

**United States Department of the Interior
U.S. Fish and Wildlife Service
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021
Telephone: (602) 242-0210 FAX: (602) 242-2513**

AESO/SE
02-21-95-F-0479

July 24, 2003

Mr. Robert E. Hollis, Division Administrator
Federal Highway Administration, Arizona Division
One Arizona Center, Suite 410
400 East Van Buren Street
Phoenix, Arizona 85004

Dear Mr. Hollis:

Thank you for your October 2, 2002, letter and biological evaluation (BE) regarding effects from the proposed express highway route, called the Area Service Highway (ASH), located between the proposed International Port of Entry (POE) site east of San Luis and Interstate 8 (I-8) in Yuma County, Arizona. Your letter requested formal consultation on the threatened Peirson's milkvetch (*Astragalus magdalenae* var. *peirsonii*), pursuant to section 7 of the Endangered Species Act (16 U.S.C. 1531-1544), as amended (Act). Your initial request for formal consultation was dated October 2, 2002; completed information was dated November 8, 2002, and a final fence construction description was dated April 3, 2003. You also requested conferencing on the proposed threatened mountain plover (*Charadrius montanus*) and the proposed threatened flat-tailed horned lizard (*Phrynosoma mcallii*) (FTHL), as per the provisions at 50 CFR 402.14, and requested our concurrence that the action may affect, but is not likely to adversely affect, the endangered Sonoran pronghorn (*Antilocapra americana sonoriensis*). We concur with the latter determination; the rationale for our concurrence is found in Appendix A.

In a December 26, 2001, Federal Register notice, we reinstated the 1993 proposed rule to list the FTHL as threatened; however, on January 3, 2003, we withdrew the proposed rule. We determined that listing was not warranted because threats to the species as identified in the proposed rule were not as significant as earlier believed and current available data did not indicate the threats to the species and its habitat were likely to endanger the species throughout all or a significant portion of its range in the foreseeable future. As a result, conferencing is not required for this species; however, the FTHL is protected by a multi-agency Flat-tailed Horned

Lizard Conservation Agreement and Strategy. You will need to discuss FTHL mitigation and compensation required under the rangewide management strategy with the land management agencies who are signatories on the conservation agreement or that permit portions of your project.

This final biological and conference opinion is based on information provided in your October 2, 2002, BE; your November 8, 2002, letter that included additional information, maps and drawings; the project proposal; telephone conversations between staff from our and your offices; field investigations; and other sources of information. Literature cited in this biological and conference opinion is not a complete bibliography of all literature available on the species of concern, the general activity of road-building and its effects, or on other subjects considered in this opinion. A complete administrative record of this consultation is on file at this office.

CONSULTATION HISTORY

- October 31, 2002: We received your October 2, 2002, biological evaluation.
- November 8, 2002: We received additional maps and information.
- January 27, 2003: We sent a letter to you noting the change in status of the FTHL and acknowledging receipt of additional information for us to proceed.
- April 3, 2003: We received the finalized rendition of fence construction to protect FTHL from the effects of the ASH.
- April 4, 2003: Staff from AESO, United States Navy (USN), URS Corporation (URSC), and the Marine Corps Air Station (MCAS)-Yuma, conducted a site visit to search for Peirson's milkvetch in suitable habitat in the largest dunes located a little over half a mile north of the Boundary Hills in the action area. AESO staff wrote and filed a brief report noting the locations searched and the lack of detection of the species at that time and place.
- May 30, 2003: A Draft BO was electronically transmitted to you for your review.
- July 22, 2003: An electronic transmittal from your office (Steve Thomas) confirmed your final review and acceptance of the Draft BO and request that it be finalized as written.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

Unless otherwise noted, the project description comes from the BE. The proposed ASH will be constructed from the International Boundary at Avenue E, north to Juan Sanchez Boulevard

(formerly County 23rd Street), east to the Barry M. Goldwater Range (BMGR), then northward to the I-8 and Araby Road traffic interchange (I-8 milepost [MP] 10.5), for a total distance of about 23 miles. The project area is divided into three segments. Segment 1 includes the area between the International Boundary and the BMGR, Segment 2 is located within the limits of the BMGR, and Segment 3 runs from County 14th Street to I-8 (Figure 1 in the BE). Table 1 in the BE illustrates the legal descriptions of the proposed ASH alignment.

Segment 1 land can be described primarily as a mix of desert scrub and lands used for agricultural purposes with associated outbuildings, the existing paved Juan Sanchez Boulevard, and a hard-packed unpaved segment of Avenue E stretching between Juan Sanchez Boulevard and the International Boundary. A dirt-surfaced two-track road within this segment stretches east from Avenue B to about the boundary of the BMGR.

Segment 2 land is located entirely on the BMGR and is characterized as mostly open, generally flat desert with some locations of partially stabilized, low dune-like formations. The dunes appear to be the westernmost portion of a partially stabilized, low dune system traversing the project area from west to east and eventually turning in a southeast direction paralleling the project area and stretching toward the International Boundary. Soils and plant associations are monotypic and common to this locality. Vegetation includes creosote (*Larrea tridentata*), white bursage (*Ambrosia dumosa*), and big galleta (*Hilaria rigida*). Soils can be described as a relatively deep, fine sandy substrate. The area is devoid of larger tree or cacti species.

Segment 3 land stretches from the northern boundary of the BMGR at County 14th to beyond Business Route 8 at the I-8 and Araby Road traffic interchange. This segment contains vegetation and soil characteristics similar to those of Segment 2, in addition to agricultural fields and commercial and residential developments.

