

**BARRY M. GOLDWATER RANGE:
MILITARY TRAINING AND
PROTECTION OF ENDANGERED SPECIES**

**A Report of the
Congressionally Appointed Task Force**

March 7, 2005


BARRY M. GOLDWATER RANGE TASK FORCE

Enclosed is the final report of the Congressionally-appointed Task Force examining environmental and readiness factors on the Barry M. Goldwater Range. The Task Force convened on three occasions, and reached consensus on a number of key issues. The findings include:

- The Air Force and Marine Corps are providing realistic training within current operational guidelines despite some loss of flexibility.
- Sufficient and stable management and funding would be necessary to ensure long-term endangered species management and protection.
- The Sikes Act and the Endangered Species Act Section 7 Consultation processes can be better utilized to maximize commander flexibility.

Recommendations supporting these findings are provided. It should also be noted that the Task Force found that border and associated law enforcement issues have a greater impact on both operational training and the endangered species than either of them have on each other. A section of the report is dedicated to that subject.

In summary, there are costs, both in dollars and in flexibility of training, that are paid to protect the habitat and species of concern on the Goldwater Range. The willingness of all parties to cooperate on these issues has ensured an environment wherein military readiness has been maintained without undue stress on the Range's habitat. The Task Force also found that there is an opportunity for incorporating additional flexibility in how the Range is managed and endangered species are protected, while ensuring both objectives continue to be high priorities.



Carl P. McCullough
Chairman

EXECUTIVE SUMMARY

The 2004 National Defense Authorization Act required the establishment of a Task Force to determine and assess various means of resolving the conflict between the dual objectives at the Barry M. Goldwater Range (Goldwater Range), Arizona, of the full use of live ordnance delivery areas for military training and the protection of endangered species that are present at the Range. The Task Force was charged with submitting to Congress a report describing its assessment, determinations, and any recommendations it would propose to address the conflict. Congress also directed the Task Force to evaluate the potential relevance of the task force approach toward resolving similar conflicts at other military training and testing ranges.

The key findings of the Task Force are:

- The Air Force and Marine Corps are providing realistic training within current operational guidelines despite some loss of flexibility.
- Sufficient and stable management and funding would be necessary to ensure long-term endangered species management and protection.
- The Sikes Act and the Endangered Species Act Section 7 Consultation processes can be better utilized to maximize commander flexibility.

The Task Force also discovered that illegal entrants and associated law enforcement activities are a larger problem on the Range than conflicts between endangered species and training.

The Goldwater Range is one of the premiere combat aviation training ranges available to the Department of Defense and will remain critical to the military readiness of the armed services into the foreseeable future. At the same time the Range comprises 42 percent of the current U.S. habitat occupied by the Sonoran pronghorn and is necessary to the recovery of the species.

Virtually every Marine and 90 percent of all Air Force A-10 and F16 pilots who fought in Operations Desert Storm, Allied Force and Iraqi Freedom trained on the Range. The air and ground training activities of the Marine Corps and Air Force are usually conducted independently. The Task Force believes the Marine Corps and Air Force can continue to fulfill their training mission objectives. Nevertheless there are constraints associated with conducting military activities in areas inhabited by sensitive species.

The Task Force recognizes the Department of Defense's requirement to provide realistic, situational training for the armed forces on the Goldwater Range. Yet, interagency consultations mandated by Section 7 of the Endangered Species Act have resulted in some training scenarios, which restrict military activities, compromise realism, or otherwise impact training. This has resulted in loss of flexibility in developing or executing training scenarios on the Goldwater Range.

There are five species of concern on the Goldwater Range, four of which are listed as threatened or endangered under the Endangered Species Act. These include the Sonoran

pronghorn antelope (Pronghorn), Lesser long-nosed bat, Cactus ferruginous pygmy owl, and the Peirson's milkvetch. The species of primary focus is the Pronghorn due to its measurable population decline in recent years, controversy surrounding its active management and mitigation measures, and the significance of portions of the Goldwater Range as prime Pronghorn habitat. Prior to the December 2004 survey, all data indicated the Pronghorn population had suffered a significant decline, which could be attributed to several factors, including historical habitat fragmentation exacerbated by an extreme 15-month drought. However, active ongoing conservation management is showing signs of success. Unfortunately, resources to support this effort have been put together reactively on an ad hoc basis. As a result, stable long-term funding is not in place to ensure proactive implementation of the Pronghorn recovery plan. The fifth species of concern is the Flat-tailed horned lizard (Lizard). The Lizard is considered the second most important conservation priority even though it is not listed as threatened or endangered.

There are a number of forums and decision-making processes that actively address both military training and endangered species protection issues. The Barry M. Goldwater Executive Council and the Barry M. Goldwater Range Intergovernmental Executive Committee are the two most effective bodies that should continue to seek mutually acceptable solutions for these issues.

The Task Force has found that illegal entrants and associated law enforcement activities currently have a significant negative effect on both the military training mission and endangered species. Direct impacts include habitat degradation and the canceling of training due to the presence of ever-increasing numbers of illegal entrants which results in reallocation of available resources to Range security. Until existing and anticipated U.S.-Mexico border trends are mitigated, military training, the continued protection of species, and the integrity of the ecology of the Goldwater Range are anticipated to experience severe stress.

The Task Force acknowledges that border issues are beyond its specified scope and recognizes they are not simply a Goldwater Range or even an Arizona problem. Nevertheless, as the number and frequency of illegal entrants transiting the Range increases, there is an increased risk of killing or harming someone through normal military activities. Such an occurrence could have significant implications on future military training and national security.

Key recommendations from the Task Force are:

- Proactively plan for the potential disruption to training resulting from the accidental harming of a Pronghorn, including the creation of a "critical incident team" with a definitive charge and established operating procedures.
- Incorporate adaptive management approaches that provide for species protection and training flexibility based upon established performance standards and specified circumstances that would require modified actions.
- Address the resource needs to implement actions recommended in the Pronghorn Recovery Plan.

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INTRODUCTION

The National Defense Authorization Act for FY2004, Section 322, required the Secretary of Defense to establish a Task Force to determine and assess various means of resolving the conflict between the dual objectives at the Goldwater Range of the full utilization of live ordnance delivery areas for military training and the protection of endangered species that are present on the Range. Section 322 required the following composition of the Task Force:

- The Air Force Range Officer, who shall serve as chairperson of the Task Force;
- The Range Officer at Barry M. Goldwater Range;
- The Commander of Luke Air Force Base, Arizona;
- The Commander of Marine Corps Air Station, Yuma, Arizona;
- The Director of the United States Fish and Wildlife Service;
- The Manager of the Cabeza Prieta National Wildlife Refuge, Arizona;
- A representative of the Game and Fish Department of the State of Arizona;
- A representative of a wildlife interest group in the State of Arizona; and,
- A representative of an environmental interest group.

The individuals who served on the Task Force are identified in Appendix A.

The Congress directed the Task Force to assess the effects of the presence of endangered species on military training activities in the live ordnance delivery areas at the Goldwater Range and in any other areas of the Range that are adversely effected by the presence of endangered species; to determine various means of addressing any significant adverse effects on military training activities; and to determine the benefits and costs associated with the implementation of these mitigation measures.

The Congress also authorized the Task Force to propose legislative and administrative actions and to evaluate its own usefulness as a mechanism to address conflicts between military training objectives and the protection of endangered species at other military training and testing ranges. The Task Force submits this report in accordance with its legislative mandate.

The Department of Defense (DoD) retained the U.S. Institute for Environmental Conflict Resolution (USIECR) to support the Task Force process and to engage a third party neutral facilitator. USIECR is known for its expertise in collaborative process design.

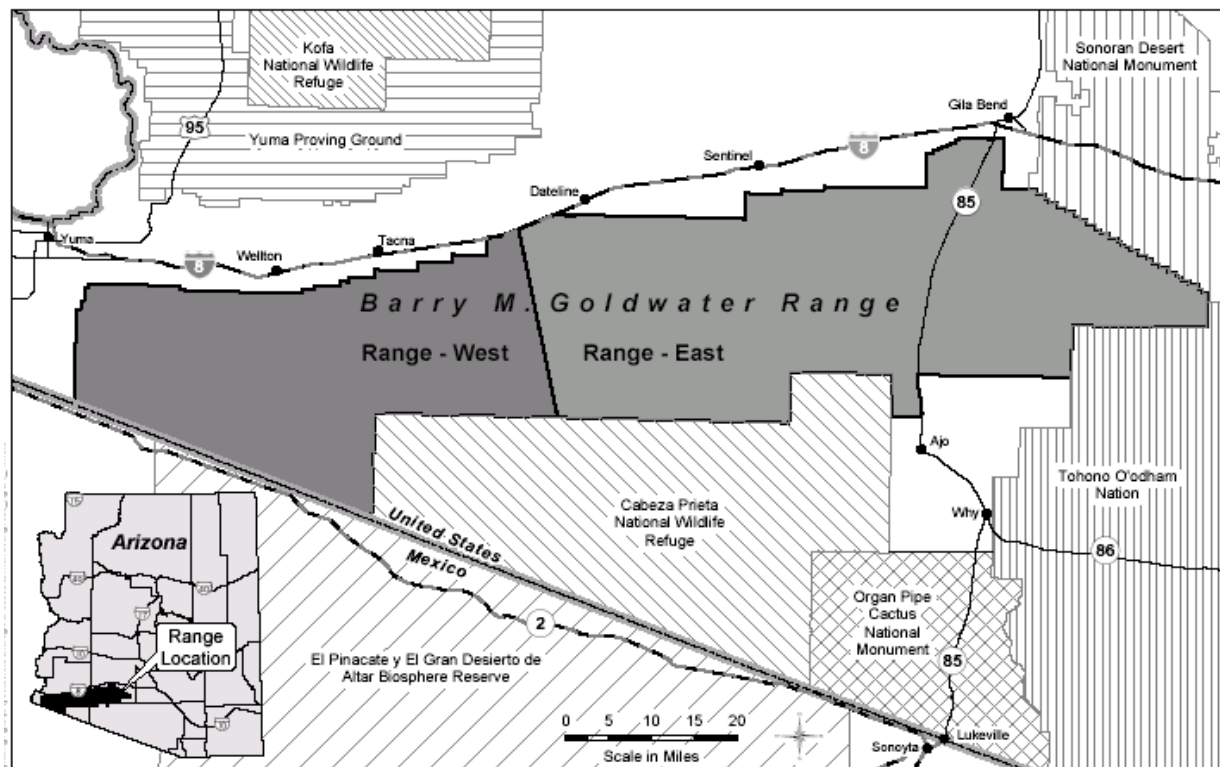
After conducting three extensive sessions, the Task Force believes its findings are responsive to the Congressional charge. The findings and recommendations are supported by all Task Force members.

