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In Reply Refer To:
AESO/SE
02-21-05-F-0492

August 26, 2005

Mr. Ron Pearce, Director
Range Management Department
Marine Corps Air Station
Box 99134
Yuma, Arizona 85364

Mr. James R. Uken, Director
56th Range Management Office
Luke Air Force Base
7224 North 139th Drive
Luke AFB, Arizona 85309-1420

RE: Biological Opinion for the Integrated Natural Resource Management Plan for the Barry M. Goldwater Range, Arizona

Dear Mr. Pearce and Mr. Uken:

Thank you for your request for formal consultation with the U.S. Fish and Wildlife Service (FWS) pursuant to section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (Act). Your request was dated June 14, 2005, and received by us on June 17, 2005. At issue are impacts that may result from the proposed Integrated Natural Resource Management Plan (INRMP) for the Barry M. Goldwater Range (BMGR), located in Yuma and Maricopa counties in southwestern Arizona. The proposed action may affect Sonoran pronghorn (*Antilocapra americana sonoriensis*, pronghorn).

In your letter, dated May 12, 2005 and received by us on May 17, 2005, you requested our concurrence that the proposed action was not likely to adversely affect the pronghorn, lesser long-nosed bat (*Leptonycteris curasoae yerbabuena*, bat), and the cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*, pygmy-owl). We sent you a letter, dated June 10, 2005, concurring that the proposed project was not likely to adversely affect the bat and pygmy-owl, but stated that we believed the proposed project may adversely affect the pronghorn.

This biological opinion is based on information provided in the "Final Environmental Impact Statement, Barry M. Goldwater Range, Proposed Integrated Natural Resources Management Plan, May 2005" (FEIS) and other sources of information as detailed in the consultation history. Literature cited in this biological opinion is not a complete bibliography of all literature available

on the species of concern; management, monitoring, and recreational activities and their effects; or on other subjects considered in this opinion. A complete administrative record of this consultation is on file at the Phoenix, Arizona, Ecological Services Office (AESO).

CONSULTATION HISTORY

- 2001-2005: Staff from our agencies met numerous times to collaboratively develop the INRMP and to discuss the proposed action and its potential effects on pronghorn and other listed species.
- May 17, 2005: We received your letter, dated May 12, 2005, requesting our concurrence that the proposed action was not likely to adversely affect the pronghorn, bat, and pygmy-owl.
- May 27, 2005: We recommended, during a telephone conference, that you request formal consultation on the proposed action and its effects on the pronghorn.
- June 10, 2005: We sent you a letter concurring that the proposed project was not likely to adversely affect the lesser long-nosed bat and cactus ferruginous pygmy-owl, but disagreeing that the proposed project was not likely to adversely affect the pronghorn. We stated that, while the proposed action will confer overall management benefits to the pronghorn, we believe some components of the proposed project are likely to adversely affect the species.
- June 17, 2005: We received your letter, dated June 14, 2005, requesting formal consultation on the proposed action and its effects on the pronghorn. We initiated formal consultation.
- July 20, 2005: We issued a draft biological opinion.
- August 2, 2005: We received an electronic mail from the Marine Corps Air Station, Yuma (MCAS) indicating the MCAS had reviewed the draft biological opinion and was satisfied with the document.
- August 11, 2005: We received a letter from the Luke Air Force Base (LAFB) indicating the LAFB had reviewed the draft biological opinion and was satisfied with the document.

BIOLOGICAL OPINION

DESCRIPTION OF PROPOSED ACTION

The Marine Corps Air Station (MCAS) and Luke Air Force Base (LAFB) propose to implement an INRMP for the BMGR (See Tables and Figures, Figure 1), located in Yuma and Maricopa

counties in southwestern Arizona. The INRMP is a new natural resources management plan for BMGR that will extend to the year 2024. The new management plan is needed to address changes in current and future military mission requirements, Department of Defense (DoD) management policies, and BMGR resource and public use conditions that have changed since the most recent previous resource management plan was prepared for the range¹.

Furthermore, the Military Lands Withdrawal Act (MLWA) of 1999 requires that the Secretaries of the Air Force, Navy, and Interior jointly prepare an INRMP for the BMGR in accordance with the Sikes Act². As stipulated by the MLWA of 1999, the purposes of the INRMP must be to provide for the “proper management and protection of the natural and cultural resources of [the range], and for sustainable use by the public of such resources to the extent consistent with the military purposes [of the BMGR].”

The INRMP is described in the Preferred Alternative (Sections 3.4.2 and 3.4.4.2 and Tables 3-3 and 3-5 through 3-13) of the FEIS. The study area for the INRMP is described in Section 1.5.2 and differs for the various resource elements assessed (e.g., the study area for natural communities and special status species includes their contiguous distribution both on and off of the range). The action area for this biological opinion is defined as the current range of the pronghorn within the U.S., plus areas of BMGR-West (from the Copper and Cabeza Prieta mountains to the western boundary of the BMGR in the Yuma Desert) and BMGR-East (East TAC and aircraft routes to East TAC) not currently occupied by pronghorn but where INRMP activities are proposed. The action area is fully described in the Environmental Baseline section of the 2003 opinions included here by reference (biological opinions on MCAS-Yuma’s Arizona portion of the Yuma Training Range Complex (YTRC) – BMGR-West (02-21-95-F-0114R4), and Luke Air Force Base’s military activities on the BMGR-East (02-21-96-F-0094R2)).

The INRMP includes both existing actions that will be carried forward and new actions. It proposes public use restrictions, authorizations, and permitting on portions of the BMGR regarding camping, vehicle use, shooting, entry into mines, firewood collection and use, rockhounding, and other activities; natural resources monitoring, surveys, and research; habitat restoration; wildlife water developments; development of a wildfire management plan; law enforcement; limitations on the locations of future utility projects and the Yuma Area Service Highway; control of trespass livestock; and designation of special natural/interest areas, while allowing other designations to expire. The management strategy of the INRMP addresses 17 resource management elements, which are detailed in the EIS and summarized as follows:

1. Resource Inventory and Monitoring

¹ The most recent resource management plan for the range is the Lower Gila South Resource Management Plan (RMP) Goldwater Amendment (hereinafter Goldwater Amendment) that was prepared by the BLM. The Goldwater Amendment, which was placed into effect in 1990, was prepared under the purviews of the MLWA of 1986 and the Federal Land Policy Management Act (FLPMA) of 1976 (43 U.S.C. 1701 et seq.). The Goldwater Amendment is based on management planning and environmental assessments that were completed during the early to late 1980s.

² The Sikes Act sets forth the Nation's resource management policies and guidance for U.S. military installations and requires the preparation of INRMPs for all installations with significant natural resources, including those (such as the BMGR) composed of withdrawn lands. The Sikes Act provides that the “... Secretary of Defense shall carry out a program to provide for the conservation and rehabilitation of natural resources on military installations...” and that an INRMP is to be prepared to facilitate implementation of that program.

