627 ft 5,675 ft	CBP currently leasing space for helicopter operations. Other Vacant hangar space is available.	Deming, New Mexico	90	
Las Cruces International Airport Las Cruces, New Mexico	3 runways 7,499 ft 7,499 ft 6,069 ft	Hangar space occupied. Possibly available upon negotiation.	El Paso, Texas	256	New Mexico State University operates UAV training in Las Cruces.
Dona Ana County Airport at Santa Teresa Santa Teresa, New Mexico	1 runway 8,500 ft	Hangar space occupied. Possibly available upon negotiation.	El Paso, Texas	89	

Information regarding each of these airports, including current status of resources and environmental conditions is included. Only those resources for each airport that are identified as needing further analysis will be considered in this PEA.

A review of airport management plans (AMPs) identified existing infrastructure, and also determined whether construction of new facilities and infrastructure to support UAV operations would be possible under these existing plans. Additionally, site tours and evaluations were conducted to consider and analyze suitability and operational capabilities available at each airport, as well as identification of any issues that could possibly impact (both positively and negatively) potential UAV operations. Airport descriptions are presented moving from the western edge of the project area, moving west-to-east, roughly extending from Yuma, Arizona, to Las Cruces, New Mexico.

4.1 Yuma International Airport

Yuma International Airport is approximately three miles south of the town of Yuma and is on the west side of the Yuma Marine Corps Air Station (YMCAS). There are four runways. All runways and taxiways belong to the YMCAS and the Control Tower and Radar Control facilities are operated and staffed by the military. The tower is open seven days per week from 0700L to 2300L; the radar control facility is open 24/7. Weather services, Notices to Airmen, and flight planning areas are all located on the YMCAS side of the airfield. Two of the four runways (i.e., runway 8/26 and runway 17/35) are continuously rigged with arresting gear for military operations. Taxiways are limited in number and routinely busy with taxiing aircraft.

Airfield activity is high both day and night. Presently there are over 470 daily flight operations at the airfield, with 320 flights (68 percent) being local military flight operations during the day and night. Although heavy bird migrations are noted in the November to March timeframe, bird-aircraft strike potential does not appear to be high.

CBP has current operations at Yuma International Airport. The Yuma Sector Air Operations is located approximately one mile from the Air Passenger Terminal on the international side of the airfield. The hangars currently being used by CBP are old, not air-conditioned, unheated, and insufficient in number to house the nine aircraft (seven rotary-wing and two fixed-wing) presently assigned to the unit. Two self-supporting aviation awnings (with open sides) are in place to protect aircraft from the sun when hangar space is fully occupied. The Yuma Border Patrol Station is approximately 1 ½ miles from the Air Operations area.

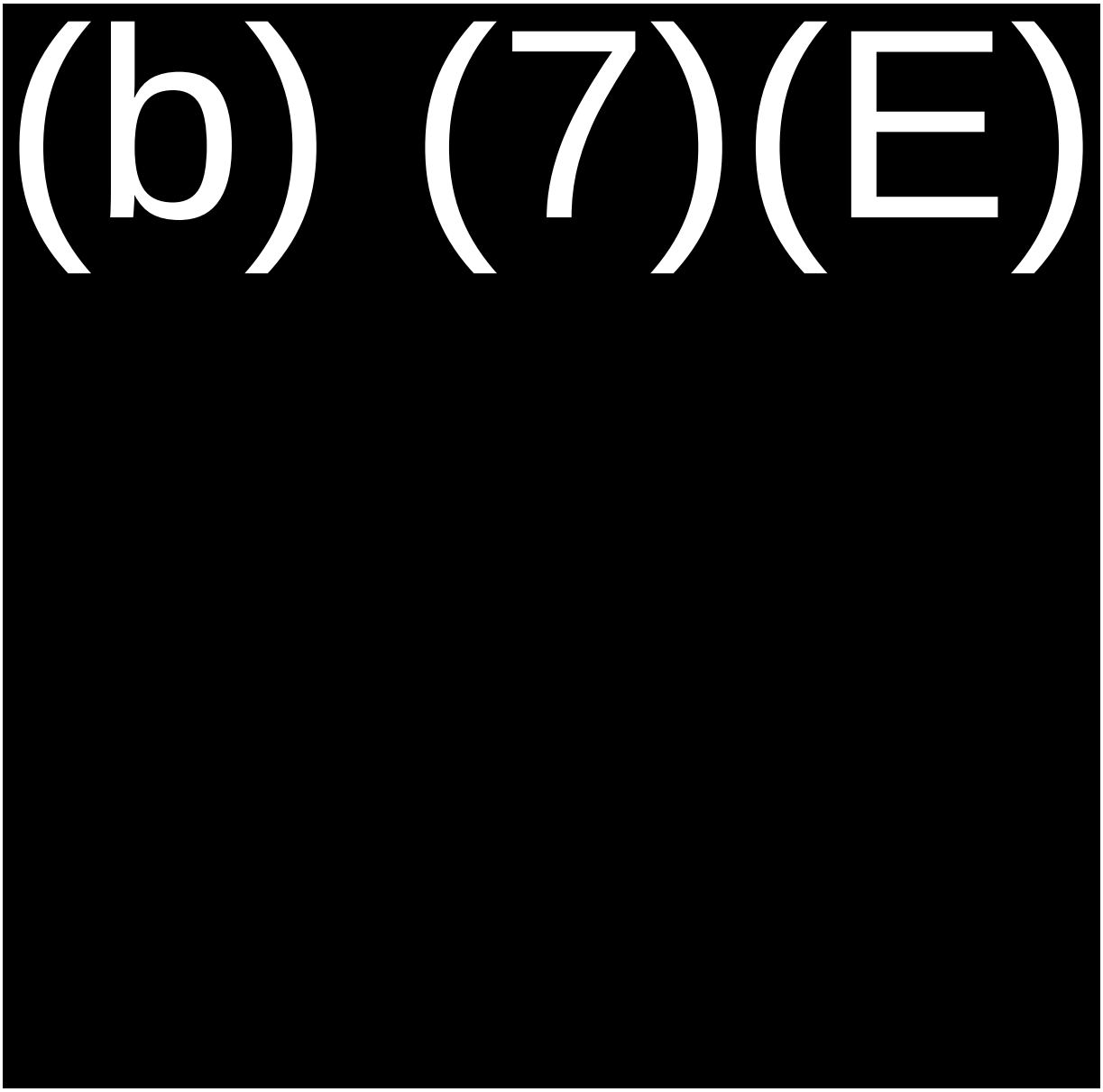


Figure 10 – Yuma International Airport. Source: Arizona Department of Transportation, Aeronautics Division

Below is a table identifying key environmental aspects for consideration in this PEA. This table identifies the existing environment for each consideration at the Yuma International Airport.

Table 6 – Yuma International Airport Impact Matrix

Resource	Description of Conditions	Needs Further Consideration
Land Use	Yuma International Airport operates under a joint-use patent with the Marine Corps Air Station. In the AMP, 17 acres for further construction of hangar facilities have been identified and evaluated (Yuma County Airport Authority 1999). While CBP has operations at the airport now, additional facilities could be constructed within the	No. Any development that would be required to support a UAV system would be in compliance with the

Resource	Description of Conditions	Needs Further Consideration
	framework of the AMP.	adopted AMP.
Air Quality	Yuma County is in attainment for all criteria pollutants therefore the requirements of 40 CFR 93, "Determining Conformity of General Federal Actions to State and Federal Implementation Plans" (General Conformity Rule) do not apply to this action. On Aug. 12, 2002, the Yuma area experienced a violation of the 24-hour standard. The Aug. 12, 2002, violation, however, was principally due to high winds. The meteorological conditions on and preceding this day were examined to determine if the date qualified as a "natural event" under Arizona Department of Environmental Quality's (ADEQ) exceptional and natural events policy. The data met all the technical criteria to be considered a natural event. Consequently, a Natural Events Action Plan was developed in conjunction with the maintenance plan and submitted to EPA in February 2004. ADEQ will resume working with stakeholders to develop best available control measures and a public education program as part of the plan process. ADEQ anticipates submitting the maintenance plan and re-designation request to EPA in January 2005 (ADEQ 2005).	No. It is not expected that UAV operations will generate emissions that will exacerbate these conditions.
Geology / Soils / Topography	Soil types within the airport are suitable for development. The terrain of the airport is relatively flat. Developed areas provide adequate drainage of storm water.	No. Development associated with deployment of a UAV system would be in compliance with local building codes, and would include any mitigation required by jurisdictions regulating storm water drainage.
Water Resources	Water service within the airport is available for potential development.	No. Water and waste water disposal are available through established infrastructure.
Biological Resources	In consultation with the Arizona Game and Fish Department for this project, the following special status species have been documented as occurring in the project vicinity (within 3 miles): • Great Egret (*Ardea alba*) – AGFD Species of Concern • Western Burrowing Owl (*Athene cunicularia hypugaea*) – USFWS Species of Concern, BLM Sensitive • Snowy Egret (*Egretta thula*) – AGFD Species of Concern • Flat-tailed Horned Lizard (*Phrynosoma mcallii*) – USFWS Species of Concern, AGFD Species of Concern No areas within the airport have been designated as critical habitat. Although heavy bird migrations are noted in the November to March timeframe, bird-aircraft strike potential does not appear to be high.	No. Impact to biological resources would be similar to those incurred by operation of other aircraft (occasional bird strike). No further analysis is warranted. Operation of UAVs would be in compliance with any procedures utilized at the airport to

Resource	Description of Conditions	Needs Further Consideration
		minimize impacts to biological resources in the area.
Floodplains	Yuma International Airport is located on military property, and therefore is not mapped by Federal Emergency Management Agency. However, the lands surrounding the airport are outside the 100 year floodplain.	No. Development associated with deployment of a UAV system would be in compliance with local building codes.
Noise	Noise abatement procedures at the Yuma International Airport are built into traffic patterns. There are no noise level limits. The Yuma Marine Corps Air Station does maintain and operate a noise monitoring system. However, there are no established noise level limits.	No. Noise emissions from standard UAV platforms is similar to or less than other aircraft operated at Yuma International Airport. Additionally, operations will generally occur during (b) (7)(E) General operations include (b) take-offs/landings per/day and do not include "touch and go" training typical of other aircraft.
Cultural & Archeological Resources	Cultural resources are not identified in the AMP as being present. The plan does identify approximately 630 acres of land adjacent to the airport for acquisition to accommodate future expansion of the airport. Construction of any facilities would require cultural resource inventory and compliance with the NHPA.	No. Any construction of facilities would require compliance with the NHPA and mitigation would be "upon discovery." No further analysis is warranted.
Utilities & Infrastructure	Utilities present at the runway include water, wastewater, storm water, electric, etc… Additionally, there is a full complement of air support facilities available on site.	No. Utilities and infrastructure are present. Deployment and operations would be in accord with local building regulation and impacts to utilities and infrastructure would be mitigated through the permitting process.
Roadways & Traffic	Interstate Highway 8 and U.S. Highway 95 converge in Yuma. Interstate Highway 8 is a major east-west route linking Yuma to central Arizona (to the east) and southern California (to the west). U.S.	No. Roadways and traffic support are present

Resource	Description of Conditions	Needs Further Consideration
	Highway 95 is a north-south route linking Yuma to Las Vegas (to the north) and Mexico (to the south). The airport is located adjacent to 32nd Street (Business Route 8), the main route through the city. The passenger terminal building is accessed via 32nd Street. General aviation facilities located west of Runway 3L-21R are accessed via Fortuna Avenue, Arizona Avenue, 36thStreet, and Burch Way. The air cargo apron is accessed via 4th Avenue to 40th Street.	and sufficient for a potential UAV program. Deployment and operation of a UAV system would potentially increase vehicle traffic in and around the airport, but increases will not be significant.
Hazardous Materials	Hazardous materials, fuel spill, fire and other emergency services and procedures are firmly established and in place at the airport.	No. Hazardous materials handling and emergency services of potential UAV systems would be in accord with the AMP and do not require further analysis.
Socioeconomics	Population: 86,070 city, 181,470 county (Arizona Department of Commerce 2004a)	No. Deployment and operation of a UAV systems would result in an addition of approximately (b jobs to the region. In the greater Yuma region, this would not be considered significant.
Environmental Justice	Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.	No. Deployment and operation of a UAV system would not displace or negatively impact minority populations disproportionately.
Cumulative Impacts	Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7).	No. Proposed implementation of a UAV system at Yuma International Airport would not result in any negative cumulative impacts to the local area.

4.2 Ajo Municipal Airport

Situated on 1,375 acres at an elevation of 1,458 feet, Ajo Municipal Airport lies six miles north of the unincorporated community of Ajo and just east of and adjacent to State Highway (SH) 85.

SH 85 is a two-lane highway that stretches from the town of Buckeye in western Maricopa County south through Gila Bend then continues further south into Pima County terminating in the town of Ajo. Ajo, with a population of 3,417, is located in western Pima County, on SH 85, 10 miles northwest of the junction with SH 86 and 42 miles south of Interstate 8. Currently, Ajo Municipal Airport serves mostly the general aviation needs of the immediate area.

The Ajo Municipal Airport has one paved runway with a total length of 3,800 feet. The runway is in good condition. Ajo is an uncontrolled airfield 1,458 feet above MSL. The airfield served as a training airfield during World War II, but is now an unattended, uncontrolled airfield with no air traffic control facilities. There is a very large concrete parking and taxi apron (estimated 3,000 feet long by 500 feet wide) adjoining the long hangar building which houses several individual aircraft bays. Grounding points and parking tie-down points are present throughout the parking areas of the apron. Short weeds are present in the expansion joints of the apron, but the concrete is in good condition and quite useable for UAV operations. The 3,800-foot, asphalt runway is in excellent condition, with runway edge lighting along the entire length and a lighted wind indicator sock. There are no runway end identifier lights.

The Ajo Airport is owned by Pima County and is open to the public. Airfield operations average approximately 6 per week. Supporting infrastructure is minimal, with no fuel at the airfield, no terminal building, and only two T-hangars (approximately 45 feet wide) on the apron. There is considerable space at the airport available for development.

Many different airport improvements were identified in 1999. However, none have taken place since that time. Considerable work would need to be completed in implementation of these actions to provide adequate support for a UAV system. However, development necessary to support a potential UAV system are identified in the AMP.

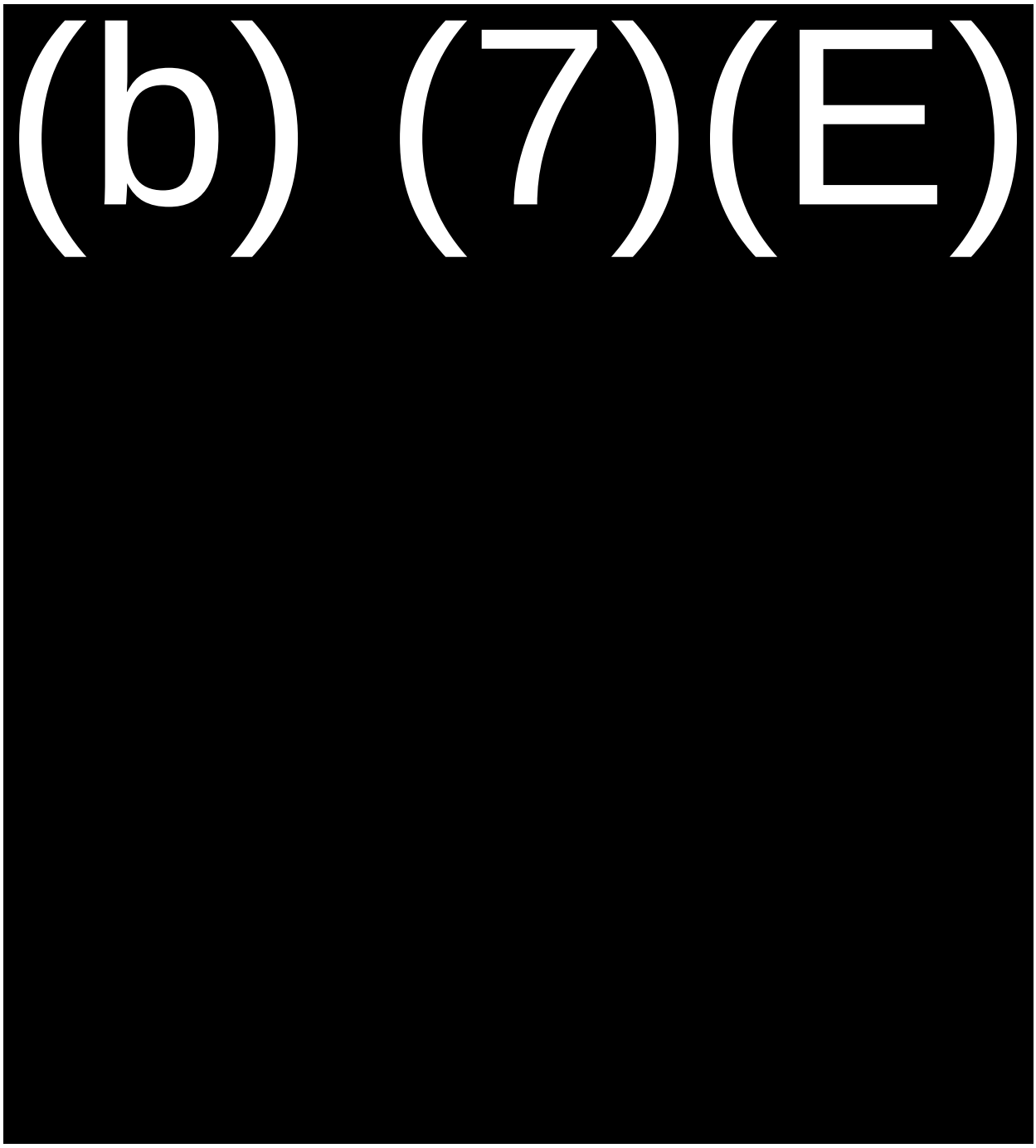


Figure 11 – Ajo Municipal Airport. Source: Arizona Department of Transportation, Aeronautics Division

The table below identifies key resource categories at Ajo Municipal Airport and specifies whether there are substantive issues in each category that would merit additional analysis in this PEA.

Table 7 – Ajo Municipal Airport Impact Matrix

Resource	Description of Conditions	Needs Further Consideration
Land Use	Ajo Municipal Airport is owned and managed by Pima County, according to the Ajo Municipal Airport AMP (Pima County 1999). Expansion of facilities has been identified in the AMP. Addition of facilities to accommodate a potential UAV program could occur within the parameters of the AMP. The Ajo Municipal Airport is located within the Barry M. Goldwater Air Force Range which is under the direct jurisdiction of Luke Air Force Base. The Airport is within the Sells and Sells Low Level Military Operations Areas. Near the Airport, there are other restricted airspace areas including the Organ Pipe National Monument, the Cabeza Prieta NWR, and areas R-2305 just north of the Airport and ER-2304 northeast of the Airport. Areas R-2301E and R-2301W are to the west of the airport, and also are considered restricted airspace.	No. Any development that would be required to support a UAV system would be in compliance with the adopted AMP.
Air Quality	Pima County is in attainment for all criteria pollutants therefore the requirements of 40 CFR 93, "Determining Conformity of General Federal Actions to State and Federal Implementation Plans" (General Conformity Rule) do not apply to this action	No.
Geology / Soils / Topography	Soil types within the airport are suitable for development. The terrain of the airport is relatively flat. Developed areas provide adequate drainage of storm water.	No. Development associated with deployment of a UAV system would be in compliance with local building codes, and would include any mitigations required by jurisdictions regulating storm water drainage.
Water Resources	The only water at the airport is provided by a 450-gallon water tank owned and maintained by Ajo Air Center. The Airport itself has no water distribution system. The closest water hookup on-airport is the neighboring Ajo Country Club. Establishment of water resources on site is identified as an action in the AMP.	No. Sufficient water is not available at the airport and would require development as identified in the AMP.
Biological Resources	In consultation with the Arizona Game and Fish Department for this project, the following special status species have been documented as occurring in the project vicinity (within 3 miles): • Sonoran Desert Tortoise (*Gopherus agassizii* – Sonoran Population) – USFWS Species of Concern, AGFD Species of Concern • Cave Myotis (*Myotis velifer*) – USFWS Species of Concern, BLM Sensitive No lands within the Ajo Municipal Airport have been designated as	No. Impact to biological resources would be similar to those incurred by operation of other aircraft (occasional bird strike). No further analysis is warranted.

Resource	Description of Conditions	Needs Further Consideration
	critical habitats.	
Floodplains	The Ajo Municipal Airport is surrounded by U.S. Government Property which is controlled by Luke Air Force Base and therefore is not included on Flood Insurance Rate Maps. It was recommended in the AMP that "the Flood Control District review surface water management for the airport property prior to any construction activities in this area."	No. Development associated with deployment of a UAV system within the airport would have no impact on flood plains. No further analysis is warranted.
Noise	Noise exposure modeling has been completed within the airport. The 55 Day-Night Average Noise level (DNL) Noise Contour has been identified for the airport at full development according to the AMP. This 55 DNL contour is wholly contained with the airport, more than 1000 feet from the airport boundary. This falls below noise requirement levels of 65 DNL.	No. Noise emissions from standard UAV platforms is similar to or less than other aircraft operated at Ajo Municipal Airport. Additionally, operations will generally occur during [redacted]. General operations include [redacted] take-offs/landings per/day and do not include "touch and go" training typical of other aircraft. No further analysis is warranted.
Cultural & Archeological Resources	In consultation associated with development of the AMP in 1999, the Arizona SHPO stated "Our records check does not indicated that the area was surveyed prior to construction or that any archaeological sites or other cultural resources have been identified on the airport property; however, significant cultural resources have been recorded during surveys in connection with other projects in the area." It was further noted "This office (SHPO) generally recommends that a survey be performed by a qualified cultural resource specialist prior to any new ground-disturbing activity…"	No. Any construction of facilities would require compliance with the NHPA and mitigation would be "upon discovery." No further analysis is warranted.
Utilities & Infrastructure	Utilities available at the Airport include electricity, phone service, and water through a 450-gallon water tank on site. Sanitary sewer and natural gas are not available. The AMP has identified establishment of water and waste-water systems.	No. Necessary utilities (water and wastewater) at the Airport are not sufficient. Development would be required according to the AMP. If done in compliance with the AMP, no further analysis would be warranted.

Resource	Description of Conditions	Needs Further Consideration
Roadways & Traffic	Ajo is located on SH 85, 10 miles northwest of the junction with SH 86 and 42 miles south of Interstate 8. The AMP identifies the need to construct up to 8 vehicle parking stalls. This is not sufficient space to fully support a UAV system. However, space is available for parking on non-paved surfaces. Additional expansion beyond what is identified in the AMP may require amending the Plan.	No. Roadways and traffic support are present and sufficient for a potential UAV program. Deployment and operation of a UAV system would potentially increase vehicle traffic in and around the airport. Analysis would be required prior to construction beyond that identified in the AMP, but is not necessary for the purpose of this document.
Hazardous Materials	Hazardous materials, fuel spill, fire and other emergency services and procedures are not in place at the Ajo Municipal Airport.	No. Hazardous materials handling and emergency services of potential UAV systems would be in accord with the AMP and do not require further analysis.
Socioeconomics	Population (as of 2002): 3,705 Ajo City, 843,746 Pima County (Arizona Department of Commerce 2004b). Tucson is the largest city in Pima County. Primary economic sectors in Ajo include tourism and support industries, as well as government (CBP) employment.	No. Deployment and operation of a UAV system would result in an addition of up to approximately (b additional jobs to the region. This infusion would be significant for the town of Ajo if all employees choose to live in Ajo. However, in a county-wide consideration, this would not be significant.
Environmental Justice	Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.	No. Deployment and operation of a UAV system would not displace or negatively impact minority populations disproportionately.

Resource	Description of Conditions	Needs Further Consideration
Cumulative Impacts	Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7).	No. Proposed implementation of a UAV system at Ajo Municipal Airport would not result in any negative cumulative impacts to the local area.

4.3 Nogales International Airport

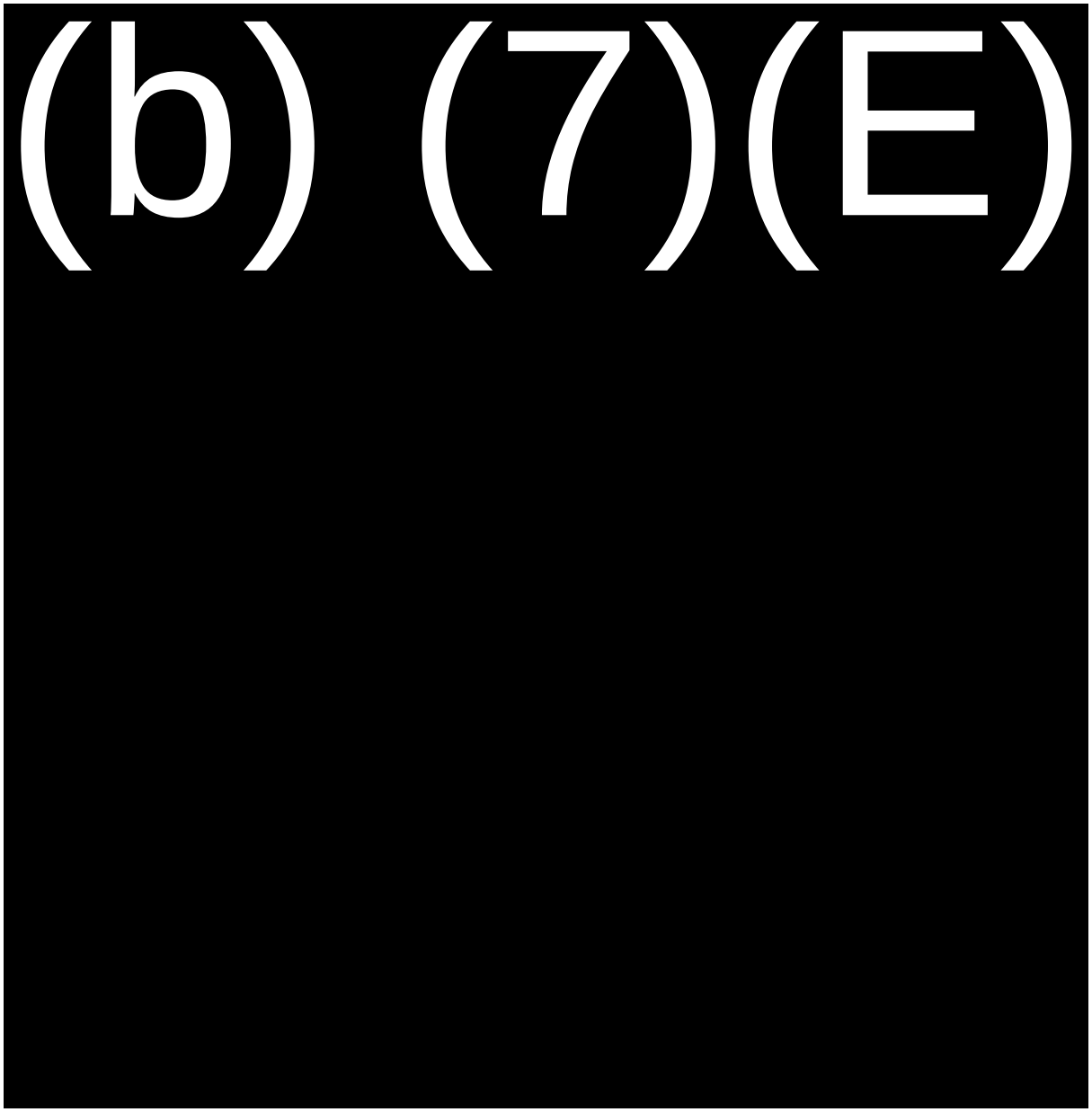
Nogales International Airport (NIA) is a general aviation airport located approximately six miles northeast of the town of Nogales and about 60 miles south of Tucson, Arizona. It is the only developed airfield in Santa Cruz County. Although the airfield is owned by the county, it is operated and maintained by Tiffin Aviation Services, the Fixed Base Operator (FBO) for the airfield. The hours of operation for the airfield are 7:00 am to 7:00 pm.

Since the airfield is an airport-of-entry, Federal Inspection Services are required for arriving passengers, aircraft, crewmembers, baggage and cargo. This includes Immigration and Customs Services. These services are located in the new terminal building. CBP has a land use designation between the terminal and the FBO/flight school facilities. This land use is identified for inspection of passengers, aircraft, crewmembers, baggage, and cargo. There is also a reserved area on the east side of the airfield to accommodate the possible long-term relocation of cargo to that area for further inspection.

There is only one maintained runway (03/21) and one helipad serving the airfield. The runway is 7,199 feet in length and is 90 feet wide. The helipad is 97 feet in diameter. Maintenance of the original north-south runway ceased around 1988. This was designated as the cross-wind runway; it has since deteriorated to the point of non-existence. Runway 3 is closed to touch-and-go operations and runway 21 is designated as the calm wind runway (wind speed < 5knots).

The airfield does not have an air traffic control tower, and is not projected to meet the required FAA threshold to require a control tower. There is also a lack of flight-services at the airfield. There are no weather services available at the terminal; however there is an automated weather station on the airfield that transmits 24 hours per day, 7 days per week. Controlled airspace around NIA is up to 700 feet AGL and within a 5 statute mile radius of the airfield complex.

According to the AMP for NIA, there were 36 aircraft based at the airport (Santa Cruz County 2002). Flying is split 50-50 between recreational and business for tenants. Over 27,000 flights were logged in 1999 the majority of the local operations were by general aviation, which accounted for 84 percent (42 percent of this was associated with training and touch-and-go activities), air taxi activity accounted for 10 percent, and military operation were 6 percent. Current (2004) flight operation statistics indicate that on average there are approximately 83 flights per day logged at the airfield, predominantly on weekends; this gives a current total of over 30,000 flights per year.



The table below identifies key resource categories at NIA and specifies whether there are substantive issues in each category that would merit additional analysis in this PEA.

Table 8 – Nogales International Airport Impact Matrix

Resource	Description of Conditions	Needs Further Consideration
Land Use	There are currently two hangars available for use at NIA The current AMP (Santa Cruz County 2002) has already established land use zoning and construction parameters if it is determined that additional facilities need to be constructed to support CBP UAV operations. Any construction activity will need additional evaluation.	No. Any development that would be required to support a UAV system would be in compliance with the adopted AMP.

Resource	Description of Conditions	Needs Further Consideration
Air Quality	NIA is located in an attainment area for all Air Quality parameters. Therefore the requirements of 40 CFR 93, "Determining Conformity of General Federal Actions to State and Federal Implementation Plans" (General conformity rule) does not apply to this section. If any construction would be required in support of deployment of a UAV system appropriate mitigation would need to take place to ensure compliance with local air quality standards in relation to particulate matter (fugitive dust).	No. NOTE: The airport is located less than 1 nm from a non-attainment area for PM_{10}. This area includes the town of Nogales and the area between the airport and the town.
Geology / Soils / Topography	Soil types within the airport are suitable for development. The terrain of the airfield is relatively flat with a slight slope to the south and west.	No. Development associated with deployment of a UAV system would be in compliance with local building codes, and would include any mitigation required by jurisdictions regulating storm water drainage.
Water Resources	Surface runoff drains into the Santa Cruz River watershed. Normal airport petroleum contaminants are handled by the Santa Cruz County Public Works Department. FBO staff are trained to respond to fuel spills that may affect water quality per the Phillips 66 training program.	No. Sufficient development of water delivery and control of runoff has been implemented as part of the AMP.
Biological Resources	The Nogales airfield is located in the foothills of the Patagonia Mountains. This area is classified as being desert-scrub grassland. Impact to biological resources would be similar to those incurred by operation of other aircraft, mainly occasional bird strikes. In consultation with the Arizona Game and Fish Department for this project, the following special status species have been documented as occurring in the project vicinity (within 3 miles): • Large-flowered Blue Star (*Amsonia grandiflora*) - - USFWS Species of concern, USFS Sensitive • Giant Spotted Whiptail (*Aspidoscelis burti stictogrammus*) – USFWS Species of Concern, USFS Sensitive, BLM Sensitive • Northern Gray Hawk (*Asturina nitida maxima*) – USFWS Species of Concern, USFS Sensitive, BLM Sensitive, AGFD Wildlife of Special Concern • Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*) – USFWS Candidate Species, USFS Sensitive, AGFD Wildlife of Special Concern • Pima Pineapple Cactus (*Coryphantha scheri v. robustipina*) – USFWS Endangered, AGFD Highly Safeguarded • Black-bellied Whistling Duck (*Dendrocygna autumnailis*) – AGFD Wildlife of Special Concern • Sonoran Desert Tortoise (*Gopherus agassizii*) – USFWS Species of Concern, AGFD Wildlife of Special Concern • Tropical Kingbird (*Tyrannus melancholicus*) – AGFD Wildlife of	No Impact to biological resources would be similar to those incurred by operation of other aircraft (occasional bird and/or bat strikes). No further analysis is warranted.