I. ASSESSMENT AND DETERMINATIONS

A. Impacts of Endangered Species on Military Training

This initial section describes the type of training conducted at the Goldwater Range and assesses the impact of threatened and endangered species conservation on the military training mission. For training purposes, the Goldwater Range consists of both the lands set aside for military use and the restricted air space above the Barry M. Goldwater Range and the Cabeza Prieta National Wildlife Refuge. Throughout this document, the Goldwater Range or Range refers to both the land and air space available for military training purposes.

The map below shows the Goldwater Range and surrounding key features.



1. Types of Training

Congress passed the Military Lands Withdrawal Act in October 1999 which designated the Marine Corps as the manager of the western segment of the Goldwater Range (Range-West) and the Air Force as the manager of the eastern segment (Range-East). The Goldwater Range is critical to military training and our nation's security. As noted below, it includes 2.8 million acres of restricted airspace and 1.7 million acres of land.

Table 1 Size of the Barry M. Goldwater Range (millions of acres)			
	Range-West	Range-East	Total Range
Restricted Airspace	1.0	1.8	2.8
Land	0.7	1.0	1.7

The favorable weather conditions, desert environment, and size of the Range combine to provide the nation’s most realistic combat training for current real-world contingency operations. The training activities on the two sections of the Range are usually independent but sometimes complementary and interdependent. In accordance with the Sikes Act, described below, the Marine Corps and the Air Force are committed to managing natural resources on the Range consistent with their military mission so as to provide for sustained, multi-purpose uses of those resources.

a. United States Marine Corps and Range-West

The Range-West has been reserved for use by the Secretary of the Navy for an armament and high-hazard testing area, aerial gunnery training, rocketry, electronic warfare, tactical maneuvering, air support, and other defense related purposes. The Secretary of the Navy has delegated control of Range-West to the Marine Corps, the primary military operator and user of this range since 1959. Local command responsibility for the operation, control, and management of the Range-West has been assigned to the Commander, Marine Corps Air Station Yuma.

Marine Corps training activities include both air and ground operations. The common purpose of all these operations is to provide training in one or more of the six war fighting functions of a Marine Aircraft Wing, which include anti-air warfare, offensive air support, assault support, aerial reconnaissance, electronic warfare, and control of aircraft and missiles. The Marine Corps also supports Fleet intermediate and advanced level aviation training and hosts the Marine Corps graduate-level aviations weapons and tactics school. Finally, the Marine Corps makes use of a limited number of ground-based facilities and locations on the Air Force side of the Range during a semi-annual training exercise called the Weapons Tactics Instructors Course.

b. United States Air Force and Range-East

The Range-East has been withdrawn and reserved since 1941 for use by the Air Force for the same purposes as Range-West. Local command responsibility for the operation, control, and management of Range-East has been delegated to the Commander of the 56th Fighter Wing at Luke Air Force Base. The 56th Range Management Office at Luke is the designated Range Operating Agency.

The strategic value of the Goldwater Range to Air Force pilot training is enormous. Well over 90 percent of all A-10 and F-16 pilots who participated in Operations Desert Storm, Allied Force, and Iraqi Freedom trained on the Range. The location, size and capacity of the Range, coupled with its vast desert environment, enables realistic combat training scenarios for aviators who may see combat within weeks of training completion. In addition to 23 primary Air Force and Army flying units, the Goldwater Range-East is used on a limited, but regular basis by the Marine Corps and Navy. These activities comprise a total of over 45,000 sorties each year.

2. Impacts of Threatened and Endangered Species Management on Military Training

The military is committed to the continuation of current conservation and habitat enhancement actions to ensure survival of all threatened and endangered species¹ on the Range. The Marine Corps and Air Force have invested a significant amount of effort and resources to meet this goal. Furthermore, the existence of the Range and its relatively pristine habitat provide protection and forage to threatened and endangered species. The military has a proven track record of stewardship toward endangered species on the Goldwater Range.

The Task Force finds that the Department of Defense can conduct most of its current training and support activities at the Range in accordance with contemporary species protection prescriptions generated under the Endangered Species Act (ESA) with marginal impact to current training capacity and quality requirements. However, compliance with the ESA is an ongoing challenge. Changes in the status of a protected species—for environmental, biological, legal, or other reasons—could affect the current balance between training and support activities and species protection prescriptions in a manner that could unacceptably impact current military missions.

At the same time, there are several actual or potential negative impacts on military training. Examples include:

- Species protection measures that require live or inert ordnance delivery training missions to be either diverted to alternative tactical ranges within the Goldwater Range or aborted to a later date can diminish the training quality of those missions.
- Constraints imposed by the series of mission modifications and protective measures implemented since 1988 at the Range to benefit Sonoran pronghorn have cumulatively reduced the scope and quality of the training in certain advanced courses that provide combat-related tactical decision-making challenges. Some of the scope and quality of this training is

¹ A threatened species is defined as any species or subspecies “likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range” [Endangered Species Act (ESA), Section 3(20)]. An endangered species is a species or subspecies of fish, wildlife, or plants “in danger of extinction throughout all or a significant portion of its range” [ESA, Section 3(6)].

compromised by ESA requirements that confine certain flight and ground activities to designated corridors, locations or times.

- The fact that no incidental take² is currently authorized for Sonoran pronghorn could result in an indefinite cessation of all air-to-ground activities on the Range, which would cause an incalculable impact on military training operations. This worst-case scenario may be more theoretical than real, but it is a legal possibility and poses a significant concern for the primary Range users.
- Success in recovering these species, such as a significant increase in the herd size of the Pronghorn, may actually further negatively impact military training in the short term because a greater Pronghorn population increases the likelihood of an incidental take. Conversely, in the long term, an increased herd size might create a positive impact by allowing increased and additional flexibilities for training operations, while still complying with ESA requirements. This type of linked species adaptive management conservation is desirable.

The specific impacts of endangered species on military training differ for the Marine Corps and the Air Force. The discussion below describes the nature and magnitude of these impacts.

a. United States Marine Corps and Range-West

The significance of the land and overlying airspace within the Pronghorn habitat is essential to the future of Marine aviation. Virtually every Marine pilot who fought in Operations Desert Storm and Iraqi Freedom has trained on the Range. This training involves flying approximately 12,000 sorties per year. In fact, for many Marines, the Range is the last stop en route to live battle zones in the Middle East. Without flexibility to utilize the full tactical dimensions offered by the Range, the air-ground battle space training scenario is reduced in complexity and realism, tactical options are artificially eliminated, and the training benefit is diminished. It is important to provide as much flexibility as possible to the training mission, while still protecting threatened and endangered species, so that students may make tactical judgments and errors in a setting that is far more forgiving than live battle zones.

Three specific present and future effects of threatened and endangered species management on the Marine Corps training mission are detailed below:

- Restricting Low-Level Flights to Designated Routes Eliminates Free Play

² “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 [50 CFR 17.3]. “Incidental take” is take of a listed fish and wildlife species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by a Federal agency or applicant [50 CFR 402.02].

The objective of low-level flight is for the aircrews of fixed-wing aircraft or helicopters to train in the use of terrain to mask their flight path from air defense radars. Since 1960, low-level flights over the Cabeza Prieta National Wildlife Refuge have been restricted. Consequently, the training quality deteriorated. It has become more difficult to mimic, as best as possible, a combat environment young military decision-makers face as their reality in the various theaters of war. Since 1988, low-level flight routes have been realigned four times during ESA Section 7³ consultations between the Marine Corps and the Fish and Wildlife Service with the objective of minimizing the potential effects on Pronghorn.

- Limiting Ground Training Sites to Pre-Approved, Designated Training Sites Results in Loss of Flexibility

Ground unit participation is essential for simulating realistic air-to-air, air-to-ground, and ground-to-air battlefield conditions. Informal consultations with the Service in 1988, regarding the potential effects of training activities on the Pronghorn, resulted in the restriction of ground units training to designated support areas in Range-West. Ground support areas were established in geographically dispersed and tactically realistic positions to provide approved off-road locations where Marine Corps ground units could deploy with vehicles to participate in air-ground integration training activities. These 35 support areas provided ground unit commanders with the sufficient flexibility to deploy their forces to meet the variety of tactical challenges posed during warfighting training scenarios.

The original 35 ground support areas in Range-West and the three in Range-East continue to provide adequate deployment training sites to ground units. However, the current biological opinion⁴ restricts the Marine Corps instructors from altering current sites. This is especially relevant with the onset of several new theatres of warfare for which the Marine Corps must develop original and innovative lesson plans to improve the combat readiness of their troops. For example, three previously approved actions are no longer possible as a result of ESA Section 7 consultation; these include new proposed ground support zones, a low level flight track for fixed-wing aircraft flight corridors over the Refuge (now limited to 60 days annually), and the continued operation of a surface-to-air missile firing range.

