



**U.S. Customs and
Border Protection**

January 6, 2011

The Honorable Louis Manuel
Chairperson
Ak-Chin Indian Community Council
Attn: Ms. Caroline Anton, Cultural Resource Manager
Ak-Chin Him Dak Eco Museum & Archives
47685 North Eco Museum Road
Maricopa, Arizona 85239

Subject: Draft Supplemental Environmental Assessment (SEA) and Proposed Finding of No Significant Impact for the SBInet Ajo-1 Tower Project, Ajo Station's Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Participant:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on January 6, 2011 and ends on February 7, 2011. The U.S. Customs and Border Protection (CBP) has prepared this draft SEA to identify and assess the potential impacts associated with the construction of fiber optic and commercial grid power to existing CBP communication and sensor towers. The SEA also analyzes the rehabilitation of a hole on Growler Mountain that was excavated during the initial construction of a proposed communication tower on Growler Mountain. The existing communication and sensor towers were previously analyzed in the *Environmental Assessment for the Proposed SBnet Ajo-1 Tower Project, Ajo Station's Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona*, finalized in December 2009. The document can also be viewed and down loaded at the following URL address: http://www.cbp.gov/xp/cgov/border_security/sbi/sbi_news/sbi_enviro_docs/nepa/

The purpose of the Proposed Action is to provide a communication link between towers to ensure effectiveness and reduce impacts to sensitive resources. The supplemental action is needed to:

- 1) Increase efficiency of border surveillance and interdiction;
- 2) Provide a stable and efficient communication link between SBInet towers;
- 3) Reduce impacts from the SBInet Ajo-1 Tower Project on designated wilderness;
- 4) Reduce impacts to Sonoran pronghorn; and

5) Remediate impacts that occurred at the TCA-AJO-189 tower site (Growler Mountain)

The draft SEA was prepared in accordance with provisions of the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4321, et seq.), the Council on Environmental Quality's NEPA implementing regulations at 40 C.F.R. Parts 1500-1508, and the U.S. Department of Homeland Security's *Management Directive 023-01, Environmental Planning Program*.

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- (a) E-mail to: ajoseacomment@cbp.dhs.gov, or
- (b) By mail to: Ms. Patience E. Patterson, RPA, U.S. Department of Homeland Security, SBInet Program Management Office, 1901 S. Bell Street, Room 7-090, Arlington, Virginia 20598, or
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Your comments regarding this effort are greatly appreciated. Please also provide any changes to your name and address information so that we may keep our contact records current. If you have any questions regarding this request, please contact Ms. Patterson via E-mail or the postal address listed above.

Sincerely,



Margaret C. Arnberg
Program Manager, SBInet
Office of Technology Innovation and Acquisition
Customs and Border Protection
Enclosure(s)



**U.S. Customs and
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January 6, 2011

The Honorable John McCain
Senator (Arizona)
United States House Senate
241 Russell Senate Office Building
Washington, DC 20510-0303

Subject: Draft Supplemental Environmental Assessment (SEA) and Proposed Finding of No Significant Impact for the SBInet Ajo-1 Tower Project, Ajo Station's Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

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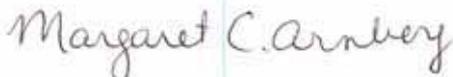
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Margaret C. Arnberg
Program Manager, SBInet
Office of Technology Innovation and Acquisition
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**U.S. Customs and
Border Protection**

January 6, 2011

Mr. Craig Miller
Northern Jaguar Project
110 Church Street
Suite 4292
Tucson, Arizona 85701

Subject: Draft Supplemental Environmental Assessment (SEA) and Proposed Finding of No Significant Impact for the SBInet Ajo-1 Tower Project, Ajo Station's Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

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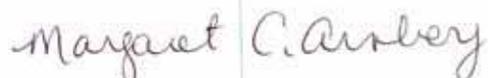
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January 6, 2011

Ms. Leesa Morrison
Homeland Security Advisor- Arizona
Arizona Department of Homeland Security
1700 West Washington
Phoenix, Arizona 85007

Subject: Draft Supplemental Environmental Assessment (SEA) and Proposed Finding of No Significant Impact for the SBInet Ajo-1 Tower Project, Ajo Station's Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

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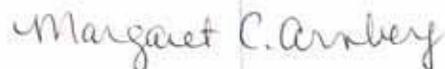
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**U.S. Customs and
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January 6, 2011

The Honorable Ned Norris, Jr.
Chairman
Tohono O'odham Nation
Attn: Mr. Peter Steere, Cultural Affairs Program Manager
Main Tribal Building Business Loop
Sells, Arizona 85634

Subject: Draft Supplemental Environmental Assessment (SEA) and Proposed Finding of No Significant Impact for the SBInet Ajo-1 Tower Project, Ajo Station's Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

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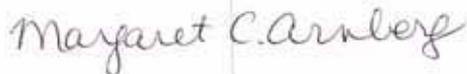
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January 6, 2011

The Honorable Wendsler Nosie, Sr.
Chairperson
San Carlos Apache Tribe
Attn: Ms. Vernelda Grant, THPO
Historic Preservation & Archaeology Department
San Carlos Avenue
San Carlos, Arizona 85550

Subject: Draft Supplemental Environmental Assessment (SEA) and Proposed Finding of No Significant Impact for the SBInet Ajo-1 Tower Project, Ajo Station's Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

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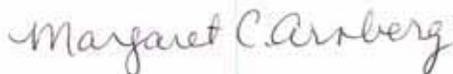
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January 6, 2011

The Honorable Benjamin H. Nuvamsa
Chairman
Attn: Marvin Lalo, Acting Director
Hopi Cultural Preservation Office
Hopi Tribal Council
1 Main Street
Kykotsmovi, Arizona 86039

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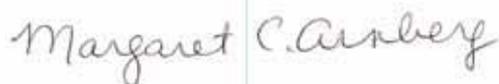
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Arizona Department of Environmental Quality
Southern Region Office
400 West Congress
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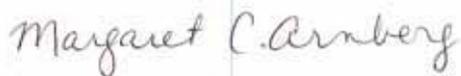
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Arizona Department of Environmental Quality
Southern Region Office
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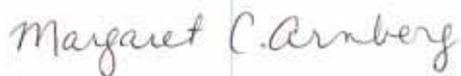
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Sincerely,



Margaret C. Arnberg
Program Manager, SBInet
Office of Technology Innovation and Acquisition
Customs and Border Protection
Enclosure(s)



**U.S. Customs and
Border Protection**

January 6, 2011

Ms. Kathy Pedrick
Special Assistant for International Programs
Bureau of Land Management, U.S. Department of Interior
Federal Building, CNF Sixth Floor, #6V3
300 West Congress
Tucson, Arizona 85701

Subject: Draft Supplemental Environmental Assessment (SEA) and Proposed Finding of No Significant Impact for the SBInet Ajo-1 Tower Project, Ajo Station's Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Participant:

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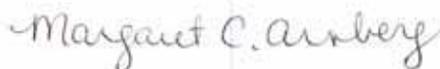
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**U.S. Customs and
Border Protection**

Phoenix Public Library
Attention: Librarian
1221 N. Central Avenue
Phoenix, AZ 85004

Subject: Draft Supplemental Environmental Assessment (SEA) and Proposed Finding of No Significant Impact for the SBInet Ajo-1 Tower Project, Ajo Station's Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

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Enclosure(s)



**U.S. Customs and
Border Protection**

Pima County Public Library
Attention: Librarian
Ajo Branch
33 Plaza
Ajo, Arizona 85321

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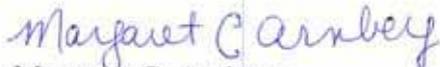
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Joel D. Valdez Main Library
Attention: Librarian
101 N. Stone Avenue
Tucson, Arizona 85701

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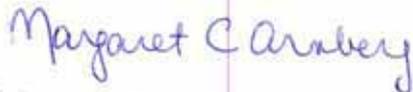
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Enclosure(s)



U.S. Customs and
Border Protection

January 6, 2011

The Honorable Chairwoman Geneva Ramon
Tohono O'odham Nation
Tohono O'odham Nation Administration Building
49 Main Street
Sells, Arizona 85634

Subject: Draft Supplemental Environmental Assessment (SEA) and Proposed Finding of No Significant Impact for the SBInet Ajo-1 Tower Project, Ajo Station's Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

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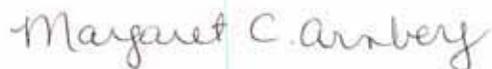
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**U.S. Customs and
Border Protection**

January 6, 2011

Ms. Elaine Raper
Acting District Manager
Bureau of Land Management, U.S. Department of Interior
Phoenix District
21604 North 7th Avenue
Phoenix, Arizona 85021

Subject: Draft Supplemental Environmental Assessment (SEA) and Proposed Finding of No Significant Impact for the SBInet Ajo-1 Tower Project, Ajo Station's Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

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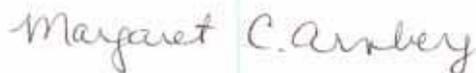
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**U.S. Customs and
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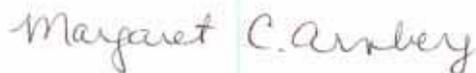
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Customs and Border Protection
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**U.S. Customs and
Border Protection**

January 6, 2011

The Honorable William Rhodes
Governor
Gila River Indian Community
Attn: Mr. Barnaby Lewis, Cultural Resource Specialist
315 West Casa Blanco Road
Sacaton, Arizona 85247

Subject: Draft Supplemental Environmental Assessment (SEA) and Proposed Finding of No Significant Impact for the SBInet Ajo-1 Tower Project, Ajo Station's Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

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U.S. Customs and
Border Protection

January 6, 2011

Commissioner C.W. "Bill" Ruth
Office of the Commissioner
International Boundary and Water Commission
U.S. Section
4171 North Mesa
Suite C-100
El Paso, Texas 79902-1441

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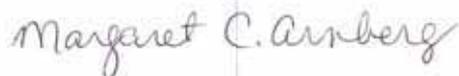
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Your comments regarding this effort are greatly appreciated. Please also provide any changes to your name and address information so that we may keep our contact records current. If you have any questions regarding this request, please contact Ms. Patterson via E-mail or the postal address listed above.

Sincerely,



Margaret C. Arnberg
Program Manager, SBInet
Office of Technology Innovation and Acquisition
Customs and Border Protection
Enclosure(s)



**U.S. Customs and
Border Protection**

January 6, 2011

Ms. Nina Siqueiros
Superintendent
Bureau of Indian Affairs
BIA Agency, Circle Drive
Sells, Arizona 85634

Subject: Draft Supplemental Environmental Assessment (SEA) and Proposed Finding of No Significant Impact for the SBInet Ajo-1 Tower Project, Ajo Station's Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Participant:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on January 6, 2011 and ends on February 7, 2011. The U.S. Customs and Border Protection (CBP) has prepared this draft SEA to identify and assess the potential impacts associated with the construction of fiber optic and commercial grid power to existing CBP communication and sensor towers. The SEA also analyzes the rehabilitation of a hole on Growler Mountain that was excavated during the initial construction of a proposed communication tower on Growler Mountain. The existing communication and sensor towers were previously analyzed in the *Environmental Assessment for the Proposed SBnet Ajo-1 Tower Project, Ajo Station's Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona*, finalized in December 2009. The document can also be viewed and down loaded at the following URL address: http://www.cbp.gov/xp/cgov/border_security/sbi/sbi_news/sbi_enviro_docs/nepa/

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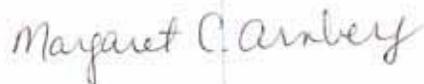
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Margaret C. Arnberg
Program Manager, SBInet
Office of Technology Innovation and Acquisition
Customs and Border Protection
Enclosure(s)



**U.S. Customs and
Border Protection**

January 6, 2011

Mr. Sid Slone
Manager
Cabeza Prieta National Wildlife Refuge
1611 North Second Avenue
Ajo, Arizona 85321

Subject: Draft Supplemental Environmental Assessment (SEA) and Proposed Finding of No Significant Impact for the SBInet Ajo-1 Tower Project, Ajo Station's Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

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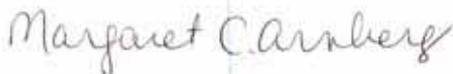
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Margaret C. Arnberg
Program Manager, SBInet
Office of Technology Innovation and Acquisition
Customs and Border Protection
Enclosure(s)



**U.S. Customs and
Border Protection**

January 6, 2011

The Honorable Ivan Smith
Chairman
Tonto Apache Tribe
Reservation #30
Payson, Arizona 85541

Subject: Draft Supplemental Environmental Assessment (SEA) and Proposed Finding of No Significant Impact for the SBInet Ajo-1 Tower Project, Ajo Station's Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

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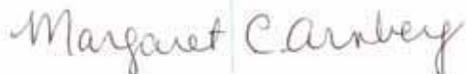
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Margaret C. Arnberg
Program Manager, SBInet
Office of Technology Innovation and Acquisition
Customs and Border Protection
Enclosure(s)



**U.S. Customs and
Border Protection**

January 6, 2011

Mr. Steve Spangle
Field Supervisor
U.S. Fish and Wildlife Service
2321 West Royal Palm Road
Suite 103
Phoenix, Arizona 85021-4951

Subject: Draft Supplemental Environmental Assessment (SEA) and Proposed Finding of No Significant Impact for the SBInet Ajo-1 Tower Project, Ajo Station's Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

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Margaret C. Arnberg
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Customs and Border Protection
Enclosure(s)



U.S. Customs and
Border Protection

January 6, 2011

Mr. Peter Steere
Manager
Tohono O'odham Nation
Cultural Affairs Office
Tohono O'odham Nation Administration Building
49 Main Street
Sells, Arizona 85634

Subject: Draft Supplemental Environmental Assessment (SEA) and Proposed Finding of No Significant Impact for the SBInet Ajo-1 Tower Project, Ajo Station's Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

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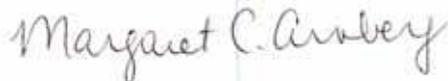
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Margaret C. Arnberg
Program Manager, SBInet
Office of Technology Innovation and Acquisition
Customs and Border Protection
Enclosure(s)



**U.S. Customs and
Border Protection**

January 6, 2011

Mr. Mark Sturm
Organ Pipe Cactus National Monument
10 Organ Pipe Drive
Ajo, Arizona 85321

Subject: Draft Supplemental Environmental Assessment (SEA) and Proposed Finding of No Significant Impact for the SBInet Ajo-1 Tower Project, Ajo Station's Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

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Margaret C. Arnberg
Program Manager, SBInet
Office of Technology Innovation and Acquisition
Customs and Border Protection
Enclosure(s)



U.S. Customs and
Border Protection

January 6, 2011

Mr. Sean Sullivan
Sierra Club
758 N. 5th Ave
Suite 214
Tucson, Arizona 85705

Subject: Draft Supplemental Environmental Assessment (SEA) and Proposed Finding of No Significant Impact for the SBInet Ajo-1 Tower Project, Ajo Station's Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

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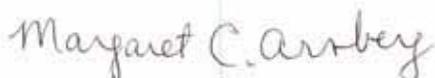
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Margaret C. Arnberg
Program Manager, SBInet
Office of Technology Innovation and Acquisition
Customs and Border Protection
Enclosure(s)



**U.S. Customs and
Border Protection**

Tohono O'odham Community College Library
Central Campus
Building 400, Room 402
Attention: Librarian
Highway 86 Mile Post 115.5N
Sells, Arizona 85634

Subject: Draft Supplemental Environmental Assessment (SEA) and Proposed Finding of No Significant Impact for the SBI*net* Ajo-1 Tower Project, Ajo Station's Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Librarian:

U.S. Customs and Border Protection (CBP) requests that your library make available to the public the enclosed *Draft Supplemental Environmental Assessment for the SBI*net* Ajo-1 Tower Project, Ajo Station's Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona*, and the related proposed *Finding of No Significant Impact*, for a 30-day public review period. Please place a copy of this letter and the draft Supplemental Environmental Assessment (SEA) in a location that facilitates public review. The document can also be downloaded from the project website at www.cbp.gov/xp/cgov/border_security/sbi/sbi_news/sbi_enviro_docs/nepa/.

In support of the Secure Border Initiative program, on January 11, 2011, CBP is publishing a Notice of Availability for the draft SEA. The draft EA identifies and assesses the potential impacts associated with the installation of fiber optic cable and construction of access from the existing commercial power grid to existing CBP communication and sensor towers. The SEA also analyzes the rehabilitation of a hole on Growler Mountain that was excavated during the initial construction of a proposed communication tower on Growler Mountain. The Proposed Action covers approximately 517 square miles of southwest Arizona in the area between Why and Lukeville, Arizona.

The purpose of the Proposed Action is to provide a communication link between towers to ensure effectiveness and reduce impacts to sensitive resources. The supplemental action is needed to:

- 1) increase surveillance and interdiction efficiency;
- 2) provide a stable and efficient communication link between two SBI*net* towers;

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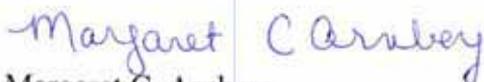
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Your prompt attention to this request is greatly appreciated. If you have any questions, please contact Ms. Patterson via E-mail or the postal address listed above.

Sincerely,



Margaret C. Arnberg
Program Manager, SBInet

Enclosure(s)



U.S. Customs and
Border Protection

January 6, 2011

Dr. Benjamin Tuggle
Regional Director
U.S. Fish and Wildlife Service
Southwest Region (Region 2)
P.O. Box 1306
Albuquerque, New Mexico 87103-1306

Subject: Draft Supplemental Environmental Assessment (SEA) and Proposed Finding of No Significant Impact for the SBInet Ajo-1 Tower Project, Ajo Station's Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear ^{Ben}Participant:

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- (b) By mail to: Ms. Patience E. Patterson, RPA, U.S. Department of Homeland Security, SBInet Program Management Office, 1901 S. Bell Street, Room 7-090, Arlington, Virginia 20598, or
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Your comments regarding this effort are greatly appreciated. Please also provide any changes to your name and address information so that we may keep our contact records current. If you have any questions regarding this request, please contact Ms. Patterson via E-mail or the postal address listed above.

Sincerely,



Margaret C. Arnberg
Program Manager, SBInet
Office of Technology Innovation and Acquisition
Customs and Border Protection
Enclosure(s)



**U.S. Customs and
Border Protection**

January 6, 2011

The Honorable Chairman Jose Vernon
Legislative Chairman
Tohono O'odham Nation
Tohono O'odham Nation Administration Building
49 Main Street
Sells, Arizona 85634

Subject: Draft Supplemental Environmental Assessment (SEA) and Proposed Finding of No Significant Impact for the SBInet Ajo-1 Tower Project, Ajo Station's Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Participant:

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Margaret C. Arnberg
Program Manager, SBInet
Office of Technology Innovation and Acquisition
Customs and Border Protection
Enclosure(s)



**U.S. Customs and
Border Protection**

January 6, 2011

Mr. Selso Villegas
Director
Tohono O'odham Nation
Department of Natural Resources
Tohono O'odham Nation Administration Building
49 Main Street
Sells, Arizona 85634

Subject: Draft Supplemental Environmental Assessment (SEA) and Proposed Finding of No Significant Impact for the SBInet Ajo-1 Tower Project, Ajo Station's Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

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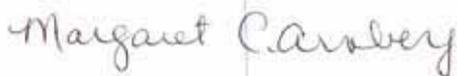
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Office of Technology Innovation and Acquisition
Customs and Border Protection
Enclosure(s)



**U.S. Customs and
Border Protection**

January 6, 2011

Ms. Karen Vitulano
U.S. Environmental Protection Agency
Region 9
Environmental Review Office, Mail Code CED-2
75 Hawthorne Street
San Francisco, California 94105-3901

Subject: Draft Supplemental Environmental Assessment (SEA) and Proposed Finding of No Significant Impact for the SBInet Ajo-1 Tower Project, Ajo Station's Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

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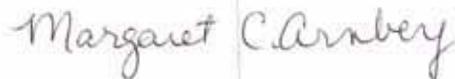
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Margaret C. Arnberg
Program Manager, SBInet
Office of Technology Innovation and Acquisition
Customs and Border Protection
Enclosure(s)



**U.S. Customs and
Border Protection**

January 6, 2011

Mr. Paul J. Winger
9131 N. Overlook Drive
Tucson, Arizona 85704

Subject: Draft Supplemental Environmental Assessment (SEA) and Proposed Finding of No Significant Impact for the SBInet Ajo-1 Tower Project, Ajo Station's Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

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Enclosure(s)



**U.S. Customs and
Border Protection**

January 6, 2011

Ms. Laura Yoshii
Acting Regional Administrator
U.S. Environmental Protection Agency
Region 9
75 Hawthorne Street
San Francisco, California 94105

Subject: Draft Supplemental Environmental Assessment (SEA) and Proposed Finding of No Significant Impact for the SBInet Ajo-1 Tower Project, Ajo Station's Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

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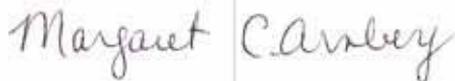
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Customs and Border Protection
Enclosure(s)



U.S. Customs and
Border Protection

January 6, 2011

The Honorable Peter Yucupicio
Chairman
Pascua Yaqui Tribe
Attn: Ms. Amalia Reyes, Language and Cultural Preservation Specialist
7474 South Camino de Oeste
Tucson, Arizona 85746

Subject: Draft Supplemental Environmental Assessment (SEA) and Proposed Finding of No Significant Impact for the SBInet Ajo-1 Tower Project, Ajo Station's Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

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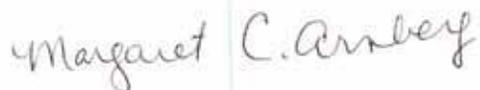
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Program Manager, SBInet
Office of Technology Innovation and Acquisition
Customs and Border Protection
Enclosure(s)



Janice K. Brewer
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

1110 West Washington Street • Phoenix, Arizona 85007
(602) 771-2300 • www.azdeq.gov



Benjamin H. Grumbles
Director

July 9, 2010

Mr. James Riordan, Executive Director SBInet
U.S. Department of Homeland Security
U.S. Customs and Border Protection
Washington, D.C. 20229

Project: Proposed Supplemental Environmental Assessment for SBInet Ajo-1 Tower Project
U.S. Border Patrol Tucson Sector

Dear Mr. Riordan:

The Air Quality Division has reviewed the project as described in your letter, with map enclosure, received on June 18, 2010, that you submitted for a General Conformity Determination with the Arizona State Implementation Plan in accordance with Clean Air Act Section 176(c)(1); 58 Federal Register 63214-63259; Title 40 Code of Federal Regulations Part 51, Subpart W §§ 51.850-51.860; Title 40 Code of Federal Regulations Part 93, Subpart B §§ 93.150-160; and Arizona Administrative Code R18-2-348 (approved into the Arizona State Implementation Plan April 23, 1999; effective June 22, 1999). The Air Quality Division has concluded that a General Conformity Determination is not required for the following reason:

- Project's total emissions of PM₁₀ in a PM₁₀ Maintenance Area would be less than *de minimis* levels in Title 40 CFR § 51.853(b) [and §93.153(b)] as described or calculated.

Nevertheless, considering the proposed tower sites and prevailing winds, which can affect the Ajo PM₁₀ Moderate Planning Nonattainment Area, we are concerned that the proposed project(s), may potentially, affect the area's immediate environment with particulate matter. Both particulate matter 10-microns (PM₁₀) and particulate matter 2.5-microns (PM_{2.5}) in size are subject to National Ambient Air Quality Standards (NAAQS). PM₁₀ and smaller can penetrate the lungs of human beings and animals, and PM_{2.5} and smaller is difficult for lungs to expel and has been linked to increases in death rates and heart attacks by disturbing heart rhythms and increasing plaque and clotting; respiratory infections, asthma attacks and chronic obstructive pulmonary disease (COPD) aggravation.

To comply with applicable air pollution control requirements and minimize adverse impacts on public health and welfare, the following information is provided:

Northern Regional Office
1801 W. Route 66 • Suite 117 • Flagstaff, AZ 86001
(928) 779-0313

Southern Regional Office
400 West Congress Street • Suite 433 • Tucson, AZ 85701
(520) 628-6733

REDUCE DISTURBANCE of PARTICULATE MATTER during CONSTRUCTION

The following measures are recommended to reduce disturbance of particulate matter, including emissions caused by strong winds as well as machinery and trucks tracking soil off the construction site:

- I. Site Preparation and Construction
 - A. Minimize land disturbance;
 - B. Suppress dust on traveled paths which are not paved through wetting, use of watering trucks, chemical dust suppressants, or other reasonable precautions to prevent dust entering ambient air;
 - C. Cover trucks when hauling soil;
 - D. Minimize soil track-out by washing or cleaning truck wheels before leaving construction site;
 - E. Stabilize the surface of soil piles; and
 - F. Create windbreaks.

- II. Site Restoration
 - A. Revegetate any disturbed land not used;
 - B. Remove unused material; and
 - C. Remove soil piles via covered trucks.

The following rules applicable to reducing dust during construction, demolition and earth moving activities are enclosed:

- Arizona Administrative Code R18-2-604 through -607
- Arizona Administrative Code R18-2-804

Should you have further questions, please do not hesitate to call me at (602) 771-2375 or A. "Bonnie" Cockrell at (602) 771-2378 of the Planning Section Staff.

Very truly yours,



Diane L. Arnst, Manager
Air Quality Planning Section

Enclosure

cc: Bret Parke, EV Administrative Counsel
A. "Bonnie" Cockrell, Environmental Program Specialist, Air Planning
File No. 240105

R18-2-604. Open Areas, Dry Washes, or Riverbeds

- A. No person shall cause, suffer, allow, or permit a building or its appurtenances, or a building or subdivision site, or a driveway, or a parking area, or a vacant lot or sales lot, or an urban or suburban open area to be constructed, used, altered, repaired, demolished, cleared, or leveled, or the earth to be moved or excavated, without taking reasonable precautions to limit excessive amounts of particulate matter from becoming airborne. Dust and other types of air contaminants shall be kept to a minimum by good modern practices such as using an approved dust suppressant or adhesive soil stabilizer, paving, covering, landscaping, continuous wetting, detouring, barring access, or other acceptable means.
- B. No person shall cause, suffer, allow, or permit a vacant lot, or an urban or suburban open area, to be driven over or used by motor vehicles, trucks, cars, cycles, bikes, or buggies, or by animals such as horses, without taking reasonable precautions to limit excessive amounts of particulates from becoming airborne. Dust shall be kept to a minimum by using an approved dust suppressant, or adhesive soil stabilizer, or by paving, or by barring access to the property, or by other acceptable means.
- C. No person shall operate a motor vehicle for recreational purposes in a dry wash, riverbed or open area in such a way as to cause or contribute to visible dust emissions which then cross property lines into a residential, recreational, institutional, educational, retail sales, hotel or business premises. For purposes of this subsection "motor vehicles" shall include, but not be limited to trucks, cars, cycles, bikes, buggies and 3-wheelers. Any person who violates the provisions of this subsection shall be subject to prosecution under A.R.S. § 49-463.

Historical Note

Adopted effective May 14, 1979 (Supp. 79-1). Former Section R9-3-604 renumbered without change as Section R18-2-604 (Supp. 87-3). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-604 renumbered to R18-2-804, new Section R18-2-604 renumbered from R18-2-404 and amended effective November 15, 1993 (Supp. 93-4).

R18-2-605. Roadways and Streets

- A. No person shall cause, suffer, allow or permit the use, repair, construction or reconstruction of a roadway or alley without taking reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne. Dust and other particulates shall be kept to a minimum by employing temporary paving, dust suppressants, wetting down, detouring or by other reasonable means.
- B. No person shall cause, suffer, allow or permit transportation of materials likely to give rise to airborne dust without taking reasonable precautions, such as wetting, applying dust suppressants, or covering the load, to prevent particulate matter from becoming airborne. Earth or other material that is deposited by trucking or earth moving equipment shall be removed from paved streets by the person responsible for such deposits.

Historical Note

Adopted effective May 14, 1979 (Supp. 79-1). Former Section R9-3-605 renumbered without change as Section R18-2-605 (Supp. 87-3). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-605 renumbered to R18-2-805, new Section R18-2-605 renumbered from R18-2-405 effective November 15, 1993 (Supp. 93-4).

R18-2-606. Material Handling

No person shall cause, suffer, allow or permit crushing, screening, handling, transporting or conveying of materials or other operations likely to result in significant amounts of airborne dust without taking reasonable precautions, such as the use of spray bars, wetting agents, dust suppressants, covering the load, and hoods to prevent excessive amounts of particulate matter from becoming airborne.

Historical Note

Section R18-2-606 renumbered from R18-2-406 effective November 15, 1993 (Supp. 93-4).

R18-2-607. Storage Piles

- A. No person shall cause, suffer, allow, or permit organic or inorganic dust producing material to be stacked, piled, or otherwise stored without taking reasonable precautions such as chemical stabilization, wetting, or covering to prevent excessive amounts of particulate matter from becoming airborne.
- B. Stacking and reclaiming machinery utilized at storage piles shall be operated at all times with a minimum fall of material and in such manner, or with the use of spray bars and wetting agents, as to prevent excessive amounts of particulate matter from becoming airborne.

Historical Note

Section R18-2-607 renumbered from R18-2-407 effective November 15, 1993 (Supp. 93-4).

R18-2-804. Roadway and Site Cleaning Machinery

- A. No person shall cause, allow or permit to be emitted into the atmosphere from any roadway and site cleaning machinery smoke or dust for any period greater than 10 consecutive seconds, the opacity of which exceeds 40%. Visible emissions when starting cold equipment shall be exempt from this requirement for the first 10 minutes.
- B. In addition to complying with subsection (A), no person shall cause, allow or permit the cleaning of any site, roadway, or alley without taking reasonable precautions to prevent particulate matter from becoming airborne. Reasonable precautions may include applying dust suppressants. Earth or other material shall be removed from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water or by other means.

Historical Note

Adopted effective February 26, 1988 (Supp. 88-1). Amended effective September 26, 1990 (Supp. 90-3). Amended effective February 3, 1993 (Supp. 93-1). Former Section R18-2-804 renumbered to Section R18-2-904, new Section R18-2-804 renumbered from R18-2-604 effective November 15, 1993 (Supp. 93-4).

Eligibility determinations
No adverse effect

June 24, 2009

James Riordan, Executive Program Director
Secure Border Initiative
U.S. Customs and Border Protection
1300 Pennsylvania Avenue
Washington, DC 20229

RE: Proposed Tower Installations within Organ Pipe Cactus Monument); CBP
SHPO-2008-1056 (40004)

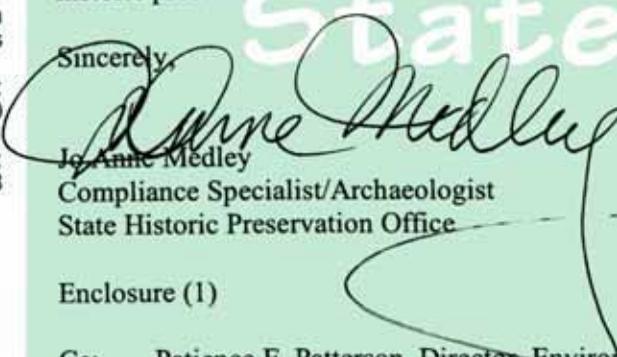
Dear Mr. Riordan:

Thank you for continuing to consult with our office pursuant to 36 CFR 800 regarding the above referenced tower project. William Collins, Historian, and I have the following comments based on documentation submitted.

1. We concur with your "unevaluated" determinations as listed in the enclosure with your letter (Enclosure #1) because the documentation provided in the survey report is not sufficient to support eligibility determinations for those properties.
2. We concur with eligibility determinations as listed in the enclosure to your letter (Enclosure #1), with two exceptions: AZ Z:13:127(ASM) and SON C:1:71(ASM).
3. We do not concur with the recommendation that the historic components of AZ A:13:127(ASM) are eligible for listing in the National Register of Historic Places (NRHP) under Criterion A. The statement of the property's historic context relates that this property was a short-term use of land in a manner inappropriate to the area's climate and water resources. It is not associated with the broad pattern of historic usage (cattle raising) that was important in the region's development. It fails to meet to National Register's criteria for association with *important* aspects of local history.
4. We do not concur with the recommendation that the prehistoric components of SON C:1:71(ASM) are not eligible for listing in the NRHP. It is our opinion that the earthen berms are prehistoric water control features and that the site is NRHP eligible under Criterion D.
5. **We concur that the avoidance and archaeological monitoring measures that will be implemented during construction and installation are sufficient to support the finding of no adverse effect for the undertaking.**

We appreciate your continuing cooperation with our office in complying with the requirements of historic preservation.

Sincerely,


Jo Anne Medley
Compliance Specialist/Archaeologist
State Historic Preservation Office

Enclosure (1)

Cc: Patience E. Patterson, Director, Environmental Planning, SBInet, Washington, DC



Janice K. Brewer
Governor

State Parks
Board Members

Chair
Reese Woodling
Tucson

Tracey Westerhausen
Phoenix

Larry Landry
Phoenix

Walter D. Armer, Jr.
Vail

Arlan Colton
Tucson

William C. Scalzo
Phoenix

Jamie Hogue
Acting State Land
Commissioner

Renée E. Bahl
Executive Director

Arizona State Parks
1300 W. Washington
Phoenix, AZ 85007

Tel & TTY: 602.542.4174
AZStateParks.com

800.285.3703 from
(520 & 928) area codes

General Fax:
602.542.4180

Director's Office Fax:
602.542.4188



Table – Summary of findings, project effects and management recommendations

Archaeological Site	Component Description	Potential Effect	NRHP Recommendation	Management Recommendation	Associated Tower
SON B:4:32(ASM)	Prehistoric (artifacts/features)	No adverse effect	Eligible	Avoidance, archaeological monitoring during construction	TCA-AJO-003
→ AZ Z:13:127(ASM) Armenta Ranch	Historic (ranch property) Prehistoric (artifacts/features)	No adverse effect No effect	Eligible NOT ELIGIBLE Unevaluated	Avoidance; use Bates Well Road to access tower location	TCA-AJO-004
SON C:1:63(ASM)	Prehistoric (artifacts)	No adverse effect	Eligible	Avoidance, archaeological monitoring during construction	TCA-AJO-310
SON C:1:64(ASM)	Historic (erosion control) Prehistoric (artifacts/feature)	No effect No adverse effect	Unevaluated Eligible	Avoidance, tower location rejected	TCA-AJO-008
SON C:1:65(ASM)	Historic (erosion control) Prehistoric (artifacts/feature)	No effect No adverse effect	Unevaluated Eligible	Avoidance, tower location rejected	TCA-AJO-008
SON C:1:66(ASM)	Prehistoric (artifacts/features)	No adverse effect	Eligible	Avoidance, tower location rejected	TCA-AJO-008
SON C:1:67(ASM)	Historic (erosion control) Prehistoric (artifacts/features)	No effect No adverse effect	Unevaluated Eligible	Avoidance, tower location rejected	TCA-AJO-008
SON C:1:68(ASM)	Prehistoric (artifacts/features)	No adverse effect	Eligible	Avoidance, tower location rejected	TCA-AJO-008
SON C:1:69(ASM)	Prehistoric (artifacts/feature)	No effect	Ineligible	Avoidance, tower location rejected	TCA-AJO-008
SON C:1:70(ASM)	Historic (erosion control) Prehistoric (artifacts)	No effect No adverse effect	Unevaluated Unevaluated	Avoidance, tower location rejected	TCA-AJO-008
SON C:1:71(ASM)	Historic (erosion control) Prehistoric (artifacts) <i>of design</i>	No effect No effect	Unevaluated Ineligible DELIGIBLE	Archaeological monitoring during construction	TCA-AJO-310
→ No CR Site on CPNWR tower site	N/A	None	No Historic Properties Affected	No Historic Properties Affected	TCA-AJO-189



**U.S. Customs and
Border Protection**

June 18, 2010

Project Evaluation Program Supervisor
Arizona Game and Fish Department
WMHB – Project Evaluation Program
5000 W. Carefree Highway
Phoenix, AZ 85086-5000

RE: Proposed Supplemental Environmental Assessment for the *SBI_{net}* Ajo-1 Tower Project,
U.S. Border Patrol Tucson Sector

Dear Sir/Madam:

On behalf of the U.S. Customs and Border Protection (CBP) and the Department of Homeland Security, the U.S. Army Corps of Engineers (USACE), Fort Worth District intends to prepare a Supplemental Environmental Assessment (SEA) for the Secure Border Initiative (*SBI_{net}*) Ajo-1 Tower Project in the U.S. Border Patrol (USBP) Tucson Sector. After completion of the 2009 Environmental Assessment (EA) and initiation of tower construction at tower site TCA-AJO-189, *SBI_{net}* identified the need for the modification of some aspects of tower TCA-AJO-189 covered in the 2009 EA. The original design for TCA-AJO-189, addressed in the 2009 EA, was a Remote Access Tower with a rock anchor foundation. This type of foundation is designed to be installed in bedrock at or near the ground surface. However, during the initial phases of foundation construction bedrock was not found at or near the ground surface. In an attempt to locate bedrock a 12- x 12- foot hole was excavated to a depth of 14 feet; however, it was determined that bedrock was deeper than 14 feet and an alternate tower foundation was required for tower construction at the TCA-AJO-189 site. During the excavation of the hole, excavated material was air lifted and staged at the Ajo airport in heavy duty canvas bags. During one of the airlifts a canvas bag with an approximately 3,000 pound payload was released to avoid stalling the helicopter. The payload landed on the side of Growler Mountain. The Cabeza Prieta National Wildlife Refuge (CPNWR) manager requested that tower construction be halted until a reasonable alternative construction method or tower site could be developed for TCA-AJO-189. Further, excavation and the airlifting of excavated material were not addressed in the 2009 EA.

The SEA will analyze the potential for significant adverse or beneficial impacts of the proposed actions. The actions included in this SEA would occur with the *SBI_{net}* Ajo-1 Tower Project Area (Figure 1). The project area is located solely on federally-owned lands and includes CPNWR, Organ Pipe Cactus National Monument and Bureau of Land Management lands. At the present time, the proposed action includes the construction of fiber optic and commercial grid power to TCA-AJO-004 and 302 and the USBP forward operating base to be moved in proximity to TCA-AJO-302 as part of the 2009 EA (Figure 2). The construction of fiber optic would replace the communication function of tower TCA-AJO-189 and complete the

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We are currently in the process of gathering the most current information available regarding Federal and state listed species potentially occurring within this area. CBP respectfully requests that your agency provide input regarding protected species, designated critical habitat, descriptions of the sensitive resources (e.g., rare or unique plant communities, threatened and endangered and candidate species), and unique or environmentally sensitive areas that you believe may be affected by the proposed USBP activities.

We intend to provide your agency with a copy of the Draft SEA for the *SBI*net Ajo-1 Tower Project once completed. Please let us know if additional copies are needed.

Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Ms. Patience Patterson at (571) 468-7290.

Sincerely,



Mr. James Riordan
Executive Program Director, *SBI*net

Enclosure(s)

cc: Mr. Dorion Watkins

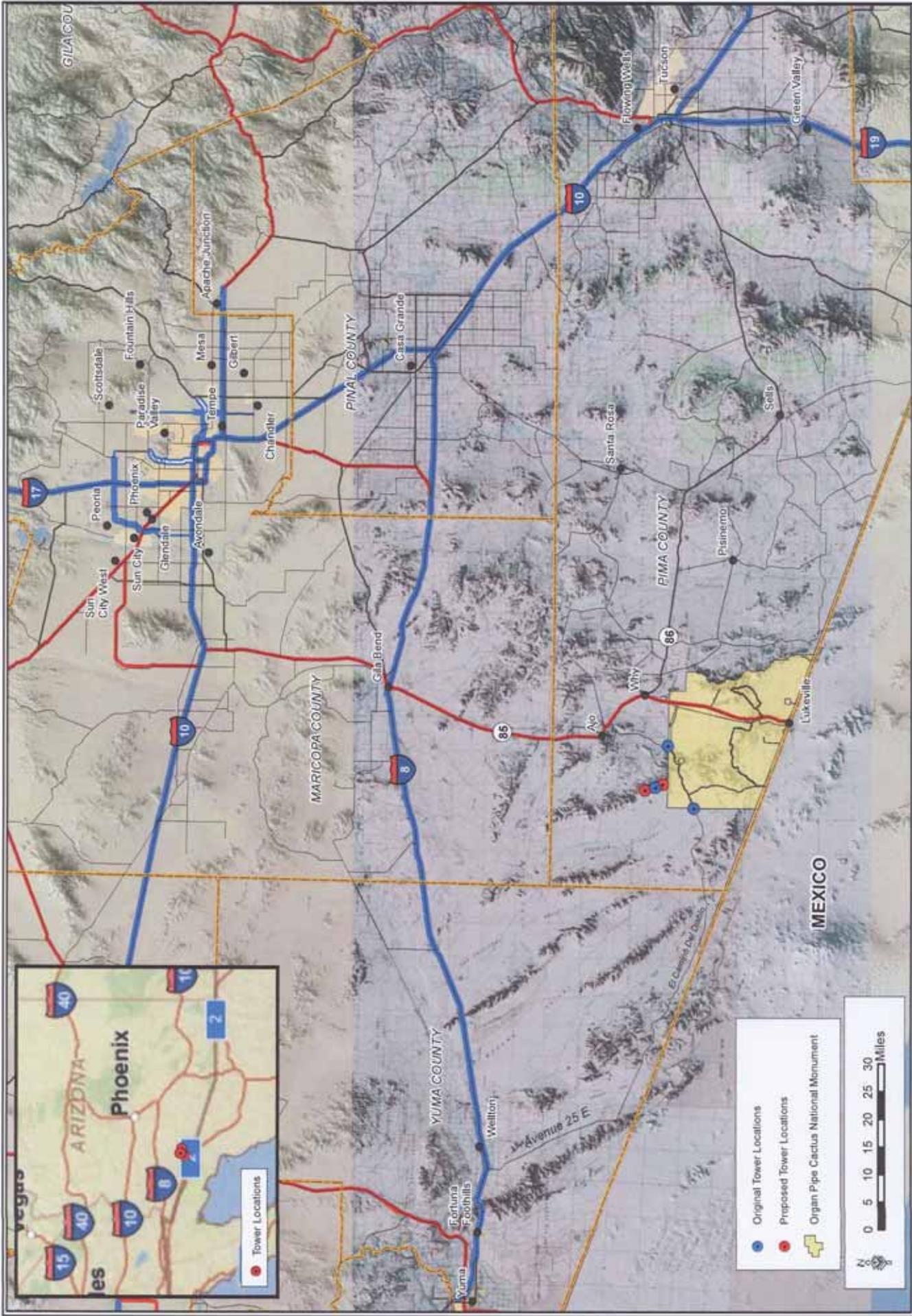
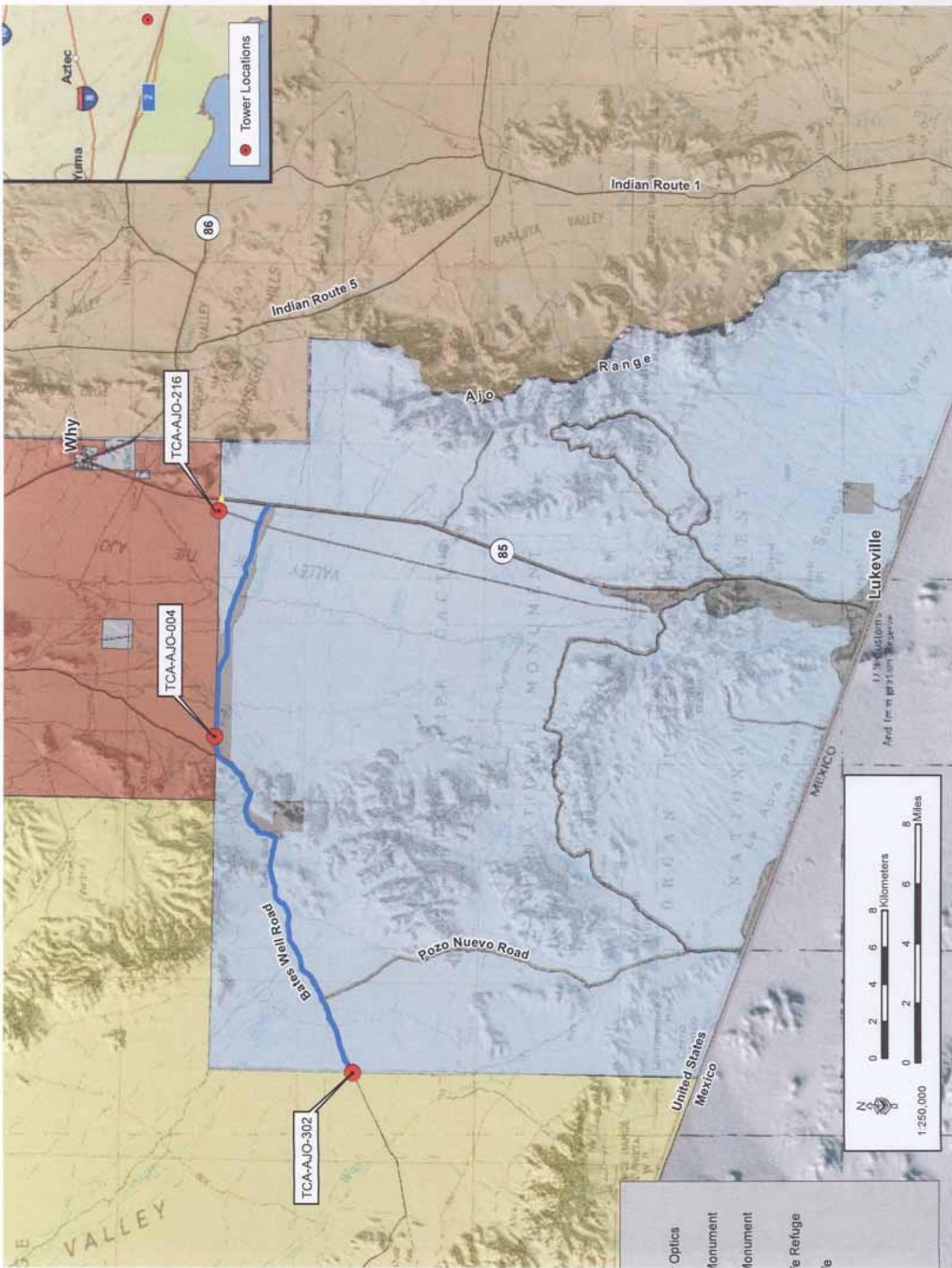
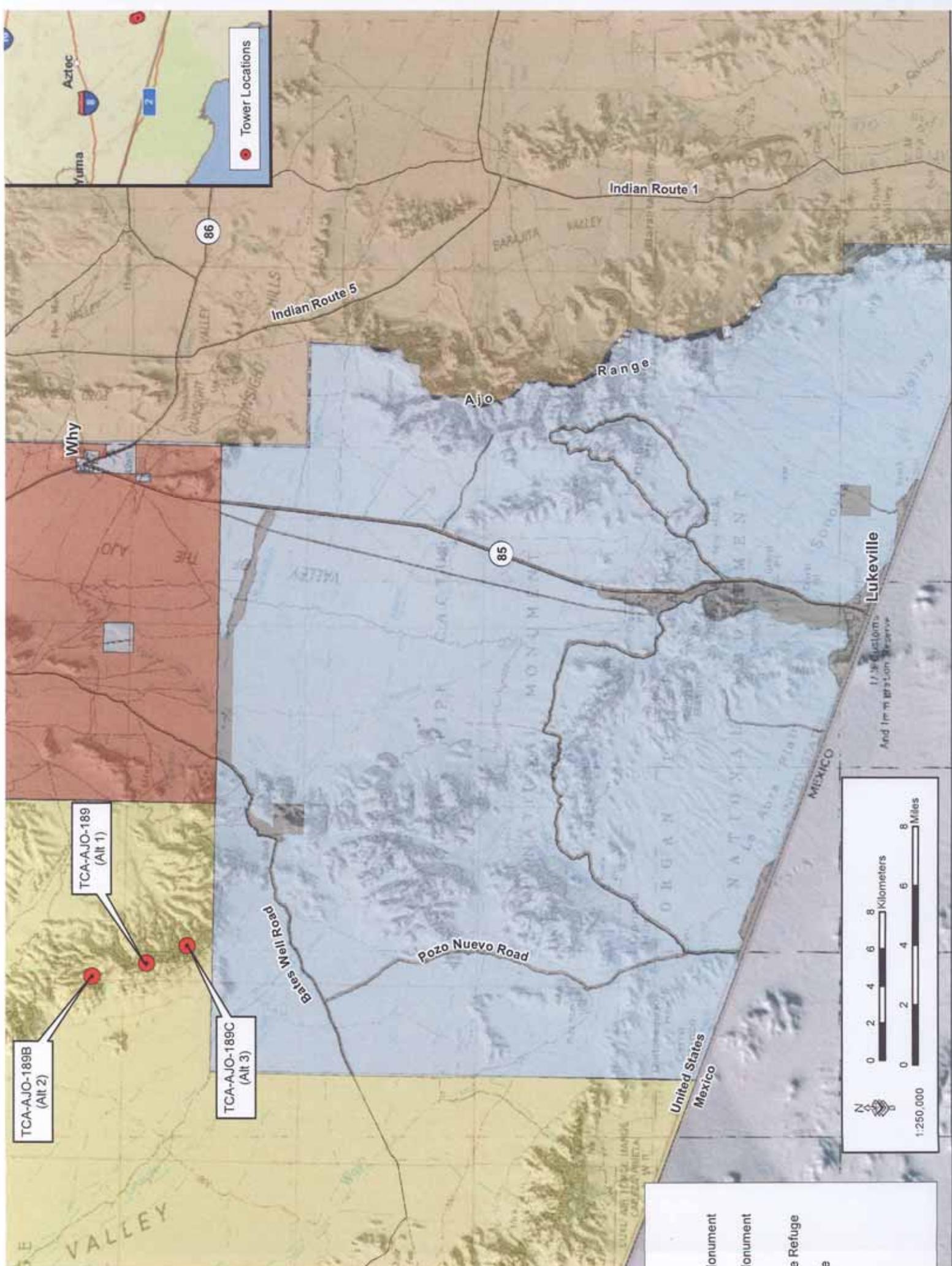


Figure 1: Vicinity Map







**U.S. Customs and
Border Protection**

June 18, 2010

Sherry Barrett, Assistant Field Supervisor
Arizona Ecological Services Field Office
U.S. Fish and Wildlife Service
201 N. Bonita Ave.
Suite 141
Tucson, AZ 85745

RE: Proposed Supplemental Environmental Assessment for the *SBI_{net}* Ajo-1 Tower Project,
U.S. Border Patrol Tucson Sector

Dear Ms. Barrett:

On behalf of the U.S. Customs and Border Protection (CBP) and the Department of Homeland Security, the U.S. Army Corps of Engineers (USACE), Fort Worth District intends to prepare a Supplemental Environmental Assessment (SEA) for the Secure Border Initiative (*SBI_{net}*) Ajo-1 Tower Project in the U.S. Border Patrol (USBP) Tucson Sector. After completion of the 2009 Environmental Assessment (EA) and initiation of tower construction at tower site TCA-AJO-189, *SBI_{net}* identified the need for the modification of some aspects of tower TCA-AJO-189 covered in the 2009 EA. The original design for TCA-AJO-189, addressed in the 2009 EA, was a Remote Access Tower with a rock anchor foundation. This type of foundation is designed to be installed in bedrock at or near the ground surface. However, during the initial phases of foundation construction bedrock was not found at or near the ground surface. In an attempt to locate bedrock a 12- x 12- foot hole was excavated to a depth of 14 feet; however, it was determined that bedrock was deeper than 14 feet and an alternate tower foundation was required for tower construction at the TCA-AJO-189 site. During the excavation of the hole, excavated material was air lifted and staged at the Ajo airport in heavy duty canvas bags. During one of the airlifts a canvas bag with an approximately 3,000 pound payload was released to avoid stalling the helicopter. The payload landed on the side of Growler Mountain. The Cabeza Prieta National Wildlife Refuge (CPNWR) manager requested that tower construction be halted until a reasonable alternative construction method or tower site could be developed for TCA-AJO-189. Further, excavation and the airlifting of excavated material were not addressed in the 2009 EA.