- Ecosystem and limits of acceptable change monitoring systems will be developed and implemented for the BMGR and increase the extent and intensity of resource surveys (new action).
- Additional vegetation and wildlife surveys, in particular, will be conducted to monitor the ecosystem health and biodiversity (new action).
- Ecosystem monitoring will detect trends within the BMGR ecosystem that would indicate overall biodiversity and health (new action).
- Limits of acceptable change monitoring will be used to track key indicators of environmental impacts resulting from recreation and other uses.
- Adaptive responses, based on monitoring results, will redirect management measures as necessary to ensure that resource conservation, rehabilitation, and protection goals are met and that recreation use continues to be sustainable (new action).

2. Special Natural/Interest Areas

- The Flat-tailed Horned Lizard Habitat Management Area and the three previously designated Areas of Critical Environmental Concern (ACECs) will be redesignated as special natural/interest areas (no functional change).
- The two Special Recreation Management Areas (SRMAs) and El Camino del Diablo Backcountry Byway will not be redesignated, but will be afforded the same resource conservation, protection, and management measures put in place for the immediate locality and entire BMGR (new action).
- Special geological, scenic, cultural, or other resource areas could be evaluated in the future to determine the appropriateness of establishing additional special natural/interest areas as conservation, rehabilitation, or protection tools (new action).

3. Motorized Access and Unroaded Area Management

Of the 2,222 miles of existing roads within the BMGR, approximately 30 percent, or 616 miles, will be closed under the proposed action (new action). Of these 616 miles, approximately 303 miles are in areas of the BMGR that, in general, are currently accessible for public use, reducing the extent of roads open for public use from 981 miles to 678 miles. Approximately 91 percent of the reduction in available general public access road mileage will occur in BMGR—West, which is managed by the Marine Corps, where 277 miles of the 767 miles currently available will be closed. In BMGR—East, which is managed by the Air Force, 26 of the 214 miles of road currently available for general public access will be closed. Most of the roads in the BMGR that will be closed are redundant; that is, other nearby roads provide access to the same area. Other roads will be closed to (1) protect certain natural or cultural resources, (2) arrest deteriorating conditions that are accelerating soil erosion, (3) prevent unnecessary reopening of naturally revegetated roads that are not needed for military or other official purposes, or (4) benefit Sonoran pronghorn, a federally listed endangered species that depends on the BMGR for 42

percent of its remaining available habitat in the United States. The other 313 miles of the total 616 miles of road to be closed are roads that are currently available for use only by the military or other agencies, resulting in 928 miles remaining from the 1,241 miles of road currently available for government use only. Of the 928 miles of roads to be retained but restricted to government use only, 51 miles are within locations that are generally open to the general public, but where access to the road is reserved for official use only to protect public safety relative to military operation, protect or restore natural or cultural resources, and/or facilitate the effectiveness of international border law enforcement (new action). Of these 51 miles of roads, 39 miles are in BMGR—West and 12 miles are in BMGR—East. The preferred action will continue to provide adequate access for sustainable public use of those areas of the BMGR that can be made available for such use. However, some roads that will be closed will reduce access within localized areas.

- Site-specific planning will be authorized for two bypass roads (totaling approximately 7 miles) to reroute primarily Border Patrol traffic around, rather than through, the Cabeza Prieta National Wildlife Refuge (NWR)/Wilderness (new action).
- In some areas, closed roads may be actively restored to remediate a degraded ecological process or to enhance wildlife usage. Other closed roads will be allowed to revegetate naturally (new action).
- Unroaded areas of 3,001 acres or more will be conserved to the extent that such conservation is compatible with military or agency missions to reduce the potential for ecosystem fragmentation or damage to cultural resources and benefit protected species (new action). Assuming that the roads closed under the preferred alternative are revegetated over the long term, the range-wide elimination of 616 miles of road will reduce the number of unroaded areas in the BMGR but increase the average size of unroaded blocks because smaller areas will be combined into larger blocks of unroaded areas. The largest unroaded area will be slightly more than 102,000 acres located within BMGR—East. The largest unroaded area in BMGR—West will be nearly 85,000 acres.

4. Camping and Visitor Stay Limits

- Dispersed, self-contained camping (non-vehicle based) will continue to be allowed in all areas open to the public (no change).
- Vehicle-based camping will continue to be allowed along most roads designated as open to public use (no change), although some road segments and specific areas will be closed to protect resources that are sensitive to human-induced disturbances (new action). Vehicles will continue to be allowed to pull up to 50 feet off the road, although campsites could be located farther from the road (no change).
- An assessment will be completed to determine the appropriateness of establishing designated camping areas (new action).

- Vehicle-based camping stays will continue to be limited to 14 consecutive days within a 28-day period except by special use permit (no change).
- Rules will be prescribed to ensure that the disposal of human sewage and solid waste is in accordance with applicable Federal, State, and local regulations (new action).

5. Recreation Services and Use Supervision

- Public off-road vehicle travel and also on- and off-road racing will continue to be prohibited (no change).
- Motorized public travel in washes will be prohibited except where the wash is a designated as part of the road system open to the public and is dry (no change).
- In most areas (except Management Unit 2), a special use permit will be required for any single party with 10 or more vehicles. In Management Unit 2, a special use permit will be required for any single party with 20 or more vehicles (new action).
- All vehicles and operators will continue to be required to comply with general vehicle operating rules, including being licensed for highway driving under Arizona laws and regulations (no change).
- Visitors will continue to need a permit to access the BMGR (no change).
- New public education and recreation use programs will be developed and implemented to inform the public about road restrictions and resource sensitivities (new action).
- A minimum of six law enforcement officers will be retained and dedicated to the BMGR (new action).
- The effects of recreation use on natural and cultural resources will be monitored. If damage occurs that exceeds pre-determined limits of acceptable change, management actions will be taken to reduce and/or remediate the damage (new action).
- Signs, gates, and fences will be installed based on a needs assessment. Roads that are open to public use will be marked as open (new action). If a road does not have a sign that indicates that it is open, drivers will have to consider it closed (new action).
- Recreation use records and statistics will be developed and maintained (new action).
- Recreational use of metal detectors and entry to mines will be prohibited (new action).

6. Rockhounding

- Rockhounding for personal use (removing up to 25 pounds of rock per individual per trip and 250 pounds per individual per year) will be allowed in portions of BMGR—West

(Management Units 2 and 3) except within special natural/interest areas and other designated areas where resources are sensitive to human-induced disturbances. Rockhounding will be prohibited in other parts of the BMGR (new action).