The ASH will be a controlled access highway from Avenue E to Business Route 8. The proposed project does not include access from nearby lands from Business Route 8 to I-8, either short or long-term, nor does it include direct access to ASH from adjacent properties along the remaining segments of the proposed roadway, with the following exceptions. A (gated) driveway, accessible to authorized personnel for an existing weather station, will be constructed. Existing access to the Yuma State Medium Security Prison and the future City of Yuma landfill will be maintained during construction, and new access roads to these facilities will be installed in the initial construction of the ASH. Existing prison access on Avenue B is not affected. The eastern part of the prison will be accessed by a new road from Avenue B on the south side of the ASH. The southern half of the City of Yuma's landfill will be accessed by an extension of this road. When the City of Yuma begins operations on the northern half of the landfill, a new access road on the north side of the ASH will be developed to access that portion.

A new overpass will be constructed at County 19th Street during initial construction to allow MCAS-Yuma vehicles access to their official rifle range. Fencing will be constructed along the ASH right-of-way line. Gates will be installed to allow egress and ingress for the U.S. Border

Patrol and the MCAS (construction details for appropriate fencing for minimal damage to FTHL are included in our file record in Phoenix). Specific details and gate locations are yet to be evaluated and agreed to by the affected parties; they will be finalized during the final design of the project.

Equipment staging; hazardous materials storage, handling, and disposal; emergency safety and fire plans; clean up operations; and other actions are fully addressed in the Arizona Department of Transportation (ADOT) Standard Specifications Handbook. Subsections (such as for Road and Bridge Construction, Other - Pollutants Controls, and Prevention of Landscape Defacement; Protection of Streams, Lakes and Reservoirs), will be strictly followed on this project. Your May 13, 2003, response to our April 23, 2003, questions clarified that the materials source pit for this project has not yet been identified. An approved environmental analysis is required by ADOT specifications for material sources prior to use, and a proposed source pit that would potentially affect listed species would not be approved by ADOT.

Conservation measures for Peirson's milkvetch

ADOT will coordinate with the BLM-Yuma office in December or January, annually, until the year of ground-breaking disturbance or until species surveys are completed to best determine the likelihood of the Peirson's milkvetch appearing that year. Should the BLM determine the plant may appear, ADOT (in that year) will ensure that species surveys are conducted in areas of potentially occupied suitable habitat. If the species is found, ADOT will coordinate with us to collect seeds and/or transplant plants prior to construction.

STATUS OF THE SPECIES

Biological opinion species: Peirson's milkvetch (*Astragalus magdalenae* var. *peirsonii*)

Peirson's milkvetch is a stout, erect, short-lived perennial that can grow up to 27 inches in height. Leaves are two to six inches long with three to 17 small, oblong, widely spaced leaflets. Leaves and stems are covered by fine silky hairs that give the plant a grayish-green appearance. The flowers are purple and arranged in racemes of eight to 17. The pods are 0.8 to 1.4 inch long, inflated, and with a triangular beak. The seeds are the largest (0.2 inch) of any North American *Astragalus* (Barneby 1964, Munz 1974, Felger 2000). Peirson's milkvetch was listed as a threatened species, without critical habitat, on October 6, 1998 (U.S. Fish and Wildlife Service 1998).

Peirson's milkvetch is a dune endemic that has been reported from the slopes and hollows of sand dunes in the Borrego Valley and Algodones Dunes in southeastern California (Barneby 1964, Munz 1974), and the Gran Desierto of northwestern Sonora (Felger 2000). The plant has not been found in the Borrego Valley for many years, and portions of the habitat there have been converted to a landfill (U.S. Fish and Wildlife Service 1998b). The species is known to be extant

at the Algodones Dunes, and was widespread in that dune system in 1977 (WESTEC 1977) and abundant in 2001 (Jim Rorabaugh, FWS, pers. comm. 2003).

In the Gran Desierto, Felger (2000) reports that the species occurs from dunes south of Sierra Blanca westward to at least the vicinity of the Sierra del Rosario. In May 2001, J. Rorabaugh (pers. comm. 2001) observed this species growing in the swales of low dunes just west of Cerro Luna, southeast of Pozo Nuevo; however, the species was not found in dunes south of the Sierra Blanca or near the Sierra del Rosario.

The species has not yet been confirmed from Arizona. Two *Astragalus magdalena* specimens were collected on the BMGR about two miles northwest of the Yuma Dunes (D. Turner, University of Arizona, pers. comm. 2000). The specimens were collected April 12, 1996, from a partially stabilized, low dune where they occurred with *Baileya pauciradiata*, *Oenothera deltoidea*, *Schismus arabicus*, *Abronia villosa*, and *Hesperocallis undulata*. The specimens were deposited in the herbarium at University of Arizona and subsequently identified by Richard Felger as Peirson's milkvetch. In a reevaluation of those specimens, Felger subsequently identified them as *A. m. magdalena*. Recently, he again reidentified them as *Astragalus lentiginosus borreganus*. Felger (2000) reports *A. m. magdalena* from near the head of the Gulf of California in "extreme southwestern Arizona", a variety that could easily be confused with Peirson's milkvetch. Felger (2000) notes that leaflets are widest at the middle in var. *magdalena*, versus the leaflets being widest above the middle in *peirsonii*. Felger (2000) also describes var. *magdalena* as being a coastal dune species, whereas var. *peirsonii* is a species of inland dunes.