Resource	Description of Conditions	Needs Further Consideration
	Special Concern No lands within the Nogales International Airport have been designated as critical habitats.	
Floodplains	Currently the presence of wetlands has not been evaluated within the airfield boundary. No wetlands are apparent within the airfield boundary. The current proposed actions would not cause disturbance to any wetlands if they are present. Any further development would require wetland delineation and coordination with the Army Corps of Engineers.	No. There are no known floodplains within or near the Nogales airport.
Noise	Noise abatement procedures at NIA are addressed in the AMP of 1999. The use of noise descriptors developed for airport noise analysis expressed as an average noise level on the basis of annual aircraft operations for a calendar year). Standards of airport land use compatibility planning for use in the development of airports were developed based on the FAA's aircraft noise exposure (DNL contour) map results. This map can be found in the AMP.	No. Noise levels from standard UAV platforms will be similar to or less than other aircraft operated out of NIA. Operations at the airfield will generally occur during (b) (7) [redacted] General operations include ([redacted] take-offs/landings per day. No touch-and-go training is anticipated.
Cultural & Archeological Resources	A cultural resource inventory was conducted in 1991 as part of the runway expansion program. No cultural or archeological findings were noted in the AMP.	No. Any new construction of facilities would require compliance with the NHPA and mitigation would be "upon discovery." No further analysis is warranted.
Utilities & Infrastructure	New utilities and infrastructure have been developed in association with the industrial park development. These would be sufficient to meet the needs of the proposed actions.	No. Sufficient utilities are available at the airport.
Roadways & Traffic	Arizona State Route 82 parallels the airport boundary. It provides sufficient access from both the town of Nogales and Patagonia. Service roads throughout the airport property provide access to any point on the airfield. These are sufficient to meet the needs of the proposed actions.	No. Roadways and traffic support are present and sufficient for a potential UAV program.
Hazardous Materials	The proposed actions would not generate any increase in hazardous waste when compared to normal airport operations. The proposed actions are not anticipated to exceed current response levels as identified in the AMP.	No. The FBO currently provides HAZARDOUS MATERIALS response sufficient to meet UAV program needs.

Resource	Description of Conditions	Needs Further Consideration
Socioeconomics	Population: Nogales City, 21375; Santa Cruz County, 41,985 (Arizona Department of Commerce 2004c). Deployment and operation of a UAV system would result in an addition of approximately (b) CBP staff and their families to the area and could result in additional jobs for the local communities.	No. Deployment and operation of a UAV system would result in an addition of up to approximately (b additional jobs to the region. This infusion would be not significant for the city of Nogales or Santa Cruz County.
Environmental Justice	Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.	No. Deployment and operation of a UAV system would not displace or negatively impact minority populations disproportionately.
Cumulative Impacts	Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7).	No. Proposed implementation of a UAV system at Nogales International Airport would not result in any negative cumulative impacts to the local area.

4.4 Sierra Vista Municipal Airport – Libby Army Airfield

The Sierra Vista Municipal Airport is located approximately 70 miles southeast of Tucson, Arizona, 57 miles northeast of Nogales and 35 miles northwest of Bisbee, Arizona. It is approximately 15 miles from the U.S. border with the Mexico. The airport is also situated within the north-central portion of the Fort Huachuca Military Reservation. The airfield is a joint-use facility with Libby Army Airfield. The city-owned, civilian landside facilities are located on approximately 72 acres of land on the north side of the airfield. The civilian landside facilities are under the jurisdiction of the City of Sierra Vista while the airfield and military landside facilities are under the jurisdiction of the U.S. Department of the Army. Sierra Vista Municipal Airport has a non-exclusive easement to use the runways and taxiways at Libby Army Airfield. The airside facilities are owned and controlled by Libby Army Airfield, Fort Huachuca.

Libby Army Airfield currently operates three runways: a primary runway (8-26) and two cross-wind runways (12-30 and 3-21). Runway 8-26 is oriented east-west and is 12,000 feet in length by 150 feet in width. Oriented northwest-southeast, Runway 12-30 is 5,365 feet in length and 100 feet in width. Runway 3-21 is 4,300 feet in length by 75 feet in width. All runways are constructed primarily of asphalt with some concrete areas where necessary.

Airfield facilities and services available to both military and civilian users include 24 hour mishap/rescue, three lighted runways, Air Traffic Control, Approach Radar, Precision Approach Radar and Airport Surveillance radar. Available navigational aids are an Instrument Landing System, a Very High Frequency Omni Range and a Non-Directional beacon. The main runway is equipped with a Visual Approach Slope Indicator and the secondary runway is equipped with a Precision Approach Path Indicator. In July 2002, The Sierra Vista City Council, under Resolution #04804, adopted the AMP for Sierra Vista Municipal Airport.

Sierra Vista Municipal Airport/Libby Army Airfield was used as the base of operations from June to September 2004 for an initial field test of UAVs by CBP within the Tucson and Yuma sectors. This field test was conducted as part of (b) (7)(E). The purpose was to determine if UAVs could complement other available tools and techniques in furthering the mission of CBP.

Fort Huachuca is the U.S. Army' (b) (7)(E). The UAVs are flown from Libby as well as two UAV runways located approximately four miles west of Libby. These vehicles share the traffic pattern and airspace with military and civilian aircraft.

Military Aircraft assigned to Libby Army Airfield include the RC-12 and C-12 fixed wing aircraft and the EH-60 and UH-1 rotary wing aircraft. The RC-12 and EH-60 aircraft are used by the U.S. Army Intelligence Center and Fort Huachuca for training Special Electronic Mission Aircraft pilots and crews. The C-12 and UH-1 aircraft are used for administrative flight support. Space available flights may be obtained by personnel who are authorized to fly on military aircraft.

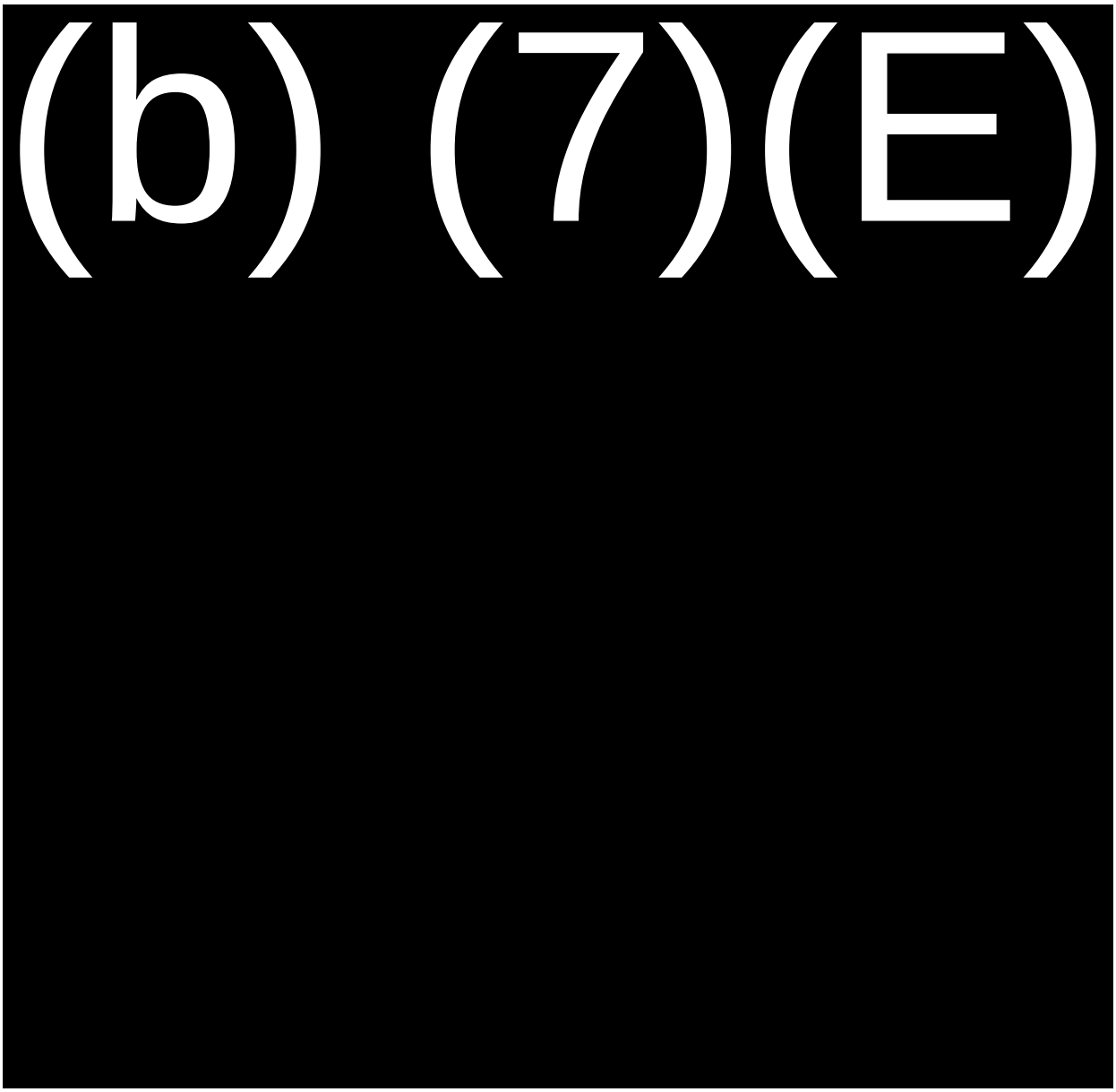


Figure 13 – Sierra Vista Municipal Airport/Libby Army Airfield. Source: Arizona Department of Transportation, Aeronautics Division

The table below identifies key resource categories at Sierra Vista Municipal Airport/Libby Army Airfield and specifies whether there are substantive issues in each category that would merit additional analysis in this PEA.

Table 9 – Sierra Vista Municipal Airport/Libby Army Airfield Impact Matrix

Resource	Description of Conditions	Needs Further Consideration
Land Use	The Sierra Vista Municipal Airport/Libby Army Airfield is located within the north-central portion of the Fort Huachuca Military Reservation. The airfield is a joint-use facility with Libby Army Airfield. The city-owned civilian landside facilities are located on	No. Any development that would be required to support a UAV system

Resource	Description of Conditions	Needs Further Consideration
	approximately 72 acres of land on the north side of the airfield. The civilian landside facilities are under the jurisdiction of the City of Sierra Vista while the airfield and military landside facilities are under the jurisdiction of the U.S. Army (City of Sierra Vista 2002). Expansion of facilities has been identified in the AMP. Addition of facilities to accommodate a potential UAV program could occur within the parameters of the AMP.	would be in compliance with the adopted AMP.
Air Quality	Cochise County in the Sierra Vista/Fort Huachuca area is in attainment for all criteria pollutants therefore the requirements of 40 CFR 93, "Determining Conformity of General Federal Actions to State and Federal Implementation Plans" (General Conformity Rule) do not apply to this action	No.
Geology / Soils / Topography	Soil types within the airport are suitable for development. The terrain of the airport is relatively flat. Developed areas provide adequate drainage of storm water.	No. Development associated with deployment of a UAV system would be in compliance with local building codes, and would include any mitigations required by jurisdictions regulating storm water drainage.
Water Resources	Potable water to the airport is provided via an on-site, city-owned well. The well, related pump house and 60,000 gallon storage tank are located on the east side of the hangars, north of the FBO hangar. An additional well is located north of the terminal parking. The water supply system for the civilian side of the airfield is separate from that of the military side. Sanitary sewer is available on site. CBP, as a federal agency, is committed to following water conservation mitigation strategies related to water consumption within the San Pedro River basin. Activities/development within the San Pedro River basin that result in an increase in net water consumption would be subject to mitigation measures.	Yes. Specific information related to net increase/decrease in water consumption related to implementation of the proposed action will require further analysis.
Biological Resources	In consultation with the Arizona Game and Fish Department for this project, the following special status species have been documented as occurring in the project vicinity (within 3 miles): • Mexican Long-tongued Bat (*Choeronycteris mexicana*) – Species of Concern under ESA, BLM Sensitive, AGFD species of concern • Western Yellow-billed Cuckoo (*Coccyzus americanus occidentialis*) – USFWS Candidate, USFS Sensitive, AGFD species of concern • Woodland spurge (*Euphorbia macropus*) – USFWS Species of Concern, AGFD – Salvage restricted • Huachuca Golden Aster (*Heterotheca rutteri*) – USFWS – Species of Concern, USFS Sensitive, BLM Sensitive • Lesser Long-nosed Bat (*Leptonycteris curasoae yerbabuenae*) – USFWS Listed Endangered, USFS Sensitive, AGFD Species of	No. Impact to biological resources would be similar to those incurred by operation of other aircraft (occasional bird strike). No further analysis is warranted.

Resource	Description of Conditions	Needs Further Consideration
	Concern • Western Small-footed Myotis (*Myotis ciliolabrum*) – USFWS Species of Concern, BLM Sensitive • Fringed Myotis (*Myotis thysanodes*) – USFWS Species of Concern, BLM Sensitive • Cave Myotis (M*yotis velifer*) -0 USFWS Species of Concern, BLM Sensitive • Desert Massasauga (*Sistrurus catenatus edwardsii*) – USFS Sensitive, AGFD Species of Concern • Northern Mexican Gargersnake (*Thamnophis eques megalops*) – USFWS Species of Concern, USFS Sensitive, AGFD Species of Concern No lands within the Sierra Vista Municipal Airport – Libby Army Airfield have been designated as critical habitat.	
Floodplains	The Sierra Vista Municipal Airport/Libby Army Airfield is located on the Fort Huachuca Military Reservation and therefore is not included on Flood Insurance Rate Maps.	No. Development associated with deployment of a UAV system within the airport would have no impact on flood plains. No further analysis is warranted.
Noise	Noise abatement procedures at the Sierra Vista Municipal Airport /Libby Army Airfield are built into traffic patterns. There are no noise level limits.	No. Noise emissions from standard UAV platforms is similar to or less than other aircraft operated at Sierra Vista Municipal Airport /Libby Army Airfield. Additionally, operations will generally occur during (b) (7)(E) . General operations include (b) take-offs/landings per/day and do not include "touch and go" training typical of other aircraft.
Cultural & Archeological Resources	Two archeological sites (AZ EE:7:27 and AZ EE:7:28) have been identified at Libby Army Airfield. These sites have not been evaluated in terms of eligibility for nomination to the NRHP. Both sites are historic dumps dating from the early to mid 20th century and may yield important information on the history of the Army at Fort Huachuca. Early expansion of Libby Army Air Field destroyed similar archeological sites without eligibility (listing on the NRHP) evaluation.	No. Any construction of facilities would require compliance with the NHPA and mitigation would be "upon discovery." No

Resource	Description of Conditions	Needs Further Consideration
	This destruction elevated the extant sites to the status of important historic databanks. Construction of new facilities within the airport would require survey of the area prior to ground disturbance, in compliance with the NHPA (USAG 2003).	further analysis is warranted.
Utilities & Infrastructure	Utilities are available at the airport. If new facilities were required to accommodate a UAV system, extension of utilities would be in compliance with the AMP.	No. Utilities are available at the Airport.
Roadways & Traffic	Civilian operations are concentrated on the north side of the airfield, accessible directly from Arizona State Route 90. Military operations are concentrated on the south side of the airfield, accessible on Fort Huachuca from Brainard Road, Gerstner Road, and Arizona Street.	No. Roadways and traffic support are present and sufficient for a potential UAV program. Deployment and operation of a UAV system would potentially increase vehicle traffic in and around the airport. Analysis would be required prior to construction beyond that identified in the AMP, but is not necessary for the purpose of this document.
Hazardous Materials	Hazardous materials, fuel spill, fire and other emergency services are available on site.	No.
Socioeconomics	Population: 42,805 Sierra Vista, 130,220 Cochise County (Arizona Department of Commerce 2004d)	Yes. In relation to adherence to water mitigation strategies, specific numbers of people added to the economy as a result of the proposed action need to be identified.
Environmental Justice	Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.	No. Deployment and operation of a UAV system would not displace or negatively impact minority populations disproportionately.
Cumulative Impacts	Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless	Yes. Proposed deployment of a UAV system at

Resource	Description of Conditions	Needs Further Consideration
	of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7).	Sierra Vista Municipal Airport /Libby Army Airfield may result in impacts to the San Pedro River water resources. Further analysis would be necessary.

4.5 Bisbee Municipal Airport

Bisbee Municipal Airport is a general aviation airport located approximately five miles south of the main part of the town of Bisbee. The airport is less than two miles from the border with Mexico and is approximately five miles northeast of the Naco port of entry. The airport is owned and operated by the town of Bisbee, AZ.

The AMP for Bisbee Municipal Airport was completed in 1999. The primary runway, 17-35, is 5,929 feet by 60 feet and is asphalt construction. The AMP rates this runway as fair to poor due to significant areas of loose aggregate. The shoulders of the runway have a 3 to 4 inch drop to the graded shoulder. The AMP notes that this constitutes a potential safety hazard.

Copper State Aircraft Services is the operator and has a full-time airport manager/fixed base operator at the airfield. There are two city owned and one private hangar at the airfield. Both hangars have been in existence since the early 1930's. The AMP notes that some of the interior support structures of the public hangars are in need of repair. Either of these hangars can accommodate only one or two aircraft each. The hangar doors only open 40 and 42 feet in width. Currently there are 23 aircraft based at the airfield that are primarily privately owned. Current airfield operations are less than 10,000 per year.

There are numerous military airspace restrictions either above or in the vicinity of the airfield. These Military Operation Areas (MOAs) are restrictive to flight operations from surface to 14,500 feet mean sea Level. Conflicts between current operations at the airfield and airspace restrictions have not been noted as of the date of the AMP.

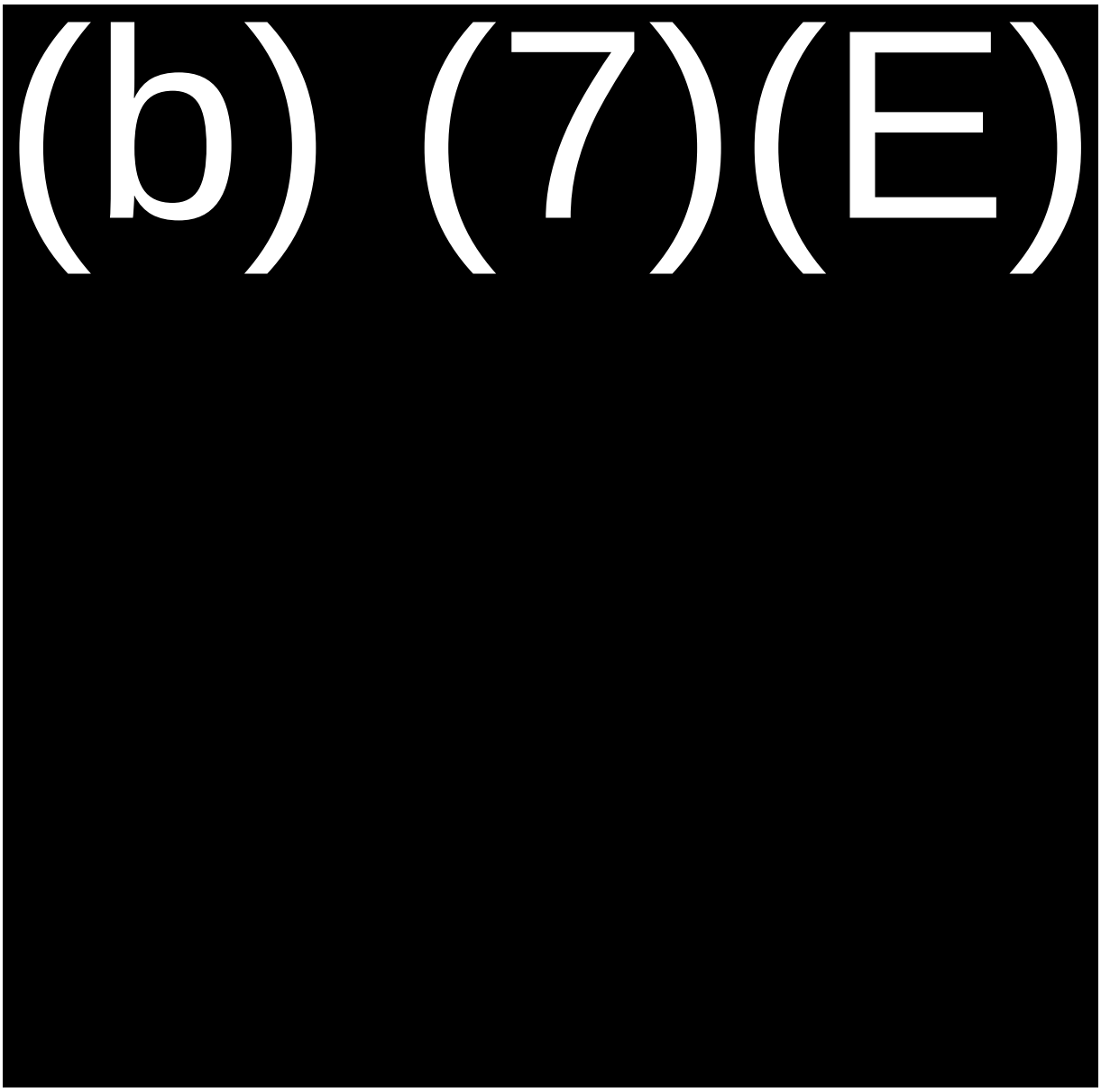


Figure 14 – Bisbee Municipal Airport. Source: Arizona Department of Transportation, Aeronautics Division

The table below identifies key resource categories at Bisbee Municipal Airport and specifies whether there are substantive issues in each category that would merit additional analysis in this PEA.

Table 10 – Bisbee Municipal Airport Impact Matrix

Resource	Description of Conditions	Needs Further Consideration
Land Use	There are currently two hangars at Bisbee Municipal. All airport property is aviation-related use; but the land is zoned RU-4 (Residential – 4 acre lots). All land adjacent to the airfield is also zoned RU-4. The current AMP (City of Bisbee 1999) has already established land use zoning and construction parameters if it is determined that	No. Any development that would be required to support a UAV system would be in

Resource	Description of Conditions	Needs Further Consideration
	additional facilities need to be constructed to support CBP UAV operations. The Bisbee City AMP indicates that future land use in the vicinity of the airfield will be "heavy industrial."	compliance with the adopted AMP. Any construction activity will require additional evaluation.
Air Quality	Bisbee Municipal Airport is located in an attainment area for all Air Quality parameters. Therefore the requirements of 40 CFR 93, "Determining Conformity of General Federal Actions to State and Federal Implementation Plans" (General conformity rule) does not apply to this section. If any construction would be required in support of deployment of a UAV system appropriate mitigation would need to take place to ensure compliance with local air quality standards in relation to particulate matter (fugitive dust).	No. NOTE: The airport is located less than 3 nm from a non-attainment area for PM_{10}.
Geology / Soils / Topography	Soil types within the airport are suitable for development. The terrain of the airfield is relatively flat with a slight slope to the south.	No. Development associated with deployment of a UAV system would be in compliance with local building codes, and would include any mitigation required by local jurisdictions.
Water Resources	The Bisbee Municipal Airport lies within the San Pedro River watershed. Sewage is disposed of via existing septic tank systems. This is sufficient for current operations. There are no current plans to include expansion of water and sanitary sewer systems. Any development may have a short-term impact on water quality. These will need to be addressed on a project specific basis. Airport drainage is considered to be functional and in good general condition.	Yes. There may be a requirement for water mitigation for any development that may occur due to UAV deployment at Bisbee Municipal Airport. Any development will require further analysis and possible mitigation.
Biological Resources	Bisbee Municipal airport is located at the southern end of the Mule Mountains on a grassy plateau. The surrounding vegetative community is classified as desert-scrub grassland. In consultation with the Arizona Game and Fish Department for this project the AGFD noted that their Heritage Data Management System did not indicate the presence of any special status species within 3 nm of Bisbee Municipal Airport. No areas of critical habitat have been defined within three miles of the boundary of the Bisbee Municipal airfield. In consultation with the Arizona Game and Fish Department for this project the AGFD noted that their Heritage Data Management System did not indicate the presence of any threatened or endangered species within 3 nm of Bisbee Municipal Airport.	No. Impact to biological resources would be similar to those incurred by operation of other aircraft (occasional bird and/or bat strikes). No further analysis is warranted.
Floodplains	No wetlands are apparent within the airfield boundary. The airfield is situated on a plateau and is above any floodplain.	No. Any development

Resource	Description of Conditions	Needs Further Consideration
		would require wetland delineation and coordination with the Army Corps of Engineers.
Noise	Noise abatement procedures at Bisbee Municipal Airport are addressed in the AMP of 1999. The use of noise descriptors developed for airport noise analysis (i.e. DNL expressed as an average noise level on the basis of annual aircraft operations for a calendar year). Standards of airport land use compatibility planning for use in the development of airports were developed based on the FAA's aircraft noise exposure (DNL contour) map results. This map can be found in the AMP.	No. Noise levels from standard UAV platforms will be similar to or less than other aircraft operated out of Bisbee Municipal. Operations at the airfield will generally occur during (b) (7) [redacted] General operations include ([redacted] take-offs/landings per day. No touch-and-go training is anticipated.
Cultural & Archeological Resources	A cultural resource inventory has not been conducted at the Bisbee Municipal Airport.	No. Any new construction of facilities would require compliance with the NHPA and mitigation would be "upon discovery." No further analysis is warranted.
Utilities & Infrastructure	The Bisbee Municipal AMP indicates that the airport electrical system is "not adequate for the present demand and should be upgraded."	No. Significant development of infrastructure would be required for deployment of UAVs. Further analysis would be required.
Roadways & Traffic	Bisbee Junction Road parallels the airport boundary. It provides access to the towns of Bisbee and Naco. Service roads throughout the airport property are minimal and composed of compacted dirt.	No. Airfield roads may not be sufficient to support UAV operations. Further analysis may be needed.
Hazardous Materials	The proposed actions would not generate any increase in hazardous waste when compared to normal airport operations. The proposed actions are not anticipated to exceed current response levels as identified in the AMP.	No further analysis is needed.
Socioeconomics	Population: City of Bisbee 6,390, Cochise County 130,220 (Arizona Department of Commerce 2004e).	Yes. There are ongoing

Resource	Description of Conditions	Needs Further Consideration
	Deployment and operation of a UAV system would result in an addition of up to approximately (b) CBP staff and their families to the area and could result in additional jobs for the local communities.	economic development efforts in the local area. The proposed UAV action would complement these efforts and would not have any significant or negative impacts.
Environmental Justice	Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.	No. Deployment and operation of a UAV system would not displace or negatively impact minority populations disproportionately.
Cumulative Impacts	Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7).	Yes. Proposed deployment of a UAV system at Bisbee Municipal airport may result in impacts to the San Pedro River water resources. Further analysis would be necessary.

4.6 Cochise College Airport

The Cochise College Airport is located on the college's Douglas campus along U.S. Highway 80, approximately eight miles west of Douglas and 16 miles east of Bisbee in southeastern Arizona. Cochise College Airport is a public use airport. Although it is open to the public and serves transient aircraft, its primary function is to accommodate the college's aviation program. Only aircraft owned and operated by the college are permanently based at the airport. The college does not function as or provide the full services of a traditional FBO. It is not the intention of the college to do so since it cannot compete due to its governmental status with private business. However, fuel services and limited emergency maintenance are available during the normal business hours of the facility.

The airport is one of four public-use airports in the area. The other public-use airports are Bisbee-Douglas International (eight miles northeast), Douglas Municipal (11 miles southeast) and Bisbee Municipal (11 miles west).

The airport has a single runway, designated Runway 5/23. The runway is of asphalt construction and is 5,303 feet long and 72 feet wide. The Runway 23 landing threshold is displaced 500 feet to allow clearance of the approach slope over a road at the east side of the airport. The displaced threshold provides a runway 23 landing length of 4,803 feet.

In April 2001, an AMP was completed for Cochise College Airport. It included recommendations for expansion of facilities and services at the airport. Expansion plans are centered on expanding the educational opportunities available through the college. For example, if the college is to add opportunities for students to learn about turboprop aircraft, the runway, taxiway, and hangar spaces will all require expansion for this larger class of aircraft.

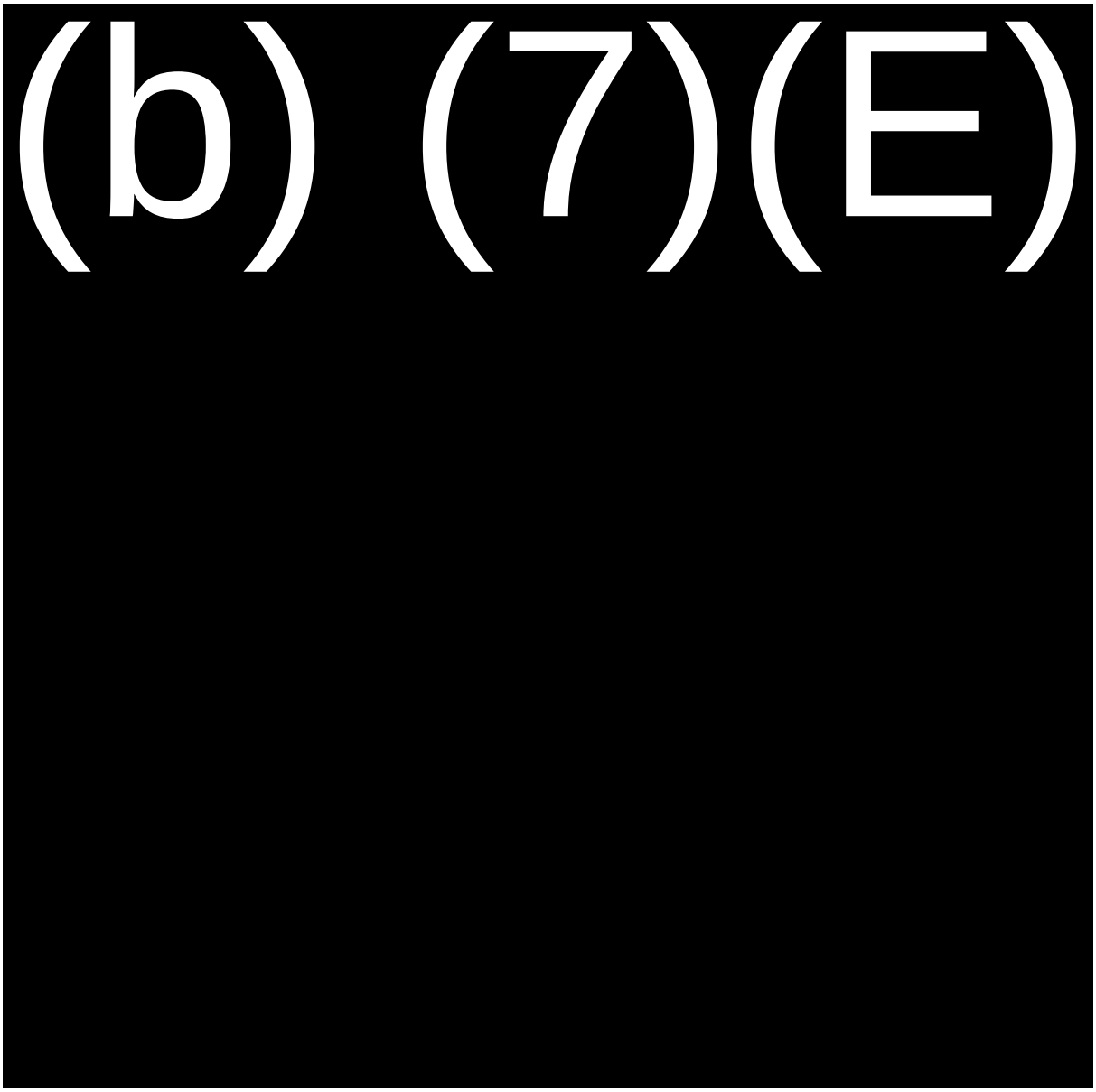


Figure 15 – Cochise College Airport. Source: Arizona Department of Transportation, Aeronautics Division

The table below identifies key resource categories at Cochise College Airport and specifies whether there are substantive issues in each category that would merit additional analysis in this PEA.