7. Wood Cutting, Gathering, and Use, and Collection of Native Plants

- The use of dead and downed wood for campfires will continue to be allowed in most areas that are open to the public (that is, in Management Units 2, 3, and 6). Wood cutting, gathering, and native wood campfires will be prohibited in Management Unit 1 (which includes most of the former Tinajas Altas Mountains ACEC). If wood supplies become depleted in high-use areas, additional restrictions could be implemented (new action).
- Wood cutting and wood gathering for purposes other than campfires will be prohibited throughout the range. Removal of wood from the range will also be prohibited (no change).
- Collection or salvage of native plants will continue to be prohibited in accordance with the Arizona Native Plant Law (no change). Collection of native plants will be allowed for protected Native American purposes (new action).

8. Hunting

- Existing game management programs will continue (no change).
- An assessment will be conducted to determine if it will be appropriate to establish a special hunting permit program that requires payment of a nominal fee to be used for the protection, conservation, and management of wildlife, including habitat improvement (new action).
- The effects of non-game species collection on wildlife, habitat, and other resources will be evaluated and, if warranted, such collection will be limited or restricted within the authority of State law (new action).

9. Recreational (Target) Shooting

- Recreational shooting will continue to be allowed under existing regulations as long as it is compatible with military use and public safety, and no significant resource issues are identified (no change).
- A special use permit will be required to shoot between sunset and sunrise or to use automatic weapons (new action).
- An assessment will be conducted on the appropriateness of recreational shooting on the BMGR, including the potential for designating specific shooting areas (new action).

10. Utility/Transportation Corridors

- Construction of the Yuma Area Service Highway (ASH) within a right-of-way that passes through the northwestern corner of BMGR—West will be allowed (no change).
- Non-military utilities will continue to be restricted to the established utility corridor along State Route 85 and the inactive Tucson Cornelia and Gila Bend Railroad (no change).

11. General Vegetation, Wildlife, Wildlife Habitat, and Wildlife Waters

- Procedures will be developed to control all trespass livestock grazing (new action).
- Actions will be taken to prevent, control, and eradicate the spread of invasive species commensurate with the threats these species pose to natural resources (new action).
- Restrictions on activities will be implemented in key areas if needed to protect and conserve habitat, ecosystems, or biodiversity (new action).
- Areas damaged by a discontinued military, agency, or extensive public use will be restored by passive or active management actions (new action).
- New wildlife water developments will be limited to six high-priority developments in the first five years of the INRMP. Concurrently, an assessment of the beneficial and adverse effects of water developments will be conducted and used to determine whether the programs should be continued or permanently suspended on the BMGR (new action).

12. Special Status Species

- Meet and support all existing and future compliance requirements for the protection and conservation of special status species (no change).
- Surveys for special status species will be conducted on an as-needed basis and used to update lists of species that occur on the BMGR as well as species distribution and abundance (no change).
- Habitat improvements will be made in support of endangered species recovery plans (no change).
- Resources will be provided, as necessary, for predator control to protect a special status species (new action).

13. Soil and Water Resources

- Measures will be taken to continue to prevent soil erosion, water pollution, and groundwater depletion (no change).

- A range-wide soil survey using Natural Resource Conservation Service standards will be conducted to provide information on soil types, erosion risks, and soil vulnerability to disturbances (new action).
- Vehicular and construction activities will be restricted when soils are susceptible to a heightened risk of erosion, and areas of excessive surface damage from past activities will be restored (new action).

14. Air Resources

- Actions will continue to be taken to control fugitive dust at construction sites and to prevent non-point source air pollution (no change).

15. Visual Resources

- The effects of new actions on visual resources will continue to be considered with a focus on minimizing degradation of scenic views (no change).

16. Wildfire Management

- A range-wide fire management plan will be prepared to establish fire prevention and suppression protocols to minimize threats to human life, property, and natural and cultural resources (new action).

17. Perimeter Land Use, Encroachment, and Regional Planning

- Actions will be taken to improve coordination and communication with off-range managers and authorities to address issues of a regional concern and to provide input so that off-range actions result in few, if any, adverse effects on the BMGR (new action).

STATUS OF THE SPECIES

Sonoran Pronghorn

Our August 6, 2003, biological opinions on MCAS-Yuma's Arizona portion of the Yuma Training Range Complex (YTRC) – BMGR-West (02-21-95-F-0114R4), and Luke Air Force Base's military activities on the BMGR-East (02-21-96-F-0094R2) included a detailed Status of the Species for the Sonoran pronghorn. Herein we incorporate that status discussion by reference and update only information that has changed.

C. Habitat

Fire

The winter and spring of 2004/2005 was very wet, resulting in some of the highest productivity of cool season annual plants in recent memory. As these annual plants dried out, they created fuel for wildfire. Historically, native Sonoran Desert annuals probably only rarely formed

continuous stands of fine fuels (Humphrey 1974). In addition, native annuals tend to deteriorate rapidly and, by the onset of the monsoon season when lightning becomes an ignition source, the fuels typically are unlikely to carry fire very far. In years with ample winter precipitation, introduced annuals, such as Mediterranean grass (*Schismus arabicus*), Sahara mustard (*Brassica tournefortii*), and garden rocket (*Eruca vesicaria*) tend to form continuous, relatively persistent stands of fine fuels. In 2005, Mediterranean grass combined with high densities of the native woolly plantain (*Plantago ovata*) and other species created fuels adequate to carry fire. Military training, such as strafing and bombing in the tactical ranges, as well as fires set by illegal immigrants or smugglers, provided the ignition sources. Exact numbers are unknown; however, in 2005 roughly 5,000 acres of Sonoran pronghorn habitat has burned to date on the Cabeza Prieta NWR. As of May 25, an estimated 13,000 acres had burned on BMGR-East. However, during the week of June 20, a fire started on BMGR-East that, according to news reports, burned more than 50,000 acres of Sonoran Desert scrub. How much of that was in current pronghorn habitat is unknown, however; much of the desert scrub between the Crater Range and the Saucedo Mountains burned in the fire.

Most Sonoran Desert trees, shrubs, and cacti are poorly adapted to fire. On the Tonto National Forest, the Siphon Fire along the Bush Highway heavily impacted saguaros (*Carnegiea gigantea*) and foothill palo verde (*P. microphyllum*), and reduced white ratany (*Krameria grayi*), wolfberry (*Lycium* sp.), and creosote (*Larrea tridentata*). Twenty-one years after the fire some native species, such as purple three-awn (*Aristida purpurea*) and desert senna (*Cassia armada*) had increased. Foothill palo verde had also apparently recovered with respect to density and canopy cover (Alford and Brock 2002).

Most cacti are very fire intolerant; fires at Saguaro National Park resulted in greater than 20 percent mortality of mature saguaros (Schwalbe *et al.* 2000). Near Palm Springs, California, fires during 1976-1983 resulted in replacement of creosote, white bursage (*Ambrosia dumosa*), and cholla (*Opuntia* sp.) with brittlebush (*Encelia farinosa*) and both native and introduced annual plants (Brown and Minnich 1986). In central Arizona, we have noted loss of cacti, trees, and creosote, and replacement by brittlebush and regrowth of jojoba (*Simmondsia chinensis*) and catclaw acacia (*Acacia greggii*) after fires.