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would replace the communication function of tower TCA-AJO-189 and complete the communication link between towers TCA-AJO-004 and 302 with the USBP Ajo Station. Two proposed tower sites are also currently being considered as alternates (Alternatives 2 and 3) to the original TCA-AJO-189 tower site (Figure 3). The two alternate tower sites would require the use of helicopter for access during construction and maintenance. Additionally, the modification of the tower foundation at TCA-AJO-189 (Alternative 1) is also being considered as part of this SEA (Figure 3).

We are currently in the process of gathering the most current information available regarding Federal and state listed species potentially occurring within this area. CBP respectfully requests that your agency provide input regarding protected species, designated critical habitat, descriptions of the sensitive resources (e.g., rare or unique plant communities, threatened and endangered and candidate species), and unique or environmentally sensitive areas that you believe may be affected by the proposed USBP activities. Threatened and Endangered species and best management practices information from the U.S. Fish and Wildlife Service's (USFWS) IPac system and the USFWS's Biological Opinion for the *SBI*net Ajo-1 Tower Project (22410-F-2009-0089 and 22410-1989-0078-R6) will be used in preparation of the Draft SEA.

We intend to provide your agency with a copy of the Draft SEA for the *SBI*net Ajo-1 Tower Project once completed. Please let us know if additional copies are needed.

Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Ms. Patience Patterson at (571) 468-7290.

Sincerely,



Mr. James Riordan
Executive Program Director, *SBI*net

Enclosure(s)

cc: Mr. Steve Spangle
Ms. Erin Fernandez
Mr. Jim Rorabaugh
Mr. Dorion Watkins



**U.S. Customs and
Border Protection**

June 18, 2010

Mr. Lee Biaza, Superintendent
Organ Pipe Cactus National Monument
10 Organ Pipe Drive
Ajo, AZ 85321

RE: Proposed Supplemental Environmental Assessment for the *SBI*net Ajo-1 Tower
Project, U.S. Border Patrol Tucson Sector

Dear Mr. Biaza:

On behalf of the U.S. Customs and Border Protection (CBP) and the Department of Homeland Security, the U.S. Army Corps of Engineers (USACE), Fort Worth District intends to prepare a Supplemental Environmental Assessment (SEA) for the Secure Border Initiative (*SBI*net) Ajo-1 Tower Project in the U.S. Border Patrol (USBP) Tucson Sector. After completion of the 2009 Environmental Assessment (EA) and initiation of tower construction at tower site TCA-AJO-189, *SBI*net identified the need for the modification of some aspects of tower TCA-AJO-189 covered in the 2009 EA. The original design for TCA-AJO-189, addressed in the 2009 EA, was a Remote Access Tower with a rock anchor foundation. This type of foundation is designed to be installed in bedrock at or near the ground surface. However, during the initial phases of foundation construction bedrock was not found at or near the ground surface. In an attempt to locate bedrock a 12- x 12- foot hole was excavated to a depth of 14 feet; however, it was determined that bedrock was deeper than 14 feet and an alternate tower foundation was required for tower construction at the TCA-AJO-189 site. During the excavation of the hole, excavated material was air lifted and staged at the Ajo airport in heavy duty canvas bags. During one of the airlifts a canvas bag with an approximately 3,000 pound payload was released to avoid stalling the helicopter. The payload landed on the side of Growler Mountain. The Cabeza Prieta National Wildlife Refuge (CPNWR) manager requested that tower construction be halted until a reasonable alternative construction method or tower site could be developed for TCA-AJO-189. Further, excavation and the airlifting of excavated material were not addressed in the 2009 EA.

The SEA will analyze the potential for significant adverse or beneficial impacts of the proposed actions. The actions included in this SEA would occur with the *SBI*net Ajo-1 Tower Project Area (Figure 1). The project area is located solely on federally-owned lands and includes CPNWR, Organ Pipe Cactus National Monument and Bureau of Land Management lands. At the present time, the proposed action includes the construction of fiber optic and commercial grid power to TCA-AJO-004 and 302 and the USBP forward

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We are currently in the process of gathering the most current information available regarding Federal and state listed species potentially occurring within this area. CBP respectfully requests that your agency provide input regarding protected species, designated critical habitat, descriptions of the sensitive resources (e.g., rare or unique plant communities, threatened and endangered and candidate species), and unique or environmentally sensitive areas that you believe may be affected by the proposed USBP activities. Additionally, your response should include any National Park Service restrictions, permitting or other requirements with which CBP would have to comply during project siting, construction, and operation. Threatened and Endangered species and best management practices information from the U.S. Fish and Wildlife Service's (USFWS) IPac system and the USFWS's Biological Opinion for the SBInet Ajo-1 Tower Project (22410-F-2009-0089 and 22410-1989-0078-R6) will be used in preparation of the Draft SEA.

We intend to provide your agency with a copy of the Draft SEA for the SBInet Ajo-1 Tower Project once completed. Please let us know if additional copies are needed.

Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Ms. Patience Patterson at (571) 468-7290.

Sincerely,



Mr. James Riordan
Executive Program Director, SBInet

Enclosure(s)

cc: Mr. Dorion Watkins



**U.S. Customs and
Border Protection**

June 18, 2010

Ms. Joan Card, Director
Water Quality Division
Arizona Department of Environmental Quality
1110 West Washington Street
Phoenix, AZ 85007

RE: Proposed Supplemental Environmental Assessment for the *SBI*net Ajo-1 Tower Project, U.S. Border Patrol Tucson Sector

Dear Ms. Card:

On behalf of the U.S. Customs and Border Protection (CBP) and the Department of Homeland Security, the U.S. Army Corps of Engineers (USACE), Fort Worth District intends to prepare a Supplemental Environmental Assessment (SEA) for the Secure Border Initiative (*SBI*net) Ajo-1 Tower Project in the U.S. Border Patrol (USBP) Tucson Sector. After completion of the 2009 Environmental Assessment (EA) and initiation of tower construction at tower site TCA-AJO-189, *SBI*net identified the need for the modification of some aspects of tower TCA-AJO-189 covered in the 2009 EA. The original design for TCA-AJO-189, addressed in the 2009 EA, was a Remote Access Tower with a rock anchor foundation. This type of foundation is designed to be installed in bedrock at or near the ground surface. However, during the initial phases of foundation construction bedrock was not found at or near the ground surface. In an attempt to locate bedrock a 12- x 12- foot hole was excavated to a depth of 14 feet; however, it was determined that bedrock was deeper than 14 feet and an alternate tower foundation was required for tower construction at the TCA-AJO-189 site. During the excavation of the hole, excavated material was air lifted and staged at the Ajo airport in heavy duty canvas bags. During one of the airlifts a canvas bag with an approximately 3,000 pound payload was released to avoid stalling the helicopter. The payload landed on the side of Growler Mountain. The Cabeza Prieta National Wildlife Refuge (CPNWR) manager requested that tower construction be halted until a reasonable alternative construction method or tower site could be developed for TCA-AJO-189. Further, excavation and the airlifting of excavated material were not addressed in the 2009 EA.

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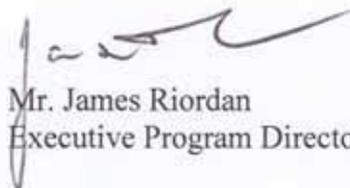
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We are currently in the process of gathering the most current data and input from state and local governmental agencies, departments, and bureaus that may be affected by or otherwise have an interest in this proposed action. Since your agency may have particular knowledge and expertise regarding potential environmental impacts from CBP's proposed action, your input is sought regarding the likely or anticipated environmental effects of this proposed action. Your response should include any state and local restrictions, permitting or other requirements with which CBP would have to comply during project siting, construction, and operation.

We intend to provide your agency with a copy of the Draft SEA for the *SBI*net Ajo-1 Tower Project once completed. Please let us know if additional copies are needed.

Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Ms. Patience Patterson at (571) 468-7290.

Sincerely,



Mr. James Riordan
Executive Program Director, *SBI*net

Enclosure(s)

cc: Mr. Steve Owens
Mr. Dorion Watkins



**U.S. Customs and
Border Protection**

June 18, 2010

Mr. Curtis McCasland, Manager
Cabeza Prieta National Wildlife Refuge
1611 North Second Avenue
Ajo, AZ 85321

RE: Proposed Supplemental Environmental Assessment for the *SBI*net Ajo-1 Tower
Project, U.S. Border Patrol Tucson Sector

Dear Mr. McCasland:

On behalf of the U.S. Customs and Border Protection (CBP) and the Department of Homeland Security, the U.S. Army Corps of Engineers (USACE), Fort Worth District intends to prepare a Supplemental Environmental Assessment (SEA) for the Secure Border Initiative (*SBI*net) Ajo-1 Tower Project in the U.S. Border Patrol (USBP) Tucson Sector. After completion of the 2009 Environmental Assessment (EA) and initiation of tower construction at tower site TCA-AJO-189, *SBI*net identified the need for the modification of some aspects of tower TCA-AJO-189 covered in the 2009 EA. The original design for TCA-AJO-189, addressed in the 2009 EA, was a Remote Access Tower with a rock anchor foundation. This type of foundation is designed to be installed in bedrock at or near the ground surface. However, during the initial phases of foundation construction bedrock was not found at or near the ground surface. In an attempt to locate bedrock a 12- x 12- foot hole was excavated to a depth of 14 feet; however, it was determined that bedrock was deeper than 14 feet and an alternate tower foundation was required for tower construction at the TCA-AJO-189 site. During the excavation of the hole, excavated material was air lifted and staged at the Ajo airport in heavy duty canvas bags. During one of the airlifts a canvas bag with an approximately 3,000 pound payload was released to avoid stalling the helicopter. The payload landed on the side of Growler Mountain. The Cabeza Prieta National Wildlife Refuge (CPNWR) manager requested that tower construction be halted until a reasonable alternative construction method or tower site could be developed for TCA-AJO-189. Further, excavation and the airlifting of excavated material were not addressed in the 2009 EA.

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Sincerely,



Mr. James Riordan
Executive Program Director, *SBI*net

Enclosure(s)

cc: Mr. Dorion Watkins



**U.S. Customs and
Border Protection**

June 18, 2010

The Honorable Mr. Ned Norris, Chairman
Tohono O'odham Nation
P.O. Box 837
Sells, AZ 85634

RE: Proposed Supplemental Environmental Assessment for the *SBI*net Ajo-1 Tower
Project, U.S. Border Patrol Tucson Sector

Dear Chairman Norris:

On behalf of the U.S. Customs and Border Protection (CBP) and the Department of Homeland Security, the U.S. Army Corps of Engineers (USACE), Fort Worth District intends to prepare a Supplemental Environmental Assessment (SEA) for the Secure Border Initiative (*SBI*net) Ajo-1 Tower Project in the U.S. Border Patrol (USBP) Tucson Sector. After completion of the 2009 Environmental Assessment (EA) and initiation of tower construction at tower site TCA-AJO-189, *SBI*net identified the need for the modification of some aspects of tower TCA-AJO-189 covered in the 2009 EA. The original design for TCA-AJO-189, addressed in the 2009 EA, was a Remote Access Tower with a rock anchor foundation. This type of foundation is designed to be installed in bedrock at or near the ground surface. However, during the initial phases of foundation construction bedrock was not found at or near the ground surface. In an attempt to locate bedrock a 12- x 12- foot hole was excavated to a depth of 14 feet; however, it was determined that bedrock was deeper than 14 feet and an alternate tower foundation was required for tower construction at the TCA-AJO-189 site. During the excavation of the hole, excavated material was air lifted and staged at the Ajo airport in heavy duty canvas bags. During one of the airlifts a canvas bag with an approximately 3,000 pound payload was released to avoid stalling the helicopter. The payload landed on the side of Growler Mountain. The Cabeza Prieta National Wildlife Refuge (CPNWR) manager requested that tower construction be halted until a reasonable alternative construction method or tower site could be developed for TCA-AJO-189. Further, excavation and the airlifting of excavated material were not addressed in the 2009 EA.

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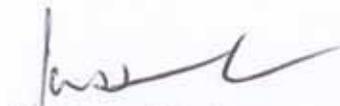
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We are currently in the process of gathering the most current information regarding Federal and state listed species, cultural resources, and sensitive and unique areas potentially occurring within the project area. CBP respectfully requests that your agency provide any information regarding those resources and/or issues that you believe may be affected by the proposed action.

We intend to provide your agency with a copy of the Draft SEA for the *SBI*net Ajo-1 Tower Project once completed. Please let us know if additional copies are needed.

Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Ms. Patience Patterson at (571) 468-7290.

Sincerely,



Mr. James Riordan
Executive Program Director, *SBI*net

Enclosure(s)

cc: Mr. Peter Steere
Ms. Karen Howe
Mr. Dorion Watkins



**U.S. Customs and
Border Protection**

June 18, 2010

Mr. Steve Owens, Director
Arizona Department of Environmental Quality
1110 West Washington Street
Phoenix, AZ 85007

RE: Proposed Supplemental Environmental Assessment for the *SBI*net Ajo-1 Tower
Project, U.S. Border Patrol Tucson Sector

Dear Mr. Owens:

On behalf of the U.S. Customs and Border Protection (CBP) and the Department of Homeland Security, the U.S. Army Corps of Engineers (USACE), Fort Worth District intends to prepare a Supplemental Environmental Assessment (SEA) for the Secure Border Initiative (*SBI*net) Ajo-1 Tower Project in the U.S. Border Patrol (USBP) Tucson Sector. After completion of the 2009 Environmental Assessment (EA) and initiation of tower construction at tower site TCA-AJO-189, *SBI*net identified the need for the modification of some aspects of tower TCA-AJO-189 covered in the 2009 EA. The original design for TCA-AJO-189, addressed in the 2009 EA, was a Remote Access Tower with a rock anchor foundation. This type of foundation is designed to be installed in bedrock at or near the ground surface. However, during the initial phases of foundation construction bedrock was not found at or near the ground surface. In an attempt to locate bedrock a 12- x 12- foot hole was excavated to a depth of 14 feet; however, it was determined that bedrock was deeper than 14 feet and an alternate tower foundation was required for tower construction at the TCA-AJO-189 site. During the excavation of the hole, excavated material was air lifted and staged at the Ajo airport in heavy duty canvas bags. During one of the airlifts a canvas bag with an approximately 3,000 pound payload was released to avoid stalling the helicopter. The payload landed on the side of Growler Mountain. The Cabeza Prieta National Wildlife Refuge (CPNWR) manager requested that tower construction be halted until a reasonable alternative construction method or tower site could be developed for TCA-AJO-189. Further, excavation and the airlifting of excavated material were not addressed in the 2009 EA.

The SEA will analyze the potential for significant adverse or beneficial impacts of the proposed actions. The actions included in this SEA would occur with the *SBI*net Ajo-1 Tower Project Area (Figure 1). The project area is located solely on federally-owned lands and includes CPNWR, Organ Pipe Cactus National Monument and Bureau of Land Management lands. At the present time, the proposed action includes the construction of fiber optic and commercial grid power to TCA-AJO-004 and 302 and the USBP forward operating base to be moved in proximity to TCA-AJO-302 as part of the 2009 EA (Figure

2). The construction of fiber optic would replace the communication function of tower TCA-AJO-189 and complete the communication link between towers TCA-AJO-004 and 302 with the USBP Ajo Station. Two proposed tower sites are also currently being considered as alternates (Alternatives 2 and 3) to the original TCA-AJO-189 tower site (Figure 3). The two alternate tower sites would require the use of helicopter for access during construction and maintenance. Additionally, the modification of the tower foundation at TCA-AJO-189 (Alternative 1) is also being considered as part of this SEA (Figure 3).

We are currently in the process of gathering the most current data and input from state and local governmental agencies, departments, and bureaus that may be affected by or otherwise have an interest in this proposed action. Since your agency may have particular knowledge and expertise regarding potential environmental impacts from CBP's proposed action, your input is sought regarding the likely or anticipated environmental effects of this proposed action. Your response should include any state and local restrictions, permitting or other requirements with which CBP would have to comply during project siting, construction, and operation.

We intend to provide your agency with a copy of the Draft EA for the *SBI*net Ajo-1 Tower Project once completed. Please let us know if additional copies are needed.

Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Ms. Patience Patterson at (571) 468-7290.

Sincerely,



Mr. James Riordan
Executive Program Director, *SBI*net

Enclosure(s)

cc: Mr. Dorion Watkins



Janice K. Brewer
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

1110 West Washington Street • Phoenix, Arizona 85007
(602) 771-2300 • www.azdeq.gov



Benjamin H. Grumbles
Director

July 9, 2010

Mr. James Riordan, Executive Director SBInet
U.S. Department of Homeland Security
U.S. Customs and Border Protection
Washington, D.C. 20229

Project: Proposed Supplemental Environmental Assessment for SBInet Ajo-1 Tower Project
U.S. Border Patrol Tucson Sector

Dear Mr. Riordan:

The Air Quality Division has reviewed the project as described in your letter, with map enclosure, received on June 18, 2010, that you submitted for a General Conformity Determination with the Arizona State Implementation Plan in accordance with Clean Air Act Section 176(c)(1); 58 Federal Register 63214-63259; Title 40 Code of Federal Regulations Part 51, Subpart W §§ 51.850-51.860; Title 40 Code of Federal Regulations Part 93, Subpart B §§ 93.150-160; and Arizona Administrative Code R18-2-348 (approved into the Arizona State Implementation Plan April 23, 1999; effective June 22, 1999). The Air Quality Division has concluded that a General Conformity Determination is not required for the following reason:

- Project's total emissions of PM₁₀ in a PM₁₀ Maintenance Area would be less than *de minimis* levels in Title 40 CFR § 51.853(b) [and §93.153(b)] as described or calculated.

Nevertheless, considering the proposed tower sites and prevailing winds, which can affect the Ajo PM₁₀ Moderate Planning Nonattainment Area, we are concerned that the proposed project(s), may potentially, affect the area's immediate environment with particulate matter. Both particulate matter 10-microns (PM₁₀) and particulate matter 2.5-microns (PM_{2.5}) in size are subject to National Ambient Air Quality Standards (NAAQS). PM₁₀ and smaller can penetrate the lungs of human beings and animals, and PM_{2.5} and smaller is difficult for lungs to expel and has been linked to increases in death rates and heart attacks by disturbing heart rhythms and increasing plaque and clotting; respiratory infections, asthma attacks and chronic obstructive pulmonary disease (COPD) aggravation.

To comply with applicable air pollution control requirements and minimize adverse impacts on public health and welfare, the following information is provided:

Northern Regional Office
1801 W. Route 66 • Suite 117 • Flagstaff, AZ 86001
(928) 779-0313

Southern Regional Office
400 West Congress Street • Suite 433 • Tucson, AZ 85701
(520) 628-6733

REDUCE DISTURBANCE of PARTICULATE MATTER during CONSTRUCTION

The following measures are recommended to reduce disturbance of particulate matter, including emissions caused by strong winds as well as machinery and trucks tracking soil off the construction site:

- I. Site Preparation and Construction
 - A. Minimize land disturbance;
 - B. Suppress dust on traveled paths which are not paved through wetting, use of watering trucks, chemical dust suppressants, or other reasonable precautions to prevent dust entering ambient air;
 - C. Cover trucks when hauling soil;
 - D. Minimize soil track-out by washing or cleaning truck wheels before leaving construction site;
 - E. Stabilize the surface of soil piles; and
 - F. Create windbreaks.

- II. Site Restoration
 - A. Revegetate any disturbed land not used;
 - B. Remove unused material; and
 - C. Remove soil piles via covered trucks.

The following rules applicable to reducing dust during construction, demolition and earth moving activities are enclosed:

- Arizona Administrative Code R18-2-604 through -607
- Arizona Administrative Code R18-2-804

Should you have further questions, please do not hesitate to call me at (602) 771-2375 or A. "Bonnie" Cockrell at (602) 771-2378 of the Planning Section Staff.

Very truly yours,



Diane L. Arnst, Manager
Air Quality Planning Section

Enclosure

cc: Bret Parke, EV Administrative Counsel
A. "Bonnie" Cockrell, Environmental Program Specialist, Air Planning
File No. 240105

R18-2-604. Open Areas, Dry Washes, or Riverbeds

- A. No person shall cause, suffer, allow, or permit a building or its appurtenances, or a building or subdivision site, or a driveway, or a parking area, or a vacant lot or sales lot, or an urban or suburban open area to be constructed, used, altered, repaired, demolished, cleared, or leveled, or the earth to be moved or excavated, without taking reasonable precautions to limit excessive amounts of particulate matter from becoming airborne. Dust and other types of air contaminants shall be kept to a minimum by good modern practices such as using an approved dust suppressant or adhesive soil stabilizer, paving, covering, landscaping, continuous wetting, detouring, barring access, or other acceptable means.
- B. No person shall cause, suffer, allow, or permit a vacant lot, or an urban or suburban open area, to be driven over or used by motor vehicles, trucks, cars, cycles, bikes, or buggies, or by animals such as horses, without taking reasonable precautions to limit excessive amounts of particulates from becoming airborne. Dust shall be kept to a minimum by using an approved dust suppressant, or adhesive soil stabilizer, or by paving, or by barring access to the property, or by other acceptable means.
- C. No person shall operate a motor vehicle for recreational purposes in a dry wash, riverbed or open area in such a way as to cause or contribute to visible dust emissions which then cross property lines into a residential, recreational, institutional, educational, retail sales, hotel or business premises. For purposes of this subsection "motor vehicles" shall include, but not be limited to trucks, cars, cycles, bikes, buggies and 3-wheelers. Any person who violates the provisions of this subsection shall be subject to prosecution under A.R.S. § 49-463.

Historical Note

Adopted effective May 14, 1979 (Supp. 79-1). Former Section R9-3-604 renumbered without change as Section R18-2-604 (Supp. 87-3). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-604 renumbered to R18-2-804, new Section R18-2-604 renumbered from R18-2-404 and amended effective November 15, 1993 (Supp. 93-4).

R18-2-605. Roadways and Streets

- A. No person shall cause, suffer, allow or permit the use, repair, construction or reconstruction of a roadway or alley without taking reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne. Dust and other particulates shall be kept to a minimum by employing temporary paving, dust suppressants, wetting down, detouring or by other reasonable means.
- B. No person shall cause, suffer, allow or permit transportation of materials likely to give rise to airborne dust without taking reasonable precautions, such as wetting, applying dust suppressants, or covering the load, to prevent particulate matter from becoming airborne. Earth or other material that is deposited by trucking or earth moving equipment shall be removed from paved streets by the person responsible for such deposits.

Historical Note

Adopted effective May 14, 1979 (Supp. 79-1). Former Section R9-3-605 renumbered without change as Section R18-2-605 (Supp. 87-3). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-605 renumbered to R18-2-805, new Section R18-2-605 renumbered from R18-2-405 effective November 15, 1993 (Supp. 93-4).

R18-2-606. Material Handling

No person shall cause, suffer, allow or permit crushing, screening, handling, transporting or conveying of materials or other operations likely to result in significant amounts of airborne dust without taking reasonable precautions, such as the use of spray bars, wetting agents, dust suppressants, covering the load, and hoods to prevent excessive amounts of particulate matter from becoming airborne.

Historical Note

Section R18-2-606 renumbered from R18-2-406 effective November 15, 1993 (Supp. 93-4).

R18-2-607. Storage Piles

- A. No person shall cause, suffer, allow, or permit organic or inorganic dust producing material to be stacked, piled, or otherwise stored without taking reasonable precautions such as chemical stabilization, wetting, or covering to prevent excessive amounts of particulate matter from becoming airborne.
- B. Stacking and reclaiming machinery utilized at storage piles shall be operated at all times with a minimum fall of material and in such manner, or with the use of spray bars and wetting agents, as to prevent excessive amounts of particulate matter from becoming airborne.

Historical Note

Section R18-2-607 renumbered from R18-2-407 effective November 15, 1993 (Supp. 93-4).

R18-2-804. Roadway and Site Cleaning Machinery

- A. No person shall cause, allow or permit to be emitted into the atmosphere from any roadway and site cleaning machinery smoke or dust for any period greater than 10 consecutive seconds, the opacity of which exceeds 40%. Visible emissions when starting cold equipment shall be exempt from this requirement for the first 10 minutes.
- B. In addition to complying with subsection (A), no person shall cause, allow or permit the cleaning of any site, roadway, or alley without taking reasonable precautions to prevent particulate matter from becoming airborne. Reasonable precautions may include applying dust suppressants. Earth or other material shall be removed from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water or by other means.

Historical Note

Adopted effective February 26, 1988 (Supp. 88-1). Amended effective September 26, 1990 (Supp. 90-3). Amended effective February 3, 1993 (Supp. 93-1). Former Section R18-2-804 renumbered to Section R18-2-904, new Section R18-2-804 renumbered from R18-2-604 effective November 15, 1993 (Supp. 93-4).



U.S. Customs and
Border Protection

June 18, 2010

Ms. Teri Raml
Bureau of Land Management
Phoenix Field Office
21605 N. 7th Avenue
Phoenix, AZ 85027-2099

RE: Proposed Supplemental Environmental Assessment for the SBInet Ajo-1 Tower
Project, U.S. Border Patrol Tucson Sector

Dear Ms. Raml:

On behalf of the U.S. Customs and Border Protection (CBP) and the Department of Homeland Security, the U.S. Army Corps of Engineers (USACE), Fort Worth District intends to prepare a Supplemental Environmental Assessment (SEA) for the Secure Border Initiative (SBInet) Ajo-1 Tower Project in the U.S. Border Patrol (USBP) Tucson Sector. After completion of the 2009 Environmental Assessment (EA) and initiation of tower construction at tower site TCA-AJO-189, SBInet identified the need for the modification of some aspects of tower TCA-AJO-189 covered in the 2009 EA. The original design for TCA-AJO-189, addressed in the 2009 EA, was a Remote Access Tower with a rock anchor foundation. This type of foundation is designed to be installed in bedrock at or near the ground surface. However, during the initial phases of foundation construction bedrock was not found at or near the ground surface. In an attempt to locate bedrock a 12- x 12- foot hole was excavated to a depth of 14 feet; however, it was determined that bedrock was deeper than 14 feet and an alternate tower foundation was required for tower construction at the TCA-AJO-189 site. During the excavation of the hole, excavated material was air lifted and staged at the Ajo airport in heavy duty canvas bags. During one of the airlifts a canvas bag with an approximately 3,000 pound payload was released to avoid stalling the helicopter. The payload landed on the side of Growler Mountain. The Cabeza Prieta National Wildlife Refuge (CPNWR) manager requested that tower construction be halted until a reasonable alternative construction method or tower site could be developed for TCA-AJO-189. Further, excavation and the airlifting of excavated material were not addressed in the 2009 EA.

The SEA will analyze the potential for significant adverse or beneficial impacts of the proposed actions. The actions included in this SEA would occur with the SBInet Ajo-1 Tower Project Area (Figure 1). The project area is located solely on federally-owned lands and includes CPNWR, Organ Pipe Cactus National Monument and Bureau of Land Management lands. At the present time, the proposed action includes the construction of

fiber optic and commercial grid power to TCA-AJO-004 and 302 and the USBP forward operating base to be moved in proximity to TCA-AJO-302 as part of the 2009 EA (Figure 2). The construction of fiber optic would replace the communication function of tower TCA-AJO-189 and complete the communication link between towers TCA-AJO-004 and 302 with the USBP Ajo Station. Two proposed tower sites are also currently being considered as alternates (Alternatives 2 and 3) to the original TCA-AJO-189 tower site (Figure 3). The two alternate tower sites would require the use of helicopter for access during construction and maintenance. Additionally, the modification of the tower foundation at TCA-AJO-189 (Alternative 1) is also being considered as part of this SEA (Figure 3).

We are currently in the process of gathering the most current information available regarding Federal and state permits that may be required for this project. CBP respectfully requests that your agency provide input regarding any rare, unique, or environmentally sensitive areas that you believe may be affected by the proposed USBP activities. Additionally, your response should include any Bureau of Land Management restrictions, permitting or other requirements with which CBP would have to comply during project siting, construction, and operation.

We intend to provide your agency with a copy of the Draft SEA for the *SBI*net Ajo-1 Tower Project once completed. Please let us know if additional copies are needed.

Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Ms. Patience Patterson at (571) 468-7290.

Sincerely,



Mr. James Riordan
Executive Program Director, *SBI*net

Enclosure(s)

cc: Mr. Dorion Watkins



**U.S. Customs and
Border Protection**

June 18, 2010

Mr. Bill Ruth, Commissioner
U.S. International Boundary and Water Commission
4171 North Mesa Street
Suite C100
El Paso, TX 79902

RE: Proposed Supplemental Environmental Assessment for the *SBI*net Ajo-1 Tower
Project, U.S. Border Patrol Tucson Sector

Dear Mr. Ruth:

On behalf of the U.S. Customs and Border Protection (CBP) and the Department of Homeland Security, the U.S. Army Corps of Engineers (USACE), Fort Worth District intends to prepare a Supplemental Environmental Assessment (SEA) for the Secure Border Initiative (*SBI*net) Ajo-1 Tower Project in the U.S. Border Patrol (USBP) Tucson Sector. After completion of the 2009 Environmental Assessment (EA) and initiation of tower construction at tower site TCA-AJO-189, *SBI*net identified the need for the modification of some aspects of tower TCA-AJO-189 covered in the 2009 EA. The original design for TCA-AJO-189, addressed in the 2009 EA, was a Remote Access Tower with a rock anchor foundation. This type of foundation is designed to be installed in bedrock at or near the ground surface. However, during the initial phases of foundation construction bedrock was not found at or near the ground surface. In an attempt to locate bedrock a 12- x 12- foot hole was excavated to a depth of 14 feet; however, it was determined that bedrock was deeper than 14 feet and an alternate tower foundation was required for tower construction at the TCA-AJO-189 site. During the excavation of the hole, excavated material was air lifted and staged at the Ajo airport in heavy duty canvas bags. During one of the airlifts a canvas bag with an approximately 3,000 pound payload was released to avoid stalling the helicopter. The payload landed on the side of Growler Mountain. The Cabeza Prieta National Wildlife Refuge (CPNWR) manager requested that tower construction be halted until a reasonable alternative construction method or tower site could be developed for TCA-AJO-189. Further, excavation and the airlifting of excavated material were not addressed in the 2009 EA.

The SEA will analyze the potential for significant adverse or beneficial impacts of the proposed actions. The actions included in this SEA would occur with the *SBI*net Ajo-1 Tower Project Area (Figure 1). The project area is located solely on federally-owned lands and includes CPNWR, Organ Pipe Cactus National Monument and Bureau of Land Management lands. At the present time, the proposed action includes the construction of

fiber optic and commercial grid power to TCA-AJO-004 and 302 and the USBP forward operating base to be moved in proximity to TCA-AJO-302 as part of the 2009 EA (Figure 2). The construction of fiber optic would replace the communication function of tower TCA-AJO-189 and complete the communication link between towers TCA-AJO-004 and 302 with the USBP Ajo Station. Two proposed tower sites are also currently being considered as alternates (Alternatives 2 and 3) to the original TCA-AJO-189 tower site (Figure 3). The two alternate tower sites would require the use of helicopter for access during construction and maintenance. Additionally, the modification of the tower foundation at TCA-AJO-189 (Alternative 1) is also being considered as part of this SEA (Figure 3).

We are currently in the process of gathering the most current data and input from Federal, state, and local governmental agencies, departments, and bureaus that may be affected by or otherwise have an interest in this proposed action. Since your agency may have particular knowledge and expertise regarding potential environmental impacts from CBP's proposed action, your input is sought regarding the likely or anticipated environmental effects of this proposed action. Your response should include any U.S. International Border & Water Commission restrictions, permitting or other requirements with which CBP would have to comply during project siting, construction, and operation.

We intend to provide your agency with a copy of the Draft SEA for the *SBI*net Ajo-1 Tower Project once completed. Please let us know if additional copies are needed.

Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Ms. Patience Patterson at (571) 468-7290.

Sincerely,



Mr. James Riordan
Executive Program Director, *SBI*net

Enclosure(s)

cc: Mr. John Merino
Mr. Al Riera
Mr. Jose Nunez
Mr. Tony Solo
Mr. Mr. Dorion Watkins



**U.S. Customs and
Border Protection**

June 18, 2010

Steve Spangle, Field Supervisor
U.S. Fish and Wildlife Service
Arizona Ecological Services Field Office
2321 West Royal Palm Road, Suite 103
Phoenix, AZ 85021-4915

RE: Proposed Supplemental Environmental Assessment for the SBInet Ajo-1 Tower
Project, U.S. Border Patrol Tucson Sector

Dear Mr. Spangle:

On behalf of the U.S. Customs and Border Protection (CBP) and the Department of Homeland Security, the U.S. Army Corps of Engineers (USACE), Fort Worth District intends to prepare a Supplemental Environmental Assessment (SEA) for the Secure Border Initiative (SBInet) Ajo-1 Tower Project in the U.S. Border Patrol (USBP) Tucson Sector. After completion of the 2009 Environmental Assessment (EA) and initiation of tower construction at tower site TCA-AJO-189, SBInet identified the need for the modification of some aspects of tower TCA-AJO-189 covered in the 2009 EA. The original design for TCA-AJO-189, addressed in the 2009 EA, was a Remote Access Tower with a rock anchor foundation. This type of foundation is designed to be installed in bedrock at or near the ground surface. However, during the initial phases of foundation construction bedrock was not found at or near the ground surface. In an attempt to locate bedrock a 12- x 12- foot hole was excavated to a depth of 14 feet; however, it was determined that bedrock was deeper than 14 feet and an alternate tower foundation was required for tower construction at the TCA-AJO-189 site. During the excavation of the hole, excavated material was air lifted and staged at the Ajo airport in heavy duty canvas bags. During one of the airlifts a canvas bag with an approximately 3,000 pound payload was released to avoid stalling the helicopter. The payload landed on the side of Growler Mountain. The Cabeza Prieta National Wildlife Refuge (CPNWR) manager requested that tower construction be halted until a reasonable alternative construction method or tower site could be developed for TCA-AJO-189. Further, excavation and the airlifting of excavated material were not addressed in the 2009 EA.

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We are currently in the process of gathering the most current information available regarding Federal and state listed species potentially occurring within this area. CBP respectfully requests that your agency provide input regarding protected species, designated critical habitat, descriptions of the sensitive resources (e.g., rare or unique plant communities, threatened and endangered and candidate species), and unique or environmentally sensitive areas that you believe may be affected by the proposed USBP activities. Threatened and Endangered species and best management practices information from the U.S. Fish and Wildlife Service's (USFWS) IPac system and the USFWS's Biological Opinion for the SBInet Ajo-1 Tower Project (22410-F-2009-0089 and 22410-1989-0078-R6) will be used in preparation of the Draft SEA.

We intend to provide your agency with a copy of the Draft SEA for the SBInet Ajo-1 Tower Project once completed. Please let us know if additional copies are needed.

Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Ms. Patience Patterson at (571) 468-7290.

Sincerely,



Mr. James Riordan
Executive Program Director, SBInet

Enclosure(s)

cc: Ms. Sherry Barret
Ms. Erin Fernandez
Mr. Jim Rorabaugh
Mr. Dorion Watkins



**U.S. Customs and
Border Protection**

June 18, 2010

Mr. Mark Winkleman
State Land Commissioner
Arizona State Land Department
1616 West Adam Street
Phoenix, AZ 85007

RE: Proposed Supplemental Environmental Assessment for the *SBInet* Ajo-1 Tower
Project, U.S. Border Patrol Tucson Sector

Dear Mr. Winkleman:

On behalf of the U.S. Customs and Border Protection (CBP) and the Department of Homeland Security, the U.S. Army Corps of Engineers (USACE), Fort Worth District intends to prepare a Supplemental Environmental Assessment (SEA) for the Secure Border Initiative (*SBInet*) Ajo-1 Tower Project in the U.S. Border Patrol (USBP) Tucson Sector. After completion of the 2009 Environmental Assessment (EA) and initiation of tower construction at tower site TCA-AJO-189, *SBInet* identified the need for the modification of some aspects of tower TCA-AJO-189 covered in the 2009 EA. The original design for TCA-AJO-189, addressed in the 2009 EA, was a Remote Access Tower with a rock anchor foundation. This type of foundation is designed to be installed in bedrock at or near the ground surface. However, during the initial phases of foundation construction bedrock was not found at or near the ground surface. In an attempt to locate bedrock a 12- x 12- foot hole was excavated to a depth of 14 feet; however, it was determined that bedrock was deeper than 14 feet and an alternate tower foundation was required for tower construction at the TCA-AJO-189 site. During the excavation of the hole, excavated material was air lifted and staged at the Ajo airport in heavy duty canvas bags. During one of the airlifts a canvas bag with an approximately 3,000 pound payload was released to avoid stalling the helicopter. The payload landed on the side of Growler Mountain. The Cabeza Prieta National Wildlife Refuge (CPNWR) manager requested that tower construction be halted until a reasonable alternative construction method or tower site could be developed for TCA-AJO-189. Further, excavation and the airlifting of excavated material were not addressed in the 2009 EA.

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We intend to provide your agency with a copy of the Draft SEA for the *SBI*net Ajo-1 Tower Project once completed. Please let us know if additional copies are needed.

Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Ms. Patience Patterson at (571) 468-7290.

Sincerely,



Mr. James Riordan
Executive Program Director, *SBI*net

Enclosure(s)

cc: Mr. Dorion Watkins

APPENDIX B
TCA-AJO-189 RESTORATION PLAN





FINAL

**RESTORATION PLAN
FOR THE FORMER SBINET TCA-AJO-189 TOWER SITE
CABEZA PRIETA NATIONAL WILDLIFE REFUGE
U.S. BORDER PATROL, AJO STATION, ARIZONA**

**Department of Homeland Security
U.S. Customs and Border Protection
U.S. Border Patrol**



AUGUST 2011

FINAL

**RESTORATION PLAN
FOR THE FORMER SBInet TCA-AJO-189 TOWER SITE
CABEZA PRIETA NATIONAL WILDLIFE REFUGE
U.S. BORDER PATROL, AJO STATION, ARIZONA**

August 2011

Prepared for: Department of Homeland Security
U.S. Customs and Border Protection
Office of Technology Innovation and Acquisition
Attn: Mr. Dorion Watkins
1901 S. Bell Street, Room 734
Arlington, VA 20598

Submitted by: U.S. Army Corps of Engineers
Fort Worth District
Attn: Mr. Randy Niebuhr
CESWF-PM-ET
801 Cherry Street, Suite 875B
Fort Worth, TX 76102

Prepared By: Gulf South Research Corporation
8081 GSRI Avenue
Baton Rouge, LA 70820
(225) 757-8088
(225) 761-8077 - fax

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SECTION 1.0
INTRODUCTION



1.0 INTRODUCTION

The Secure Border Initiative (SBI) is a comprehensive, multi-year plan established by the Department of Homeland Security (DHS) in November 2005 to secure the United States (U.S.) borders and reduce illegal immigration. The SBI mission is to promote border security strategies that protect against and prevent terrorist attacks and other transnational crimes. Additionally, SBI will coordinate DHS efforts to ensure the legal entry and exit of people and goods moving across the U.S. borders and improve the enforcement of immigration, customs, and agriculture laws at U.S. borders, within the country, and abroad.