³ Section 7 is that part of the ESA that requires all Federal agencies, in consultation with the Fish and Wildlife Service (or National Oceanic and Atmospheric Administration (NOAA) Fisheries), to use their authorities to further the purpose of the ESA and to ensure that their actions are not likely to jeopardize the continued existence of listed species or result in destruction or adverse modification of critical habitat.

⁴ “Biological opinions” are documents which include (1) the opinion of the Fish and Wildlife Service as to whether or not a Federal action is likely to jeopardize the continued existence of a listed or proposed species, or result in the destruction or adverse modification of designated or proposed critical habitat; (2) a summary of the information on which the opinion is based; and (3) a detailed discussion of the effects of the action on listed and proposed species and designated or proposed critical habitats [50 CFR 402.02 and 50 CFR 402.14].

- **Resources Expended to Comply with Sonoran Pronghorn Management**

The Marine Corps has successfully implemented actions that have ensured full compliance with the ESA, through Biological Opinions that have endorsed the Marine Corps management scheme. To implement these actions, the Marine Corps has expended over \$650,000 on direct Pronghorn recovery projects since 1993. These expenditures have not come from funds appropriated expressly for this purpose, but rather have necessarily from funds that otherwise would have been available for other military training purposes. Specifically, actions to benefit the Sonoran Pronghorn and ensure full compliance with the ESA have included modifying flight routes, establishing minimum flight altitudes, and ongoing participation with the Pronghorn Recovery Team process to take steps that actively enhance the recovery of the Pronghorn. The Task Force would like to emphasize that while the Marine Corps has demonstrated its ability to conduct training exercises on the Range consistent with existing ESA-related, the costs associated with these efforts will continue indefinitely unless and until the recovery status of the Sonoran Pronghorn is improved.

- b. United States Air Force and Range-East**

There are three primary impacts to military operations on the Range-East due to Pronghorn protections as a result of ESA Section 7 consultations between the Air Force and the Fish and Wildlife Service. Foremost is the impact on the flying training mission through cancelled sorties, or sorties diverted to another tactical range due to the presence of Pronghorn at target locations. Second, significant resources have been expended to comply with the ESA and the Biological Opinion for the Pronghorn. Finally, there are certain indirect impacts that affect training operations.

- Pronghorn Impact on Sorties**

The Biological Opinion requires the Air Force to send biologists to survey the North and South Tactical range target areas for the presence of Pronghorn prior to live drop, high explosives employment sorties. Pronghorn sightings within three kilometers of any inert bombing target results in its closure for the day; sightings within five kilometers close high explosives targets. Additionally, ground movements for range personnel are restricted based on traffic type, quantity, and distance from the sited Pronghorn.

For calendar years 2002 through 2004, seven percent of all live drop sorties were cancelled, and 11 percent were moved to another tactical range, totaling 18 percent of all live drop sorties being impacted. Live drop sorties are crucial to training new pilots and require an above average time commitment for mission planning to ensure safe operations and appropriate learning on these one-time sorties. Targets are highly restricted for environmental compliance, and many elements must successfully come together to achieve a successful live drop event.

When sorties are launched and subsequently cancelled due to target closures, many hours of effort are lost, disrupting the programmed flying training flow and wasting resources. If a mission is launched and subsequently moved to another target area, the tactical scenario becomes diluted and is more academic in nature, losing combat training realism. When adequate notification occurs, some sorties are terminated before execution, but usually after many hours of effort have already been expended. While the Air Force has succeeded at making moved sorties as effective as possible, the ease of providing quality training has been diminished and missed training elements must be accomplished on subsequent or additional sorties.

- Resources Expended to Comply with Sonoran Pronghorn Protection

The Air Force has implemented many actions to ensure both the continued successful operation of the Range and full ESA compliance. The Air Education and Training Command has spent \$3.9 million on Pronghorn studies and projects since 1995, including over \$350,000 annually on Biological Opinion compliance via contract biologists necessary for Range surveys prior to live ordnance drops. In addition, one Air Force biologist expends 95 percent of his daily efforts addressing Pronghorn related issues. Beyond these immediate financial consequences, the diversion of time and energy for senior staff and officers and their consultations with numerous other agencies to ensure compliance with Pronghorn protection is a frequent occurrence that causes the focus to shift to endangered species concerns rather than the military's training mission. The Air Force has also demonstrated its ability to conduct training exercises on the Range in compliance with the ESA, however the Task Force emphasizes that the costs associated with these efforts will continue indefinitely unless and until the recovery status of the Sonoran Pronghorn is improved.

- Other Impacts Resulting from Pronghorn Management

The following three indirect impacts occur due to Pronghorn management practices. First, rotary wing aircraft are generally restricted from using the North and South Tactical Ranges when the East Tactical Range is available. This is based on study findings that Pronghorn react adversely to the sound of helicopters. Second, contract range maintenance and explosive ordnance disposal clearances are occasionally delayed due to Pronghorn proximity. Finally, the Air Force is also impacted by the 1500 foot altitude restriction over the Refuge, severely limiting its low-altitude training opportunities.

3. Summary

The Range is critical to the training mission of both the Air Force and Marine Corps. There are evident impacts to Marine Corps and Air Force training due to the presence of endangered species, including a reduction in the ability to provide realistic training and the alteration of proposed actions because of fear of a jeopardy opinion⁵. More

⁵ A Biological Opinion determining that a Federal action is likely to jeopardize the continued existence of a listed species or results in the destruction or adverse modification of critical habitat.

specifically, low-level flights are restricted to designated routes and ground training is limited to pre-approved sites. The need to cancel live-drop sorties or move to different tactical ranges on short notice also occurs regularly. The military remains extremely concerned about the potential consequences of an incidental take.

Given existing conditions and conservation constraints, the military can continue to achieve most of the training requirements currently assigned to the Range. The bigger question is how to deal with future training requirements in the context of efforts to successfully recover species. It is essential to the training mission to maintain the ability to provide realistic combat-related training today and in the future. The more restrictive the requirements from interagency ESA Section 7 consultations, the more training flexibility and realism are reduced. A better approach, based on adaptive management, is desired to ensure effective and efficient compliance with ESA requirements. This will allow simultaneous accomplishment of critical training missions and protected species management as the status of listed species and training mission changes.

B. Impacts of Military Training on Endangered Species

The Task Force has also investigated the impact of military training on endangered species on the Range. This section details the findings.

1. Ecoregional Setting

The Sonoran Desert Ecoregion encompasses approximately 64 million acres in southern Arizona, southeastern California, northern Baja California, and northwestern Sonora, Mexico. The Sonoran Desert is especially rich in biological diversity. Together, the Goldwater Range, the Cabeza Prieta National Wildlife Refuge, Organ Pipe Cactus National Monument, and the Sonoran Desert National Monument represent one of the largest contiguous regions of relatively undeveloped areas in the Sonoran Desert. This is prime habitat to well-adapted species. It is estimated that there are over 2,000 species of invertebrates, 500 species of plants, 200 species of birds, 60 species of mammals, and 60 species of reptiles/amphibians present on the Range.

Military installations in general and the Goldwater Range in particular provide vast unfragmented habitat for a host of species. For example, 87 percent of the Air Force portion of the Range is considered pristine -- intact and virtually untouched. Six percent is considered to be impacted by military training activities and another seven percent displays only minimal signs of military activity. Moreover, within the Pronghorn habitat on the Marine Corps' side, 98 percent remains undisturbed by authorized military operations.

2. Species of Concern

The Goldwater Range is an active military flight training facility overlaying a large area of the low mountains and basins of the Sonoran Desert, adjacent to Mexico. As noted in the training description, the Air Force manages the Range-East and the Marine Corps manages the Range-West. At the Range, there are five species of concern, four of which are listed as threatened or endangered:

Species	Description	Listing Status
Sonoran pronghorn	Mammal	Endangered
Flat-tailed horned lizard	Reptile	Not listed
Lesser long-nosed bat	Mammal	Endangered
Cactus ferruginous pygmy-owl	Bird	Endangered
Peirson's milkvetch	Plant	Threatened

Each of these species is described below. However, at the Goldwater Range, the Pronghorn is the species of primary focus. This is due to its measurable population decline, controversy surrounding its active management and mitigation measures, and the predominance of the Range as Pronghorn habitat. The Task Force concurs that the Flat-tailed horned lizard, even though it is not a listed species⁶, is the second most significant species on the Range because of the potential for listing and possible impacts to the species from Range activities.

a. Endangered Sonoran Pronghorn (*Antilocapra americana sonoriensis*)

It was expected that due to favorable forage conditions and the effectiveness of emergency recovery actions, the U.S. population of Pronghorn would probably increase somewhat since the December 2002 survey. This has proven to be true, as 39 Pronghorn were sighted on the Goldwater Range in the December 2004 survey. Based upon this observation and predictive modeling, it is estimated there are approximately 58 Pronghorn on the Range. This count has notably increased the estimated 21 to 33 animals based on the 2002 survey. Although these numbers are encouraging and the trend is in a positive direction, the population is still exceedingly low and the species remains in grave danger of extirpation.

The U.S. sub-population of Pronghorn has been, and is still, subjected to a myriad of human activities that has the potential to adversely affect its historic habitat and its survival. Such activities include livestock grazing, recreation, and military activities on the Range. An increasing influx of illegal entrants and smugglers, and the corresponding response from the U.S. Border Patrol and other law enforcement agencies is also an increasingly important variable. Furthermore, the range of the Pronghorn is limited by highways, fences, canals, and towns that act as physical barriers to their free movement. These barriers prevent them from accessing traditional foraging areas and greenbelts such as the Gila River and Rio Sonoyta, especially during periods of drought. These impediments have resulted in the Pronghorn losing their ability to roam on their historical ranges.