Burning of creosote flats may have little initial effect on pronghorn, and could benefit them in the short term by increasing visibility. However, fire in the washes could eliminate important forage species and thermal cover. Some areas burned in 2005 experienced nearly complete removal of vegetation cover. Those areas will provide no components of pronghorn habitat until annual or perennial vegetation recovers. As noted in the 2003 opinions, during drought years cacti are a major dietary component (44 percent, Hughes and Smith 1990). Consumption of cacti, especially chain fruit cholla (*Cylindropuntia fulgida*), provides an important source of water during hot, dry conditions (Hervert *et al.* 1997). Cholla are readily killed by fire.

The extent and longevity of effects to pronghorn habitat from this year's fires are not yet clear, and the fire season is not yet over. Monitoring will be needed to determine survivorship and recovery of important forage and cover species, and if current fires promote establishment of introduced plants that further increase fire risk. However, even in the best scenario it is likely to

be many years before trees once again dominate wash communities and cholla recover to a point that they are useful forage plants for pronghorn.

D. Distribution and Abundance

United States

Populations of Sonoran pronghorn have increased dramatically since the August 6, 2003, opinions. As described in those opinions, a devastating drought and other factors caused an estimated 79 percent decline in the U.S. subpopulation from 2000 to 2002. Since then, several key recovery actions have been implemented, including establishment of forage enhancement plots, construction of a semi-captive breeding facility, stocking of the breeding facility with pronghorn from Sonora and Arizona, and construction of pronghorn waters. In addition, precipitation in 2003-2005 was adequate for production of ample forage and excellent fawn survivorship. The estimated U.S. population increased from 21 pronghorn in December 2002 to 58 in December 2004. An additional seven adults and 10 fawns populate the semi-captive breeding facility.

Mexico

The status of the two subpopulations in Sonora (west of Highway 8 near the Pinacate Lava flow, and southeast of Highway 8) has improved since 2002, similar to the U.S. subpopulation. Surveys conducted in December 2004 and February 2005 demonstrated that the population southeast of Highway 8 increased from an estimated 260 to 625, while the Pinacate population increased from an estimated 25 to 59.

E. Threats

Barriers that Limit Distribution and Movement

Since the 2003 BOs, a welded steel vehicle barrier has been constructed along the Organ Pipe Cactus National Monument boundary from the Tohono O'odham Nation boundary to nearly Quitobaquito. The barrier will be extended to the boundary with Cabeza Prieta NWR. At the same time, theft has resulted in the disappearance of the barbed wire cattle fence along the international boundary at Organ Pipe. The vehicle barrier is not likely a significant barrier to movement of pronghorn, and removal of the barbed wire fence could facilitate movement of pronghorn between Sonora and Arizona. However, Mexico Highway 2, which runs east-west and parallels the border, is probably key in preventing such movements.

Habitat Disturbance

The 2003 opinions describe ongoing grazing and effects to pronghorn on the BLM allotments near Ajo. In 2004, the Cameron Allotment was closed, cattle were removed, most boundary fences with Cabeza Prieta NWR and Organ Pipe Cactus NM as well as pasture fences were taken down, but waters were left in place for pronghorn and other wildlife. We expect that vegetation communities and soils will gradually recover and pronghorn will make more use of the area in the future.

Illegal immigration and smuggling, as well as associated law enforcement response by Border Patrol and others, have continued to increase since 2003. We do not have precise numbers, but proliferation of illegal vehicle routes, presence of vehicles and people in pronghorn habitat, and, as discussed above, fires caused by illegal immigrants or smugglers continue to cause significant adverse effects to pronghorn and their habitat. There have been at least two cases of illegal immigrants on foot going over or under the fence and walking through the semi-captive breeding facility. Law enforcement helicopters have more than once passed at low elevations over the pronghorn facility, which could result in animals bolting and potentially injuring themselves (but that has not occurred to date). Based on discussions with land managers and at meetings of the Barry M. Goldwater Executive Council (BEC), there is evidence that increased law enforcement is pushing illegal traffic west into the Yuma Desert (out of pronghorn habitat) and possibly east, as well. The vehicle barrier at Organ Pipe Cactus NM is likely pushing vehicle traffic (but not foot traffic) onto Cabeza Prieta NWR and the Tohono O'odham Nation.

ENVIRONMENTAL BASELINE

Sonoran pronghorn

The Environmental Baseline from the 2003 opinions is included here by reference. The following information supplements and updates that baseline.

Distribution

Because none of the pronghorn are telemetered, we know very little of current pronghorn habitat use or distribution in Arizona. The older, more experienced does are thought to guide herds to traditional-use seasonal areas. The death of most of these older individuals in 2002 may have changed use patterns. During the December 6-12, 2004, survey of the Arizona population, two groups of pronghorn were seen on BMGR-East, one group was observed on BMGR-West, and four groups were found on the Cabeza Prieta NWR. Early this year, pronghorn were using the tactical ranges at BMGR-East, but since March few have been observed there. Pronghorn were recently observed in Charlie Bell Pass in the Growler Mountains (June), on the Granite Mountains forage enhancement plot (May), and in the Pozo Nuevo Hills at Organ Pipe Cactus NM (May).

Drought

As discussed above, since the drought of 2002, both winter and summer precipitation has been adequate to provide good to excellent forage conditions for Sonoran pronghorn.

Emergency Recovery Actions

We and our partners continue working to implement a variety of recovery actions in Arizona. Five forage enhancement plots are now in operation. Our 2003 opinions described the construction of the semi-captive breeding facility in Childs Valley. That facility is now completed, one of the forage enhancement plots is located within the enclosure, and 17 pronghorn populate the facility. Two of the does in the enclosure were captured from the

Sonoran population southeast of Highway 8, and four does and one buck were captured and placed in the enclosure from the Arizona population. This spring, the does gave birth to 10 fawns.

The Charlie Bell and recently-completed Adobe Well forage enhancement plots were irrigated in the last two months. The Granite Mountains forage site on BMGR was irrigated twice for several days recently. Several free flowing valves were installed in order to enhance vegetation in the washes. A drinker was filled and a surveillance camera installed at the Granite Mountains site. While irrigating there on May 19, monitors observed three pronghorn (two adult females and one fawn) on the plot. The Lower Well forage enhancement plot is now completed and a trial irrigation has taken place. Personnel pumped water from the well to the storage tanks, and then pumped from the storage tanks to the plots. We estimate the well produces ~ 20 gallons/minute sustained.

This year water developments in the Granite Mountains, Sierra Pintas, Fawn Hills, and Antelope Hills were modified to expand water storage capabilities. Work is underway to establish two pronghorn waters on BMGR-West. Additional water developments have been established or improved since 2003.

D. Past and Ongoing Non-Federal Actions in the Action Area

See the discussion above under “Habitat Disturbance” in the STATUS OF THE SPECIES regarding increasing illegal immigration and smuggling, and effects to pronghorn and their habitats.