Table 11 – Cochise College Airport Impact Matrix

Resource	Description of Conditions	Needs Further Consideration
Land Use	Cochise College Airport is located on the Douglas Campus of Cochise College, northwest of the town of Douglas. The Airport is managed by Cochise College, with a focus on providing facilities to support the college's Aviation Program. Expansion of facilities has been identified in the AMP, but focus on expansion of the Aviation Program offered by the college. The AMP does not identify expansion of facilities to support other tenants. However, identified expansion, if done in conjunction with the college, could serve the needs of the college as well as tenants (Cochise College 2001).	No. Any development that would be required to support a UAV system would be in compliance with the adopted AMP.
Air Quality	Cochise County in the Douglas area is classified as non-attainment for PM_{10}. This area includes the town of Douglas and the area between the airport and the town. The Douglas PM_{10} state implementation plan indicated that 60.0 percent of the PM_{10} in the Douglas area originated in Mexico (81.4 percent) generated from unpaved road fugitive dust. The second large emissions source was agricultural activities (11.9 percent). The Douglas PM_{10} state implementation plan was submitted to EPA in 1993 and demonstrates attainment "but for emissions emanating outside the United States."	No. If any construction would be required in support of deployment of a UAV system appropriate mitigation would need to take place to ensure compliance with local air quality standards in relation to particulate matter (fugitive dust).
Geology / Soils / Topography	The Cochise College Airport is located in the Sulphur Springs Valley of the Chihuahua Desert. This valley is surrounded by the Swisshelm and Perilla Mountains to the east and the Mule Mountains to the west and is less than 40 miles to the Chiricahua Mountains. Soil types within the airport are suitable for development. The terrain of the airport is relatively flat. Developed areas provide adequate drainage of storm water.	No. Development associated with deployment of a UAV system would be in compliance with local building codes, and would include any mitigations required by jurisdictions that regulate storm water drainage.
Water Resources	A well to provide water and septic systems to treat and dispose of sanitary wastes are available at the airport, owned and operated by the college.	No. Services are available utilizing existing college-owned services.

Resource	Description of Conditions	Needs Further Consideration
Biological Resources	In consultation with the Arizona Game and Fish Department for this project, the following special status species have been documented in the project vicinity (within 3 miles): • Chiricahua Leopard Frog (*Rana Chiricahuensis*) – USFWS Listed Threatened, USFS Sensitive, AGFD Species of Concern. No lands within the Cochise College Airport have been designated as critical habitats.	No. Impact to biological resources would be similar to those incurred by operation of other aircraft (occasional bird strike). No further analysis is warranted.
Floodplains	The Cochise College Airport is not located within the 100-year floodplain.	No.
Noise	Noise exposure models have been completed within the airport. The 55 DNL Noise Contour has been identified for the airport at full development according to the AMP. This 55 DNL contour is wholly contained with the airport, more than 1000 feet from the airport boundary. This falls below noise requirement levels of 65 DNL.	No. Noise emissions from standard UAV platforms is similar to or less than other aircraft operated at Cochise College Airport. Additionally, operations will generally occur during (b) (7)(E) . General operations include (b) take-offs/landings per/day and do not include "touch and go" training typical of other aircraft.
Cultural & Archeological Resources	Cultural resource surveys were conducted in 1970, 1992, and 1995 prior to development of the current facilities at the college. No evidence of cultural materials has been found in these surveys. As noted in the AMP, "…there are no known archeological or cultural sites located on the airport grounds."	No. Any construction of facilities would require compliance with the NHPA and mitigation would be "upon discovery." No further analysis is warranted.
Utilities & Infrastructure	Utilities are available at the airport. If new facilities were required to accommodate a UAV system, extension of utilities would be in compliance with the AMP.	No. Utilities are available at the Airport.
Roadways & Traffic	Access to the airport is through the main gate of Cochise College – Douglas Campus, just north of State Route 80.	No. Roadways and traffic support are present and sufficient for a potential UAV program. Deployment and operation of a UAV system would potentially increase vehicle traffic in and

Resource	Description of Conditions	Needs Further Consideration
		around the airport. Analysis would be required prior to construction beyond that identified in the AMP, but is not necessary for the purposes of this document.
Hazardous Materials	Hazardous materials, fuel spill, fire and other emergency services are available.	No.
Socioeconomics	Population: 16,740 Douglas, 130,220 Cochise County (Arizona Department of Commerce 2004f)	No. Deployment and operation of a UAV system would result in an addition of up to approximately (b) additional jobs to the region.
Environmental Justice	Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.	No. Deployment and operation of a UAV system would not displace or negatively impact minority populations disproportionately.
Cumulative Impacts	Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7).	No. Deployment and operation of a UAV system would not displace or negatively impact minority populations disproportionately.

4.7 Bisbee-Douglas International Airport

The Bisbee-Douglas International Airport (BDI) is located approximately eight miles northwest of the city of Douglas and about nine miles from the border. The airport was deeded to Cochise County by quitclaim deed on May 13, 1949. This was part of the War Assets Administration, Reorganization Plan One of 1947 and under the provisions of the Surplus Property Act of 1944. The federal government placed several restrictions on the use of the BDI. These include:

- The land and structures must be used to benefit the public.
- No exclusive grants or rights to the airport may be issued.
- The U.S. government may use the airport at all times without fee or charge.

- In the event of a national emergency, the U.S. government may have exclusive use or possession of the airport, without charge.

The FAA did release 72.62 acres of land adjacent to the eastern side of the airport to Cochise County for non-airport use. This has been developed by the Arizona Department of Corrections into a prison just east of the airfield.

There are about 20 aircraft based at BDI, this is expected to rise to over 60 by 2016. Current airfield operations average about 12 takeoff and landings per day. Airfield operations were about 3,300 landings and takeoffs per year in 1999. Cochise County actively promotes the airport as a regional focus for Maquilladora companies as North American Free Trade Agreement (NAFTA) related commerce increases in the local area. It is anticipated that by an average of 46,000 airfield operations would occur annually at the BDI by the year 2016. The airport has been identified as strategically placed to host warehouses, manufacturing and corporate bases for growth Maquilladora companies.

The two primary runways at BDI are 17-35 and 8-26. These are described in the AMP (Cochise County 1999) to be in fair to poor condition. Runway 17-35 is currently 7,290 feet by 150 feet and runway 8-26 is 7,000 feet by 150 feet. Two secondary runways were also identified; these are 3-21 and 12-30. Runway 3-21 is currently 7,500 feet by 150 feet. Runway 12-30 is currently listed as abandoned.

A detailed analysis of wind data for the period 1986 thru 1996 was undertaken as part of the AMP. This analysis was conducted for wind occurrences above 10.5-knots, 16-knots, and a high wind analysis. The study concluded that June was the month of peak winds. The study also found that runway 3-21 provided the best alignment for all wind occurrences. The number of runways and their orientation provide many options in relation to cross-wind occurrences (Cochise County 1997).

There are two large World War II vintage hangars at BDI. Only one of these is currently occupied. The other is in fair condition and would be available for immediate use. The vacant hangar would require some improvements, but in general would meet UAV operational requirements. The hangar doors open to over 100 feet. The taxiways that support these hangars are in good condition and are immediately accessible to the front of the hangars.

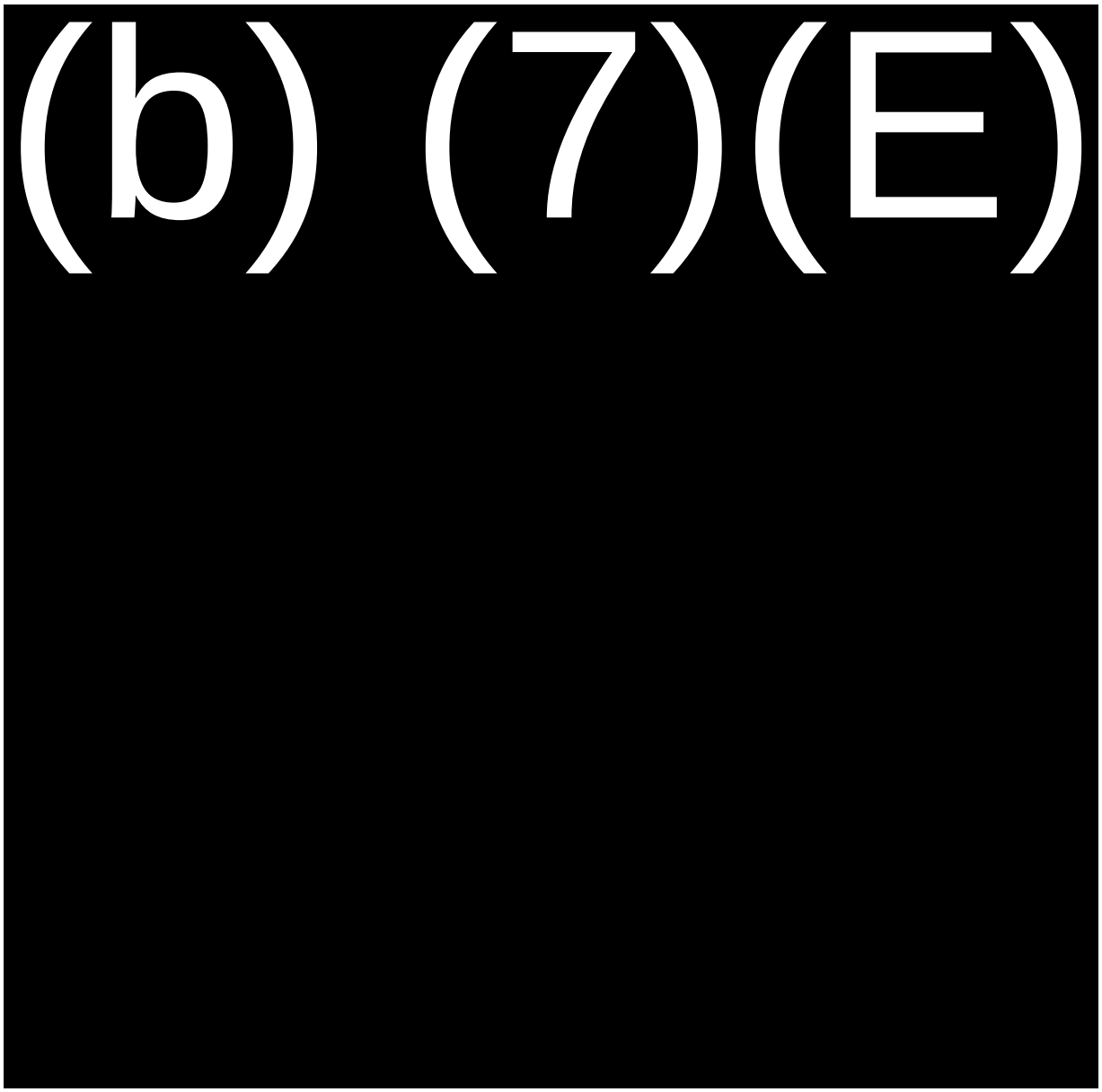


Figure 16 – Bisbee-Douglas International Airport. Source: Arizona Department of Transportation, Aeronautics Division

The table below identifies key resource categories at BDI and specifies whether there are substantive issues in each category that would merit additional analysis in this PEA.

Table 12 – Bisbee-Douglas International Airport Impact Matrix

Resource	Description of Conditions	Needs Further Consideration
Land Use	Most of the land use and zoning for BDI is currently set aside as industrial park. There is one area at the north end of the airfield that is identified as a no-development-area.	No. Any development that would be required to support a UAV system would be in compliance with the

Resource	Description of Conditions	Needs Further Consideration
		adopted AMP. Any construction activity will require additional evaluation.
Air Quality	The northern half of BDI is located in an attainment area. The southern half of BDI is located in a non-attainment area for sulfur dioxide and PM_{10}. Therefore the requirements of 40 CFR 93, "Determining Conformity of General Federal Actions to State and Federal Implementation Plans" (General conformity rule) may apply to this section. If any construction would be required in support of deployment of a UAV system appropriate mitigation would need to take place to ensure compliance with local air quality standards in relation to particulate matter (fugitive dust) and sulfur dioxide.	No. NOTE: It has been noted that over 80 percent of the emissions affecting air quality have their sources in Mexico.
Geology / Soils / Topography	Soil types within the airport are suitable for development. The terrain of the airfield is relatively flat with a slight slope to the southwest.	No. Development associated with deployment of a UAV system would be in compliance with local building codes, and would include any mitigation required by local jurisdictions.
Water Resources	Sufficient water resources are available on the airfield. The BDI AMP does include plans for the expansion of water and sanitary sewer systems. Airport drainage is considered to be functional and in good general condition.	No.
Biological Resources	BDI is located at the southern end of the Springs Valley. The surrounding vegetative community is described as Tobosa and Galleta grass-scrub community. The Arizona Game and Fish Department were consulted for information on threatened and endangered species for this project. The AGFD did not provide any information on species within 3 nm of BDI. No areas of critical habitat have been defined within three miles of the boundary of the BDI.	No. Impact to biological resources would be similar to those incurred by operation of other aircraft. No further analysis is warranted.
Floodplains	No wetlands are apparent within the airfield boundary. The airfield is situated on a desert shrub/playa and is above any floodplain.	No. Any development would require wetland delineation and coordination with the Army Corps of Engineers.
Noise	Noise abatement procedures at BDI are addressed in the AMP of 1999. The use of noise descriptors developed for airport noise analysis (i.e. DNL expressed as an average noise level on the basis of annual aircraft operations for a calendar year). Standards of airport land use compatibility planning for use in the	No. Noise levels from standard UAV platforms will be similar to or less than other aircraft operated

Resource	Description of Conditions	Needs Further Consideration
	development of airports were developed based on the FAA's aircraft noise exposure (DNL contour) map results. This map can be found in the AMP. The AMP indicates that there are no significant noise impacts evident.	out of BDI. Operations at the airfield will generally occur during (b) (7)(E) (b) (7)(E) eneral operations include ((b) (7)(E) ake-offs/landings per day. No touch-and-go training is anticipated.
Cultural & Archeological Resources	It was noted in the BDI AMP that there are several structures on the airfield that may be regarded as historic, around 1930. The Arizona SHPO indicates that "some extant features of the site may qualify for inclusion on the Arizona or NRHP"	No. Any new construction of facilities would require compliance with the NHPA.
Utilities & Infrastructure	The BDI AMP indicated that the airport electrical system may require upgrading to provide sufficient power to the hangars. All utilities are accessible upon request.	No. Significant development of infrastructure would be required for deployment of UAVs. Further analysis would be required.
Roadways & Traffic	U.S. Highway 191 parallels the airport boundary. It provides access from the Douglas border area to Tucson and other points north. It also serves a main route for NAFTA traffic. Service roads throughout BDI are sufficient to meet requirements for possible deployment of UAV operations.	No. Airfield roads are sufficient to support UAV operations. No further analysis may be needed.
Hazardous Materials	The proposed actions would not generate any increase in hazardous waste when compared to normal airport operations. The proposed actions are not anticipated to exceed current response levels as identified in the AMP.	No. No further analysis is needed.
Socioeconomics	Population: Douglas 16,740, Cochise County 130,220 (Arizona Department of Commerce 2004e) Deployment and operation of a UAV system would result in an addition of approximately [redacted] CBP staff and their families to the area and could result in additional jobs for the local communities.	No. Deployment and operation of a UAV system would result in an addition of up to approximately [redacted] additional jobs to the region.
Environmental Justice	Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.	No. Deployment and operation of a UAV system would not displace or negatively impact minority populations disproportionately.

Resource	Description of Conditions	Needs Further Consideration
Cumulative Impacts	Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7).	No. No cumulative impacts have been noted.

4.8 Douglas Municipal Airport

The Douglas Municipal Airport (DMA) is located in the southeastern corner of the city limits of Douglas approximately two miles east of the Central Business District. The airport encompasses all of section 16 (640 acres), T24S, R28E, Gila and Salt River Meridian. It is less than ¼ mile from the U.S.-Mexico border. Hours of operation are Monday through Friday 7:00 am to 6:00 pm, weekends 8:00 am to 5:00 pm.

The airport is owned and maintained by the City of Douglas and the FBO is Air Resources International. The FBO maintains the same hours of operation as the airfield. The AMP for DMA was completed in 1994 (City of Douglas 1994).

The airport has been used for border patrol activities since it was first established in 1928. It became the first airport in the U.S. to have international status. Today the airport supports many types of operations including business, international traffic, U.S. customs, flight training, and air taxi flights. There has been an increase in international traffic and more frequent U.S. customs inspections.

There are two conventional hangars next to the aircraft parking apron. Each hangar is designed to hold eleven aircraft. One of these is used on occasions by CBP aircrews.

The primary runway, 3-21 is 5,400 feet long and 60 feet wide, constructed of asphalt. Runway 18/36 is designated as the crosswind runway and is 4,146 feet long and 98 feet wide. It is a dirt runway classified as being in poor condition. The AMP identifies the need to have further crosswind studies conducted to determine the need for a new crosswind runway aligned 13-31. The current studies for the crosswind runway were completed using data from BDI. The AMP notes that wind characteristics vary significantly between these two airports. The AMP notes that an Automated Surface Observation System needs to be added to the airfield to further support crosswind studies and provide current weather information to pilots.

There were 27 aircraft based at Douglas Municipal in 1994, this is forecasted to increase to 34 by the year 2014. The FBO estimated the 1993 annual operations at approximately 11,300, this equates to an average of 31 flight operations per day. Cochise County is actively promoting the local airports as a regional focus for *Maquilladora* companies as NAFTA related commerce increases in the local area. The operation forecasts indicate that by 2009 there will be an average of 12,370 airfield operations annually.

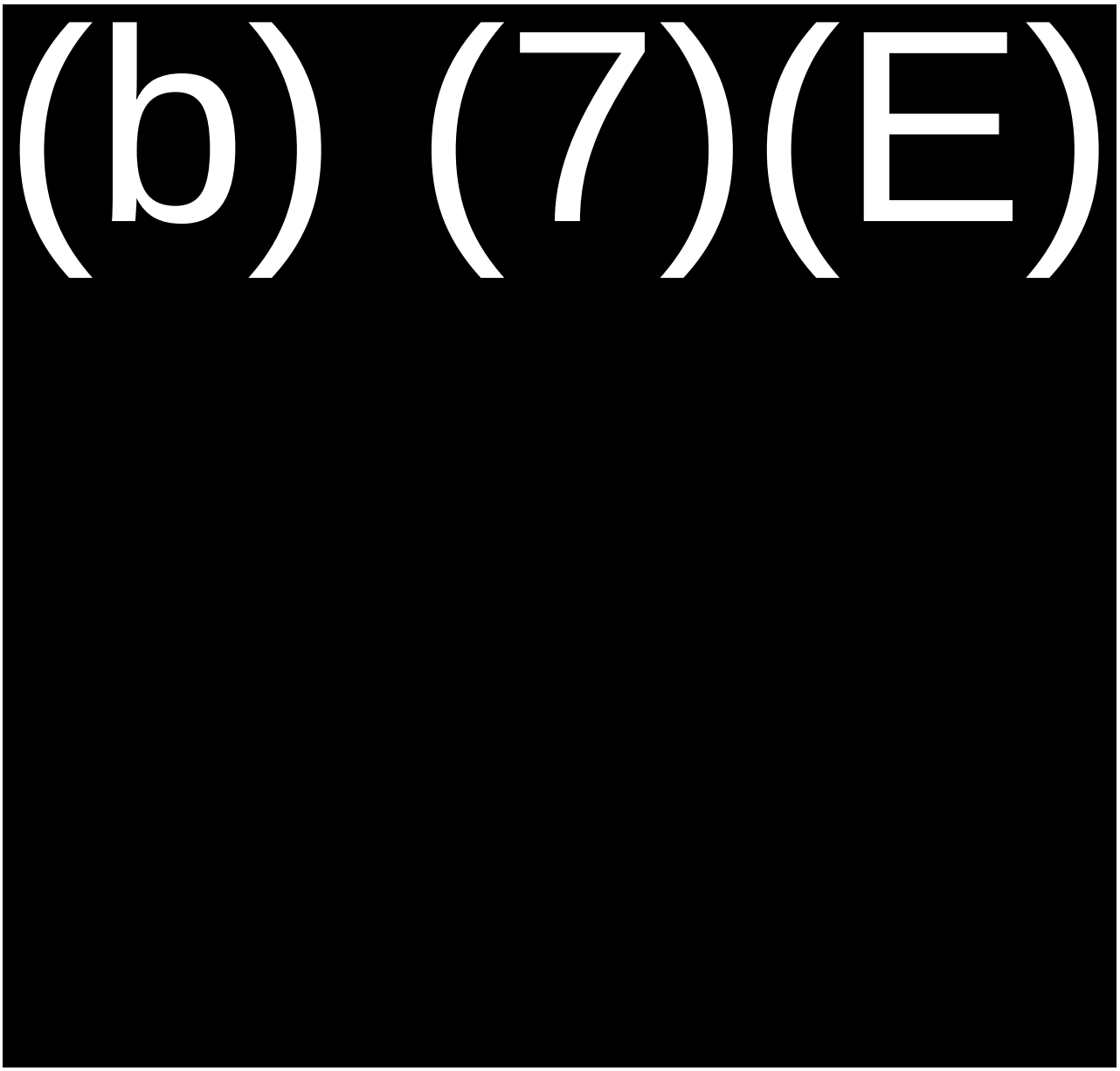


Figure 17 – Douglas Municipal Airport. Source: Arizona Department of Transportation, Aeronautics Division

The table below identifies key resource categories at Douglas Municipal Airport and specifies whether there are substantive issues in each category that would merit additional analysis in this PEA.

Table 13 – Douglas Municipal Airport Impact Matrix

Resource	Description of Conditions	Needs Further Consideration
Land Use	The land that Douglas Municipal Airport is located on is dedicated to use by the airport. The north and eastern sides of the airport are zoned rural/agricultural, the southern border is zoned for industrial, and the western side of the airport is zoned for residential. Aviation easements are in place or being planned to protect expansion of runways.	No. Any development that would be required to support a UAV system would be in

Resource	Description of Conditions	Needs Further Consideration
		compliance with the adopted AMP. Any construction activity will require additional evaluation.
Air Quality	Douglas Municipal is located in a non-attainment area for sulfur dioxide and PM_{10}. Therefore the requirements of 40 CFR 93, "Determining Conformity of General Federal Actions to State and Federal Implementation Plans" (General conformity rule) may apply to this section. If any construction would be required in support of deployment of a UAV system appropriate mitigation would need to take place to ensure compliance with local air quality standards in relation to particulate matter (fugitive dust) and sulfur dioxide.	No. NOTE: It has been noted that over 80 percent of the emissions affecting air quality have their sources in Mexico.
Geology / Soils / Topography	Soil types within the airport are suitable for development. The terrain of the airfield is relatively flat with a slight slope to the southwest.	No. Development associated with deployment of a UAV system would be in compliance with local building codes, and would include any mitigation required by local jurisdictions.
Water Resources	Sufficient water resources are available on the airfield. Implementation of the local Storm Water Pollution Prevention Plan by the airport will help to prevent the discharge of potentially contaminated water into nearby water bodies. The AMP indicated that the area water quality will not be significantly affected by proposed construction on the airfield. Airport drainage is considered to be functional and in good general condition.	No. Any development associated with the UAV program may have a short-term impact on water quality. These will need to be addressed on a project specific basis.
Biological Resources	Douglas Municipal airport is located southeast of the Perilla Mountains in a creosote-tarbush community. In consultation with the Arizona Game and Fish Department for this project, the following special status species have been documented as occurring in the project vicinity (within 3 miles): • Greater Western Bonneted Bat (*Eumops perotis californicus*) – USFWS Species of Concern • Texas Globe Berry (*Ibervillea tenuisecta*) – BLM Sensitive • Texas Horned Lizard (*Phrynosoma cornutum*) - USFWS Species of Concern, BLM Sensitive No lands within the Douglas Municipal Airport have been designated as critical habitats.	No. Impact to biological resources would be similar to those incurred by operation of other aircraft. No further analysis is warranted.
Floodplains	No wetlands are apparent within the airfield boundary. The airfield is situated in a desert-scrub and is above any floodplain as noted in the AMP.	No. Any development would require wetland delineation and

Resource	Description of Conditions	Needs Further Consideration
		coordination with the Army Corps of Engineers.
Noise	Noise abatement procedures at Douglas Municipal are addressed in the AMP. The use of noise descriptors developed for airport noise analysis (i.e. DNL expressed as an average noise level on the basis of annual aircraft operations for a calendar year). Standards of airport land use compatibility planning for use in the development of airports were developed based on the FAA's aircraft noise exposure (DNL contour) map results. This map can be found in the AMP. The AMP indicates that there are currently no significant noise impacts evident.	No. Noise levels from standard UAV platforms will be similar to or less than other aircraft operated out Douglas Municipal airport. Operations at the airfield will generally occur during(b) (7)(E) (b) (7)(E)General operations include (b) (7)(E) (b) (7)(E)ake-offs/landings per day. No touch-and-go training is anticipated.
Cultural & Archeological Resources	It was noted in the AMP that there were no significant structures on the airfield that may be regarded as historic.	No. Any new construction of facilities would require compliance with the NHPA.
Utilities & Infrastructure	The AMP indicated that there are sufficient electrical and other utilities available to support future deployment on the airfield. All utilities are accessible upon request.	No. N. further analysis would be required.
Roadways & Traffic	Douglas Municipal is located two miles from the Douglas business center. Access is via 10th Street which passes through mostly residential areas. From downtown Douglas the main thoroughfare is Arizona State Highway 80. This leads to I-10 which is a distance of over 80 miles.	No. Airfield roads are sufficient to support UAV operations. No further analysis may be needed.
Hazardous Materials	The proposed actions would not generate any increase in hazardous waste when compared to normal airport operations. The proposed actions are not anticipated to exceed current response levels as identified in the AMP.	No. No further analysis is needed.

Resource	Description of Conditions	Needs Further Consideration
Socioeconomics	Population: Douglas 16,740, Cochise County 130,220 (Arizona Department of Commerce 2004f). Deployment and operation of a UAV system would result in an addition of approximatel [redacted] CBP staff and their families to the area and could result in additional jobs for the local communities.	No. Deployment and operation of a UAV system would result in an addition of u[redacted]o approximately [redacted] additional jobs to the region.
Environmental Justice	Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.	No. Deployment and operation of a UAV system would not displace or negatively impact minority populations disproportionately.
Cumulative Impacts	Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7).	No. No cumulative impacts have been noted.

4.9 Lordsburg Municipal Airport

The Lordsburg Municipal Airport is located east of the town of Lordsburg, in Hidalgo County in southwest New Mexico. Lordsburg, located on Interstate 10, is approximately 55 miles from the U.S.-Mexican border. The airport is owned and operated by the City of Lordsburg. There is one runway – Runway 12/30 that is 5,011 feet long by 75 feet wide. The runway has one hangar that is currently used as a maintenance and storage facility. There are five aircraft based at the field, with operations averaging about eight per day. A military UAV operated from the field 3 to 5 years ago according to the airport manager. There is considerable space available within the airport for development if necessary.

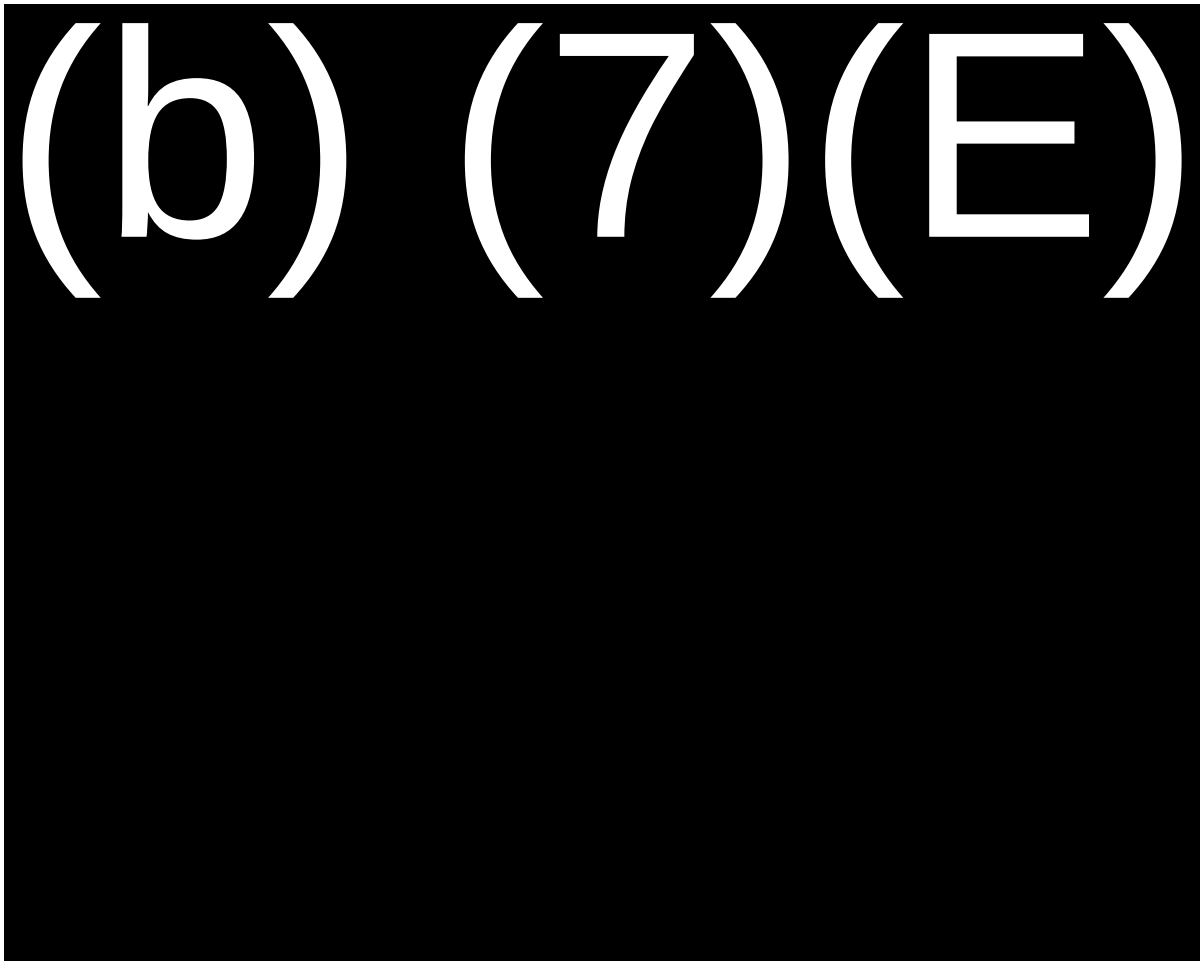


Figure 18 – Lordsburg Municipal Airport. Source: New Mexico Resource Geographic Information System

Listed in the table below is a discussion of conditions related to individual resources as they relate to the Lordsburg Municipal Airport.