*SBI*net is the component of SBI charged with developing and installing technology and attendant tactical infrastructure solutions to help U.S. Customs and Border Protection (CBP) gain effective control of the Nation's borders. The goal of *SBI*net is to field the most effective, proven technology and response platforms, and integrate them into a single, comprehensive border security system for DHS. *SBI*net no longer exists as a branch of SBI. The Office of Technology, Innovation and Acquisition (OTIA) has assumed all of SBI and *SBI*net.

U.S. Customs and Border Protection (CBP), OTIA proposes to restore an approximately 35- x 35-foot disturbance area located on Growler Mountain in the Cabeza Prieta National Wildlife Refuge (Photographs 1-1 and 1-2 and Figure 1-1). The entire 35- x 35-foot area has been cleared of vegetation and graded. In 2009, CBP prepared an environmental assessment for the construction, operation, and maintenance of the *SBI*net Ajo-1 Tower Project. The project included 10 towers and included the proposed tower (TCA-AJO-189) located on Growler Mountain. The disturbance was created during the initial construction phase of TCA-AJO-189.



Photograph 1-1. Aerial view of disturbance looking north from south of the site



Photograph 1-2. Excavated hole at TCA-AJO-189

The original design for TCA-AJO-189 included a rock anchor foundation. This type of foundation is designed to be installed in bedrock at or near the ground surface. However, during the initial phases of foundation construction, bedrock was not found at or near the ground surface. In an attempt to locate bedrock, a 14- x 14-foot hole was excavated to a depth of 6 feet. However, it was determined that bedrock was deeper than 6 feet, and an alternate tower foundation was required for tower construction at the TCA-AJO-189 site on top of Growler Mountain. During the excavation of the hole, excavated material was airlifted in canvas slings

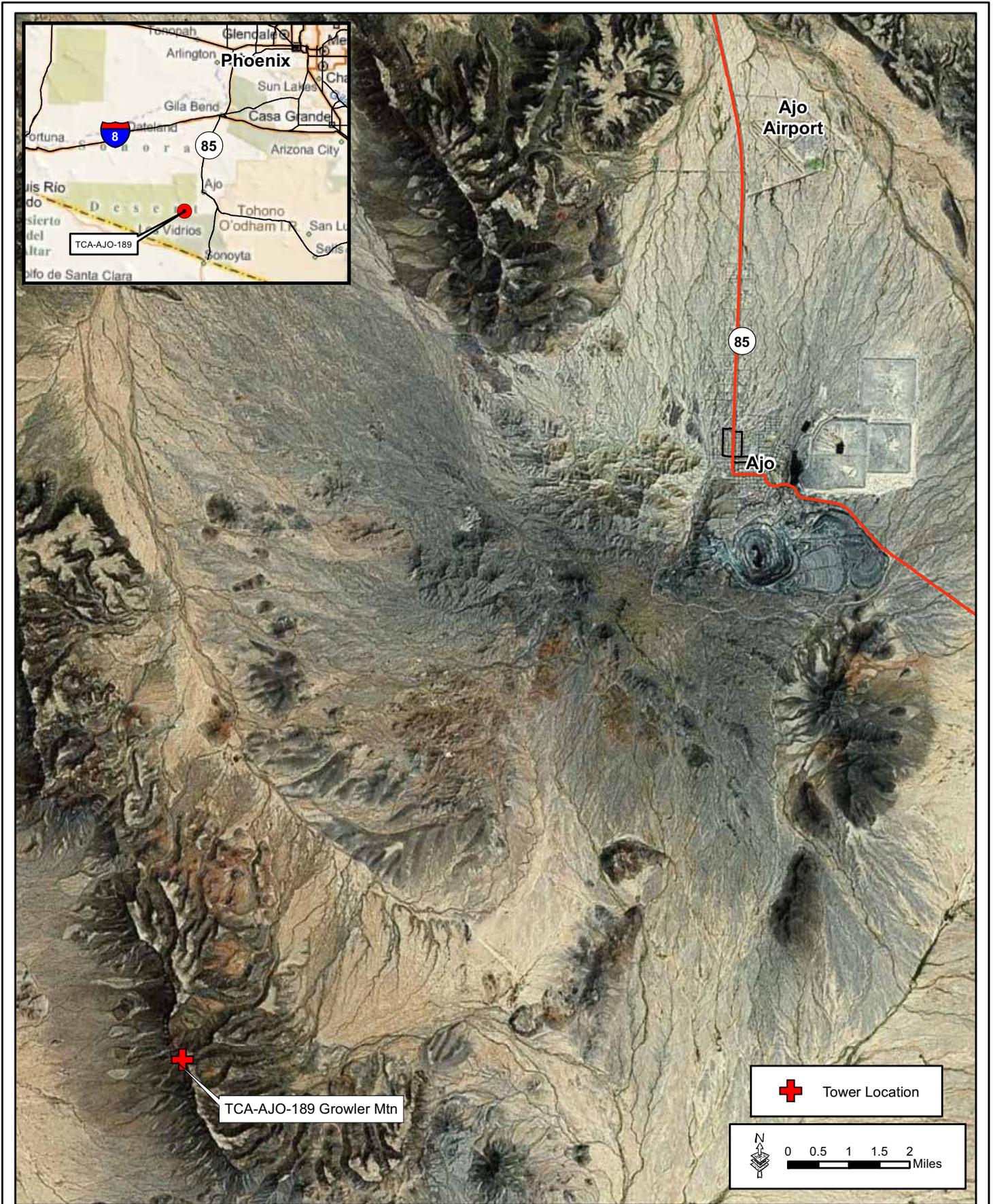


Figure 1-1: Location Map

and staged at the Ajo Airport. During one of the airlifts, a canvas sling, with an approximately 3,000-pound payload, was released to avoid stalling the helicopter. The payload landed on the side of Growler Mountain within designated wilderness. U.S Fish and Wildlife Service (USFWS) requested that tower construction be halted until a reasonable alternative construction method or an alternative tower site could be developed for TCA-AJO-189.

To accommodate USFWS's request, OTIA developed one alternative that would eliminate the need for TCA-AJO-189, an alternative that would modify the foundation at TCA-AJO-189, and two alternate locations for TCA-AJO-189, which would avoid designated wilderness. In December 2010, CBP released a draft supplemental environmental assessment, for public review, addressing five alternatives, including the No Action Alternative. The alternative that would eliminate the need for TCA-AJO-189 was the preferred alternative. In a February 9, 2011 correspondence, USFWS mandated that CBP restore tower site TCA-AJO-189 to pre-construction or near pre-construction conditions (Appendix A). Additionally, the correspondence outlined restoration requirements for the site.

The purpose of the proposed restoration project is to return the site to, at, or near pre-construction conditions. This restoration plan outlines the site remediation, landscaping, re-vegetation, irrigation, and monitoring requirements for the restoration of the site.

1.1 SETTING

The restoration site is situated along the crest of Growler Mountain at an elevation of approximately 3,000 feet above mean sea level. The vegetation community found in this area is described by Brown and Lowe (1994) as the Colorado subdivision of the Sonoran Desert Scrub biotic community. Other communication equipment and solar panels are located on the crest adjacent to the restoration site. Currently, the entire 35- x 35-foot site is void of vegetation and the soil is exposed to the elements.

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SECTION 2.0
SITE REMEDIATION AND LANDSCAPING

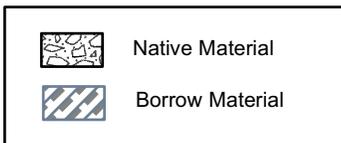
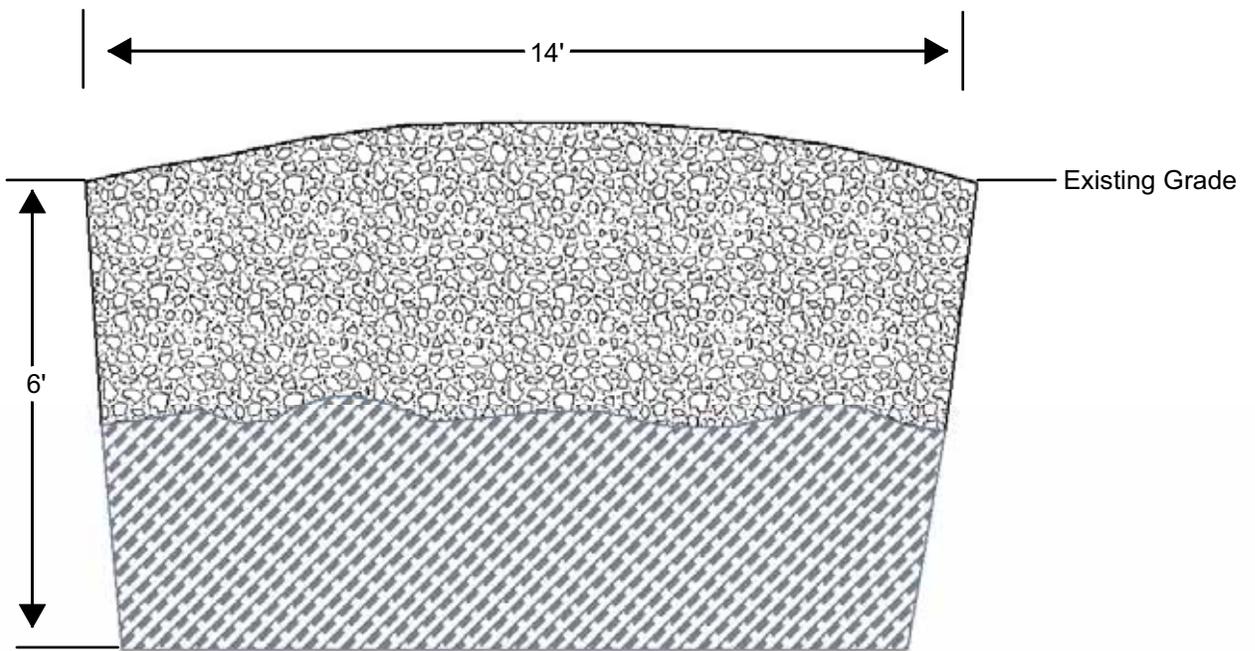


2.0 SITE REMEDIATION AND LANDSCAPING

This plan provides provisions to restore the natural topography of the site to pre-construction conditions. The initial phase of restoration efforts will include the remediation of the 14- x 14-foot hole. The hole will be backfilled with both off-site borrow material and native material excavated from the hole. Off-site borrow material will be obtained from Mission Material, located north of Gila Bend, Arizona. This material is needed to compensate for the excavated material lost on the side of Growler Mountain when the soil bag was released from the helicopter. The off-site borrow material will be the first material placed in the hole, and the bottom 50 to 75 percent of the material will be compacted to a 95 percent compaction rate. Previously excavated native material will be used to backfill the remainder of the hole (Figure 2-1). Only native material excavated from the site will be used to backfill the upper portion of the excavated hole. Due to the remote nature of the site, all material will need to be transported by helicopter.

Following backfilling efforts, the entire 35- x 35-foot site will be graded to match the adjacent natural grade. The backfilled hole will be graded to ensure that there is not an excessive mound of soil, nor concavity at the top of the restored area. The native material used to backfill the hole should be slightly mounded above grade to allow for natural compaction.

Rocks originally removed from the site will be used to restore the natural landscape. However, in western arid land soils there is often a carbonate or caliche layer present. These materials are generally pale and starkly contrast with undisturbed surface layers. This contrast can be further exacerbated by the presence of desert varnish, a weathering of some rocks that produces a dark brown-black coating (Abella et al. 2007). This contrast is evident at the disturbance site (see Photographs 1-1 and 1-2). Upon final grading of the 35- x 35-foot disturbed area, native rocks removed from the site will be placed on the site to restore the landscape. Native rocks removed from the site will be sorted and those rocks with desert varnish or dark coloring will be selected for use. These rocks will be hand placed so the desert varnish (dark coating) is exposed and arranged in a natural pattern using the adjacent undisturbed landscape as a model. If a sufficient amount of native material with desert varnish cannot be obtained from the previously excavated material, the rocks will be treated to create an artificial desert varnish appearance. There are also several commercially available non-toxic products (e.g., Permeon™) that mimic the appearance of desert varnish and can be applied to the soil and rock surfaces to lessen the contrast of exposed paler materials. If required, these treatments would be conducted after plantings are established and no more disturbances are expected in order to fully maximize effectiveness of color application.



NOT TO SCALE

Figure 2-1: Typical Cross-section of Remediated Hole on Growler Mountain

**SECTION 3.0
REVEGETATION**



3.0 REVEGETATION

3.1 VEGETATION SAMPLING

The purpose of this restoration effort is to restore the disturbed footprint at TCA-AJO-189 to at or near pre-construction conditions. In an effort to determine pre-construction conditions at the site, vegetation sampling was conducted in the undisturbed habitat adjacent to the disturbed area. On March 23, 2011 Gulf South Research Corporation (GSRC) conducted vegetation sampling adjacent to the disturbed area at TCA-AJO-189. The purpose of the vegetation sampling was to identify and characterize the revegetation target community. Per the requirements in USFWS' February 9, 2011 correspondence, three randomly located 12- X 12-foot plots were established outside but within 100 feet of the disturbed area. Data was collected regarding the species composition, species density, and percent ground cover for all perennial shrubs and cacti. A portion of the area adjacent to the western edge of the disturbed area was excluded from sampling due to the extremely steep nature of the topography. To ensure the three plots were randomly located, a random number generator was used to determine the direction from the disturbed area for each plot. The random number generator was also used to determine a distance to the center of each plot from the disturbed area. The center and all four corners of each of the sample plots were collected using a Trimble Geo XT handheld GPS unit (Figure 3-1). Photographs of each plot were taken from the four corners and at the midpoint along each side. A photograph of Plot 2 is shown as Photograph 3-1.



Photograph 3-1. Layout of Sample Plot 2

Data was collected regarding the plant composition and density for each of the three randomly chosen sample plots. A point intercept method was used to collect percent ground cover in each sample plot by stretching a calibrated tape across each plot at 1-foot transect intervals and recording cover types at 1-foot intervals along each transect (Appendix B). A total of 132 data points were collected for each of the three sample plots. This data was averaged across all three plots, and species type, number, and percent cover per unit area were calculated to determine the vegetation characteristics of the landscape adjacent to the disturbed area (Table 3-1). These vegetation characteristics were used to determine the revegetation requirements for the disturbed area.

Overall plant species diversity was relatively low with an average of 4.3 species per plot. Vegetation densities were also low. Triangle-leaf bursage (*Ambrosia deltoidea*), had the highest density with an average of less than 28 plants per sample plot. The average density of all other plants represented in the sample plots was 0.33 to 2 plants per sample area.

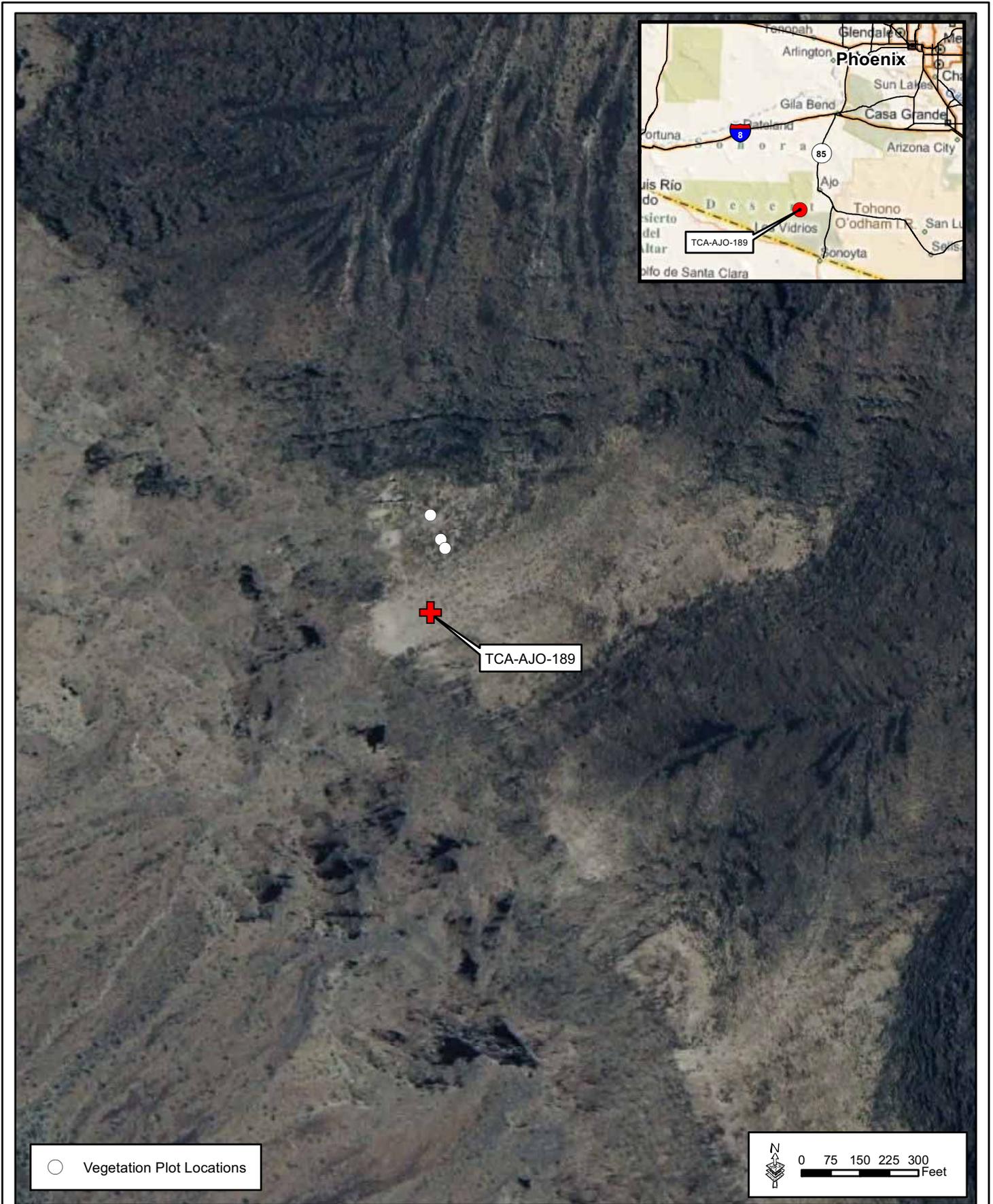


Figure 3-1: Sample Vegetation Plot Locations

Table 3-1. Species Occurrence, Prevalence, and Percent Cover for Sample Plots and Re-vegetation Recommendations

Species	Species Occurrence by Plot	Average Number Present per Sample plot	Average Number Present per Unit Area (1 square feet)	Number of Plants Required to Achieve Desired Densities (1,225 ft ²)	Average Percent Cover (%)
Triangle-leaf bursage (<i>Ambrosia deltoidea</i>)	1,2,3:(3)	27.7	0.192	236	10.8%
Desert agave (<i>Agave deserti</i>)	1,2,3:(3)	1.7	0.01180	14	0.76%
Cane cholla (<i>Cylindropuntia spinosior</i>)	1,2,3:(3)	1	0.0069	9	0.0%
Engelmann's hedgehog cactus (<i>Echinocereus engelmannii</i>)	2,3:(2)	1	0.0069	9	0.25%
Fremont's wolfberry (<i>Lycium fremontii</i>)	3:(1)	0.33	0.00229	3	0.52%
Ocotillo (<i>Fouquieria splendens</i>)	2:(1)	0.33	0.00229	3	0.25%
White ratany (<i>Krameria grayi</i>)	2:(1)	0.33	0.00229	3	0.0%

Other plants noted in the landscape but not captured in the sample plots included saguaro (*Carnegie gigantea*), brittle bush (*Encelia farinosa*), creosote bush (*Larrea tridentata*), Graham's nipple cactus (*Mammillaria grahamii*), and Nevada jointfir (*Ephedra nevadensis*).

It should be noted that prior to the initiation of construction, three desert agave and one saguaro (*Carnegie gigantea*), approximately 2.5 feet tall, were removed from the 35- x 35-foot disturbed area and transplanted for site rehabilitation efforts following tower construction. The three agaves were transplanted in pots and left on Growler Mountain, and the saguaro was transplanted on Growler Mountain outside the 35- x 35-foot footprint. During the vegetation sampling efforts in 2011, it was noted that the three agaves had been vandalized and were dead (Photograph 3-2).



Photograph 3-2. Three transplanted desert agaves from disturbance footprint after vandalism mortality

3.2 REVEGETATION REQUIREMENTS

Perennial shrubs comprise the majority of the plant composition in the adjacent landscape. In consultation with USFWS, it was determined that with the exception of one saguaro that was removed from the disturbed area prior to vegetation clearing, revegetation efforts would focus on perennial shrubs. Although not sampled during the vegetation sampling, creosotebush is a common species on the landscape and will serve to promote species diversity. Creosote is being used in place of white ratany due to the low survival potential of transplanted white ratany. A

total of 248 plants will be planted within the disturbed area and will include the following species and numbers:

- Triangle-leaf bursage 240 plants
- Fremont's wolfberry 4 plants
- Creosotebush 4 plants

Additionally, the saguaro originally removed from the disturbed area will be transplanted back on-site as part of the planting efforts associated with the restoration project.

3.3 PLANTING STOCK

One of the confounding issues often encountered in re-vegetation efforts is a need for a relatively quick schedule of completion. Due to the relatively recent nature of the disturbance (March 2010), and its location in designated Wilderness, the need for quick restoration is important. It is important to minimize the time in which the site is disturbed to reduce the potential for erosion, continued degradation, and invasion by exotic plant species. Due to the time required for a site to naturally regenerate, artificial regeneration methods will be used to revegetate the disturbed area. To utilize artificial regeneration methods, appropriate plant stock will need to be obtained for planting.

Underlying all plant source selections for revegetation projects is a need to reduce genetic pollution and maintain genetic integrity through the use of source materials native to the proposed action site (Munda et. al. 1995). It is thought that locally derived source materials will be better adapted to the specific constraints imposed on them by the immediate environmental conditions. The degree to which these concerns of genetic integrity and genetic pollution are applicable to a given re-vegetation site increases as the project area increases in size due to the greater influence imposed by the introduced genetic pool (Richards 1998). All plant material will be obtained from the Cabeza Prieta National Wildlife Refuge (CPNWR) to maintain a local plant source. Plant material will be obtained from harvesting cutting from donor plants on the CPNWR. The specific location for harvesting cuttings will be identified by the CPNWR manager but is anticipated to be the Childs Mountain Area. Cuttings of the appropriate species will be harvested and transported to a nursery in Tucson, Arizona the same day. During collection and transport, the cuttings will be kept moist and out of direct sunlight. Currently, it is anticipated that cuttings will be harvested in October 2011. The cuttings need to be obtained from actively growing plants and new plant growth should be harvested.

The cuttings will be established and raised at a nursery. Cuttings would be established in deep pots, tree cells, or plant bands to promote fuller, deeper root development (Bainbridge 1995). The cuttings will be ready for transplanting approximately 6 months from the date of harvest. To allow for mortality during propagation at the nursery, an additional 15 percent or a total of 286 cuttings would be harvested and grown at the nursery. The following number of cuttings by species would be harvested:

- Triangle-leaf bursage 276 cuttings
- Fremont's wolfberry 5 cuttings
- Creosotebush 5 cuttings

3.4 PLANTING

A total of 248 plants will be planted within the 35- x 35-foot disturbed area on Growler Mountain. The planting mix will include the species and quantities discussed in Section 3.2 of this plan. It is anticipated that planting activities would occur in April 2012. Planting arrangements and positions will be selected using a grid matrix with selections chosen at random for each group of plant species. These randomly chosen site selections will be evaluated with respect to any patterns observed in the adjacent native plant communities and adjusted if necessary to mimic natural plant dispersal in an effort to better visually integrate the restoration site with the surrounding native landscape.

Plants will be transported to the disturbed area via a helicopter the day of planting. The plants will be protected from direct sunlight during daily planting activities. Plants will be placed in the soil to a depth not to exceed the root collar.

3.5 PLANT AND SITE PROTECTION

Tree protectors or guards will be securely placed around each plant to mitigate herbivory and provide temporary enhanced microclimates for the young plants. Additionally, a sturdy but temporary exclusionary fence constructed of T-posts and fencing material approved by USFWS will be established around the site. No fewer than four clearly marked signs in English and Spanish stating that the site is an active restoration project with restricted access will be placed along the perimeter of the fenced area.

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SECTION 4.0
IRRIGATION



4.0 IRRIGATION

The use of irrigation for establishing plants in re-vegetation projects in the arid southwest is mandatory if any degree of success is to be obtained. Using four different irrigation treatment types for arid land re-vegetation models, 1-gallon container grown plants with irrigation had the highest success rate (Bean 2004, Grantz 1998). Through the use of new technologies like deep pipe irrigation and older indigenous irrigation strategies such as shallow basins, researchers have been able to vastly increase survivorship while reducing the quantities of water needed to establish plants in dry, remote sites (Bainbridge 2002). The major goals of this project is to restore the disturbed area to at or near pre-construction conditions, therefore all of irrigation components will be temporary and removed when the restoration goals are met.

The proposed irrigation system will incorporate the deep pipe method. This system reduces the quantity of water needed for plant establishment by encouraging deeper, healthier root growth and reducing water losses inherent with surface drip irrigation through evaporation. This method is also known to greatly reduce the opportunistic establishment of unwanted weed and exotic plant species. At the time of planting, a 0.5-inch PVC pipe with multiple 1-millimeter holes drilled along its length but primarily toward the bottom will be installed. This pipe will be inserted into the soil adjacent to the plant to a depth of 8 to 20 inches. A total of 13 250-gallon tanks on stands will be maintained on Growler Mountain adjacent to the site. These drums will serve as storage for the irrigation water needed for this project.

The plantings will be manually irrigated for a period of 5 months beginning at the time of planting. Each plant will receive 1 gallon of water per watering episode. Irrigation personnel will fill 1-gallon containers from the water storage tanks and place the 1-gallon container on each individual emitter per plant. Approximately 3,250 gallons of water will be required during the 5 months of irrigation. Personnel responsible for monthly irrigation efforts will access the site on foot. Irrigation equipment will be removed from the site after 1 year following the initial planting if the restoration site is accepted by USFWS. The following watering schedule was developed in coordination with USFWS.

- Water every week (4 times per month, including the initial water at planting) during the first and second months (May and June 2012) following planting.
- Water every two weeks (2 times per month) during the third and fourth months (July and August 2012).
- Water once a month during the fifth month (September 2012).

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SECTION 5.0
MONITORING



5.0 MONITORING

Personnel will access the site on foot up to 13 times during a 5 month period following planting to irrigate, and monitor the condition of the plantings, and conduct maintenance on the irrigation system. Monitoring efforts will coincide with irrigation visits to minimize the amount of trips to the site and will occur during the same 5-month period. Monitoring and irrigation personnel will be the same people. The condition of the plantings and irrigation system will be recorded. Notes will be taken on plant health, losses to herbivory, transplant shock, and desiccation. Any new growth, recruitment of new seedlings, and the presence of annual plant growth will be recorded. Dead plants will be identified by marking their location with surveyor paint. Irrigation requirements will be adjusted in consultation with USFWS if plant loss due to the lack of water is noticed during monitoring efforts. The site will also be surveyed for the presence of exotic plant species. If exotic plant species that are not already established in the surrounding landscape are encountered within the restoration action area they will be documented and OTIA will coordinate with USFWS concerning corrective actions. Site photos will be taken to document conditions.

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SECTION 6.0
RESTORATION GOALS

6.0 RESTORATION GOALS

The purpose of this restoration project is to restore the 35- x 35-foot disturbed area to, at, or near pre-project conditions both functionally and visually. Attainment of success for restoration projects can be measured in multiple ways and is often a function of project size, preexisting conditions, and the degree to which thresholds of irreversibility have been passed (Aronson 1993). This project deals with a relatively new disturbance within a fairly intact ecosystem, therefore restoration of the site to at or near pre-project conditions should be achievable. The plant community adjacent to the site is replicable; however, the harsh climatic conditions and remote nature of the site will increase the cost and efforts involved with restoration. The visual continuity between the disturbed area and the adjacent native landscape will be difficult to measure and subjective in nature. This hurdle can best be overcome through a well-established plan of action and clearly established agency expectations with frequent and open communications.

The goal for re-vegetation is more easily measured. Through coordination with USFWS, OTIA has established a goal of a total of 174 plants (70 percent survival), including both planted and naturally recruited plants. Generally, plantings are not considered established until after the first full growing season. Therefore, USFWS and OTIA personnel will visit the restoration site 1 year from the date of planting to determine if restoration goals have been met. If the site is accepted by USFWS, all irrigation material and fencing will be removed from the site within a week of the site visit.

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SECTION 7.0
HELICOPTER ACCESS



7.0 HELICOPTER ACCESS

Due to the remote location of the restoration site, helicopter access will be required for all restoration activities with the exception of irrigation and monitoring. Due to the location of the restoration site in designated Wilderness and within the current range of the Sonoran pronghorn (*Antilocapra americana sonoriensis*), OTIA has developed the restoration plan to include the minimal helicopter lifts necessary. A total of 90 helicopter lifts will be required to complete the restoration activities as described in this restoration plan. The following is an itemization of the helicopter lifts by activity:

- Site Rehabilitation and Landscaping 68 lifts
- Revegetation 6 lifts
- Irrigation (includes water delivery) 14 lifts
- Project Termination 2

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SECTION 8.0
REFERENCES



8.0 REFERENCES

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**APPENDIX A
LETTER COMMENTS ON
DRAFT SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT**



United States Department of the Interior

FISH AND WILDLIFE SERVICE
P.O. Box 1306
Albuquerque, New Mexico 87103



In Reply Refer To:
FWS/R2/NWRS-SUPV/047395

FEB 09 2011

Patience E. Patterson, RPA
U.S. Department of Homeland Security
SBInet Program Management Office
1901 S. Bell Street, Room 7-090
Arlington, Virginia 20598

Dear Ms. Patterson:

Thank you for the opportunity to provide comments on the *Draft Supplemental Environmental Assessment* (SEA) for the SBInet Ajo-1 Tower Project. The U.S. Fish and Wildlife Service (Service) strongly supports the selection of the Preferred Alternative. The Preferred Alternative eliminates the need for tower TCA-AJO-189, located within designated wilderness on Cabeza Prieta National Wildlife Refuge (Refuge). The selection of this alternative would reduce impacts to Wilderness from construction, and long term maintenance of the infrastructures associated with alternatives B and C. Additionally, reduced tower maintenance, refueling, and generator use at tower TCA-AJO-302 (located at the boundary of the Refuge and Organ Pipe Cactus National Monument) would also reduce potential adverse effects on Sonoran pronghorn (*Antilocapra Americana sonoriensis*).

Given that the impacts associated with the initial excavation for the foundation for tower TCA-AJO-189 is in designated wilderness and that the excavation was beyond that approved for the project, it is imperative that the site be restored to pre-existing or near pre-existing conditions. This should be addressed in the document as part of the Preferred Alternative and incorporated into any decision document for the draft SEA. The following should also be incorporated in the draft SEA and associated decision document:

- A qualified botanist should be obtained by the Department of Homeland Security (DHS) to conduct an inventory to determine plant composition, density and percent ground cover of perennial shrubs and cacti - by species - at three randomly selected 12 by 12 foot plots outside of, but within one hundred feet of, the existing disturbed site at Tower 189. The three plots should be averaged and used as a baseline to determine the target objectives for restoration of the tower site.
- The restoration objectives will be determined by the Service after consultation with the DHS and a qualified expert in restoration of desert environments. The Service stands ready to assist DHS with implementing the restoration objectives for the tower site.

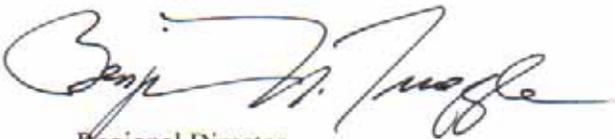
Ms. Patience Patterson

2

- The restoration expert should develop a plan for the restoration of the site. This plan will lay out a strategy and procedures for implementing the actions necessary to meet the restoration objectives.
- Upon approval of the restoration plan, the Service will conduct a "minimum tool analysis" which will lay out how the plan will be implemented.
- The Service must inspect and sign off on the completed restoration project before the DHS is relieved of its responsibility.

Thank you for this opportunity to provide comments on the *Draft Supplemental Environmental Assessment*. We look forward to your continued cooperation on this matter. Please contact Sid Slone, Refuge Manager at 520-387-4993 with any questions.

Sincerely,



A handwritten signature in black ink, appearing to read 'Sid Slone', written in a cursive style.

Regional Director

APPENDIX B
RESULTS FOR VEGETATION SAMPLE PLOT DATA COLLECTION



Plot 1: 12' x 12'

Triangle-leaf bursage (*Ambrosia deltoidea*) 31
Desert agave (*Agave deserti*) 1
Cane cholla (*Cylindropuntia spinosior*) 1
3 species, 33 plants

Plot 2: 12' x 12'

Triangle-leaf bursage (*Ambrosia deltoidea*) 32
Desert agave (*Agave deserti*) 2
Cane cholla (*Cylindropuntia spinosior*) 1
Ocotillo (*Fouquieria splendens*) 1
Engelmann's hedgehog cactus (*Echinocereus engelmannii*) 2
White ratany (*Krameria grayi*) 1
6 species, 39 plants

Plot 3: 12' x 12'

Triangle-leaf bursage (*Ambrosia deltoidea*) 20
Desert agave (*Agave deserti*) 2
Cane cholla (*Cylindropuntia spinosior*) 1
Engelmann's hedgehog cactus (*Echinocereus engelmannii*) 1
Fremont's wolfberry (*Lycium fremontii*) 1
5 species, 25 plants

	Plot 1	Plot 2	Plot 3	Mean average # /144sq ft
Triangle-leaf bursage	31	32	20	27.7
Desert agave	1	2	2	1.7
Cane cholla	1	1	1	1
Ocotillo	0	1	0	0.33
Hedgehog cactus	0	2	1	1
White ratany	0	1	0	0.33
wolfberry	0	0	1	0.33

APPENDIX C
FEDERAL AND STATE PROTECTED SPECIES LISTS



Pima County

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
California Least Tern	<i>Sterna antillarum browni</i>	Endangered	Smallest of the North American Terns. Body length is 21 to 24 cm (8 to 9 inches) with a wingspan of 45 to 51cm (18 to 20 inches). Has black crown and loreal stripe on head, snowy white forehead and underside, and gray upperparts. Outer two primaries black, yellow or orange bill with black tip, and orange legs. Males have a wider dark loreal stripe but sexes mostly distinguished by behavior.	Maricopa, Mohave, Pima	< 2,000 ft	Open, bare or sparsely vegetated sand, sandbars, gravel pits, or exposed flats along shorelines of inland rivers, lakes, reservoirs, or drainage systems.	Breeding occasionally documented in Arizona; migrants may occur more frequently. Feeds primarily on fish in shallow waters and secondarily on invertebrates. Nests in a simple scrape on sandy or gravelly soil.
Chiricahua leopard frog	<i>Lithobates [Rana] chiricahuensis</i>	Threatened	Cream colored tubercles (spots) on a dark background on the rear of the thigh, dorsolateral folds that are interrupted and deflected medially, and a call given out of water distinguish this spotted frog from other leopard frogs.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, Navajo, Pima, Santa Cruz, Yavapai	3,300-8,900 ft	Streams, rivers, backwaters, ponds, and stock tanks that are mostly free from introduced fish, crayfish, and bullfrogs.	Require permanent or nearly permanent water sources. Populations north of the Gila River may be a closely-related, but distinct, undescribed species. A special rule allows take of frogs due to operation and maintenance of livestock tanks on State and private lands.
Desert pupfish	<i>Cyprinodon macularius</i>	Endangered	Small (2 inches) smoothly rounded body shape with narrow vertical bars on the sides. Breeding males blue on head and sides with yellow on tail. Females and juveniles tan to olive colored back and silvery sides.	Cochise, Graham, Maricopa, Pima, Pinal, Santa Cruz, Yavapai	< 4,000 ft	Shallow springs, small streams, and marshes. Tolerates saline and warm water.	Two subspecies are recognized: Desert Pupfish (<i>C.m. macularis</i>) and Quitobaquito Pupfish (<i>C.m. eremus</i>). Critical habitat includes Quitobaquito Springs, Pima County, portions of San Felipe Creek, Carrizo Wash, and Fish Creek Wash, Imperial County, California.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Gila chub	<i>Gila intermedia</i>	Endangered	Deep compressed body, flat head. Dark olive-gray color above, silver sides. Endemic to Gila River Basin.	Cochise, Gila, Graham, Greenlee, Pima, Pinal, Santa Cruz, Yavapai	2,000-5,500 ft	Pools, springs, cienegas, and streams.	Found on multiple private lands, including the Nature Conservancy and the Audubon Society. Also occurs on Federal and state lands and in Sonora, Mexico. Critical habitat occurs in Cochise, Gila, Graham, Greenlee, Pima, Pinal, Santa Cruz, and Yavapai counties.
Gila topminnow	<i>Poeciliopsis occidentalis occidentalis</i>	Endangered	Small (2 inches), guppy-like, live bearing, lacks dark spots on its fins. Breeding males are jet black with yellow fins.	Cochise, Gila, Graham, Maricopa, Pima, Santa Cruz, Yavapai	< 4,500 ft	Small streams, springs, and cienegas vegetated shallows.	Species historically also occurred in backwaters of large rivers but is currently isolated to small streams and springs.
Huachuca water umbel	<i>Lilaeopsis schaffneriana ssp. recurva</i>	Endangered	Herbaceous, semi-aquatic perennial in the parsley family (Umbelliferae) with slender erect, hollow, leaves that grow from the nodes of creeping rhizomes. Flower: 3 to 10 flowered umbels arise from root nodes.	Cochise, Pima, Santa Cruz	3,500-6,500 ft	Cienegas, perennial low gradient streams, wetlands.	Species also occurs in adjacent Sonora, Mexico, west of the continental divide. Critical habitat in Cochise and Santa Cruz counties (64 FR 37441, July 12, 1999).
Jaguar	<i>Panthera onca</i>	Endangered	Largest species of cat native to Southwest. Muscular, with relatively short, massive limbs, and a deep-chested body. Usually cinnamon-buff in color with many black spots. Weights ranges from 90-300 lbs.	Cochise, Pima, Santa Cruz	1,600-9,000 ft	Found in Sonoran deserts scrub up through subalpine conifer forest.	Also occurs in New Mexico. A Jaguar conservation team is being formed that is being led by Arizona and New Mexico state entities along with private organizations.
Kearney's blue star	<i>Amsonia kearneyana</i>	Endangered	A herbaceous perennial about 2 feet tall in the dogbane family (Apocynaceae). Thickened woody root and many pubescent (hairy) stems that rarely branch. Flowers: white terminal inflorescence in April and May.	Pima	3,600-3,800 ft	West-facing drainages in the Baboquivari Mountains.	Plants grow in stable, partially shaded, coarse alluvium along a dry wash in the Baboquivari Mountains. Range is extremely limited. Protected by Arizona Native Plant Law.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Lesser long-nosed bat	<i>Leptonycteris curasoae yerbabuena</i>	Endangered	Elongated muzzle, small leaf nose, and long tongue. Yellowish brown or gray above and cinnamon brown below. Tail minute and appears to be lacking. Easily disturbed.	Cochise, Gila, Graham, Greenlee, Maricopa, Pima, Pinal, Santa Cruz, Yuma	1,600-11,500 ft	Desert scrub habitat with agave and columnar cacti present as food plants.	Day roosts in caves and abandoned tunnels. Forages at night on nectar, pollen, and fruit of paniculate agaves and columnar cacti. This species is migratory and is present in Arizona usually from April to September and south of the border the remainder of the year.
Masked bobwhite	<i>Colinus virginianus ridgewayi</i>	Endangered	Males have a brick-red breast and black head and throat. Females are generally nondescript but resemble other races such as the Texas bobwhite.	Pima	1,000-4,000 ft	Desert grasslands with diversity of dense native grasses, forbs, and brush.	Species is closely associated with Prairie acacia (<i>Acacia angustissima</i>). Formerly occurred in Altar and Santa Cruz valleys, as well as Sonora, Mexico. Presently only known from reintroduced populations on Buenos Aires NWR.
Mexican spotted owl	<i>Strix occidentalis lucida</i>	Threatened	Medium sized with dark eyes and no ear tufts. Brownish and heavily spotted with white or beige.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai	4,100-9,000 ft	Nests in canyons and dense forests with multi-layered foliage structure.	Generally nest in older forests of mixed conifer or ponderosa pine/gambel oak type, in canyons, and use variety of habitats for foraging. Sites with cool microclimates appear to be of importance or are preferred. Critical habitat was finalized on August 31, 2004 (69 FR 53182) in Arizona in Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Navajo, Pima, Pinal, Santa Cruz, and Yavapai counties.
Mountain plover	<i>Charadrius montanus</i>	Proposed threatened	Small bird (8 – 9 1/2-in), about the size of a killdeer, with longer legs and more upright posture. Light brown above with white forehead, throat, and breast but lacks the black breast band typical of many plovers. Crown may be mottled black to solid black during the breeding season and distinct black loreal stripe extending from the black bill to the eye. In winter, the crown and loreal stripe become pale brown in coloration.	Apache, Cochise, La Paz, Maricopa, Navajo, Pima, Pinal, Yuma	< 7,200 ft	Semi-desert grasslands and agricultural lands with sparse vegetation or vegetation interspersed with bare ground and flat topography.	Arizona primarily provides winter habitat for the species but some breeding occurs near Springerville.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Nichol Turk's head cactus	<i>Echinocactus horizontalonius</i> var. <i>nicholii</i>	Endangered	Blue-green to yellowish-green, columnar, 18 inches tall, 8 inches in diameter. Spine clusters have 5 radial and 3 central spines; one curves downward and is short; 2 spines curve upward and are red or pale gray. Flowers: pink; fruit: woolly white.	Pima, Pinal	2,400-4,100 ft	Sonoran desertscrub.	Found in unshaded microsites in Sonoran desertscrub on dissected alluvial fans at the foot of limestone mountains and on inclined terraces and saddles on limestone mountain sides.
Ocelot	<i>Leopardus (=Felis) pardalis</i>	Endangered	Medium-sized spotted cat that is yellowish with black streaks and stripes running from front to back. Tail is spotted and about 1/2 the length of head and body. Face is less heavily streaked than the back and sides.	Cochise, Pima, Santa Cruz	< 8,000 ft	Desert scrub in Arizona. Humid tropical and subtropical forests, and savannahs in areas south of the U.S.	May persist in partly-cleared forests, second-growth woodland, and abandoned cultivated areas reverted to brush. Universal component is presence of dense cover. Unconfirmed reports of individuals in the southern part of the State continue to be received.
Pima pineapple cactus	<i>Coryphantha scheeri</i> var. <i>robustispina</i>	Endangered	Hemispherical stems 4-7 inches tall 3-4 inches diameter. Central spine 1 inch long straw colored hooked surrounded by 6-15 radial spines. Flower: yellow, salmon, or rarely white narrow floral tube.	Pima, Santa Cruz	2,300-5,000 ft	Sonoran desertscrub or semi-desert grassland communities.	Occurs in alluvial valleys or on hillsides in rocky to sandy or silty soils. This species can be confused with juvenile barrel cactus (<i>Ferocactus</i>). However, the spines of the later are flattened, in contrast with the round cross-section of the <i>Coryphantha</i> spines. About 80-90% of individuals occur on state or private land.
Sonoran pronghorn	<i>Antilocapra americana sonoriensis</i>	Endangered	Upperparts tan; underparts, rump, and two bands across the neck are white. Male has two black cheek pouches. Hoofed with slightly curved black horns having a single prong. Smallest and palest of the pronghorn subspecies.	Maricopa, Pima, Yuma	2,000-4,000 ft	Broad intermountain alluvial valleys with creosote-bursage and palo verde-mixed cacti associations.	Typically, bajadas are used as fawning areas and sandy dune areas provide food seasonally. Cacti (jumping cholla) appears to make up substantial part of diet. This subspecies also occurs in Mexico.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	Endangered	Small passerine (about 6 inches) grayish-green back and wings, whitish throat, light olive-gray breast and pale yellowish belly. Two wingbars visible. Eye-ring faint or absent.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, Yuma	< 8,500 ft	Cottonwood/willow and tamarisk vegetation communities along rivers and streams.	Migratory riparian-obligate species that occupies breeding habitat from late April to September. Distribution within its range is restricted to riparian corridors. Difficult to distinguish from other members of the <i>Empidonax</i> complex by sight alone. Training seminar required for those conducting flycatcher surveys. Critical habitat was finalized on October 19, 2005 (50 CFR 60886). In Arizona there are critical habitat segments in Apache, Cochise, Gila, Graham, Greenlee, Maricopa, Mohave, Pima, Pinal, and Yavapai counties.
Acuna cactus	<i>Echinomastus erectocentrus var. acunensis</i>	Candidate	Less than 12 inches tall; spine clusters borne on tubercles, each with a groove on the upper surface. 2-3 central spines and 12 radial spines. Radial spines are dirty white with maroon tips. Flowers pink to purple.	Pima, Pinal	1,300-2,000 ft	Well drained knolls and gravel ridges in Sonoran desertscrub.	Immature plants distinctly different from mature plants. Immatures are disc-shaped or spherical and have no central spines until they are about 1.5 inches.
Northern Mexican Gartersnake	<i>Thamnophis eques megalops</i>	Candidate	Background color ranges from olive, olive-brown, to olive-gray. Body has three yellow or light colored stripes running down the length of the body, darker towards tail. Species distinguished from other native gartersnakes by the lateral stripes reaching the 3rd and 4th scale rows. Paired black spots extend along dorsolateral fields.	Apache, Cochise, Coconino, Gila, Graham, Navajo, Pima, Pinal, Santa Cruz, Yavapai	130-8,500 ft	Cienegas, stock tanks, large-river riparian woodlands and forests, streamside gallery forests.	Core population areas in the U.S. include mid/upper Verde River drainage, mid/lower Tonto Creek, and the San Rafael Valley and surrounding area. Status on tribal lands unknown. Distributed south into Mexico along the Sierra Madre Occidental and Mexican Plateau. Strongly associated with the presence of a native prey base including leopard frogs and native fish.
Sonoyta mud turtle	<i>Kinosternon sonoriense longifemorale</i>	Candidate	Aquatic; dark, medium-sized; shell up to 7 inches long; head, neck, and limbs mottled; carapace is olive brown to dark brown; plastron hinged; long barbels on chin, webbed feet.	Pima	1,100 ft	Ponds and streams.	Found only in Quitobaquito Springs in Organ Pipe Cactus National Monument, Arizona. Species also occurs in Rio Sonoyta, Sonora, Mexico.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Tucson shovel-nosed snake	<i>Chionactis occipitalis klauberi</i>	Candidate	Small snake (10-17 inches total length) in the family Colubridae, with a shovel-shaped snout and an inset lower jaw. Overall coloring mimics coral snakes, with pale yellow to cream-colored body, 21 or more black or brown saddle-like bands across the back, and orange-red saddle-like bands in between. The subspecies is distinguished from the other subspecies in that these secondary orange-red crossbands are suffused with dark pigment, making them appear brown or partly black, and the black and red crossbands do not encircle the entire body.	Maricopa, Pima, Pinal	785-1,662 ft	Sonoran Desertscrub; associated with soft, sandy soils having sparse gravel.	Found in creosote-mesquite floodplain environments, finds refuge under desert shrubs, active during crepuscular (dawn and dusk) and daylight hours.
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	Candidate	Medium-sized bird with a slender, long-tailed profile, slightly down-curved bill that is blue-black with yellow on the lower half. Plumage is grayish-brown above and white below, with rufous primary flight feathers.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, Yuma	< 6,500 ft	Large blocks of riparian woodlands (cottonwood, willow, or tamarisk galleries).	Neotropical migrant that winters primarily in South America and breeds primarily in the U.S. (but also in southern Canada and northern Mexico). As a migrant it is rarely detected; can occur outside of riparian areas. Cuckoos are found nesting statewide, mostly below 5,000 feet in central, western, and southeastern Arizona. Concern for cuckoos are primarily focused upon alterations to its nesting and foraging habitat. Nesting cuckoos are associated with relatively dense, wooded, streamside riparian habitat, with varying combinations of Fremont cottonwood, willow, velvet ash, Arizona walnut, mesquite, and tamarisk. Some cuckoos have also been detected nesting in velvet mesquite, netleaf hackberry, Arizona sycamore, Arizona alder, and some exotic neighborhood shade trees.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Gooddings onion	<i>Allium gooddingii</i>	Conservation Agreement	Herbaceous perennial plant; broad, flat, rather blunt leaves; flowering stalk 14-18 inches tall, flattened, and narrowly winged toward apex; fruit is broader than long; seeds are short and thick.	Apache, Greenlee, Pima	7,500-11,250 ft	Shaded sites on north-trending drainages, on slopes, or in narrow canyons, within mixed conifer and spruce fir forests.	Known from the White, Santa Catalina, and Chuska Mountains. Also found in New Mexico on the Lincoln and Gila National Forests. A Conservation Agreement between the Service and the Forest Service signed in February 1998.
San Xavier talussnail	<i>Sonorella eremita</i>	Conservation Agreement	Land snail, less than one inch in diameter (about .75 inches); round shell with 4.5 whorls; white to pinkish tint and chestnut-brown shoulder band.	Pima	3,850-3,920 ft	Inhabits a deep, northwest-facing limestone rockslide.	Restricted to 50 by 100 foot area of land privately owned in southeastern Arizona. A Conservation Agreement was finalized in 1995 and renewed in May 2008.
American peregrine falcon	<i>Falco peregrinus anatum</i>	Delisted	A crow-sized falcon with slate blue-gray on the back and wings, and white on the underside; a black head with vertical "bandit's mask" pattern over the eyes; long pointed wings; and a long wailing call made during breeding. Very adept flyers and hunters, reaching diving speeds of 200 mph.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, Yuma	3,500-9,000 ft	Areas with rocky, steep cliffs, primarily near water, where prey (primarily shorebirds, songbirds, and waterfowl) concentrations are high. Nests are found on ledges of cliffs, and sometimes on man-made structures such as office towers and bridge abutments.	Species recovered with over 1,650 breeding birds in the US and Canada.
Cactus ferruginous pygmy-owl	<i>Glaucidium brasilianum cactorum</i>	Delisted; petitioned for relisting	Small reddish-brown owl with a cream-colored belly streaked with reddish-brown. Males average 2.2 oz and females average 2.6 oz. Length is approximately 6.5 in., including a relatively long tail. Lacks ear tufts, and has paired black spots on the back of the head.	Pima, Pinal	< 4,000 ft	Areas of desert woodlands with tall canopy cover. Primarily found in Sonoran desert scrub and occasionally in riparian drainages and woodlands within semi-desert grassland communities. Prefers to nest in cavities in saguaro cacti but has been found in low-density suburban developments that include natural open spaces.	Not recognized as a protected taxonomic entity under the Act, but protected from direct take of individuals and nests/eggs under the Migratory Bird Treaty Act. A 2006 petition for relisting under the Act is currently being evaluated. Due to low population numbers, captive breeding research was initiated in 2006 with some success.