E. Past and Ongoing Federal Actions in the Action Area

Since our August 2003 BO, we have consulted formally on six occasions. All were non-jeopardy reinitiations of consultation in which we anticipated no incidental take of pronghorn. They are summarized here:

December 22, 2003: Reinitiation of formal consultation with Organ Pipe Cactus NM regarding effects of the vehicle barrier on their southern border (02-21-F-0237R). We concluded that the proposed revised construction schedule would result in effects similar to those of the original proposal.

January 27, 2004: Reinitiation of formal consultation with Organ Pipe Cactus NM regarding effects of revised proposed actions for the State Route 85 Roadway and Drainage Improvements Project (02-21-02-F-0546R1), the Widening of North Puerto Blanco Road Project (02-21-01-F-0109R1), and the Twin Peaks Access Road Stabilization Project (02-00-F-0295R1). Revisions to the construction schedules for all three projects were proposed that would take construction up to March 15, 2004, which is the beginning of the critical fawning period. We anticipated that the revisions would add only minor effects to the pronghorn.

April 29, 2004: Second reinitiation of formal consultation with Organ Pipe Cactus NM regarding effects of the vehicle barrier (02-21-F-0237R2). Increased vehicle traffic was

proposed as part of the construction activities. We anticipated no additional effects to pronghorn.

June 21, 2004: Reinitiation of formal consultation regarding the effects of livestock grazing on BLM lands in the Ajo area (02-21-94-F-192R3, 02-21-85-F-069R1). BLM proposed closure of the Cameron Allotment. We concluded that net effects of closing the allotment would be beneficial to the pronghorn.

March 3, 2005: Reinitiation of formal consultation regarding effects of livestock grazing on BLM lands in the Ajo area (02-21-94-F-192R4, 02-21-05-F-0120). BLM proposed to increase authorized use on the Coyote Flats and Why allotments, to combine these two allotments into one (Coyote Flats), and to make changes in seasonal use and other minor modifications to the livestock grazing activities. We found that these revisions would have effects to pronghorn similar to those of previous grazing regimes.

March 10, 2005: Reinitiation of formal consultation with Organ Pipe Cactus NM regarding effects of revised public use restrictions for the Widening of North Puerto Blanco Road Project (02-21-01-F-0109R2) and their General Management Plan (02-21-89-F-0078R3). Public use restrictions were revised from the March 15-July 15 period to April 30-July 15 for 2005 and other years with good precipitation and pronghorn forage, as suggested by the Sonoran Pronghorn Recovery Team. We found that this revision would have little additional effect to pronghorn or their habitat.

EFFECTS OF THE PROPOSED 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.

Implementation of the following resource management elements proposed in the INRMP may result in degradation of pronghorn habitat and/or disturbance to pronghorn.: Resource Inventory and Monitoring; Motorized Access and Unroaded Area Management; Camping and Visitor Stay Limits; Recreation Services and Use Supervision; Rockhounding; Wood Cutting, Gathering, and Firewood Use and Collection of Native Plants; Hunting; Recreational (Target) Shooting; Utility/Transportation Corridors; General Vegetation, Wildlife, Wildlife Habitat, and Wildlife Waters; Special Status Species; and Wildfire Management.

Disturbance to pronghorn and degradation of pronghorn habitat could result from vehicular and foot traffic; noise; trash dispersal; light pollution; disturbance of soils; and crushing, destruction, or removal of vegetation that may provide forage and cover to pronghorn, associated with activities detailed in the resource management elements. Additionally, though it has not been documented for Sonoran pronghorn, there is a potential for pronghorn to be killed or injured

through collision with vehicles. Though the INRMP would authorize activities that may be detrimental to pronghorn, restrictions, prohibitions, and provisions included in the resource management elements should generally reduce disturbance to pronghorn and degradation of their habitat. Overall, implementation of the INRMP and the resource management elements will likely be beneficial to pronghorn on the BMGR.

The pronghorn is sensitive to human presence. Krausman *et al.* (2001) reported that Sonoran pronghorn reacted to ground disturbances (vehicles or people on foot) with a change in behavior 37 percent of the time, resulting in the animals running or trotting away 2.6 percent of the time. The effects of disturbance from vehicular use of roads on Sonoran pronghorn were a more significant impact than disturbance from aircraft (helicopter, jet, and fixed wing) (Krausman *et al.* 2001). Wright and deVos (1986) noted that Sonoran pronghorn exhibit “a heightened response to human traffic” as compared to other subspecies of pronghorn. They noted that “once aware of an observer, Sonoran pronghorn are quick to leave the area. One herd was observed 1.5 hours later 11 miles north of the initial observation in October 1984. Other pronghorn have run until out of the observer’s sight when disturbed.” Hughes and Smith (1990) noted that on all but one occasion, pronghorn ran from the observer’s vehicle and continued to run until they were out of sight.

Studies of captive pronghorn, other than the Sonoran subspecies, have also shown that they are sensitive to disturbance such as human presence and vehicular noise. Human traffic, such as a person walking or running past pronghorn in an enclosed pen, a motorcycle driving past, a truck driving past, a truck blowing its horn while driving past, or a person entering a holding pen, caused an increased heart-rate response in American pronghorn in half-acre holding pens (Workman *et al.* 1992). The highest heart rates occurred in female pronghorn in response to a person entering a holding pen, or a truck driving past while sounding the horn. The lowest heart rates occurred when a motorcycle or truck was driven past their pen. Other investigators have shown that heart rate increases in response to auditory or visual disturbance in the absence of overt behavioral changes (Thompson *et al.* 1968, Cherkovich and Tatoyan 1973, Moen *et al.* 1978).

Disturbance and flight of ungulates are known to result in a variety of physiological effects that are adverse, including elevated metabolism, lowered body weight, reduced fetus survival, and withdrawal from suitable habitat (Geist 1971, Harlow *et al.* 1987). Frequent disturbance imposes a burden on the energy and nutrient supply of animals (Geist 1971), which may be exacerbated in harsh environments such as those occupied by Sonoran pronghorn. Human presence may cause Sonoran pronghorn to move from an area, thereby denying pronghorn access to that specific site for what may be crucial ecological functions (e.g. foraging, bedding, seeking thermal shelter, seeking mates, seeking fawning sites, seeking areas of relative safety from predators). Causing pronghorn to move also increases their physiological demands by expending calories and metabolic water. These may be critical stresses in seasonal hot-dry periods and in extended periods of low forage availability. Disturbance may also lead to mortality. Causing a pronghorn to be alarmed or agitated, or to flee from a disturbance, may also make it vulnerable to predator attack. This is especially true for fawns and females during the fawning season. Krausman *et al.* (2001) found that fawns and their mothers were more sensitive to human disturbance than other life stages of Sonoran pronghorn.