Pronghorn have been isolated in their current habitat. Within this isolated habitat, no factor or combination of factors other than the relative availability of quality forage and freestanding water – which are directly tied to the timing, distribution, and abundance of rainfall – can account for the irregular, dramatic cycles of growth and decline observed on an almost yearly basis in the U.S. Sonoran pronghorn population since 1992. The vulnerability of the Pronghorn to drought cycles is not new. Their populations have no doubt always declined during periodic drought cycles that are typical of the Sonoran Desert. The severity of drought impact on the current Pronghorn populations, however, is exacerbated by the barriers that curtail their ability to leave drought-stricken habitat in search of better forage conditions and water.

⁶ A listed species is a species, subspecies, or distinct population segment that has been added to the federal list of endangered and threatened wildlife and plants.

The current habitat occupied by Pronghorn in the United States is almost entirely within or contiguous to federal ownership. The Range encompasses approximately 42 percent of the suitable habitat occupied by this species. The neighboring National Wildlife Refuge, Organ Pipe Cactus National Monument, and BLM lands provide about 40, 12, and 4 percent, respectively, of the Pronghorn's habitat. The remaining Pronghorn habitat is within state and private lands in Arizona at the margins of the species' range. Critical habitat has not been designated for the Pronghorn because federal land ownership and conservation management has provided adequate protection of its habitat.

There have been concerns raised about military activities and their potential impact on the Pronghorn. Military air and surface activities within the Goldwater Range and flights within the restricted airspace overlying the Cabeza Prieta National Wildlife Refuge have contributed incremental, adverse effects to the overall cumulative impacts on Sonoran pronghorn. These effects, however, are cumulatively of negligible magnitudes and none are significant.

The Fish and Wildlife Service has evaluated the effects of military activities on Pronghorn at the Range in three separate biological opinions conducted between 1996 and 2003, including opinions on the activities by the Marine Corps Air Station, Luke Air Force Base, and the Western Army National Guard Aviation Training Site expansion project. All opinions that addressed Pronghorn came to the same conclusion; namely, the actions proposed were not likely to jeopardize the continued existence of the Pronghorn. The latest three opinions did not anticipate that military activities would result in the incidental take of Pronghorn, thus no reasonable and prudent measures⁷, nor terms and conditions were included in those opinions.

A summary of the latest opinions identifies why the Service concluded that the proposed activities were not likely to jeopardize the continued existence of the Pronghorn:

1. Ground-based military activities in the current range of the Pronghorn affect a relatively small portion of its suitable habitat.
2. Low-level helicopter flights with the greatest potential for adverse interactions with the Pronghorn would be limited primarily to four designated flight corridors, and would occur primarily during the spring and fall Weapons Tactics Instructor's courses on Range-West. Low-level helicopter flights along the corridors follow straight-line paths and do not involve hovering flight, which is most disturbing to Pronghorn. Moreover, these corridors have been aligned and their use has been timed to minimize the potential effects on Pronghorn.

⁷ "Reasonable and prudent measure" is an action that the Service, or NOAA Fisheries, believes is necessary or appropriate necessary to minimize the impacts (amount or extent) of incidental take caused by an action that was subject to consultation.

3. Biological monitors and procedures required by Luke Air Force Base are being used to minimize the likelihood of Pronghorn injury or harm on the tactical ranges when ordnance is delivered. No Pronghorn have been shown to have been injured or killed by ordnance delivery.
4. The likelihood of encounters between Pronghorn and military activities, and the possibility that incidental take will result, are significantly diminished due to the small size of the U.S. sub-population.
5. Emergency recovery actions have been initiated in an attempt to reverse the recent decline in the status of the U.S. sub-population. A semi-captive breeding facility has been completed and seven Pronghorn are now housed in a predator-free environment with abundant forage and water. It is hoped that Pronghorn will successfully reproduce in the facility and provide animals to augment the wild population. Forage enhancement plots, which provide green forage for Pronghorn during times of drought, have been created inside the facility, and another in the same area is currently in operation. Emergency water sources have also been developed. These water sources and forage enhancement plots are expected to buffer some of the effects of drought, which have been the assumed cause of recent Pronghorn population declines. The military has contributed funding for these emergency recovery actions.

The conservation of the Pronghorn is nevertheless a challenge. Recognizing the critical importance of the Goldwater Range as prime habitat for the Pronghorn, recovering the U.S. Sonoran Pronghorn is dependent on three key efforts:

- Successfully establishing and maintaining the semi-captive Pronghorn breeding program;
- Fortifying the habitat of the free-roaming herd with forage enhancements; and
- Continuing the Pronghorn project with Mexico

In addition to these three immediate tasks, the Task Force recognizes the importance of two other efforts. First, it is important to continue protecting the U.S. population of the Sonoran Pronghorn and its available habitat from loss due to human activities. Second, ultimately, there is a need to establish one or more stable and free-roaming populations in suitable U.S. habitat locations outside the Goldwater Range. The three priority tasks are described in additional detail below and highlighted in Appendix B as specific parts of the Recovery Plan that need near-term attention.

Semi-Captive Pronghorn Breeding Program

The semi-captive Pronghorn breeding program is a critical management tool for Pronghorn recovery. One site currently exists and is showing signs of success. The Pronghorn Recovery Plan calls for the continuation of this successful site and expansion to a second population outside of currently occupied habitat in the next few years. The establishment of a second population off the Range would also require a second breeding facility. The second population will increase the likelihood of recovery of the species and relieve pressure currently on the Range as one of the primary sources for the recovery efforts.

Forage Enhancements

The most critical time for the survival of Pronghorn fawns generally occurs in the month of June. Fawns usually become active and are quite mobile in April. June is the month during which weaning generally takes place. Unfortunately it is also generally the driest and hottest part of the year. Because of these two factors it is imperative that forage irrigation plots and artificial waters be available in the short term, especially during times of extreme drought, until such time as the Pronghorn Recovery Team determines this action is no longer necessary. Adequate forage plots and available water can easily be the variable that means the difference between life and death for the newly born fawns and, in times of extreme drought, for adult Pronghorn as well, and are therefore useful as a short-term strategy while population numbers remain dangerously low.

Continue Pronghorn Project with Mexico

The Pronghorn populations in Mexico are not currently threatened to the same degree as is the population in the United States. Mexico's populations exist in two areas, one close to the U.S.-Mexico border and the other closer to the Gulf of California. Historically the Mexican and U.S. populations have interbred. Currently interbreeding is no longer taking place. Collaboration with Mexico has allowed the importation of Pronghorn to the successful U.S. captive breeding program. This importation is vital to continue to fortify the gene pool of the U.S Pronghorn population.

The long-term needs for Sonoran Pronghorn recovery were fully discussed in the Sonoran Pronghorn Recovery Plan dated 1998 and Supplement and Amendment dated January 2002. As a listed species, the Pronghorn is required to have a recovery plan developed which recommends the steps and priority actions that would lead to recovery and delisting. Development of the plan involved public comment and the plan includes recommendation of necessary actions, but does not have the force of law or regulation. The Task Force believes that action along the lines described in the Plan will be necessary in order to achieve meaningful changes in management flexibility on the Range. Consequently, the Task Force believes serious consideration should be given to the steps and resources needed to implement the Plan's recommendations, and long-term implementation. A more complete description of the Plan and its recommendations are included in Appendix B

b. Flat-tailed Horned Lizard (*Phrynosoma mcallii*)

The Lizard is found predominantly in sandy creosote flats and valleys in extreme southwestern Arizona, southeastern California, and adjacent areas in Sonora and Baja California Norte. On the Goldwater Range, the Lizard occurs west of the Gila and Butler mountains on the western portion of the Range. Under the current Conservation Agreement, there are five designated management areas identified for the Lizard. Twenty-four percent of the total acreage designated for the long-term preservation of this species is found within the Goldwater Range. It is not a federally-listed species, but proposals and subsequent withdrawals of the proposed listing have occurred twice. Conservation of the species is covered by a multi-party conservation agreement to which the Marine Corps and the Fish and Wildlife Service are among the signatories.

Lizard protection was addressed in formal conferencing in the 1996 Biological Opinion on Marine Corps activities on the Range, and again in a reinitiation of consultation with the Service in 2002. In those documents, the Service found that the actions proposed by the Marine Corps were not likely to jeopardize the continued existence of the Lizard. The rationale for this conclusion was:

1. Activities are limited on that part of the Range where the Lizard occurs.
2. The Marine Corps included significant conservation measures into their proposed action.
3. The proposed action affects a relatively minor portion of the Lizard's range.

The 1996 Biological Opinion anticipated an annual incidental take of 23 Lizards due to direct mortality, 10 due to harm caused by habitat degradation, and an undetermined number due to harassment caused by relocating animals out of harm's way. Several terms and conditions were included in the opinion, which were consistent with the species' conservation strategy and conservation agreement being developed at that time. Most of the terms and conditions reiterated measures previously committed to by the Marine Corps in the proposed action. The Marine Corps has actively complied with the Flat Tail Horned Lizard Conservation Strategy in order to prevent it from formally becoming listed as endangered.

c. Endangered Lesser Long-Nosed Bat (*Leptonycteris curasoae yerbabuenae*)

The Lesser long-nosed bat (Bat) is migratory and found throughout its historical range, from southern Arizona and extreme southwestern New Mexico, through western Mexico, and south to El Salvador. It breeds in maternity colonies (mines and caves) in southwestern and south-central Arizona from about mid-April through late July or August. It has not been recorded on the Range, but the occurrence of several nearby maternity roosts, appropriate forage resources, and a one-way foraging flight distance of up to 40 miles suggests Bats use the eastern and southern portions of the Range. Just

outside the Range, fixed-wing aircraft from Range-West fly over two Bat roosts at a minimum of 1,500 feet above ground level.