The Yuma Dunes were visited by staff from AESO, USN, URSC, and MCAS-Yuma, on April 4, 2003. Peirson's milkvetch was not found, but conditions in 2003 were marginal for growth of the species (Jim Rorabaugh, pers. comm., 2003). Staff from AESO had visited the Yuma Dunes in February 2001 and again in March 2001 without finding Peirson's milkvetch. In April 2001, AESO and BLM-Yuma staff visited Turner's "*Astragalus magdalena*" collection site; the species was not observed during any of these visits. During extensive surveys for flat-tailed horned lizards in the Yuma Desert in 1985 (Rorabaugh *et al.* 1987), Peirson's milkvetch was not found, despite favorable growing conditions (J. Rorabaugh, pers. comm. 2001). However, Rorabaugh *et al.* (1987) did not visit the largest dunes in the area, where Peirson's milkvetch is most likely to occur. Warren and Laurenzi (1987) did not find Peirson's milkvetch in the Yuma Desert during their work. The highest quality habitat for this plant is likely in the largely unstable dunes within a few miles north of the Boundary Hills, which are located on the International Boundary at Monument 198. The occurrence of Peirson's milkvetch in dunes to the south in the Gran Desierto and to the west in California suggest it is likely to occur in suitable habitat in Arizona. The species is only apparent in years with sufficient winter precipitation. Failure to find the plant during recent surveys may reflect lack of suitable conditions rather than absence of the species.

The final rule listing the species stated that the primary threat to the plant and its habitat is off-highway vehicle (OHV) use and recreational development associated with it. About 75 percent of the Algodones Dunes were open (until recently) to OHV use. Between 75 to 80 percent of all known colonies of Peirson's milkvetch in California occur within this area that was open to OHV use. In 1977, no seedlings of Peirson's milkvetch or any other sensitive dune plant species were found in areas of heavy OHV use (WESTEC 1977). Areas of intense OHV use are almost devoid of plant cover (Luckenbach and Bury 1983). In 1990, colonies of Peirson's milkvetch could not be found in areas of heavy OHV use, and in areas of moderate OHV use, colonies had lower reproductive success and poorer health than comparable populations located in areas closed to OHV use (U.S. Fish and Wildlife Service 1998). The Northern Algodones Dunes Wilderness was designated in 1994, and includes 32,240 acres, or about 25 percent, of the dune system. OHVs are prohibited in this area. As a result of a court settlement, BLM closed another 48,000 acres of the dunes to vehicular use, pending consultation with the U. S. Fish and Wildlife Service's Ecological Services Field Office in Carlsbad, California.

In the Yuma Desert in Arizona, the public is prohibited from entering that portion of the BMGR that includes the Yuma Dunes and other suitable plant habitat on the range. Military activities are largely limited to existing routes; however, the Border Patrol routinely drives off-road through this area which has resulted in unofficial route proliferation in the Yuma Desert. Off-road vehicle use by smugglers and illegal entrants continues to be a growing, additional problem. Visits to the Yuma Dunes and the "*Astragalus magdalena*" collection site in February and April 2001 revealed evidence of OHV activity in both areas, but it appears to not yet be occurring at levels approaching those observed in the Algodones Dunes. In addition, few OHV tracks were apparent in the Yuma Dunes during survey work in April 2003 (J. Rorabaugh, pers. comm. 2001). Another potential threat to Peirson's milkvetch in the Yuma Desert is invasion of non-native plants, particularly Sahara mustard (*Brassica tournefortii*), but also Russian thistle (*Salsola tragus*) and Mediterranean grass (*Schismus arabicus* and *S. barbatus*). These exotics may compete with Peirson's milkvetch, or may become dense enough in some years to carry fire, which is detrimental to Peirson's milkvetch.

Conference opinion species: Mountain plover (*Chadarius montanus*)

The mountain plover is a medium-sized bird standing about seven inches tall. It is light brown above with a lighter colored breast, but lacks the contrasting dark breastbelt common to many other plovers. Nondescript grayish brown in winter, its breeding plumage shows a white forehead and a white line over the eye, contrasting with a dark crown and the black line that runs from the base of the beak to the eye (Peterson 1990, U.S. Fish and Wildlife Service 1999).

Mountain plovers are insectivores, feeding primarily on grasshoppers, crickets, and ants (U.S. Fish and Wildlife Service 1999). They are associated with short-grass habitats and semi-arid plains, grasslands, and plateaus throughout most of their range, including areas of intense grazing pressure and cropped agricultural fields. Mountain plovers occur throughout the central plains and Rocky Mountains extending north into Alberta, Canada and south into the southwestern U.S.

and northwestern Mexico. The mountain plover is one of only nine bird species endemic to the North American grasslands (Knopf 1996).

Mountain plover breeding habitat is known to include short-grass prairie (vegetation less than 4 inches tall) and shrub-steppe landscapes, dryland, cultivated farms, and prairie dog towns. Short vegetation, bare ground, and a flat topography are recognized as habitat-defining characteristics at both breeding and wintering locales. Breeding occurs in the Western Great Plains and Colorado plateau between about 4,000 feet to 7,200 feet in elevation. Plovers usually nest on sites where vegetation is sparse or absent due to disturbance by herbivores, including domestic livestock and prairie dogs. Mountain plovers are rarely found near water. They may be found on heavily grazed pastures throughout their breeding range and may selectively nest in or near prairie dog towns. Wintering mountain plovers generally arrive in Arizona in November and begin leaving for breeding areas by mid-March, and may make a nonstop migration to breeding grounds. Although cultivated lands are used by wintering mountain plovers and are more abundant than non-cultivated lands, mountain plovers appear to prefer alkali flats, burned grasslands, and livestock-grazed annual grasslands over cultivated sites. Mountain plover wintering habitat elevations are variable but generally occur in valley bottoms below 1,000 feet.

We proposed the mountain plover for listing as threatened without critical habitat on February 16, 1999 (U.S. Fish and Wildlife Service 1999). Mountain plover habitat is threatened by the conversion of grasslands to agricultural crops and urban development, domestic livestock management, other land uses (that control or eliminate prairie dogs, grasshoppers, and other insects, including pesticides), and oil, gas, and mineral development throughout mountain plover breeding and wintering ranges.

ENVIRONMENTAL BASELINE

The environmental baseline includes past and present impacts of all Federal, Tribal, State, or private actions in the action area; the anticipated impacts of all proposed Federal actions in the action area that have undergone formal or early section 7 consultation; and the impact of State and private actions that are contemporaneous with the consultation process. The environmental baseline defines the current status of the species and its habitat in the action area to provide a platform from which to assess the effects of the action now under consultation.