Recreation is recognized as having significant environmental impacts on wildlife (Knight and Gutzwiller 1995). Non-motorized human recreation activities, such as hiking, have the ability to disrupt wildlife in many ways, particularly by displacing animals (Knight and Gutzwiller 1995). McArthur *et al.* (1982) reported elevated heart rates and flight among mountain sheep approached by humans. Mountain sheep reactions to hikers were greater than reactions to road traffic, helicopters, or fixed wing aircraft. Peak levels of hiking and skiing displaced chamois from nutritionally important habitats for prolonged periods (Hamr 1988). Orienteering activities in Denmark displaced roe and red deer from their home ranges; however, the animals eventually returned to these areas after disturbances ceased (Jeppesen 1987a, 1987b). Cassier *et al.* (1992) found that elk in Yellowstone National Park moved an average of 1.1 mile to avoid cross country skiers, often moving to another drainage.

Resource Management Elements

Implementation of the “Resource Inventory and Monitoring” resource management element may result in increased disturbance to pronghorn. Disturbance could be avoided or minimized by adjusting surveys to avoid areas occupied by pronghorn. Overall, implementation of this element will likely benefit pronghorn by potentially providing better information about pronghorn and pronghorn habitat on the BMGR and the elements important to their protection and preservation. In addition to implementing a system that sets limits of acceptable change and uses adaptive management, this element recommends development of a monitoring system that integrates with existing monitoring and management activities within the greater Sonoran Desert Ecoregion. This would allow for management of pronghorn in a landscape context, and provide a better basis for coordinating management with lands adjacent to the BMGR. Additionally, if the proposed inventory and monitoring program is successful in identifying where detrimental impacts to pronghorn and pronghorn habitat are occurring and effective adaptive management responses are developed and implemented, there could be beneficial effects to pronghorn and pronghorn habitat.

Implementation of the “Motorized Access and Unroaded Area Management” resource management element will result in adverse effects to pronghorn. Continued use of roads proposed to remain open to public use within pronghorn habitat will result in continued disturbance to pronghorn and degradation of their habitat. Road closures within pronghorn habitat associated with this element, however, will likely benefit pronghorn.

Roads have been documented to generally affect wildlife and habitat in a number of ways, including the fragmentation and degradation of habitat, and direct mortality from impacts with vehicles. Human use of roads can cause disturbance to pronghorn as described above. According to the FEIS, the subject BMGR dirt roads, most of which are unimproved, have a lower magnitude of impact than paved roads with high traffic volumes. The FEIS states that the U.S. Border Patrol-maintained drag roads and roads providing access to the military ground operational areas are the best example of the types of BMGR roads that would have the highest degree of impact on wildlife and wildlife habitats. However, none of these roads are proposed for closure. The roads proposed for closure are, for the most part, roads that were created through repeated use rather than through mechanical dirt-moving, and are relatively narrow and

infrequently used. Even these roads, however, can cause direct, permanent disturbance of the habitat, cause erosion that can reduce the quality of habitat, and facilitate invasion by non-native pest plant species that can displace native habitat through competition or fire. Human use of roads can result in short-term denial of access to habitat for pronghorn or cause pronghorn to flee the area when cars or people approach.

It is estimated that 41 percent of the current pronghorn range occurs on the BMGR, with 2 percent occurring in Management Unit 2, 11 percent occurring in Management Unit 3, 13 percent occurring in Management Unit 4, and 15 percent occurring in Management Unit 5. About 32 percent of the current pronghorn range within the BMGR is in areas that are generally open to public access (that portion within Units 2 and 3 and the road open to the public in Unit 4); the remainder is within areas that are closed to public access. Additionally, beginning in 2002, Unit 3 is closed to public entry from March 15 to July 15 each year as part of the overall effort to recover the pronghorn. This timeframe spans the normal period for pronghorn births and is critical to the early survival of fawns.

The INRMP proposes to close an estimated 112 miles of road within the current pronghorn range. These road closures represent a 17 percent reduction of disturbance from roads within the current distribution of pronghorn in the BMGR (the total road mileage would be reduced from about 650 miles to about 538 miles). Most of the roads slated for closure are used relatively infrequently and are not regularly maintained. These types of roads are not likely to inhibit the movement of pronghorn, however, pronghorn using areas along these roads are likely to be startled and may move considerable distances, at least temporarily, to avoid vehicles.

The closure of roads within the pronghorn habitat would likely be beneficial because it would reduce encounters between humans and pronghorn, and it would help protect the habitat from any associated disturbance. Most of the proposed road closures within pronghorn range would be within creosote-dominated vegetation communities, which pronghorn use for forage, particularly during the spring. Some proposed road closures within pronghorn range occur within the bajadas of the Mohawk Mountains, which are particularly used by females during the fawning season.

The entirety of the valley bottom floodplain natural community on the BMGR is within the current distribution of pronghorn. The relatively dense vegetation found within the desert riparian vegetation community provides forage, shade, and cover for pronghorn. About 8 miles of roads would be closed within this community, which represents a reduction of about one half. Approximately 6 miles of roads in the xeroriparian scrub, which occurs with relative frequency in the current range of pronghorn, would be closed. This habitat provides important thermal cover for pronghorn, particularly during the hot, dry summer months. It is estimated that 19 unroaded areas greater than 3,000 acres in size would be within the current area of distribution of the pronghorn, which would also contribute to the protection of pronghorn because the maintenance and conservation of large tracts of undisturbed habitat would reduce disturbance on this species.

Implementation of the "Camping and Visitor Stay Limits" will likely result in disturbance to pronghorn and degradation of pronghorn habitat. Vehicular and foot traffic, trash dispersal,

noise, and light pollution associated with camping could affect behavior and movement patterns of pronghorn and degrade habitat. Proposed camping limitations and restrictions (e.g., restriction of camping within ¼-mile of wildlife water sources and of designated natural and cultural resources that are sensitive to human-caused disturbance; closure of some road segments and specific areas to protect resources that are sensitive to human-induced disturbances), however, will likely benefit pronghorn by reducing the area affected by camping and by continuing to limit the duration of any disturbance to pronghorn that may be caused by vehicles and associated camping activity. Additionally, pronghorn will continue to benefit from the closure of Unit 3 to the public during the fawning season.

Implementation of the “Recreation Services and Use Supervision” resource management element will result in continued disturbance to pronghorn and degradation of their habitat similar to the camping element described above. Limitations and provisions associated with this element, however, will likely benefit pronghorn. Continued prohibition of public off-road vehicle travel, on- and off-road racing, and motorized public travel in washes, except where they are a designated as part of the road system open to the public and are dry, will decrease disturbance of pronghorn and degradation of their habitat. Requiring a special use permit for larger group sizes (single parties with 10 or more vehicles) in all the management units except Unit 2 could benefit pronghorn and pronghorn habitat by discouraging use by larger groups.

Law enforcement activities may result in disturbance to pronghorn if activities (e.g., walking, driving) occur within occupied pronghorn habitat. However, requiring the retention of at least six law enforcement officers would continue to ensure that there would be personnel to prevent/deter visitors from violating rules regarding protection of pronghorn and pronghorn habitat (e.g., more law-enforcement officers to prevent illegal ORV travel).