The Fish and Wildlife Service addressed potential effects to the Bat in formal consultation twice, once in a 1997 biological opinion and again in 2003. All other consultations on this species concerning military activities on the Range were informal and concluded that proposed actions may affect, but were not likely to adversely affect, the species. In the two formal consultations, the Service found that the proposed actions were not likely to jeopardize the continued existence of the Bat. The rationale supporting this assessment included the fact that no Bats have been documented on the Range and that no roosts occur near proposed activities.

d. Endangered Cactus Ferruginous Pygmy-owl (*Glaucidium brasilianum cactorum*)

The Pygmy-owl (Owl) is an inhabitant of rich Sonoran Desert scrub and associated riparian vegetation in south-central Arizona south through the Mexican states of Sonora and northern Sinaloa. It has not been confirmed to be present on the Goldwater Range. In 2001, two Owls were found nearby on the eastern portion of the Refuge, south of the Range. Owls in Arizona have declined dramatically since the late 1800s, and in 2003 only an estimated 21 birds existed in Arizona.

On the Range, the Owl has been addressed once in formal consultation – in the 1997, biological opinion on the Western Army National Guard Aviation Training Site. The Fish and Wildlife Service found that the proposed action was not likely to jeopardize the continued existence of the Owl. The Service concurred with Luke Air Force Base in a 1997 opinion that proposed activities on the Range may affect, but are not likely to adversely affect, the Owl. Summarizing from the opinion, the rationale for finding that the action proposed was not likely to jeopardize the Owl included the fact that no Owls had been confirmed to be present on the Range.

e. Threatened Peirson's milkvetch (*Astragalus magdalenae personii*)

Peirson's milkvetch (Milkvetch) is a dune endemic plant known primarily from the Algodones Dunes in California and the dunes of the Gran Desierto of northwestern Sonora, Mexico. On the Range, it was reported from a single 1996 specimen collected near the Range's western boundary. However, the specimen was subsequently assigned to a different subspecies, so Milkvetch is not currently known to exist in Arizona or on the Range, although it occurs nearby in Sonora and suitable habitat exists in the Yuma Dunes on the Range. Surveys during 2003 and 2004 failed to find the species on the Range.

The only opinion addressing effects of the Range military activities on Milkvetch was in 2001. In this opinion, the Service found that the actions proposed were not likely to jeopardize the continued existence of the Milkvetch. The rationale for this conclusion

was that relatively limited potential habitat existed on the Range and the Marine Corps activities were expected to only minimally affect those habitats.

3. Summary

It is the finding of the Task Force that, at present, there is a net benefit to endangered species from the presence of the Goldwater Range and the mitigation measures that have been put in place by the military. However, concerns remain about the long-term viability of the Pronghorn population, especially if stable recovery funding is not assured. In addition, there is the distinct possibility that impacts on species could be exacerbated with future technological advances in weapons systems. These advances could translate into larger and potentially less predictable impact footprints on the Range.

C. Current Management

This section describes existing forums, decision-making processes, and issues related to data consistency and measuring impacts.

1. Existing Forums

Seven forums currently exist that have the ability to address the intersection of military training and endangered species on the Range. A few are appropriate to address border issues which are described below. In their entirety, these forums play a significant role in the management of training, endangered species, and border issues on the Range. They range in scope from information exchange to coordinated management, and in membership from strictly military or federal, to a broader membership that includes municipalities and nongovernmental organizations. Coordination among the various state and federal agencies on endangered species, primarily the Pronghorn, is considered much improved. At the same time, the good working relationships that exist have often translated into mutually supported actions and decision-making, and are perceived to be a function of individual personalities, relationships and continuity of key leaders. The following section describes specific characteristics of each forum and its effectiveness.

a. Barry M. Goldwater Executive Council (BEC)

The BEC is a coordinating forum for agencies with duties and spending authority on the Goldwater Range. Its stated mission is to enhance the management of natural and cultural resources on the Range by teaming various state and federal agencies into a collaborative management council. The BEC is not a decision-making body, but BEC members, informed by BEC deliberations, individually make their own decisions consistent with their organizational missions.

The Task Force finds the BEC's effectiveness in addressing issues is strong with regard to endangered species, military training and border issues. The strength of this Council is generated from the frequency of its meetings, the broad array of governmental entities involved, and the wide range of issues addressed by the BEC.

b. Barry M. Goldwater Range Intergovernmental Executive Committee (IEC)

The IEC's stated mission is to improve intergovernmental coordination among federal, state and local entities, and Native American Tribes, in matters regarding the management of the Goldwater Range. The IEC, as specified in the 1999 Military Lands Withdrawal Act, provides an information sharing forum for public groups and private citizens to express their views, and share information and advice regarding the management process for the Range. The IEC is advisory. Meetings of the IEC generally follow those of the BEC to facilitate communication among IEC members and interested parties.

The Task Force believes the IEC is effective in allowing for communication and decision-making transparency between policy making entities on the Range and local and state entities, Native American Tribes, and the public.

c. Arizona Commanders Summit (ACS)

The ACS is a communication and coordination forum whose stated mission is to facilitate efficient military operations in Arizona and create a cooperative effort among the commanders of Arizona military organizations to ensure the highest possible level of training operations. The office of the Governor of Arizona also participates, enabling a direct communications link to the state regarding military issues.

The Task Force considers the ACS to be effective in addressing its breadth of issues and providing a line of communication among all service branches, including the Arizona National Guard and military reserve components. The ACS provides a forum in which the military can coordinate mutually agreed upon Range policies. The ACS also provides a forum in which issues of common interest to the Arizona Governor's Office and installation commanders throughout the State can be discussed.

d. Southwest Strategy's US-Mexico Borderland Management Task Force (Task Team)

The Southwest Strategy is a community development and natural resources conservation and management effort by federal, state, tribal and local governments. Through this effort the partners work with each other and the public to restore and maintain the cultural, economic and environmental quality of life in the states of Arizona and New Mexico. The Task Team's mission, as a sub-set of the Southwest Strategy, is to help facilitate effective collaboration, coordination and communication on natural and cultural resource issues. The Team also addresses impacts on communities along the United States-Mexico border region of Arizona and New Mexico. Such impacts include employee and visitor safety, reducing illegal entrant deaths, and reducing the impacts on the region's natural and cultural resources caused by illegal entrants and smugglers of controlled substances.

The Task Force finds the Task Team effective in addressing regional border issues because of the broad participation of law enforcement agencies. This forum enhances communications and connectivity of land managers, state, tribal and local governments in the border region.

e. Sonoran Pronghorn Recovery Team (SPRT)

The SPRT's mission is to conserve, enhance and restore Pronghorn populations and their habitat to effect eventual removal from their endangered status by teaming federal, state, tribal, international and private entities into a cooperative working group.

The Task Force considers the SPRT to be helpful in addressing the recovery of the Pronghorn given the difficulty of the task. The Recovery Team's membership and mission focus exclusively on implementation of Pronghorn recovery efforts.

f. Flat-tailed Horned Lizard Management Oversight Group (MOG) and Flat-tailed Horned Lizard Interagency Coordinating Committee (ICC)

The MOG and ICC are technical working groups whose mission is to protect the Lizard through the implementation of the Lizard conservation strategy so that the species will not require listing under the Endangered Species Act. The MOG provides policy oversight of the Lizard conservation strategy. The ICC provides technical expertise in the administration of the Lizard conservation strategy. The Task Force finds the MOG and ICC to be helpful in addressing the protection of the Lizard.

g. Range Commanders Council (RCC)

The RCC is a communication and coordination forum whose stated mission is to preserve and enhance the nation's warfighting superiority. This group ensures that affordable technical capability and capacity are available to test and operate the world's most effective weapons systems and to train the warfighters who use them. The Office of the Secretary of Defense supports the RCC because issues addressed by the RCC are joint in nature (i.e., independent of service channels) and, in recent years, the RCC has become proactive in encroachment, environmental, and endangered species issues.

The Task Force believes the RCC is an effective forum in which the military can coordinate mutually agreed upon national military range policies. The RCC may have an interest in the evaluation of this Task Force process as a possible model for resolving military training and endangered species conflicts at other locations.

2. Existing Processes

Many of the issues the Task Force faces arise in different formal planning and decision-making processes in which many of the stakeholders are already involved, such as National Environmental Policy Act (NEPA) processes. It is clear that, regardless of the decision-making process, relatively unilateral and uncoordinated decisions by various governmental units or agencies can generate unintended and difficult management challenges for others. An example is the development of barriers that eliminate vehicle travel in certain areas along the Arizona-Mexico border. While the solution resolves an immediate problem in one area, it tends to move the problem to a neighboring area.

a. Sikes Act

The Sikes Act authorizes the Secretary of Defense to develop cooperative plans for conservation and rehabilitation programs on military reservations. The Sikes Act authorizes commanders to manage resources consistent with the training mission. The

Act provides for the cooperative preparation of the Integrated Natural Resources Management Plan by the Secretary of Interior and the state wildlife agency. It is discussed below. Congress enacted the Sikes Act as a commander's tool to ensure "no net loss" in the capability of military installation lands to support the military mission. Currently the flexibility of the Sikes Act is sometimes hindered by the way the Section 7 consultation process is currently implemented, also described below.