Special Status Species in the Arizona HDMS, listed alphabetically by county, by taxon, by scientific name.

Updated December 2006

COUNTY	TAXON	SCIENTIFIC NAME	COMMON NAME	ESA	BLM	USFS	NESL	MEXFED	STATE	ELCODE	BCD	SRANK	GRANK
Apache	AMPHIBIAN	Bufo microscaphus	Arizona Toad	SC		S				AAABB01110		S3S4	G3G4
Apache	AMPHIBIAN	Rana chiricahuensis	Chiricahua Leopard Frog	LT		S		A	WSC	AAABH01080		S3	G3
Apache	AMPHIBIAN	Rana pipiens	Northern Leopard Frog			S	2		WSC	AAABH01170		S2	G5
Apache	AMPHIBIAN	Rana yavapaiensis	Lowland Leopard Frog	SC		S		PR	WSC	AAABH01250		S4	G4
Apache	BIRD	Accipiter gentilis	Northern Goshawk	SC		S		4 A	WSC	ABNKC12060		S3	G5
Apache	BIRD	Athene cucularia hypugaea	Western Burrowing Owl	SC	S			4 A		ABNSB10012		S3	G4T4
Apache	BIRD	Catharus fuscescens	Veery						WSC	ABPB18080		S1	G5
Apache	BIRD	Ceryle alcyon	Belted Kingfisher					4	WSC	ABNXD01020		S2B,S5N	G5
Apache	BIRD	Charadrius montanus	Mountain Plover	SC	S	S		4		ABNNB03100		S1B,S2N	G2
Apache	BIRD	Coccyzus americanus occidentalis	Western Yellow-billed Cuckoo	C		S		2	WSC	ABNRB02022		S3	G5T3Q
Apache	BIRD	Dolichonyx oryzivorus	Bobolink						WSC	ABPBXA9010		S1	G5
Apache	BIRD	Dumetella carolinensis	Gray Catbird						WSC	ABPBK01010		S1	G5
Apache	BIRD	Empidonax traillii extimus	Southwestern Willow Flycatcher	LE		S		2	WSC	ABPAE33043		S1	G5T1T2
Apache	BIRD	Falco peregrinus anatum	American Peregrine Falcon	SC		S		4 A	WSC	ABNKD06071		S4	G4T4
Apache	BIRD	Haliaeetus leucocephalus	Bald Eagle	LT,PDL		S		P	WSC	ABNKC10010		S2S3B,S4N	G5
Apache	BIRD	Haliaeetus leucocephalus (wintering pop.)	Bald Eagle	LT,PDL		S		P	WSC	ABNKC10012		S4N	G5
Apache	BIRD	Pandion haliaetus	Osprey						WSC	ABNKC01010		S2B,S4N	G5
Apache	BIRD	Pica hudsonia	Black-billed Magpie						WSC	ABPAV09010		S3	G5
Apache	BIRD	Pinicola enucleator	Pine Grosbeak						WSC	ABPBY03010		S1	G5
Apache	BIRD	Setophaga ruticilla	American Redstart						WSC	ABPBX06010		S1	G5
Apache	BIRD	Strix occidentalis lucida	Mexican Spotted Owl	LT		S		3 A	WSC	ABNSB12012		S3S4	G3T3
Apache	FISH	Catostomus clarki	Desert Sucker	SC	S					AFCJC02040		S3S4	G3G4
Apache	FISH	Catostomus insignis	Sonora Sucker	SC	S			P		AFCJC02100		S3	G3
Apache	FISH	Catostomus sp. 3	Little Colorado Sucker	SC		S			WSC	AFCJC02250		S2	G2
Apache	FISH	Gila robusta	Roundtail Chub	SC		S		2 PR	WSC	AFCJB13150		S2	G3
Apache	FISH	Lepidomeda vittata	Little Colorado Spinedace	LT		S			WSC	AFCJB20040		S1S2	G1G2
Apache	FISH	Oncorhynchus apache	Apache Trout	LT		S			WSC	AFCHA02102		S3	G3T3
Apache	FISH	Rhinichthys osculus	Speckled Dace	SC	S			P		AFCJB37050		S3S4	G5
Apache	FISH	Tiaroga cobitis	Loach Minnow	LT		S		P	WSC	AFCJB37140		S1	G2
Apache	INVERTEBRATE	Anodonta californiensis	California Floater	SC		S				IMBIV04020		S1S2	G3Q
Apache	INVERTEBRATE	Daihinibaenetes arizonensis	Arizona Giant Sand Treader Cricket	SC	S	S				IORT21010		S1S3	G1G3
Apache	INVERTEBRATE	Psephenus montanus	White Mountains Water Penny Beetle	SC		S				IICOL63020		S2?	G2?
Apache	INVERTEBRATE	Pyrgulopsis trivialis	Three Forks Springsnail	C	S	S				IMGASJ0560		S1	G1
Apache	INVERTEBRATE	Speyeria nokomis nitocris	Mountain Silverspot Butterfly			S				IILEPJ6052		S?	G3T3
Apache	MAMMAL	Euderma maculatum	Spotted Bat	SC				PR	WSC	AMACC07010		S1S2	G4
Apache	MAMMAL	Idionycteris phyllotis	Allen's Big-eared Bat	SC	S					AMACC09010		S2S3	G3G4
Apache	MAMMAL	Microtus mexicanus navaho	Navajo Mexican Vole	SC		S		4	WSC	AMAFF11213		S1	G5T2Q
Apache	MAMMAL	Myotis occultus	Arizona Myotis	SC	S					AMACC01160		S3	G3G4
Apache	MAMMAL	Myotis volans	Long-legged Myotis	SC	S					AMACC01110		S3S4	G5

COUNTY	TAXON	SCIENTIFIC NAME	COMMON NAME	ESA	BLM	USFS	NESL	MEXFED	STATE	ELCODE_BCD	SRANK	GRANK
Apache	MAMMAL	Perognathus flavus goodpasteri	Springerville Pocket Mouse	SC		S				AMAFD01031	S3	G5T3
Apache	MAMMAL	Sorex palustris	American Water Shrew						WSC	AMABA01150	S1	G5
Apache	MAMMAL	Spermophilus tridecemlineatus monticola	White Mountains Ground Squirrel			S				AMAFB05092	S3	G5T3
Apache	MAMMAL	Zapus hudsonius luteus	New Mexican Jumping Mouse	SC		S			WSC	AMAFH01014	S2	G5T2
Apache	PLANT	Allium gooddingii	Goodding Onion	SC		S		3	HS	PMLIL02120	S3S4	G4
Apache	PLANT	Amsonia peeblesii	Peebles Blue Star					4		PDAP0030E0	S3	G3
Apache	PLANT	Astragalus nutriosensis	Nutrioso Milk-vetch	SC					SR	PDFAB0FB70	S3?	G3?
Apache	PLANT	Astragalus xiphoides	Gladiator Milk Vetch	SC					SR	PDFAB0F9T0	S3	G3
Apache	PLANT	Botrychium crenulatum	Crenulate Moonwort	SC		S				PPOPH010L0	S1	G3
Apache	PLANT	Calypso bulbosa	Western Fairy Slipper						SR	PMORC0D010	S3	G5
Apache	PLANT	Carex chihuahuensis	A Sedge			S				PMCYP032T0	S2S3	G3G4
Apache	PLANT	Carex specuicola	Navajo Sedge	LT				3	HS	PMCYP03CQ0	S2	G2
Apache	PLANT	Castilleja mogollonica	White Mountains Paintbrush	SC		S			SR	PDSCR0D3Q0	S1	G1Q
Apache	PLANT	Chrysothamnus molestus	Tusayan Rabbitbrush	SC		S				PDAST2C060	S3	G3
Apache	PLANT	Cypripedium parviflorum var. pubescens	Yellow Lady's-slipper						HS	PMORC0Q092	S1	G5T5
Apache	PLANT	Draba standleyi	Standley Whitlow-grass	SC						PDBRA112G0	S2S3	G2G3
Apache	PLANT	Eremocrinum albomarginatum	Utah Solitaire Lily			S			SR	PMLIL0T010	S2	G3
Apache	PLANT	Erigeron rhizomatus	Rhizome Fleabane	LT				2		PDAST3M3N0	S1	G2
Apache	PLANT	Goodyera repens	Lesser Rattlesnake Plantain						SR	PMORC17030	S2	G5
Apache	PLANT	Ipomoea plummerae var. cuneifolia	Huachuca Morning Glory			S				PDCON0A141	S3	G4T3
Apache	PLANT	Malaxis porphyrea	Purple Adder's Mouth						SR	PMORC1R0Q0	S2	G4
Apache	PLANT	Mammillaria wrightii var. wrightii	Wright Fishhook Cactus						SR	PDCAC0A0E2	S1	G4T3
Apache	PLANT	Platanthera hyperborea	Boreal Bog Orchid						SR	PMORC1Y0B0	S3S4	G5
Apache	PLANT	Platanthera purpurascens	Slender Bog Orchid						SR	PMORC1Y0P0	S4	G5
Apache	PLANT	Puccinellia parishii	Parish Alkali Grass	SC				4	HS	PMPOA530T0	S2	G2
Apache	PLANT	Rumex orthoneurus	Blumer's Dock	SC		S			HS	PDPGN0P0Z0	S3	G3
Apache	PLANT	Salix arizonica	Arizona Willow			S			HS	PDSAL02080	S2	G2G3
Apache	PLANT	Senecio quaerens	Gila Groundsel	SC		S			SR	PDAST8H2L0	S2	G2
Apache	PLANT	Stellaria porsildii	Porsild's Starwort			S				PDCAR0X160	S1	G1
Apache	PLANT	Streptopus amplexifolius	White Mandarin Twisted Stalk						SR	PMLIL1X010	S2S3	G5
Apache	PLANT	Trifolium neurophyllum	White Mountains Clover	SC		S				PDFAB401N0	S2	G2
Apache	PLANT	Zigadenus virescens	Green Death Camas						SR	PMLIL280E0	S4	G4
Apache	REPTILE	Thamnophis eques megalops	Northern Mexican Gartersnake	SC		S		A	WSC	ARADB36061	S2S3	G5T5
Apache	REPTILE	Thamnophis rufipunctatus	Narrow-headed Gartersnake	SC		S			WSC	ARADB36110	S3	G3G4
Apache; Gra	BIRD	Ceryle alcyon	Belted Kingfisher					4	WSC	ABNXD01020	S2B,S5N	G5
Apache; Gra	REPTILE	Thamnophis rufipunctatus	Narrow-headed Gartersnake	SC		S			WSC	ARADB36110	S3	G3G4
Apache; Gre	BIRD	Haliaeetus leucocephalus (wintering pop.)	Bald Eagle	LT,PDL		S		P	WSC	ABNKC10012	S4N	G5
Apache; Gre	BIRD	Pandion haliaetus	Osprey						WSC	ABNKC01010	S2B,S4N	G5
Apache; Gre	BIRD	Strix occidentalis lucida	Mexican Spotted Owl	LT		S		3 A	WSC	ABNSB12012	S3S4	G3T3
Apache; Gre	PLANT	Allium gooddingii	Goodding Onion	SC		S		3	HS	PMLIL02120	S3S4	G4
Apache; Gre	PLANT	Calypso bulbosa	Western Fairy Slipper						SR	PMORC0D010	S3	G5
Apache; Gre	PLANT	Malaxis porphyrea	Purple Adder's Mouth						SR	PMORC1R0Q0	S2	G4
Apache; Gre	PLANT	Rumex orthoneurus	Blumer's Dock	SC		S			HS	PDPGN0P0Z0	S3	G3

COUNTY	TAXON	SCIENTIFIC NAME	COMMON NAME	ESA	BLM	USFS	NESL	MEXFED	STATE	ELCODE	BCD	SRANK	GRANK
Apache; Gred	PLANT	Senecio quaerens	Gila Groundsel	SC		S			SR	PDAST8H2L0		S2	G2
Apache; Gred	REPTILE	Thamnophis rufipunctatus	Narrow-headed Gartersnake	SC		S			WSC	ARADB36110		S3	G3G4
Apache; Navj	AMPHIBIAN	Rana pipiens	Northern Leopard Frog			S	2		WSC	AAABH01170		S2	G5
Apache; Navj	BIRD	Accipiter gentilis	Northern Goshawk	SC		S	4	A	WSC	ABNKC12060		S3	G5
Apache; Navj	BIRD	Haliaeetus leucocephalus (wintering pop.)	Bald Eagle	LT,PDL		S		P	WSC	ABNKC10012		S4N	G5
Apache; Navj	BIRD	Pandion haliaetus	Osprey						WSC	ABNKC01010		S2B,S4N	G5
Clark	FISH	Catostomus latipinnis	Flannelmouth Sucker	SC	S	S				AFCJC02110		S2	G3G4
Cochise	AMPHIBIAN	Ambystoma tigrinum stebbinsi	Sonoran Tiger Salamander	LE				PR	WSC	AAAAA01145		S1S2	G5T1T2
Cochise	AMPHIBIAN	Eleutherodactylus augusti cactorum	Western Barking Frog			S			WSC	AAABD04171		S1	G5T5
Cochise	AMPHIBIAN	Rana blairi	Plains Leopard Frog						WSC	AAABH01040		S1	G5
Cochise	AMPHIBIAN	Rana chiricahuensis	Chiricahua Leopard Frog	LT		S		A	WSC	AAABH01080		S3	G3
Cochise	AMPHIBIAN	Rana subaquavocalis	Ramsey Canyon Leopard Frog	SC		S				AAABH01280		S1	G1Q
Cochise	AMPHIBIAN	Rana yavapaiensis	Lowland Leopard Frog	SC		S		PR	WSC	AAABH01250		S4	G4
Cochise	BIRD	Accipiter gentilis	Northern Goshawk	SC		S	4	A	WSC	ABNKC12060		S3	G5
Cochise	BIRD	Amazilia violiceps	Violet-crowned Hummingbird						WSC	ABNUC29150		S3	G5
Cochise	BIRD	Ammodramus bairdii	Baird's Sparrow	SC					WSC	ABPBXA0010		S2N	G4
Cochise	BIRD	Anthus spragueii	Sprague's Pipit						WSC	ABPBM02060		S2N	G4
Cochise	BIRD	Asturina nitida maxima	Northern Gray Hawk	SC		S		PR	WSC	ABNKC19011		S3	G5T4Q
Cochise	BIRD	Athene cucularia hypugaea	Western Burrowing Owl	SC	S		4	A		ABNSB10012		S3	G4T4
Cochise	BIRD	Buteogallus anthracinus	Common Black-Hawk			S		A	WSC	ABNKC15010		S3	G4G5
Cochise	BIRD	Coccyzus americanus occidentalis	Western Yellow-billed Cuckoo	C		S	2		WSC	ABNRB02022		S3	G5T3Q
Cochise	BIRD	Dendrocygna autumnalis	Black-bellied Whistling-Duck						WSC	ABNJB01040		S3	G5
Cochise	BIRD	Empidonax fulvifrons pygmaeus	Northern Buff-breasted Flycatcher	SC					WSC	ABPAE33141		S1	G5T5
Cochise	BIRD	Empidonax traillii extimus	Southwestern Willow Flycatcher	LE		S	2		WSC	ABPAE33043		S1	G5T1T2
Cochise	BIRD	Euphilotis neoxenus	Eared Quetzal			S		A		ABNWA03010		SAB,S1N	G3
Cochise	BIRD	Falco peregrinus anatum	American Peregrine Falcon	SC		S	4	A	WSC	ABNKD06071		S4	G4T4
Cochise	BIRD	Haliaeetus leucocephalus (wintering pop.)	Bald Eagle	LT,PDL		S		P	WSC	ABNKC10012		S4N	G5
Cochise	BIRD	Ictinia mississippiensis	Mississippi Kite					A	WSC	ABNKC09010		S3	G5
Cochise	BIRD	Plegadis chihi	White-faced Ibis	SC						ABNGE02020		S?B,S2S3N	G5
Cochise	BIRD	Strix occidentalis lucida	Mexican Spotted Owl	LT		S	3	A	WSC	ABNSB12012		S3S4	G3T3
Cochise	BIRD	Trogon elegans	Elegant Trogon						WSC	ABNWA02070		S3	G5
Cochise	BIRD	Tyrannus crassirostris	Thick-billed Kingbird						WSC	ABPAE52040		S2	G5
Cochise	BIRD	Tyrannus melancholicus	Tropical Kingbird						WSC	ABPAE52010		S3	G5
Cochise	FISH	Agosia chrysogaster chrysogaster	Gila Longfin Dace	SC	S			A		AFCJB37151		S3S4	G4T3T4
Cochise	FISH	Agosia chrysogaster ssp. 1	Yaqui Longfin Dace	SC	S			A		AFCJB37152		S1	G4T1
Cochise	FISH	Campostoma ornatum	Mexican Stoneroller	SC		S		P	WSC	AFCJB03030		S1	G3
Cochise	FISH	Catostomus clarki	Desert Sucker	SC	S					AFCJC02040		S3S4	G3G4
Cochise	FISH	Catostomus insignis	Sonora Sucker	SC	S			P		AFCJC02100		S3	G3
Cochise	FISH	Cyprinella formosa	Beautiful Shiner	LT				A	WSC	AFCJB49080		S1	G2
Cochise	FISH	Gila intermedia	Gila Chub	LE		S		P	WSC	AFCJB13160		S2	G2
Cochise	FISH	Gila purpurea	Yaqui Chub	LE				P	WSC	AFCJB13140		S1	G1
Cochise	FISH	Ictalurus pricei	Yaqui Catfish	LT				PR	WSC	AFCKA01090		S1	G2

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Cochise	FISH	Poeciliopsis occidentalis sonoriensis	Yaqui Topminnow	LE					A	WSC	AFCNC05022	S1	G3T3
Cochise	FISH	Rhinichthys osculus	Speckled Dace	SC	S				P		AFCJB37050	S3S4	G5
Cochise	INVERTEBRATE	Agathymus aryna	Arizona Giant Skipper			S					IILEP87080	S?	G4G5
Cochise	INVERTEBRATE	Agathymus evansi	Huachuca Giant-skipper			S					IILEP87110	S?	G2G3
Cochise	INVERTEBRATE	Agathymus neumoegei	Neumogen's Giant Skipper			S					IILEP87010	S?	G4G5
Cochise	INVERTEBRATE	Anthocharis cethura	Felder's Orange Tip			S					IILEPA6010	S?	G4G5
Cochise	INVERTEBRATE	Cicindela oregona maricopa	Maricopa Tiger Beetle	SC	S	S					IICOL02362	S3	G5T3
Cochise	INVERTEBRATE	Erynnis scudderi	Scudder's Dusky Wing			S					IILEP37070	S?	G4G5
Cochise	INVERTEBRATE	Neophasia terlooii	Chiricahua Pine White			S					IILEP99020	S2?	G3G4
Cochise	INVERTEBRATE	Psephenus arizonensis	Arizona Water Penny Beetle	SC		S					IICOL63010	S2?	G2?
Cochise	INVERTEBRATE	Pyrgulopsis bernardina	San Bernardino Springsnail	SC	S	S					IMGASJ0950	S1	G1
Cochise	INVERTEBRATE	Pyrgulopsis thompsoni	Huachuca Springsnail	C	S	S					IMGASJ0230	S2	G2
Cochise	INVERTEBRATE	Stygobromus arizonensis	Arizona Cave Amphipod	SC		S					ICMAL05360	S1?	G2G3
Cochise	INVERTEBRATE	Sympetrum signiferum	Mexican Meadowfly			S					Iiodo61150	S?	G2G3
Cochise	MAMMAL	Choeronycteris mexicana	Mexican Long-tongued Bat	SC					A	WSC	AMACB02010	S2	G4
Cochise	MAMMAL	Corynorhinus townsendii pallescens	Pale Townsend's Big-eared Bat	SC							AMACC08014	S3S4	G4T4
Cochise	MAMMAL	Eumops perotis californicus	Greater Western Bonneted Bat	SC							AMACD02011	S1S2	G5T4
Cochise	MAMMAL	Idionycteris phyllotis	Allen's Big-eared Bat	SC	S						AMACC09010	S2S3	G3G4
Cochise	MAMMAL	Lasiurus blossevillii	Western Red Bat							WSC	AMACC05060	S2	G5
Cochise	MAMMAL	Lasiurus xanthinus	Western Yellow Bat							WSC	AMACC05070	S1	G5
Cochise	MAMMAL	Leptonycteris curasoae yerbabuenae	Lesser Long-nosed Bat	LE		S				WSC	AMACB03030	S2	G4
Cochise	MAMMAL	Myotis ciliolabrum	Western Small-footed Myotis	SC	S						AMACC01140	S3	G5
Cochise	MAMMAL	Myotis occultus	Arizona Myotis	SC	S						AMACC01160	S3	G3G4
Cochise	MAMMAL	Myotis thysanodes	Fringed Myotis	SC	S						AMACC01090	S3S4	G4G5
Cochise	MAMMAL	Myotis velifer	Cave Myotis	SC	S						AMACC01050	S4	G5
Cochise	MAMMAL	Myotis volans	Long-legged Myotis	SC	S						AMACC01110	S3S4	G5
Cochise	MAMMAL	Nyctinomops femorosaccus	Pocketed Free-tailed Bat			S					AMACD04010	S2S3	G4
Cochise	MAMMAL	Nyctinomops macrotis	Big Free-tailed Bat	SC	S						AMACD04020	S2S3	G5
Cochise	MAMMAL	Panthera onca	Jaguar	LE		S			P	WSC	AMAJH02010	S1	G3
Cochise	MAMMAL	Sciurus nayaritensis chiricahuae	Chiricahua Fox Squirrel	SC		S					AMAFB07051	S1S2	G5T1T2
Cochise	MAMMAL	Sigmodon ochrognathus	Yellow-nosed Cotton Rat	SC							AMAFF07040	S3S4	G4G5
Cochise	MAMMAL	Sorex arizonae	Arizona Shrew	SC		S			P	WSC	AMABA01240	S2S3	G3
Cochise	MAMMAL	Thomomys bottae mearnsi	Mearns' Southern Pocket Gopher	SC							AMAF0102G	S5	G5T5
Cochise	PLANT	Allium plummerae	Plummer Onion							SR	PMLIL021V0	S3	G4
Cochise	PLANT	Allium rhizomatum	Redflower Onion			S				SR	PMLIL02320	S1	G3?Q
Cochise	PLANT	Apacheria chiricahuensis	Chiricahua Rock Flower							SR	PDCRO01010	S2	G2
Cochise	PLANT	Arabis tricornuta	Chiricahua Rock Cress			S					PDBRA06200	S1?	G1?
Cochise	PLANT	Asclepias lemmonii	Lemmon Milkweed			S					PDASC020Z0	S2	G4?
Cochise	PLANT	Asplenium dalhousiae	Dalhouse Spleenwort			S					PPASP020A0	S1	GNR
Cochise	PLANT	Astragalus cobrensis var. maguirei	Coppermine Milk-vetch	SC		S				SR	PDFAB0F262	S1	G4T2
Cochise	PLANT	Astragalus hypoxylus	Huachuca Milk-vetch	SC	S	S				SR	PDFAB0F470	S1	G1
Cochise	PLANT	Carex chihuahuensis	A Sedge			S					PMCYP032T0	S2S3	G3G4
Cochise	PLANT	Carex ultra	Arizona Giant Sedge			S	S				PMCYP03E50	S2	G3?

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Cochise	PLANT	Castilleja nervata	Trans-pecos Indian-paintbrush			S				PDSCR0D270		S1	G3Q
Cochise	PLANT	Cleome multicaulis	Playa Spider Plant	SC					SR	PDCPP03080		S1	G2G3
Cochise	PLANT	Coryphantha robbinsorum	Cochise Pincushion Cactus	LT					HS	PDCAC0X0C0		S1	G1
Cochise	PLANT	Coryphantha scheeri var. valida	Slender Needle Corycactus						SR	PDCAC040C4		S3?	G4T4
Cochise	PLANT	Coursetia glabella		SC		S				PDFAB140B0		S1	G3?
Cochise	PLANT	Draba standleyi	Standley Whitlow-grass	SC						PDBRA112G0		S2S3	G2G3
Cochise	PLANT	Echinocereus ledingii	Pinaleno Hedgehog Cactus						SR	PDCAC06066		S4	G4G5T4
Cochise	PLANT	Echinocereus pectinatus var. pectinatus	Texas Rainbow Cactus						SR	PDCAC060A3		S4	G5T4
Cochise	PLANT	Echinomastus erectocentrus var. erectocentrus	Needle-spined Pineapple Cactus	SC		S			SR	PDCAC0J0E2		S3	G3T3Q
Cochise	PLANT	Epithelantha micromeris	Button Cactus					PR	SR	PDCAC07020		S1	G4
Cochise	PLANT	Erigeron arisolius				S				PDAST3M510		S2	G2
Cochise	PLANT	Erigeron kuschei	Chiricahua Fleabane	SC		S			SR	PDAST3M240		S1	G1
Cochise	PLANT	Erigeron lemmonii	Lemmon Fleabane	C					HS	PDAST3M2A0		S1	G1
Cochise	PLANT	Eriogonum capillare	San Carlos Wild-buckwheat	SC					SR	PDPGN08100		S4	G4
Cochise	PLANT	Eriogonum terrenatum	San Pedro River Wild Buckwheat		S					PDPGN08760		S1	G1
Cochise	PLANT	Escobaria tuberculosa	Incense Corycactus						SR	PDCAC0X0F0		S1	G4
Cochise	PLANT	Euphorbia macropus	Woodland Spurge	SC					SR	PDEUP0Q2U0		S2	G4
Cochise	PLANT	Gentianella wislizeni	Wislizeni Gentian	SC		S			SR	PDGEN07090		S1	G2
Cochise	PLANT	Graptopetalum bartramii	Bartram Stonecrop	SC	S	S			SR	PDCRA06010		S3	G3
Cochise	PLANT	Hedeoma costatum	Chiricahua Mock Pennyroyal			S				PDLAM0M0L0		S1	G5
Cochise	PLANT	Hedeoma dentatum	Mock-pennyroyal			S				PDLAM0M0M0		S3	G3
Cochise	PLANT	Heterotheca rutteri	Huachuca Golden Aster	SC	S	S				PDAST4V0J0		S2	G2
Cochise	PLANT	Heuchera glomerulata	Arizona Alum Root			S				PDSAX0E0F0		S3	G3
Cochise	PLANT	Hexalectris revoluta	Chisos Coral-root		S	S			SR	PMORC1C030		S1	G1G2
Cochise	PLANT	Hexalectris spicata	Crested Coral Root						SR	PMORC1C040		S3S4	G5
Cochise	PLANT	Hexalectris warnockii	Texas Purple Spike	SC	S	S			HS	PMORC1C050		S1	G2G3
Cochise	PLANT	Hieracium pringlei	Pringle Hawkweed	SC		S				PDAST4W170		S1	G2Q
Cochise	PLANT	Hieracium rusbyi	Rusby Hawkweed			S				PDAST4W1A0		S1	G2?
Cochise	PLANT	Ipomoea plummerae var. cuneifolia	Huachuca Morning Glory			S				PDCON0A141		S3	G4T3
Cochise	PLANT	Ipomoea thurberi	Thurber's Morning-glory			S				PDCON0A1K0		S1	G3
Cochise	PLANT	Laennecia eriophylla	Woolly Fleabane			S				PDASTDL020		S2	G3
Cochise	PLANT	Lilaeopsis schaffneriana var. recurva	Huachuca Water Umbel	LE					HS	PDAP119051		S2	G4T2
Cochise	PLANT	Lilium parryi	Lemmon Lily	SC		S			SR	PMLIL1A0J0		S2	G3
Cochise	PLANT	Lobelia fenestralis	Leafy Lobelia						SR	PDCAM0E0H0		S1	G4
Cochise	PLANT	Lupinus huachucanus	Huachuca Mountain Lupine			S				PDFAB2B210		S2	G2
Cochise	PLANT	Lupinus lemmonii	Lemmon's Lupine			S				PDFAB2B2A0		S1S2Q	G1G2Q
Cochise	PLANT	Malaxis corymbosa	Madrean Adders Mouth						SR	PMORC1R020		S3S4	G4
Cochise	PLANT	Malaxis porphyrea	Purple Adder's Mouth						SR	PMORC1R0Q0		S2	G4
Cochise	PLANT	Malaxis tenuis	Slender Adders Mouth						SR	PMORC1R090		S1	G4
Cochise	PLANT	Mammillaria viridiflora	Varied Fishhook Cactus						SR	PDCAC0A0D0		S4	G4
Cochise	PLANT	Mammillaria wrightii var. wilcoxii	Wilcox Fishhook Cactus						SR	PDCAC0A0E1		S4	G4T4
Cochise	PLANT	Metastelma mexicanum	Wiggins Milkweed Vine	SC		S				PDASC050P0		S1S2	G3G4
Cochise	PLANT	Pectis imberbis	Beardless Chinch Weed	SC		S				PDAST6W0A0		S1	G3

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Cochise	PLANT	Peniocereus greggii var. greggii	Night-blooming Cereus	SC					PR	SR	PDCAC0V011	S1	G3G4T2
Cochise	PLANT	Penstemon discolor	Catalina Beardtongue			S			HS	PDSCR1L210		S2	G2
Cochise	PLANT	Penstemon ramosus	Branching Penstemon			S				PDSCR1L7L0		S1	G3G4Q
Cochise	PLANT	Penstemon superbus	Superb Beardtongue			S				PDSCR1L630		S2?	G3?
Cochise	PLANT	Perityle cochisensis	Chiricahua Rock Daisy			S			SR	PDAST70080		S1S2	G1G2
Cochise	PLANT	Physalis latiphysa	Broad-leaf Ground-cherry			S				PDSOL0S0H0		S1	G1
Cochise	PLANT	Platanthera limosa	Thurber's Bog Orchid						SR	PMORC1Y0G0		S4	G4
Cochise	PLANT	Polemonium flavum	Pinaleno Jacobs Ladder			S				PDPLM0E0B2		S2	G5T3?
Cochise	PLANT	Polemonium pauciflorum ssp. hinckleyi	Hinckley's Ladder	SC		S				PDPLM0E0G1		S1	G3G5T2Q
Cochise	PLANT	Psilactis gentryi	Mexican Bare-ray-aster			S				PDASTE7010		S1	G3
Cochise	PLANT	Rumex orthoneurus	Blumer's Dock	SC		S			HS	PDPGN0P0Z0		S3	G3
Cochise	PLANT	Salvia amissa	Aravaipa Sage	SC	S	S				PDLAM1S0Z0		S2	G2
Cochise	PLANT	Samolus vagans	Chiricahua Mountain Brookweed			S				PDPRI09040		S2	G2?
Cochise	PLANT	Schiedeella arizonica	Fallen Ladies'-tresses						SR	PMORC670Z0		S4	GNR
Cochise	PLANT	Senecio carlomasonii	Seemann Groundsel			S				PDAST8H3W0		S2S3	G4?Q
Cochise	PLANT	Senecio multidentatus var. huachucanus	Huachuca Groundsel			S			HS	PDAST8H411		S2	G2G4T2
Cochise	PLANT	Senecio neomexicanus var. toumeyii	Toumey Groundsel			S				PDAST8H274		S2	G5T2Q
Cochise	PLANT	Sisyrinchium cernuum	Nodding Blue-eyed Grass			S				PMIRI0D0B0		S2	G5
Cochise	PLANT	Spiranthes delitescens	Madrean Ladies'-tresses	LE					HS	PMORC2B140		S1	G1
Cochise	PLANT	Stellaria porsildii	Porsild's Starwort			S				PDCAR0X160		S1	G1
Cochise	PLANT	Stenorrhynchos michuacanum	Michoacan Ladies'-tresses						SR	PMORC2B0L0		S3	G4
Cochise	PLANT	Talinum marginatum	Tepic Flame Flower	SC		S			SR	PDFOR080N0		S1	G2
Cochise	PLANT	Tephrosia thurberi	Thurber Hoary Pea			S				PDFAB3X0M0		S3	G4G5
Cochise	PLANT	Tragia laciniata	Sonoran Noseburn			S				PDEUP1D060		S3?	G3G4
Cochise	PLANT	Vauquelinia californica ssp. pauciflora	Limestone Arizona Rosewood	SC					SR	PDROS1R022		S1	G4T3
Cochise	PLANT	Viola umbraticola	Shade Violet			S				PDVIO042E0		S2?	G3G4
Cochise	PLANT	Zigadenus virens	Green Death Camas						SR	PMLIL280E0		S4	G4
Cochise	REPTILE	Aspidoscelis burti stictogrammus	Giant Spotted Whiptail	SC	S	S				ARACJ02011		S3	G4T4
Cochise	REPTILE	Crotalus willardi obscurus	New Mexico Ridge-nosed Rattlesnake	LT		S		PR		ARADE02131		S1	G5T1T2
Cochise	REPTILE	Crotalus willardi willardi	Arizona Ridge-nosed Rattlesnake			S		PR	WSC	ARADE02132		S3	G5T4
Cochise	REPTILE	Gopherus agassizii (Sonoran Population)	Sonoran Desert Tortoise	SC				A	WSC	ARAAF01013		S4	G4T4
Cochise	REPTILE	Phrynosoma cornutum	Texas Horned Lizard	SC	S			A		ARACF12010		S3S4	G4G5
Cochise	REPTILE	Sistrurus catenatus edwardsii	Desert Massasauga			S		PR	WSC	ARADE03012		S1S2	G3G4T3T4Q
Cochise	REPTILE	Thamnophis eques megalops	Northern Mexican Gartersnake	SC		S		A	WSC	ARADB36061		S2S3	G5T5
Cochise; Gra	BIRD	Haliaeetus leucocephalus (wintering pop.)	Bald Eagle	LT,PDL		S		P	WSC	ABNKC10012		S4N	G5
Cochise; Pim	BIRD	Tyrannus melancholicus	Tropical Kingbird						WSC	ABPAE52010		S3	G5
Cochise; Pim	PLANT	Eriogonum capillare	San Carlos Wild-buckwheat	SC					SR	PDPGN08100		S4	G4
Cochise; Pim	REPTILE	Aspidoscelis burti stictogrammus	Giant Spotted Whiptail	SC	S	S				ARACJ02011		S3	G4T4
Cochise; Sar	AMPHIBIAN	Ambystoma tigrinum stebbinsi	Sonoran Tiger Salamander	LE				PR	WSC	AAAAA01145		S1S2	G5T1T2
Cochise; Sar	AMPHIBIAN	Rana yavapaiensis	Lowland Leopard Frog	SC		S		PR	WSC	AAABH01250		S4	G4

COUNTY	TAXON	SCIENTIFIC NAME	COMMON NAME	ESA	BLM	USFS	NESL	MEXFED	STATE	ELCODE	BCD	SRANK	GRANK
Cochise; San	BIRD	Accipiter gentilis	Northern Goshawk	SC		S	4	A	WSC	ABNKC12060		S3	G5
Cochise; San	BIRD	Haliaeetus leucocephalus (wintering pop.)	Bald Eagle	LT,PDL		S		P	WSC	ABNKC10012		S4N	G5
Cochise; San	BIRD	Trogon elegans	Elegant Trogon						WSC	ABNWA02070		S3	G5
Cochise; San	MAMMAL	Myotis velifer	Cave Myotis	SC	S					AMACC01050		S4	G5
Cochise; San	PLANT	Erigeron arisolius				S				PDAST3M510		S2	G2
Cochise; San	PLANT	Hedeoma dentatum	Mock-pennyroyal			S				PDLAMOM0M0		S3	G3
Cochise; San	PLANT	Laennecia eriophylla	Woolly Fleabane			S				PDASTD020		S2	G3
Cochise; San	PLANT	Muhlenbergia dubioides	Box Canyon Muhly			S				PMPOA480G0		S1	G1Q
Cochise; San	PLANT	Tragia laciniata	Sonoran Noseburn			S				PDEUP1D060		S3?	G3G4
Cochise; San	REPTILE	Crotalus willardi willardi	Arizona Ridge-nosed Rattlesnake			S		PR	WSC	ARADE02132		S3	G5T4
Cochise; San	REPTILE	Thamnophis eques megalops	Northern Mexican Gartersnake	SC		S		A	WSC	ARADB36061		S2S3	G5T5
Coconino	AMPHIBIAN	Bufo microscaphus	Arizona Toad	SC		S				AAAB01110		S3S4	G3G4
Coconino	AMPHIBIAN	Rana blairi	Plains Leopard Frog						WSC	AAABH01040		S1	G5
Coconino	AMPHIBIAN	Rana chiricahuensis	Chiricahua Leopard Frog	LT		S		A	WSC	AAABH01080		S3	G3
Coconino	AMPHIBIAN	Rana pipiens	Northern Leopard Frog			S	2		WSC	AAABH01170		S2	G5
Coconino	AMPHIBIAN	Rana yavapaiensis	Lowland Leopard Frog	SC				PR	WSC	AAABH01250		S4	G4
Coconino	BIRD	Accipiter gentilis	Northern Goshawk	SC		S	4	A	WSC	ABNKC12060		S3	G5
Coconino	BIRD	Athene cunicularia hypugaea	Western Burrowing Owl	SC	S		4	A		ABNSB10012		S3	G4T4
Coconino	BIRD	Buteo regalis	Ferruginous Hawk	SC			3		WSC	ABNKC19120		S2B,S4N	G4
Coconino	BIRD	Buteogallus anthracinus	Common Black-Hawk			S		A	WSC	ABNKC15010		S3	G4G5
Coconino	BIRD	Ceryle alcyon	Belted Kingfisher				4		WSC	ABNXD01020		S2B,S5N	G5
Coconino	BIRD	Empidonax traillii extimus	Southwestern Willow Flycatcher	LE		S	2		WSC	ABPAE33043		S1	G5T1T2
Coconino	BIRD	Eupilotis neoxenus	Eared Quetzal			S		A		ABNWA03010		SAB,S1N	G3
Coconino	BIRD	Falco peregrinus anatum	American Peregrine Falcon	SC		S	4	A	WSC	ABNKD06071		S4	G4T4
Coconino	BIRD	Haliaeetus leucocephalus	Bald Eagle	LT,PDL		S		P	WSC	ABNKC10010		S2S3B,S4N	G5
Coconino	BIRD	Haliaeetus leucocephalus (wintering pop.)	Bald Eagle	LT,PDL		S		P	WSC	ABNKC10012		S4N	G5
Coconino	BIRD	Pandion haliaetus	Osprey						WSC	ABNKC01010		S2B,S4N	G5
Coconino	BIRD	Pinicola enucleator	Pine Grosbeak						WSC	ABPBY03010		S1	G5
Coconino	BIRD	Plegadis chihi	White-faced Ibis	SC						ABNGE02020		S?B,S2S3N	G5
Coconino	BIRD	Strix occidentalis lucida	Mexican Spotted Owl	LT		S	3	A	WSC	ABNSB12012		S3S4	G3T3
Coconino	FISH	Catostomus clarki	Desert Sucker	SC	S					AFCJC02040		S3S4	G3G4
Coconino	FISH	Catostomus insignis	Sonora Sucker	SC	S			P		AFCJC02100		S3	G3
Coconino	FISH	Catostomus latipinnis	Flannelmouth Sucker	SC	S	S				AFCJC02110		S2	G3G4
Coconino	FISH	Catostomus sp. 3	Little Colorado Sucker	SC		S			WSC	AFCJC02250		S2	G2
Coconino	FISH	Gila cypha	Humpback Chub	LE			2		WSC	AFCJB13080		S1	G1
Coconino	FISH	Gila intermedia	Gila Chub	LE		S		P	WSC	AFCJB13160		S2	G2
Coconino	FISH	Gila robusta	Roundtail Chub	SC		S	2	PR	WSC	AFCJB13150		S2	G3
Coconino	FISH	Lepidomeda vittata	Little Colorado Spinedace	LT		S			WSC	AFCJB20040		S1S2	G1G2
Coconino	FISH	Oncorhynchus apache	Apache Trout	LT		S			WSC	AFCHA02102		S3	G3T3
Coconino	FISH	Rhinichthys osculus	Speckled Dace	SC	S			P		AFCJB37050		S3S4	G5
Coconino	FISH	Xyrauchen texanus	Razorback Sucker	LE		S	2	P	WSC	AFCJC11010		S1	G1
Coconino	INVERTEBRATE	Anodonta californiensis	California Floater	SC		S				IMBIV04020		S1S2	G3Q
Coconino	INVERTEBRATE	Archeolarca cavicola	Grand Canyon Cave Pseudoscorpion	SC						ILARA38020		S?	G1G2