Table 14 – Lordsburg Municipal Airport Impact Matrix

Resource	Description of Conditions	Needs Further Consideration
Land Use	Lordsburg Municipal Airport is owned and managed by the City of Lordsburg.	No. Any development that would be required to support a UAV system would require site specific analysis.
Air Quality	Hidalgo County is classified as an attainment area for all criteria pollutants therefore the requirements of 40 CFR 93, "Determining Conformity of General Federal Actions to State and Federal Implementation Plans" (General Conformity Rule) do not apply to this action	No.
Geology / Soils / Topography	Soil types within the airport are suitable for development. The terrain of the airport is relatively flat. Developed areas provide adequate drainage of storm water.	No. Development associated with

Resource	Description of Conditions	Needs Further Consideration
		deployment of a UAV system would be in compliance with local building codes, and would include any mitigations required by jurisdictions regulating storm water drainage.
Water Resources	Water and wastewater are available on site at the airport.	No. Sufficient water and wastewater resources are available at the airport. However, lines would need to be extended if new facilities would be constructed. Environmental analysis would be required at that time.
Biological Resources	A biological assessment was completed in 2002 in relation to the environmental assessment for extension of the runway. The environmental assessment notes, "The proposed project area has been previously disturbed by blading, grading, roads, and utility development. There is no suitable habitat within the project area for the listed species. The proposed action (extension of the runway) will not affect threatened, endangered, or candidate species." (City of Lordsburg, 2002)	No. Impact to biological resources would be similar to those incurred by operation of other aircraft (occasional bird strike). No further analysis is warranted.
Floodplains	The Lordsburg Municipal Airport is not within the 100 year floodplain.	No.
Noise	The 55 DNL con tour is wholly contained within the airport. This falls below noise requirement levels of 65 DNL.	No. Noise emissions from standard UAV platforms is similar to or less than other aircraft operated at Lordsburg Municipal Airport. Additionally, operations will generally occur during (b) (7)(E) . General operations include (b) (7)(E) take-offs/landings per/day and do not include "touch and go" training typical of other aircraft. No further analysis is warranted.

Resource	Description of Conditions	Needs Further Consideration
Cultural & Archeological Resources	No cultural resources have been identified within the Lordsburg Municipal Airport.	No. Any construction of facilities would require compliance with the NHPA and mitigation would be "upon discovery." No further analysis is warranted.
Utilities & Infrastructure	Utilities available at the Airport include electricity, phone service, and water.	No. If new facilities were to be constructed to support a UAV system, utilities would need to be extended. However, such extensions would occur on previously disturbed areas within the airport.
Roadways & Traffic	The Lordsburg Municipal Airport is located east of the city of Lordsburg, south of Interstate-10. It is accessible via Airport Road.	No. Roadways and traffic support are present and sufficient for a potential UAV program. Deployment and operation of a UAV system would potentially increase vehicle traffic in and around the airport. Analysis would be required prior to construction but is not necessary for the purpose of this document.
Hazardous Materials	Hazardous materials, fuel spill, fire and other emergency services and procedures are not in place at the Lordsburg Municipal Airport.	No. Hazardous materials handling and emergency services of potential UAV systems would be in accord with the AMP and do not require further analysis.
Socioeconomics	Population: 3,370 Lordsburg, 5.932 Hidalgo County (U.S. Census Bureau 2000)	No. Deployment and operation of a UAV system would result in an addition of up to approximately (b) (7)(E)

Resource	Description of Conditions	Needs Further Consideration
		additional jobs to the region.
Environmental Justice	Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.	No. Deployment and operation of a UAV system would not displace or negatively impact minority populations disproportionately.
Cumulative Impacts	Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7).	No. No cumulative impacts have been noted.

4.10 Playas Air Strip

The Playas Airstrip is located about one-half mile north of the town of Playas. The single runway is orientated 08-26 and is 5,000 feet long and approximately 60 feet wide. The airport slopes from east to west and drops approximately 200 feet. The airstrip is in fair condition and is asphalt composite. There is no AMP for the Playas airfield.

There was a siding built to support the El Paso & Southwestern Railroad that provided a rail route from El Paso, Texas to Tucson, Arizona. The airport and town were built by Phelps Dodge as part of the company town of Playas to support the copper mines and smelter south of town. Modern housing was built in the 1970s to support workers at the copper smelter plant. Over 250 rental homes, six apartment buildings, a bowling alley, a bar, a rodeo ring, fitness center, shooting range, swimming pool and a helicopter pad were built to support the employees.

Due to a highly depressed copper market, Phelps Dodge closed its smelter in Playas (Hidalgo County) in the fall of 1999. Four hundred and fifty Phelps Dodge employees were released and the Animas Public Schools staff was reduced by two thirds over the next two years due to the Hidalgo Smelter closure (New Mexico State 2005). The employees were told to leave by June 1, 2000.

The town was put into caretaker status after it was closed. It was then purchased by New Mexico Tech from Phelps Dodge in 2003. This included all homes, apartment buildings, community facilities, and the surrounding 1,200 acres. The main purpose of the acquisition was to develop, support and operate a National Emergency Response Training, Research and Development Center at the town. (b) (7)(E) [redacted] here are approximately 47 people residing in the town that provide caretaker support and coordinate activities between the various agencies and New Mexico Tech.

The U.S. Army has conducted UAV activities out of the airfield. This included launch and recovery of the Shadow UAV. There are no aircraft based out of Playas. Airfield operations data and weather information are not available for the airfield.

There is one hangar at the west end of the airstrip. The hangar doors are not wide enough for UAVs to utilize the hangar. Construction of new hangar facilities would be necessary. There are a few utilities to service the hangar and airstrip area.

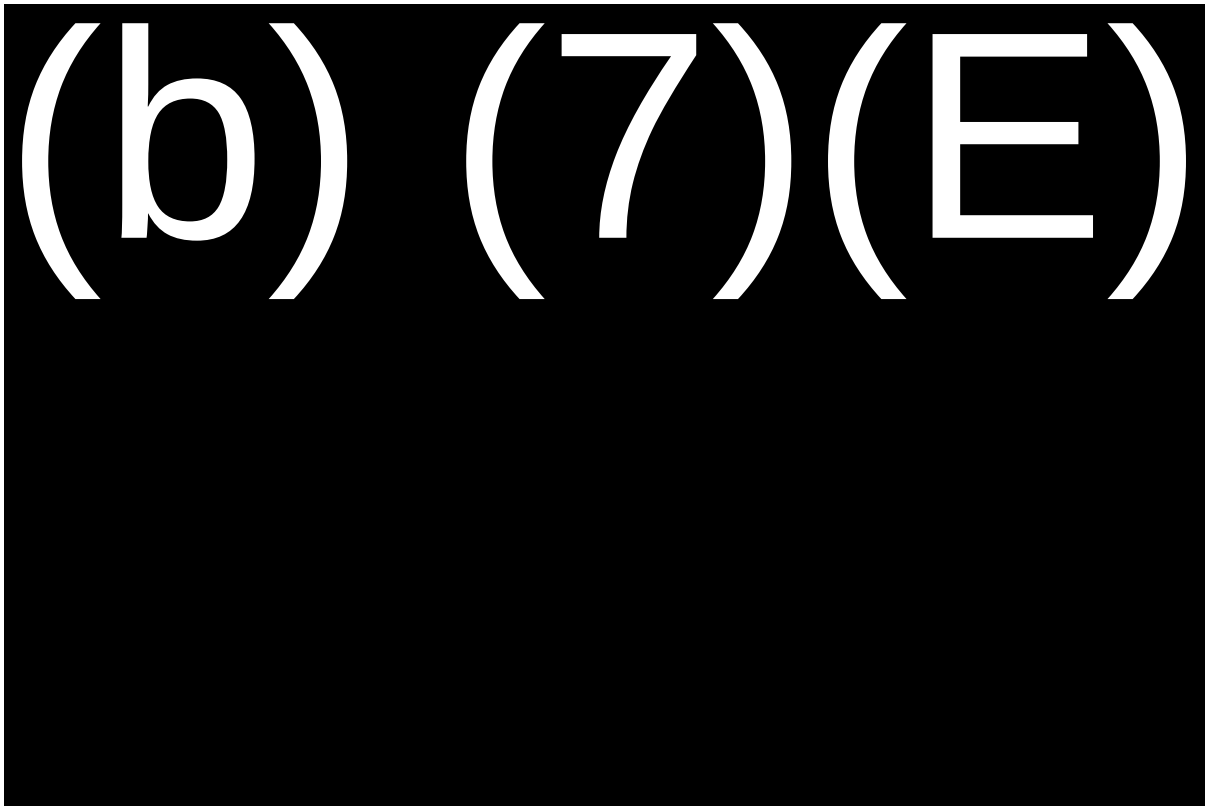


Figure 19 – Playas Airstrip. Source: New Mexico Resource Geographic Informational System

Table 15 – Playas Airstrip Impact Matrix

Resource	Description of Conditions	Needs Further Consideration
Land Use	The airstrip is located on land owned by New Mexico Tech and is dedicated for use as a landing area.	No. Any development needed to support a UAV system would have to be in compliance with the New Mexico Tech requirements.
Air Quality	The Playas area of Hidalgo County is in attainment for air quality.	No.
Geology / Soils / Topography	Soil types in the area are suitable for development. The terrain of the airfield is slopes from east to west.	No.

Resource	Description of Conditions	Needs Further Consideration
Water Resources	There are sufficient water resources available in the local area. There are no water courses in the local area that to be protected.	No.
Biological Resources	Consultation with the New Mexico Department of Game and Fish noted: "The Dept. would recommend that no flight operations be conducted from the Playas Air Strip. This strip is close proximity to two Desert Bighorn Sheep ranges, the Little Hatchet Mountains, 3 miles southeast, and the Big Hatchet Wildlife Management Area, 11 miles to the south, of the Playas air strip. Low over-flights of these ranges have the potential to disrupt desert bighorn sheep, a state listed mammal. If the Playas Air Strip is used, takeoffs and landings should be from the northwest to avoid flying over the Hatchet and Little Hatchet Mountains."	No. Impact to biological resources would be similar to those incurred by operation of other aircraft, mainly occasional bird or bat strikes. No further analysis is warranted.
Floodplains	No wetlands are apparent within the airfield complex. The airfield is situated in a desert-scrub and is above any floodplain. Any development would require wetland delineation and coordination with the Army Corps of Engineers.	No. Further analysis may be warranted.
Noise	The airfield is located far enough away from any inhabited area that noise would not be a factor.	No. Noise levels from standard UAV platforms will be similar to or less than other aircraft operated out Playas airfield. Operations at the airfield will generally occur during (b) (7)(E) (b) (7)(E) General operations include (b) (7)(E) (b) (7)(E) take-offs/landings per day. No touch-and-go training is anticipated.
Cultural & Archeological Resources	There are no records of Cultural and Archeological surveys having been completed in the local area.	No Any new construction of facilities would require compliance with the NHPA.
Utilities & Infrastructure	There are some electrical utilities available to support future deployment on the airfield. All utilities are accessible upon request from the main village area.	No Any new installation of utilities would require further analysis.
Roadways & Traffic	Good quality paved roads service the village and extend to the hangar at the airfield. It is approximately 20 miles to I-10 via nm Route 113.	No Roads to the airfield are sufficient to support UAV operations. No further analysis may be needed.
Hazardous	The proposed actions would not generate any increase in hazardous waste when compared to normal airport operations.	No. No further analysis is

Resource	Description of Conditions	Needs Further Consideration
Materials		needed.
Socioeconomics	Deployment and operation of up t[redacted] UAV systems would result in an addition of up to approximately[redacted] P staff and their families to the area. There is no census data for the town of Playas. The 2000 Census indicates that Hidalgo County had a population of 5,932 (U.S. Census Bureau 2000). Deployment and operation of a UAV system could result in additional jobs for the local communities.	Yes. The proposed UAV action would have a positive effect on the local community.
Environmental Justice	Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.	No. Deployment and operation of a UAV system would not displace or negatively impact minority populations disproportionately.
Cumulative Impacts	Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7).	No. No cumulative impacts are noted.

4.11 Deming Municipal Airport

The Deming Municipal Airport is owned and operated by the City of Deming, supporting general aviation and the Border Patrol. The airport is uncontrolled, open 24 hours a day, with two runways over 5,000 feet long (runway 8/26 is 6,627 feet long, 75 feet wide and runway 4/22 is 5,675 feet long, 60 feet wide). Approximately twenty aircraft are based at the airport with flight operations averaging 28 per day. Border Patrol currently leases hangar space for two helicopters located at the airport. The existing hangar has a 90-foot door. Additionally, there are three World War II hangars on the south side of the runways, one of which is vacant. Nearly 300 acres of land surrounding the aeronautical surface are available for lease and development, with 50 acres available along a 75-foot concrete apron with taxiways to runways. Historically (1995), a Hermes UAV was based at the Deming Airport.

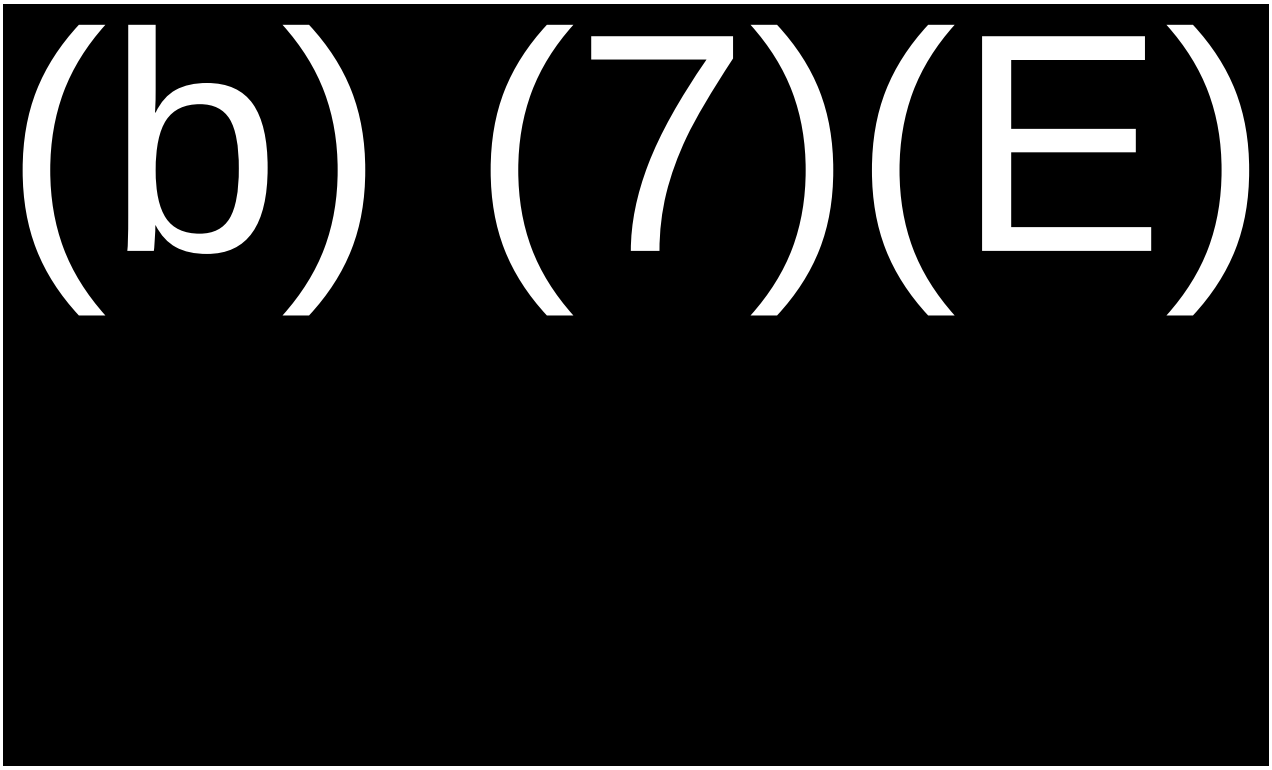


Figure 20 – Deming Municipal Airport. Source City of Deming, New Mexico.

The table below identifies key resource categories at Deming Municipal Airport and specifies whether there are substantive issues in each category that would merit additional analysis in this PEA.

Table 16 – Deming Municipal Airport Impact Matrix

Resource	Description of Conditions	Needs Further Consideration
Land Use	Deming Municipal Airport is owned and operated by the City of Deming. There is an existing AMP, outlining future development and management within the airport. The terminal was renovated and expanded in 1995, including addition of taxiways, hangars, and other airfield support services.	No. Any development that would be required to support a UAV system would be within the development outlined in the AMP.
Air Quality	Deming is classified as an attainment area for all criteria pollutants therefore the requirements of 40 CFR 93, "Determining Conformity of General Federal Actions to State and Federal Implementation Plans" (General Conformity Rule) do not apply to this action.	No.
Geology / Soils / Topography	Soil types within the airport are suitable for development. The terrain of the airport is relatively flat. Developed areas provide adequate drainage of storm water.	No. Development associated with deployment of a UAV system would be in compliance with local building codes, and would include any mitigation required by

Resource	Description of Conditions	Needs Further Consideration
		jurisdictions regulating storm water drainage.
Water Resources	Water and wastewater are available on site at the airport.	No. Sufficient water and wastewater resources are available at the airport. However, lines would need to be extended if new facilities would be constructed. Environmental analysis would be required at that time.
Biological Resources	No listed species (threatened or endangered) have been inventoried within the Deming Municipal Airport.	No. Impact to biological resources would be similar to those incurred by operation of other aircraft (occasional bird strike). No further analysis is warranted.
Floodplains	The Deming Municipal Airport is not within the 100 year floodplain.	No. Development associated with deployment of a UAV system within the airport would have no impact on flood plains. No further analysis is warranted.
Noise	The 55 DNL contour is wholly contained within the airport. This falls below noise requirement levels of 65 DNL.	No. Noise emissions from standard UAV platforms is similar to or less than other aircraft operated at Deming Municipal Airport. Additionally, operations will generally occur during (b) (7)(E) General operations include (b) (7)(E) take-offs/landings per day and do not include touch-and-go training typical of other aircraft. No further analysis is warranted.

Resource	Description of Conditions	Needs Further Consideration
Cultural & Archeological Resources	No archeological sites have been identified within the Deming Municipal Airport.	No. Any construction of facilities would require compliance with the NHPA and mitigation would be "upon discovery." No further analysis is warranted.
Utilities & Infrastructure	Utilities available at the Airport include electricity, phone service, and water.	No. If new facilities were to be constructed to support a UAV system, utilities would need to be extended. However, such extensions would occur on previously disturbed areas within the airport.
Roadways & Traffic	The Deming Municipal Airport is east of the City of Deming, south of Interstate-10.	No. Roadways and traffic support are present and sufficient for a potential UAV program. Deployment and operation of a UAV system would potentially increase vehicle traffic in and around the airport. Analysis would be required prior to construction but is not necessary for the purpose of this document.
Hazardous Materials	Hazardous materials, fuel spill, fire and other emergency services and procedures are in place at the Deming Municipal Airport.	No. Hazardous materials handling and emergency services of potential UAV systems would be in accord with the AMP and do not require further analysis.
Socioeconomics	Population: 14,116 Deming, 25,016 Luna County (U.S. Census Bureau 2000)	No. Deployment and operation of a UAV system would result in an addition of up to approximately (b) (7)(E)

Resource	Description of Conditions	Needs Further Consideration
		additional jobs to the region.
Environmental Justice	Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.	No. Deployment and operation of a UAV system would not displace or negatively impact minority populations disproportionately.
Cumulative Impacts	Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7).	No. No cumulative impacts are noted.

4.12 Las Cruces International Airport

The Las Cruces International Airport is a city-owned facility that supports general aviation only. The airport is uncontrolled, open 24 hours a day, with three runways over 5,000 feet long. Approximately 132 aircraft are based at the field with an average of 100 operations per day. New Mexico State University operates through its Physical Science Lab, a UAV training program. In the past, the university has operated Global Hawk UAVs at the airport and plans to construct a hangar to support future UAV operations. There are several hangars at the airport, but all are currently leased and occupied.

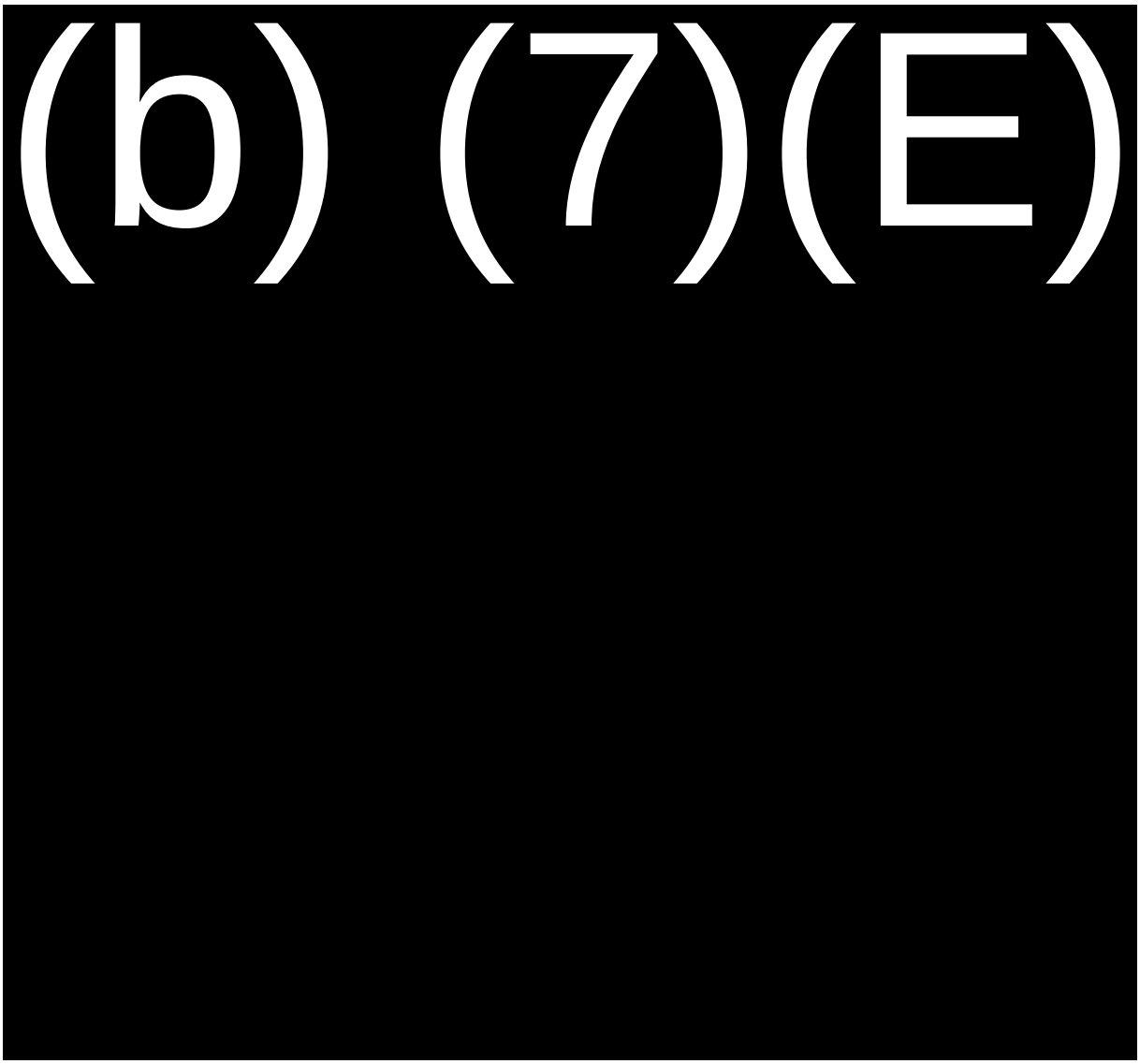


Figure 21 – Las Cruces International Airport. Source: New Mexico Resource Geographic Information System

Listed in the table below is a discussion of conditions related to individual resources as they relate to the Las Cruces International Airport.

Table 17 – Las Cruces International Airport Impact Matrix

Resource	Description of Conditions	Needs Further Consideration
Land Use	Las Cruces International Airport is owned and operated by the City of Las Cruces. The airport's AMP outlines considerable future development within the airport, such as the addition of taxiways, hangars, and other airfield support services (City of Las Cruces 1997).	No. Any development that would be required to support a UAV system would be within the development outlined in the AMP.
Air Quality	Las Cruces is classified as an attainment area for all criteria pollutants therefore the requirements of 40 CFR 93, "Determining Conformity of	No.

Resource	Description of Conditions	Needs Further Consideration
	General Federal Actions to State and Federal Implementation Plans" (General Conformity Rule) do not apply to this action.	
Geology / Soils / Topography	Soil types within the airport are suitable for development. The terrain of the airport is relatively flat. Developed areas provide adequate drainage of storm water.	No. Development associated with deployment of a UAV system would be in compliance with local building codes, and would include any mitigation required by jurisdictions regulating storm water drainage.
Water Resources	Water and wastewater disposal are available on site at the airport.	No. Sufficient water and wastewater resources are available at the airport. However, lines would need to be extended if new facilities would be constructed. Environmental analysis would be required at that time.
Biological Resources	No listed (threatened or endangered) have been inventoried within the Las Cruces International Airport.	No. Impact to biological resources would be similar to those incurred by operation of other aircraft (occasional bird strike). No further analysis is warranted.
Floodplains	The Las Cruces International Airport is not within the 100 year floodplain.	No.
Noise	The 55 DNL contour is wholly contained within the airport. This falls below noise requirement levels of 65 DNL.	No. Noise emissions from standard UAV platforms is similar to or less than other aircraft operated at Las Cruces International Airport. Additionally, operations will g[redacted] during (b) (7)(E) General operations include [redacted] take-

Resource	Description of Conditions	Needs Further Consideration
		offs/landings per/day and do not include "touch and go" training typical of other aircraft. No further analysis is warranted.
Cultural & Archeological Resources	Three cultural resources have been identified within the Las Cruces International Airport (as noted in a report published in 1986. Of the total number of excavated prehistoric sites, one was a lithic/fire-cracked rock site, one was a lithic/sherd/fire-cracked rock site, and one was a lithic scatter site. The sites were probably utilized sporadically during the ceramic, Archaic and Paleo-Indian Periods. (Clifton 1986)	No. Any construction of facilities would require compliance with the NHPA and mitigation would be "upon discovery." No further analysis is warranted.
Utilities & Infrastructure	Utilities available at the Airport include electricity, phone service, and water.	No. If new facilities were to be constructed to support a UAV system, utilities would need to be extended. However, such extensions would occur on previously disturbed areas within the airport.
Roadways & Traffic	The Las Cruces International Airport is located west of Las Cruces, just north of Interstate 10. It is accessible via Crawford Boulevard from Exit 132.	No. Roadways and traffic support are present and sufficient for a potential UAV program. Deployment and operation of a UAV system would potentially increase vehicle traffic in and around the airport. Analysis would be required prior to construction but is not necessary for the purpose of this document.
Hazardous Materials	Hazardous materials, fuel spill, fire and other emergency services and procedures are in place at the Las Cruces International Airport.	No. Hazardous materials handling and emergency services of potential UAV systems would be in accord with the AMP and do not require

Resource	Description of Conditions	Needs Further Consideration
		further analysis.
Socioeconomics	Population: 74,267 Las Cruces, 174,682 Dona Ana County (U.S. Census Bureau 2000)	No. Deployment and operation of a UAV system would result in an addition of up to approximately (b) (7)(E) additional jobs to the region.
Environmental Justice	Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.	No. Deployment and operation of a UAV system would not displace or negatively impact minority populations disproportionately.
Cumulative Impacts	Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7).	No. No cumulative impacts are noted.

4.13 Dona Ana County Airport at Santa Teresa

The Dona Ana County Airport at Santa Teresa is owned and operated by Dona Ana County, and supports general aviation and charter flights. It is located adjacent to an industrial park. There is one runway (runway 10/28) that is 8,500 feet long and 100 feet wide. The airfield is uncontrolled and open 24 hours a day. About 100 aircraft are based at the airport with an average of 100 operations per day. Plans identify significant expansion of the airport and services. The airport is also home of the War Eagles Air Museum.

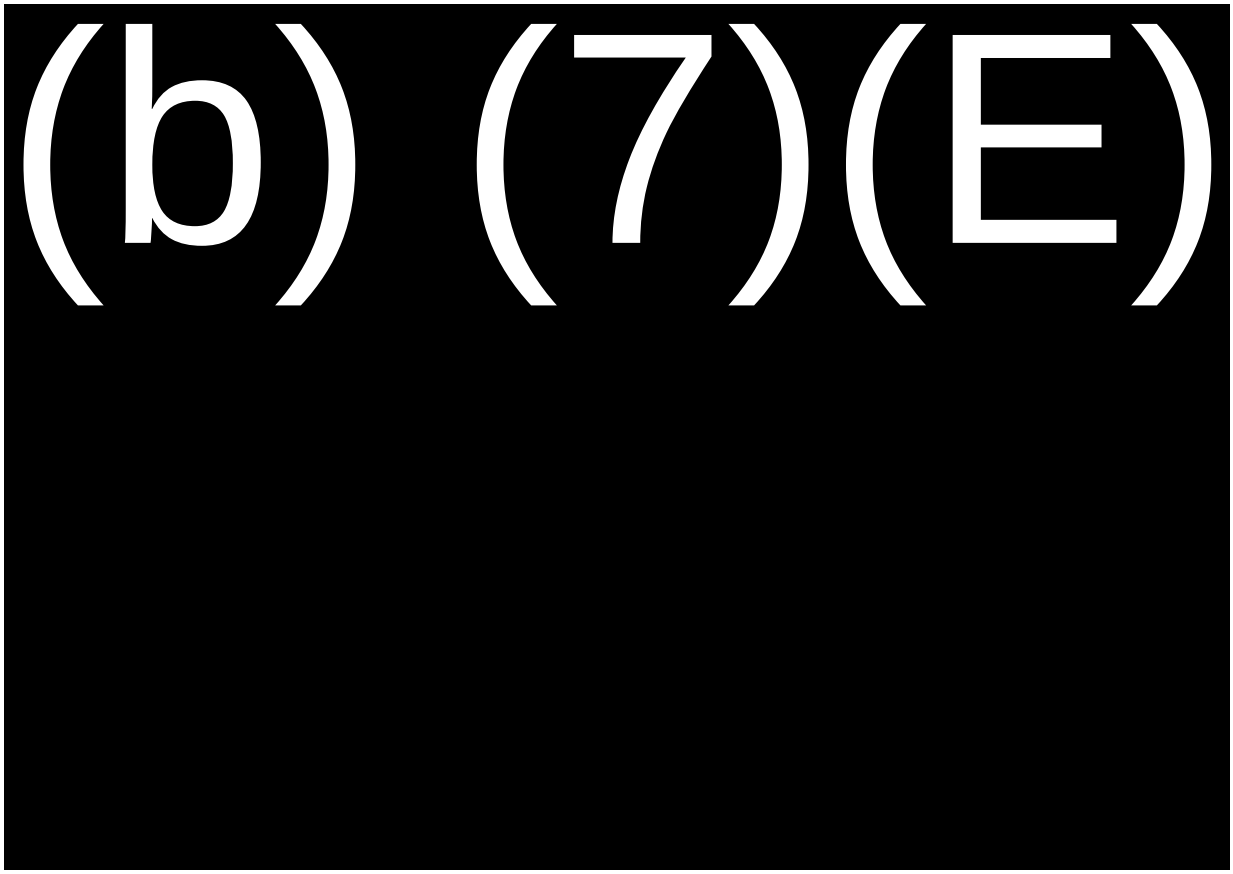


Figure 22 – Dona Ana County Airport at Santa Teresa. Source: New Mexico Resource Geographic Information System

The table below identifies key resource categories at Dona Ana County Airport and specifies whether there are substantive issues in each category that would merit additional analysis in this PEA.