The action area includes those areas affected directly or indirectly by the ASH project, and not only the immediate area involved in the description of the ASH project. This includes the ASH right-of-way and adjacent State and privately owned lands that are aligned with the ASH and access roads, fences, and associated constructions.

Environmental baseline for Peirson's milkvetch

Habitat in the action area is similar enough to occupied habitat in California and Sonora that Peirson's milkvetch could exist undetected. Surveys for this species have been informal,

intermittent, and cursory, and this, added to the last several years of drought during which most surveys for the species have occurred, may explain the lack of records or specimens in the action area. The specimen of *Astragalus lentiginosus borreganus*, originally thought to be Peirson's milkvetch, was collected about 5.5 miles ESE of the proposed ASH on the BMGR.

The project area is located within the Yuma Desert and the creosote-white bursage series of the Lower Colorado River Valley subdivision of the Sonoran Desert scrub Biotic Community (Brown 1994) at an elevation of about 166 feet. In this series, creosote and white bursage are often co-dominants, with galleta grass (*Hilaria rigida*), dalea (*Psoralea emoryi*), coldenia (*Tequilia plicata*), and other locally-abundant species. Distinctive floras are also found in dunes in the area, particularly in the Yuma Dunes west of the Tinajas Altas Mountains. Species such as dune buckwheat (*Eriogonum deserticola*), mormon tea (*Ephedra trifurca*), bugseed (*Dicoria canescens*), dune spurge (*Euphorbia platysperma*), possibly Peirson's milkvetch (*Astragalus magdalenae peirsonii*), and wire lettuce (*Stephanomeria schotti*) are found in these dune habitats. These species are dune specialists typical of the Gran Desierto dunes in northwestern Sonora (Felger 2000). The Colorado River is located approximately six to 10 miles to the west. The "A" Canal is the only permanent water source that exists within the project area. Other agriculturally related water channels exist, but typically contain water only when adjacent fields are being irrigated.

Climate is characterized by extreme aridity, mild winters, and hot summers. Approximately 2.7 inches of precipitation fall annually at Yuma, with slightly more than half of this occurring in the winter months (Tumer and Brown 1982). Annual precipitation increases from west to east across the BMGR. Infrequent chubascos (tropical storms) bring heavy rains in September or October that can produce spectacular growth on warm-season perennial plants (Felger 2000).

Segment 2 contains the westernmost portion of a partially stabilized, low dune system. This dune system traverses the project area from west to east and eventually turns in a southeasterly direction paralleling the project area, crossing County 19th Street about one mile east of the proposed ASH alignment and stretches towards the International Boundary. The dunes in this area have been heavily impacted by sand and gravel mining, OHVs, trash dumping, target practice, and other activities. If Peirson's milkvetch occurs or did occur in this area, it has likely been adversely affected by these activities. The portion of dune ridge or system that extends into the action area is relatively small, probably less than five percent of total dune habitat from the International Boundary to County 19th Street. About 30 acres of this dune system are located within the action area, with seven acres of this total being previously disturbed.

Within the action area, Peirson's milkvetch is likely to occur in dunes and low, partially-stabilized dunes in the Yuma Desert. Where dunes are larger and less stabilized, higher quality habitat for Peirson's milkvetch may exist, but the species has not been found there to date. The species is only apparent in winters and springs when precipitation has been sufficient to support germination and growth. It seems unlikely that Peirson's milkvetch is common in the Yuma Desert, otherwise it would have been recorded by others working in the area (Warren and

Laurenzi 1989, Rorabaugh, *et al.* 1987, K. Reichhardt, pers. comm. 2001), but it could occur undetected. The only other likely habitat in Arizona is at Pinta Sands at Cabeza Prieta National Wildlife Refuge (NWR), but the species has not been reported from there (Felger 1997).

The plant and most of its habitat or potential habitats in Arizona have been largely protected from human activities due to restrictions on public access on the BMGR, the remoteness and difficulty of accessing dune habitats on the BMGR and at Cabeza Prieta NWR, and the focusing of military activities outside of areas likely to be inhabited by Peirson's milkvetch. Off-road vehicle activities by Border Patrol, illegal entrants, and drug smugglers are probably the primary human-caused effects on the species in Arizona. Surface disturbance in the FTHL management area, which lies adjacent to portions of the ASH right-of-way, was 2.86 percent to 3.36 percent in 2002. Most surface disturbance was attributable to off-road vehicle tracks (Rorabaugh *et al.* 2002). Other area impacts include effects from military and recreational uses, illegal immigrants, drug smugglers, mining, shooting, and trash dumping.

Use of the lands adjacent to the project area includes commercial, correctional (a prison facility), waste treatment (a saline sludge disposal facility), residential, and agricultural. Ownership and/or jurisdiction of lands within and adjacent to the project area includes lands administered by the U.S. Bureau of Land Management (BLM), U.S. Bureau of Reclamation (BOR), U.S. Department of Defense (DOD), Arizona State Land Department (ASLD), and parcels of land that are privately owned (refer to Figure 3 in the BE).

Environmental baseline for mountain plover

The project and the action areas as described above are the same for the mountain plover. Segments 1 and 3 of the proposed project contain or traverse nearby agricultural fields. These fields, depending on time of year and other economic influences, support various crops including lettuce, alfalfa, and citrus. Southern Arizona is known to support wintering and migrating mountain plovers, and these fields provide opportunities for wintering and migrating mountain plovers to forage for insects, especially grasshoppers. Although potential nesting sites occur within the action area, mountain plovers are not known to breed in Yuma County (Henry Detwiler, Southwest Birders, pers. comm. 2003).