Developing and implementing a limits-of-acceptable-change monitoring program would guide recreation use and potentially allow for better protection of pronghorn by providing data on the effects of recreation use on pronghorn and pronghorn habitat. Increases in public education programs and assessment of the need for additional gates, fencing, or signs, which could deter motorized access in unauthorized areas, may benefit pronghorn.

Implementation of the “Rockhounding,” “Wood Cutting, Gathering, and Firewood Use, and Collection of Native Plants,” “Hunting,” and “Recreational (Target Shooting)” resource management elements will likely result in disturbance to pronghorn and some habitat degradation due to vehicular and foot traffic and noise associated with these activities. Disturbance to pronghorn from the allowance of rockhounding should be minimized by restrictions on the amount of rock allowed to be removed (maximum of 25 pounds of rock per individual per trip and 250 pounds per individual per year) and by prohibiting rockhounding within special natural/interest areas and other designated areas where resources are sensitive to human-induced disturbances. The prohibition of rockhounding in other areas the BMGR should benefit pronghorn by reducing any potential disturbance to pronghorn or degradation of habitat.

Disturbance from the collection of dead and downed wood for campfires should be minimized through monitoring of this activity in high use areas and implementation of restrictions if resource conditions dictate the need. Though native plants may be collected for protected Native

American purposes, collection or salvage of plants listed in the Arizona Native Plant Law, including plant parts, seeds, or fruit; and wood cutting and wood gathering for purposes other than campfires, will be prohibited.

An assessment will be conducted to determine if it would be appropriate to establish a special hunting permit program that requires payment of a nominal fee to be used for the protection, conservation, and management of wildlife, including habitat improvement, on the range. Pronghorn on the BMGR could benefit from the special hunting permit program, if implemented, because it would potentially provide funding that would be used for general habitat protection, conservation, and management of wildlife, including habitat improvement and related activities.

An assessment will be conducted on the appropriateness of recreational shooting on the BMGR, as well as of the need to restrict such activities to specific areas, times, and types of firearms, should it be justified. This would potentially have minor benefits to pronghorn, if, as a result of the assessment, dispersed recreational shooting was disallowed in place of providing for recreational shooting in designated areas located away from areas of greater pronghorn use. Therefore, although allowing recreational shooting may have some adverse effects on pronghorn, these new management objectives may be expected to somewhat reduce and/or localize these impacts.

Though State Route (SR) 85 appears to already pose a barrier to eastward movement of pronghorn, allowing continued development of overhead and underground utilities within the SR 85 transportation/utility corridor (“Utility/Transportation Corridors” resource management element) will likely continue to negatively affect pronghorn. However, prohibiting all other transportation/utility corridor development, except within the SR 85 corridor, will likely benefit pronghorn by reducing/limiting the effects of development (i.e., elimination of wildlife habitat, increased wildlife mortality, increased noise and human activity, habitat fragmentation, and restriction of wildlife movement).

The development of a program to control all trespass grazing (“General Vegetation, Wildlife, Wildlife Habitat, and Wildlife Waters” resource management element) will likely benefit pronghorn. Livestock grazing can alter vegetation and degrade habitat, compete with/act as a deterrent to use for forage by pronghorn, and transmit disease to pronghorn. Livestock grazing is also associated with the spread of invasive species, which can alter habitats and reach densities to carry fire. Control of invasive species could result in some disturbance to pronghorn if control activities are conducted in areas occupied by pronghorn. Control of invasive plants, however, will likely benefit pronghorn by improving habitat function and reducing the risk of large fires. The objectives to establish criteria for protection of important habitat; to implement restrictions in key areas to protect and conserve habitat; and to restore areas that have been damaged by a discontinued military, agency, or intensive public use would likely benefit pronghorn.

Up to six high-priority wildlife water development projects may be implemented. It is currently unknown whether the San Cristobal Valley site will be selected for a water development project; if it is, however, it may benefit pronghorn. The development will only be implemented in concert with supporting research, as consistent with the Sonoran Pronghorn Recovery Plan, and as evaluated through section 7 consultation (DOI, BLM 1999).

Disturbance to pronghorn could occur from implementation of the “Special Status Species” resource management element, if activities such as special status species surveys and habitat improvements, as well as predator control, occur within habitat occupied by pronghorn. However, these activities would generally benefit pronghorn if they are made in support of pronghorn recovery. Currently, there are no specific plans for implementing predator control programs on the BMGR. Predator control could potentially be a useful tool for furthering the recovery of pronghorn; however, the need for and design of any future predator control program would be resolved in detail by the recovery team, the FWS, and/or Arizona Game and Fish Department, and reviewed under the Act, National Environmental Policy Act, and other applicable laws.

Prevention of soil erosion, water pollution, and groundwater depletion; restriction of vehicular and construction activities when soils are susceptible to a heightened risk of erosion; restriction of vehicular traffic to established roads and previously impacted areas; and restoration of areas with excessive surface damage from past activities (“Soil and Water Resources” resource management element) will likely benefit pronghorn by preventing degradation and/or improving the quality of their habitat. A range-wide soil survey could benefit pronghorn by providing information about the relationship between wildlife habitats of interest and the soils on which they occur. Such information could aid in monitoring and adaptive management of pronghorn and pronghorn habitat.

The implementation of dust control measures at construction sites and recreation activity areas, and the development of best management practices for activities that might potentially generate non-point source pollution (“Air Resources” resource management element) may provide a small benefit to pronghorn habitat because these measures help protect vegetation (i.e., preventing the accumulation of excessive amounts of dust on leaves of vegetation, which can interfere with photosynthesis) that is a component of pronghorn habitat. Management provisions for visual resources (“Visual Resources” resource management element) that result in new development occurring in previously disturbed areas may benefit pronghorn and pronghorn habitat by minimizing habitat loss and helping to keep human disturbances within certain locations.

The preparation of a range-wildfire management plan to establish fire prevention and suppression protocols to minimize threats to human life, property, and natural and cultural resources (“Wildfire Management” resource management element) will likely benefit pronghorn because wildfires can have a detrimental impact on pronghorn by potentially causing direct mortality or by destroying pronghorn habitat. Some fire prevention and suppression activities could disturb pronghorn or degrade habitat (i.e., creation and maintenance of fuel breaks in pronghorn habitat), however, adverse effects could be minimized or avoided through proper planning and would be analyzed in future section 7 consultation.

Improved coordination and communication with off-range managers and authorities to address issues of a regional concern and to provide input so that off-range actions result in few, if any, adverse effects on the BMGR (“Perimeter Land Use, Encroachment, and Regional Planning” resource management element) will likely benefit pronghorn. Actions that consider species occurring both on and off the BMGR (e.g., pronghorn) in a greater regional context would lead

to better information about their ecology and also better management and decision-making. Assessment of issues such as groundwater management, soil or water quality, use of agricultural chemicals, trespass grazing, and illegal immigration would all be considered, and their effect on the cultural and natural resources (including pronghorn) of the BMGR would likely benefit pronghorn.