Table 18 – Dona Ana County Airport Impact Matrix

Resource	Description of Conditions	Needs Further Consideration
Land Use	Dona Ana County Airport at Santa Teresa is owned and operated by Dona Ana County. The airport's AMP outlines considerable future development within the airport, such as addition and expansion of taxiways, hangars, and other airfield support services.	No. Any development that would be required to support a UAV system would be within the development outlined in the AMP.
Air Quality	Two areas near the airport have been classified as "nonattainment" by EPA for criteria pollutants. These include Sunland Park, a town approximately 5 miles southeast of the airport, which was classified as "marginal" for 1-hour ozone. Anthony, a town approximately 10 miles northeast of the airport is classified as moderate for PM_{10} pollutants. These ratings are attributable to sources "outside the borders of the United States."	No.
Geology / Soils	Soil types within the airport are suitable for development. The terrain of the airport is relatively flat. Developed areas provide adequate	No. Development

Resource	Description of Conditions	Needs Further Consideration
/ Topography	drainage of storm water.	associated with deployment of a UAV system would be in compliance with local building codes, and would include any mitigation required by jurisdictions regulating storm water drainage.
Water Resources	Water and wastewater are available on site at the airport.	No. Sufficient water and wastewater resources are available at the airport. However, lines would need to be extended if new facilities would be constructed. Environmental analysis would be required at that time.
Biological Resources	No listed (threatened or endangered) have been inventoried within the Dona Ana County Airport at Santa Teresa.	No. Impact to biological resources would be similar to those incurred by operation of other aircraft (occasional bird strike). No further analysis is warranted.
Floodplains	The Dona Ana County Airport at Santa Teresa is not within the 100 year floodplain.	No. Development associated with deployment of a UAV system within the airport would have no impact on flood plains. No further analysis is warranted.
Noise	The 55 DNL contour is wholly contained within the airport. This falls below noise requirement levels of 65 DNL.	No. Noise emissions from standard UAV platforms is similar to or less than other aircraft operated at Dona Ana County Airport at Santa Teresa Additionally, operations will generally occur during (b) (7)(E)

Resource	Description of Conditions	Needs Further Consideration
		General operations include (b) (7)(E) take-offs/landings per/day and do not include "touch and go" training typical of other aircraft. No further analysis is warranted.
Cultural & Archeological Resources	No cultural resources have been identified within the Dona Ana County Airport at Santa Teresa.	No. Any construction of facilities would require compliance with the NHPA and mitigation would be "upon discovery." No further analysis is warranted.
Utilities & Infrastructure	Utilities available at the Airport include electricity, phone service, and water.	No. If new facilities were to be constructed to support a UAV system, utilities would need to be extended. However, such extensions would occur on previously disturbed areas within the airport.
Roadways & Traffic	The Dona Ana County Airport at Santa Teresa is located northwest of El Paso, Texas, west of Interstate-10, just off Santa Teresa International Boulevard.	No. Roadways and traffic support are present and sufficient for a potential UAV program. Deployment and operation of a UAV system would potentially increase vehicle traffic in and around the airport. Analysis would be required prior to construction but is not necessary for the purpose of this document.
Hazardous Materials	Hazardous materials, fuel spill, fire and other emergency services and procedures are in place at the Dona Ana County Airport at Santa Teresa.	No. Hazardous materials handling and emergency services of potential UAV systems would be in

Resource	Description of Conditions	Needs Further Consideration
		accord with the AMP and do not require further analysis.
Socioeconomics	Population: 2,607 Santa Teresa, 174,682 Dona Ana County (U.S. Census Bureau 2000). Santa Teresa is part of the larger El Paso/Juarez metropolitan area.	No. Deployment and operation of a UAV system would result in an addition of up to approximately (b) (7)(E) additional jobs to the region.
Environmental Justice	Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.	No. Deployment and operation of a UAV system would not displace or negatively impact minority populations disproportionately.
Cumulative Impacts	Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7).	No. No cumulative impacts are noted.

5 Acronyms and Abbreviations

ACEC	Area of Critical Environmental Concern
ADEQ	Arizona Department of Environmental Quality
AGFD	Arizona Game and Fish Department
AGL	Above Ground Level
AMP	Airport Management Plan
AO	Area of Operations
BA	Biological Assessment
BDI	Bisbee-Douglas International Airport
BLM	Bureau of Land Management
BMGR	Barry M. Goldwater Range
BO	Biological Opinion
CAA	Clean Air Act
CANAMEX	The CANAMEX Trade Corridor as defined by Congress in the 1995 National Highway Systems Designation Act
CBP	Customs and Border Protection
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CWA	Clean Water Act
dBA	A-Weighted Decible
DHS	Department of Homeland Security
DMA	Douglas Municipal Airport
DNL	Day-Night Average Sound Level
DoD	Department of Defense
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FBO	Fixed Base Operator
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
FTE	Full time equivalent
GIS	Geographic Information System
INRMP	Integrated Natural Resource Management Plan
INS	Immigration & Naturalization Service
JTF-6	Joint Task Force - 6
LAAF	Libby Army Air Field
L_{max}	Maximum Loudness
MALE	Medium Altitude Long Endurance
MBTA	Migratory Bird Treaty Act
MOU	Memoranda of Understanding
MSL	Mean Sea Level
NAFTA	North American Free Trade Agreement

NAGPRA	Native American Graves Protection and Repatriation Act
NCA	National Conservation Area
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NIA	Nogales International Airport
nm	Nautical Mile
NMGFD	New Mexico Game and Fish Department
NMRPTC	New Mexico Rare Plant Technical Council
NOA	Notice of Availability
NOI	Notice of Intent
NRHP	National Register of Historic Places
NTSB	National Transportation Safety Board
OBP	Office of Border Patrol
OSI	Organizational Strategies, Inc.
PAC	Protective Activity Center
PEA	Programmatic Environmental Assessment
PEIS	Programmatic Environmental Impact Statement
PM_{10}	Particulate matter less than 20 microns
RCRA	Resource Conservation and Recovery Act
SHPO	State Historic Preservation Officer
T&E	Threatened and Endangered
THPO	Tribal Historic Preservation Officer
UAV	Unmanned Aerial Vehicle
UDA	Undocumented Alien
U.S.	United States
USAG	United States Army Garrison
USC	United State Code
USFS	U.S. Forest Service
USFWS	United States Fish and Wildlife Service
WSA	Wilderness Study Area
YMCAS	Yuma Marine Corps Air Station

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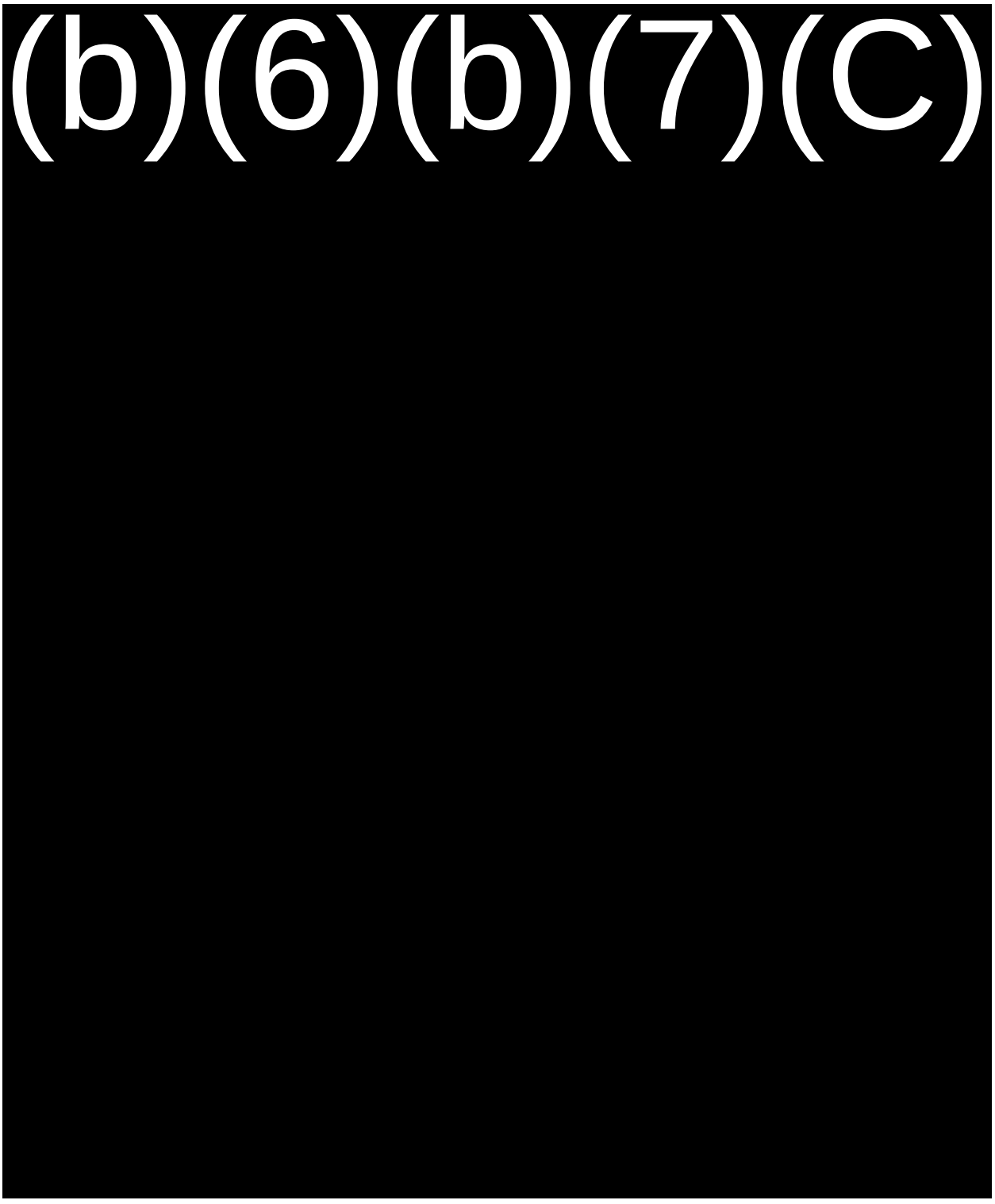
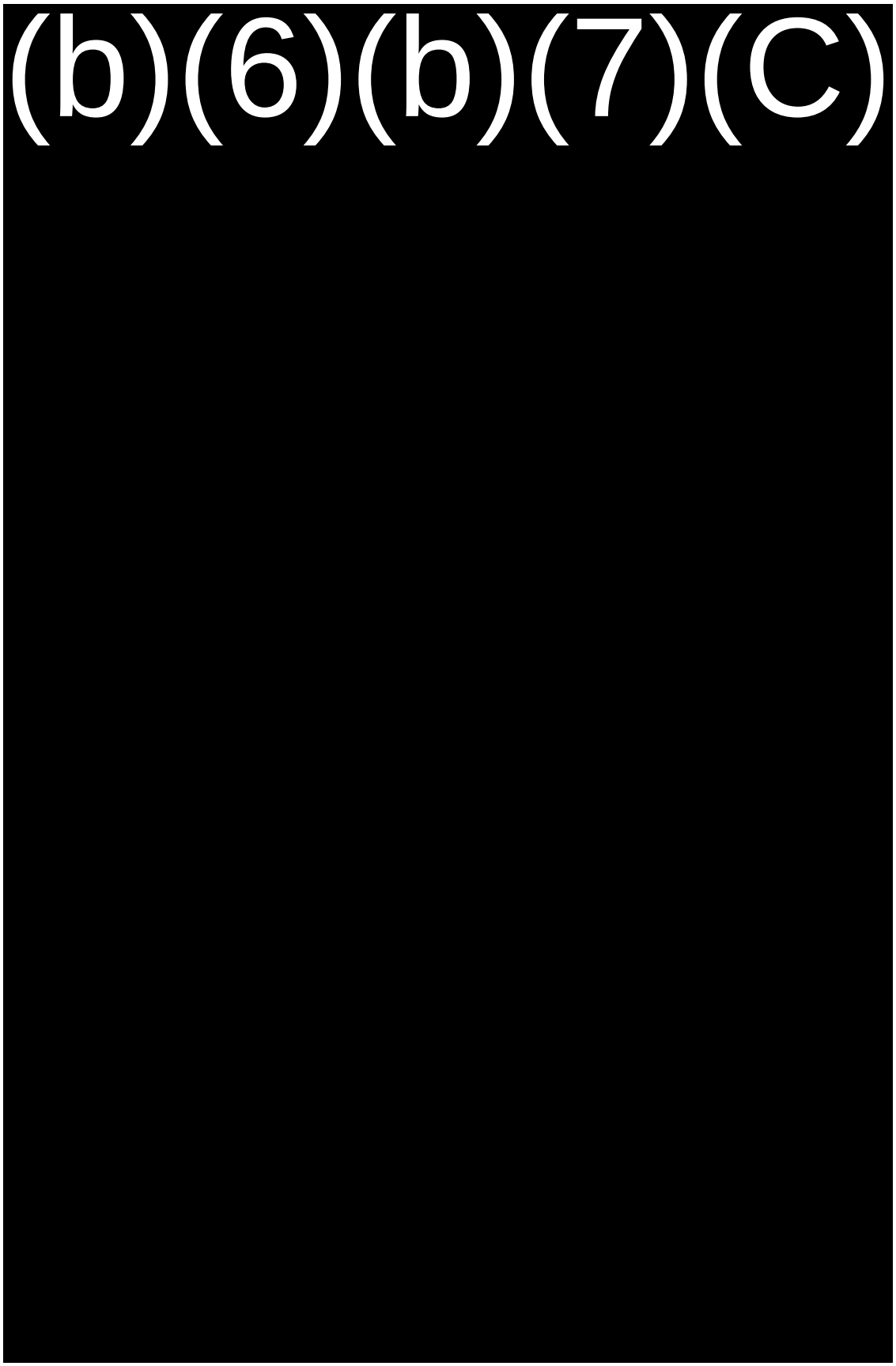
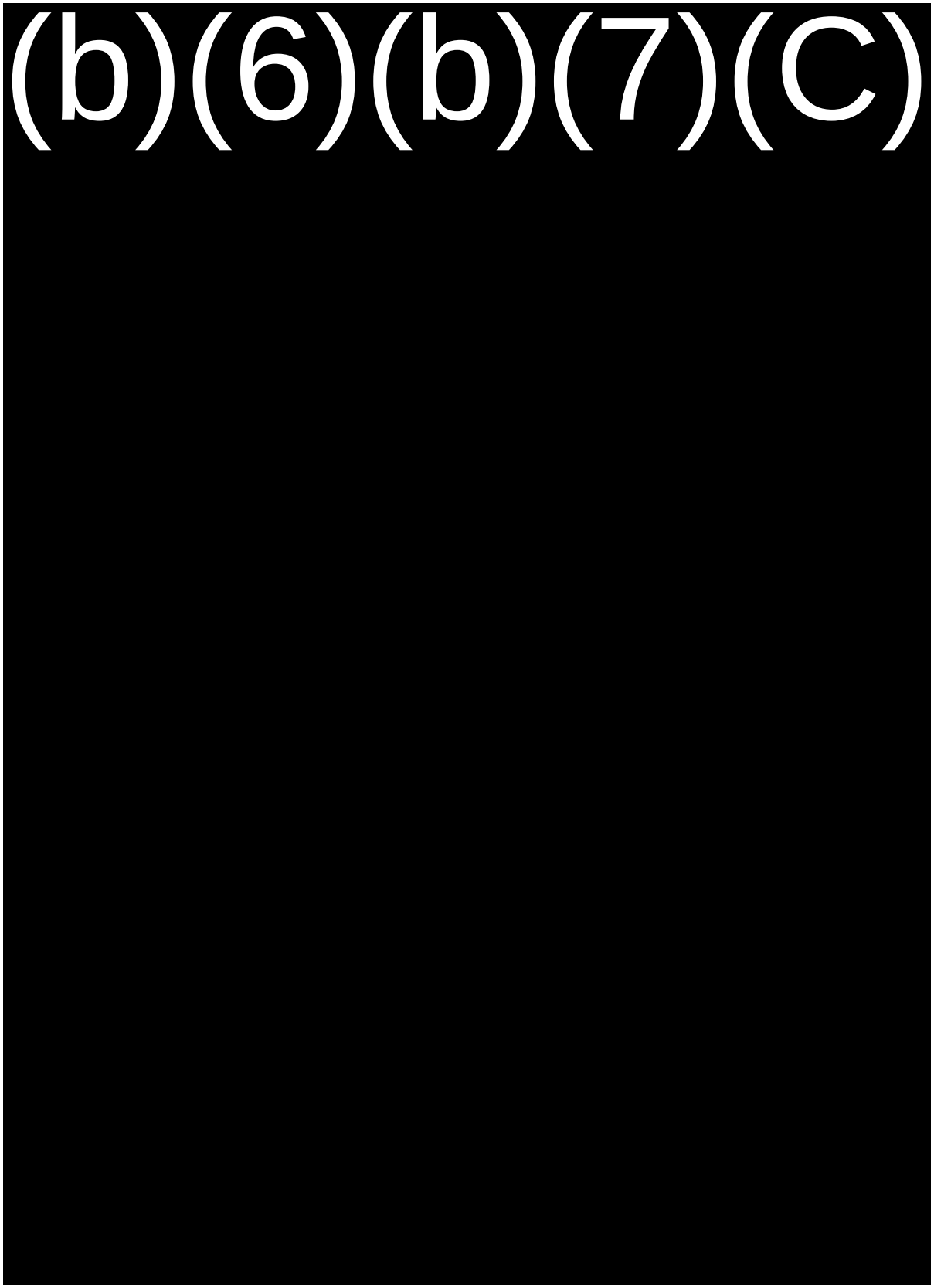
7 List of Preparers

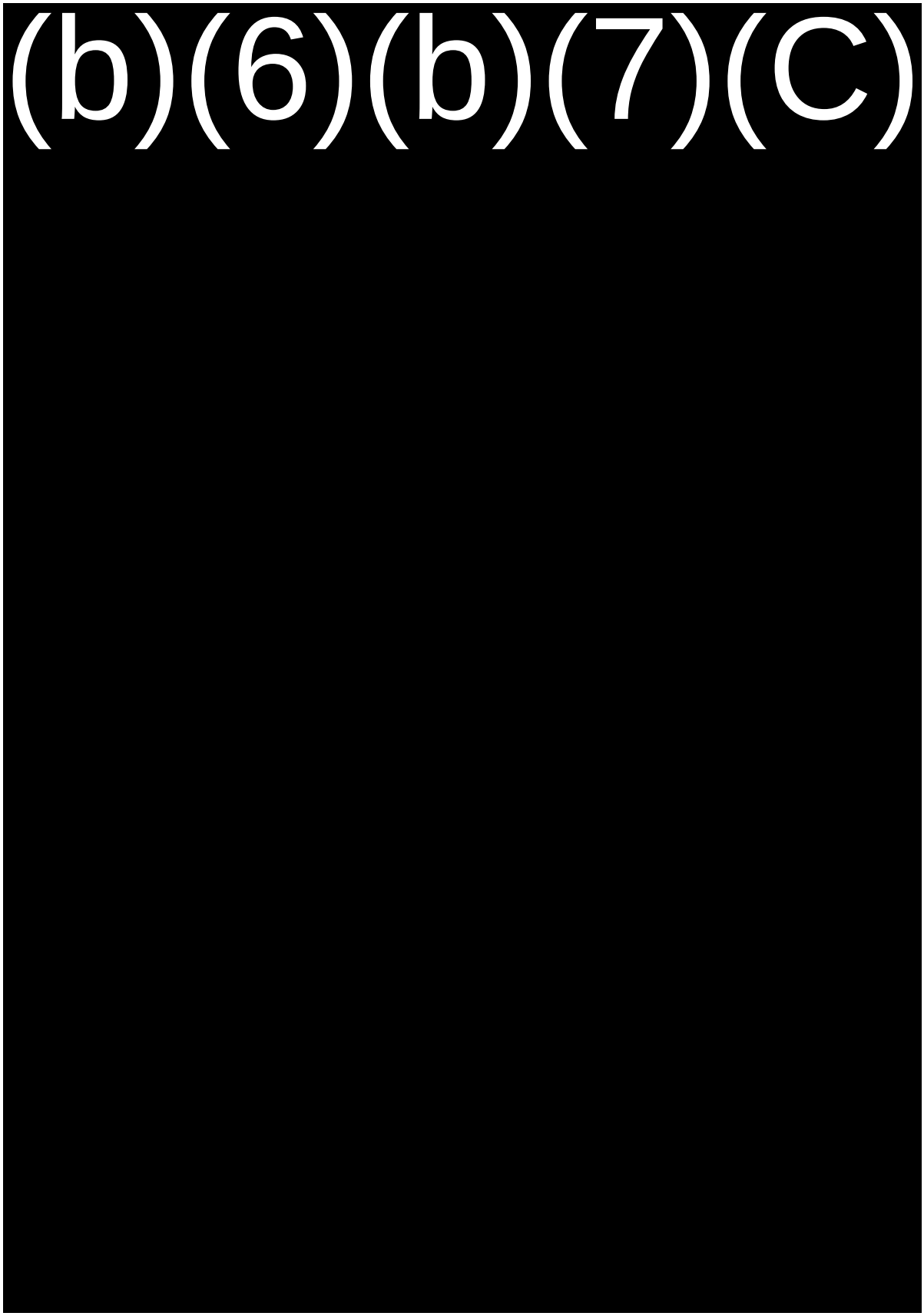
Name	Discipline/Expertise	Experience	Role
(b)(6)(b)(7)(C)	Environmental Planning/Natural Resources	10 years in NEPA and related studies	Environmental Analyst
	Environmental Planning/NEPA Analyst	12 Years in NEPA and related studies	Impact Analysis, and PEA technical review
	Policy Analyst, Environmental Planner and Analyst	11 years of NEPA, policy and planning experience	Environmental Analyst
	Natural resource analysis	15 years of natural resource, wildlife, and land use planning. 22 years meteorological experience	GIS analysis and mapping of potential impacts to wildlife and ecosystems.
	Chemistry, Licensed Environmental Health Scientist	11 years of experience in environmental science	Technical Review and Editing