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Coconino	INVERTEBRATE	Cicindela oregona maricopa	Maricopa Tiger Beetle	SC	S	S				IICOL02362		S3	G5T3
Coconino	INVERTEBRATE	Discus shimekii cockerelli	Cockerell's Striate Disc (Snail)	SC	S					IMGAS54121		S2?	G4T4
Coconino	INVERTEBRATE	Metrichia nigritta	Page Spring Micro Caddisfly	SC						IITRI97010		S?	G3G4
Coconino	INVERTEBRATE	Oxyloma haydeni haydeni	Niobrara Ambersnail		S	S				IMGAS67152		S1	G3?T1
Coconino	INVERTEBRATE	Oxyloma haydeni kanabensis	Kanab Ambersnail	LE	S	S	4			IMGAS67151		S1?	G3T1Q
Coconino	INVERTEBRATE	Stenopelmatus navajo	Navajo Jerusalem Cricket	SC	S	S				IHORT26020		S1S3	G1G3
Coconino	MAMMAL	Choeronycteris mexicana	Mexican Long-tongued Bat	SC				A	WSC	AMACB02010		S2	G4
Coconino	MAMMAL	Corynorhinus townsendii pallescens	Pale Townsend's Big-eared Bat	SC			4			AMACC08014		S3S4	G4T4
Coconino	MAMMAL	Dipodomys microps leucotis	Houserock Valley Chisel-toothed Kangaroo Rat	SC			4		WSC	AMAFD03024		S2	G5T2Q
Coconino	MAMMAL	Euderma maculatum	Spotted Bat	SC				PR	WSC	AMACC07010		S1S2	G4
Coconino	MAMMAL	Eumops perotis californicus	Greater Western Bonneted Bat	SC						AMACD02011		S1S2	G5T4
Coconino	MAMMAL	Idionycteris phyllotis	Allen's Big-eared Bat	SC	S					AMACC09010		S2S3	G3G4
Coconino	MAMMAL	Lasiurus blossevillii	Western Red Bat						WSC	AMACC05060		S2	G5
Coconino	MAMMAL	Microtus mexicanus hualpaiensis	Hualapai Mexican Vole	LE					WSC	AMAFF11212		S1	G5T1Q
Coconino	MAMMAL	Microtus mexicanus navaho	Navajo Mexican Vole	SC		S	4		WSC	AMAFF11213		S1	G5T2Q
Coconino	MAMMAL	Myotis ciliolabrum	Western Small-footed Myotis	SC	S					AMACC01140		S3	G5
Coconino	MAMMAL	Myotis evotis	Long-eared Myotis	SC	S					AMACC01070		S3S4	G5
Coconino	MAMMAL	Myotis occultus	Arizona Myotis	SC	S					AMACC01160		S3	G3G4
Coconino	MAMMAL	Myotis thysanodes	Fringed Myotis	SC	S					AMACC01090		S3S4	G4G5
Coconino	MAMMAL	Myotis velifer	Cave Myotis	SC	S					AMACC01050		S4	G5
Coconino	MAMMAL	Myotis volans	Long-legged Myotis	SC	S					AMACC01110		S3S4	G5
Coconino	MAMMAL	Nyctinomops macrotis	Big Free-tailed Bat	SC	S					AMACD04020		S2S3	G5
Coconino	MAMMAL	Perognathus amplus cineris	Wupatki Arizona Pocket Mouse	SC		S	4			AMAFD01053		S3	G5T3Q
Coconino	PLANT	Allium bigelovii	Bigelow Onion						SR	PMLIL02070		S2S3	G3
Coconino	PLANT	Amsonia peeblesii	Peebles Blue Star				4			PDAP0030E0		S3	G3
Coconino	PLANT	Aquilegia desertorum	Mogollon Columbine						SR	PDRAN05070		S4	G4
Coconino	PLANT	Argemone arizonica	Roaring Springs Prickly-poppy	SC						PDPAP03030		S1	G1
Coconino	PLANT	Asclepias welshii	Welsh's Milkweed	LT			3		HS	PDASC02290		S1	G1
Coconino	PLANT	Astragalus ampullarius	Gumbo Milk-vetch	SC		S				PDFAB0F0L0		S1	G2
Coconino	PLANT	Astragalus beathii	Beath Milk-vetch				4			PDFAB0F160		S2	G2
Coconino	PLANT	Astragalus cremnophylax var. cremnophylax	Sentry Milk-vetch	LE					HS	PDFAB0F2H1		S1	G1T1
Coconino	PLANT	Astragalus cremnophylax var. hevronii	Marble Canyon Milk-vetch		S	S	3			PDFAB0F2H3		S1	G1T1
Coconino	PLANT	Astragalus cremnophylax var. myriorrhaphis	Cliff Milk-vetch	SC	S	S			SR	PDFAB0F2H2		S1	G1T1
Coconino	PLANT	Astragalus rusbyi	Rusby's Milk-vetch			S				PDFAB0F7Q0		S3	G3
Coconino	PLANT	Astragalus xiphoides	Gladiator Milk Vetch	SC					SR	PDFAB0F9T0		S3	G3
Coconino	PLANT	Botrychium crenulatum	Crenulate Moonwort	SC		S				PPOPH010L0		S1	G3
Coconino	PLANT	Calypso bulbosa	Western Fairy Slipper						SR	PMORC0D010		S3	G5
Coconino	PLANT	Camissonia exilis	Slender Evening-primrose	SC					SR	PDONA030J0		S1	G1
Coconino	PLANT	Camissonia specuicola ssp. hesperia	Grand Canyon Evening-primrose	SC						PDONA031J1		S1	G2T1
Coconino	PLANT	Carex specuicola	Navajo Sedge	LT			3		HS	PMCYP03CQ0		S2	G2
Coconino	PLANT	Castilleja kaibabensis	Kaibab Paintbrush			S				PDSCR0D1J0		S2	G2

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Coconino	PLANT	Chrysothamnus molestus	Tusayan Rabbitbrush	SC		S				PDAST2C060		S3	G3
Coconino	PLANT	Cimicifuga arizonica	Arizona Bugbane	SC		S			HS	PDRAN07020		S2	G2
Coconino	PLANT	Cirsium parryi ssp. mogollonicum	Mogollon Thistle	SC		S			SR	PDAST2E261		S1	G4T1
Coconino	PLANT	Coryphantha missouriensis	Missouri Corycactus						SR	PDCAC0X020		S3	G5
Coconino	PLANT	Cymopterus megacephalus	Cameron Water-parsley	SC		S				PDAP10U0M0		S3	G3
Coconino	PLANT	Echinocactus polycephalus var. polycephalus	Clustered Barrel Cactus						SR	PDCAC05033		S2	G3G4T3T4
Coconino	PLANT	Echinocactus polycephalus var. xeranthemoides	Grand Canyon Cottontop Cactus						SR	PDCAC05032		S2S3	G3G4T1T3
Coconino	PLANT	Erigeron saxatilis	Rock Fleabane			S				PDAST3M560		S3	G3
Coconino	PLANT	Eriogonum ericifolium var. ericifolium	Heathleaf Wild-buckwheat			S				PDPGN08231		S2	G3T2
Coconino	PLANT	Eriogonum ripleyi	Ripley Wild-buckwheat	SC		S			SR	PDPGN08520		S2	G2
Coconino	PLANT	Errazurizia rotundata	Roundleaf Errazurizia		S		4		SR	PDFAB1L010		S2	G2
Coconino	PLANT	Ferocactus cylindraceus var. eastwoodiae	Golden Barrel Cactus						SR	PDCAC08084		S1	G5T1
Coconino	PLANT	Flaveria mcdougallii	Grand Canyon Flaveria						SR	PDAST3V070		S2	G2
Coconino	PLANT	Gentianopsis barbellata	Bearded Gentian			S				PDGEN08010		S1	G3G4
Coconino	PLANT	Hedeoma diffusum	Flagstaff Pennyroyal			S			SR	PDLAM0M0N0		S3	G3
Coconino	PLANT	Heuchera eastwoodiae	Eastwood Alum Root			S				PDSAX0E0B0		S3	G3
Coconino	PLANT	Lesquerella kaibabensis	Kaibab Bladderpod	SC		S				PDBRA1N1R0		S1S2	G1G2
Coconino	PLANT	Listera convallarioides	Broadleaf Twayblade						SR	PMORC1N050		S1	G5
Coconino	PLANT	Malaxis porphyrea	Purple Adder's Mouth						SR	PMORC1R0Q0		S2	G4
Coconino	PLANT	Opuntia basilaris var. aurea	Yellow Beavertail						SR	PDCAC0D300		S3	G3
Coconino	PLANT	Opuntia basilaris var. longiareolata	Grand Canyon Beavertail Cactus						SR	PDCAC0D054		S2	G5T2Q
Coconino	PLANT	Opuntia nicholii	Navajo Bridge Cactus						SR	PDCAC0D0W0		S4	G4Q
Coconino	PLANT	Pediocactus bradyi	Brady Pincushion Cactus	LE			2		HS	PDCAC0E010		S1	G1
Coconino	PLANT	Pediocactus paradinei	Kaibab Pincushion Cactus	SC	S	S			HS	PDCAC0E040		S2	G2
Coconino	PLANT	Pediocactus peeblesianus var. fickeiseniae	Fickeisen Plains Cactus	C		S	3		HS	PDCAC0E051		S1S2	G1G2T1T2
Coconino	PLANT	Pediocactus sileri	Siler Pincushion Cactus	LT	S				HS	PDCAC0E060		S3	G3
Coconino	PLANT	Pediocactus simpsonii	Simpson Plains Cactus						SR	PDCAC0E070		S1	G4
Coconino	PLANT	Penstemon clutei	Sunset Crater Beardtongue	SC		S			SR	PDSCR1L1E0		S2	G2
Coconino	PLANT	Penstemon nudiflorus	Flagstaff Beardtongue			S				PDSCR1L4A0		S2S3	G2G3
Coconino	PLANT	Phacelia serrata	Cinder Phacelia	SC						PDHYD0C4B0		S3	G3
Coconino	PLANT	Phacelia welshii	Welsh Phacelia	SC						PDHYD0C4U0		S2	G2
Coconino	PLANT	Pinus aristata	Rocky Mountain Bristlecone Pine						SR	PGPIN04020		S2	G3
Coconino	PLANT	Platanthera zothecina	Alcove Bog-orchid	SC			3			PMORC1Y130		S2	G2
Coconino	PLANT	Polemonium flavum	Pinaleno Jacobs Ladder			S				PDPLM0E0B2		S2	G5T3?
Coconino	PLANT	Primula specuicola	Grand Canyon Primrose						SR	PDPRI080H0		S2	G4Q
Coconino	PLANT	Psoralea thompsonae var. whitingii	Whiting Indigo Bush	SC						PDFAB3C092		S1	G3?T2
Coconino	PLANT	Puccinellia parishii	Parish Alkali Grass	SC			4		HS	PMPOA530T0		S2	G2
Coconino	PLANT	Rosa stellata ssp. abyssa	Grand Canyon Rose	SC	S	S			SR	PDROS1J153		S2	G4T2
Coconino	PLANT	Rumex orthoneurus	Blumer's Dock	SC		S			HS	PDPGN0P0Z0		S3	G3
Coconino	PLANT	Sclerocactus sileri	House Rock Fishhook Cactus						SR	PDCAC0J0T0		S1	G1

COUNTY	TAXON	SCIENTIFIC NAME	COMMON NAME	ESA	BLM	USFS	NESL	MEXFED	STATE	ELCODE_BCD	SRANK	GRANK
Coconino	PLANT	Senecio franciscanus	San Francisco Peaks Groundsel	LT					HS	PDAST8H1C0	S1	G1
Coconino	PLANT	Silene rectiramea	Grand Canyon Catchfly	SC						PDCAROU1F0	S1	G1
Coconino	PLANT	Talinum validulum	Tusayan Flame Flower	SC					SR	PDPOR080M0	S3	G3
Coconino	PLANT	Triteleia lemmoniae	Mazatzal Triteleia						SR	PMLIL210C0	S3	G3
Coconino	PLANT	Zigadenus virens	Green Death Camas						SR	PMLIL280E0	S4	G4
Coconino	REPTILE	Crotalus oreganus abyssus	Grand Canyon Rattlesnake			S				ARADE02121	S4	G5T4
Coconino	REPTILE	Thamnophis eques megalops	Northern Mexican Gartersnake	SC		S		A	WSC	ARADB36061	S2S3	G5T5
Coconino	REPTILE	Thamnophis rufipunctatus	Narrow-headed Gartersnake	SC		S			WSC	ARADB36110	S3	G3G4
Coconino; Gi	BIRD	Accipiter gentilis	Northern Goshawk	SC		S	4	A	WSC	ABNKC12060	S3	G5
Coconino; Gi	BIRD	Falco peregrinus anatum	American Peregrine Falcon	SC		S	4	A	WSC	ABNKD06071	S4	G4T4
Coconino; Gi	BIRD	Strix occidentalis lucida	Mexican Spotted Owl	LT		S	3	A	WSC	ABNSB12012	S3S4	G3T3
Coconino; Gi	INVERTEBRATE	Cicindela oregona maricopa	Maricopa Tiger Beetle	SC	S	S				IICOL02362	S3	G5T3
Coconino; Gi	PLANT	Heuchera eastwoodiae	Eastwood Alum Root			S				PDSAX0E0B0	S3	G3
Coconino; Gi	PLANT	Triteleia lemmoniae	Mazatzal Triteleia						SR	PMLIL210C0	S3	G3
Coconino; Gi	BIRD	Strix occidentalis lucida	Mexican Spotted Owl	LT		S	3	A	WSC	ABNSB12012	S3S4	G3T3
Coconino; Md	AMPHIBIAN	Rana pipiens	Northern Leopard Frog			S	2		WSC	AAABH01170	S2	G5
Coconino; Md	BIRD	Falco peregrinus anatum	American Peregrine Falcon	SC		S	4	A	WSC	ABNKD06071	S4	G4T4
Coconino; Md	FISH	Catostomus latipinnis	Flannelmouth Sucker	SC	S	S				AFCJC02110	S2	G3G4
Coconino; Md	FISH	Gila cypha	Humpback Chub	LE			2		WSC	AFCJB13080	S1	G1
Coconino; Md	FISH	Rhinichthys osculus	Speckled Dace	SC	S			P		AFCJB37050	S3S4	G5
Coconino; Md	MAMMAL	Eumops perotis californicus	Greater Western Bonneted Bat	SC						AMACD02011	S1S2	G5T4
Coconino; Md	MAMMAL	Idionycteris phyllotis	Allen's Big-eared Bat	SC	S					AMACC09010	S2S3	G3G4
Coconino; Md	MAMMAL	Nyctinomops macrotis	Big Free-tailed Bat	SC	S					AMACD04020	S2S3	G5
Coconino; Md	PLANT	Camissonia specuicola ssp. hesperia	Grand Canyon Evening-primrose	SC						PDONA031J1	S1	G2T1
Coconino; Md	PLANT	Flaveria mcdougallii	Grand Canyon Flaveria						SR	PDAST3V070	S2	G2
Coconino; Md	PLANT	Thelypteris puberula var. sonorensis	Aravaipa Wood Fern		S					PPTHE05192	S2	G5T3
Coconino; Md	PLANT	Yucca whipplei	Our Lords Candle						SR	PMAGA0B0X0	S3S4	G4G5
Coconino; Nd	BIRD	Strix occidentalis lucida	Mexican Spotted Owl	LT		S	3	A	WSC	ABNSB12012	S3S4	G3T3
Coconino; Nd	PLANT	Carex specuicola	Navajo Sedge	LT			3		HS	PMCYP03CQ0	S2	G2
Coconino; Ya	BIRD	Accipiter gentilis	Northern Goshawk	SC		S	4	A	WSC	ABNKC12060	S3	G5
Coconino; Ya	BIRD	Falco peregrinus anatum	American Peregrine Falcon	SC		S	4	A	WSC	ABNKD06071	S4	G4T4
Coconino; Ya	BIRD	Pinicola enucleator	Pine Grosbeak						WSC	ABPBY03010	S1	G5
Coconino; Ya	BIRD	Strix occidentalis lucida	Mexican Spotted Owl	LT		S	3	A	WSC	ABNSB12012	S3S4	G3T3
Coconino; Ya	PLANT	Allium bigelovii	Bigelow Onion						SR	PMLIL02070	S2S3	G3
Coconino; Ya	PLANT	Eriogonum ripleyi	Ripley Wild-buckwheat	SC		S			SR	PDPGN08520	S2	G2
Coconino; Ya	PLANT	Hedeoma diffusum	Flagstaff Pennyroyal			S			SR	PDLAM0M0N0	S3	G3
Coconino; Ya	REPTILE	Thamnophis rufipunctatus	Narrow-headed Gartersnake	SC		S			WSC	ARADB36110	S3	G3G4
Gila	AMPHIBIAN	Bufo microscaphus	Arizona Toad	SC		S				AAABB01110	S3S4	G3G4
Gila	AMPHIBIAN	Eleutherodactylus augusti cactorum	Western Barking Frog			S			WSC	AAABD04171	S1	G5T5
Gila	AMPHIBIAN	Rana chiricahuensis	Chiricahua Leopard Frog	LT		S		A	WSC	AAABH01080	S3	G3
Gila	AMPHIBIAN	Rana yavapaiensis	Lowland Leopard Frog	SC		S		PR	WSC	AAABH01250	S4	G4
Gila	BIRD	Accipiter gentilis	Northern Goshawk	SC		S	4	A	WSC	ABNKC12060	S3	G5
Gila	BIRD	Asturina nitida maxima	Northern Gray Hawk	SC		S		PR	WSC	ABNKC19011	S3	G5T4Q

COUNTY	TAXON	SCIENTIFIC NAME	COMMON NAME	ESA	BLM	USFS	NESL	MEXFED	STATE	ELCODE	BCD	SRANK	GRANK
Gila	BIRD	Buteogallus anthracinus	Common Black-Hawk			S			A	WSC	ABNKC15010	S3	G4G5
Gila	BIRD	Ceryle alcyon	Belted Kingfisher				4			WSC	ABNXD01020	S2B,S5N	G5
Gila	BIRD	Coccyzus americanus occidentalis	Western Yellow-billed Cuckoo	C		S	2			WSC	ABNRB02022	S3	G5T3Q
Gila	BIRD	Dolichonyx oryzivorus	Bobolink							WSC	ABPBXA9010	S1	G5
Gila	BIRD	Empidonax traillii extimus	Southwestern Willow Flycatcher	LE		S	2			WSC	ABPAE33043	S1	G5T1T2
Gila	BIRD	Euptilotis neoxenus	Eared Quetzal			S			A		ABNWA03010	SAB,S1N	G3
Gila	BIRD	Falco peregrinus anatum	American Peregrine Falcon	SC		S	4		A	WSC	ABNKD06071	S4	G4T4
Gila	BIRD	Haliaeetus leucocephalus	Bald Eagle	LT,PDL		S			P	WSC	ABNKC10010	S2S3B,S4N	G5
Gila	BIRD	Pandion haliaetus	Osprey							WSC	ABNKC01010	S2B,S4N	G5
Gila	BIRD	Rallus longirostris yumanensis	Yuma Clapper Rail	LE					P	WSC	ABNME0501A	S3	G5T3
Gila	BIRD	Strix occidentalis lucida	Mexican Spotted Owl	LT		S	3		A	WSC	ABNSB12012	S3S4	G3T3
Gila	FISH	Agosia chrysogaster chrysogaster	Gila Longfin Dace	SC	S				A		AFCJB37151	S3S4	G4T3T4
Gila	FISH	Catostomus clarki	Desert Sucker	SC	S						AFCJC02040	S3S4	G3G4
Gila	FISH	Catostomus insignis	Sonora Sucker	SC	S				P		AFCJC02100	S3	G3
Gila	FISH	Gila intermedia	Gila Chub	LE		S			P	WSC	AFCJB13160	S2	G2
Gila	FISH	Gila nigra	Headwater Chub	C							AFCJB13180	S2	G2Q
Gila	FISH	Gila robusta	Roundtail Chub	SC		S	2		PR	WSC	AFCJB13150	S2	G3
Gila	FISH	Poeciliopsis occidentalis occidentalis	Gila Topminnow	LE					A	WSC	AFCNC05021	S1S2	G3T3
Gila	FISH	Rhinichthys osculus	Speckled Dace	SC	S				P		AFCJB37050	S3S4	G5
Gila	FISH	Xyrauchen texanus	Razorback Sucker	LE		S	2		P	WSC	AFCJC11010	S1	G1
Gila	INVERTEBRATE	Agathon arizonicus				S					IIDIP46010	S?	G1
Gila	INVERTEBRATE	Anodonta californiensis	California Floater	SC		S					IMBIV04020	S1S2	G3Q
Gila	INVERTEBRATE	Cicindela oregona maricopa	Maricopa Tiger Beetle	SC	S	S					IICOL02362	S3	G5T3
Gila	INVERTEBRATE	Pyrgulopsis simplex	Fossil Springsnail	SC	S	S					IMGASJ0210	S1	G1G2
Gila	INVERTEBRATE	Pyrgulopsis sola	Brown Springsnail	SC	S	S					IMGASJ0220	S1	G1
Gila	MAMMAL	Corynorhinus townsendii pallescens	Pale Townsend's Big-eared Bat	SC			4				AMACC08014	S3S4	G4T4
Gila	MAMMAL	Eumops perotis californicus	Greater Western Bonneted Bat	SC							AMACD02011	S1S2	G5T4
Gila	MAMMAL	Idionycteris phyllotis	Allen's Big-eared Bat	SC	S						AMACC09010	S2S3	G3G4
Gila	MAMMAL	Lasiurus blossevillii	Western Red Bat							WSC	AMACC05060	S2	G5
Gila	MAMMAL	Macrotus californicus	California Leaf-nosed Bat	SC						WSC	AMACB01010	S3S4	G4
Gila	MAMMAL	Myotis occultus	Arizona Myotis	SC	S						AMACC01160	S3	G3G4
Gila	MAMMAL	Myotis thysanodes	Fringed Myotis	SC	S						AMACC01090	S3S4	G4G5
Gila	MAMMAL	Myotis velifer	Cave Myotis	SC	S						AMACC01050	S4	G5
Gila	MAMMAL	Myotis volans	Long-legged Myotis	SC	S						AMACC01110	S3S4	G5
Gila	MAMMAL	Myotis yumanensis	Yuma Myotis	SC							AMACC01020	S3S4	G5
Gila	MAMMAL	Nyctinomops femorosaccus	Pocketed Free-tailed Bat		S						AMACD04010	S2S3	G4
Gila	MAMMAL	Nyctinomops macrotis	Big Free-tailed Bat	SC	S						AMACD04020	S2S3	G5
Gila	PLANT	Abutilon parishii	Pima Indian Mallow	SC	S	S				SR	PDMAL020E0	S2	G2
Gila	PLANT	Agave arizonica	Arizona Agave	No status						HS	PMAGA01030	SHYB	G1Q
Gila	PLANT	Agave delamateri	Tonto Basin Agave	SC		S				HS	PMAGA010W0	S2	G2
Gila	PLANT	Agave murpheyi	Hohokam Agave	SC	S	S				HS	PMAGA010F0	S2	G2
Gila	PLANT	Agave toumeyana var. bella	Toumey Agave							SR	PMAGA010R1	S3	G3T3
Gila	PLANT	Arenaria aberrans	Mt. Dellenbaugh Sandwort			S					PDCAR04010	S2	G2G3

COUNTY	TAXON	SCIENTIFIC NAME	COMMON NAME	ESA	BLM	USFS	NESL	MEXFED	STATE	ELCODE	BCD	SRANK	GRANK
Gila	PLANT	Carex chihuahuensis	A Sedge			S				PMCYP032T0		S2S3	G3G4
Gila	PLANT	Cimicifuga arizonica	Arizona Bugbane	SC		S			HS	PDRAN07020		S2	G2
Gila	PLANT	Echinocereus triglochidiatus var. arizonicus	Arizona Hedgehog Cactus	LE		S			HS	PDCAC060K1		S2	G5T2
Gila	PLANT	Erigeron anchana	Mogollon Fleabane	SC		S				PDAST3M580		S2	G2
Gila	PLANT	Eriogonum capillare	San Carlos Wild-buckwheat	SC					SR	PDPGN08100		S4	G4
Gila	PLANT	Ferocactus cylindraceus var. cylindraceus	California Barrel Cactus						PR	PDCAC08081		S3	G5T4
Gila	PLANT	Fremontodendron californicum	Flannel Bush		S				SR	PDSTE03010		S2S3	G4
Gila	PLANT	Heuchera eastwoodiae	Eastwood Alum Root			S				PDSAX0E0B0		S3	G3
Gila	PLANT	Heuchera glomerulata	Arizona Alum Root			S				PDSAX0E0F0		S3	G3
Gila	PLANT	Mammillaria viridiflora	Varied Fishhook Cactus						SR	PDCAC0A0D0		S4	G4
Gila	PLANT	Osmorhiza brachypoda	Sweet Cicely			S				PDAP11K020		S1	G4
Gila	PLANT	Penstemon nudiflorus	Flagstaff Beardtongue			S				PDSCR1L4A0		S2S3	G2G3
Gila	PLANT	Penstemon superbus	Superb Beardtongue			S				PDSCR1L630		S2?	G3?
Gila	PLANT	Perityle gilensis var. salensis	Gila Rock Daisy			S				PDAST700D2		S2?	G2?T2?
Gila	PLANT	Perityle saxicola	Fish Creek Rock Daisy	SC		S				PDAST700P0		S1	G1
Gila	PLANT	Phlox amabilis	Arizona Phlox			S				PDPLM0D050		S2	G2
Gila	PLANT	Rumex orthoneurus	Blumer's Dock	SC		S			HS	PDPGN0P0Z0		S3	G3
Gila	PLANT	Salvia amissa	Aravaipa Sage	SC	S	S				PDLAM1S020		S2	G2
Gila	PLANT	Triteleia lemmoniae	Mazatzal Triteleia						SR	PMLIL210C0		S3	G3
Gila	REPTILE	Gopherus agassizii (Sonoran Population)	Sonoran Desert Tortoise	SC					A	WSC	ARAAF01013	S4	G4T4
Gila	REPTILE	Thamnophis eques megalops	Northern Mexican Gartersnake	SC		S			A	WSC	ARADB36061	S2S3	G5T5
Gila	REPTILE	Thamnophis rufipunctatus	Narrow-headed Gartersnake	SC		S				WSC	ARADB36110	S3	G3G4
Gila; Graham	AMPHIBIAN	Rana chiricahuensis	Chiricahua Leopard Frog	LT		S			A	WSC	AAABH01080	S3	G3
Gila; Graham	BIRD	Buteogallus anthracinus	Common Black-Hawk			S			A	WSC	ABNKC15010	S3	G4G5
Gila; Graham	BIRD	Falco peregrinus anatum	American Peregrine Falcon	SC		S	4		A	WSC	ABNKD06071	S4	G4T4
Gila; Graham	BIRD	Haliaeetus leucocephalus	Bald Eagle	LT,PDL		S			P	WSC	ABNKC10010	S2S3B,S4N	G5
Gila; Graham	FISH	Gila nigra	Headwater Chub	C						AFCJB13180		S2	G2Q
Gila; Maricop	AMPHIBIAN	Rana yavapaiensis	Lowland Leopard Frog	SC		S			PR	WSC	AAABH01250	S4	G4
Gila; Maricop	BIRD	Buteogallus anthracinus	Common Black-Hawk			S			A	WSC	ABNKC15010	S3	G4G5
Gila; Maricop	BIRD	Haliaeetus leucocephalus	Bald Eagle	LT,PDL		S			P	WSC	ABNKC10010	S2S3B,S4N	G5
Gila; Maricop	BIRD	Strix occidentalis lucida	Mexican Spotted Owl	LT		S	3		A	WSC	ABNSB12012	S3S4	G3T3
Gila; Maricop	MAMMAL	Myotis yumanensis	Yuma Myotis	SC						AMACC01020		S3S4	G5
Gila; Maricop	PLANT	Fremontodendron californicum	Flannel Bush		S				SR	PDSTE03010		S2S3	G4
Gila; Navajo	PLANT	Penstemon nudiflorus	Flagstaff Beardtongue			S				PDSCR1L4A0		S2S3	G2G3
Gila; Pinal	AMPHIBIAN	Rana yavapaiensis	Lowland Leopard Frog	SC		S			PR	WSC	AAABH01250	S4	G4
Gila; Pinal	BIRD	Buteogallus anthracinus	Common Black-Hawk			S			A	WSC	ABNKC15010	S3	G4G5
Gila; Pinal	BIRD	Empidonax traillii extimus	Southwestern Willow Flycatcher	LE		S	2			WSC	ABPAE33043	S1	G5T1T2
Gila; Pinal	BIRD	Falco peregrinus anatum	American Peregrine Falcon	SC		S	4		A	WSC	ABNKD06071	S4	G4T4
Gila; Pinal	BIRD	Haliaeetus leucocephalus	Bald Eagle	LT,PDL		S			P	WSC	ABNKC10010	S2S3B,S4N	G5
Gila; Pinal	FISH	Agosia chrysogaster chrysogaster	Gila Longfin Dace	SC	S				A		AFCJB37151	S3S4	G4T3T4
Gila; Pinal	FISH	Catostomus clarki	Desert Sucker	SC	S					AFCJC02040		S3S4	G3G4
Gila; Pinal	FISH	Catostomus insignis	Sonora Sucker	SC	S				P	AFCJC02100		S3	G3
Gila; Pinal	INVERTEBRATE	Cicindela oregona maricopa	Maricopa Tiger Beetle	SC	S	S				IICOL02362		S3	G5T3

COUNTY	TAXON	SCIENTIFIC NAME	COMMON NAME	ESA	BLM	USFS	NESL	MEXFED	STATE	ELCODE	BCD	SRANK	GRANK
Gila; Pinal	PLANT	Mammillaria viridiflora	Varied Fishhook Cactus						SR	PDCACO0A0D0		S4	G4
Gila; Pinal	REPTILE	Gopherus agassizii (Sonoran Population)	Sonoran Desert Tortoise	SC				A	WSC	ARAAF01013		S4	G4T4
Gila; Yavapai	AMPHIBIAN	Rana chiricahuensis	Chiricahua Leopard Frog	LT		S		A	WSC	AAABH01080		S3	G3
Gila; Yavapai	AMPHIBIAN	Rana yavapaiensis	Lowland Leopard Frog	SC		S		PR	WSC	AAABH01250		S4	G4
Gila; Yavapai	BIRD	Buteogallus anthracinus	Common Black-Hawk			S		A	WSC	ABNKC15010		S3	G4G5
Gila; Yavapai	BIRD	Coccyzus americanus occidentalis	Western Yellow-billed Cuckoo	C		S	2		WSC	ABNRB02022		S3	G5T3Q
Gila; Yavapai	BIRD	Falco peregrinus anatum	American Peregrine Falcon	SC		S	4	A	WSC	ABNKD06071		S4	G4T4
Gila; Yavapai	BIRD	Haliaeetus leucocephalus	Bald Eagle	LT,PDL		S		P	WSC	ABNKC10010		S2S3B,S4N	G5
Gila; Yavapai	BIRD	Rallus longirostris yumanensis	Yuma Clapper Rail	LE				P	WSC	ABNME0501A		S3	G5T3
Gila; Yavapai	BIRD	Strix occidentalis lucida	Mexican Spotted Owl	LT		S	3	A	WSC	ABNSB12012		S3S4	G3T3
Gila; Yavapai	FISH	Agosia chrysogaster chrysogaster	Gila Longfin Dace	SC	S			A		AFCJB37151		S3S4	G4T3T4
Gila; Yavapai	FISH	Catostomus clarki	Desert Sucker	SC	S					AFCJC02040		S3S4	G3G4
Gila; Yavapai	FISH	Catostomus insignis	Sonora Sucker	SC	S			P		AFCJC02100		S3	G3
Gila; Yavapai	FISH	Gila nigra	Headwater Chub	C						AFCJB13180		S2	G2Q
Gila; Yavapai	FISH	Gila robusta	Roundtail Chub	SC		S	2	PR	WSC	AFCJB13150		S2	G3
Gila; Yavapai	FISH	Rhinichthys osculus	Speckled Dace	SC	S			P		AFCJB37050		S3S4	G5
Gila; Yavapai	FISH	Xyrauchen texanus	Razorback Sucker	LE		S	2	P	WSC	AFCJC11010		S1	G1
Gila; Yavapai	INVERTEBRATE	Pyrgulopsis simplex	Fossil Springsnail	SC	S	S				IMGASJ0210		S1	G1G2
Gila; Yavapai	MAMMAL	Nyctinomops femorosaccus	Pocketed Free-tailed Bat		S					AMACD04010		S2S3	G4
Gila; Yavapai	PLANT	Fremontodendron californicum	Flannel Bush		S				SR	PDSTE03010		S2S3	G4
Gila; Yavapai	PLANT	Heuchera eastwoodiae	Eastwood Alum Root			S				PDSAX0E0B0		S3	G3
Gila; Yavapai	REPTILE	Thamnophis eques megalops	Northern Mexican Gartersnake	SC		S		A	WSC	ARADB36061		S2S3	G5T5
Graham	AMPHIBIAN	Bufo microscaphus	Arizona Toad	SC		S				AAABB01110		S3S4	G3G4
Graham	AMPHIBIAN	Rana chiricahuensis	Chiricahua Leopard Frog	LT		S		A	WSC	AAABH01080		S3	G3
Graham	AMPHIBIAN	Rana yavapaiensis	Lowland Leopard Frog	SC		S		PR	WSC	AAABH01250		S4	G4
Graham	BIRD	Accipiter gentilis	Northern Goshawk	SC		S	4	A	WSC	ABNKC12060		S3	G5
Graham	BIRD	Amazilia violiceps	Violet-crowned Hummingbird						WSC	ABNUC29150		S3	G5
Graham	BIRD	Asturina nitida maxima	Northern Gray Hawk	SC		S		PR	WSC	ABNKC19011		S3	G5T4Q
Graham	BIRD	Athene cunicularia hypugaea	Western Burrowing Owl	SC	S		4	A		ABNSB10012		S3	G4T4
Graham	BIRD	Buteogallus anthracinus	Common Black-Hawk			S		A	WSC	ABNKC15010		S3	G4G5
Graham	BIRD	Coccyzus americanus occidentalis	Western Yellow-billed Cuckoo	C		S	2		WSC	ABNRB02022		S3	G5T3Q
Graham	BIRD	Empidonax traillii eximius	Southwestern Willow Flycatcher	LE		S	2		WSC	ABPAE33043		S1	G5T1T2
Graham	BIRD	Falco peregrinus anatum	American Peregrine Falcon	SC		S	4	A	WSC	ABNKD06071		S4	G4T4
Graham	BIRD	Haliaeetus leucocephalus (wintering pop.)	Bald Eagle	LT,PDL		S		P	WSC	ABNKC10012		S4N	G5
Graham	BIRD	Strix occidentalis lucida	Mexican Spotted Owl	LT		S	3	A	WSC	ABNSB12012		S3S4	G3T3
Graham	FISH	Agosia chrysogaster chrysogaster	Gila Longfin Dace	SC	S			A		AFCJB37151		S3S4	G4T3T4
Graham	FISH	Catostomus clarki	Desert Sucker	SC	S					AFCJC02040		S3S4	G3G4
Graham	FISH	Catostomus insignis	Sonora Sucker	SC	S			P		AFCJC02100		S3	G3
Graham	FISH	Cyprinodon macularius	Desert Pupfish	LE				P	WSC	AFCNB02060		S1	G1
Graham	FISH	Gila intermedia	Gila Chub	LE		S		P	WSC	AFCJB13160		S2	G2
Graham	FISH	Gila robusta	Roundtail Chub	SC		S	2	PR	WSC	AFCJB13150		S2	G3

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Graham	FISH	Meda fulgida	Spikedace	LT		S			WSC	AFCJB22010		S1	G2
Graham	FISH	Oncorhynchus apache	Apache Trout	LT		S			WSC	AFCHA02102		S3	G3T3
Graham	FISH	Poeciliopsis occidentalis occidentalis	Gila Topminnow	LE				A	WSC	AFCNC05021		S1S2	G3T3
Graham	FISH	Rhinichthys osculus	Speckled Dace	SC	S			P		AFCJB37050		S3S4	G5
Graham	FISH	Tiaroga cobitis	Loach Minnow	LT		S		P	WSC	AFCJB37140		S1	G2
Graham	FISH	Xyrauchen texanus	Razorback Sucker	LE		S		2 P	WSC	AFCJC11010		S1	G1
Graham	INVERTEBRATE	Anodonta californiensis	California Floater	SC		S				IMBIV04020		S1S2	G3Q
Graham	INVERTEBRATE	Cicindela oregona maricopa	Maricopa Tiger Beetle	SC	S	S				IICOL02362		S3	G5T3
Graham	INVERTEBRATE	Eumorsea pinaleno	Pinaleno Monkey Grasshopper	SC		S				IORT14010		S1S3	G1G3
Graham	INVERTEBRATE	Limenitis archippus obsoleta	Obsolete Viceroy Butterfly			S				IILEPL3024		S?	G5T3T4
Graham	INVERTEBRATE	Oreohelix grahamensis	Pinaleno Mountainsnail			S				IMGASB5120		S2	G2
Graham	INVERTEBRATE	Pyrgulopsis arizonae	Bylas Springsnail	SC	S	S				IMGASJ0770		S1	G1G2
Graham	INVERTEBRATE	Sonorella christenseni	Clark Peak Talussnail	SC		S				IMGASC9150		S1	G1
Graham	INVERTEBRATE	Sonorella grahamensis	Pinaleno Talussnail	SC		S				IMGASC9280		S1	G1
Graham	INVERTEBRATE	Sonorella imitator	Mimic Talussnail			S				IMGASC9320		S2	G2
Graham	INVERTEBRATE	Sonorella macrophallus	Wet Canyon Talussnail	SC		S				IMGASC9360		S1	G1
Graham	INVERTEBRATE	Tryonia gilae	Gila Tryonia	SC		S				IMGASJ7160		S1	G1
Graham	MAMMAL	Choeronycteris mexicana	Mexican Long-tongued Bat	SC				A	WSC	AMACB02010		S2	G4
Graham	MAMMAL	Corynorhinus townsendii pallescens	Pale Townsend's Big-eared Bat	SC				4		AMACC08014		S3S4	G4T4
Graham	MAMMAL	Eumops perotis californicus	Greater Western Bonneted Bat	SC						AMACD02011		S1S2	G5T4
Graham	MAMMAL	Idionycteris phyllotis	Allen's Big-eared Bat	SC	S					AMACC09010		S2S3	G3G4
Graham	MAMMAL	Lasiurus blossevillii	Western Red Bat						WSC	AMACC05060		S2	G5
Graham	MAMMAL	Lasiurus xanthinus	Western Yellow Bat						WSC	AMACC05070		S1	G5
Graham	MAMMAL	Leptonycteris curasoae yerbabuenae	Lesser Long-nosed Bat	LE		S			WSC	AMACB03030		S2	G4
Graham	MAMMAL	Macrotus californicus	California Leaf-nosed Bat	SC					WSC	AMACB01010		S3S4	G4
Graham	MAMMAL	Microtus longicaudus leucophaeus	White-bellied Long-tailed Vole			S				AMAFF11061		S3	G5T3
Graham	MAMMAL	Myotis velifer	Cave Myotis	SC	S					AMACC01050		S4	G5
Graham	MAMMAL	Myotis yumanensis	Yuma Myotis	SC						AMACC01020		S3S4	G5
Graham	MAMMAL	Nyctinomops femorosaccus	Pocketed Free-tailed Bat			S				AMACD04010		S2S3	G4
Graham	MAMMAL	Nyctinomops macrotis	Big Free-tailed Bat	SC	S					AMACD04020		S2S3	G5
Graham	MAMMAL	Sigmodon ochrognathus	Yellow-nosed Cotton Rat	SC						AMAFF07040		S3S4	G4G5
Graham	MAMMAL	Tamiasciurus hudsonicus grahamensis	Mt Graham Red Squirrel	LE					WSC	AMAFB08011		S1	G5T1
Graham	MAMMAL	Thomomys bottae mearnsi	Mearns' Southern Pocket Gopher	SC						AMAF0102G		S5	G5T5
Graham	PLANT	Abutilon parishii	Pima Indian Mallow	SC	S	S			SR	PDMAL020E0		S2	G2
Graham	PLANT	Carex chihuahuensis	A Sedge			S				PMCYP032T0		S2S3	G3G4
Graham	PLANT	Carex ultra	Arizona Giant Sedge			S	S			PMCYP03E50		S2	G3?
Graham	PLANT	Echinocereus ledingii	Pinaleno Hedgehog Cactus						SR	PDCAC06066		S4	G4G5T4
Graham	PLANT	Erigeron heliographis	Pinalenos Fleabane	SC						PDAST3M500		S1	G1
Graham	PLANT	Erigeron piscaticus	Fish Creek Fleabane	SC	S	S			SR	PDAST3M4X0		S1	G1
Graham	PLANT	Eriogonum apachense	Apache Wild-buckwheat	SC					SR	PDPGN082PD		S1	G5T1
Graham	PLANT	Eriogonum capillare	San Carlos Wild-buckwheat	SC					SR	PDPGN08100		S4	G4
Graham	PLANT	Eupatorium bigelovii	Bigelow Thoroughwort			S				PDAST3P080		S1	G2?