Formal surveys for mountain plover are not known to have been conducted within or near the project area; however, Detwiler (pers. comm. 2003) reports that in some years mountain plovers are "uncommon" during winter months in agricultural fields south of Yuma; while in other years none are observed. Detwiler has observed small groups of mountain plovers in Yuma; 12 were seen in a newly planted alfalfa field. Detwiler has reports from other reputable birding enthusiasts who had observed a flock of about 50 mountain plovers in agricultural fields south of Yuma (Henry Detwiler, pers. comm. 2003). A larger wintering population of mountain plovers occurs to the west in the Imperial Valley of California, where in 2003 a population of about 3,000 resided (Henry Detwiler, pers. comm. 2003).

Human activities in mountain plover wintering habitat (agricultural lands) include pesticide use, plowing, creation of canals and irrigation ditches, crop rotation, buildings, vehicles, and associated roadways. Two additional road projects (repaving of Juan Sanchez Boulevard from Avenues E ½ to B by ADOT and construction of the commercial POE), are in the planning stages within or near the western terminus of the proposed ASH alignment. The repaving of Juan Sanchez Boulevard would result in temporary disturbance to about five acres of mountain plover habitat resulting from shoulder buildup and construction equipment staging; but this segment is planned for repaving whether or not the ASH is constructed and, depending on funding source, could require separate consultation. Details of approximate size and acres of disturbance from constructing the new commercial POE were not available during this analysis.

EFFECTS OF THE ACTION

Effects of the action refer to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated and interdependent with that action, that will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur.

Effects of the action to Peirson's Milkvetch

ADOT will coordinate with the BLM-Yuma office annually, in December or January, until the year of ground-breaking disturbance or until species surveys are completed to best determine the likelihood of the plants appearing that year. Should the BLM determine that the plants may appear that year, ADOT will ensure that species surveys are completed in areas of suitable habitat. If the species is found, ADOT will coordinate with us to collect seeds and/or transplant plants prior to construction (Logan Simpson Design Inc. 2002).

The only possible suitable habitat for Peirson's milkvetch occurs in Segment 2. The project will require permanent acquisition of about 97 acres within Segment 2. About 160 acres will be temporarily disturbed. About 30 acres of dune area and suitable habitat for Peirson's milkvetch will be permanently lost.

The proposed project will result in the routing of large volumes of traffic through this segment. Traffic currently occurs occasionally along a dirt-surfaced two-track road that parallels the boundary to the BMGR (Avenue 4E). Because the ASH would be a controlled access roadway within a fenced right-of-way, the project is not expected to initially increase human access or access-associated impacts to Peirson's milkvetch habitat on adjacent desert lands. However, its presence could stimulate future growth on nearby State and private lands by increasing their commercial value. As these lands become more valuable for development, growth in the demand for additional roadways, including on- and off-ramps from the ASH will occur as the public

needs to access homes, businesses, and other services built along the highway. Thus, in the future the ASH could facilitate access to Peirson's milkvetch habitat adjacent to the ASH. Federal lands are owned and managed for specific purposes, which do not include commercial or residential development. As a result, growth-inducing development (commercial and residential) is not anticipated to occur on Federal lands as a result of the project.

Non-Federal lands adjacent to the ASH are owned by State and private parties. It is currently unknown what plans exist for State and privately owned lands along the ASH. The presence of the ASH is likely to stimulate future growth on nearby State and private lands by increasing their commercial value, which in turn will increase the demand for access from the ASH. In this way, the ASH could have indirect effects on remaining dune habitats of Peirson's milkvetch on the State and private lands adjacent to Segment 2 (which contains potentially suitable habitat). This would include remaining portions of the dune habitats west of the BMGR and adjacent lands. As described in the Environmental Baseline, the dune habitats west of the BMGR are probably less than 5 percent of potential Peirson's milkvetch habitat in Arizona. Growth inducing effects are contingent on future development of access off the ASH.

Effects of the action to Mountain Plover

About 18 acres of farmland used by wintering mountain plovers will be permanently lost as a result of the ASH and associated actions. The ASH is also expected to have indirect, growth-inducing effects in adjacent State and private lands (see above Effects of the action to Peirson's milkvetch). Agricultural lands adjacent to the ASH route that are now wintering habitat for the plover are more likely to be developed in the future, or may be developed sooner, as a result of the presence of the ASH. Because many thousands of acres of farmland exist in the Yuma area, acres of available farmland habitat is not considered a limiting factor for wintering mountain plovers in this area. A large number of acres of remaining farmland within the Yuma area and adjacent communities such as Winterhaven, Bard, Dome Valley, and the Wellton-Mohawk Valley continue to support thriving businesses. Thus, loss of habitat due to the ASH is not expected to reduce or threaten populations of mountain plovers in the greater Yuma area.

The ASH will also route high-speed vehicles, including large trucks, through the action area, adding to existing average daily traffic volumes. This has the potential to result in mortality of birds attempting to fly across this segment of the proposed ASH. Road kill is a significant issue for vertebrate populations overall, and can be especially so for certain populations, including birds.

Drivers using local roads such as Highway 95, Avenue 3E, and Avenue B are expected to shift their traffic use to the ASH, reducing traffic volumes on local roads which pass through agricultural lands that could be used by wintering mountain plovers. Because the alternate roads traverse more agricultural lands than the ASH will, incidents of road-killed mountain plover could possibly decline, although mortality locations could change.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Cumulative effects to Peirson's milkvetch and to mountain plover

Continued growth and development of Yuma and San Luis, Arizona, and San Luis Rio Colorado, Sonora appears steady. Agricultural development continues on the Yuma Mesa in the vicinity of the proposed ASH. Increased human presence and access is reasonably certain to result in increased use and disturbance of the dune habitat of the Peirson's milkvetch, at least west of the BMGR. Increased tourism (especially in the recreational uses of winter visitors) and commercial and business ventures will result in increased housing, business, and infrastructure (national and international). Traffic (especially larger trucks and more of them) will increase on the ASH as well as on other Yuma-area highways, as a result of the increasing population growth. Greater development will result in more conversion of both species' habitat into other land uses that are not compatible with these species' needs. An exception could be increases in agricultural development, which could benefit the mountain plover, but could also be a detriment due to the pesticides used in agriculture. This is difficult to quantify because agricultural lands are converted to residential and commercial development at the same time. The borderlands in the Yuma area continue to support heavy illegal traffic by smugglers and undocumented immigrants crossing the border from Mexico. Such activities result in noise, off-road vehicle activity, trash, abandoned vehicles, and other wildlife and habitat disturbances.