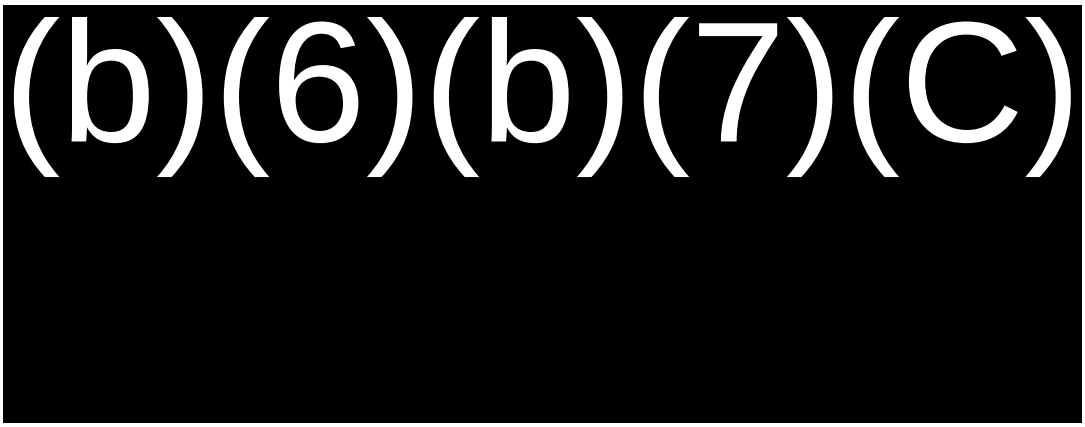
8 Persons Contacted



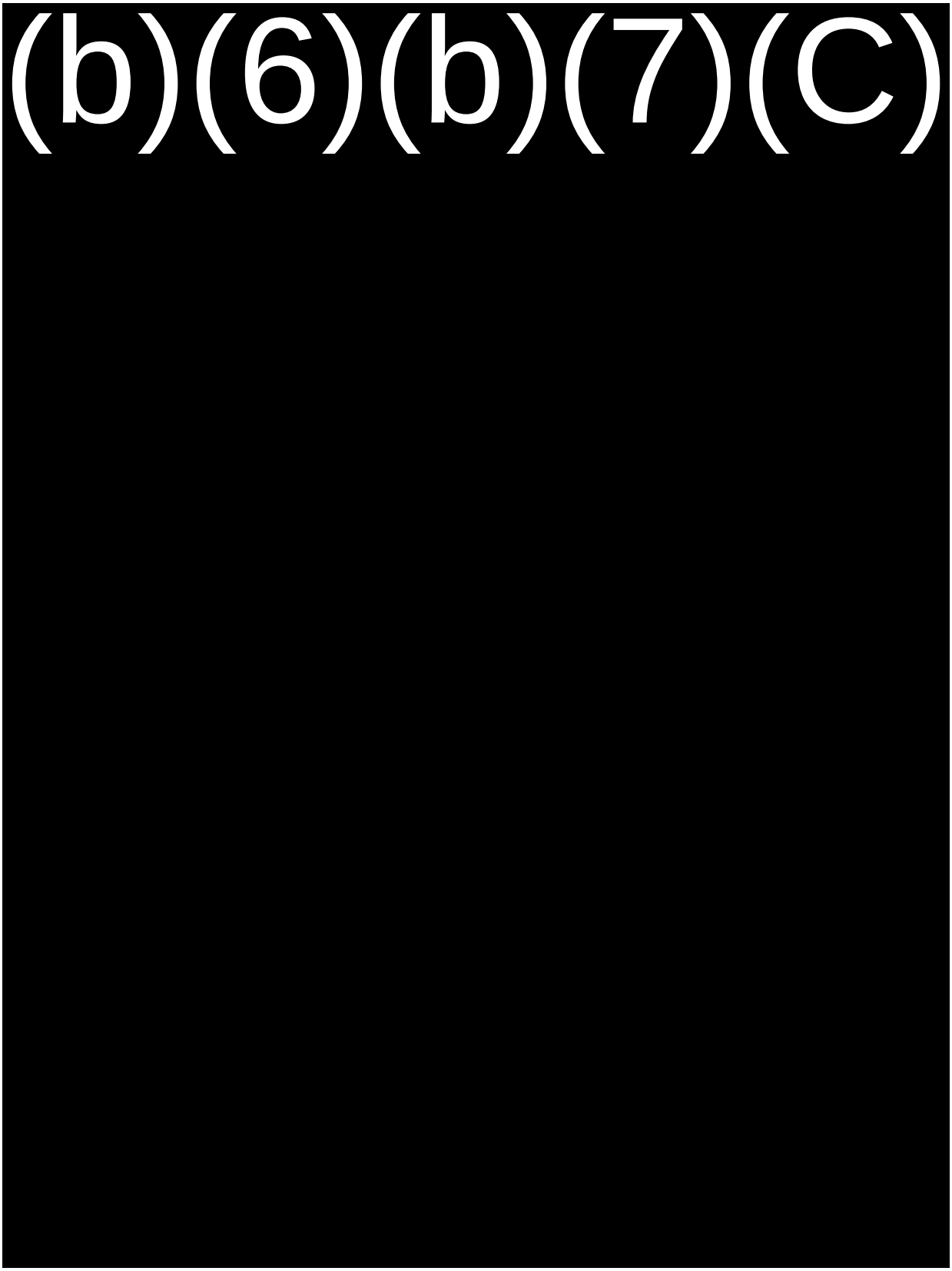


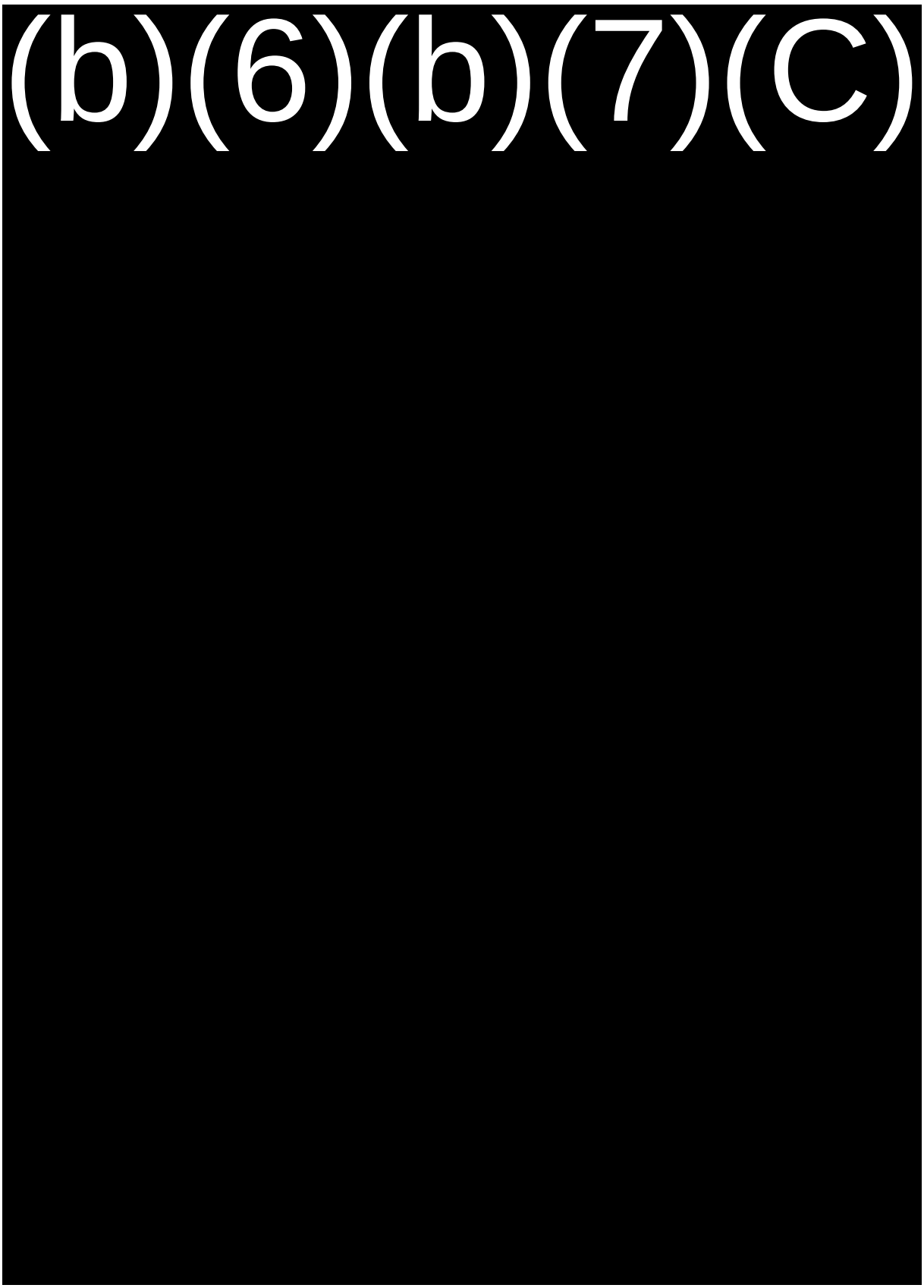


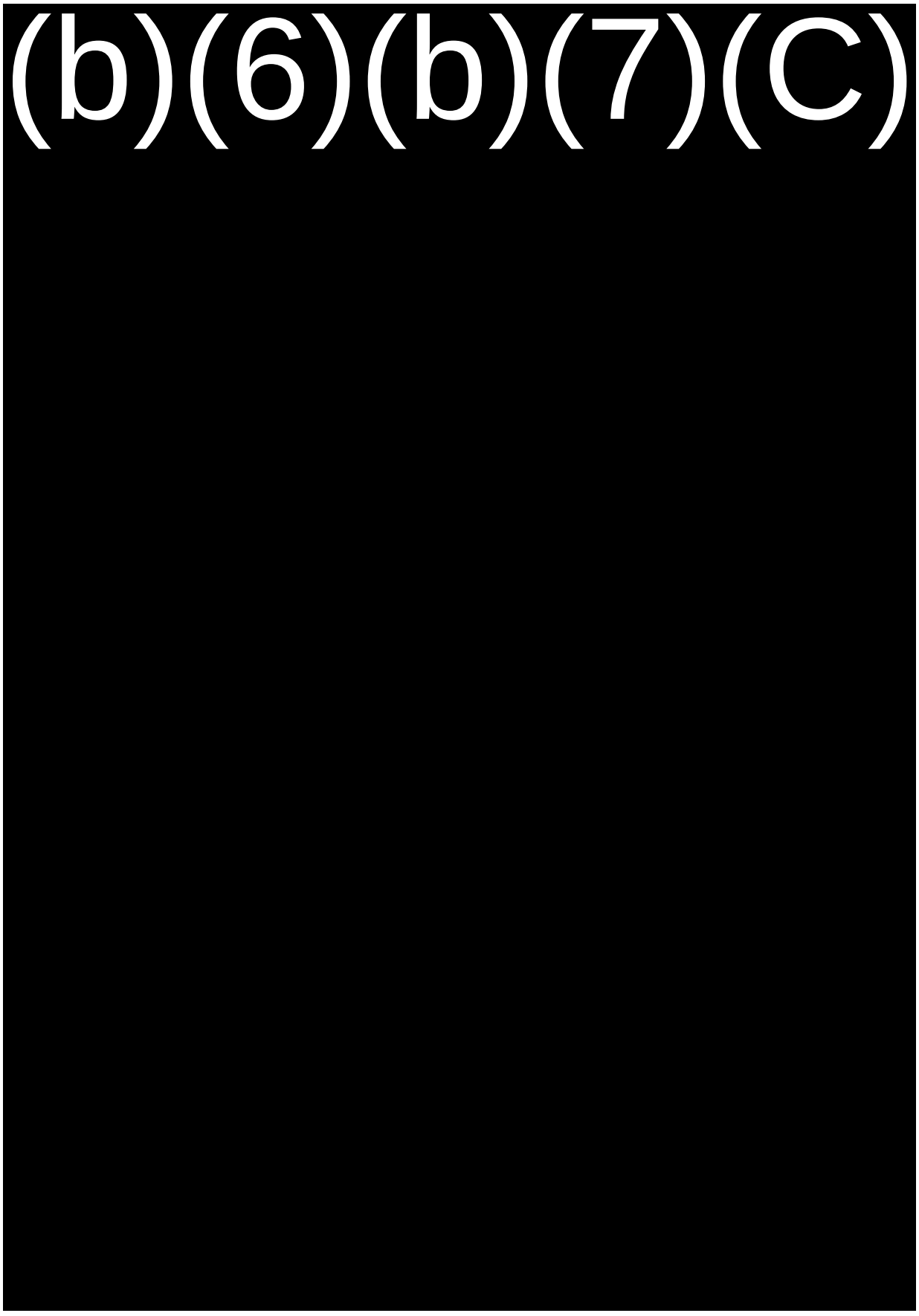


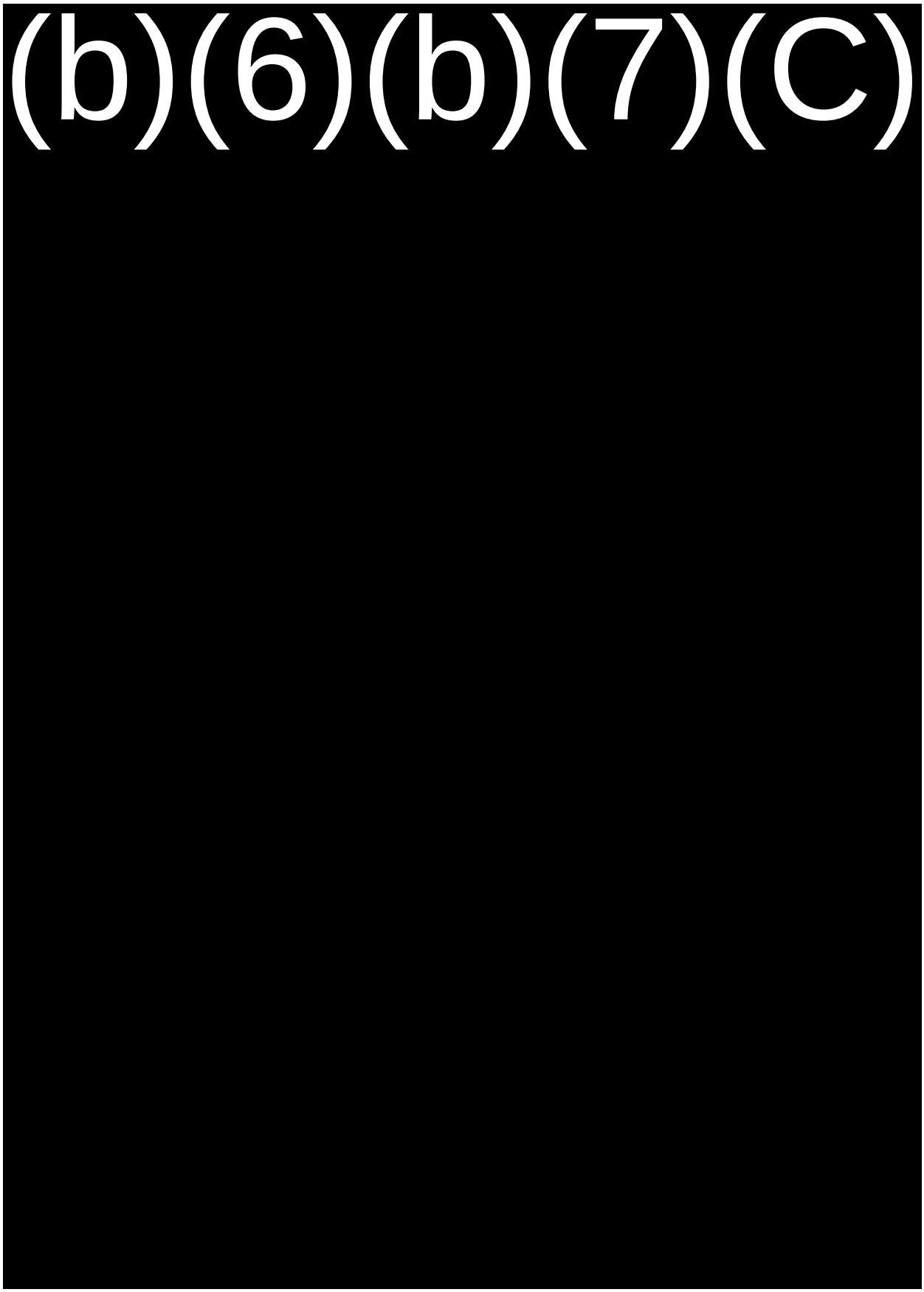


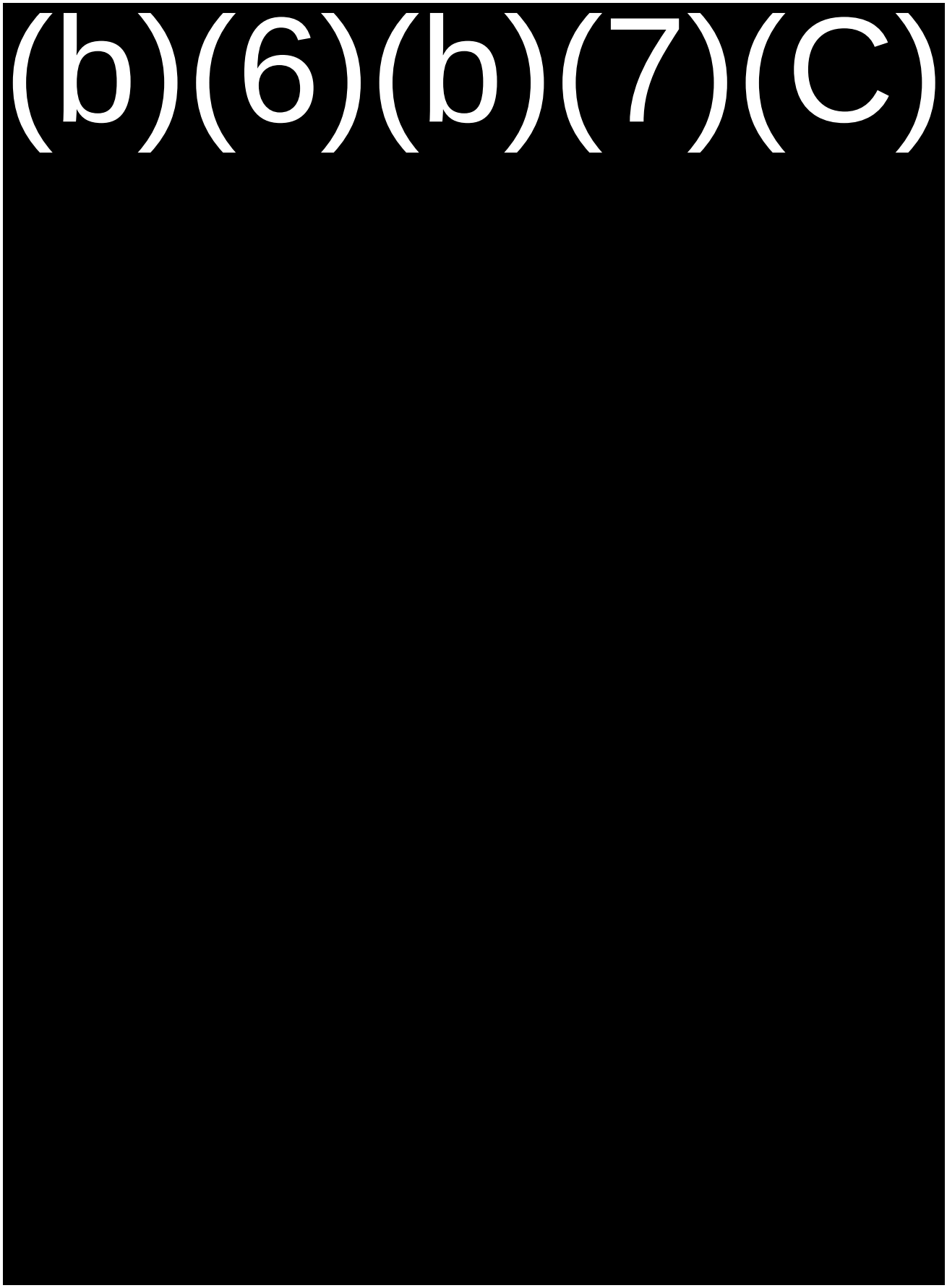
9 Distribution List

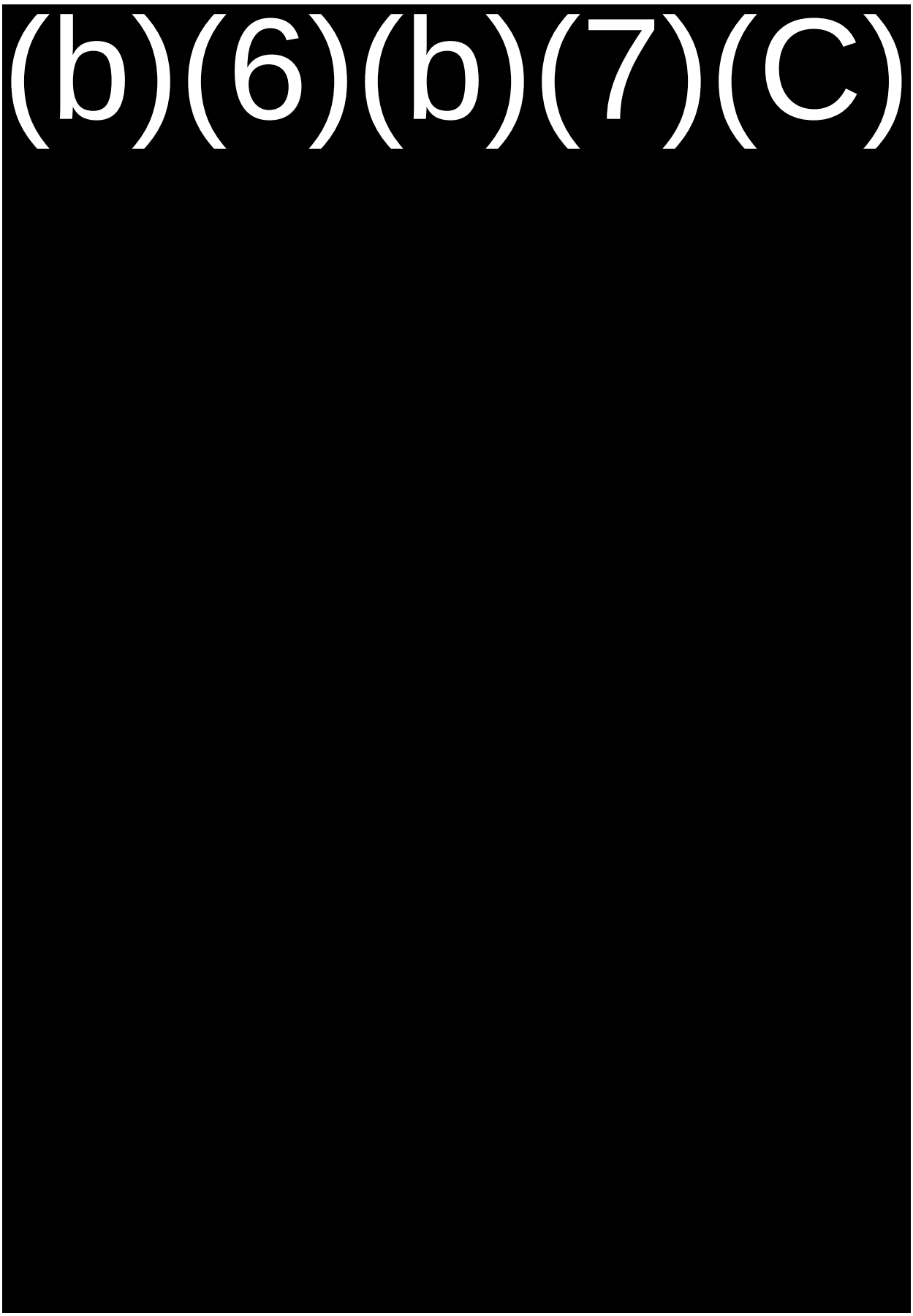


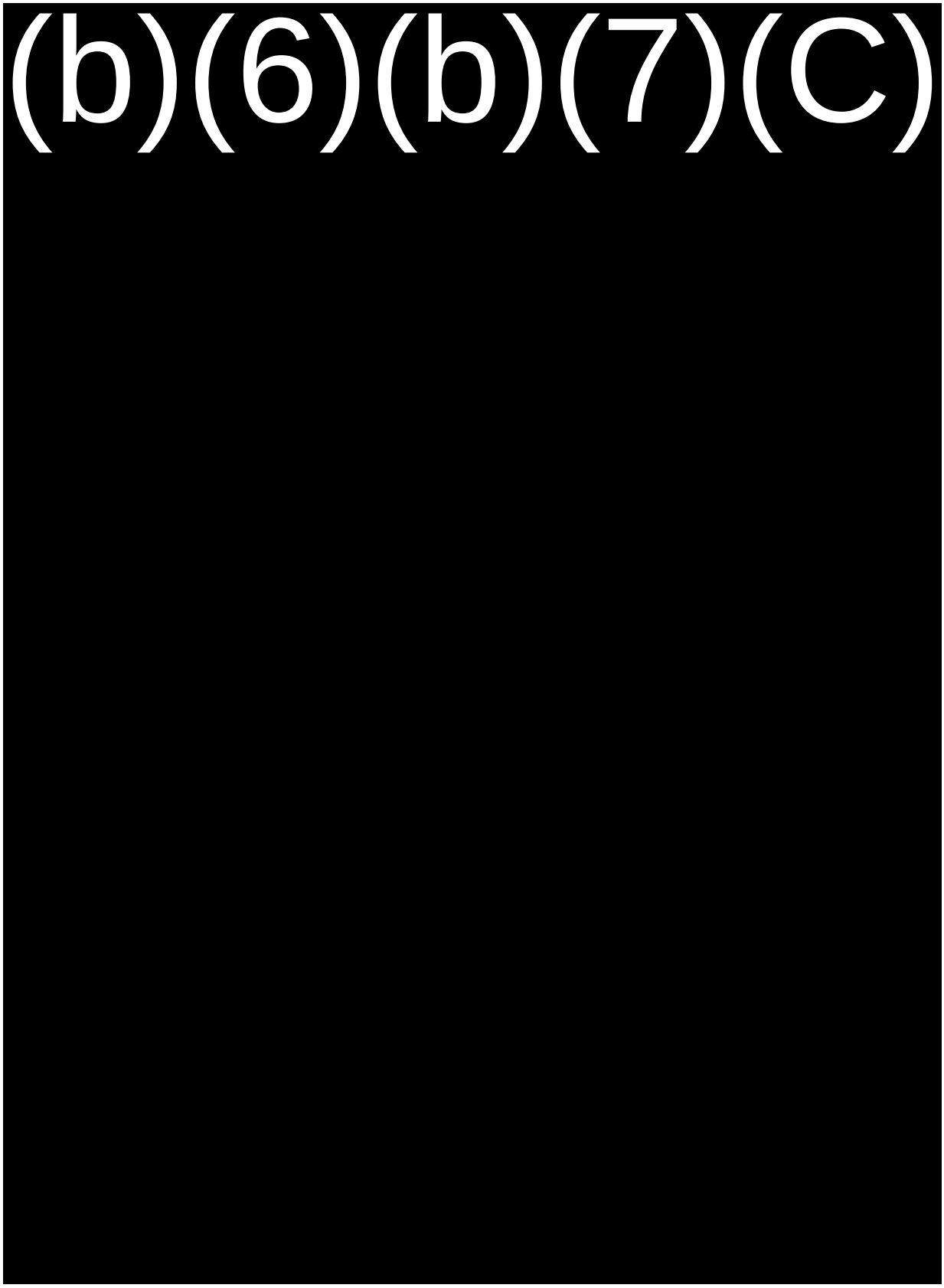


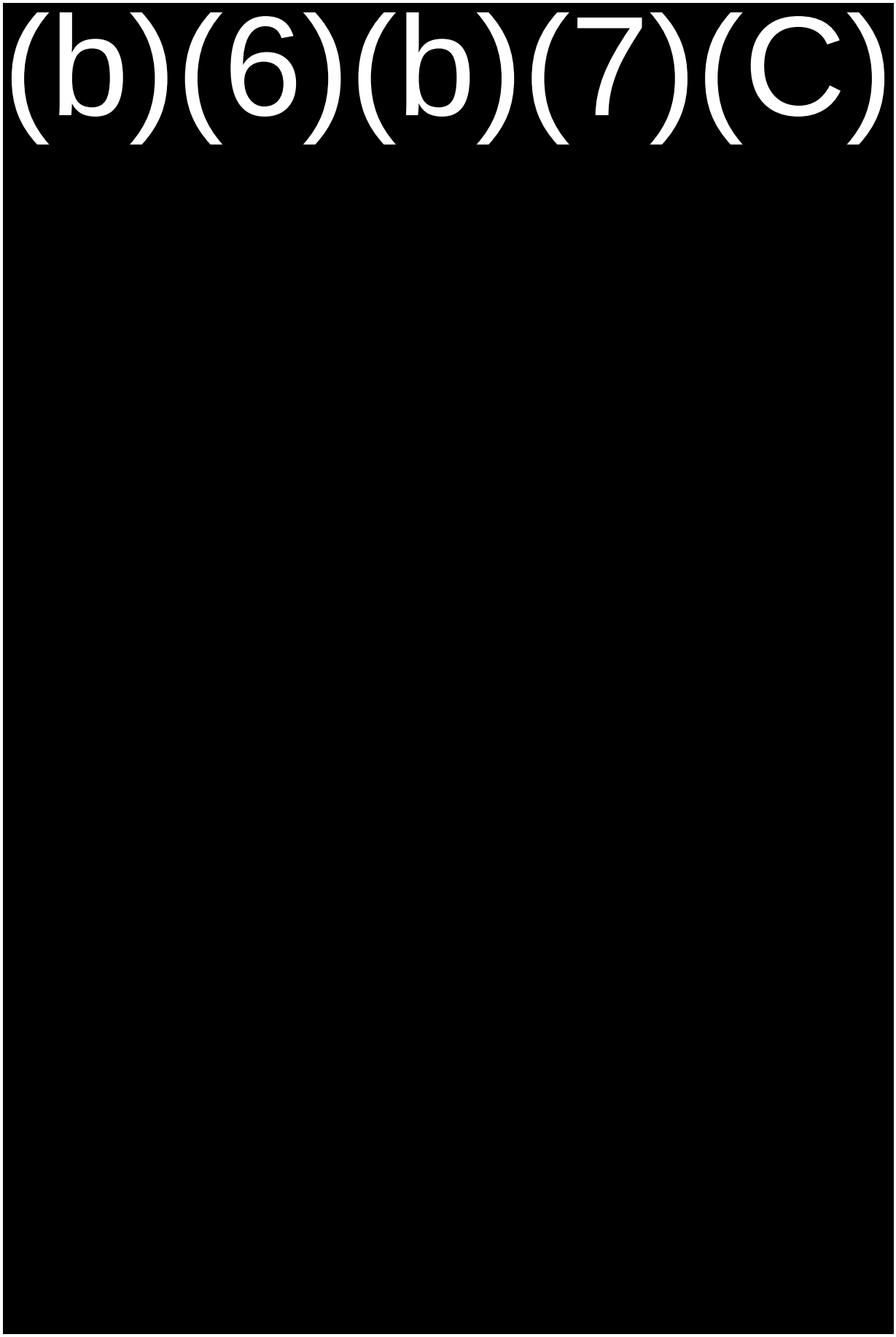


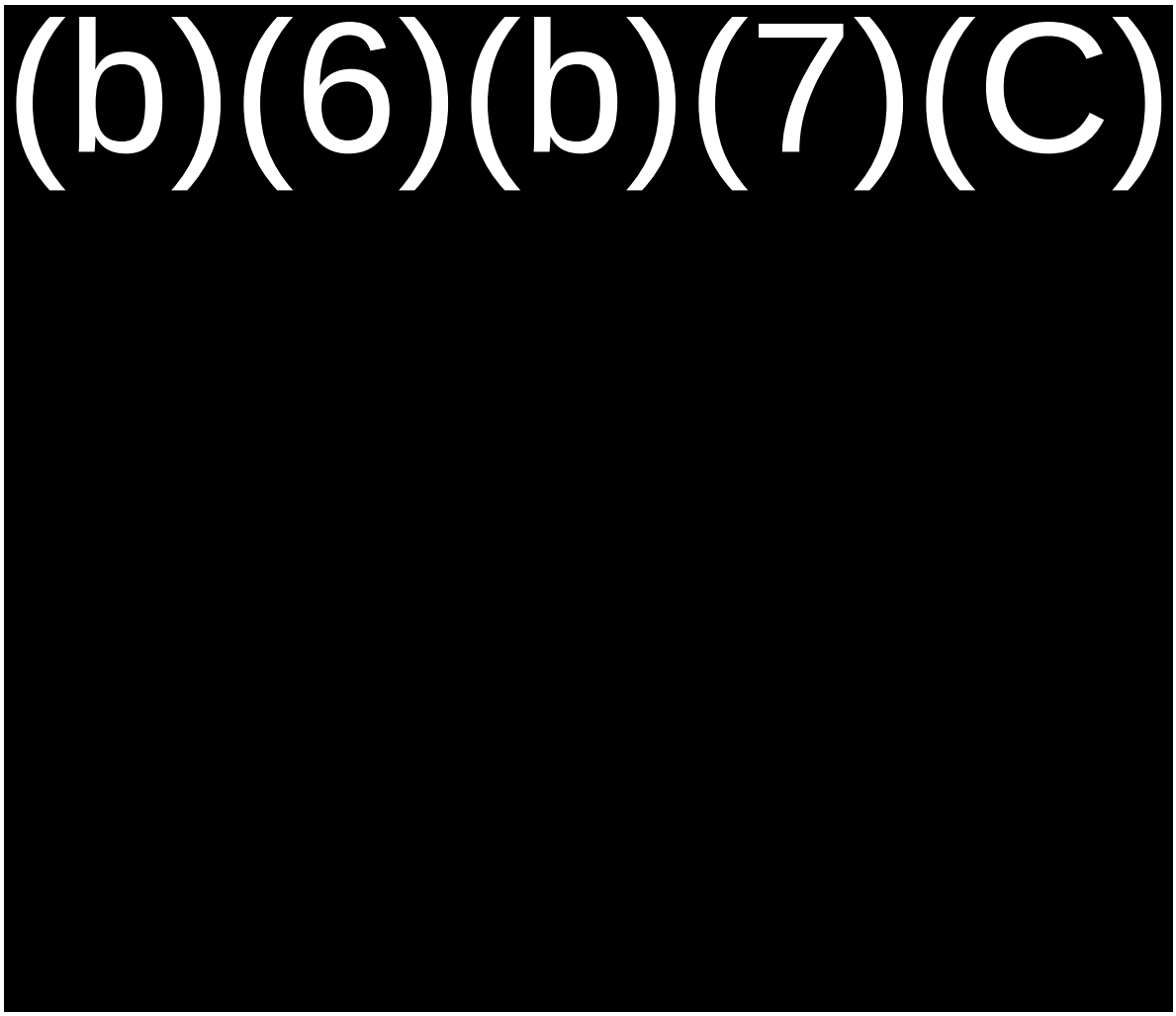






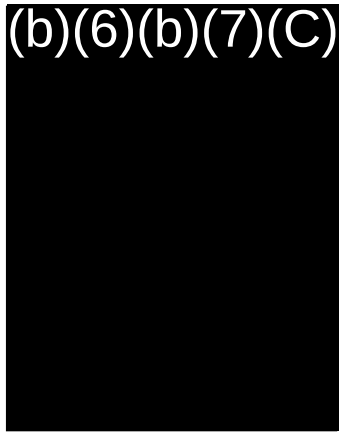






Appendix A – Correspondence

Bureau of Indian Affairs regional offices that received the consultation letter on the following page:



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERSS
P.O. BOX 17300, 819 TAYLOR STREET
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF

May 13, 2005

Planning, Environmental and Regulatory Division

Subject: U.S. Customs and Border Protection (CBP), Office of Border Patrol (OBP), proposed action: Supplemental Environmental Assessment (SEA): Basing and Operation of Unmanned Aerial Vehicles (UAV) along the US-Mexico Border, in the States of Arizona and New Mexico.

Bureau of Indian Affairs

Dear

On behalf of the Department of Homeland Security, Office of U.S. Customs and Border Protection (CBP), the Fort Worth District, U.S. Army Corps of Engineers is notifying you of the proposed project noted above. In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, the CBP wishes to continue its consultation process with appropriate, federally-recognized tribes who historically used this region and/or continue to use the area. We welcome your comments on this undertaking and look forward to hearing any concerns you may have regarding known sacred sites or other traditional cultural properties within the proposed project area.

CBP intends to develop an initial operational capability for Unmanned Aerial Vehicles (UAV) systems along the U.S.-Mexico border and base the systems at established airfields in Arizona and New Mexico. The affected region consists of the existing airfields and the international border within the states of Arizona and New Mexico, extending from the border inland 25 nautical miles inland. The UAV operations are proposed to take place 24 hours per day, 7days per week beginning in August, 2005.

CBP is preparing a Supplemental Environmental Assessment (SEA) for this proposed action and requests your comments early in this process, in order to identify and resolve issues of concern at the earliest possible time.

The purpose and need for the proposed action is to enhance the ability of CBP to detect and track illegal entrants within the affected area, especially in remote areas that are difficult to monitor or patrol. Illegal entrants are attracted to those areas where they might enter the U.S. undetected, possibly to smuggle narcotics, contraband or weapons of mass destruction. UAVs will reach, in a timely manner, remote locations where illegal activity may be occurring, and in so doing improve border security by detecting and tracking illegal activity and enabling CBP to respond.

UAV demonstrations conducted at Fort Huachuca, Arizona in 2003 and a pilot program called Operation Skywatch conducted in 2004 clearly demonstrated that UAV systems are an effective compliment to CBP ground and air assets. UAV systems are not intended to replace assets, but rather to enhance the ability of CBP to detect and track illegal entrants crossing U.S. borders.

Although CBP has not selected a specific UAV system at this time, it is known that each UAV will have a normal operational altitude of at least (b) (7)(E) above ground level in order to satisfy certain operational and Federal Aviation Administration requirements. Noise, as perceived from the ground, is not expected to be significant at the operating flight altitude.

Ground activities related to the proposed project will be limited to within the perimeters of existing airports. The airports are characterized by development such as hangars, runways, taxiways and administration buildings. UAV operations are consistent with the airports' master plans and community land use plans within the vicinities of the airports.

At this time, construction activities are not anticipated and are not part of the proposed action. However, construction activities could eventually be proposed within the boundaries of an airfield if utilities, hangar space or administrative space are required. Additionally, construction to support communications may be proposed later. If construction is proposed in the future, then all required NHPA Section 106 consultation and National Environmental Policy Act planning and coordination will be accomplished at that time.

Once the draft EA is complete, a copy will be forwarded to you for your review and comment. Please direct questions, or responses at your earliest convenience to (b)(6)(b)(7)(C)
(b)(6)(b)(7)(C)

Sincerely,

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

Enclosures
1. Map of the Affected Area
2. List of Airfields where UAV Systems could be based

ORGANIZATIONAL STRATEGIES, INC.
1436 South Legend Hill Drive, Suite ~~185~~ 140
Clearfield, UT 84015
Phone: (801) 773-6278
Fax: (801) 525-1175
~~1-866-OSI-UTAH (874-8824)~~

May 20, 2005

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

Subject: US Customs and Border Protection, Office of Border Patrol (CBP), proposed action: Operation of Unmanned Aerial Vehicles along the US-Mexico Border, in the States of Arizona and New Mexico.

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

OSI, acting on behalf of the US Customs and Border Protection, Office of Border Patrol (CBP) is initiating the consultation process with your office regarding the proposed project noted above.

CBP intends to initiate an initial operating capability for Unmanned Aerial Vehicles (UAV) systems along the US-Mexico border and base the systems at established airfields in Arizona and New Mexico. The affected region consists of the existing airfields and the international border within the states of Arizona and New Mexico, extending from the border to 25 nautical miles inland to the US. The UAV operations are proposed to take place on a permanent basis beginning in August, 2005. A map showing the affected area and airfield locations is enclosed, along with a listing of the specific airfields.

The purpose and need for the proposed action is to enhance the ability of CBP to detect and track illegal entrants within the affected area, especially in remote areas that are difficult to monitor or patrol. Illegal entrants are attracted to those areas where they might enter the US undetected, possibly to smuggle narcotics, contraband or weapons of mass destruction. UAVs will reach, in a timely manner, remote locations where illegal activity may be occurring, and in so doing improve border security by detecting and tracking illegal activity and enabling CBP to respond.

UAV demonstrations, based out of Fort Huachuca, Arizona in 2003 and a pilot program called Operation Skywatch conducted in 2004 clearly demonstrated that UAV systems are an effective compliment to CBP ground and air assets. UAV systems are not intended to replace assets, but rather to enhance the ability of CBP to detect and track illegal entrants crossing the U.S. borders.

Although CBP has not selected a specific UAV system at this time, it is known that each UAV will have a normal operational altitude of at least (b) (7)(E) above ground level in order to satisfy certain operational and Federal Aviation Administration requirements. Noise, as perceived from the ground, is not expected to be significant at the operating flight altitude.

Ground activities related to the proposed project will be limited to within the perimeters of existing airports. The airports are characterized by development such as hangars, runways, taxiways and administration buildings. UAV operations are consistent with the airports' master plans and community land use plans within the vicinities of the airports.

At this time, construction activities are not anticipated and are not part of the proposed action. However, construction activities could eventually be proposed within the boundaries of an airfield if utilities, hangar space or administrative space are required. Additionally, construction to support communications may latter be proposed. If construction is proposed in the future, then all required National Environmental Policy Act planning and coordination will be accomplished at that time.

We are in the process of preparing an environmental assessment and respectfully requests that your comments on the proposed project as they relate to sensitive species and environments, cultural resources and land management policies within the affected region, under the responsibility of the Bureau of Land Management.

We request your comments early in this process, in order to identify and resolve issues of concern at the earliest possible time. Please direct questions, or responses at your earliest convenience to the undersigned.