Integrated Natural Resources Management Plan (INRMP)

Prior to 2001, natural resource management at the Range was performed by the Bureau of Land Management. Since November 2001, the Marine Corps and Air Force have assumed responsibilities for land management of the Range. The conservation management plan on the Range is the INRMP to be jointly prepared by the Secretary of the Navy, the Secretary of the Air Force, and the Secretary of the Interior. The Arizona Department of Game and Fish has been an important partner in the development of this INRMP. A key component of the INRMP and this planning process is conservation of the Pronghorn and other endangered species and species at risk acknowledged by the Task Force.

The Air Force and the Marine Corps share the lead for the Draft Environmental Impact Statement for the future Range INRMP. The U.S. Fish and Wildlife Service is one of several cooperating federal agencies working with the military, State and Tribal interests, non-governmental organizations and the public in this process.

b. Endangered Species Act

The purposes of the ESA include to "provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for conservation of such endangered species and threatened species ..." The ESA establishes regulatory requirements for the management and protection of listed species. The ESA is the measure of last resort to prevent extinction and as such is inherently conservative in its approach. The current implementation of the ESA focuses on single species management. The following are key components of the implementation of the ESA:

(i) Recovery Plan

Recovery plans set forth reasonable actions which are believed to be necessary to recover and/or protect listed species. Plans are published by the Service, which are often prepared with the assistance of others, including recovery teams. These plans are subject to change as dictated by new information, changes in species' status, and the completion of recovery tasks. Recovery plan formulation and implementation inherently lend themselves to collaborative processes and adaptive management.

The recovery plan for the Pronghorn was published in 1998. A Federal Court found that plan to be deficient. As a result, the Pronghorn Recovery Plan was updated in 2002 in an effort to incorporate Pronghorn recovery criteria and to include objective measurable criteria for the delisting of the Pronghorn, as well as to provide estimates of the time required to carry out the measures needed to achieve the plan's goal and intermediate steps toward that goal. The goal is "... to effect the removal of the Sonoran pronghorn from the endangered species list." The Service annually reviews progress on the implementation of the recovery plan.

(ii) Section 7 Consultation

Among the challenges in balancing military use and species protection is the way the ESA Section 7 consultation process is implemented, which frequently reduces the military's flexibility for adaptive and realistic training. The incidental take statements contained in biological opinions under ESA Section 7 provisions are important to the Marine Corps and Air Force. Each branch of the service needs a level of certainty regarding its ability to conduct training without the risk that its training operations would be curtailed should they accidentally take a listed species above authorized levels. The Marine Corps and Air Force have worked diligently and cooperatively with the Service through the ESA Section 7 consultation process to develop measures that minimize the likelihood of take. Additional conservation measures have been voluntarily developed and implemented by the military services to further the conservation of the Pronghorn. No such incidental take by the military has ever been documented although the risk cannot be entirely eliminated.

Adaptive management is an approach discussed by the Task Force that can enhance flexibility. An adaptive management approach would recognize that the vulnerability of a listed species to impacts from military activities can vary according to the size and health of the species population, prevailing habitat quality, and offsetting conservation measures, such as habitat improvements that mitigate the effects of drought. Adaptive management measures would be developed in lieu of static limits -- such as strictly defined flight corridors, ground support areas, and operating seasons -- on current and potential future military activities. Adaptive management would provide the Marine Corps and Air Force with additional flexibility for conducting realistic training when or where favorable natural conditions exist or mitigation measures are already in place that would reduce the potential for adverse effects. More restrictive limits on military operations could be reinstated when warranted by severe environmental or population conditions.

3. Metrics for Evaluating Impacts

Because the Air Force has been required by Biological Opinion to monitor for the presence of Pronghorn they have been able to measure the impact of Pronghorn to overall mission impact on a percentage basis since 1998. With the establishment of a centralized range control operations facility in 2003 they have since been able to measure illegal entrants' impact on a by-occurrence and lost-range-time basis. While a Pronghorn

sighting normally results in one to three target sets being closed for an entire day, the presence of illegal entrants results in the closure of an entire tactical range (approximately 25 target sets) for the period of time required to effect their removal.

Conversely, because there are no targets within Pronghorn habitat on the Marine Corps side and restrictions to protect the Pronghorn are pre-determined, there is no requirement to monitor for Pronghorn on a daily basis. While the Marine Corps is moving toward a centralized range control operations facility, to date they have a limited capability to correlate the impact of illegal entrant related activity to their daily operations.

The Task Force believes that improvements should be made in expanding the metrics used to track and measure impacts on training or endangered species. Part of the challenge is to add a measure of consistency across the entire Range even though the training objectives of the Marine Corps and Air Force have operational differences.

4. Summary

There are numerous management mechanisms, both forums and processes, which help address military training and endangered species protection. The Barry M. Goldwater Executive Council (BEC) and the Intergovernmental Executive Committee (IEC) are two of the more important and effective bodies that should continue to address the interface between these two issues. The BEC forum has regular participation and the appropriate level of representation from each of the other forums to act as the clearinghouse for endangered species and border issues impacting the Range. The BEC appears to be the best available entity for data collection, processing and management for the training and endangered species issues.

Although existing regulatory mechanisms provide the tools necessary for the coordination of a comprehensive approach to the recovery of the Pronghorn and the protection of other species of concern, current implementation is problematic because opportunities for flexibility within ESA Section 7 consultations are not used advantageously.

Congress provided commanders with a useful tool through the INRMP development under the Sikes Act. As currently practiced, implementation of the ESA Section 7 consultation process constrains the flexibility inherent in Sikes Act management.

D. Border Issues

The Task Force has determined that, based on both recent trends and anecdotal evidence, illegal entrants and associated law enforcement activities have a greater negative impact on Goldwater Range activities than either military training has on species conservation or species conservation has on military training. Part of the growing problem is attributable to increased law enforcement and supporting activities that tend to channel the illegal entrants to increasingly remote areas, such as the Goldwater Range and the Cabeza Prieta National Wildlife Refuge. Unless these border situations are effectively addressed, military training, the continued protection of species, and the integrity of the ecology of the Range will all be in jeopardy.

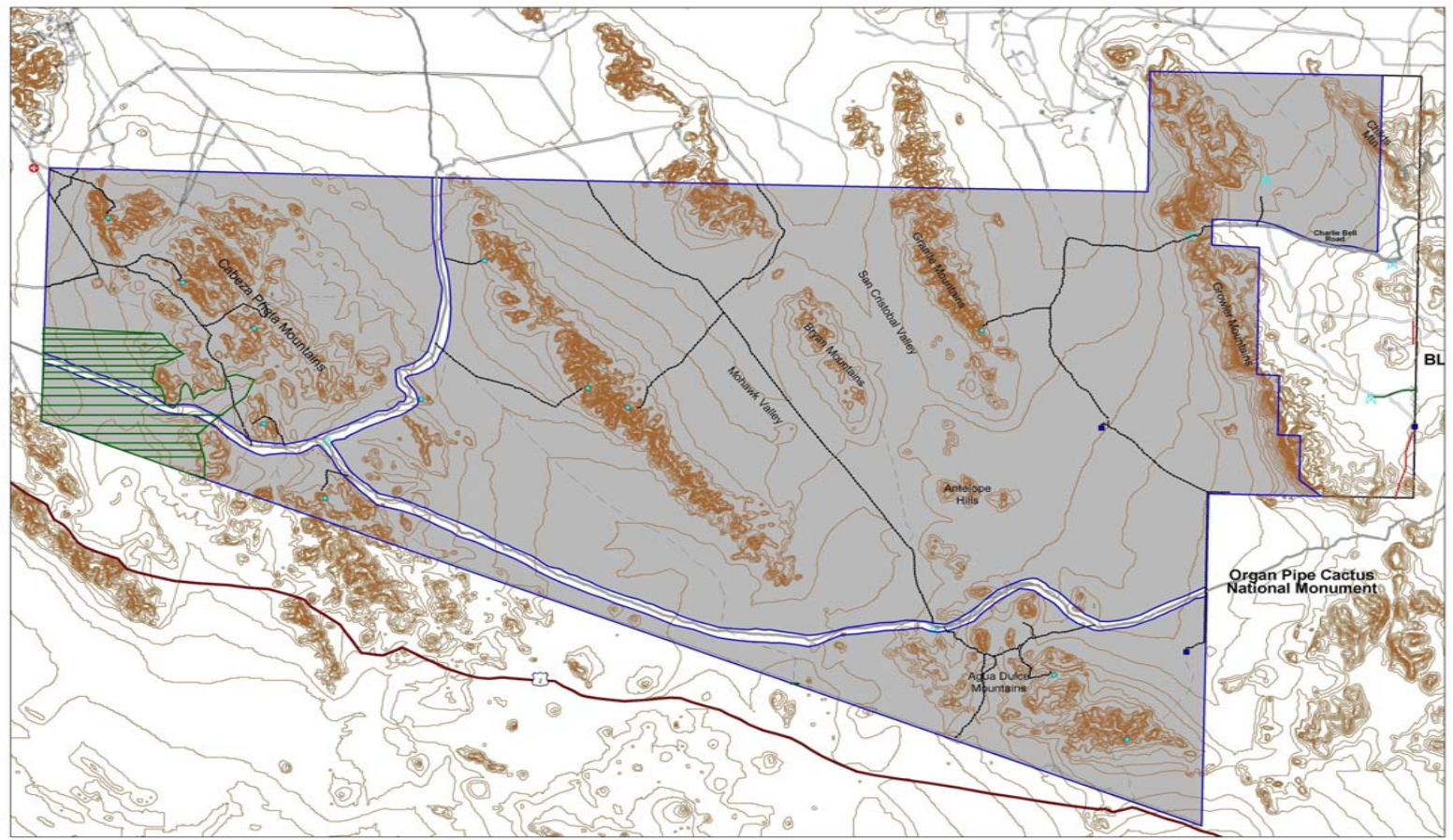
1. Illegal Entrants Impacts on Training Mission

The statistics reflect a notable increase in the number of individuals illegally crossing the border, both for Arizona as a whole and for the Range itself (which includes 37 miles of international boundary):

- 9,247 undocumented migrants were arrested on the Range during the 10 months between October 1, 2003 and August 4, 2004.
- 229 vehicles were seized on the Range during the same period.
- In the Yuma Sector of the Border Patrol, apprehensions were up 73 percent in fiscal year 2004 to a total of 98,060. The Yuma Sector is responsible for 106 Arizona Border miles and includes the western portion of the Range.