Lands adjacent to the project area include State and private lands; these lands will likely be developed for residential, agricultural or industrial purposes in the future. Some activities on State and private lands may require Federal permits (such as Clean Water Act Section 404 permits) and thus would be subject to Section 7 consultation. The Act's Section 10(a)(1)(B) permit process can be used to address activities that may involve a "take" of listed species where there are no Federal lands, funds, or permits involved.

CONCLUSION

Conclusion for Peirson's milkvetch

After reviewing the current status of Peirson's milkvetch, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is our biological opinion that the ASH project, as proposed, is not likely to jeopardize the continued existence of the Peirson's milkvetch. We base this conclusion on the following:

1. Peirson's milkvetch is not known from the action area, although it could exist undetected until adequate moisture allows germination and growth, and timely surveys are conducted at those times.
2. The direct and indirect effects of the action would only affect about five percent of potential Peirson's milkvetch habitat in Arizona, which in turn is only a very small portion of the total milk-vetch habitat.

3. ADOT will coordinate with the BLM-Yuma office in December or January, annually, until the year of ground-breaking disturbance or until species surveys are completed to best determine the likelihood of the plants appearing that year. Should the BLM determine the plant may appear, ADOT (in that year) will ensure that species surveys are conducted in areas of potentially occupied suitable habitat. If the species is found, ADOT will coordinate with us to collect seeds and/or transplant plants prior to construction.

Our conclusions for this biological opinion are based on full implementation of the project as described in the Description of the Proposed Action section of this document, including any conservation measures incorporated into the project design.

Conclusion for mountain plover

After reviewing the current status of the mountain plover, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is our conference opinion that the ASH project, as proposed, is not likely to jeopardize the continued existence of the mountain plover. We base this conclusion on the following:

1. The majority of wintering mountain plover habitat and the number of wintering mountain plovers occurs well outside the action area.
2. The project, as proposed, will eliminate a very small portion of available and used wintering mountain plover habitat in the Yuma area. Existing acres of wintering mountain plover habitat are not thought to be a limiting factor for the species in the Yuma area.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulations pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is further defined (50 CFR 17.3) to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. "Harass" is defined (50 CFR 17.3) as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. "Incidental take" is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

Incidental Take of Peirson's milkvetch

Sections 7(b)(4) and 7(o)(2) of the Act generally do not apply to listed plant species; however, limited protection of listed plants is provided to the extent that the Act prohibits the removal and reduction to possession of federally listed endangered plants from areas under Federal jurisdiction, or for any act that would remove, cut, dig up, damage, or destroy any such species on any other area in knowing violation of any regulation of any State or in the course of any violation of a State criminal trespass law.

Incidental Take of Mountain Plover

AMOUNT OR EXTENT OF TAKE

We anticipate direct take of mountain plover by mortality through bird-vehicle collisions. Such take is difficult to quantify due to the difficulty in obtaining numbers (see Effects of the action to Mountain Plover, above), but we believe it is reasonably certain to occur. Because there appear to be so few mountain plovers reported in the action area, they are present in the action area only during their wintering season, and they do not arrive every year, we anticipate incidental take of one bird per year for the life of the highway.

EFFECT OF THE TAKE

In this biological opinion, the Service finds the anticipated level of take is not likely to jeopardize the continued existence of the mountain plover.

MIGRATORY BIRD TREATY ACT

To the extent that this statement concludes that take of any threatened or endangered species of migratory bird will result from the agency action for which consultation is being made, we will not refer the incidental take of any migratory bird for prosecution under the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. 703-712), if such take is in compliance with the terms and conditions (including amount and/or number) specified herein.

REASONABLE AND PRUDENT MEASURES AND TERMS AND CONDITIONS

Reasonable and prudent measures and terms and conditions for mountain plover

The prohibitions against taking mountain plover found in section 9 of the ESA do not apply until the species is listed. We recommend that you implement the following reasonable and prudent measures and terms and conditions. If this conference opinion is adopted as a biological opinion following a listing or designation, these measures, with their implementing terms and conditions, will be nondiscretionary.

1. You shall monitor and document road-killed mountain plover(s), or any sick, injured, or dead mountain plover(s) found in the project area.
 - 1.1 You shall educate employees, contractors, and crew, to recognize mountain plover(s) and their habitat.
 - 1.2 You shall emphasize to employees, contractors, and crew, that they drive the posted speed limit(s) or lower, as situations warrant, to further reduce the low frequency of bird-vehicle collisions.
 - 1.3 You shall educate employees, contractors, and crew, to immediately report to you any mountain plover(s) seen, and, if possible, the date, time, and location of mountain plover(s) (especially road-killed) in the project area, and to report such information for you to track on an annual basis.
 - 1.4 You shall send us a brief annual report of mortality or any other knowledge or incidence of mountain plover(s) in your project area. This brief summary is due to our Tucson suboffice (110 South Church Street, Suite 3450, Tucson, Arizona, 85701), by March 1, annually, for the life of the highway.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

Conservation recommendations for Peirson's milkvetch and mountain plover

We recommend that you:

1. Actively participate in the recovery and the recovery planning for these species.
2. Fund, aid, or establish research and study proposals to develop demographic and habitat information for these species.