Sincerely,

///signed///

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

Enclosures (2)
1. Map of the Affected Area
2. List of Airfields where UAV Systems will be Based

ORGANIZATIONAL STRATEGIES, INC.
1436 South Legend Hill Drive, Suite ~~185~~ 140
Clearfield, UT 84015
Phone: (801) 773-6278
Fax: (801) 525-1175
~~1-866-OSI-UTAH (674-8824)~~

May 20, 2005

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

Subject: US Customs and Border Protection, Office of Border Patrol (CBP), proposed action: Operation of Unmanned Aerial Vehicles along the US-Mexico Border, in the States of Arizona and New Mexico.

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

OSI, acting on behalf of the US Customs and Border Protection, Office of Border Patrol (CBP) is initiating the consultation process with your office regarding the proposed project noted above.

CBP intends to initiate an initial operating capability for Unmanned Aerial Vehicles (UAV) systems along the US-Mexico border and base the systems at established airfields in Arizona and New Mexico. The affected region consists of the existing airfields and the international border within the states of Arizona and New Mexico, extending from the border to 25 nautical miles inland to the US. The UAV operations are proposed to take place on a permanent basis beginning in August, 2005. A map showing the affected area and airfield locations is enclosed, along with a listing of the specific airfields.

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Although CBP has not selected a specific UAV system at this time, it is known that each UAV will have a normal operational altitude of at least (b)(7)(E) above ground level in order to satisfy certain operational and Federal Aviation Administration requirements. Noise, as perceived from the ground, is not expected to be significant at the operating flight altitude.

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We are in the process of preparing an environmental assessment and respectfully requests that your comments on the proposed project as they relate to sensitive species and environments, cultural resources and land management policies within the affected region, under the responsibility of the Bureau of Land Management.

We request your comments early in this process, in order to identify and resolve issues of concern at the earliest possible time. Please direct questions, or responses at your earliest convenience to the undersigned.

Sincerely,

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

Enclosures (2)
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1436 South Legend Hill Drive, Suite ~~105~~ 140
Clearfield, UT 84015
Phone: (801) 773-6278
Fax: (801) 525-1175
~~1-866-OSI-UTAH (674-8824)~~

May 5, 2005

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

Subject: US Customs and Border Protection, Office of Border Patrol (CBP), proposed action: Operation of Unmanned Aerial Vehicles along the US-Mexico Border, in the States of Arizona and New Mexico.

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

OSI, acting on behalf of the US Customs and Border Protection, Office of Border Patrol (CBP), is initiating the consultation process with your office regarding the proposed project noted above. This letter serves as initiation of that process.

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The purpose and need for the proposed action is to enhance the ability of CBP to detect and track illegal entrants within the affected area, especially in remote areas that are difficult to monitor or patrol.

Portions of the Coronado National Forest lie within the affected area. Therefore, CBP requests your comments on the proposed project as they relate to sensitive species and environments, cultural resources and land management policies within the affected region, under the responsibility of the US Forest Service.

We are in the process of preparing an environmental assessment for the proposed action. A copy will be provided to you as soon as it is available. We request your comments early in this process, in order to identify and resolve issues of concern at the earliest possible time. Please direct questions, or responses at your earliest convenience to the undersigned.

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

Enclosures (2)
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2. List of Airfields where UAV Systems Could be Based

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May 5, 2005

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

Subject: US Customs and Border Protection, Office of Border Patrol (CBP), proposed action: Operation of Unmanned Aerial Vehicles along the US-Mexico Border, in the States of Arizona and New Mexico.

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

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2. List of Airfields where UAV Systems Could be Based

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~~1 866 OSI UTAH (674-8824)~~

May 5, 2005

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

Subject: US Customs and Border Protection, Office of Border Patrol (CBP), proposed action: Operation of Unmanned Aerial Vehicles along the US-Mexico Border, in the States of Arizona and New Mexico.

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

OSI has been designated by the US Customs and Border Protection, Office of Border Patrol (CBP) to initiate and coordinate the section 7 consultation process for the proposed action described above. This letter serves as initiation of that process.

CBP proposes to develop an initial operating capability for Unmanned Aerial Vehicles (UAV) systems along the US-Mexico border and base the systems at established airfields in New Mexico and Arizona. The affected region consists of the existing airfields and the international border within the states of Arizona and New Mexico, extending from the border to 25 nautical miles inland to the US. The UAV operations are proposed to take place 24 hours per day, 7days per week beginning in August, 2005. A map showing the affected area and airfield locations is enclosed, along with a listing of the specific airfields.

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We are in the process of preparing an environmental assessment and respectfully request that your agency review the enclosed species list for accuracy and completeness, and provide a list and description of the species within the project area that you believe may be affected by the proposed action. Any information that could be provided regarding potential or known presence of species, critical habitat, general habitat, descriptions, distribution, and status of these species within the project area would be greatly appreciated.

To better assess potential impacts to these species, we would like to present as much data in a GIS format as possible. Any GIS information or information sources that you could provide regarding current distribution of the above mentioned species would be helpful.

We request your comments early in this process, in order to identify and resolve issues of concern at the earliest possible time. Please direct questions, or responses at your earliest convenience to the undersigned.

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

Enclosures (8)
1. Map of the Affected Area
2. List of Airfields where UAV Systems will be Based
3. Topographic Map – Deming Municipal Airport and Vicinity
4. Topographic Map – Dona Ana County Airport at Santa Teresa and Vicinity
5. Topographic Map – Las Cruces International Airport and Vicinity
6. Topographic Map – Lordsburg Municipal Airport and Vicinity
7. Topographic Map – Playas and Vicinity
8. Species List: Cochise, Pima, Santa Cruz and Yuma, Arizona

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~~1-866-OSI-UTAH (674-8824)~~

May 5, 2005

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

Subject: US Customs and Border Protection, Office of Border Patrol (CBP), proposed action: Operation of Unmanned Aerial Vehicles along the US-Mexico Border, in the States of Arizona and New Mexico.

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

Enclosures (11)
1. Map of the Affected Area
2. List of Airfields where UAV Systems Could be Based
3. Topographic Map – Ajo Municipal Airport and Vicinity
4. Topographic Map – Bisbee Municipal Airport and Vicinity
5. Topographic Map – Bisbee Douglas International Airport and Vicinity
6. Topographic Map – Cochise College Airport
7. Topographic Map – Douglas Municipal Airport and Vicinity
8. Topographic Map – Libby Army Airfield and Vicinity
9. Topographic Map – Nogales International Airport and Vicinity
10. Topographic Map – Yuma Marine Corps Air Station/Yuma International Airport and Vicinity
11. Species List: Cochise, Pima, Santa Cruz and Yuma, Arizona

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1436 South Legend Hill Drive, Suite ~~105~~ 140
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Phone: (801) 773-6278
Fax: (801) 525-1175
~~1 866 OSI-UTAH (674-8824)~~

May 5, 2005

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

Subject: US Customs and Border Protection, Office of Border Patrol (CBP), proposed action: Operation of Unmanned Aerial Vehicles along the US-Mexico Border, in the States of Arizona and New Mexico.

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The purpose and need for the proposed action is to enhance the ability of CBP to detect and track illegal entrants within the affected area, especially in remote areas that are difficult to monitor or patrol.

Portions of the Buenos Aires National Wildlife Refuge (NWR)lie within the affected area. Therefore, CBP requests your comments on the proposed project as they relate to sensitive species and environments, cultural resources and land management policies within the affected region and under the responsibility of the Buenos Aires NWR.

We are in the process of preparing an environmental assessment (EA) for the proposed action. A copy will be provided to you as soon as it is available. If you do not wish receive a copy of the EA, please notify us.

We request your comments early in this process, in order to identify and resolve issues of concern at the earliest possible time. Please direct questions, or responses at your earliest convenience to the undersigned.

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

Enclosure (2)
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Phone: (801) 773-6278
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~~1-866-OSI-UTAH (674-8824)~~

May 5, 2005

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

Subject: US Customs and Border Protection, Office of Border Patrol (CBP), proposed action: Operation of Unmanned Aerial Vehicles along the US-Mexico Border, in the States of Arizona and New Mexico.

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The purpose and need for the proposed action is to enhance the ability of CBP to detect and track illegal entrants within the affected area, especially in remote areas that are difficult to monitor or patrol.

Portions of the Cabeza Prieta National Wildlife Refuge (NWR) lie within the affected area. Therefore, CBP requests your comments on the proposed project as they relate to sensitive species and environments, cultural resources and land management policies within the affected region and under the responsibility of the Cabeza Prieta NWR.

We are in the process of preparing an environmental assessment (EA) for the proposed action. A copy will be provided to you as soon as it is available. If you do not wish receive a copy of the EA, please notify us.

We request your comments early in this process, in order to identify and resolve issues of concern at the earliest possible time. Please direct questions, or responses at your earliest convenience to the undersigned.

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

Enclosure (2)
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2. List of Airfields where UAV Systems Could be Based

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May 5, 2005

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

Subject: US Customs and Border Protection, Office of Border Patrol (CBP), proposed action: Operation of Unmanned Aerial Vehicles along the US-Mexico Border, in the States of Arizona and New Mexico.

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

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Portions of the San Bernardino and Leslie Canyon Refuge lie within the affected area. Therefore, CBP requests your comments on the proposed project as they relate to sensitive species and environments, cultural resources and land management policies within the affected region and under the responsibility of your refuges.

We are in the process of preparing an environmental assessment (EA) for the proposed action. A copy will be provided to you as soon as it is available. If you do not wish receive a copy of the EA, please notify us.

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

Enclosure (2)
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May 5, 2005

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

Subject: US Customs and Border Protection, Office of Border Patrol (CBP), proposed action: Operation of Unmanned Aerial Vehicles along the US-Mexico Border, in the States of Arizona and New Mexico.

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Portions of the Saguaro National Park lie within the affected area. Therefore, CBP requests your comments on the proposed project as they relate to sensitive species and environments, cultural resources and land management policies within the affected region, under the responsibility of the National Park Service.

We are in the process of preparing an environmental assessment for the proposed action. A copy will be provided to you as soon as it is available. We request your comments early in this process, in order to identify and resolve issues of concern at the earliest possible time. Please direct questions, or responses at your earliest convenience to the undersigned.

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May 5, 2005

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

Subject: US Customs and Border Protection, Office of Border Patrol (CBP), proposed action: Operation of Unmanned Aerial Vehicles along the US-Mexico Border, in the States of Arizona and New Mexico.

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

OSI has been designated by the US Customs and Border Protection, Office of Border Patrol (CBP) to initiate and coordinate the consultation process for the proposed action described above. This letter serves as initiation of that process.

CBP intends to develop an initial operating capability for Unmanned Aerial Vehicles (UAV) systems along the US-Mexico border and base the systems at established airfields in New Mexico and Arizona. The affected region consists of the existing airfields and the international border within the states of Arizona and New Mexico, extending from the border to 25 nautical miles inland to the US. The UAV operations are proposed to take place 24 hours per day, 7days per week beginning in August, 2005. A map showing the affected area and airfield locations is enclosed, along with a listing of the specific airfields.

The purpose and need for the proposed action is to enhance the ability of CBP to detect and track illegal entrants within the affected area, especially in remote areas that are difficult to monitor or patrol. Illegal entrants are attracted to those areas where they might enter the US undetected, possibly to smuggle narcotics, contraband or weapons of mass destruction. UAVs will reach, in a timely manner, remote locations where illegal activity may be occurring, and in so doing improve border security by detecting and tracking illegal activity and enabling CBP to respond.

UAV demonstrations, based out of Fort Huachuca, Arizona in 2003 and a pilot program called Operation Skywatch conducted in 2004 clearly demonstrated that UAV systems are an effective compliment to CBP ground and air assets. UAV systems are not intended to replace assets, but rather to enhance the ability of CBP to detect and track illegal entrants crossing the U.S. borders.

Although CBP has not selected a specific UAV system at this time, it is known that each UAV will have a normal operational altitude of at least (b) (7)(E) above ground level in order to satisfy certain operational and Federal Aviation Administration requirements. Noise, as perceived from the ground, is not expected to be significant at the operating flight altitude.

Ground activities related to the proposed project will be limited to within the perimeters of existing airports. The airports are characterized by development such as hangars, runways, taxiways and administration buildings. UAV operations are consistent with the airports' master plans and community land use plans within the vicinities of the airports.

Portions of the Saguaro National Park lie within the affected area. Therefore, CBP requests your comments on the proposed project as they relate to sensitive species and environments, cultural resources and land management policies within the affected region, under the responsibility of the National Park Service.

We are in the process of preparing an environmental assessment for the proposed action. A copy will be provided to you as soon as it is available. We request your comments early in this process, in order to identify and resolve issues of concern at the earliest possible time. Please direct questions, or responses at your earliest convenience to the undersigned.

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

Enclosures (2)
1. Map of the Affected Area
2. List of Airfields where UAV Systems Could be Based

ORGANIZATIONAL STRATEGIES, INC.
1436 South Legend Hill Drive, Suite ~~105~~ 140
Clearfield, UT 84015
Phone: (801) 773-6278
Fax: (801) 525-1175
~~1-866-OSI-UTAH (674-8824)~~

May 5, 2005

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

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May 5, 2005

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United States Department of the Interior

NATIONAL PARK SERVICE
INTERMOUNTAIN REGION
12795 West Alameda Parkway
PO Box 25287
Denver, Colorado 80225-0287

June 22, 2005

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

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

Thank you for the opportunity to provide preliminary scoping comments on the U.S. Customs and Border Protection, Office of Border Patrol (CBP-BP) Environmental Assessment (EA) on the operation of Unmanned Aerial Vehicles (UAV) along the US-Mexico border. I agree detecting border violators before they reach our nation's border and enter National Park Service lands is vital and necessary. We also appreciate the opportunity to work collaboratively in this effort. I offer the following comments as preliminary ideas during the scoping period for the EA.

General Comments

1. The frequency, length, and timing of UAV flights are crucial factors for determining any potential environmental and visitor impacts on park units. It would be very helpful to me if you could provide this information in the EA.

2. Because of the altitude of the proposed flights, perhaps the most significant effect of the UAV would be on natural soundscapes. Again, it is difficult to assess what impacts the UAV flights might have on the natural and cultural resources we are charged with protecting without more information about the noise such flights will generate.

3. Any changes in CBP's on-the-ground activities in response to UAV operations are important to know because all ground activities cause direct and often permanant damage to natural and cultural resources. I understand not every contingency can be planned for, but I would appreciate the opportunity to work with you in the development of the EA to minimize the negative impacts such land travel will likely have on the parks.

4. I understand the UAV operational altitude is [redacted], above ground level. I am unclear if that is the operational flying altitude at all times or an average from some fixed point to another.

TAKE PRIDE IN AMERICA

Comments specific to Organ Pipe Cactus National Monument

I understand from the scoping letter that UAV's would maintain a normal above ground level (AGL) of (b) (7)(E) or greater. The proposed action could greatly reduce adverse impacts on the monument's resources, including the endangered Sonoran Pronghorn. We recommend that the [redacted] AGL be maintained throughout all areas of the monument, including mountainous areas to ensure minimum impact on park resources specific to these areas, such as, bighorn sheep, golden eagles, and prairie and peregrine falcons.

Comments specific to Coronado National Memorial

Frequent and lengthy flights over certain areas could negatively impact some wildlife species, especially if decibel levels are high. For example, the draft recovery plan for the federally threatened Mexican spotted owl suggests that restrictions be implemented during the breeding season if noise levels would exceed 45dBA more than twice an hour or for an extended period of time (> one hour) within 100 m of nesting sites or within the entire PACs (Protected Activity Center) if nesting sites are not known. The Memorial contains PACs there are located within the UAV flight zone. While the increased border vigilance is an important issue, so is our charge to protect species and other resources. I am confident one of those issues need not be exclusive of the other. It would be very helpful if you could please provide information on potential noise impacts resulting from UAV use.

Again, thank you for the opportunity to comment during the initial stages of the EA. The NPS understands and supports the goals you seek to achieve. I look forward to working collaboratively in reviewing and providing additional comment on the EA for this proposed action as more information becomes available.

Sincerely,

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

Indian tribes that were sent the consultation letters on the following page:

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

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

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERSS
P.O. BOX 17300, 819 TAYLOR STREET
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF

May 13, 2005

Planning, Environmental and Regulatory Division

Subject: U.S. Customs and Border Protection (CBP), Office of Border Patrol (OBP), proposed action: Supplemental Environmental Assessment (SEA): Basing and Operation of Unmanned Aerial Vehicles (UAV) along the US-Mexico Border, in the States of Arizona and New Mexico.

On behalf of the Department of Homeland Security, Office of U.S. Customs and Border Protection (CBP), the Fort Worth District, U.S. Army Corps of Engineers is notifying you of the proposed project noted above. In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, the CBP wishes to continue its consultation process with appropriate, federally-recognized tribes who historically used this region and/or continue to use the area. We welcome your comments on this undertaking and look forward to hearing any concerns you may have regarding known sacred sites or other traditional cultural properties within the proposed project area.

CBP intends to develop an initial operational capability for Unmanned Aerial Vehicles (UAV) systems along the U.S.-Mexico border and base the systems at established airfields in Arizona and New Mexico. The affected region consists of the existing airfields and the international border within the states of Arizona and New Mexico, extending from the border inland 25 nautical miles inland. The UAV operations are proposed to take place 24 hours per day, 7days per week beginning in August, 2005.

CBP is preparing a Supplemental Environmental Assessment (SEA) for this proposed action and requests your comments early in this process, in order to identify and resolve issues of concern at the earliest possible time.

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At this time, construction activities are not anticipated and are not part of the proposed action. However, construction activities could eventually be proposed within the boundaries of an airfield if utilities, hangar space or administrative space are required. Additionally, construction to support communications may be proposed later. If construction is proposed in the future, then all required NHPA Section 106 consultation and National Environmental Policy Act planning and coordination will be accomplished at that time.

Once the draft EA is complete, a copy will be forwarded to you for your review and comment. Please direct questions, or responses at your earliest convenience to (b)(6)(b)(7)(C)
(b)(6)(b)(7)(C)

Sincerely,

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

Enclosures
1. Map of the Affected Area
2. List of Airfields where UAV Systems could be based

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

Salt River Pima-Maricopa Indian Community
Community Development Department
Cultural & Environmental Services

June 6, 2005

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

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

The Salt River Pima-Maricopa Indian Community is in receipt of your letter, dated May 13, 2005, regarding the Customs and Border Protection, the Fort Worth District project. This project is within our ancestral territory, but through an agreement with the Four Southern Tribes (Salt River Pima-Maricopa Indian Community; Gila River Indian Community; Ak Chin Indian Community; and the Tohono O'odham Nation), we defer all consultation to the Tohono O'odham Nation. Thank you for providing us the opportunity to comment on this project. We look forward to consulting and commenting on future Department of the Army projects, pursuant to Section 106.

Sincerely,

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

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

COMANCHE TRIBE
NAGPRA

June 30, 2005

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

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

Thank you for your letter of May 16th regarding the US Customs and Border Protection, Office of Border Patrol using unmanned aerial vehicles along the US-Mexico boarder in the states of Arizona and New Mexico.

At this time, the Comanche Nation has no immediate concerns or issues regarding the project; however, please keep us informed of the project progress. We also would like to receive archaeological reports and findings for the project area.

If in the process of the project human remains or archaeological items are discovered, we request that you immediately cease the project work and notify us so that we may discuss appropriate disposition with you and the other Tribal Nations that may be affected by such discoveries.

We look forward to your reports as activities proceed.

Sincerely,

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

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May 5, 2005

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

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Dear (b) (7)(E)

OSI has been designated by the US Customs and Border Protection, Office of Border Patrol (CBP) to initiate and coordinate interagency consultations, with respect to the proposed action described above. We are in the process of gathering the most current information available regarding federally listed species that potentially occur within Cochise, Pima, Yuma and Santa Cruz counties of Arizona.

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We are in the process of preparing an environmental assessment and respectfully request that your agency provide a list and description of the native plants within the project area that you believe may be affected by the proposed action. Any information that could be provided regarding potential or known presence of species, critical habitat, general habitat, descriptions, distribution, and status of these species would be greatly appreciated.

We request your comments early in this process, in order to identify and resolve issues of concern at the earliest possible time. Please direct questions, or responses at your earliest convenience to the undersigned.

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

Enclosures (10)
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3. Topographic Map – Ajo Municipal Airport and Vicinity
4. Topographic Map – Bisbee Municipal Airport and Vicinity
5. Topographic Map – Bisbee Douglas International Airport and Vicinity
6. Topographic Map – Cochise College Airport
7. Topographic Map – Douglas Municipal Airport and Vicinity
8. Topographic Map – Libby Army Airfield and Vicinity
9. Topographic Map – Nogales International Airport and Vicinity
10. Topographic Map – Yuma Marine Corps Air Station/Yuma International Airport and Vicinity

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERSS
P.O. BOX 17300, 819 TAYLOR STREET
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF

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

In accordance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations, 36 CFR 800, the Fort Worth District of the U.S. Army Corps of Engineers, acting on behalf of the U.S. Customs and Border Protection (CBP), Office of Border Patrol (OBP), is initiating the consultation process with your office regarding the proposed project noted above.

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Once the draft EA is complete, a copy will be forwarded to you for your review and comment. Please direct questions, or responses at your earliest convenience to (b)(6)(b)(7)(C)
(b)(6)(b)(7)(C)

Sincerely,

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

Enclosures (10)
1. Map of the Affected Area
2. List of Airfields where UAV Systems Could be Based
3. Topographic Map – Ajo Municipal Airport and Vicinity
4. Topographic Map – Bisbee Municipal Airport and Vicinity
5. Topographic Map – Bisbee Douglas International Airport and Vicinity
6. Topographic Map – Cochise College Airport
7. Topographic Map – Douglas Municipal Airport and Vicinity
8. Topographic Map – Douglas Municipal Airport and Vicinity
9. Topographic Map – Nogales International Airport and Vicinity
10. Topographic Map – Yuma Marine Corps Air Station/Yuma International Airport and Vicinity

ORGANIZATIONAL STRATEGIES, INC.
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Phone: (801) 773-6278
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~~1 866 OSI UTAH (674-8824)~~

May 5, 2005

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

Subject: US Customs and Border Protection, Office of Border Patrol (CBP), proposed action: Operation of Unmanned Aerial Vehicles along the US-Mexico Border, in the States of Arizona and New Mexico.

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

OSI has been designated by the US Customs and Border Protection, Office of Border Patrol (CBP) to initiate and coordinate the consultation process for the proposed action described above. This letter serves as initiation of that process.

CBP intends to develop an initial operating capability for Unmanned Aerial Vehicles (UAV) systems along the US-Mexico border and base the systems at established airfields in New Mexico and Arizona. The affected region consists of the existing airfields and the international border within the states of Arizona and New Mexico, extending from the border to 25 nautical miles inland to the US. The UAV operations are proposed to take place 24 hours per day, 7days per week beginning in August, 2005. A map showing the affected area and airfield locations is enclosed, along with a listing of the specific airfields.

The purpose and need for the proposed action is to enhance the ability of CBP to detect and track illegal entrants within the affected area, especially in remote areas that are difficult to monitor or patrol. Illegal entrants are attracted to those areas where they might enter the US undetected, possibly to smuggle narcotics, contraband or weapons of mass destruction. UAVs will reach, in a timely manner, remote locations where illegal activity may be occurring, and in so doing improve border security by detecting and tracking illegal activity and enabling CBP to respond.

UAV demonstrations, based out of Fort Huachuca, Arizona in 2003 and a pilot program called Operation Skywatch conducted in 2004 clearly demonstrated that UAV systems are an effective compliment to CBP ground and air assets. UAV systems are not intended to replace assets, but rather to enhance the ability of CBP to detect and track illegal entrants crossing the U.S. borders.

Although CBP has not selected a specific UAV system at this time, it is known that each UAV will have a normal operational altitude of at least (b) (7)(E) above ground level in order to satisfy certain operational and Federal Aviation Administration requirements. Noise, as perceived from the ground, is not expected to be significant at the operating flight altitude.

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At this time, construction activities are not anticipated and are not part of the proposed action. However, construction activities could eventually be proposed within the boundaries of an airfield if utilities, hangar space or administrative space are required. Additionally, construction to support communications may latter be proposed. If construction is proposed in the future, then all required National Environmental Policy Act planning and coordination will be accomplished at that time.

We are in the process of preparing an environmental assessment and respectfully request that your agency provide a list and description of the species within the project area that you believe may be affected by the proposed action. Any information that could be provided regarding potential or known presence of species, critical habitat, general habitat, descriptions, distribution, and status of these species would be greatly appreciated.

We request your comments early in this process, in order to identify and resolve issues of concern at the earliest possible time. Please direct questions, or responses at your earliest convenience to the undersigned.

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

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8. Topographic Map – Libby Army Airfield and Vicinity
9. Topographic Map – Nogales International Airport and Vicinity
10. Topographic Map – Yuma Marine Corps Air Station/Yuma International Airport and Vicinity

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

GOVERNOR
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SUSAN E. CHILTON, ARIVACA
DIRECTOR
DUANE L. SHROUFE
DEPUTY DIRECTOR
STEVE K. FERRELL

May 17, 2005

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

Re: Special Status Species Information for **Bisbee Municipal Airport; Proposed US Customs and Border Protection.**

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

The Arizona Game and Fish Department (Department) has reviewed your request, dated May 5, 2005, regarding special status species information associated with the above-referenced project areas. The Department's Heritage Data Management System (HDMS) has been accessed and current records do not indicate the presence of any special status species in the project vicinity (3-mile radius). In addition this project does not occur in the vicinity of any Designated or Proposed Critical Habitats.

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

Making available this information does not substitute for the Department's review of project proposals, and should not decrease our opportunities to review and evaluate new project proposals and sites. The Department is also concerned about other resource values, such as other wildlife, including game species, and wildlife-related recreation. The Department would appreciate the opportunity to provide an evaluation of impacts to wildlife or wildlife habitats associated with project activities occurring in the subject area, when specific details become available.

If you have any questions regarding this letter, please contact me at (b)(6)(b)(7)(C) General status information and county distribution lists for special status species are also available on our web site at http://www.azgfd.gov/hdms, as well as species abstracts for some special status species.

Sincerely,

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

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

cc: (b)(6)(b)(7)(C)

AGFD # 05-10-05(01)b

Special Status Species within 3 Miles of Ajo Municipal Airport

NAME	COMMON NAME	ESA	USFS	BLM	STATE
Gopherus agassizil (Sonoran Population)	Sonoran Desert Tortoise	SC			WSC
Myotis velifer	Cave Myotis	SC		S	

No Critical Habitats in project area. AGFD # 05-10-05(01)a. Proposed US Customs and Border Protection.

Arizona Game and Fish Department, Heritage Data Management System, May 17, 2005.

Special Status Species within 3 Miles of Bisbee-Douglas International Airport

NAME	COMMON NAME	ESA	USFS	BLM	STATE
Phrynosoma cornutum	Texas Horned Lizard	SC		S	
Rana chiricahuensis	Chiricahua Leopard Frog	LT	S		WSC
Sistrurus catenatus edwardsii	Desert Massasauga		S		WSC

No Critical Habitats in project area. AGFD # 05-10-05(01)c. Proposed US Customs and Border Protection.

Arizona Game and Fish Department, Heritage Data Management System, May 17, 2005.

Special Status Species within 3 Miles of Cochise College Airfield

NAME	COMMON NAME	ESA	USFS	BLM	STATE
Rana chiricahuensis	Chiricahua Leopard Frog	LT	S		WSC

No Critical Habitats in project area. AGFD # 05-10-05(01)d. Proposed US Customs and Border Protection.

Arizona Game and Fish Department, Heritage Data Management System, May 17, 2005.

Special Status Species within 3 Miles of Douglas Municipal Airport

NAME	COMMON NAME	ESA	USFS	BLM	STATE
Eumops perotis californicus	Greater Western Bonneted Bat	SC			
Ibervillea tenuisecta	Texas Globe Berry			S	
Phrynosoma cornutum	Texas Horned Lizard	SC		S	

No Critical Habitats in project area. AGFD # 05-10-05(01)e. Proposed US Customs and Border Protection.

Arizona Game and Fish Department, Heritage Data Management System, May 17, 2005.

Special Status Species within 3 Miles of Libby Army Airfield

NAME	COMMON NAME	ESA	USFS	BLM	STATE
Choeronycteris mexicana	Mexican Long-tongued Bat	SC		S	WSC
Coccyzus americanus occidentalis	Western Yellow-billed Cuckoo	C	S		WSC
Euphorbia macropus	Woodland Spurge	SC			SR
Heterotheca rutteri	Huachuca Golden Aster	SC	S	S	
Leptonycteris curasoae yerbabuenae	Lesser Long-nosed Bat	LE	S		WSC
Myotis ciliolabrum	Western Small-footed Myotis	SC		S	
Myotis thysanodes	Fringed Myotis	SC		S	
Myotis velifer	Cave Myotis	SC		S	
Sistrurus catenatus edwardsii	Desert Massasauga		S		WSC
Thamnophis eques megalops	Northern Mexican Gartersnake	SC	S		WSC

No Critical Habitats in project area. AGFD # 05-10-05(01)f. Proposed US Customs and Border Protection.

Arizona Game and Fish Department, Heritage Data Management System, May 17, 2005.

Special Status Species within 3 Miles of Nogales International Airport

NAME	COMMON NAME	ESA	USFS	BLM	STATE
Amsonia grandiflora	Large-flowered Blue Star	SC	S		
Aspidoscelis burti stictogrammus	Giant Spotted Whiptail	SC	S	S	
Asturina nitida maxima	Northern Gray Hawk	SC	S	S	WSC
Coccyzus americanus occidentalis	Western Yellow-billed Cuckoo	C	S		WSC
Coryphantha scheeri var. robustispina	Pima Pineapple Cactus	LE			HS
Dendrocygna autumnalis	Black-bellied Whistling-Duck				WSC
Gopherus agassizil (Sonoran Population)	Sonoran Desert Tortoise	SC			WSC
Tyrannus melancholicus	Tropical Kingbird				WSC

No Critical Habitats in project area. AGFD # 05-10-05(01)g. Proposed US Customs and Border Protection.

Arizona Game and Fish Department, Heritage Data Management System, May 17, 2005.

Special Status Species within 3 Miles of Yuma Marine Corps Air Station/ Yuma International Airport

NAME	COMMON NAME	ESA	USFS	BLM	STATE
Ardea alba	Great Egret				WSC
Athene cunicularia hypugaea	Western Burrowing Owl	SC		S	
Egretta thula	Snowy Egret				WSC
Phrynosoma mcallii	Flat-tailed Horned Lizard	SC			WSC

No Critical Habitats in project area. AGFD # 05-10-05(01)h. Proposed US Customs and Border Protection.

Arizona Game and Fish Department, Heritage Data Management System, May 17, 2005.

GUIDELINES FOR HANDLING SONORAN DESERT TORTOISES
ENCOUNTERED ON DEVELOPMENT PROJECTS
Arizona Game and Fish Department
Revised January 17, 1997

The Arizona Game and Fish Department (Department) has developed the following guidelines to reduce potential impacts to desert tortoises, and to promote the continued existence of tortoises throughout the state. These guidelines apply to short-term and/or small-scale projects, depending on the number of affected tortoises and specific type of project.

Desert tortoises of the Sonoran population are those occurring south and east of the Colorado River. Tortoises encountered in the open should be moved out of harm's way to adjacent appropriate habitat. If an occupied burrow is determined to be in jeopardy of destruction, the tortoise should be relocated to the nearest appropriate alternate burrow or other appropriate shelter, as determined by a qualified biologist. Tortoises should be moved less than 48 hours in advance of the habitat disturbance so they do not return to the area in the interim. Tortoises should be moved quickly, kept in an upright position at all times and placed in the shade. Separate disposable gloves should be worn for each tortoise handled to avoid potential transfer of disease between tortoises. Tortoises must not be moved if the ambient air temperature exceeds 105 degrees Fahrenheit unless an alternate burrow is available or the tortoise is in imminent danger.