COUNTY	TAXON	SCIENTIFIC NAME	COMMON NAME	ESA	BLM	USFS	NESL	MEXFED	STATE	ELCODE	BCD	SRANK	GRANK
Graham	PLANT	Hackelia ursina	Chihuahuan Stickseed			S				PDBOR0G0R0		S2	G3?
Graham	PLANT	Heuchera glomerulata	Arizona Alum Root			S				PDSAX0E0F0		S3	G3
Graham	PLANT	Hieracium rusbyi	Rusby Hawkweed			S				PDAST4W1A0		S1	G2?
Graham	PLANT	Mammillaria viridiflora	Varied Fishhook Cactus						SR	PDCAC0A0D0		S4	G4
Graham	PLANT	Mammillaria wrightii var. wilcoxii	Wilcox Fishhook Cactus						SR	PDCAC0A0E1		S4	G4T4
Graham	PLANT	Penstemon discolor	Catalina Beardtongue			S			HS	PDSCR1L210		S2	G2
Graham	PLANT	Penstemon ramosus	Branching Penstemon			S				PDSCR1L7L0		S1	G3G4Q
Graham	PLANT	Penstemon superbus	Superb Beardtongue			S				PDSCR1L630		S2?	G3?
Graham	PLANT	Physalis latiphysa	Broad-leaf Ground-cherry			S				PDSOL0S0H0		S1	G1
Graham	PLANT	Platanthera hyperborea	Boreal Bog Orchid						SR	PMORC1Y0B0		S3S4	G5
Graham	PLANT	Platanthera purpurascens	Slender Bog Orchid						SR	PMORC1Y0P0		S4	G5
Graham	PLANT	Polemonium flavum	Pinaleno Jacobs Ladder			S				PDPLM0E0B2		S2	G5T3?
Graham	PLANT	Potentilla albiflora	White-flowered Cinquefoil			S				PDROS1B010		S1S2	G1G2
Graham	PLANT	Purshia subintegra	Arizona Cliff Rose	LE					HS	PDROS1E080		S1	GNA
Graham	PLANT	Rumex orthoneurus	Blumer's Dock	SC		S			HS	PDPGN0P0Z0		S3	G3
Graham	PLANT	Salvia amissa	Aravaipa Sage	SC	S	S				PDLAM1S020		S2	G2
Graham	PLANT	Schiedeella arizonica	Fallen Ladies'-tresses						SR	PMORC67020		S4	GNR
Graham	REPTILE	Aspidoscelis burti stictogrammus	Giant Spotted Whiptail	SC	S	S				ARACJ02011		S3	G4T4
Graham	REPTILE	Gopherus agassizii (Sonoran Population)	Sonoran Desert Tortoise	SC				A	WSC	ARAAF01013		S4	G4T4
Graham	REPTILE	Phrynosoma cornutum	Texas Horned Lizard	SC	S			A		ARACF12010		S3S4	G4G5
Graham	REPTILE	Thamnophis rufipunctatus	Narrow-headed Gartersnake	SC		S			WSC	ARADB36110		S3	G3G4
Graham; Gre	AMPHIBIAN	Bufo microscaphus	Arizona Toad	SC		S				AAABB01110		S3S4	G3G4
Graham; Gre	FISH	Agosia chrysogaster chrysogaster	Gila Longfin Dace	SC	S			A		AFCJB37151		S3S4	G4T3T4
Graham; Gre	FISH	Catostomus clarki	Desert Sucker	SC	S					AFCJC02040		S3S4	G3G4
Graham; Gre	FISH	Rhinichthys osculus	Speckled Dace	SC	S			P		AFCJB37050		S3S4	G5
Graham; Gre	PLANT	Allium bigelovii	Bigelow Onion						SR	PMLILO2070		S2S3	G3
Graham; Gre	REPTILE	Thamnophis rufipunctatus	Narrow-headed Gartersnake	SC		S			WSC	ARADB36110		S3	G3G4
Graham; Pina	FISH	Gila robusta	Roundtail Chub	SC		S		2	PR	WSC	AFCJB13150	S2	G3
Graham; Pina	PLANT	Salvia amissa	Aravaipa Sage	SC	S	S				PDLAM1S020		S2	G2
Graham; Pina	REPTILE	Gopherus agassizii (Sonoran Population)	Sonoran Desert Tortoise	SC				A	WSC	ARAAF01013		S4	G4T4
Greenlee	AMPHIBIAN	Bufo microscaphus	Arizona Toad	SC		S				AAABB01110		S3S4	G3G4
Greenlee	AMPHIBIAN	Rana chiricahuensis	Chiricahua Leopard Frog	LT		S		A	WSC	AAABH01080		S3	G3
Greenlee	AMPHIBIAN	Rana pipiens	Northern Leopard Frog				2		WSC	AAABH01170		S2	G5
Greenlee	AMPHIBIAN	Rana yavapaiensis	Lowland Leopard Frog	SC		S		PR	WSC	AAABH01250		S4	G4
Greenlee	BIRD	Accipiter gentilis	Northern Goshawk	SC		S		4	A	WSC	ABNKC12060	S3	G5
Greenlee	BIRD	Buteogallus anthracinus	Common Black-Hawk			S			A	WSC	ABNKC15010	S3	G4G5
Greenlee	BIRD	Coccyzus americanus occidentalis	Western Yellow-billed Cuckoo	C		S		2		WSC	ABNRB02022	S3	G5T3Q
Greenlee	BIRD	Empidonax traillii extimus	Southwestern Willow Flycatcher	LE		S		2		WSC	ABPAE33043	S1	G5T1T2
Greenlee	BIRD	Euptilotis neoxenus	Eared Quetzal			S			A		ABNWA03010	SAB,S1N	G3
Greenlee	BIRD	Falco peregrinus anatum	American Peregrine Falcon	SC		S		4	A	WSC	ABNKD06071	S4	G4T4
Greenlee	BIRD	Haliaeetus leucocephalus (wintering pop.)	Bald Eagle	LT,PDL		S			P	WSC	ABNKC10012	S4N	G5
Greenlee	BIRD	Pandion haliaetus	Osprey							WSC	ABNKC01010	S2B,S4N	G5

COUNTY	TAXON	SCIENTIFIC NAME	COMMON NAME	ESA	BLM	USFS	NESL	MEXFED	STATE	ELCODE	BCD	SRANK	GRANK
Greenlee	BIRD	<i>Strix occidentalis lucida</i>	Mexican Spotted Owl	LT		S	3	A	WSC	ABNSB12012		S3S4	G3T3
Greenlee	FISH	<i>Agosia chrysogaster chrysogaster</i>	Gila Longfin Dace	SC	S			A		AFCJB37151		S3S4	G4T3T4
Greenlee	FISH	<i>Catostomus clarki</i>	Desert Sucker	SC	S					AFCJC02040		S3S4	G3G4
Greenlee	FISH	<i>Catostomus insignis</i>	Sonora Sucker	SC	S			P		AFCJC02100		S3	G3
Greenlee	FISH	<i>Gila intermedia</i>	Gila Chub	LE		S		P	WSC	AFCJB13160		S2	G2
Greenlee	FISH	<i>Gila robusta</i>	Roundtail Chub	SC		S	2	PR	WSC	AFCJB13150		S2	G3
Greenlee	FISH	<i>Meda fulgida</i>	Spikedace	LT		S			WSC	AFCJB22010		S1	G2
Greenlee	FISH	<i>Oncorhynchus apache</i>	Apache Trout	LT		S			WSC	AFCHA02102		S3	G3T3
Greenlee	FISH	<i>Oncorhynchus gilae</i>	Gila Trout	LE		S			WSC	AFCHA02100		S1	G3
Greenlee	FISH	<i>Rhinichthys osculus</i>	Speckled Dace	SC	S			P		AFCJB37050		S3S4	G5
Greenlee	FISH	<i>Tiaroga cobitis</i>	Loach Minnow	LT		S		P	WSC	AFCJB37140		S1	G2
Greenlee	FISH	<i>Xyrauchen texanus</i>	Razorback Sucker	LE		S	2	P	WSC	AFCJC11010		S1	G1
Greenlee	INVERTEBRATE	<i>Cicindela oregona maricopa</i>	Maricopa Tiger Beetle	SC	S	S				IICOL02362		S3	G5T3
Greenlee	INVERTEBRATE	<i>Psephenus montanus</i>	White Mountains Water Penny Beetle	SC		S				IICOL63020		S2?	G2?
Greenlee	INVERTEBRATE	<i>Speyeria nokomis nitocris</i>	Mountain Silverspot Butterfly			S				IILEPJ6052		S?	G3T3
Greenlee	MAMMAL	<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC						AMACD02011		S1S2	G5T4
Greenlee	MAMMAL	<i>Myotis evotis</i>	Long-eared Myotis	SC	S			I		AMACC01070		S3S4	G5
Greenlee	MAMMAL	<i>Myotis occultus</i>	Arizona Myotis	SC	S					AMACC01160		S3	G3G4
Greenlee	MAMMAL	<i>Myotis volans</i>	Long-legged Myotis	SC	S					AMACC01110		S3S4	G5
Greenlee	MAMMAL	<i>Zapus hudsonius luteus</i>	New Mexican Jumping Mouse	SC		S			WSC	AMAFH01014		S2	G5T2
Greenlee	PLANT	<i>Allium gooddingii</i>	Goodding Onion	SC		S	3		HS	PMLIL02120		S3S4	G4
Greenlee	PLANT	<i>Calypso bulbosa</i>	Western Fairy Slipper						SR	PMORC0D010		S3	G5
Greenlee	PLANT	<i>Coeloglossum viride</i> var. <i>virescens</i>	American Frog Orchid						SR	PMORC0K011		S1	G5T5
Greenlee	PLANT	<i>Conioselinum mexicanum</i>	Mexican Hemlock Parsley	SC		S				PDAP10P030		S1	G2?
Greenlee	PLANT	<i>Cypripedium parviflorum</i> var. <i>pubescens</i>	Yellow Lady's-slipper						HS	PMORC0Q092		S1	G5T5
Greenlee	PLANT	<i>Echinocereus fasciculatus</i>	Magenta-flower Hedgehog-cactus						SR	PDCAC06065		S?	G4G5T4T5
Greenlee	PLANT	<i>Eriogonum capillare</i>	San Carlos Wild-buckwheat	SC					SR	PDPGN08100		S4	G4
Greenlee	PLANT	<i>Gentianella wislizeni</i>	Wislizeni Gentian	SC		S			SR	PDGEN07090		S1	G2
Greenlee	PLANT	<i>Goodyera repens</i>	Lesser Rattlesnake Plantain						SR	PMORC17030		S2	G5
Greenlee	PLANT	<i>Hackelia ursina</i>	Chihuahuan Stickseed			S				PDBOR0G0R0		S2	G3?
Greenlee	PLANT	<i>Heuchera glomerulata</i>	Arizona Alum Root			S				PDSAX0E0F0		S3	G3
Greenlee	PLANT	<i>Lupinus lemmonii</i>	Lemmon's Lupine			S				PDFAB2B2A0		S1S2Q	G1G2Q
Greenlee	PLANT	<i>Penstemon linarioides</i> ssp. <i>maguirei</i>	Maguire's Penstemon						SR	PDSCR1L3S1		S1	G5T1
Greenlee	PLANT	<i>Penstemon ramosus</i>	Branching Penstemon			S				PDSCR1L7L0		S1	G3G4Q
Greenlee	PLANT	<i>Penstemon superbus</i>	Superb Beardtongue			S				PDSCR1L630		S2?	G3?
Greenlee	PLANT	<i>Perityle ambrosiifolia</i>	Lace-leaf Rockdaisy			S				PDAST70120		S1	G1
Greenlee	PLANT	<i>Platanthera hyperborea</i>	Boreal Bog Orchid						SR	PMORC1Y0B0		S3S4	G5
Greenlee	PLANT	<i>Platanthera purpurascens</i>	Slender Bog Orchid						SR	PMORC1Y0P0		S4	G5
Greenlee	PLANT	<i>Rumex orthoneurus</i>	Blumer's Dock	SC		S			HS	PDPGN0P0Z0		S3	G3
Greenlee	PLANT	<i>Schiedeella arizonica</i>	Fallen Ladies'-tresses						SR	PMORC67020		S4	GNR
Greenlee	PLANT	<i>Senecio quaerens</i>	Gila Groundsel	SC		S			SR	PDAST8H2L0		S2	G2
Greenlee	PLANT	<i>Trifolium neurophyllum</i>	White Mountains Clover	SC		S				PDFAB401N0		S2	G2

COUNTY	TAXON	SCIENTIFIC NAME	COMMON NAME	ESA	BLM	USFS	NESL	MEXFED	STATE	ELCODE	BCD	SRANK	GRANK
Greenlee	PLANT	Zigadenus virescens	Green Death Camas						SR	PMLIL280E0		S4	G4
Greenlee	REPTILE	Thamnophis rufipunctatus	Narrow-headed Gartersnake	SC		S			WSC	ARADB36110		S3	G3G4
La Paz	AMPHIBIAN	Bufo microscaphus	Arizona Toad	SC		S				AAAB01110		S3S4	G3G4
La Paz	AMPHIBIAN	Rana yavapaiensis	Lowland Leopard Frog	SC		S		PR	WSC	AAABH01250		S4	G4
La Paz	BIRD	Ardea alba	Great Egret						WSC	ABNGA04040		S1B,S4N	G5
La Paz	BIRD	Athene cunicularia hypugaea	Western Burrowing Owl	SC	S			4 A		ABNSB10012		S3	G4T4
La Paz	BIRD	Coccyzus americanus occidentalis	Western Yellow-billed Cuckoo	C		S	2		WSC	ABNRB02022		S3	G5T3Q
La Paz	BIRD	Empidonax traillii extimus	Southwestern Willow Flycatcher	LE		S	2		WSC	ABPAE33043		S1	G5T1T2
La Paz	BIRD	Ixobrychus exilis	Least Bittern					A	WSC	ABNGA02010		S3	G5
La Paz	BIRD	Laterallus jamaicensis coturniculus	California Black Rail	SC		S		PR	WSC	ABNME03041		S1	G4T1
La Paz	BIRD	Plegadis chihi	White-faced Ibis	SC						ABNGE02020		S7B,S2S3N	G5
La Paz	BIRD	Rallus longirostris yumanensis	Yuma Clapper Rail	LE				P	WSC	ABNME0501A		S3	G5T3
La Paz	FISH	Cyprinodon macularius	Desert Pupfish	LE				P	WSC	AFCNB02060		S1	G1
La Paz	FISH	Gila elegans	Bonytail	LE			1	P	WSC	AFCJB13100		S1	G1
La Paz	FISH	Poeciliopsis occidentalis occidentalis	Gila Topminnow	LE				A	WSC	AFCNC05021		S1S2	G3T3
La Paz	FISH	Xyrauchen texanus	Razorback Sucker	LE		S	2	P	WSC	AFCJC11010		S1	G1
La Paz	MAMMAL	Corynorhinus townsendii pallescens	Pale Townsend's Big-eared Bat	SC			4			AMACC08014		S3S4	G4T4
La Paz	MAMMAL	Eumops perotis californicus	Greater Western Bonneted Bat	SC						AMACD02011		S1S2	G5T4
La Paz	MAMMAL	Lasiurus xanthinus	Western Yellow Bat						WSC	AMACC05070		S1	G5
La Paz	MAMMAL	Macrotus californicus	California Leaf-nosed Bat	SC					WSC	AMACB01010		S3S4	G4
La Paz	MAMMAL	Myotis velifer	Cave Myotis	SC	S					AMACC01050		S4	G5
La Paz	MAMMAL	Myotis yumanensis	Yuma Myotis	SC						AMACC01020		S3S4	G5
La Paz	MAMMAL	Nyctinomops femorosaccus	Pocketed Free-tailed Bat		S					AMACD04010		S2S3	G4
La Paz	PLANT	Mammillaria viridiflora	Varied Fishhook Cactus						SR	PDCAC0A0D0		S4	G4
La Paz	PLANT	Opuntia echinocarpa	Straw-top Cholla						SR	PDCAC0D2W0		S5	G5
La Paz	PLANT	Pholisma arenarium	Scaly Sandplant		S				HS	PDLNN02010		S2	G3
La Paz	REPTILE	Charina trivirgata gracia	Desert Rosy Boa	SC	S	S				ARADA01021		S3	G4G5T3
La Paz	REPTILE	Gopherus agassizii (Sonoran Population)	Sonoran Desert Tortoise	SC				A	WSC	ARAAF01013		S4	G4T4
La Paz	REPTILE	Heloderma suspectum cinctum	Banded Gila Monster	SC	S			A		ARACE01011		S4	G4T4
La Paz	REPTILE	Uma scoparia	Mojave Fringe-toed Lizard						WSC	ARACF15030		S2S3	G3G4
La Paz; Mohave	PLANT	Mammillaria viridiflora	Varied Fishhook Cactus						SR	PDCAC0A0D0		S4	G4
La Paz; Mohave	AMPHIBIAN	Bufo microscaphus	Arizona Toad	SC		S				AAAB01110		S3S4	G3G4
La Paz; Mohave	AMPHIBIAN	Rana yavapaiensis	Lowland Leopard Frog	SC		S		PR	WSC	AAABH01250		S4	G4
La Paz; Mohave	BIRD	Aechmophorus clarkii	Clark's Grebe				4		WSC	ABNCA04020		S3	G5
La Paz; Mohave	BIRD	Coccyzus americanus occidentalis	Western Yellow-billed Cuckoo	C		S	2		WSC	ABNRB02022		S3	G5T3Q
La Paz; Mohave	BIRD	Empidonax traillii extimus	Southwestern Willow Flycatcher	LE		S	2		WSC	ABPAE33043		S1	G5T1T2
La Paz; Mohave	BIRD	Falco peregrinus anatum	American Peregrine Falcon	SC		S	4	A	WSC	ABNKD06071		S4	G4T4
La Paz; Mohave	BIRD	Haliaeetus leucocephalus	Bald Eagle	LT,PDL		S		P	WSC	ABNKC10010		S2S3B,S4N	G5
La Paz; Mohave	BIRD	Laterallus jamaicensis coturniculus	California Black Rail	SC		S		PR	WSC	ABNME03041		S1	G4T1
La Paz; Mohave	BIRD	Rallus longirostris yumanensis	Yuma Clapper Rail	LE				P	WSC	ABNME0501A		S3	G5T3

COUNTY	TAXON	SCIENTIFIC NAME	COMMON NAME	ESA	BLM	USFS	NESL	MEXFED	STATE	ELCODE	BCD	SRANK	GRANK
La Paz; Mohave	FISH	<i>Gila elegans</i>	Bonytail	LE			1	P	WSC	AFCJB13100		S1	G1
La Paz; Mohave	FISH	<i>Xyrauchen texanus</i>	Razorback Sucker	LE		S	2	P	WSC	AFCJC11010		S1	G1
La Paz; Mohave	MAMMAL	<i>Corynorhinus townsendii pallescens</i>	Pale Townsend's Big-eared Bat	SC			4			AMACC08014		S3S4	G4T4
La Paz; Mohave	MAMMAL	<i>Lasiurus blossevillii</i>	Western Red Bat						WSC	AMACC05060		S2	G5
La Paz; Mohave	MAMMAL	<i>Macrotus californicus</i>	California Leaf-nosed Bat	SC					WSC	AMACB01010		S3S4	G4
La Paz; Mohave	MAMMAL	<i>Myotis velifer</i>	Cave Myotis	SC	S					AMACC01050		S4	G5
La Paz; Mohave	MAMMAL	<i>Nyctinomops femorosaccus</i>	Pocketed Free-tailed Bat		S					AMACD04010		S2S3	G4
La Paz; Mohave	REPTILE	<i>Gopherus agassizii</i> (Sonoran Population)	Sonoran Desert Tortoise	SC				A	WSC	ARAAF01013		S4	G4T4
La Paz; Yuma	BIRD	<i>Haliaeetus leucocephalus</i> (wintering pop.)	Bald Eagle	LT,PDL		S		P	WSC	ABNKC10012		S4N	G5
Maricopa	AMPHIBIAN	<i>Bufo microscaphus</i>	Arizona Toad	SC		S				AAABB01110		S3S4	G3G4
Maricopa	AMPHIBIAN	<i>Gastrophryne olivacea</i>	Great Plains Narrow-mouthed Toad					PR	WSC	AAABE01020		S3	G5
Maricopa	AMPHIBIAN	<i>Pternohyla fodiens</i>	Lowland Burrowing Treefrog						WSC	AAABC06010		S1S2	G4
Maricopa	AMPHIBIAN	<i>Rana yavapaiensis</i>	Lowland Leopard Frog	SC		S		PR	WSC	AAABH01250		S4	G4
Maricopa	BIRD	<i>Ardea alba</i>	Great Egret						WSC	ABNGA04040		S1B,S4N	G5
Maricopa	BIRD	<i>Athene cunicularia hypugaea</i>	Western Burrowing Owl	SC	S		4	A		ABNSB10012		S3	G4T4
Maricopa	BIRD	<i>Buteogallus anthracinus</i>	Common Black-Hawk			S		A	WSC	ABNKC15010		S3	G4G5
Maricopa	BIRD	<i>Charadrius alexandrinus nivosus</i>	Western Snowy Plover	No Status		S			WSC	ABNNB03031		S1	G4T3
Maricopa	BIRD	<i>Coccyzus americanus occidentalis</i>	Western Yellow-billed Cuckoo	C		S	2		WSC	ABNRB02022		S3	G5T3Q
Maricopa	BIRD	<i>Dendrocygna autumnalis</i>	Black-bellied Whistling-Duck						WSC	ABNJB01040		S3	G5
Maricopa	BIRD	<i>Egretta thula</i>	Snowy Egret						WSC	ABNGA06030		S1B,S4N	G5
Maricopa	BIRD	<i>Empidonax traillii extimus</i>	Southwestern Willow Flycatcher	LE		S	2		WSC	ABPAE33043		S1	G5T1T2
Maricopa	BIRD	<i>Falco peregrinus anatum</i>	American Peregrine Falcon	SC		S	4	A	WSC	ABNKD06071		S4	G4T4
Maricopa	BIRD	<i>Glaucidium brasilianum cactorum</i>	Cactus Ferruginous Pygmy-owl	SC				A	WSC	ABNSB08041		S1	G5T3
Maricopa	BIRD	<i>Haliaeetus leucocephalus</i>	Bald Eagle	LT,PDL		S		P	WSC	ABNKC10010		S2S3B,S4N	G5
Maricopa	BIRD	<i>Haliaeetus leucocephalus</i> (wintering pop.)	Bald Eagle	LT,PDL		S		P	WSC	ABNKC10012		S4N	G5
Maricopa	BIRD	<i>Ictinia mississippiensis</i>	Mississippi Kite					A	WSC	ABNKC09010		S3	G5
Maricopa	BIRD	<i>Ixobrychus exilis</i>	Least Bittern					A	WSC	ABNGA02010		S3	G5
Maricopa	BIRD	<i>Pandion haliaetus</i>	Osprey						WSC	ABNKC01010		S2B,S4N	G5
Maricopa	BIRD	<i>Rallus longirostris yumanensis</i>	Yuma Clapper Rail	LE				P	WSC	ABNME0501A		S3	G5T3
Maricopa	FISH	<i>Agosia chrysogaster chrysogaster</i>	Gila Longfin Dace	SC	S			A		AFCJB37151		S3S4	G4T3T4
Maricopa	FISH	<i>Catostomus clarki</i>	Desert Sucker	SC	S					AFCJC02040		S3S4	G3G4
Maricopa	FISH	<i>Catostomus insignis</i>	Sonora Sucker	SC	S			P		AFCJC02100		S3	G3
Maricopa	FISH	<i>Catostomus sp. 3</i>	Little Colorado Sucker	SC		S			WSC	AFCJC02250		S2	G2
Maricopa	FISH	<i>Cyprinodon macularius</i>	Desert Pupfish	LE				P	WSC	AFCNB02060		S1	G1
Maricopa	FISH	<i>Gila elegans</i>	Bonytail	LE			1	P	WSC	AFCJB13100		S1	G1
Maricopa	FISH	<i>Gila robusta</i>	Roundtail Chub	SC		S	2	PR	WSC	AFCJB13150		S2	G3
Maricopa	FISH	<i>Poeciliopsis occidentalis occidentalis</i>	Gila Topminnow	LE				A	WSC	AFCNC05021		S1S2	G3T3
Maricopa	FISH	<i>Rhinichthys osculus</i>	Speckled Dace	SC	S			P		AFCJB37050		S3S4	G5
Maricopa	FISH	<i>Xyrauchen texanus</i>	Razorback Sucker	LE		S	2	P	WSC	AFCJC11010		S1	G1
Maricopa	INVERTEBRATE	<i>Cicindela oregona maricopa</i>	Maricopa Tiger Beetle	SC	S	S				IICOL02362		S3	G5T3

COUNTY	TAXON	SCIENTIFIC NAME	COMMON NAME	ESA	BLM	USFS	NESL	MEXFED	STATE	ELCODE	BCD	SRANK	GRANK
Maricopa	INVERTEBRATE	<i>Limenitis archippus obsoleta</i>	Obsolete Viceroy Butterfly			S				IILEPL3024		S?	G5T3T4
Maricopa	INVERTEBRATE	<i>Sonorella allynsmithi</i>	Squaw Peak Talussnail	SC		S				IMGASC9010		S1	G1
Maricopa	MAMMAL	<i>Antilocapra americana sonoriensis</i>	Sonoran Pronghorn	LE		S		P	WSC	AMALD01012		S1	G5T1
Maricopa	MAMMAL	<i>Corynorhinus townsendii pallescens</i>	Pale Townsend's Big-eared Bat	SC			4			AMACC08014		S3S4	G4T4
Maricopa	MAMMAL	<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC						AMACD02011		S1S2	G5T4
Maricopa	MAMMAL	<i>Lasiurus blossevillii</i>	Western Red Bat						WSC	AMACC05060		S2	G5
Maricopa	MAMMAL	<i>Lasiurus xanthinus</i>	Western Yellow Bat						WSC	AMACC05070		S1	G5
Maricopa	MAMMAL	<i>Leptonycteris curasoae yerbabuenae</i>	Lesser Long-nosed Bat	LE		S			WSC	AMACB03030		S2	G4
Maricopa	MAMMAL	<i>Macrotus californicus</i>	California Leaf-nosed Bat	SC					WSC	AMACB01010		S3S4	G4
Maricopa	MAMMAL	<i>Myotis velifer</i>	Cave Myotis	SC	S					AMACC01050		S4	G5
Maricopa	MAMMAL	<i>Myotis yumanensis</i>	Yuma Myotis	SC						AMACC01020		S3S4	G5
Maricopa	MAMMAL	<i>Nyctinomops femorosaccus</i>	Pocketed Free-tailed Bat		S					AMACD04010		S2S3	G4
Maricopa	PLANT	<i>Abutilon parishii</i>	Pima Indian Mallow	SC	S	S			SR	PDMAL020E0		S2	G2
Maricopa	PLANT	<i>Acacia farnesiana</i>	Sweet Acacia			S				PDFAB020D0		S1S2	G5
Maricopa	PLANT	<i>Agave arizonica</i>	Arizona Agave	No status					HS	PMAGA01030		SHYB	G1Q
Maricopa	PLANT	<i>Agave delamateri</i>	Tonto Basin Agave	SC		S			HS	PMAGA010W0		S2	G2
Maricopa	PLANT	<i>Agave murpheyi</i>	Hohokam Agave	SC	S	S			HS	PMAGA010F0		S2	G2
Maricopa	PLANT	<i>Agave toumeyana</i> var. <i>bella</i>	Toumey Agave						SR	PMAGA010R1		S3	G3T3
Maricopa	PLANT	<i>Allium bigelovii</i>	Bigelow Onion						SR	PMLIL02070		S2S3	G3
Maricopa	PLANT	<i>Berberis harrisoniana</i>	Kofa Barberry		S					PDBER02030		S1S2	G1G2
Maricopa	PLANT	<i>Echinomastus erectocentrus</i> var. <i>acunensis</i>	Acuna Cactus	C				P	HS	PDCAC0J0E1		S1	G3T1Q
Maricopa	PLANT	<i>Erigeron piscaticus</i>	Fish Creek Fleabane	SC	S	S			SR	PDAST3M4X0		S1	G1
Maricopa	PLANT	<i>Eriogonum ripleyi</i>	Ripley Wild-buckwheat	SC		S			SR	PDPGN08520		S2	G2
Maricopa	PLANT	<i>Ferocactus cylindraceus</i> var. <i>cylindraceus</i>	California Barrel Cactus					PR	SR	PDCAC08081		S3	G5T4
Maricopa	PLANT	<i>Ferocactus cylindraceus</i> var. <i>eastwoodiae</i>	Golden Barrel Cactus						SR	PDCAC08084		S1	G5T1
Maricopa	PLANT	<i>Ferocactus emoryi</i>	Emory's Barrel-cactus						SR	PDCAC08090		S1S2	G4
Maricopa	PLANT	<i>Fremontodendron californicum</i>	Flannel Bush		S				SR	PDSTE03010		S2S3	G4
Maricopa	PLANT	<i>Mabrya acerifolia</i>	Mapleleaf False Snapdragon			S				PDSCR2L010		S2	G2
Maricopa	PLANT	<i>Mammillaria viridiflora</i>	Varied Fishhook Cactus						SR	PDCAC0A0D0		S4	G4
Maricopa	PLANT	<i>Opuntia echinocarpa</i>	Straw-top Cholla						SR	PDCAC0D2W0		S5	G5
Maricopa	PLANT	<i>Opuntia engelmannii</i> var. <i>flavispina</i>							SR	PDCAC0D224		S3?	G5T3?
Maricopa	PLANT	<i>Perityle saxicola</i>	Fish Creek Rock Daisy	SC		S				PDAST700P0		S1	G1
Maricopa	PLANT	<i>Purshia subintegra</i>	Arizona Cliff Rose	LE					HS	PDROS1E080		S1	GNA
Maricopa	PLANT	<i>Stenocereus thurberi</i>	Organ Pipe Cactus						SR	PDCAC10020		S4	G5
Maricopa	PLANT	<i>Tumamoca macdougallii</i>	Tumamoc Globeberry		S	S			SR	PDCUC0S010		S3	G4
Maricopa	PLANT	<i>Vauquelinia californica</i> ssp. <i>sonorensis</i>	Arizona Sonoran Rosewood		S					PDROS1R024		S1	G4T1
Maricopa	REPTILE	<i>Aspidoscelis burti xanthonota</i>	Red-back Whiptail	SC		S				ARACJ02012		S2	G4T2
Maricopa	REPTILE	<i>Charina trivirgata gracia</i>	Desert Rosy Boa	SC	S	S				ARADA01021		S3	G4G5T3
Maricopa	REPTILE	<i>Charina trivirgata trivirgata</i>	Mexican Rosy Boa	SC	S					ARADA01023		S2	G4G5T3
Maricopa	REPTILE	<i>Eumeces gilberti arizonensis</i>	Arizona Skink	SC		S		PR	WSC	ARACH01061		S1	G5T1Q

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Maricopa	REPTILE	Gopherus agassizii (Sonoran Population)	Sonoran Desert Tortoise	SC					A	WSC	ARAAF01013	S4	G4T4
Maricopa	REPTILE	Heloderma suspectum cinctum	Banded Gila Monster	SC	S				A		ARACE01011	S4	G4T4
Maricopa	REPTILE	Phyllorhynchus browni lucidus	Maricopa Leaf-nosed Snake			S			PR		ARADB25012	S2	G5T2Q
Maricopa	REPTILE	Sauromalus ater (Arizona Population)	Arizona Chuckwalla	SC	S				A		ARACF13013	S4	G5T4Q
Maricopa	REPTILE	Thamnophis eques megalops	Northern Mexican Gartersnake	SC		S			A	WSC	ARADB36061	S2S3	G5T5
Maricopa; Pima	MAMMAL	Antilocapra americana sonoriensis	Sonoran Pronghorn	LE		S			P	WSC	AMALD01012	S1	G5T1
Maricopa; Pima	BIRD	Strix occidentalis lucida	Mexican Spotted Owl	LT		S		3	A	WSC	ABNSB12012	S3S4	G3T3
Maricopa; Pima	PLANT	Abutilon parishii	Pima Indian Mallow	SC	S	S				SR	PDMAL020E0	S2	G2
Maricopa; Pima	PLANT	Lotus alamosanus	Alamos Deer Vetch			S					PDFAB2A020	S1	G3G4
Maricopa; Pima	REPTILE	Aspidoscelis burti xanthonota	Red-back Whiptail	SC		S					ARACJ02012	S2	G4T2
Maricopa; Pima	REPTILE	Gopherus agassizii (Sonoran Population)	Sonoran Desert Tortoise	SC					A	WSC	ARAAF01013	S4	G4T4
Maricopa; Yuma	AMPHIBIAN	Bufo microscaphus	Arizona Toad	SC		S					AAABB01110	S3S4	G3G4
Maricopa; Yuma	AMPHIBIAN	Rana yavapaiensis	Lowland Leopard Frog	SC		S			PR	WSC	AAABH01250	S4	G4
Maricopa; Yuma	BIRD	Buteogallus anthracinus	Common Black-Hawk			S			A	WSC	ABNKC15010	S3	G4G5
Maricopa; Yuma	BIRD	Ceryle alcyon	Belted Kingfisher					4		WSC	ABNXD01020	S2B,S5N	G5
Maricopa; Yuma	BIRD	Falco peregrinus anatum	American Peregrine Falcon	SC		S		4	A	WSC	ABNKD06071	S4	G4T4
Maricopa; Yuma	BIRD	Haliaeetus leucocephalus	Bald Eagle	LT,PDL		S			P	WSC	ABNKC10010	S2S3B,S4N	G5
Maricopa; Yuma	FISH	Agosia chrysogaster chrysogaster	Gila Longfin Dace	SC	S				A		AFCJB37151	S3S4	G4T3T4
Maricopa; Yuma	FISH	Poeciliopsis occidentalis occidentalis	Gila Topminnow	LE					A	WSC	AFCNC05021	S1S2	G3T3
Maricopa; Yuma	PLANT	Heuchera eastwoodiae	Eastwood Alum Root			S					PDSAX0E0B0	S3	G3
Maricopa; Yuma	REPTILE	Gopherus agassizii (Sonoran Population)	Sonoran Desert Tortoise	SC					A	WSC	ARAAF01013	S4	G4T4
Maricopa; Yuma	REPTILE	Thamnophis eques megalops	Northern Mexican Gartersnake	SC		S			A	WSC	ARADB36061	S2S3	G5T5
Mohave	AMPHIBIAN	Bufo microscaphus	Arizona Toad	SC		S					AAABB01110	S3S4	G3G4
Mohave	AMPHIBIAN	Rana onca	Relict Leopard Frog	C		S				WSC	AAABH01150	SU	G1
Mohave	AMPHIBIAN	Rana pipiens	Northern Leopard Frog			S		2		WSC	AAABH01170	S2	G5
Mohave	AMPHIBIAN	Rana yavapaiensis	Lowland Leopard Frog	SC		S			PR	WSC	AAABH01250	S4	G4
Mohave	BIRD	Accipiter gentilis	Northern Goshawk	SC		S		4	A	WSC	ABNKC12060	S3	G5
Mohave	BIRD	Aechmophorus clarkii	Clark's Grebe					4		WSC	ABNCA04020	S3	G5
Mohave	BIRD	Athene cunicularia hypugaea	Western Burrowing Owl	SC	S			4	A		ABNSB10012	S3	G4T4
Mohave	BIRD	Buteo regalis	Ferruginous Hawk	SC				3		WSC	ABNKC19120	S2B,S4N	G4
Mohave	BIRD	Buteogallus anthracinus	Common Black-Hawk			S			A	WSC	ABNKC15010	S3	G4G5
Mohave	BIRD	Coccyzus americanus occidentalis	Western Yellow-billed Cuckoo	C		S		2		WSC	ABNRB02022	S3	G5T3Q
Mohave	BIRD	Empidonax traillii extimus	Southwestern Willow Flycatcher	LE		S		2		WSC	ABPAE33043	S1	G5T1T2
Mohave	BIRD	Falco peregrinus anatum	American Peregrine Falcon	SC		S		4	A	WSC	ABNKD06071	S4	G4T4
Mohave	BIRD	Haliaeetus leucocephalus	Bald Eagle	LT,PDL		S			P	WSC	ABNKC10010	S2S3B,S4N	G5
Mohave	BIRD	Haliaeetus leucocephalus (wintering pop.)	Bald Eagle	LT,PDL		S			P	WSC	ABNKC10012	S4N	G5
Mohave	BIRD	Rallus longirostris yumanensis	Yuma Clapper Rail	LE					P	WSC	ABNME0501A	S3	G5T3
Mohave	BIRD	Strix occidentalis lucida	Mexican Spotted Owl	LT		S		3	A	WSC	ABNSB12012	S3S4	G3T3

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Mohave	FISH	Agosia chrysogaster chrysogaster	Gila Longfin Dace	SC	S				A		AFCJB37151	S3S4	G4T3T4
Mohave	FISH	Catostomus clarki	Desert Sucker	SC	S						AFCJC02040	S3S4	G3G4
Mohave	FISH	Catostomus insignis	Sonora Sucker	SC	S			P			AFCJC02100	S3	G3
Mohave	FISH	Catostomus latipinnis	Flannelmouth Sucker	SC	S	S					AFCJC02110	S2	G3G4
Mohave	FISH	Cyprinodon macularius	Desert Pupfish	LE				P	WSC		AFCNB02060	S1	G1
Mohave	FISH	Gila cypha	Humpback Chub	LE			2		WSC		AFCJB13080	S1	G1
Mohave	FISH	Gila elegans	Bonytail	LE			1	P	WSC		AFCJB13100	S1	G1
Mohave	FISH	Gila robusta	Roundtail Chub	SC		S	2	PR	WSC		AFCJB13150	S2	G3
Mohave	FISH	Gila seminuda	Virgin River Chub	LE		S			WSC		AFCJB13170	S1	G1
Mohave	FISH	Lepidomeda mollispinis mollispinis	Virgin Spinedace	SC					WSC		AFCJB20031	S1	G1G2T1
Mohave	FISH	Plagopterus argentissimus	Woundfin	LE,XN					WSC		AFCJB33010	S1	G1
Mohave	FISH	Rhinichthys osculus	Speckled Dace	SC	S			P			AFCJB37050	S3S4	G5
Mohave	FISH	Xyrauchen texanus	Razorback Sucker	LE		S	2	P	WSC		AFCJC11010	S1	G1
Mohave	INVERTEBRATE	Cicindela oregona maricopa	Maricopa Tiger Beetle	SC	S	S					IICOL02362	S3	G5T3
Mohave	INVERTEBRATE	Pyrgulopsis bacchus	Grand Wash Springsnail	SC	S	S					IMGASJ0150	S1	G1
Mohave	INVERTEBRATE	Pyrgulopsis conica	Kingman Springsnail	SC	S	S					IMGASJ0160	S1	G1
Mohave	INVERTEBRATE	Pyrgulopsis deserta	Desert Springsnail		S	S					IMGASJ0390	S1	G2
Mohave	MAMMAL	Corynorhinus townsendii pallescens	Pale Townsend's Big-eared Bat	SC			4				AMACC08014	S3S4	G4T4
Mohave	MAMMAL	Euderma maculatum	Spotted Bat	SC				PR	WSC		AMACC07010	S1S2	G4
Mohave	MAMMAL	Eumops perotis californicus	Greater Western Bonneted Bat	SC							AMACD02011	S1S2	G5T4
Mohave	MAMMAL	Idionycteris phyllotis	Allen's Big-eared Bat	SC	S						AMACC09010	S2S3	G3G4
Mohave	MAMMAL	Macrotus californicus	California Leaf-nosed Bat	SC					WSC		AMACB01010	S3S4	G4
Mohave	MAMMAL	Microtus mexicanus hualpaiensis	Hualapai Mexican Vole	LE					WSC		AMAFF11212	S1	G5T1Q
Mohave	MAMMAL	Myotis ciliolabrum	Western Small-footed Myotis	SC	S						AMACC01140	S3	G5
Mohave	MAMMAL	Myotis occultus	Arizona Myotis	SC	S						AMACC01160	S3	G3G4
Mohave	MAMMAL	Myotis thysanodes	Fringed Myotis	SC	S						AMACC01090	S3S4	G4G5
Mohave	MAMMAL	Myotis velifer	Cave Myotis	SC	S						AMACC01050	S4	G5
Mohave	MAMMAL	Myotis volans	Long-legged Myotis	SC	S						AMACC01110	S3S4	G5
Mohave	MAMMAL	Myotis yumanensis	Yuma Myotis	SC							AMACC01020	S3S4	G5
Mohave	MAMMAL	Nyctinomops femorosaccus	Pocketed Free-tailed Bat		S						AMACD04010	S2S3	G4
Mohave	MAMMAL	Nyctinomops macrotis	Big Free-tailed Bat	SC	S						AMACD04020	S2S3	G5
Mohave	PLANT	Arctomecon californica	Las Vegas Bearpoppy	SC					SR		PDPAP02010	S2	G3
Mohave	PLANT	Astragalus ampullarius	Gumbo Milk-vetch	SC		S					PDFAB0F0L0	S1	G2
Mohave	PLANT	Astragalus geyeri var. triquetrus	Beaver Dam Milk-vetch	SC	S						PDFAB0F3M2	S1	G4T2T3
Mohave	PLANT	Astragalus holmgreniorum	Holmgren Milk-vetch	LE					HS		PDFAB0F9Z0	S1	G1
Mohave	PLANT	Astragalus lentiginosus var. ambiguus	Freckled Milk-vetch	SC							PDFAB0FB91	S1	G5T1Q
Mohave	PLANT	Astragalus newberryi var. aquarii	Aquarius Milk-vetch		S						PDFAB0F5Y5	S1	G5T1
Mohave	PLANT	Astragalus toanus var. scidulus	Diamond Butte Milk-vetch		S						PDFAB0F8Z1	S1	G4G5T1T3
Mohave	PLANT	Camissonia brevipes	Golden Suncup	SC							PDONA03070	S1	G4G5
Mohave	PLANT	Camissonia exilis	Slender Evening-primrose	SC					SR		PDONA030J0	S1	G1
Mohave	PLANT	Camissonia specuicola ssp. hesperia	Grand Canyon Evening-primrose	SC							PDONA031J1	S1	G2T1
Mohave	PLANT	Cirsium virginense	Virgin Thistle	SC					SR		PDAST2E3F0	S1	G2
Mohave	PLANT	Coryphantha missouriensis	Missouri Corycactus						SR		PDCAC0X020	S3	G5

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Mohave	PLANT	Cycladenia humilis var. jonesii	Jones' Cycladenia	LT					HS	PDAPO09012		S1	G3G4T2
Mohave	PLANT	Echinocactus polycephalus var. polycephalus	Clustered Barrel Cactus						SR	PDCAC05033		S2	G3G4T3T4
Mohave	PLANT	Echinocactus polycephalus var. xeranthemoides	Grand Canyon Cottontop Cactus						SR	PDCAC05032		S2S3	G3G4T1T3
Mohave	PLANT	Enceliopsis argophylla	Silverleaf Sunray		S					PDAST3G010		S2	G2G3
Mohave	PLANT	Eriogonum mortonianum	Morton Wild-buckwheat	SC		S			SR	PDPGN083Z0		S1	G1
Mohave	PLANT	Eriogonum thompsoniae var. atwoodii	Atwood Wild-buckwheat	SC		S			SR	PDPGN085T2		S1	G4T1
Mohave	PLANT	Eriogonum viscidulum	Sticky Buckwheat	SC	S					PDPGN08690		S1	G2
Mohave	PLANT	Escobaria vivipara var. rosea	Viviparous Foxtail Cactus						SR	PDCAC0X0G8		S3	G5T3
Mohave	PLANT	Fremontodendron californicum	Flannel Bush		S				SR	PDSTE03010		S2S3	G4
Mohave	PLANT	Lupinus latifolius ssp. leucanthus	Broadleaf Lupine			S				PDFAB2B29D		S1	G5T1T2
Mohave	PLANT	Mammillaria viridiflora	Varied Fishhook Cactus						SR	PDCAC0A0D0		S4	G4
Mohave	PLANT	Mentzelia memorabilis	September 11 Stickleaf		S					PDLOA03290		S1	G1
Mohave	PLANT	Opuntia basilaris var. aurea	Yellow Beavertail						SR	PDCAC0D300		S3	G3
Mohave	PLANT	Opuntia basilaris var. longiareolata	Grand Canyon Beavertail Cactus						SR	PDCAC0D054		S2	G5T2Q
Mohave	PLANT	Opuntia echinocarpa	Straw-top Cholla						SR	PDCAC0D2W0		S5	G5
Mohave	PLANT	Opuntia nicholii	Navajo Bridge Cactus						SR	PDCAC0D0W0		S4	G4Q
Mohave	PLANT	Opuntia superbospina	Kingman's Prickly-pear						SR	PDCAC0D1Q0		SH	GHQ
Mohave	PLANT	Opuntia whipplei var. multigeniculata	Blue Diamond Cholla	SC					SR	PDCAC0D1N1		S1	G4?T1Q
Mohave	PLANT	Opuntia whipplei var. whipplei	Whipple Cholla						SR	PDCAC0D1N3		S1	G4?T4?
Mohave	PLANT	Pediocactus peeblesianus var. fickeiseniae	Fickeisen Plains Cactus	C		S		3	HS	PDCAC0E051		S1S2	G1G2T1T2
Mohave	PLANT	Pediocactus sileri	Siler Pincushion Cactus	LT	S				HS	PDCAC0E060		S3	G3
Mohave	PLANT	Pediomelum castoreum	Beaver Dam Scurf Pea	SC						PDFAB5L050		S1	G3
Mohave	PLANT	Pediomelum epipsilum	Kane Scurf-pea	SC						PDFAB5L0F1		S1	G4?T1
Mohave	PLANT	Penstemon albomarginatus	White-margined Penstemon	SC	S				SR	PDSCR1L070		S2	G2
Mohave	PLANT	Penstemon bicolor ssp. roseus	Cerbat Beardtongue	SC	S				SR	PDSCR1L0S2		S2	G3T3Q
Mohave	PLANT	Penstemon distans	Mt. Trumbull Beardtongue	SC	S	S			SR	PDSCR1L6W0		S2	G2
Mohave	PLANT	Penstemon petiolatus	Sheep Range Beardtongue		S					PDSCR1L4Z0		S1	G2G3
Mohave	PLANT	Phacelia parishii	Parish's Phacelia		S					PDHYD0C3G0		S1	G2G3
Mohave	PLANT	Polygala rusbyi	Hualapai Milkwort			S				PDPGL021H0		S3	G3
Mohave	PLANT	Purshia subintegra	Arizona Cliff Rose	LE					HS	PDROS1E080		S1	GNA
Mohave	PLANT	Rosa stellata ssp. abyssa	Grand Canyon Rose	SC	S	S			SR	PDROS1J153		S2	G4T2
Mohave	PLANT	Townsendia smithii	Blackrock Ground Daisy		S					PDAST9C0R0		S1	G1
Mohave	PLANT	Tricardia watsonii	Three Hearts		S					PDHYD0F010		S2	G4
Mohave	PLANT	Yucca whipplei	Our Lords Candle						SR	PMAGA0B0X0		S3S4	G4G5
Mohave	REPTILE	Charina trivirgata gracia	Desert Rosy Boa	SC	S	S				ARADA01021		S3	G4G5T3
Mohave	REPTILE	Crotalus oreganus abyssus	Grand Canyon Rattlesnake			S				ARADE02121		S4	G5T4
Mohave	REPTILE	Gopherus agassizii (Mohave Population)	Mohave Desert Tortoise	LT					A	WSC	ARAAF01012	S2	G4T3Q
Mohave	REPTILE	Gopherus agassizii (Sonoran Population)	Sonoran Desert Tortoise	SC					A	WSC	ARAAF01013	S4	G4T4
Mohave	REPTILE	Heloderma suspectum cinctum	Banded Gila Monster	SC	S				A		ARACE01011	S4	G4T4