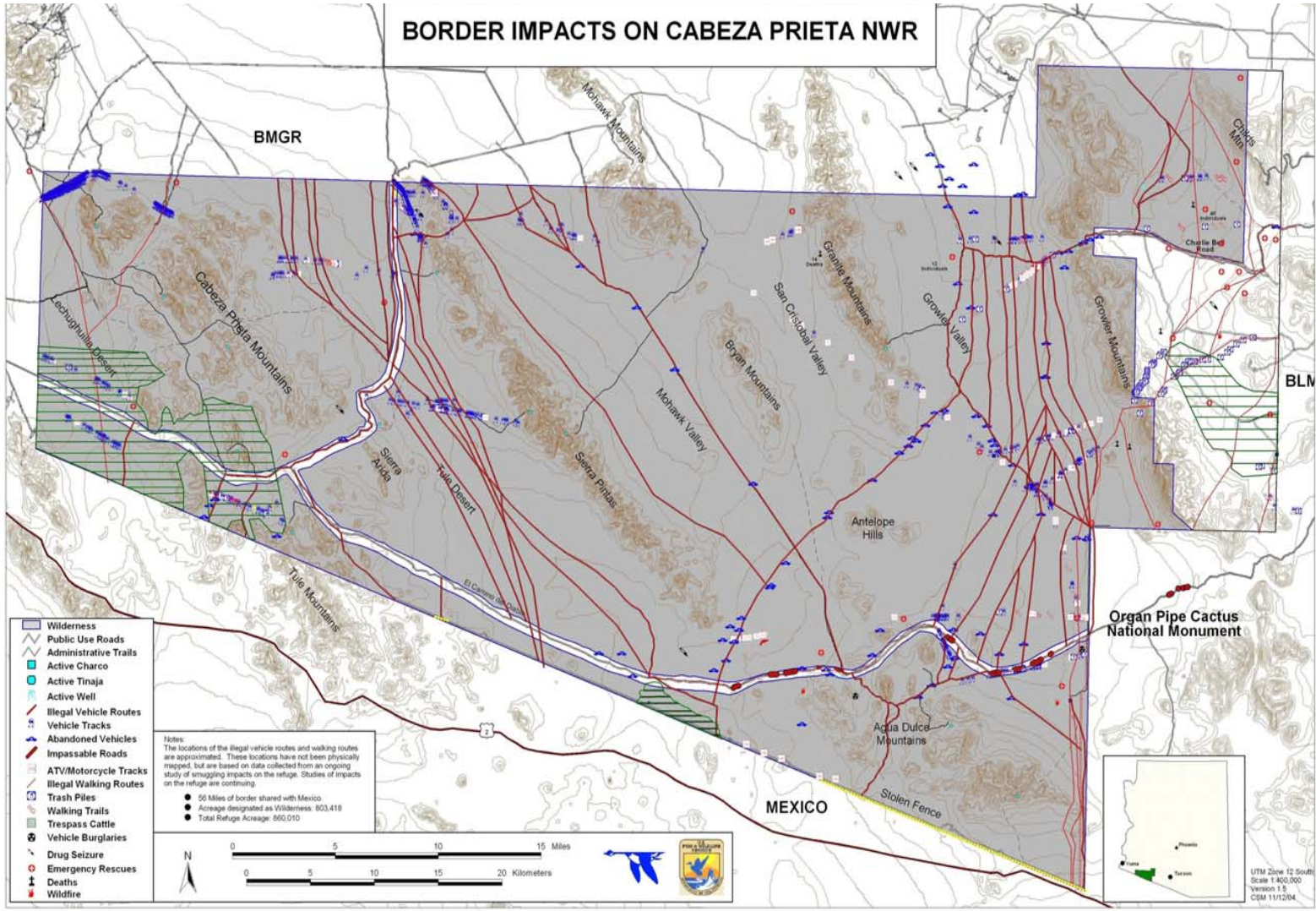
The Task Force acknowledges that border issues are beyond its explicit scope and recognizes that they are not simply a Range or even a State of Arizona problem. Nevertheless, both the Marine Corps and Air Force are dedicated to the maintenance of a safe training environment. Both are concerned about the risk of killing or harming illegal entrants. As the number of entrants transiting the Range increases, so does the likelihood of a serious accident. Additionally, the killing or injury of humans on the Range could potentially result in a stoppage of training on the Range. This risk is unacceptably high and growing. As an indication of the growing impact of illegal entrants, the following maps show the increasing number of trails and roads through the Cabeza Prieta National Wildlife Refuge from 1998 (Map 1) to 2004 (Map 2).

MAP 1



MAP 2

BORDER IMPACTS ON CABEZA PRIETA NWR



When illegal entrants walk or drive into the impact area of an unmanned tactical range or near the targets of a manned controlled range they are exposed to many hazards, from unexploded ordnance to being wounded or killed by air-to-ground munitions delivery. Because of the danger, when it is known that these individuals are in the area, aircraft air-to-ground weapons deliveries must be terminated and the individuals removed from the range before operations can resume.

- In calendar year 2003, Range-East tactical ranges were closed on 37 occasions for 135 hours due to illegal entrants or related causes.
- For calendar year 2004, Range-East tactical ranges were closed on 55 occasions for 122 hours.

Range closure periods due to migrant or drug trafficking incursion can last from 30 minutes to several hours, depending on the scenario, and can occur at any time of the day or year. When unauthorized individuals are spotted by Range ground personnel, information is relayed to security, which then dispatches personnel to detain and remove the individuals from the Range. If the incursion consists of a large group, security coordinates with Immigration and Customs Enforcement and U.S. Border Patrol to assist with additional vehicles and officers. Because of the distances, rough roads, and speed limits, this can often be a lengthy endeavor. It also requires diversion of military personnel from their mission-related duties to border-related issues.

If an unmanned tactical range closes because of the presence of unauthorized personnel, the entire range, including all target sets, closes for weapon deliveries. In some cases pilots can “safe up” their systems and continue to train using simulated weapons deliveries (no weapons released). This procedure often allows for germane training to continue that can partially fulfill mission requirements. Otherwise, missions are cancelled, delayed, or moved to another range (if one is available and the mission relocation can be safely accomplished). Any changes to the attack scenario or target set, however, degrade training effectiveness at the very least. To the extent Immigration and Customs Enforcement and Border Patrol are required to use aircraft in response to an incursion, such use will likely conflict with low-altitude military training, resulting in a non-effective or cancelled mission.

2. Illegal Entrants Impacts on Habitat and Endangered Species

While there has been no documented harm to a Pronghorn as a result of illegal entrant activity, as the number of illegal entrants on the Range increases, the chance of harming Pronghorn or Lizards also increases. The Border Patrol’s response to illegal border incursions also will impact habitat and protected species.

The more obvious and increasingly negative impacts of border crossing and related enforcement activities are occurring to the habitat of the fragile Sonoran Desert. These impacts include:

- The proliferation of trails and roads, resulting in soil compaction, destruction of vegetation and erosion.
- Abandoned vehicles and the additional ecosystem damage caused by efforts to remove them.
- Human waste and trash, including large amounts of plastic used to carry water, provide shelter and as packaging for food as well as other discarded personal effects.
- Fires for cooking or to keep warm resulting in destruction of vegetation and also increasing the risk of wildfires.
- The pollution of wildlife water resources.
- The introduction of non-native plants and other harmful organisms, including diseases that impact wildlife.
- Increased security infrastructure that fragments and degrades habitat and disrupts wildlife movement.
- Redistribution of illegal entrants into smaller and ecologically-sensitive areas, such as Parks, Refuges and Monuments as well as the Goldwater Range.
- Border issues are negatively impacting the safety of visitors and staff.

3. Summary

The Task Force concludes that border issues are not only a bigger problem on the Range, but they are inextricably intertwined with both endangered species and training concerns. There is significantly more habitat degradation and destruction as a result of illegal entrants and associated enforcement activity than results from military training on the Range. Similarly the military training is negatively impacted more by border issues than by endangered species. As the number of entrants crossing the border increases, there is a heightened risk that an illegal entrant will be killed or seriously injured. When illegal entrants are encountered on the Range, the Range can be closed for extended periods of time. Moreover, the efforts of the Border Patrol to control illegal immigration, even when well coordinated with the military, can interfere with military training and reduce its effectiveness.