In order for us to be informed of actions minimizing or avoiding adverse effects or benefitting listed or proposed species or their habitats, we request notification of the implementation of any conservation recommendations.

REINITIATION NOTICE

Reinitiation for formal consultation

This concludes formal consultation for Peirson's milkvetch in regard to the ASH project, per your request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Reinitiation for conference

This concludes the conference for mountain plover in regard to the ASH project, per your request. You may ask us to confirm the conference opinion as a biological opinion issued through formal consultation if the proposed species is listed. Your request must be in writing. If we review the proposed action and find there have been no significant changes in the action as planned or in the information used during the conference, we will confirm the conference opinion as the biological opinion for the project and no further section 7 consultation will be necessary.

After listing as threatened or endangered and any subsequent adoption of this conference opinion, you shall request reinitiation of consultation if: 1) the amount or extent of incidental take is exceeded; 2) new information reveals effects of your action that may affect the species in a manner or to an extent not considered in the conference opinion; 3) your action is subsequently modified in a manner that causes an effect to the species that was not considered in this opinion; or, 4) a new species is listed or critical habitat designated that may be affected by the action.

The incidental take statement provided in this conference opinion for mountain plover does not become effective until the species is listed and the conference opinion is adopted as the biological opinion issued through formal consultation. At that time, the project will be reviewed to determine whether any take of the proposed species has occurred. Modifications of the opinion and incidental take statement may be appropriate to reflect that take. No take of the proposed species may occur between the listing of the species and the adoption of the conference opinion through formal consultation, or the completion of a subsequent formal consultation.

We appreciate your efforts to identify and minimize effects to listed species from this project. For further information please contact Thetis Gamberg at (520) 670-4619 or Jim Rorabaugh at (602) 242-0210 (x238). Please refer to consultation number, 02-21-95-F-0479, in your future correspondence concerning this project.

Sincerely,

/s/ Steven L. Spangle
Field Supervisor

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (ARD-ES)
Assistant Field Supervisor, Fish and Wildlife Service, Tucson, AZ

Bill Knight, Arizona Department of Transportation, Tucson, AZ
John Kennedy, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ
Regional Supervisor, Arizona Game and Fish Department, Tucson, AZ

LITERATURE CITED

- Barneby, R.C. 1964. Atlas of North American *Astragalus*. Memoirs of the New York Botanical Garden 13:1-1188.
- Brown, D.E. 1994. (Ed.). Biotic communities of the American Southwest-United States and Mexico. University of Utah Press. Salt Lake City, UT.
- Felger, R.S. 1997. Checklist of the vascular plants of Cabeza Prieta National Wildlife Refuge, Arizona. Drylands Institute, Tucson, AZ.
- _____. 2000. Flora of the Gran Desierto and Rio Colorado of Northwestern Mexico. University of Arizona Press, Tucson, AZ.
- Knopf, F.L. 1996. Mountain plover (*Charadrius montanus*). In A. Poole and F. Gill (Eds.). The Birds of North America, No. 211. The Academy of Natural Sciences, Philadelphia, and The American Ornithologists' Union, Washington, DC.
- Logan Simpson Design Inc. 2002. Biological evaluation for area service highway. Project No. HPP-900-A(022). Prepared for Arizona Department of Transportation. Tempe, AZ.
- Luckenbach, R.A., and R.B. Bury. 1983. Effects of off-road vehicles on the biota of the Algodones Dunes, Imperial County, California. Journal of Applied Ecology 20:265-286.
- Munz, P.A. 1974. A Flora of Southern California. University of California Press, Berkeley, CA.
- Rorabaugh, J.C., C.L. Palermo, and S.C. Dunn. 1987. Distribution and relative abundance of the flat-tailed horned lizard (*Phrynosoma mcallii*) in Arizona. Southwestern Naturalist 32(1):103-109.
- Turner, R.M. and D.E. Brown. 1982. Sonoran desert scrub. In D.E. Brown, ed., Biotic communities of the American Southwest-United States and Mexico. Desert Plants 4(1-4):181-222.
- U.S. Fish and Wildlife Service. 1998. Endangered and threatened wildlife and plants; determination of endangered and threatened status for five desert milk-vetch taxa from California. Federal Register 63(193):53596-53615.
- _____. 1999. Endangered and threatened wildlife and plants: proposed rule to list the mountain plover as threatened. Federal Register 64(30):7587-7601.

Warren, P., and A. Laurenzi. 1987. Rare plant survey of the Yuma District. Report to the Bureau of Land Management, Yuma, AZ.

WESTEC. 1977. Survey of the sensitive plants of the Algodones Dunes. Report to the Bureau of Land Management, Riverside, California.

APPENDIX A

CONCURRENCE

Sonoran pronghorn (*Antilocapra americana sonoriensis*)

The Sonoran pronghorn was listed as endangered on March 11, 1967, without critical habitat. We finalized the revised recovery plan in December, 1998. Typical pronghorn habitat consists of broad valleys, which are usually open, flat, and are composed of grassland or shrub lands between mountain ranges within the Lower Colorado River Valley and Arizona Upland subdivisions of the Sonoran Desert Scrub Biotic Community (Turner and Brown 1982). These valleys often contain washes lined with tree species such as palo verde and mesquite that are typical to these two subdivisions. Within the flatter portions of the habitat, creosote and white bursage dominate the landscape. Bajadas are used in spring as fawning areas, while wash systems offer shelter (i.e., shade) from extreme summer temperatures. Pronghorn are also known to use sandy areas such as the Pinta Sands and Mohawk Dunes due to the seasonal abundance of annual vegetation. Because these annuals lose palatability as summer approaches (a result of natural curing of vegetation) and because these dune areas provide little shade, pronghorns will move to more mesic habitats (e.g., areas with trees, etc.) as summer progresses.