COUNTY	TAXON	SCIENTIFIC NAME	COMMON NAME	ESA	BLM	USFS	NESL	MEXFED	STATE	ELCODE	BCD	SRANK	GRANK
Mohave	REPTILE	Lampropeltis pyromelana infralabialis	Utah Mountain Kingsnake			S				ARADB19041		S1	G4G5T3
Mohave	REPTILE	Xantusia arizonae	Arizona Night Lizard			S				ARACK01050		S3	G3
Mohave; Yav	AMPHIBIAN	Rana yavapaiensis	Lowland Leopard Frog	SC		S		PR	WSC	AAABH01250		S4	G4
Mohave; Yav	BIRD	Buteogallus anthracinus	Common Black-Hawk			S		A	WSC	ABNKC15010		S3	G4G5
Mohave; Yav	FISH	Gila robusta	Roundtail Chub	SC		S		2 PR	WSC	AFCJB13150		S2	G3
Mohave; Yav	PLANT	Allium bigelovii	Bigelow Onion						SR	PMLIL02070		S2S3	G3
Mohave; Yav	PLANT	Mammillaria viridiflora	Varied Fishhook Cactus						SR	PDCAC0A0D0		S4	G4
Navajo	AMPHIBIAN	Bufo microscaphus	Arizona Toad	SC		S				AAABH01110		S3S4	G3G4
Navajo	AMPHIBIAN	Rana chiricahuensis	Chiricahua Leopard Frog	LT		S		A	WSC	AAABH01080		S3	G3
Navajo	AMPHIBIAN	Rana pipiens	Northern Leopard Frog			S		2	WSC	AAABH01170		S2	G5
Navajo	BIRD	Accipiter gentilis	Northern Goshawk	SC		S		4 A	WSC	ABNKC12060		S3	G5
Navajo	BIRD	Athene cucularia hypugaea	Western Burrowing Owl	SC	S			4 A		ABNSB10012		S3	G4T4
Navajo	BIRD	Buteo regalis	Ferruginous Hawk	SC				3	WSC	ABNKC19120		S2B,S4N	G4
Navajo	BIRD	Falco peregrinus anatum	American Peregrine Falcon	SC		S		4 A	WSC	ABNKD06071		S4	G4T4
Navajo	BIRD	Haliaeetus leucocephalus (wintering pop.)	Bald Eagle	LT,PDL		S		P	WSC	ABNKC10012		S4N	G5
Navajo	BIRD	Pandion haliaetus	Osprey						WSC	ABNKC01010		S2B,S4N	G5
Navajo	BIRD	Strix occidentalis lucida	Mexican Spotted Owl	LT		S		3 A	WSC	ABNSB12012		S3S4	G3T3
Navajo	FISH	Agosia chrysogaster chrysogaster	Gila Longfin Dace	SC	S			A		AFCJB37151		S3S4	G4T3T4
Navajo	FISH	Catostomus clarki	Desert Sucker	SC	S					AFCJC02040		S3S4	G3G4
Navajo	FISH	Catostomus sp. 3	Little Colorado Sucker	SC		S			WSC	AFCJC02250		S2	G2
Navajo	FISH	Gila robusta	Roundtail Chub	SC		S		2 PR	WSC	AFCJB13150		S2	G3
Navajo	FISH	Lepidomeda vittata	Little Colorado Spinedace	LT		S			WSC	AFCJB20040		S1S2	G1G2
Navajo	FISH	Rhinichthys osculus	Speckled Dace	SC	S			P		AFCJB37050		S3S4	G5
Navajo	INVERTEBRATE	Anodonta californiensis	California Floater	SC		S				IMBIV04020		S1S2	G3Q
Navajo	INVERTEBRATE	Cicindela oregona maricopa	Maricopa Tiger Beetle	SC	S	S				IICOL02362		S3	G5T3
Navajo	MAMMAL	Corynorhinus townsendii pallescens	Pale Townsend's Big-eared Bat	SC				4		AMACC08014		S3S4	G4T4
Navajo	MAMMAL	Idionycteris phyllotis	Allen's Big-eared Bat	SC	S					AMACC09010		S2S3	G3G4
Navajo	MAMMAL	Microtus mexicanus navaho	Navajo Mexican Vole	SC		S		4	WSC	AMAFF11213		S1	G5T2Q
Navajo	MAMMAL	Myotis evotis	Long-eared Myotis	SC	S					AMACC01070		S3S4	G5
Navajo	MAMMAL	Myotis occultus	Arizona Myotis	SC	S					AMACC01160		S3	G3G4
Navajo	MAMMAL	Myotis thysanodes	Fringed Myotis	SC	S					AMACC01090		S3S4	G4G5
Navajo	MAMMAL	Myotis volans	Long-legged Myotis	SC	S					AMACC01110		S3S4	G5
Navajo	MAMMAL	Panthera onca	Jaguar	LE		S		P	WSC	AMAJH02010		S1	G3
Navajo	MAMMAL	Perognathus flavus goodpasteri	Springerville Pocket Mouse	SC		S				AMAFD01031		S3	G5T3
Navajo	PLANT	Amsonia peeblesii	Peebles Blue Star					4		PDAP0030E0		S3	G3
Navajo	PLANT	Asclepias welshii	Welsh's Milkweed	LT				3	HS	PDASC02290		S1	G1
Navajo	PLANT	Astragalus xiphoides	Gladiator Milk Vetch	SC					SR	PDFAB0F9T0		S3	G3
Navajo	PLANT	Carex specuicola	Navajo Sedge	LT				3	HS	PMCYP03CQ0		S2	G2
Navajo	PLANT	Chrysothamnus molestus	Tusayan Rabbitbrush	SC		S				PDAST2C060		S3	G3
Navajo	PLANT	Errazurizia rotundata	Roundleaf Errazurizia			S		4	SR	PDFAB1L010		S2	G2
Navajo	PLANT	Pediocactus papyracanthus	Paper-spined Cactus	SC					SR	PDCAC0J0K0		S2S3	G4
Navajo	PLANT	Pediocactus peeblesianus var. peeblesianus	Peebles Navajo Cactus	LE					HS	PDCAC0E053		S1	G1G2T1

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Navajo	PLANT	Penstemon nudiflorus	Flagstaff Beardtongue			S				PDSCR1L4A0		S2S3	G2G3
Navajo	PLANT	Platanthera zothecina	Alcove Bog-orchid	SC			3			PMORC1Y130		S2	G2
Navajo	REPTILE	Thamnophis eques megalops	Northern Mexican Gartersnake	SC		S		A	WSC	ARADB36061		S2S3	G5T5
Navajo	REPTILE	Thamnophis rufipunctatus	Narrow-headed Gartersnake	SC		S			WSC	ARADB36110		S3	G3G4
Pima	AMPHIBIAN	Gastrophryne olivacea	Great Plains Narrow-mouthed Toad					PR	WSC	AAABE01020		S3	G5
Pima	AMPHIBIAN	Pternohyla fodiens	Lowland Burrowing Treefrog						WSC	AAABC06010		S1S2	G4
Pima	AMPHIBIAN	Rana chiricahuensis	Chiricahua Leopard Frog	LT		S		A	WSC	AAABH01080		S3	G3
Pima	AMPHIBIAN	Rana yavapaiensis	Lowland Leopard Frog	SC		S		PR	WSC	AAABH01250		S4	G4
Pima	BIRD	Accipiter gentilis	Northern Goshawk	SC		S	4	A	WSC	ABNKC12060		S3	G5
Pima	BIRD	Ammodramus bairdii	Baird's Sparrow	SC					WSC	ABPBXA0010		S2N	G4
Pima	BIRD	Asturina nitida maxima	Northern Gray Hawk	SC		S		PR	WSC	ABNKC19011		S3	G5T4Q
Pima	BIRD	Athene cunicularia hypugaea	Western Burrowing Owl	SC	S		4	A		ABNSB10012		S3	G4T4
Pima	BIRD	Buteogallus anthracinus	Common Black-Hawk			S		A	WSC	ABNKC15010		S3	G4G5
Pima	BIRD	Caracara cheriway	Crested Caracara	No Status					WSC	ABNKD02020		S1S2	G5
Pima	BIRD	Coccyzus americanus occidentalis	Western Yellow-billed Cuckoo	C		S	2		WSC	ABNRB02022		S3	G5T3Q
Pima	BIRD	Colinus virginianus ridgwayi	Masked Bobwhite	LE				P	WSC	ABNLC21022		S1	G5T1
Pima	BIRD	Dendrocygna autumnalis	Black-bellied Whistling-Duck						WSC	ABNJB01040		S3	G5
Pima	BIRD	Dendrocygna bicolor	Fulvous Whistling-Duck	SC						ABNJB01010		SAN	G5
Pima	BIRD	Empidonax fulvifrons pygmaeus	Northern Buff-breasted Flycatcher	SC					WSC	ABPAE33141		S1	G5T5
Pima	BIRD	Empidonax traillii extimus	Southwestern Willow Flycatcher	LE		S	2		WSC	ABPAE33043		S1	G5T1T2
Pima	BIRD	Falco peregrinus anatum	American Peregrine Falcon	SC		S	4	A	WSC	ABNKD06071		S4	G4T4
Pima	BIRD	Glaucidium brasilianum cactorum	Cactus Ferruginous Pygmy-owl	SC				A	WSC	ABNSB08041		S1	G5T3
Pima	BIRD	Pachyrhamphus aglaiae	Rose-throated Becard						WSC	ABPAE53070		S1	G4G5
Pima	BIRD	Pandion haliaetus	Osprey						WSC	ABNKC01010		S2B,S4N	G5
Pima	BIRD	Poliotila nigriceps	Black-capped Gnatcatcher						WSC	ABPB08040		S1	G5
Pima	BIRD	Rallus longirostris yumanensis	Yuma Clapper Rail	LE				P	WSC	ABNME0501A		S3	G5T3
Pima	BIRD	Strix occidentalis lucida	Mexican Spotted Owl	LT		S	3	A	WSC	ABNSB12012		S3S4	G3T3
Pima	BIRD	Trogon elegans	Elegant Trogon						WSC	ABNWA02070		S3	G5
Pima	BIRD	Tyrannus crassirostris	Thick-billed Kingbird						WSC	ABPAE52040		S2	G5
Pima	BIRD	Tyrannus melancholicus	Tropical Kingbird						WSC	ABPAE52010		S3	G5
Pima	FISH	Agosia chrysogaster chrysogaster	Gila Longfin Dace	SC	S			A		AFCJB37151		S3S4	G4T3T4
Pima	FISH	Catostomus clarki	Desert Sucker	SC	S					AFCJC02040		S3S4	G3G4
Pima	FISH	Cyprinodon eremus	Quitobaquito Desert Pupfish	LE					WSC	AFCNB02140		S1	G1
Pima	FISH	Cyprinodon macularius	Desert Pupfish	LE				P	WSC	AFCNB02060		S1	G1
Pima	FISH	Gila intermedia	Gila Chub	LE		S		P	WSC	AFCJB13160		S2	G2
Pima	FISH	Poeciliopsis occidentalis occidentalis	Gila Topminnow	LE				A	WSC	AFCNC05021		S1S2	G3T3
Pima	INVERTEBRATE	Agathymus aryxna	Arizona Giant Skipper			S				IILEP87080		S?	G4G5
Pima	INVERTEBRATE	Agathymus polingi	Poling's Giant Skipper			S				IILEP87190		S?	G4
Pima	INVERTEBRATE	Anthocharis cethura	Felder's Orange Tip			S				IILEPA6010		S?	G4G5
Pima	INVERTEBRATE	Argia sabino	Sabino Canyon Damselfly	SC		S				IIDOD68100		S?	G1G2
Pima	INVERTEBRATE	Calephelis rawsoni arizonensis	Arizona Metalmark			S				IILEPH2073		S2	G3G4
Pima	INVERTEBRATE	Limenitis archippus obsoleta	Obsolete Viceroy Butterfly			S				IILEPL3024		S?	G5T3T4
Pima	INVERTEBRATE	Neophasia terlooii	Chiricahua Pine White			S				IILEP99020		S2?	G3G4

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Pima	INVERTEBRATE	Sonorella eremita	San Xavier Talussnail	SC						IMGASC9240		S1	G1
Pima	INVERTEBRATE	Tryonia quitobaquitae	Quitobaquito Tryonia	SC		S				IMGASJ7130		S1	G1G2
Pima	MAMMAL	Antilocapra americana sonoriensis	Sonoran Pronghorn	LE		S		P	WSC	AMALD01012		S1	G5T1
Pima	MAMMAL	Choeronycteris mexicana	Mexican Long-tongued Bat	SC				A	WSC	AMACB02010		S2	G4
Pima	MAMMAL	Corynorhinus townsendii pallescens	Pale Townsend's Big-eared Bat	SC			4			AMACC08014		S3S4	G4T4
Pima	MAMMAL	Eumops perotis californicus	Greater Western Bonneted Bat	SC						AMACD02011		S1S2	G5T4
Pima	MAMMAL	Eumops underwoodi	Underwood's Bonneted Bat	SC	S					AMACD02020		S1	G4
Pima	MAMMAL	Lasiurus blossevillii	Western Red Bat						WSC	AMACC05060		S2	G5
Pima	MAMMAL	Lasiurus xanthinus	Western Yellow Bat						WSC	AMACC05070		S1	G5
Pima	MAMMAL	Leptonycteris curasoae yerbabuena	Lesser Long-nosed Bat	LE		S			WSC	AMACB03030		S2	G4
Pima	MAMMAL	Macrotus californicus	California Leaf-nosed Bat	SC					WSC	AMACB01010		S3S4	G4
Pima	MAMMAL	Myotis occultus	Arizona Myotis	SC	S					AMACC01160		S3	G3G4
Pima	MAMMAL	Myotis velifer	Cave Myotis	SC	S					AMACC01050		S4	G5
Pima	MAMMAL	Nyctinomops femorosaccus	Pocketed Free-tailed Bat		S					AMACD04010		S2S3	G4
Pima	MAMMAL	Nyctinomops macrotis	Big Free-tailed Bat	SC	S					AMACD04020		S2S3	G5
Pima	MAMMAL	Panthera onca	Jaguar	LE		S		P	WSC	AMAJH02010		S1	G3
Pima	MAMMAL	Sigmodon ochrognathus	Yellow-nosed Cotton Rat	SC						AMAFF07040		S3S4	G4G5
Pima	PLANT	Abutilon parishii	Pima Indian Mallow	SC	S	S			SR	PDMAL020E0		S2	G2
Pima	PLANT	Abutilon thurberi	Thurber Indian Mallow						SR	PDMAL020P0		S1	G2?
Pima	PLANT	Acacia farnesiana	Sweet Acacia			S				PDFAB020D0		S1S2	G5
Pima	PLANT	Agave parviflora ssp. parviflora	Santa Cruz Striped Agave	SC		S		A	HS	PMAGA010L2		S3	G3T3
Pima	PLANT	Agave schottii var. treleasei	Trelease Agave	SC		S			HS	PMAGA010N2		S1	G5T1Q
Pima	PLANT	Allium gooddingii	Goodding Onion	SC		S	3		HS	PMLIL02120		S3S4	G4
Pima	PLANT	Allium plummerae	Plummer Onion						SR	PMLIL021V0		S3	G4
Pima	PLANT	Amoreuxia gonzalezii	Saiya	SC		S			HS	PDBIX01010		S1	G1
Pima	PLANT	Amsonia grandiflora	Large-flowered Blue Star	SC		S				PDAP003060		S2	G2
Pima	PLANT	Amsonia kearneyana	Kearney's Blue Star	LE					HS	PDAP0030M0		S1	G1
Pima	PLANT	Asplenium dalhousiae	Dalhouse Spleenwort		S					PPASP020A0		S1	GNR
Pima	PLANT	Berberis harrisoniana	Kofa Barberry		S					PDBER02030		S1S2	G1G2
Pima	PLANT	Boerhavia megaptera	Tucson Mountain Spiderling			S				PDNYC06090		S3	G3
Pima	PLANT	Capsicum annuum var. glabriusculum	Chiltepin			S				PDSOL06012		S2	G5T5
Pima	PLANT	Carex chihuahuensis	A Sedge			S				PMCYP032T0		S2S3	G3G4
Pima	PLANT	Carex ultra	Arizona Giant Sedge		S	S				PMCYP03E50		S2	G3?
Pima	PLANT	Coryphantha scheeri var. robustispina	Pima Pineapple Cactus	LE					HS	PDCAC040C1		S2	G4T2
Pima	PLANT	Dalea tentaculoides	Gentry Indigo Bush	SC	S	S			HS	PDFAB1A1K0		S1	G1
Pima	PLANT	Desmanthus covillei	Coville Bundleflower			S				PDFAB1C030		S1	G3G4
Pima	PLANT	Echinocactus horizonthalonius var. nicholii	Nichol Turk's Head Cactus	LE					HS	PDCAC05022		S2	G4T2
Pima	PLANT	Echinocereus fasciculatus	Magenta-flower Hedgehog-cactus						SR	PDCAC06065		S?	G4G5T4T5
Pima	PLANT	Echinomastus erectocentrus var. acunensis	Acuna Cactus	C				P	HS	PDCAC0J0E1		S1	G3T1Q
Pima	PLANT	Echinomastus erectocentrus var. erectocentrus	Needle-spined Pineapple Cactus	SC		S			SR	PDCAC0J0E2		S3	G3T3Q

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Pima	PLANT	Erigeron arisolius				S				PDAST3M510		S2	G2
Pima	PLANT	Eriogonum capillare	San Carlos Wild-buckwheat	SC					SR	PDPGN08100		S4	G4
Pima	PLANT	Eriogonum ericifolium var. ericifolium	Heathleaf Wild-buckwheat			S				PDPGN08231		S2	G3T2
Pima	PLANT	Eriogonum terrenatum	San Pedro River Wild Buckwheat			S				PDPGN08760		S1	G1
Pima	PLANT	Euphorbia gracillima	Mexican Broomspurge			S				PDEUP0D110		S3	G4?
Pima	PLANT	Ferocactus cylindraceus var. eastwoodiae	Golden Barrel Cactus						SR	PDCAC08084		S1	G5T1
Pima	PLANT	Ferocactus emoryi	Emory's Barrel-cactus						SR	PDCAC08090		S1S2	G4
Pima	PLANT	Graptopetalum bartramii	Bartram Stonecrop	SC	S	S			SR	PDCRA06010		S3	G3
Pima	PLANT	Hackelia ursina	Chihuahuan Stickseed			S				PDBOR0G0R0		S2	G3?
Pima	PLANT	Hedeoma dentatum	Mock-pennyroyal			S				PDLAM0M0M0		S3	G3
Pima	PLANT	Hermannia pauciflora	Sparseleaf Hermannia			S				PDSTE06010		S1	G2?
Pima	PLANT	Heterotheca rutteri	Huachuca Golden Aster	SC	S	S				PDAST4V0J0		S2	G2
Pima	PLANT	Hexalectris revoluta	Chisos Coral-root		S	S			SR	PMORC1C030		S1	G1G2
Pima	PLANT	Hexalectris spicata	Crested Coral Root						SR	PMORC1C040		S3S4	G5
Pima	PLANT	Lilaeopsis schaffneriana var. recurva	Huachuca Water Umbel	LE					HS	PDAPI19051		S2	G4T2
Pima	PLANT	Lilium parryi	Lemmon Lily	SC		S			SR	PMLIL1A0J0		S2	G3
Pima	PLANT	Listera convallarioides	Broadleaf Twayblade						SR	PMORC1N050		S1	G5
Pima	PLANT	Lophocereus schottii	Senita						SR	PDCAC14010		S2	G4
Pima	PLANT	Lysiloma watsonii	Littleleaf False Tamarind						SR	PDFAB2C040		S1	G4?
Pima	PLANT	Malaxis tenuis	Slender Adders Mouth						SR	PMORC1R090		S1	G4
Pima	PLANT	Mammillaria mainiae	Counter Clockwise Fishhook Cactus			S			SR	PDCAC0A060		S1	G3
Pima	PLANT	Mammillaria thornberi	Thornber Fishhook Cactus						SR	PDCAC0A0C0		S4	G4
Pima	PLANT	Mammillaria viridiflora	Varied Fishhook Cactus						SR	PDCAC0A0D0		S4	G4
Pima	PLANT	Manihot davisiae	Arizona Manihot			S				PDEUP0Z010		S2	G4
Pima	PLANT	Matelea cordifolia	Sonoran Milkweed Vine			S				PDASC0A080		S1	G4
Pima	PLANT	Metastelma mexicanum	Wiggins Milkweed Vine	SC		S				PDASC050P0		S1S2	G3G4
Pima	PLANT	Muhlenbergia dubioides	Box Canyon Muhly			S				PMPOA480G0		S1	G1Q
Pima	PLANT	Muhlenbergia xerophila	Weeping Muhly			S				PMPOA48220		S1	G3
Pima	PLANT	Notholaena lemmonii	Lemmon Cloak Fern	SC						PPADI0G0D0		S1S2	G3?
Pima	PLANT	Opuntia engelmannii var. flavispina							SR	PDCAC0D224		S3?	G5T3?
Pima	PLANT	Opuntia versicolor	Stag-horn Cholla						SR	PDCAC0D1K0		S2S3	G4
Pima	PLANT	Opuntia x kelvinensis	Kelvin Cholla						SR	PDCAC0D2M0		SHYB	GNA
Pima	PLANT	Passiflora foetida	Foetid Passionflower			S				PDPAS01070		S2	G5
Pima	PLANT	Pectis imberbis	Beardless Chinch Weed	SC		S				PDAST6W0A0		S1	G3
Pima	PLANT	Peniocereus greggii var. transmontanus	Desert Night-blooming Cereus						PR	PDCAC0V012		S3S4	G3G4T3T4
Pima	PLANT	Peniocereus striatus	Dahlia Rooted Cereus						SR	PDCAC0V020		S1	G4
Pima	PLANT	Penstemon discolor	Catalina Beardtongue			S			HS	PDSCR1L210		S2	G2
Pima	PLANT	Penstemon superbus	Superb Beardtongue			S				PDSCR1L630		S2?	G3?
Pima	PLANT	Perityle ajoensis	Ajo Rock Daisy						SR	PDAST700Y0		S1	G1
Pima	PLANT	Physalis latiphysa	Broad-leaf Ground-cherry			S				PDSOL0S0H0		S1	G1
Pima	PLANT	Platanthera limosa	Thurber's Bog Orchid						SR	PMORC1Y0G0		S4	G4

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Pima	PLANT	<i>Psilotum nudum</i>	Whisk Fern						HS	PPPSI01020		S1	G5
Pima	PLANT	<i>Samolus vagans</i>	Chiricahua Mountain Brookweed			S				PDPRI09040		S2	G2?
Pima	PLANT	<i>Schiedeella arizonica</i>	Fallen Ladies'-tresses						SR	PMORC67020		S4	GNR
Pima	PLANT	<i>Senecio carlomasonii</i>	Seemann Groundsel			S				PDAST8H3W0		S2S3	G4?Q
Pima	PLANT	<i>Senecio neomexicanus</i> var. <i>toumeyi</i>	Toumey Groundsel			S				PDAST8H274		S2	G5T2Q
Pima	PLANT	<i>Sisyrinchium cernuum</i>	Nodding Blue-eyed Grass			S				PMIRI0D0B0		S2	G5
Pima	PLANT	<i>Solanum lumholtzianum</i>	Lumholtz Nightshade			S				PDSOL0Z180		S3	G3G4
Pima	PLANT	<i>Stenocereus thurberi</i>	Organ Pipe Cactus						SR	PDCAC10020		S4	G5
Pima	PLANT	<i>Stevia lemmonii</i>	Lemmon's Stevia			S				PDAST8V010		S2	G3G4
Pima	PLANT	<i>Thelypteris puberula</i> var. <i>sonorensis</i>	Aravaipa Wood Fern		S					PPTHE05192		S2	G5T3
Pima	PLANT	<i>Tragia laciniata</i>	Sonoran Noseburn			S				PDEUP1D060		S3?	G3G4
Pima	PLANT	<i>Triteleopsis palmeri</i>	Blue Sand Lily			S			SR	PMLIL22010		S1	G3
Pima	PLANT	<i>Tumamoca macdougalii</i>	Tumamoc Globeberry		S	S			SR	PDCUC0S010		S3	G4
Pima	PLANT	<i>Vauquelinia californica</i> ssp. <i>sonorensis</i>	Arizona Sonoran Rosewood		S					PDROS1R024		S1	G4T1
Pima	PLANT	<i>Viola umbraticola</i>	Shade Violet			S				PDVIO042E0		S2?	G3G4
Pima	REPTILE	<i>Aspidoscelis burti stictogrammus</i>	Giant Spotted Whiptail	SC	S	S				ARACJ02011		S3	G4T4
Pima	REPTILE	<i>Aspidoscelis burti xanthonota</i>	Red-back Whiptail	SC		S				ARACJ02012		S2	G4T2
Pima	REPTILE	<i>Charina trivirgata gracia</i>	Desert Rosy Boa	SC	S	S				ARADA01021		S3	G4G5T3
Pima	REPTILE	<i>Charina trivirgata trivirgata</i>	Mexican Rosy Boa	SC	S					ARADA01023		S2	G4G5T3
Pima	REPTILE	<i>Chionactis paralostris organica</i>	Organ Pipe Shovel-nosed Snake			S				ARADB05021		S2	G3G4T2
Pima	REPTILE	<i>Gopherus agassizii</i> (Sonoran Population)	Sonoran Desert Tortoise	SC				A	WSC	ARAAF01013		S4	G4T4
Pima	REPTILE	<i>Kinosternon sonoriense longifemorale</i>	Sonoyta Mud Turtle	C		S				ARAAE01041		S1	G4T1
Pima	REPTILE	<i>Masticophis bilineatus lineolatus</i>	Ajo Mountain Whipsnake			S				ARADB21012		S2	G5T2Q
Pima	REPTILE	<i>Phrynosoma cornutum</i>	Texas Horned Lizard	SC	S			A		ARACF12010		S3S4	G4G5
Pima	REPTILE	<i>Phyllorhynchus browni lucidus</i>	Maricopa Leaf-nosed Snake			S		PR		ARADB25012		S2	G5T2Q
Pima	REPTILE	<i>Thamnophis eques megalops</i>	Northern Mexican Gartersnake	SC		S		A	WSC	ARADB36061		S2S3	G5T5
Pima	REPTILE	<i>Uma rufopunctata</i>	Yuman Desert Fringe-toed Lizard	SC		S		A	WSC	ARACF15040		S2S3	G2G3
Pima; Pinal	PLANT	<i>Hedeoma dentatum</i>	Mock-pennyroyal			S				PDLAM0M0M0		S3	G3
Pima; Santa	AMPHIBIAN	<i>Eleutherodactylus augusti cactorum</i>	Western Barking Frog			S			WSC	AAABD04171		S1	G5T5
Pima; Santa	BIRD	<i>Accipiter gentilis</i>	Northern Goshawk	SC		S		4 A	WSC	ABNKC12060		S3	G5
Pima; Santa	BIRD	<i>Strix occidentalis lucida</i>	Mexican Spotted Owl	LT		S		3 A	WSC	ABNSB12012		S3S4	G3T3
Pima; Santa	BIRD	<i>Tyrannus melancholicus</i>	Tropical Kingbird						WSC	ABPAE52010		S3	G5
Pima; Santa	MAMMAL	<i>Leptonycteris curasoae yerbabuena</i>	Lesser Long-nosed Bat	LE		S			WSC	AMACB03030		S2	G4
Pima; Santa	PLANT	<i>Agave parviflora</i> ssp. <i>parviflora</i>	Santa Cruz Striped Agave	SC		S		A	HS	PMAGA010L2		S3	G3T3
Pima; Santa	PLANT	<i>Amsonia grandiflora</i>	Large-flowered Blue Star	SC		S				PDAP003060		S2	G2
Pima; Santa	PLANT	<i>Asclepias lemmonii</i>	Lemmon Milkweed			S				PDASC020Z0		S2	G4?
Pima; Santa	PLANT	<i>Carex chihuahuensis</i>	A Sedge			S				PMCYP032T0		S2S3	G3G4
Pima; Santa	PLANT	<i>Coryphantha scheeri</i> var. <i>robustispina</i>	Pima Pineapple Cactus	LE					HS	PDCAC040C1		S2	G4T2
Pima; Santa	PLANT	<i>Graptopetalum bartramii</i>	Bartram Stonecrop	SC	S	S			SR	PDCRA06010		S3	G3
Pima; Santa	PLANT	<i>Hexalectris spicata</i>	Crested Coral Root						SR	PMORC1C040		S3S4	G5

COUNTY	TAXON	SCIENTIFIC NAME	COMMON NAME	ESA	BLM	USFS	NESL	MEXFED	STATE	ELCODE	BCD	SRANK	GRANK
Pima; Santa	PLANT	Hieracium pringlei	Pringle Hawkweed	SC		S				PDAST4W170		S1	G2Q
Pima; Santa	PLANT	Lupinus huachucanus	Huachuca Mountain Lupine			S				PDFAB2B210		S2	G2
Pima; Santa	PLANT	Samolus vagans	Chiricahua Mountain Brookweed			S				PDPRI09040		S2	G2?
Pima; Santa	PLANT	Tephrosia thurberi	Thurber Hoary Pea			S				PDFAB3X0M0		S3	G4G5
Pima; Santa	REPTILE	Oxybelis aeneus	Brown Vinesnake						WSC	ARADB24010		S2	G5
Pinal	AMPHIBIAN	Gastrophryne olivacea	Great Plains Narrow-mouthed Toad					PR	WSC	AAABE01020		S3	G5
Pinal	AMPHIBIAN	Rana yavapaiensis	Lowland Leopard Frog	SC		S		PR	WSC	AAABH01250		S4	G4
Pinal	BIRD	Ardea alba	Great Egret						WSC	ABNGA04040		S1B,S4N	G5
Pinal	BIRD	Asturina nitida maxima	Northern Gray Hawk	SC		S		PR	WSC	ABNKC19011		S3	G5T4Q
Pinal	BIRD	Athene cunicularia hypugaea	Western Burrowing Owl	SC	S		4	A		ABNSB10012		S3	G4T4
Pinal	BIRD	Buteogallus anthracinus	Common Black-Hawk			S		A	WSC	ABNKC15010		S3	G4G5
Pinal	BIRD	Coccyzus americanus occidentalis	Western Yellow-billed Cuckoo	C		S	2		WSC	ABNRB02022		S3	G5T3Q
Pinal	BIRD	Dendrocygna autumnalis	Black-bellied Whistling-Duck						WSC	ABNJB01040		S3	G5
Pinal	BIRD	Empidonax traillii extimus	Southwestern Willow Flycatcher	LE		S	2		WSC	ABPAE33043		S1	G5T1T2
Pinal	BIRD	Falco peregrinus anatum	American Peregrine Falcon	SC		S	4	A	WSC	ABNKD06071		S4	G4T4
Pinal	BIRD	Glaucidium brasilianum cactorum	Cactus Ferruginous Pygmy-owl	SC				A	WSC	ABNSB08041		S1	G5T3
Pinal	BIRD	Ictinia mississippiensis	Mississippi Kite					A	WSC	ABNKC09010		S3	G5
Pinal	BIRD	Ixobrychus exilis	Least Bittern					A	WSC	ABNGA02010		S3	G5
Pinal	BIRD	Rallus longirostris yumanensis	Yuma Clapper Rail	LE				P	WSC	ABNME0501A		S3	G5T3
Pinal	BIRD	Tyrannus crassirostris	Thick-billed Kingbird						WSC	ABPAE52040		S2	G5
Pinal	BIRD	Tyrannus melancholicus	Tropical Kingbird						WSC	ABPAE52010		S3	G5
Pinal	FISH	Agosia chrysogaster chrysogaster	Gila Longfin Dace	SC	S			A		AFCJB37151		S3S4	G4T3T4
Pinal	FISH	Catostomus clarki	Desert Sucker	SC	S					AFCJC02040		S3S4	G3G4
Pinal	FISH	Catostomus insignis	Sonora Sucker	SC	S			P		AFCJC02100		S3	G3
Pinal	FISH	Cyprinodon macularius	Desert Pupfish	LE				P	WSC	AFCNB02060		S1	G1
Pinal	FISH	Gila robusta	Roundtail Chub	SC		S	2	PR	WSC	AFCJB13150		S2	G3
Pinal	FISH	Meda fulgida	Spikedace	LT		S			WSC	AFCJB22010		S1	G2
Pinal	FISH	Poeciliopsis occidentalis occidentalis	Gila Topminnow	LE				A	WSC	AFCNC05021		S1S2	G3T3
Pinal	FISH	Rhinichthys osculus	Speckled Dace	SC	S			P		AFCJB37050		S3S4	G5
Pinal	FISH	Tiaroga cobitis	Loach Minnow	LT		S		P	WSC	AFCJB37140		S1	G2
Pinal	INVERTEBRATE	Cicindela oregona maricopa	Maricopa Tiger Beetle	SC	S	S				IICOL02362		S3	G5T3
Pinal	MAMMAL	Choeronycteris mexicana	Mexican Long-tongued Bat	SC				A	WSC	AMACB02010		S2	G4
Pinal	MAMMAL	Corynorhinus townsendii pallescens	Pale Townsend's Big-eared Bat	SC			4			AMACC08014		S3S4	G4T4
Pinal	MAMMAL	Eumops perotis californicus	Greater Western Bonneted Bat	SC						AMACD02011		S1S2	G5T4
Pinal	MAMMAL	Lasiurus blossevillii	Western Red Bat						WSC	AMACC05060		S2	G5
Pinal	MAMMAL	Lasiurus xanthinus	Western Yellow Bat						WSC	AMACC05070		S1	G5
Pinal	MAMMAL	Leptonycteris curasoae yerbabuenae	Lesser Long-nosed Bat	LE		S			WSC	AMACB03030		S2	G4
Pinal	MAMMAL	Macrotus californicus	California Leaf-nosed Bat	SC					WSC	AMACB01010		S3S4	G4
Pinal	MAMMAL	Myotis ciliolabrum	Western Small-footed Myotis	SC	S					AMACC01140		S3	G5
Pinal	MAMMAL	Myotis velifer	Cave Myotis	SC	S					AMACC01050		S4	G5
Pinal	MAMMAL	Myotis yumanensis	Yuma Myotis	SC						AMACC01020		S3S4	G5

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Pinal	MAMMAL	Nyctinomops femorosaccus	Pocketed Free-tailed Bat		S					AMACD04010	S2S3	G4
Pinal	PLANT	Abutilon parishii	Pima Indian Mallow	SC	S	S			SR	PDMAL020E0	S2	G2
Pinal	PLANT	Agave murpheyi	Hohokam Agave	SC	S	S			HS	PMAGA010F0	S2	G2
Pinal	PLANT	Agave toumeyana var. bella	Toumey Agave						SR	PMAGA010R1	S3	G3T3
Pinal	PLANT	Carex ultra	Arizona Giant Sedge		S	S				PMCYP03E50	S2	G3?
Pinal	PLANT	Echinocactus horizonthalonius var. nicholii	Nichol Turk's Head Cactus	LE					HS	PDCAC05022	S2	G4T2
Pinal	PLANT	Echinocereus triglochidiatus var. arizonicus	Arizona Hedgehog Cactus	LE		S			HS	PDCAC060K1	S2	G5T2
Pinal	PLANT	Echinomastus erectocentrus var. acunensis	Acuna Cactus	C				P	HS	PDCAC0J0E1	S1	G3T1Q
Pinal	PLANT	Echinomastus erectocentrus var. erectocentrus	Needle-spined Pineapple Cactus	SC		S			SR	PDCAC0J0E2	S3	G3T3Q
Pinal	PLANT	Erigeron anchana	Mogollon Fleabane	SC		S				PDAST3M580	S2	G2
Pinal	PLANT	Eriogonum capillare	San Carlos Wild-buckwheat	SC					SR	PDPGN08100	S4	G4
Pinal	PLANT	Euphorbia gracillima	Mexican Broomspurge			S				PDEUP0D110	S3	G4?
Pinal	PLANT	Ferocactus cylindraceus var. eastwoodiae	Golden Barrel Cactus						SR	PDCAC08084	S1	G5T1
Pinal	PLANT	Fremontodendron californicum	Flannel Bush		S				SR	PDSTE03010	S2S3	G4
Pinal	PLANT	Lilaeopsis schaffneriana var. recurva	Huachuca Water Umbel	LE					HS	PDAPI19051	S2	G4T2
Pinal	PLANT	Mabrya acerifolia	Mapleleaf False Snapdragon			S				PDSCR2L010	S2	G2
Pinal	PLANT	Mammillaria thornberi	Thornber Fishhook Cactus						SR	PDCAC0A0C0	S4	G4
Pinal	PLANT	Mammillaria viridiflora	Varied Fishhook Cactus						SR	PDCAC0A0D0	S4	G4
Pinal	PLANT	Opuntia versicolor	Stag-horn Cholla						SR	PDCAC0D1K0	S2S3	G4
Pinal	PLANT	Penstemon discolor	Catalina Beardtongue			S			HS	PDSCR1L210	S2	G2
Pinal	PLANT	Perityle gilensis var. gilensis	Gila Rock Daisy			S				PDAST700D1	S2?	G2?T2?
Pinal	PLANT	Stenocereus thurberi	Organ Pipe Cactus						SR	PDCAC10020	S4	G5
Pinal	PLANT	Thelypteris puberula var. sonorensis	Aravaipa Wood Fern		S					PPTHE05192	S2	G5T3
Pinal	PLANT	Tumamoca macdougallii	Tumamoc Globeberry		S	S			SR	PDCUC0S010	S3	G4
Pinal	REPTILE	Aspidoscelis burti stictogrammus	Giant Spotted Whiptail	SC	S	S				ARACJ02011	S3	G4T4
Pinal	REPTILE	Aspidoscelis burti xanthonota	Red-back Whiptail	SC		S				ARACJ02012	S2	G4T2
Pinal	REPTILE	Gopherus agassizii (Sonoran Population)	Sonoran Desert Tortoise	SC				A	WSC	ARAAF01013	S4	G4T4
Pinal	REPTILE	Phyllorhynchus browni lucidus	Maricopa Leaf-nosed Snake			S		PR		ARADB25012	S2	G5T2Q
Pinal	REPTILE	Thamnophis eques megalops	Northern Mexican Gartersnake	SC		S		A	WSC	ARADB36061	S2S3	G5T5
Pinal	REPTILE	Xantusia arizonae	Arizona Night Lizard			S				ARACK01050	S3	G3
Santa Cruz	AMPHIBIAN	Ambystoma tigrinum stebbinsi	Sonoran Tiger Salamander	LE				PR	WSC	AAAAA01145	S1S2	G5T1T2
Santa Cruz	AMPHIBIAN	Eleutherodactylus augusti cactorum	Western Barking Frog			S			WSC	AAABD04171	S1	G5T5
Santa Cruz	AMPHIBIAN	Gastrophryne olivacea	Great Plains Narrow-mouthed Toad					PR	WSC	AAABE01020	S3	G5
Santa Cruz	AMPHIBIAN	Rana chiricahuensis	Chiricahua Leopard Frog	LT		S		A	WSC	AAABH01080	S3	G3
Santa Cruz	AMPHIBIAN	Rana tarahumarae	Tarahumara Frog	SC					WSC	AAABH01210	SXS1	G3
Santa Cruz	AMPHIBIAN	Rana yavapaiensis	Lowland Leopard Frog	SC		S		PR	WSC	AAABH01250	S4	G4
Santa Cruz	BIRD	Accipiter gentilis	Northern Goshawk	SC		S		4 A	WSC	ABNKC12060	S3	G5
Santa Cruz	BIRD	Amazilia violiceps	Violet-crowned Hummingbird						WSC	ABNUC29150	S3	G5

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Santa Cruz	BIRD	<i>Ammodramus bairdii</i>	Baird's Sparrow	SC					WSC	ABPBXA0010		S2N	G4
Santa Cruz	BIRD	<i>Anthus spragueii</i>	Sprague's Pipit						WSC	ABPBM02060		S2N	G4
Santa Cruz	BIRD	<i>Asturina nitida maxima</i>	Northern Gray Hawk	SC		S		PR	WSC	ABNKC19011		S3	G5T4Q
Santa Cruz	BIRD	<i>Athene cucularia hypugaea</i>	Western Burrowing Owl	SC	S		4	A		ABNSB10012		S3	G4T4
Santa Cruz	BIRD	<i>Buteogallus anthracinus</i>	Common Black-Hawk			S		A	WSC	ABNKC15010		S3	G4G5
Santa Cruz	BIRD	<i>Coccyzus americanus occidentalis</i>	Western Yellow-billed Cuckoo	C		S	2		WSC	ABNRB02022		S3	G5T3Q
Santa Cruz	BIRD	<i>Dendrocygna autumnalis</i>	Black-bellied Whistling-Duck						WSC	ABNJB01040		S3	G5
Santa Cruz	BIRD	<i>Empidonax traillii eximius</i>	Southwestern Willow Flycatcher	LE		S	2		WSC	ABPAE33043		S1	G5T1T2
Santa Cruz	BIRD	<i>Falco peregrinus anatum</i>	American Peregrine Falcon	SC		S	4	A	WSC	ABNKD06071		S4	G4T4
Santa Cruz	BIRD	<i>Glaucidium brasilianum cactorum</i>	Cactus Ferruginous Pygmy-owl	SC				A	WSC	ABNSB08041		S1	G5T3
Santa Cruz	BIRD	<i>Haliaeetus leucocephalus</i> (wintering pop.)	Bald Eagle	LT,PDL		S		P	WSC	ABNKC10012		S4N	G5
Santa Cruz	BIRD	<i>Pachyramphus aglaiae</i>	Rose-throated Becard						WSC	ABPAE53070		S1	G4G5
Santa Cruz	BIRD	<i>Pandion haliaetus</i>	Osprey						WSC	ABNKC01010		S2B,S4N	G5
Santa Cruz	BIRD	<i>Poliotilta nigriceps</i>	Black-capped Gnatcatcher						WSC	ABPB08040		S1	G5
Santa Cruz	BIRD	<i>Strix occidentalis lucida</i>	Mexican Spotted Owl	LT		S	3	A	WSC	ABNSB12012		S3S4	G3T3
Santa Cruz	BIRD	<i>Trogon elegans</i>	Elegant Trogon						WSC	ABNWA02070		S3	G5
Santa Cruz	BIRD	<i>Tyrannus crassirostris</i>	Thick-billed Kingbird						WSC	ABPAE52040		S2	G5
Santa Cruz	BIRD	<i>Tyrannus melancholicus</i>	Tropical Kingbird						WSC	ABPAE52010		S3	G5
Santa Cruz	FISH	<i>Agosia chrysogaster chrysogaster</i>	Gila Longfin Dace	SC	S			A		AFCJB37151		S3S4	G4T3T4
Santa Cruz	FISH	<i>Catostomus clarki</i>	Desert Sucker	SC	S					AFCJC02040		S3S4	G3G4
Santa Cruz	FISH	<i>Catostomus insignis</i>	Sonora Sucker	SC	S			P		AFCJC02100		S3	G3
Santa Cruz	FISH	<i>Cyprinodon macularius</i>	Desert Pupfish	LE				P	WSC	AFCNB02060		S1	G1
Santa Cruz	FISH	<i>Gila ditaenia</i>	Sonora Chub	LT				A	WSC	AFCJB13090		S1	G2
Santa Cruz	FISH	<i>Gila intermedia</i>	Gila Chub	LE		S		P	WSC	AFCJB13160		S2	G2
Santa Cruz	FISH	<i>Poeciliopsis occidentalis occidentalis</i>	Gila Topminnow	LE				A	WSC	AFCNC05021		S1S2	G3T3
Santa Cruz	FISH	<i>Rhinichthys osculus</i>	Speckled Dace	SC	S			P		AFCJB37050		S3S4	G5
Santa Cruz	INVERTEBRATE	<i>Agathymus aryxna</i>	Arizona Giant Skipper			S				IILEP87080		S?	G4G5
Santa Cruz	INVERTEBRATE	<i>Argia sabino</i>	Sabino Canyon Damselfly	SC		S				IIDO68100		S?	G1G2
Santa Cruz	INVERTEBRATE	<i>Calephelis rawsoni arizonensis</i>	Arizona Metalmark			S				IILEPH2073		S2	G3G4
Santa Cruz	INVERTEBRATE	<i>Heterelmis stephani</i>	Stephan's Heterelmis Riffle Beetle	C		S				IICOL5B010		S1	G1
Santa Cruz	INVERTEBRATE	<i>Limenitis archippus obsoleta</i>	Obsolete Viceroy Butterfly			S				IILEPL3024		S?	G5T3T4
Santa Cruz	INVERTEBRATE	<i>Neophasia terlooii</i>	Chiricahua Pine White			S				IILEP99020		S2?	G3G4
Santa Cruz	INVERTEBRATE	<i>Pyrgulopsis thompsoni</i>	Huachuca Springsnail	C	S	S				IMGASJ0230		S2	G2
Santa Cruz	INVERTEBRATE	<i>Stygobromus arizonensis</i>	Arizona Cave Amphipod	SC		S				ICMAL05360		S1?	G2G3
Santa Cruz	INVERTEBRATE	<i>Sympetrum signiferum</i>	Mexican Meadowfly			S				IIDO61150		S?	G2G3
Santa Cruz	MAMMAL	<i>Choeronycteris mexicana</i>	Mexican Long-tongued Bat	SC				A	WSC	AMACB02010		S2	G4
Santa Cruz	MAMMAL	<i>Corynorhinus townsendii pallescens</i>	Pale Townsend's Big-eared Bat	SC			4			AMACC08014		S3S4	G4T4
Santa Cruz	MAMMAL	<i>Lasiurus blossevillii</i>	Western Red Bat						WSC	AMACC05060		S2	G5
Santa Cruz	MAMMAL	<i>Leptonycteris curasoae yerbabuenae</i>	Lesser Long-nosed Bat	LE		S		I	WSC	AMACB03030		S2	G4
Santa Cruz	MAMMAL	<i>Macrotus californicus</i>	California Leaf-nosed Bat	SC					WSC	AMACB01010		S3S4	G4
Santa Cruz	MAMMAL	<i>Myotis velifer</i>	Cave Myotis	SC	S					AMACC01050		S4	G5