A tortoise may be moved up to two miles, but no further than necessary from its original location. If a release site, or alternate burrow, is unavailable within this distance, and ambient air temperature exceeds 105 degrees Fahrenheit, the Department should be contacted to place the tortoise into a Department-regulated desert tortoise adoption program. Tortoises salvaged from projects which result in substantial permanent habitat loss (e.g. housing and highway projects), or those requiring removal during long-term (longer than one week) construction projects, will also be placed in desert tortoise adoption programs. *Managers of projects likely to affect desert tortoises should obtain a scientific collecting permit from the Department to facilitate temporary possession of tortoises.* Likewise, if large numbers of tortoises (>5) are expected to be displaced by a project, the project manager should contact the Department for guidance and/or assistance.

Please keep in mind the following points:

- These guidelines do not apply to the Mohave population of desert tortoises (north and west of the Colorado River). Mohave desert tortoises are specifically protected under the Endangered Species Act, as administered by the U.S. Fish and Wildlife Service.
- These guidelines are subject to revision at the discretion of the Department. We recommend that the Department be contacted during the planning stages of any project that may affect desert tortoises.
- Take, possession, or harassment of wild desert tortoises is prohibited by state law. Unless specifically authorized by the Department, or as noted above, project personnel should avoid disturbing any tortoise.

RAC:NLO:rc

STATUS DEFINITIONS

ARIZONA GAME AND FISH DEPARTMENT (AGFD)
HERITAGE DATA MANAGEMENT SYSTEM (HDMS)

FEDERAL US STATUS

ESA **Endangered Species Act** (1973 as amended)
US Department of Interior, Fish and Wildlife Service (http://arizonaes.fws.gov)

Listed

- **LE** Listed Endangered: imminent jeopardy of extinction.
- **LT** Listed Threatened: imminent jeopardy of becoming Endangered.
- **XN** Experimental Nonessential population.

Proposed for Listing

- **PE** Proposed Endangered.
- **PT** Proposed Threatened.

Candidate (Notice of Review: 1999)

- **C** Candidate. Species for which USFWS has sufficient information on biological vulnerability and threats to support proposals to list as Endangered or Threatened under ESA. However, proposed rules have not yet been issued because such actions are precluded at present by other listing activity.
- **SC** Species of Concern. The terms "Species of Concern" or "Species at Risk" should be considered as terms-of-art that describe the entire realm of taxa whose conservation status may be of concern to the US Fish and Wildlife Service, but neither term has official status (currently all former C2 species).

Critical Habitat (check with state or regional USFWS office for location details)

- **Y** Yes: Critical Habitat has been designated.
- **P** Proposed: Critical Habitat has been proposed.

[\N No Status: certain populations of this taxon do not have designated status (check with state or regional USFWS office for details about which populations have designated status)].

USFS **US Forest Service** (1999 Animals, 1999 Plants: corrected 2000)
US Department of Agriculture, Forest Service, Region 3 (http://www.fs.fed.us/r3/)

- **S** Sensitive: those taxa occurring on National Forests in Arizona which are considered sensitive by the Regional Forester.

BLM **US Bureau of Land Management** (2000 Animals, 2000 Plants)
US Department of Interior, Bureau of Land Management, Arizona State Office (http://azwww.az.blm.gov)

- **S** Sensitive: those taxa occurring on BLM Field Office Lands in Arizona which are considered sensitive by the Arizona State Office.
- **P** Population: only those populations of Banded Gila monster (*Heloderma suspectum cinctum*) that occur north and west of the Colorado River, are considered sensitive by the Arizona State Office.

STATE STATUS

STATE:

Plants - NPL **Arizona Native Plant Law** (1999)
Arizona Department of Agriculture (http://agriculture.state.az.us/PSD/nativeplants.htm)

- **HS** Highly Safeguarded: no collection allowed.
- **SR** Salvage Restricted: collection only with permit.
- **ER** Export Restricted: transport out of State prohibited.
- **SA** Salvage Assessed: permits required to remove live trees.
- **HR** Harvest Restricted: permits required to remove plant by-products.

Wildlife - WSCA **Wildlife of Special Concern in Arizona** (in prep)
Arizona Game and Fish Department (http://www.azgfd.com)

- **WSC** Wildlife of Special Concern in Arizona. Species whose occurrence in Arizona is or may be in jeopardy, or with known or perceived threats or population declines, as described by the Arizona Game and Fish Department's listing of Wildlife of Special Concern in Arizona (WSCA, in prep). Species indicated on printouts as WSC are currently the same as those in **Threatened Native Wildlife in Arizona** (1988).

Revised 8/24/04, AGFD HDMS
J:\HDMS\DOCUMENT\NBOOKS\TEMPLATE\BORDERS\STATDEF

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Phone: (801) 773-6278
Fax: (801) 525-1175
~~1-866-OSI-UTAH (674-8824)~~

May 5, 2005

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

Subject: US Customs and Border Protection, Office of Border Patrol (CBP), proposed action: Operation of Unmanned Aerial Vehicles along the US-Mexico Border, in the States of Arizona and New Mexico.

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

OSI has been designated by the US Customs and Border Protection, Office of Border Patrol (CBP) to initiate and coordinate the consultation process for the proposed action described above. This letter serves as initiation of that process.

CBP intends to develop an initial operational capability for Unmanned Aerial Vehicles (UAV) systems along the US-Mexico border and base the systems at established airfields in New Mexico and Arizona. The affected region consists of the existing airfields and the international border within the states of Arizona and New Mexico, extending from the border to 25 nautical miles inland to the US. The UAV operations are proposed to take place 24 hours per day, 7days per week beginning in August, 2005.

Although CBP has not selected a specific UAV system at this time, it is known that each UAV will have a normal operational altitude of at least (b) (7)(E) above ground level in order to satisfy certain operational and Federal Aviation Administration requirements. Noise, as perceived from the ground, is not expected to be significant at the operating flight altitude.

Ground activities related to the proposed project will be limited to within the perimeters of existing airports. The airports are characterized by development such as hangars, runways, taxiways and administration buildings. UAV operations are consistent with the airports' master plans and community land use plans within the vicinities of the airports.

The purpose and need for the proposed action is to enhance the ability of CBP to detect and track illegal entrants within the affected area, especially in remote areas that are difficult to monitor or patrol.

The Kartchner Caverns State Park lies within the affected area. Therefore, CBP requests your comments on the proposed project as they relate to sensitive species and environments, cultural resources and land management policies within the affected region, under the responsibility of Arizona State Parks.

We are in the process of preparing an environmental assessment for the proposed action. A copy will be provided to you as soon as it is available. We request your comments early in this process, in order to identify and resolve issues of concern at the earliest possible time. Please direct questions, or responses at your earliest convenience to the undersigned

Sincerely,

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

Enclosures (2)
1. Map of the Affected Area
2. List of Airfields where UAV Systems will be Based

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May 5, 2005

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

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UAV demonstrations, based out of Fort Huachuca, Arizona in 2003 and a pilot program called Operation Skywatch conducted in 2004 clearly demonstrated that UAV systems are an effective compliment to CBP ground and air assets. UAV systems are not intended to replace assets, but rather to enhance the ability of CBP to detect and track illegal entrants crossing the U.S. borders.

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

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1. Map of the Affected Area
2. List of Airfields where UAV Systems Could be Based
3. Topographic Map – Deming Municipal Airport and Vicinity
4. Topographic Map – Dona Ana County Airport at Santa Teresa and Vicinity
5. Topographic Map – Las Cruces International Airport and Vicinity
6. Topographic Map – Lordsburg Municipal Airport and Vicinity
7. Topographic Map – Playas and Vicinity

GOVERNOR
Bill Richardson

DIRECTOR AND SECRETARY
TO THE COMMISSION
Bruce C. Thompson

STATE OF NEW MEXICO
DEPARTMENT OF GAME & FISH
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For basic information or to order free publications: 1-800-862-9310.

STATE GAME COMMISSION
Guy Riordan, Chairman
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Alfredo Montoya, Vice-Chairman
Alcalde, NM

David Henderson
Santa Fe, NM

H.M. "Dutch" Salmon
Silver City, NM

Peter Pino
Zia Pueblo, NM

Dr. Tom Arves
Albuquerque, NM

Leo Sims
Hobbs, NM

May 31, 2005

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

Re: Operation of Unmanned Aerial Vehicles along the US-Mexico Border, in the States of Arizona and New Mexico.
NMGF No. 10081

Dear (b) (7)(E)

In response to your letter dated May 5, 2005 regarding the above referenced project, enclosed is a list of species of concern that occur in Dona Ana, Luna and Hidalgo Counties. The Dept. would recommend that no flight operations be conducted from the Playas Air Strip. This strip is in close proximity to two Desert Bighorn Sheep ranges, the Little Hatchet Mountains, 3 miles southeast, and the Big Hatchet Wildlife Management Area, 11 miles to the south, of the Playas air strip. Low over-flights of these ranges have the potential to disrupt desert bighorn sheep, a state listed mammal. If the Playas Air Strip is used, takeoffs and landings should be from the northwest to avoid flying over the Hatchet and Little Hatchet Mountains.
The Department also conducts monthly aerial surveys in the proposed area. We request that the Border Patrol include in your analysis proposed safety precautions for manned aircraft using the same airspace.
Other sources of biological information are listed below.

For more information on listed and other species of concern, contact the following sources:

1. Species Accounts: http://fwie.fw.vt.edu/states/nm.htm
2. Species Searches: http://nmnhp.unm.edu/bisonm/bisonquery.php
3. New Mexico Wildlife of Concern by Counties List: http://www.wildlife.state.nm.us/conservation/share_with_wildlife/documents/speciesofconcern.pdf
4. Habitat Handbook Project Guidelines: http://wildlife.state.nm.us/conservation/habitat_handbook/index.htm
5. For custom, site-specific database searches on plants and wildlife. Go to Data then to Free On-Line Data and follow the directions go to: http://nmnhp.unm.edu
6. New Mexico State Forestry Division (505-827-5830) or http://nmrareplants.unm.edu/index.html for state-listed plants

7. For the most current listing of federally listed species **always** check the U.S. Fish and Wildlife Service at (b) (7)(E)

Thank you for the opportunity to review and comment on your project. If you have any questions please contact (b)(6)(b)(7)(C).

Sincerely,

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

xc: (b)(6)(b)(7)(C)

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERSS
P.O. BOX 17300, 819 TAYLOR STREET
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF

May 16, 2005

Planning, Environmental and Regulatory Division

Subject: U.S. Customs and Border Protection (CBP), Office of Border Patrol (OBP), proposed action: Supplemental Environmental Assessment (SEA): Basing and Operation of Unmanned Aerial Vehicles (UAV) along the US-Mexico Border, in the States of Arizona and New Mexico.

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

Dear (b)(6)(b)(7)(C):

In accordance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations, 36 CFR 800, the Fort Worth District of the U.S. Army Corps of Engineers, acting on behalf of the U.S. Customs and Border Protection (CBP), Office of Border Patrol (OBP), is initiating the consultation process with your office regarding the proposed project noted above.

CBP intends to develop an initial operational capability for Unmanned Aerial Vehicles (UAV) systems along the U.S.-Mexico border and base the systems at established airfields in Arizona and New Mexico. The affected region consists of the existing airfields and the international border within the states of Arizona and New Mexico, extending from the border inland 25 nautical miles inland. The UAV operations are proposed to take place 24 hours per day, 7days per week beginning in August, 2005.

CBP is preparing a Supplemental Environmental Assessment (SEA) for this proposed action and requests your comments early in this process, in order to identify and resolve issues of concern at the earliest possible time.

The purpose and need for the proposed action is to enhance the ability of CBP to detect and track illegal entrants within the affected area, especially in remote areas that are difficult to monitor or patrol. Illegal entrants are attracted to those areas where they might enter the U.S. undetected, possibly to smuggle narcotics, contraband or weapons of mass destruction. UAVs will reacb, in a timely manner, remote locations where illegal activity may be occurring, and in so doing improve border security by detecting and tracking illegal activity and enabling CBP to respond.

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effective compliment to CBP ground and air assets. UAV systems are not intended to replace assets, but rather to enhance the ability of CBP to detect and track illegal entrants crossing U.S. borders.

Although CBP has not selected a specific UAV system at this time, it is known that each UAV will have a normal operational altitude of at least (b) (7)(E) above ground level in order to satisfy certain operational and Federal Aviation Administration requirements. Noise, as perceived from the ground, is not expected to be significant at the operating flight altitude.

Ground activities related to the proposed project will be limited to within the perimeters of existing airports. The airports are characterized by development such as hangars, runways, taxiways and administration buildings. UAV operations are consistent with the airports' master plans and community land use plans within the vicinities of the airports (see enclosures).

At this time, construction activities are not anticipated and are not part of the proposed action. However, construction activities could eventually be proposed within the boundaries of an airfield if utilities, hangar space or administrative space are required. Additionally, construction to support communications may be proposed later. If construction is proposed in the future, then all required NHPA Section 106 consultation and National Environmental Policy Act planning and coordination will be accomplished at that time.

Once the draft EA is complete, a copy will be forwarded to you for your review and comment. Please direct questions, or responses at your earliest convenience to (b)(6)(b)(7)(C)
(b)(6)(b)(7)(C)

Sincerely,

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

Enclosures (10)
1. Map of the Affected Area
2. List of Airfields where UAV Systems Could be Based
3. Topographic Map – Deming Municipal Airport and Vicinity
4. Topographic Map – Doña Ana County Airport at Santa Teresa and Vicinity
5. Topographic Map – Las Cruces International Airport and Vicinity
6. Topographic Map – Lordsburg Municipal Airport and Vicinity
7. Topographic Map – Playas and Vicinity

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERSS
P.O. BOX 17300, 819 TAYLOR STREET
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF

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

May 16, 2005

Planning, Environmental and Regulatory Division

Subject: U.S. Customs and Border Protection (CBP), Office of Border Patrol (OBP), proposed action: Supplemental Environmental Assessment (SEA): Basing and Operation of Unmanned Aerial Vehicles (UAV) along the US-Mexico Border, in the States of Arizona and New Mexico.

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

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

In accordance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations, 36 CFR 800, the Fort Worth District of the U.S. Army Corps of Engineers, acting on behalf of the U.S. Customs and Border Protection (CBP), Office of Border Patrol (OBP), is initiating the consultation process with your office regarding the proposed project noted above.

CBP intends to develop an initial operational capability for Unmanned Aerial Vehicles (UAV) systems along the U.S.-Mexico border and base the systems at established airfields in Arizona and New Mexico. The affected region consists of the existing airfields and the international border within the states of Arizona and New Mexico, extending from the border inland 25 nautical miles inland. The UAV operations are proposed to take place 24 hours per day, 7days per week beginning in August, 2005.

CBP is preparing a Supplemental Environmental Assessment (SEA) for this proposed action and requests your comments early in this process, in order to identify and resolve issues of concern at the earliest possible time.

The purpose and need for the proposed action is to enhance the ability of CBP to detect and track illegal entrants within the affected area, especially in remote areas that are difficult to monitor or patrol. Illegal entrants are attracted to those areas where they might enter the U.S. undetected, possibly to smuggle narcotics, contraband or weapons of mass destruction. UAVs will reach, in a timely manner, remote locations where illegal activity may be occurring, and in so doing improve border security by detecting and tracking illegal activity and enabling CBP to respond.

UAV demonstrations conducted at Fort Huachuca, Arizona in 2003 and a pilot program called Operation Skywatch conducted in 2004 clearly demonstrated that UAV systems are an

effective compliment to CBP ground and air assets. UAV systems are not intended to replace assets, but rather to enhance the ability of CBP to detect and track illegal entrants crossing U.S. borders.

Although CBP has not selected a specific UAV system at this time, it is known that each UAV will have a normal operational altitude of at least (b) (7)(E) above ground level in order to satisfy certain operational and Federal Aviation Administration requirements. Noise, as perceived from the ground, is not expected to be significant at the operating flight altitude.

Ground activities related to the proposed project will be limited to within the perimeters of existing airports. The airports are characterized by development such as hangars, runways, taxiways and administration buildings. UAV operations are consistent with the airports' master plans and community land use plans within the vicinities of the airports (see enclosures).

At this time, construction activities are not anticipated and are not part of the proposed action. However, construction activities could eventually be proposed within the boundaries of an airfield if utilities, hangar space or administrative space are required. Additionally, construction to support communications may be proposed later. If construction is proposed in the future, then all required NHPA Section 106 consultation and National Environmental Policy Act planning and coordination will be accomplished at that time.

Once the draft EA is complete, a copy will be forwarded to you for your review and comment. Please direct questions, or responses at your earliest convenience to (b)(6)(b)(7)(C)
(b)(6)(b)(7)(C)

Sincerely,

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

Enclosures (10)
1. Map of the Affected Area
2. List of Airfields where UAV Systems Could be Based
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6. Topographic Map – Lordsburg Municipal Airport and Vicinity
7. Topographic Map – Playas and Vicinity

No Historic Properties Affected.

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

for NM State Historic Preservation Officer

Provided No Concerns
Don Fuchin Mtbo.

ORGANIZATIONAL STRATEGIES, INC.
1436 South Legend Hill Drive, Suite 105-140
Clearfield, UT 84015
Phone: (801) 773-6278
Fax: (801) 525-1175
1 866 OSI-UTAH (674-8824)

May 5, 2005

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

Subject: US Customs and Border Protection, Office of Border Patrol (CBP), proposed action: Operation of Unmanned Aerial Vehicles along the US-Mexico Border, in the States of Arizona and New Mexico.

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

OSI has been designated by the US Customs and Border Protection, Office of Border Patrol (CBP) to initiate and coordinate interagency consultations, with respect to the proposed action described above. We are in the process of gathering of the most current information available regarding federally listed species that potentially occur within Hidalgo, Grant, Dona Ana and Luna counties of New Mexico.

CBP intends to develop an initial operating capability for Unmanned Aerial Vehicles (UAV) systems along the US-Mexico border and base the systems at established airfields in New Mexico and Arizona. The affected region consists of the existing airfields and the international border within the states of Arizona and New Mexico, extending from the border to 25 nautical miles inland to the US. The UAV operations are proposed to take place 24 hours per day, 7days per week beginning in August, 2005.

The purpose and need for the proposed action is to enhance the ability of CBP to detect and track illegal entrants within the affected area, especially in remote areas that are difficult to monitor or patrol.

Although CBP has not selected a specific UAV system at this time, it is known that each UAV will have a normal operational altitude of at least (b) (7)(E) above ground level in order to satisfy certain operational and Federal Aviation Administration requirements. Noise, as perceived from the ground, is not expected to be significant at the operating flight altitude.

Ground activities related to the proposed project will be limited to within the perimeters of existing airports. The airports are characterized by development such as hangars, runways, taxiways and administration buildings. UAV operations are consistent with the airports' master plans and community land use plans within the vicinities of the airports.

At this time, construction activities are not anticipated and are not part of the proposed action. However, construction activities could eventually be proposed within the boundaries of an airfield if utilities, hangar space or administrative space are required. Additionally, construction to support communications may latter be proposed. If construction is proposed in the future, then all required National Environmental Policy Act planning and coordination will be accomplished at that time.

We are in the process of preparing an environmental assessment and respectfully request that your agency provide a list and description of the native plants within the project area that you believe may be affected by the proposed action. Any information that could be provided regarding potential or known presence of species, critical habitat, general habitat, descriptions, distribution, and status of these species would be greatly appreciated.

We request your comments early in this process, in order to identify and resolve issues of concern at the earliest possible time. Please direct questions, or responses at your earliest convenience to the undersigned.

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

Enclosures (7)
1. Map of the Affected Area
2. List of Airfields where UAV Systems Could be Based
3. Topographic Map of Deming municipal Airport
4. Topographic Map of Dona Ana County Airport at Santa Teresa
5. Topographic Map of Las Cruces International Airport and Vicinity
6. Topographic Map of Lordsburg Municipal Airport and Vicinity
7. Topographic Map of Playas Air Strip Airport

SPECIES TABLE

COCHISE, PIMA, AND SANTA CRUZ COUNTIES, ARIZONA

Common Name	Scientific Name	Listing Status	County	Habitat	Comments
PLANTS					
1. Canelo Hills ladies'-tresses	*Spiranthes delitescens*	E	Cochise, Santa Cruz	Finely grained, highly organic, saturated soils of cienegas.	Also called Madrean Hills ladies-tresses
2. Cochise pincushion cactus	*Coryphantha robbinsorum*	T	Cochise	Semi desert grassland with small shrubs, agave, other cacti, and grama grass.	
3. Huachuca water-umbel	*Lilaeopsis schaffneriana var. recurva*	E	Cochise, Pima, Santa Cruz	Cienegas, perennial low gradient streams, wetlands.	Populations on Fort Huachuca Military Reservation. Critical habitat in Cochise and Santa Cruz counties (64 FR 37441, July 12, 1999)
4. Kearney's blue-star	*Amsonia kearneyana*	E	Pima	West facing drainages in the Baboquivari Mountains	
5. Nichol Turk's head cactus	*Echinocactus horizonthalonius var. nicholii*	E	Pima	Sonoran desertscrub.	

Common Name		Scientific Name	Listing Status	County	Habitat	Comments
6.	Pima pineapple cactus	*Coryphantha scheeri var. robustispina*	E	Pima, Santa Cruz	Sonoran desertscrub or semi-desert grassland communities.	The USFWS has announced a 5 year review of the Pima pineapple cactus (70 FR 5460, February 2, 2005), which will include consideration of the taxonomic validity of the pima pineapple cactus.
BIRDS						
7.	Bald eagle	*Haliaeetus leucocephalus*	AD, T	Cochise, Pima, Santa Cruz, Yuma	Large trees or cliffs near water with abundant prey.	Species has been proposed for delisting (64 FR 36454) but still receives full protection under the ESA.
8.	Brown pelican	*Pelecanus occidentalis*	DM, E	Cochise, Pima, Santa Cruz, Yuma	Coastal land and islands. Species found around many Arizona lakes & rivers	An uncommon transient in Arizona on many Arizona lakes and rivers. Individuals wander up from Mexico in summer and fall. No breeding records in Arizona.
9.	Cactus ferruginous pygmy-owl	*Glaucidium brasilianum cactorum*	E	Cochise, Pima, Santa Cruz, Yuma	Mature cottonwood, willow, mesquite bosques & Sonoran desertscrub	Critical habitat is proposed in Pima and Pinal counties (67 FR71032; 11-27-02).
10.	Masked bobwhite (quail)	*Colinus virginianus ridgwayi*	E	Pima	Desert grasslands with diversity of dense native grasses, forbs and brush.	
11.	Mexican spotted owl	*Strix occidentalis lucida*	T	Cochise, Pima, Santa Cruz	Nests in canyons and dense forests with multi-layered foliage structure.	Critical habitat was finalized on August 31, 2004 (69 FR 53182). Critical habitat occurs in Cochise, Pima and Santa Cruz, counties.
12.	Northern aplomado falcon	*Falco femoralis septentrionalis*	E	Cochise, Santa Cruz	Grassland and savannah.	

Common Name	Scientific Name	Listing Status	County	Habitat	Comments
13. Southwestern willow flycatcher	*Empidonax traillii extimus*	E	Cochise, Pima, Santa Cruz, Yuma	Cottonwood willow and tamarisk vegetation along rivers and streams.	
14. Yuma clapper rail	*Rallus longirostris yumanensis*	E	Yuma	Nests in freshwater mashes along the Colorado River. May migrate south to coastal areas in Mexico.	The USFWS has announced a 5 year review of the Yuma clapper rail (70 FR 5460, February 2, 2005), which will include consideration of the species population and distribution.
AMPHIBIANS					
15. Chiricahua leopard frog	*Rana chiricahuensis*	T	Cochise, Pima, Santa Cruz	Streams, rivers, backwaters, ponds, and stock tanks that are mostly free from introduced fish, crayfish and bullfrogs.	
16. Sonora tiger salamander	*Ambystoma tigrinum stebbinsi*	E	Cochise, Santa Cruz	Stock tanks and impounded cienegas in San Rafael Valley, Huachuca Mountains.	
MAMMALS					
17. Jaguar	*Panthera onca*	E	Cochise, Pima, Santa Cruz	Found in Sonoran desertscrub up through subalpine conifer forest.	
18. Lesser long-nosed bat	*Leptonycteris curasoae yerbabuenae*	E	Cochise, Pima, Santa Cruz	Desert scrub habitat with agave and columnar cacti present as food plants.	The USFWS announced a 5 year review of the Lesser long-nosed bat (70 FR 5460, February 2, 2005). The USFWS will consider population numbers, which may be greater than the reported numbers that led to the listing of the species.
19. Mexican gray wolf	*Canis lupus*	DR, E, EXPN, T	Cochise, Pima, Santa Cruz, Grant, Hidalgo, Luna	Habitat that supports its prey, such as elk and deer	

Common Name	Scientific Name	Listing Status	County	Habitat	Comments
20. Ocelot	*Leopardus (=Felis) pardalis*	E	Cochise, Pima, Santa Cruz	Humid tropical and sub-tropical forests, savannahs, and semi-arid thornscrub.	
21. Sonoran pronghorn	*Antilocapra americana sonoriensis*	E	Pima, Yuma	Broad intermountain alluvial valleys with creosote-bursage and palo verde-mixed cacti associations.	
REPTILES					
22. New Mexican ridge-nosed rattlesnake	*Crotalus willardi obscurus*	T	Cochise	Primarily canyon bottoms in pine-oak communities.	
FISH					
23. Beautiful shiner	*Cyprinella formosa*	T	Cochise	Small to medium streams and ponds with sand, gravel, and rock bottoms.	Critical habitat in San Bernardino National Wildlife Refuge (49 FR 34490).
24. Desert pupfish	*Cyprinodon macularius*	E	Pima, Santa Cruz	Shallow springs, small streams and marshes. Tolerates saline and warm water.	Critical habitat includes Quitobaquito Springs in Pima County
25. Gila chub	*Gila intermedia*	PE	Cochise, Pima, Santa Cruz	Pools, springs, cienegas, and streams.	
26. Gila topminnow (incl. Yaqui)	*Poeciliopsis occidentalis*	E	Cochise, Pima, Santa Cruz	Small streams, springs and cienegas vegetated shallows.	
27. Loach minnow	*Tiaroga cobitis*	T	Cochise, Pima	Shallow, turbulent riffles with cobble substrate in Gila River drainages.	

Common Name	Scientific Name	Listing Status	County	Habitat	Comments
28. Razorback sucker	*Xyrauchen texanus*	E	Yuma	Mainstem channels, impoundments, slow backwaters of medium and large streams and rivers, sometimes around cover.	
29. Sonora chub	*Gila ditaenia*	T	Santa Cruz	Perennial and intermittent small to moderate streams with boulders and cliffs.	
30. Spikedace	*Meda fulgida*	T	Cochise, Pima	Moderate to large perennial streams of the upper Gila River basin, where it inhabits shallow riffles with sand, gravel and rubble substrates.	
31. Yaqui catfish	*Ictalurus pricei*	T	Cochise	Moderate to large streams with slow current over sand and rock bottoms.	Critical habitat in San Bernardino National Wildlife Refuge (49 FR 34490).
32. Yaqui Chub	*Gila purpurea*	E	Cochise	Deep pools in creeks, scoured areas of cienegas and other stream associated quiet waters of the Rio Yaqui basin.	Critical habitat in San Bernardino National Wildlife Refuge (49 FR 34490).

Source: USFWS. Last Updated April 28, 2005

Legend:

E – Endangered
T – Threatened
C – Candidate
AD – Proposed Delisting
EXPN – Experimental population
DM – Delisted Taxon, in 5 year monitoring period
DR – Delisted Taxon, Taxonomic Revision
* – Conservation Agreement

SPECIES TABLE

DONA ANA, GRANT, HIDALGO AND LUNA COUNTIES, NEW MEXICO

Common Name	Scientific Name	Listing Status	County	Habitat	Comments
PLANTS					
33. Sneed pincushion cactus	*Coryphantha sneedii var. sneedii*	E	Dona Ana	The cactus grows primarily in limestone in areas of broken terrain and steep slopes.	
BIRDS					
34. Bald eagle	*Haliaeetus leucocephalus*	AD, T	Cochise, Pima, Santa Cruz, Yuma, Dona Ana, Grant, Hidalgo, Luna	Large trees or cliffs near water with abundant prey.	Species has been proposed for delisting (64 FR 36454) but still receives full protection under the ESA.
35. Least tern	*Sterna antillarum*	E	Dona Ana	Depends upon riparian habitat of the Mississippi and Rio Grande basins	
36. Mexican spotted owl	*Strix occidentalis lucida*	T	Cochise, Pima, Santa Cruz, Dona Ana, Grant, Hidalgo	Nests in canyons and dense forests with multi-layered foliage structure.	Critical habitat was finalized on August 31, 2004 (69 FR 53182). Critical habitat occurs in Cochise, Pima and Santa Cruz, counties.
37. Northern aplomado falcon	*Falco femoralis septentrionalis*	E	Cochise, Santa Cruz, Dona Ana, Grant, Hidalgo, Luna	Grassland and savannah.	
38. Southwestern willow flycatcher	*Empidonax traillii extimus*	E	Dona Ana, Grant, Hidalgo, Luna	Cottonwood willow and tamarisk vegetation along rivers and streams.	

Common Name	Scientific Name	Listing Status	County	Habitat	Comments
MAMMALS					
39. Black-footed ferret	*Mustela nigripes*	E, EXPN	Grant	The plains and prairies of the Midwest U.S., co-exists and depends upon prairie dog populations.	
40. Jaguar	*Panthera onca*	E	Hidalgo	Found in Sonoran desertscrub up through subalpine conifer forest.	
41. Lesser long-nosed bat	*Leptonycteris curasoae yerbabuenae*	E	Hidalgo	Desert scrub habitat with agave and columnar cacti present as food plants.	The USFWS announced a 5 year review of the Lesser long-nosed bat (70 FR 5460, February 2, 2005). The USFWS will consider population numbers, which may be greater than reported numbers that led to the listing of the species.
42. Mexican gray wolf	*Canis lupus*	DR, E, EXPN, T	Grant, Hidalgo, Luna	Habitat that supports its prey, such as elk and deer.	
43. Mexican long-nosed bat	*Leptonycteris nivalis*	E	Hidalgo	The bats are nomadic and follow the availability of food sources, roosting in caves and abandoned mines.	
REPTILES					
44. New Mexican ridge-nosed rattlesnake	*Crotalus willardi obscurus*	T	Cochise, Hidalgo	Primarily canyon bottoms in pine-oak communities.	

	Common Name	Scientific Name	Listing Status	County	Habitat	Comments
FISH						
45.	Beautiful shiner	*Cyprinella formosa*	T	Grant, Luna	Small to medium streams and ponds with sand, gravel, and rock bottoms.	Same critical habitat as Yaqui Chub and Catfish (see 49 FR 34490, 08-31-84).
46.	Chihuahua chub	*Gila nigrescens*	T	Grant	Associated with sheltered areas of shallow pools, such as submerged trees and undercut banks of the upper Mimbres River.	
47.	Gila chub	*Gila intermedia*	PE	Grant	Pools, springs, cienegas, and streams.	
48.	Gila topminnow (incl. Yaqui)	*Poeciliopsis occidentalis*	E	Grant	Small streams, springs and cienegas vegetated shallows.	
49.	Gila trout	*Oncorhynchus gilae*	E	Grant	Found above 5,400 feet elevation, in moderate to high gradient perennial mountain streams, typically flowing through steep canyons and valleys.	
50.	Loach minnow	*Tiaroga cobitis*	T	Grant, Hidalgo	Small to large perennial streams of the Gila River drainage in Arizona and New Mexico in shallow, turbulent riffles with cobble substrate.	
51.	Rio Grande silvery minnow	*Hybognathus amarus*	E	Dona Ana	The Rio Grande River from Espanola, New Mexico, to the Gulf of Mexico and the Pecos River from Santa Rosa, New Mexico to the Rio Grande.	
52.	Spikedace	*Meda fulgida*	T	Grant, Hidalgo	Moderate to large perennial streams of the Gila River drainage, in shallow riffles with sand, gravel and rubble substrates.	

Source: USFWS. Last Updated April 28, 2005

Legend:

E – Endangered	EXPN – Experimental population
T – Threatened	DM – Delisted Taxon, in 5 year monitoring period
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