Pronghorn are known to consume a variety of browse, grass, forb, and cacti species. Pronghorn have been documented eating chain fruit cholla, bursage (spp.), mesquite, and mistletoe, but fruit from the chain fruit cholla appears to be of particular importance. It is believed these fruit supply a substantial portion of their water requirements during the drier times of the year (U.S. Fish and Wildlife Service 1998a).

Predation, drought, loss of habitat due to overgrazing, barriers (highways, four-strand, barbed wire fences, canals, and agricultural areas) to historical habitat, and human encroachment appear to be the greatest reasons for population decline of the Sonoran pronghorn. Predators include coyote, bobcat, and, in areas with more rugged terrain and more dense vegetation nearby, mountain lion.

Three distinct subpopulations of pronghorns occur in the U.S. and Mexico. Within the U.S. portion of the Sonoran pronghorn's range, pronghorn interact to form one population in which interbreeding may occur. The U.S. population is effectively separated from populations in the Pinacate Region and on the Gulf Coast of Sonora by Mexico Highway 2 and the U.S./Mexico International Boundary fence.

AGFD aerial surveys estimated the U.S. Sonoran pronghorn population at 246 individuals in 1992, 184 in 1994, 216 in 1996, 172 in 1998, 99 in 2000, and 21 in 2002 (Logan Simpson Design Inc. 2002). As of March 2003, only one fawn had been detected; however, adult pronghorn appear to be in good condition and the winter rains have produced a good crop of ephemeral forage (J. Morgart, FWS, pers. comm. 2003). Although drought was likely the proximate cause of the dramatic decline of the U.S. subpopulation in 2002, anthropogenic factors likely have contributed to or exacerbated the effects of the drought. In Sonora in 2002, an

estimated 280 pronghorn remained, including 25 in the El Pinacate subpopulation and 311 in the subpopulation southeast of Mexico Highway 8. These represent roughly a 34 and 18 percent decline in these two populations, respectively (Bright *et al.* unpubl. data).

The proposed project occurs within the historical range of the Sonoran pronghorn, where vegetation communities are characterized by the creosote-bursage series of the Lower Colorado River Valley subdivision. The low dunes and/or sandy substrate environment, in portions of Segments 1, 2, and 3, produce seasonally variable, annual crops, but no tree species or defined wash systems that could be used as bedding areas were observed, and no chain fruit cholla were observed during various field and site visits. The nearest recent Sonoran pronghorn records are east of the Cabeza Prieta Mountains, approximately 65 to 70 miles east of the proposed ASH. Colonization of the Yuma Desert by Sonoran pronghorns is very unlikely, given existing barriers formed by the Gila and Tinajas Altas mountains, Mexico Highway 2, Interstate 8, and the International Boundary fence. The action area is considered unoccupied historical habitat and potential recovery habitat. Additional information about the environmental baseline can be found in the discussions for the mountain plover and Peirson's milkvetch in the biological and conference opinion.

The project will remove about 215.61 acres of historical Sonoran pronghorn habitat within the creosote-bursage series of the Lower Colorado River Valley subdivision. Sonoran pronghorn are known to use this vegetation series and similar sandy flat habitat throughout their current range east of the Cabeza Prieta Mountains. Their use typically occurs during late winter or early spring, when annual plants are present. Because the closest known sightings of Sonoran pronghorns occur about 65 to 70 miles away (east of Cabeza Prieta Mountains, Mohawk Valley), (Mike Coffeen, FWS, pers. comm. 2003), temporary disturbances to individual pronghorns are not anticipated.

Sonoran pronghorns typically avoid areas near human habitation, such as those near residential developments, and are cautious when around roads. If pronghorn colonize or are reintroduced to the Yuma Desert, Sonoran pronghorn movement is anticipated to be restricted to those areas east of the ASH or south into Mexico because the project is so close to Yuma. The proposed project is not anticipated to contribute additional barriers to recovery when compared to those that currently exist (mountain ranges, human impacts). The proposed project area does not support tree species or chain fruit cholla that would be affected, and arroyos or wash systems do not occur within the proposed project area.

The proposed project will route large truck traffic through this segment, adding to existing average daily traffic volumes, increasing the potential for effects (road injuries or mortalities) to large animals attempting to cross the ASH. Because Sonoran pronghorns currently do not occur in the Yuma Desert and are unlikely to colonize this area on their own, and as a result of past and current human occupation and/or existing land uses west of the proposed project, pronghorn movement across the ASH is not anticipated to occur.

We concur that the ASH project, as proposed, is not likely to adversely affect the Sonoran pronghorn. Critical habitat has not been designated for Sonoran pronghorn; thus none will be affected. We present this concurrence based on the above analysis and because:

1. It is highly unlikely Sonoran pronghorn will occur in the action area or cross the ASH.
2. Future land uses and human occupation will continue to increase, further diminishing chances that Sonoran pronghorns could naturally colonize the area.

Our concurrence is based on full implementation of the project as described in the Description of the Proposed Action section of this document, including any conservation measures incorporated into the project design. In the unlikely event that Sonoran pronghorn colonize or are reintroduced to the Yuma Desert in the future, your determination and our concurrence may need to be reconsidered.

REFERENCES CITED

Logan Simpson Design Inc. 2002. Biological evaluation for area service highway. Project No. HPP-900-A(022). Prepared for Arizona Department of Transportation. Tempe, AZ.

Turner, R.M. and D.E. Brown. 1982. Sonoran desert scrub. *In* D.E. Brown, ed., Biotic communities of the American Southwest-United States and Mexico. Desert Plants 4(1-4):181-222.

U.S. Fish and Wildlife Service. 1998a. Endangered and threatened wildlife and plants: Final revised Sonoran pronghorn recovery plan. Region 2 Regional Office, Albuquerque, NM.