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.

Most lands within the current range of the pronghorn are managed by Federal agencies; thus, most activities that could potentially affect pronghorn are Federal activities that are subject to section 7 consultation. The effects of these Federal activities are not considered cumulative effects. Relatively small parcels of private and State lands occur within the currently-occupied range of the pronghorn near Ajo and Why, north of the BMGR from Dateland to Highway 85, and from the Mohawk Mountains to Tacna. State inholdings in the BMGR were acquired by the USAF. Continuing rural and agricultural development, recreation, vehicle use, grazing, and other activities on private and State lands adversely affect pronghorn and their habitat. MCAS-Yuma (2001) reports that 2,884 acres have been converted to agriculture near Sentinel and Tacna. These activities on State and private lands and along the Mexican border and the effects of these activities are expected to continue into the foreseeable future. Historical habitat and potential recovery areas currently outside of the current range are also expected to be affected by these same activities on lands in and near the action area in the vicinity of Ajo, Why, and Yuma.

Of particular concern are increasing illegal border crossings by undocumented migrants and smugglers. Deportable migrant apprehensions by Border Patrol agents in the Ajo Station increased steadily from 9,150 in 1996 to 20,340 in 2000. Apprehensions in the BMGR by the Border Patrol were 9,500, 11,202, and 8,704 in 1996, 2000, and 2001, respectively (URS Corporation 2003). In 2001, estimates of undocumented migrant traffic reached 1,000 per night in Organ Pipe Cactus NM alone (Organ Pipe Cactus NM 2001). Given these numbers and that the Border Patrol apprehends only a fraction of illegal migrants and smugglers, undocumented illegal traffic through the BMGR probably exceeds recreational use even on the busiest of holiday weekends. Increased presence of the Border Patrol in the Douglas, Arizona area, and in San Diego (Operation Gatekeeper) and southeastern California, have pushed undocumented migrant and smuggler traffic into remote desert areas, such as Cabeza Prieta NWR, Organ Pipe Cactus NM, and BMGR (Klein 2000). Vehicle barriers and effective patrols in the Algodones Dunes of Imperial County, California, are probably responsible for a recent redirection to and increase of illegal vehicle crossings and vehicle abandonment in the BMGR (May 21, 2003, meeting notes of the Barry M. Goldwater Range Executive Council). These illegal crossings and law enforcement response have resulted in route proliferation, off-highway vehicle (OHV) activity, increased human presence in backcountry areas, discarded trash, abandoned vehicles, cutting of firewood, illegal campfires, and increased chance of wildfire. Habitat degradation and

disturbance of pronghorn almost certainly results from these illegal activities. We expect these activities to continue; however, some discussions are occurring between Mexican and U.S. officials about the creation of a guest worker program whereby Mexican nationals could legally cross the border to work in the U.S. If such a program is initiated, it might greatly reduce future illegal immigration and law enforcement response, with concomitant reductions in habitat degradation and suspected disturbance of pronghorn.

CONCLUSION

After reviewing the current status of the Sonoran pronghorn, the environmental baseline for the action area, the effects of the proposed implementation of the BMGR INRMP, and the cumulative effects, it is our biological opinion that the proposed action is not likely to jeopardize the continued existence of the Sonoran pronghorn. No critical habitat has been designated for this species, therefore, none will be affected. Our conclusion is based on the rationales given in our previous biological opinions and reinitiations on those actions, and the following:

- 1) The Sonoran pronghorn population has increased since 2002 despite increasingly high levels of human use in the form of off- and on-road vehicle and foot travel by smugglers, illegal immigrants, and law enforcement.
- 2) Restrictions, prohibitions, and provisions described in the proposed resource management elements would reduce adverse effects of certain activities proposed by the INRMP. For example, an estimated 112 miles of road within the current pronghorn range would be closed; all transportation/utility corridor development would be prohibited outside of the SR 85 corridor; a wildfire management program would be developed; a program would be developed to control all trespass grazing; and additional resource surveys would be conducted that could provide better information about pronghorn and pronghorn habitat on the BMGR and the elements important to their protection and preservation.
- 3) Unit 3, mostly open to public use, will continue to be closed to public entry during the pronghorn fawning season from March 15 to July 15.
- 4) When added to the environmental baseline, the status of the species, and cumulative effects, the effects of the proposed action, which include beneficial restrictions, limitations, and provisions, do not reduce appreciably the likelihood of survival and recovery of the subspecies in the wild. Therefore, the proposed action will not jeopardize the continued existence of the subspecies. As proposed, implementation of the INRMP will not significantly adversely affect important fawn recruitment or significantly adversely affect occupied pronghorn habitat. Concerns about disturbance to pronghorn and habitat degradation are minimized by the INRMP's restrictions, limitations, and provisions.

The conclusions of 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 that were incorporated into the project design.

INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulation pursuant to section 4(d) of the ESA 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 defined 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 (50 CFR 17.3). “Harass” is defined 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 (50 CFR 17.3). “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 ESA provided that such taking is in compliance with the terms and conditions of this incidental take statement.

AMOUNT OR EXTENT OF TAKE ANTICIPATED

We do not anticipate the proposed action will result in incidental take of Sonoran pronghorn for the following reasons:

- 1) Restrictions, prohibitions, and provisions described in the proposed resource management elements would reduce adverse effects of certain activities proposed by the INRMP (see rationale 2 under “Conclusion” above).
- 2) Pronghorn are rare (currently <60) on the BMGR, making encounter with human activities a relatively rare event.
- 3) Recently completed forage enhancement plots and water developments buffer the effects of drought when pronghorn are most sensitive to human disturbance.
- 4) No incidental take of Sonoran pronghorn is known to have occurred on the BMGR or elsewhere in Arizona due to activities authorized by the INRMP.

CONSERVATION RECOMMENDATIONS

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

1. MCAS and LAFB should continue to pursue funding for all pronghorn research, monitoring, and recovery needs identified by the SOPH Recovery Team.

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

REINITIATION NOTICE

This concludes formal consultation on the action(s) outlined in the (request/reinitiation 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.

Thank you for your cooperation and assistance throughout this consultation process, as well as your considerable role and leadership in conservation of the Sonoran pronghorn. Any questions or comments should be directed to Erin Fernandez (520) 670-6150 (x238) or Jim Rorabaugh (602) 242-0210 (x 238).

Sincerely,

/s/ Steven L. Spangle
Field Supervisor

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Regional Supervisor, Arizona Game and Fish Department, Yuma, AZ
Acting Chief, Habitat Branch, Arizona Game and Fish, Phoenix, AZ

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TABLES AND FIGURES

Figure 1. The Barry M. Goldwater Range (FEIS, May 2005).