COUNTY	TAXON	SCIENTIFIC NAME	COMMON NAME	ESA	BLM	USFS	NESL	MEXFED	STATE	ELCODE_BCD	SRANK	GRANK
Santa Cruz	MAMMAL	<i>Panthera onca</i>	Jaguar	LE		S		P	WSC	AMAJH02010	S1	G3
Santa Cruz	MAMMAL	<i>Sigmodon ochrognathus</i>	Yellow-nosed Cotton Rat	SC						AMAFF07040	S3S4	G4G5
Santa Cruz	MAMMAL	<i>Sorex arizonae</i>	Arizona Shrew	SC		S		P	WSC	AMABA01240	S2S3	G3
Santa Cruz	MAMMAL	<i>Thomomys umbrinus intermedius</i>	Southern Pocket Gopher			S				AMAF01012	S3	G5T3
Santa Cruz	PLANT	<i>Abutilon parishii</i>	Pima Indian Mallow	SC	S	S			SR	PDMAL020E0	S2	G2
Santa Cruz	PLANT	<i>Acacia farnesiana</i>	Sweet Acacia			S				PDFAB020D0	S1S2	G5
Santa Cruz	PLANT	<i>Agave parviflora ssp. parviflora</i>	Santa Cruz Striped Agave	SC		S		A	HS	PMAGA010L2	S3	G3T3
Santa Cruz	PLANT	<i>Allium rhizomatum</i>	Redflower Onion			S			SR	PMLIL02320	S1	G3?Q
Santa Cruz	PLANT	<i>Amoreuxia gonzalezii</i>	Saiya	SC		S			HS	PDBIX01010	S1	G1
Santa Cruz	PLANT	<i>Amsonia grandiflora</i>	Large-flowered Blue Star	SC		S				PDAP03060	S2	G2
Santa Cruz	PLANT	<i>Arabis tricornuta</i>	Chiricahua Rock Cress			S				PDBRA06200	S1?	G1?
Santa Cruz	PLANT	<i>Asclepias lemmonii</i>	Lemmon Milkweed			S				PDASC020Z0	S2	G4?
Santa Cruz	PLANT	<i>Asclepias uncialis</i>	Greene Milkweed	SC		S				PDASC02220	S1?	G3G4
Santa Cruz	PLANT	<i>Astragalus hypoxylus</i>	Huachuca Milk-vetch	SC	S	S			SR	PDFAB0F470	S1	G1
Santa Cruz	PLANT	<i>Browallia eludens</i>	Elusive New Browallia Species	SC		S				PDSOL03030	S1	G2?
Santa Cruz	PLANT	<i>Capsicum annuum var. glabriusculum</i>	Chiltepin			S				PDSOL06012	S2	G5T5
Santa Cruz	PLANT	<i>Carex chihuahuensis</i>	A Sedge			S				PMCYP032T0	S2S3	G3G4
Santa Cruz	PLANT	<i>Carex ultra</i>	Arizona Giant Sedge		S	S				PMCYP03E50	S2	G3?
Santa Cruz	PLANT	<i>Choisya mollis</i>	Santa Cruz Star Leaf	SC		S				PDRUT02022	S2	G5?T2?
Santa Cruz	PLANT	<i>Conioselinum mexicanum</i>	Mexican Hemlock Parsley	SC		S				PDAP10P030	S1	G2?
Santa Cruz	PLANT	<i>Coryphantha recurvata</i>	Santa Cruz Beehive Cactus			S			HS	PDCAC04090	S3	G3
Santa Cruz	PLANT	<i>Coryphantha scheeri var. robustispina</i>	Pima Pineapple Cactus	LE					HS	PDCAC040C1	S2	G4T2
Santa Cruz	PLANT	<i>Coursetia glabella</i>		SC		S				PDFAB140B0	S1	G3?
Santa Cruz	PLANT	<i>Dalea tentaculoides</i>	Gentry Indigo Bush	SC	S	S			HS	PDFAB1A1K0	S1	G1
Santa Cruz	PLANT	<i>Erigeron arisolius</i>				S				PDAST3M510	S2	G2
Santa Cruz	PLANT	<i>Euphorbia macropus</i>	Woodland Spurge	SC					SR	PDEUP0Q2U0	S2	G4
Santa Cruz	PLANT	<i>Graptopetalum bartramii</i>	Bartram Stonecrop	SC	S	S			SR	PDCRA06010	S3	G3
Santa Cruz	PLANT	<i>Hedeoma dentatum</i>	Mock-pennyroyal			S				PDLAM0M0M0	S3	G3
Santa Cruz	PLANT	<i>Heterotheca rutteri</i>	Huachuca Golden Aster	SC	S	S				PDAST4V0J0	S2	G2
Santa Cruz	PLANT	<i>Hexalectris revoluta</i>	Chisos Coral-root		S	S			SR	PMORC1C030	S1	G1G2
Santa Cruz	PLANT	<i>Hexalectris spicata</i>	Crested Coral Root						SR	PMORC1C040	S3S4	G5
Santa Cruz	PLANT	<i>Hieracium pringlei</i>	Pringle Hawkweed	SC		S				PDAST4W170	S1	G2Q
Santa Cruz	PLANT	<i>Ipomoea plummerae var. cuneifolia</i>	Huachuca Morning Glory			S				PDCON0A141	S3	G4T3
Santa Cruz	PLANT	<i>Ipomoea thurberi</i>	Thurber's Morning-glory			S				PDCON0A1K0	S1	G3
Santa Cruz	PLANT	<i>Laennecia eriophylla</i>	Woolly Fleabane			S				PDASTDL020	S2	G3
Santa Cruz	PLANT	<i>Lilaeopsis schaffneriana var. recurva</i>	Huachuca Water Umbel	LE					HS	PDAP119051	S2	G4T2
Santa Cruz	PLANT	<i>Lilium parryi</i>	Lemmon Lily	SC		S			SR	PMLIL1A0J0	S2	G3
Santa Cruz	PLANT	<i>Lobelia fenestralis</i>	Leafy Lobelia						SR	PDCAM0E0H0	S1	G4
Santa Cruz	PLANT	<i>Lobelia laxiflora</i>	Mexican Lobelia						SR	PDCAM0E0X0	S1	G4
Santa Cruz	PLANT	<i>Lotus alamosanus</i>	Alamos Deer Vetch			S				PDFAB2A020	S1	G3G4
Santa Cruz	PLANT	<i>Lupinus huachucanus</i>	Huachuca Mountain Lupine			S				PDFAB2B210	S2	G2
Santa Cruz	PLANT	<i>Macroptilium supinum</i>	Supine Bean	SC		S			SR	PDFAB330L0	S1	G2
Santa Cruz	PLANT	<i>Malaxis corymbosa</i>	Madrean Adders Mouth						SR	PMORC1R020	S3S4	G4

COUNTY	TAXON	SCIENTIFIC NAME	COMMON NAME	ESA	BLM	USFS	NESL	MEXFED	STATE	ELCODE	BCD	SRANK	GRANK
Santa Cruz	PLANT	Malaxis porphyrea	Purple Adder's Mouth						SR	PMORC1R0Q0		S2	G4
Santa Cruz	PLANT	Mammillaria wrightii var. wilcoxii	Wilcox Fishhook Cactus						SR	PDCAC0A0E1		S4	G4T4
Santa Cruz	PLANT	Manihot davisiae	Arizona Manihot			S				PDEUP0Z010		S2	G4
Santa Cruz	PLANT	Marina diffusa	Escoba			S				PDFAB2F020		S1	G5?
Santa Cruz	PLANT	Metastelma mexicanum	Wiggins Milkweed Vine	SC		S				PDASC050P0		S1S2	G3G4
Santa Cruz	PLANT	Muhlenbergia xerophila	Weeping Muhly			S				PMPOA48220		S1	G3
Santa Cruz	PLANT	Notholaena lemmonii	Lemmon Cloak Fern	SC						PPADI0G0D0		S1S2	G3?
Santa Cruz	PLANT	Opuntia versicolor	Stag-horn Cholla						SR	PDCAC0D1K0		S2S3	G4
Santa Cruz	PLANT	Paspalum virletii	Virlet Paspalum			S				PMPOA4P1L0		S1	G3?
Santa Cruz	PLANT	Passiflora foetida	Foetid Passionflower			S				PDPAS01070		S2	G5
Santa Cruz	PLANT	Pectis imberbis	Beardless Chinch Weed	SC		S				PDAST6W0A0		S1	G3
Santa Cruz	PLANT	Penstemon discolor	Catalina Beardtongue			S			HS	PDSCR1L210		S2	G2
Santa Cruz	PLANT	Penstemon superbus	Superb Beardtongue			S				PDSCR1L630		S2?	G3?
Santa Cruz	PLANT	Physalis latiphysa	Broad-leaf Ground-cherry			S				PDSOL0S0H0		S1	G1
Santa Cruz	PLANT	Psilotum nudum	Whisk Fern						HS	PPPSI01020		S1	G5
Santa Cruz	PLANT	Samolus vagans	Chiricahua Mountain Brookweed			S				PDPRI09040		S2	G2?
Santa Cruz	PLANT	Schiedeella arizonica	Fallen Ladies'-tresses						SR	PMORC67020		S4	GNR
Santa Cruz	PLANT	Senecio carlomasonii	Seemann Groundsel			S				PDAST8H3W0		S2S3	G4?Q
Santa Cruz	PLANT	Senecio multidentatus var. huachucanus	Huachuca Groundsel			S			HS	PDAST8H411		S2	G2G4T2
Santa Cruz	PLANT	Sisyrinchium cernuum	Nodding Blue-eyed Grass			S				PMIRI0D0B0		S2	G5
Santa Cruz	PLANT	Solanum lumholtzianum	Lumholtz Nightshade			S				PDSOL0Z180		S3	G3G4
Santa Cruz	PLANT	Spiranthes delitescens	Madrean Ladies'-tresses	LE					HS	PMORC2B140		S1	G1
Santa Cruz	PLANT	Stenorrhynchos michuacanum	Michoacan Ladies'-tresses						SR	PMORC2B0L0		S3	G4
Santa Cruz	PLANT	Stevia lemmonii	Lemmon's Stevia			S				PDAST8V010		S2	G3G4
Santa Cruz	PLANT	Talinum humile	Pinos Altos Flame Flower	SC		S			SR	PDPOR080A0		S1	G2
Santa Cruz	PLANT	Talinum marginatum	Tepic Flame Flower	SC		S			SR	PDPOR080N0		S1	G2
Santa Cruz	PLANT	Tephrosia thurberi	Thurber Hoary Pea			S				PDFAB3X0M0		S3	G4G5
Santa Cruz	PLANT	Tragia laciniata	Sonoran Noseburn			S				PDEUP1D060		S3?	G3G4
Santa Cruz	PLANT	Viola umbraticola	Shade Violet			S				PDVIO042E0		S2?	G3G4
Santa Cruz	REPTILE	Aspidoscelis burti stictogrammus	Giant Spotted Whiptail	SC	S	S				ARACJ02011		S3	G4T4
Santa Cruz	REPTILE	Crotalus willardi willardi	Arizona Ridge-nosed Rattlesnake			S			PR	WSC	ARADE02132	S3	G5T4
Santa Cruz	REPTILE	Gopherus agassizii (Sonoran Population)	Sonoran Desert Tortoise	SC					A	WSC	ARAAF01013	S4	G4T4
Santa Cruz	REPTILE	Lampropeltis getula nigrita	Western Black Kingsnake			S			A		ARADB19026	S1S2	G5T3T4Q
Santa Cruz	REPTILE	Oxybelis aeneus	Brown Vinesnake						WSC	ARADB24010		S2	G5
Santa Cruz	REPTILE	Thamnophis eques megalops	Northern Mexican Gartersnake	SC		S			A	WSC	ARADB36061	S2S3	G5T5
Yavapai	AMPHIBIAN	Bufo microscaphus	Arizona Toad	SC		S				AAAB01110		S3S4	G3G4
Yavapai	AMPHIBIAN	Rana chiricahuensis	Chiricahua Leopard Frog	LT		S			A	WSC	AAABH01080	S3	G3
Yavapai	AMPHIBIAN	Rana pipiens	Northern Leopard Frog			S		2		WSC	AAABH01170	S2	G5
Yavapai	AMPHIBIAN	Rana yavapaiensis	Lowland Leopard Frog	SC		S			PR	WSC	AAABH01250	S4	G4
Yavapai	BIRD	Accipiter gentilis	Northern Goshawk	SC		S		4	A	WSC	ABNKC12060	S3	G5
Yavapai	BIRD	Athene cunicularia hypugaea	Western Burrowing Owl	SC	S			4	A		ABNSB10012	S3	G4T4
Yavapai	BIRD	Buteo regalis	Ferruginous Hawk	SC				3		WSC	ABNKC19120	S2B,S4N	G4
Yavapai	BIRD	Buteogallus anthracinus	Common Black-Hawk			S			A	WSC	ABNKC15010	S3	G4G5
Yavapai	BIRD	Ceryle alcyon	Belted Kingfisher					4		WSC	ABNXD01020	S2B,S5N	G5

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Yavapai	BIRD	Coccyzus americanus occidentalis	Western Yellow-billed Cuckoo	C		S	2		WSC	ABNRB02022		S3	G5T3Q
Yavapai	BIRD	Empidonax traillii extimus	Southwestern Willow Flycatcher	LE		S	2		WSC	ABPAE33043		S1	G5T1T2
Yavapai	BIRD	Falco peregrinus anatum	American Peregrine Falcon	SC		S	4	A	WSC	ABNKD06071		S4	G4T4
Yavapai	BIRD	Haliaeetus leucocephalus	Bald Eagle	LT,PDL		S		P	WSC	ABNKC10010		S2S3B,S4N	G5
Yavapai	BIRD	Haliaeetus leucocephalus (wintering pop.)	Bald Eagle	LT,PDL		S		P	WSC	ABNKC10012		S4N	G5
Yavapai	BIRD	Setophaga ruticilla	American Redstart						WSC	ABPBX06010		S1	G5
Yavapai	BIRD	Strix occidentalis lucida	Mexican Spotted Owl	LT		S	3	A	WSC	ABNSB12012		S3S4	G3T3
Yavapai	FISH	Agosia chrysogaster chrysogaster	Gila Longfin Dace	SC	S			A		AFCJB37151		S3S4	G4T3T4
Yavapai	FISH	Catostomus clarki	Desert Sucker	SC	S					AFCJC02040		S3S4	G3G4
Yavapai	FISH	Catostomus insignis	Sonora Sucker	SC	S			P		AFCJC02100		S3	G3
Yavapai	FISH	Cyprinodon macularius	Desert Pupfish	LE				P	WSC	AFCNB02060		S1	G1
Yavapai	FISH	Gila intermedia	Gila Chub	LE		S		P	WSC	AFCJB13160		S2	G2
Yavapai	FISH	Gila nigra	Headwater Chub	C						AFCJB13180		S2	G2Q
Yavapai	FISH	Gila robusta	Roundtail Chub	SC		S	2	PR	WSC	AFCJB13150		S2	G3
Yavapai	FISH	Meda fulgida	Spikedace	LT		S			WSC	AFCJB22010		S1	G2
Yavapai	FISH	Poeciliopsis occidentalis occidentalis	Gila Topminnow	LE				A	WSC	AFCNC05021		S1S2	G3T3
Yavapai	FISH	Ptychocheilus lucius	Colorado Pikeminnow	LE,XN			2	P	WSC	AFCJB35020		S1	G1
Yavapai	FISH	Rhinichthys oculus	Speckled Dace	SC	S			P		AFCJB37050		S3S4	G5
Yavapai	FISH	Xyrauchen texanus	Razorback Sucker	LE		S	2	P	WSC	AFCJC11010		S1	G1
Yavapai	INVERTEBRATE	Cicindela oregona maricopa	Maricopa Tiger Beetle	SC	S	S				IICOL02362		S3	G5T3
Yavapai	INVERTEBRATE	Cylloepus parkeri	Parker's Cylloepus Riffle Beetle	SC		S				IICOL59010		S1?	G1?
Yavapai	INVERTEBRATE	Metrichia nigritta	Page Spring Micro Caddisfly	SC						IITRI97010		S?	G3G4
Yavapai	INVERTEBRATE	Protophila balmorhea	Balmorhea Saddle-case Caddisfly	SC						IITRI34040		S?	G2
Yavapai	INVERTEBRATE	Pyrgulopsis glandulosa	Verde Rim Springsnail	SC	S	S				IMGASJ0180		S1	G1
Yavapai	INVERTEBRATE	Pyrgulopsis montezumensis	Montezuma Well Springsnail	SC	S	S				IMGASJ0190		S1	G1
Yavapai	INVERTEBRATE	Pyrgulopsis morrisoni	Page Springsnail	C	S	S				IMGASJ0200		S1	G1
Yavapai	INVERTEBRATE	Pyrgulopsis sola	Brown Springsnail	SC	S	S				IMGASJ0220		S1	G1
Yavapai	MAMMAL	Corynorhinus townsendii pallescens	Pale Townsend's Big-eared Bat	SC			4			AMACC08014		S3S4	G4T4
Yavapai	MAMMAL	Euderma maculatum	Spotted Bat	SC				PR	WSC	AMACC07010		S1S2	G4
Yavapai	MAMMAL	Idionycteris phyllotis	Allen's Big-eared Bat	SC	S					AMACC09010		S2S3	G3G4
Yavapai	MAMMAL	Lasiurus blossevillii	Western Red Bat						WSC	AMACC05060		S2	G5
Yavapai	MAMMAL	Macrotus californicus	California Leaf-nosed Bat	SC					WSC	AMACB01010		S3S4	G4
Yavapai	MAMMAL	Microtus mexicanus hualpaiensis	Hualapai Mexican Vole	LE					WSC	AMAFF11212		S1	G5T1Q
Yavapai	MAMMAL	Myotis ciliolabrum	Western Small-footed Myotis	SC	S					AMACC01140		S3	G5
Yavapai	MAMMAL	Myotis occultus	Arizona Myotis	SC	S					AMACC01160		S3	G3G4
Yavapai	MAMMAL	Myotis thysanodes	Fringed Myotis	SC	S					AMACC01090		S3S4	G4G5
Yavapai	MAMMAL	Myotis velifer	Cave Myotis	SC	S					AMACC01050		S4	G5
Yavapai	MAMMAL	Myotis volans	Long-legged Myotis	SC	S					AMACC01110		S3S4	G5
Yavapai	MAMMAL	Nyctinomops femorosaccus	Pocketed Free-tailed Bat		S					AMACD04010		S2S3	G4
Yavapai	MAMMAL	Nyctinomops macrotis	Big Free-tailed Bat	SC	S					AMACD04020		S2S3	G5
Yavapai	MAMMAL	Sigmodon arizonae arizonae	Camp Verde Cotton Rat						WSC	AMAFF07023		SH	G5TH
Yavapai	PLANT	Abutilon parishii	Pima Indian Mallow	SC	S	S			SR	PDMAL020E0		S2	G2

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Yavapai	PLANT	Agave arizonica	Arizona Agave	No status					HS	PMAGA01030		SHYB	G1Q
Yavapai	PLANT	Agave delamateri	Tonto Basin Agave	SC		S			HS	PMAGA010W0		S2	G2
Yavapai	PLANT	Agave mckelveyana	Mckelvey's Agave						SR	PMAGA010D0		S4	G4
Yavapai	PLANT	Agave murpheyi	Hohokam Agave	SC	S	S			HS	PMAGA010F0		S2	G2
Yavapai	PLANT	Agave toumeyana var. bella	Toumey Agave						SR	PMAGA010R1		S3	G3T3
Yavapai	PLANT	Allium bigelovii	Bigelow Onion						SR	PMLIL02070		S2S3	G3
Yavapai	PLANT	Amsonia peeblesii	Peebles Blue Star				4			PDAP0030E0		S3	G3
Yavapai	PLANT	Arenaria aberrans	Mt. Dellenbaugh Sandwort			S				PDCAR04010		S2	G2G3
Yavapai	PLANT	Astragalus newberryi var. aquarii	Aquarius Milkvetch		S					PDFAB0F5Y5		S1	G5T1
Yavapai	PLANT	Carex ultra	Arizona Giant Sedge		S	S				PMCYP03E50		S2	G3?
Yavapai	PLANT	Cymopterus megacephalus	Cameron Water-parsley	SC		S				PDAP10U0M0		S3	G3
Yavapai	PLANT	Erigeron saxatilis	Rock Fleabane			S				PDAST3M560		S3	G3
Yavapai	PLANT	Eriogonum ericifolium var. ericifolium	Heathleaf Wild-buckwheat			S				PDPGN08231		S2	G3T2
Yavapai	PLANT	Eriogonum ripleyi	Ripley Wild-buckwheat	SC		S			SR	PDPGN08520		S2	G2
Yavapai	PLANT	Escobaria vivipara var. rosea	Viviparous Foxtail Cactus						SR	PDCAC0X0G8		S3	G5T3
Yavapai	PLANT	Ferocactus cylindraceus var. eastwoodiae	Golden Barrel Cactus						SR	PDCAC08084		S1	G5T1
Yavapai	PLANT	Fremontodendron californicum	Flannel Bush		S				SR	PDSTE03010		S2S3	G4
Yavapai	PLANT	Hedeoma diffusum	Flagstaff Pennyroyal			S			SR	PDLAM0M0N0		S3	G3
Yavapai	PLANT	Heuchera eastwoodiae	Eastwood Alum Root			S				PDSAX0E0B0		S3	G3
Yavapai	PLANT	Hexalectris spicata	Crested Coral Root						SR	PMORC1C040		S3S4	G5
Yavapai	PLANT	Lupinus latifolius ssp. leucanthus	Broadleaf Lupine			S				PDFAB2B29D		S1	G5T1T2
Yavapai	PLANT	Mammillaria viridiflora	Varied Fishhook Cactus						SR	PDCAC0A0D0		S4	G4
Yavapai	PLANT	Penstemon nudiflorus	Flagstaff Beardtongue			S				PDSCR1L4A0		S2S3	G2G3
Yavapai	PLANT	Phlox amabilis	Arizona Phlox			S				PDPLM0D050		S2	G2
Yavapai	PLANT	Polygala rusbyi	Hualapai Milkwort			S				PDPGL021H0		S3	G3
Yavapai	PLANT	Puccinellia parishii	Parish Alkali Grass	SC			4		HS	PMPOA530T0		S2	G2
Yavapai	PLANT	Purshia subintegra	Arizona Cliff Rose	LE					HS	PDROS1E080		S1	GNA
Yavapai	PLANT	Salvia dorrii ssp. mearnsii	Verde Valley Sage	SC		S			SR	PDLAM1S0G5		S3	G5T3
Yavapai	PLANT	Talinum validulum	Tusayan Flame Flower	SC					SR	PDPOR080M0		S3	G3
Yavapai	PLANT	Thelypteris puberula var. sonorensis	Aravaipa Wood Fern		S					PPTHE05192		S2	G5T3
Yavapai	PLANT	Triteleia lemmoniae	Mazatzal Triteleia						SR	PMLIL210C0		S3	G3
Yavapai	PLANT	Washingtonia filifera	California Fan Palm						SR	PMARE0G010		S1	G4
Yavapai	REPTILE	Charina trivirgata gracia	Desert Rosy Boa	SC	S	S				ARADA01021		S3	G4G5T3
Yavapai	REPTILE	Gopherus agassizii (Sonoran Population)	Sonoran Desert Tortoise	SC				A	WSC	ARAAF01013		S4	G4T4
Yavapai	REPTILE	Heloderma suspectum cinctum	Banded Gila Monster	SC	S			A		ARACE01011		S4	G4T4
Yavapai	REPTILE	Thamnophis eques megalops	Northern Mexican Gartersnake	SC		S		A	WSC	ARADB36061		S2S3	G5T5
Yavapai	REPTILE	Thamnophis rufipunctatus	Narrow-headed Gartersnake	SC		S			WSC	ARADB36110		S3	G3G4
Yavapai	REPTILE	Xantusia arizonae	Arizona Night Lizard			S				ARACK01050		S3	G3
Yuma	BIRD	Ardea alba	Great Egret						WSC	ABNGA04040		S1B,S4N	G5
Yuma	BIRD	Athene cunicularia hypugaea	Western Burrowing Owl	SC	S		4	A		ABNSB10012		S3	G4T4
Yuma	BIRD	Coccyzus americanus occidentalis	Western Yellow-billed Cuckoo	C		S	2		WSC	ABNRB02022		S3	G5T3Q
Yuma	BIRD	Egretta thula	Snowy Egret						WSC	ABNGA06030		S1B,S4N	G5

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Yuma	BIRD	Empidonax traillii extimus	Southwestern Willow Flycatcher	LE		S	2		WSC	ABPAE33043		S1	G5T1T2
Yuma	BIRD	Glaucidium brasilianum cactorum	Cactus Ferruginous Pygmy-owl	SC				A	WSC	ABNSB08041		S1	G5T3
Yuma	BIRD	Ixobrychus exilis	Least Bittern					A	WSC	ABNGA02010		S3	G5
Yuma	BIRD	Lanius ludovicianus	Loggerhead Shrike	SC						ABPBR01030		S4	G4
Yuma	BIRD	Laterallus jamaicensis coturniculus	California Black Rail	SC		S		PR	WSC	ABNME03041		S1	G4T1
Yuma	BIRD	Rallus longirostris yumanensis	Yuma Clapper Rail	LE				P	WSC	ABNME0501A		S3	G5T3
Yuma	FISH	Xyrauchen texanus	Razorback Sucker	LE		S	2	P	WSC	AFCJC11010		S1	G1
Yuma	MAMMAL	Antilocapra americana sonoriensis	Sonoran Pronghorn	LE		S		P	WSC	AMALD01012		S1	G5T1
Yuma	MAMMAL	Corynorhinus townsendii pallescens	Pale Townsend's Big-eared Bat	SC			4			AMACC08014		S3S4	G4T4
Yuma	MAMMAL	Euderma maculatum	Spotted Bat	SC				PR	WSC	AMACC07010		S1S2	G4
Yuma	MAMMAL	Eumops perotis californicus	Greater Western Bonneted Bat	SC						AMACD02011		S1S2	G5T4
Yuma	MAMMAL	Lasiurus xanthinus	Western Yellow Bat						WSC	AMACC05070		S1	G5
Yuma	MAMMAL	Macrotus californicus	California Leaf-nosed Bat	SC					WSC	AMACB01010		S3S4	G4
Yuma	MAMMAL	Myotis yumanensis	Yuma Myotis	SC						AMACC01020		S3S4	G5
Yuma	MAMMAL	Nyctinomops femorosaccus	Pocketed Free-tailed Bat		S					AMACD04010		S2S3	G4
Yuma	MAMMAL	Sigmodon hispidus eremicus	Yuma Hispid Cotton Rat	SC						AMAFF07013		S2S3	G5T2T3
Yuma	PLANT	Allium parishii	Parish Onion		S				SR	PMLIL021N0		S1	G3
Yuma	PLANT	Berberis harrisoniana	Kofa Barberry		S					PDBER02030		S1S2	G1G2
Yuma	PLANT	Cryptantha ganderi	Gander's Cryptantha	SC						PDBOR0A120		S1	G1G2
Yuma	PLANT	Echinocactus polycephalus var. polycephalus	Clustered Barrel Cactus						SR	PDCAC05033		S2	G3G4T3T4
Yuma	PLANT	Euphorbia platysperma	Dune Spurge	SC						PDEUP0D1X0		S1	G3
Yuma	PLANT	Ferocactus cylindraceus var. cylindraceus	California Barrel Cactus					PR	SR	PDCAC08081		S3	G5T4
Yuma	PLANT	Helianthus niveus ssp. tephrodes	Dune Sunflower	SC						PDAST4N0Z2		S2	G4T2
Yuma	PLANT	Lophocereus schottii	Senita						SR	PDCAC14010		S2	G4
Yuma	PLANT	Opuntia echinocarpa	Straw-top Cholla						SR	PDCAC0D2W0		S5	G5
Yuma	PLANT	Pholisma sonorae	Sand Food	SC	S				HS	PDLNN02020		S1	G2
Yuma	PLANT	Rhus kearneyi	Kearney Sumac		S				SR	PDANA08050		S2	G4
Yuma	PLANT	Stephanomeria schottii	Schott Wire Lettuce		S					PDAST8U0D0		S2	G2
Yuma	PLANT	Triteleopsis palmeri	Blue Sand Lily		S				SR	PMLIL22010		S1	G3
Yuma	PLANT	Washingtonia filifera	California Fan Palm						SR	PMARE0G010		S1	G4
Yuma	REPTILE	Charina trivirgata gracia	Desert Rosy Boa	SC	S	S				ARADA01021		S3	G4G5T3
Yuma	REPTILE	Gopherus agassizii (Sonoran Population)	Sonoran Desert Tortoise	SC				A	WSC	ARAAF01013		S4	G4T4
Yuma	REPTILE	Heloderma suspectum cinctum	Banded Gila Monster	SC	S			A		ARACE01011		S4	G4T4
Yuma	REPTILE	Phrynosoma mcallii	Flat-tailed Horned Lizard	SC				A	WSC	ARACF12040		S2S3	G3
Yuma	REPTILE	Sauromalus ater (Arizona Population)	Arizona Chuckwalla	SC	S			A		ARACF13013		S4	G5T4Q
Yuma	REPTILE	Uma rufopunctata	Yuman Desert Fringe-toed Lizard	SC		S		A	WSC	ARACF15040		S2S3	G2G3
	AMPHIBIAN	Bufo microscaphus	Arizona Toad	SC		S				AAAB01110		S3S4	G3G4
	AMPHIBIAN	Rana yavapaiensis	Lowland Leopard Frog	SC		S		PR	WSC	AAABH01250		S4	G4
	BIRD	Accipiter gentilis	Northern Goshawk	SC		S	4	A	WSC	ABNKC12060		S3	G5
	BIRD	Aechmophorus clarkii	Clark's Grebe				4		WSC	ABNCA04020		S3	G5

COUNTY	TAXON	SCIENTIFIC NAME	COMMON NAME	ESA	BLM	USFS	NESL	MEXFED	STATE	ELCODE	BCD	SRANK	GRANK
	BIRD	Ardea alba	Great Egret						WSC	ABNGA04040		S1B,S4N	G5
	BIRD	Coccyzus americanus occidentalis	Western Yellow-billed Cuckoo	C		S	2		WSC	ABNRB02022		S3	G5T3Q
	BIRD	Empidonax traillii extimus	Southwestern Willow Flycatcher	LE		S	2		WSC	ABPAE33043		S1	G5T1T2
	BIRD	Falco peregrinus anatum	American Peregrine Falcon	SC		S	4	A	WSC	ABNKD06071		S4	G4T4
	BIRD	Ixobrychus exilis	Least Bittern					A	WSC	ABNGA02010		S3	G5
	BIRD	Laterallus jamaicensis coturniculus	California Black Rail	SC		S		PR	WSC	ABNME03041		S1	G4T1
	BIRD	Rallus longirostris yumanensis	Yuma Clapper Rail	LE				P	WSC	ABNME0501A		S3	G5T3
	FISH	Catostomus latipinnis	Flannelmouth Sucker	SC	S	S				AFCJC02110		S2	G3G4
	FISH	Gila elegans	Bonytail	LE			1	P	WSC	AFCJB13100		S1	G1
	FISH	Plagopterus argentissimus	Woundfin	LE,XN					WSC	AFCJB33010		S1	G1
	FISH	Xyrauchen texanus	Razorback Sucker	LE		S	2	P	WSC	AFCJC11010		S1	G1
	MAMMAL	Microtus mexicanus navaho	Navajo Mexican Vole	SC		S	4		WSC	AMAFF11213		S1	G5T2Q
	PLANT	Carex ultra	Arizona Giant Sedge		S	S				PMCYP03E50		S2	G3?
	PLANT	Puccinellia parishii	Parish Alkali Grass	SC			4		HS	PMPOA530T0		S2	G2
	REPTILE	Crotalus willardi obscurus	New Mexico Ridge-nosed Rattlesnake	LT		S		PR		ARADE02131		S1	G5T1T2
	REPTILE	Phrynosoma cornutum	Texas Horned Lizard	SC	S			A		ARACF12010		S3S4	G4G5
	REPTILE	Sistrurus catenatus edwardsii	Desert Massasauga			S		PR	WSC	ARADE03012		S1S2	G3G4T3T4Q

APPENDIX D
AIR QUALITY CALCULATIONS

CALCULATION SHEET-COMBUSTIBLE EMISSIONS-CONSTRUCTION

Assumptions for Combustible Emissions					
Type of Construction Equipment	Num. of Units	HP Rated	Hrs/day	Days/yr	Total hp-hrs
Water Truck	0	300	8	0	0
Diesel Road Compactors	1	100	8	40	32000
Diesel Dump Truck	0	300	8	0	0
Diesel Excavator	0	300	8	0	0
Diesel Hole Trenchers	0	175	8	0	0
Diesel Bore/Drill Rigs	0	300	8	0	0
Diesel Cement & Mortar Mixers	0	300	8	0	0
Diesel Cranes	0	175	8	0	0
Diesel Graders	0	300	8	0	0
Diesel Tractors/Loaders/Backhoes	1	100	8	40	32000
Diesel Bull Dozers	0	300	8	0	0
Diesel Front End Loaders	0	300	8	0	0
Diesel Fork Lifts	1	100	8	40	32000
Diesel Generator Set	1	40	8	40	12800

Emission Factors							
Type of Construction Equipment	VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	PM-10 g/hp-hr	PM-2.5 g/hp-hr	SO2 g/hp-hr	CO2 g/hp-hr
Water Truck	0.440	2.070	5.490	0.410	0.400	0.740	536.000
Diesel Road Compactors	0.370	1.480	4.900	0.340	0.330	0.740	536.200
Diesel Dump Truck	0.440	2.070	5.490	0.410	0.400	0.740	536.000
Diesel Excavator	0.340	1.300	4.600	0.320	0.310	0.740	536.300
Diesel Trenchers	0.510	2.440	5.810	0.460	0.440	0.740	535.800
Diesel Bore/Drill Rigs	0.600	2.290	7.150	0.500	0.490	0.730	529.700
Diesel Cement & Mortar Mixers	0.610	2.320	7.280	0.480	0.470	0.730	529.700
Diesel Cranes	0.440	1.300	5.720	0.340	0.330	0.730	530.200
Diesel Graders	0.350	1.360	4.730	0.330	0.320	0.740	536.300
Diesel Tractors/Loaders/Backhoes	1.850	8.210	7.220	1.370	1.330	0.950	691.100
Diesel Bull Dozers	0.360	1.380	4.760	0.330	0.320	0.740	536.300
Diesel Front End Loaders	0.380	1.550	5.000	0.350	0.340	0.740	536.200
Diesel Fork Lifts	1.980	7.760	8.560	1.390	1.350	0.950	690.800
Diesel Generator Set	1.210	3.760	5.970	0.730	0.710	0.810	587.300

CALCULATION SHEET-COMBUSTIBLE EMISSIONS-CONSTRUCTION

Emission factors (EF) were generated from the NONROAD2005 model for the 2006 calendar year. The VOC EFs includes exhaust and evaporative emissions. The VOC evaporative components included in the NONROAD2005 model are diurnal, hotsoak, running loss, tank permeation, hose permeation, displacement, and spillage. The construction equipment age distribution in the NONROAD2005 model is based on the population in U.S. for the 2006 calendar year.

Emission Calculations							
Type of Construction Equipment	VOC tons/yr	CO tons/yr	NOx tons/yr	PM-10 tons/yr	PM-2.5 tons/yr	SO2 tons/yr	CO2 tons/yr
Water Truck	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Road Paver	0.013	0.052	0.173	0.012	0.012	0.026	18.909
Diesel Dump Truck	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Excavator	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Hole Cleaners\Trenchers	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Bore/Drill Rigs	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Cement & Mortar Mixers	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Cranes	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Graders	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Tractors/Loaders/Backhoes	0.065	0.290	0.255	0.048	0.047	0.034	24.371
Diesel Bull Dozers	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Front End Loaders	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Aerial Lifts	0.070	0.274	0.302	0.049	0.048	0.034	24.360
Diesel Generator Set	0.017	0.053	0.084	0.010	0.010	0.011	8.284
Total Emissions	0.165	0.668	0.813	0.120	0.116	0.105	75.924

Conversion factors	
Grams to tons	1.102E-06

CALCULATION SHEET-TRANSPORTATION COMBUSTIBLE EMISSIONS-CONSTRUCTION

Construction Worker Personal Vehicle Commuting to Meeting Site-Passenger and Light Duty Trucks									
Pollutants	Emission Factors		Assumptions				Results by Pollutant		
	Passenger Cars g/mile	Pick-up Trucks, SUVs g/mile	Mile/day	Day/yr	Number of cars	Number of trucks	Total Emissions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	1.36	1.61	60	180	10	10	0.16	0.19	0.35
CO	12.4	15.7	60	180	10	10	1.48	1.87	3.34
NOx	0.95	1.22	60	180	10	10	0.11	0.15	0.26
PM-10	0.0052	0.0065	60	180	10	10	0.00	0.00	0.00
PM 2.5	0.0049	0.006	60	180	10	10	0.00	0.00	0.00
CO2	369	511	60	180	10	10	43.92	60.82	104.73

Heavy Duty Trucks Delivery Supply Trucks to Transport Site									
Pollutants	Emission Factors		Assumptions				Results by Pollutant		
	10,000-19,500 lb Delivery Truck	33,000-60,000 lb semi trailer rig	Mile/day	Day/yr	Number of trucks	Number of trucks	Total Emissions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	0.29	0.55	60	180	2	2	0.01	0.01	0.02
CO	1.32	3.21	60	180	2	2	0.03	0.08	0.11
NOx	4.97	12.6	60	180	2	2	0.12	0.30	0.42
PM-10	0.12	0.33	60	180	2	2	0.00	0.01	0.01
PM 2.5	0.13	0.36	60	180	2	2	0.00	0.01	0.01
CO2	536	536	60	180	2	2	12.76	12.76	25.52

Maintenance Commute Associated with Proposed Action									
Pollutants	Emission Factors		Assumptions				Results by Pollutant		
	Passenger Cars g/mile	Pick-up Trucks, SUVs g/mile	Mile/day	Day/yr	Number of Cars	Number of trucks	Total Emissions cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	1.36	1.61	40	365	0	2	-	0.05	0.05
CO	12.4	15.7	40	365	0	2	-	0.51	0.51
NOx	0.95	1.22	40	365	0	2	-	0.04	0.04
PM-10	0.0052	0.0065	40	365	0	2	-	0.00	0.00
PM 2.5	0.0049	0.006	40	365	0	2	-	0.00	0.00
CO2	369	511	40	365	0	2	-	16.44	16.44

Truck Emission Factor Source: MOBILE6.2 USEPA 2005 Emission Facts: Average annual emissions and fuel consumption for gasoline-fueled passenger cars and light trucks. EPA 420-F-05-022 August 2005. Emission rates were generated using MOBILE.6 highway.

CALCULATION SHEET-TRANSPORTATION COMBUSTIBLE EMISSIONS-CONSTRUCTION

Conversion factor:	gms to tons
	0.000001102

Carbon Equivalents	Conversion Factor
N2O or NOx	311
Methane or VOCs	25

Source: EPA 2010 Reference, Tables and Conversions, Inventory of U.S. Greenhouse Gas Emissions and Sinks;
<http://www.epa.gov/climatechange/emissions/usinventoryreport.html>

CARBON EQUIVALENTS

Construction Commuters	Conversion	Emissions CO2 tons/yr	Total CO2
VOCs	25	8.84	
NOx	311	0.26	
Total		9.10	113.83

Delivery Trucks	Conversion	Emissions CO2 tons/yr	Total CO2
VOCs	25	0.50	
NOx	311	130.07	
Total		130.57	156.08

Kirtland AFB staff and Students	Conversion	Emissions CO2 tons/yr	Total CO2
VOCs	25	1.30	
NOx	311	12.21	
Total		13.50	29.95

CALCULATION SHEET-FUGITIVE DUST-CONSTRUCTION

Construction Fugitive Dust Emissions

Construction Fugitive Dust Emission Factors

Emission Factor	Units	Source
General Construction Activities	0.19 ton PM10/acre-month	MRI 1996; EPA 2001; EPA 2006
New Road Construction	0.42 ton PM10/acre-month	MRI 1996; EPA 2001; EPA 2006

PM2.5 Emissions

PM2.5 Multiplier	0.10 (10% of PM10 emissions assumed to be PM2.5)	EPA 2001; EPA 2006
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Control Efficiency

0.50 (assume 50% control efficiency for PM10 and PM2.5 emissions)	EPA 2001; EPA 2006
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Project Assumptions

Construction Area (0.19 ton PM10/acre-month)

		Conversion Factors	
Duration of Construction Project	6 months	0.000022957	acres per feet
Length	_____ miles	5280	feet per mile
Length (converted)	_____ feet		
Width	_____ feet		
Area	5.00 acres		

Staging Areas

Duration of Construction Project	6 months
Length	_____ miles
Length (converted)	_____ feet
Width	_____ feet
Area	2.00 acres

	Project Emissions (tons/year)			
	PM10 uncontrolled	PM10 controlled	PM2.5 uncontrolled	PM2.5 controlled
Construction Area (0.19 ton PM10/ac)	5.70	2.85	0.57	0.29
Staging Areas	0.38	0.19	0.04	0.02
Total	6.08	3.04	0.61	0.30

References:

EPA 2001. *Procedures Document for National Emissions Inventory, Criteria Air Pollutants, 1985-1999*. EPA-454/R-01-006. Office of Air Quality Planning and Standards, United States Environmental Protection Agency. March 2001.

EPA 2006. *Documentation for the Final 2002 Nonpoint Sector (Feb 06 version) National Emission Inventory for Criteria and Hazardous Air Pollutants*. Prepared for: Emissions Inventory and Analysis Group (C339-02) Air Quality Assessment Division Office of Air Quality Planning and Standards, United States Environmental Protection Agency. July 2006.

MRI 1996. *Improvement of Specific Emission Factors (BACM Project No. 1)*. Midwest Research Institute (MRI). Prepared for the California South Coast Air Quality Management District, March 29, 1996.

Construction Fugitive Dust Emission Factors

General Construction Activities Emission Factor

0.19 ton PM10/acre-month Source: MRI 1996; EPA 2001; EPA 2006

The area-based emission factor for construction activities is based on a study completed by the Midwest Research Institute (MRI) Improvement of Specific Emission Factors (BACM Project No. 1), March 29, 1996. The MRI study evaluated seven construction projects in Nevada and California (Las Vegas, Coachella Valley, South Coast Air Basin, and the San Joaquin Valley). The study determined an average emission factor of 0.11 ton PM10/acre-month for sites without large-scale cut/fill operations. A worst-case emission factor of 0.42 ton PM10/acre-month was calculated for sites with active large-scale earth moving operations. The monthly emission factors are based on 168 work-hours per month (MRI 1996). A subsequent MRI Report in 1999, Estimating Particulate Matter Emissions from Construction Operations, calculated the 0.19 ton PM10/acre-month emission factor by applying 25% of the large-scale earthmoving emission factor (0.42 ton PM10/acre-month) and 75% of the average emission factor (0.11 ton PM10/acre-month).

The 0.19 ton PM10/acre-month emission factor is referenced by the EPA for non-residential construction activities in recent procedures documents for the National Emission Inventory (EPA 2001; EPA 2006). The 0.19 ton PM10/acre-month emission factor represents a refinement of EPA's original AP-42 area-based total suspended particle (TSP) emission factor in Section 13.2.3 Heavy Construction Operations. In addition to the EPA, this methodology is also supported by the South Coast Air Quality Management District and the Western Regional Air Partnership (WRAP) which is funded by the EPA and is administered jointly by the Western Governor's Association and the National Tribal Environmental Council. The emission factor is assumed to encompass a variety of non-residential construction activities including building construction (commercial, industrial, institutional, governmental), public works, and travel on unpaved roads. The EPA National Emission Inventory documentation assumes that the emission factors are uncontrolled and recommends a control efficiency of 50% for PM10 and PM2.5 in PM nonattainment areas.

New Road Construction Emission Factor

0.42 ton PM10/acre-month Source: MRI 1996; EPA 2001; EPA 2006

The emission factor for new road construction is based on the worst-case conditions emission factor from the MRI 1996 study described above (0.42 tons PM10/acre-month). It is assumed that road construction involves extensive earthmoving and heavy construction vehicle travel resulting in emissions that are higher than other general construction projects. The 0.42 ton PM10/acre-month emission factor for road construction is referenced in recent procedures documents for the EPA National Emission Inventory (EPA 2001; EPA 2006).

PM2.5 Multiplier

0.10

PM2.5 emissions are estimated by applying a particle size multiplier of 0.10 to PM10 emissions. This methodology is consistent with the procedures documents for the National Emission Inventory (EPA 2006).

Control Efficiency for PM10 and PM2.5

0.50

The EPA National Emission Inventory documentation recommends a control efficiency of 50% for PM10 and PM2.5 in PM nonattainment areas. Wetting controls will be applied during project construction (EPA 2006).

References:

EPA 2001. *Procedures Document for National Emissions Inventory, Criteria Air Pollutants, 1985-1999*. EPA-454/R-01-006. Office of Air Quality Planning and Standards, United States Environmental Protection Agency. March 2001.

EPA 2006. *Documentation for the Final 2002 Nonpoint Sector (Feb 06 version) National Emission Inventory for Criteria and Hazardous Air Pollutants*. Prepared for: Emissions Inventory and Analysis Group (C339-02) Air Quality Assessment Division Office of Air Quality Planning and Standards, United States Environmental Protection Agency. July 2006.

MRI 1996. *Improvement of Specific Emission Factors (BACM Project No. 1)*. Midwest Research Institute (MRI). Prepared for the California South Coast Air Quality Management District, March 29, 1996.

CALCULATION SHEET-SUMMARY OF EMISSIONS

Alternative 1 Construction Emissions for Criteria Pollutants (tons per year)									
Emission Source	VOC	CO	NOx	PM-10	PM-2.5	SO2	CO2	CO2 Equivalents	Total CO2
Combustible Emissions	0.17	0.67	0.81	0.12	0.12	0.10	75.92	257.12	333.04
Construction Site-Fugitive PM-10	NA	NA	NA	3.04	0.30	NA	NA	NA	NA
Construction Workers Commuter & Trucking	0.37	3.45	0.68	0.01	0.01	NA	104.73	219.72	324.46
Total emissions-CONSTRUCTION	0.54	4.12	1.49	3.17	0.43	0.10	181	477	658
De minimis Threshold (1)	100	100	100	100	100	100	NA	NA	27,557

1. Pima County is in non-attainment for PM-10

Carbon Equivalents	Conversion Factor
N2O or NOx	311
Methane or VOCs	25

Source: EPA 2010 Reference, Tables and Conversions, Inventory of U.S. Greenhouse Gas Emissions and Sinks;
<http://www.epa.gov/climatechange/emissions/usinventoryreport.html>