II. RECOMMENDATIONS FOR LEGISLATIVE AND ADMINISTRATIVE ACTIONS

This section sets forth the Task Force’s recommendations to enhance both the military training mission and endangered species’ protection at the Range. The Task Force recommends no specific legislative actions, but does recommend the following administrative actions:

1. A number of tasks need to be accomplished to improve the likelihood of the Pronghorn recovery. The priority tasks (cited in Appendix B) include the captive breeding program, forage enhancements, and collaboration on Pronghorn recovery with Mexico. Each of these tasks is critically important and deserves predictable and stable management and funding.
2. Currently, incidental take of Sonoran pronghorn is not authorized. Explicitly recognize the potential impact of an accidental take and plan for its consequences. This should include the creation of a “critical incident team” with a definitive charge and set of operational procedures. This team should include biological, legal, Range, field operations, and media expertise. Specific individuals should be designated as members of this team. The presence of such a team would increase the likelihood that there could be continued operation of the Goldwater Range in the event of an accidental Pronghorn take.
3. Establish an incidental take ceiling for Sonoran pronghorn, to be allocated in aggregate among all authorized activities within the Pronghorn’s U.S. range. This would vary in accordance with the conditions of the U.S. Pronghorn population and its available habitat—i.e., authorized incidental take would increase on a sliding scale in proportion with the size and health of the U.S. population and the quality of its available habitat.
4. Base impact assessments on a science-based approach to determine impacts from specific activities without an undue reliance on cumulative worst-case outcomes.
5. Encourage the military and Fish and Wildlife Service to pursue adaptive management approaches that would allow for species protection and recovery and, at the same time, provide the flexibility needed to support realistic high-quality training and training support.
6. Establish clearly defined guidelines by which the potential for various military activities on the Goldwater Range to affect a listed species to an extent that causes harm to the population can be consistently and accurately assessed. These guidelines should be developed independently of any specific proposed action through a cooperative effort by species

recovery teams, the Arizona Ecological Services Office, and Arizona Game and Fish Department.

7. The Flat Tailed Horned Lizard Management Oversight Group, a bi-state, multi-agency task force, has demonstrated conservation success to the point where it played a significant role in keeping the Lizard off the endangered species list to date. This proactive, collaborative group should be recognized as an exemplary forum which could serve as a prototype for conservation issues elsewhere.

The Task Force provides the following general recommendations regarding border control issues, acknowledging that border issues are beyond its explicit scope and recognizing that they are not simply a Range or even a State of Arizona problem. Recommendations include:

- Recognize and address that illegal entrants and associated law enforcement activities are having a significant impact on Goldwater Range operations and endangered species.
- Recognize and address that a funneling effect occurs from focused law enforcement efforts that forces illegal entrants onto the Goldwater Range and other remote desert areas.
- Increase the opportunity for Goldwater Range management input into strategic level law enforcement planning in an effort to help mitigate the unintended consequences of law enforcement activities.
- To alleviate current pressure on the Goldwater Range, strongly examine the effectiveness and consequences of constructing a vehicle barrier and other low-impact monitoring technology along the southern boundary of the Cabeza Prieta National Wildlife Refuge and the Goldwater Range.

III. EVALUATION OF TASK FORCE APPROACH AS MEANS OF RESOLVING CONFLICTS

The legislation that created the Barry M. Goldwater Task Force stipulates that its Report to Congress should also evaluate the utility of task force proceedings as a means of resolving conflicts between military training objectives and protection of endangered species at other military training and testing ranges. The United States Institute for Environmental Conflict Resolution (USIECR) and its facilitation team was charged by the Task Force members with the responsibility to provide an independent evaluation of the Goldwater Task Force process and to make general recommendations for designing future legislated task forces.

USIECR has previously identified “best practices” for designing and conducting successful environmental conflict resolution processes. Furthermore, USIECR, in close collaboration with the President’s Council on Environmental Quality and senior officials of many of the Executive Branch Departments has developed an agreed upon set of “basic principles” that should guide federal agency engagement in collaborative problem solving and environmental conflict resolution. The evaluation of the Goldwater Task Force process is based on these established “best practices” and recommended “basic principles.”

In the sections that follow, first there is a summary of the perceptions and experiences of the Task Force members themselves regarding both the process and the outcomes of their facilitated collaborative efforts. Then, the legislated design of the Barry M. Goldwater Task Force process is evaluated against established “best practices” and adopted “best principles” for collaborative problem solving with stakeholders. Finally, Recommendations are offered on how the legislated design of the Barry M. Goldwater Task Force could be improved for future use.

A. Results of Task Force Evaluation Questionnaire

Findings from the evaluation of the Barry M. Goldwater Range Task Force are summarized below. The findings are based on the process participants’ responses to an end of process questionnaire administered by the U.S. Institute for Environmental Conflict Resolution on January 19, 2005.⁸ Of the nine Task Force members, nine completed an evaluation, a 100% response rate. The results shed light on how the participants valued the process and the associated outcomes.

The evaluation reveals highly positive respondent assessments of the Task Force Process. Respondents reported agreement was reached on the issues addressed during the process (78% reported agreement was reached on *all* key issues, the other 22% reported agreement was reached on *most* key issues). The respondents also reported that the

⁸Additional negotiations took place subsequent to January 19th as a result of internal agency reviews of the report. The survey responses do not reflect any activities that occurred after this date.

recommendations, if implemented, would effectively solve the problem or resolve the controversy (the mean rating was 8.00 out of 10.00).⁹ The respondents were less confident that the recommendations would be carried out in their current form (mean 7.25).

The respondents provided a very positive endorsement of the facilitation team, reporting they would recommend the facilitators to others in a similar situation without hesitation (mean 9.67). Respondents reported they had full access to relevant information needed to participate effectively in the Task Force Process (mean 9.11), and that the Task Force participants had sufficient authority to make commitments on behalf of their organizations (mean 8.67). The respondents also reported a significant increase in (a) their capacity to work together cooperatively to solve problems and resolve conflict, and (b) in their levels of trust in each other, as a result of the process.

Eighty-nine percent of the respondents were “totally satisfied” with the Task Force Process and with 67% were "totally satisfied" with the results of the process. The other respondents reported being “somewhat satisfied” with the process (11%) and with the results of the process (33%); no respondents reported any level of dissatisfaction with either the Task Force Process or the results.

When asked to rate the effectiveness of the Task Force Process against their “next best alternative” to a facilitated collaborative process, the respondents strongly agreed that the Task Force Process would: (a) more effectively address the key issues; (b) more effectively solve the problem or resolve the dispute; and (c) better serve the interests of the participants. The respondents also strongly agreed that (a) the results would be less likely to be challenged, and (b) the participants would be better able to work together in the future on matters related to this situation.

When asked to record in very general terms what the Task Force Process had accomplished, all respondents (100%) reported relationships among the participants were improved, and 78% highlighted that the conflict did not escalate.

Overall, the respondents provided a positive assessment of the value of Task Force Process. The respondents reported:

- a) their "first choice" would be to use this type of process again for similar situations (mean 9.11);
- b) they would "without hesitation" recommend this type of process to others in a similar situation (mean 8.78); and
- c) they “could not have progressed as far” using any other process (mean 8.44).

This suggests that the respondents viewed the Task Force Process as effective and that they would endorse the use of collaborative processes for similar situations.

⁹ Ratings are based on a 0-10 scale labeled at the midpoint and the endpoints (e.g., where a "0" means "do not agree at all", a "5" means "moderately agree" and a "10" means "completely agree"). Ratings of 7.51 and above, out of 10.00, are reported as a high level of achievement.

B. Evaluation of Legislated Design of Barry M. Goldwater Task Force Process

In many respects, the provisions included in Section 322 of the enabling legislation contributed to the success of the Barry M. Goldwater Task Force process by providing clear guidance and sufficient flexibility for it to do its work effectively. There were some areas, however, where improvements could be made when considering future design of other legislated task force processes to resolve conflicts between military training and endangered species.

Each practice or principle is listed and briefly described. Then, the conditions established by the Task Force legislation in relation to each particular best practice or principle are detailed, along with the benefits and drawbacks associated with such a process design.

- 1. Informed Commitment** — Confirm willingness and availability of appropriate agency leadership and staff at all levels to commit to basic principles of engagement with stakeholders.
 - **Goldwater Task Force:** The legislation directed the Secretary of Defense to establish the Task Force and stipulated its membership, including that the Air Force range officer would serve as chairperson. Personnel re-assignments within the Department of Defense significantly delayed the convening of the Task Force. Several designated members of the Task Force delegated participation to their staff.
 - **Benefits:** A congressionally mandated task force serves to highlight the importance and priority of the issue to be addressed for the sponsoring agency, the designated participants and the general public. A legislative mandate also helps ensure that the designated members will participate and devote the necessary time and attention required.
 - **Drawbacks:** The current legislation provides no guidance or reference to follow accepted best practices and principles for engagement in collaborative problem solving and environmental conflict resolution. Such guidance could be helpful in assuring that assigned staff from the sponsoring agency will be committed to a credible process. In addition, the legislation doesn't provide guidance regarding the designated members delegating decision-making authority to their representative. A consensus-seeking process, especially one that has a short and strict time limit, can be significantly hampered if the participants around the table do not have decision-making authority.

- 2. Flexibility in Process Design** — The design of collaborative processes should not be overly prescriptive. Flexibility is needed in creating the specific design of a process that would be appropriate for the given situation in order to increase the likelihood of a successful outcome.
 - **Goldwater Task Force:** The enabling legislation for the Task Force established several parameters related to the design of the process, including the composition of the membership, the specific issues to be addressed, the

authority of the chairperson to secure the services of experts, and the deadline for the report on its findings and recommendations.

- **Benefits:** By being silent on many process design elements, the legislation allowed for a fairly flexible approach to creative problem solving and achieving consensus-based recommendations. The legislation allowed the Task Force to secure the services of technical experts on endangered species, as well as professional third-party neutral facilitators. Stipulation of the Task Force membership ensured that certain stakeholder interests would be represented. The legislation's mandate to the Task Force aided in focusing its efforts.
- **Drawbacks:** The legislated composition of the Task Force may have resulted in some affected parties feeling that their interests were not being represented. This could result in reduced support for implementation of the final recommendations. In the worst case, it could result in additional litigation by those who feel their concerns were not satisfactorily addressed. The mandated composition did not readily allow for appointing additional members, if deemed necessary and appropriate. The mandated focus and composition of the Task Force interfered somewhat with its ability to more effectively address the issue of illegal entrants and associated law enforcement efforts, which has emerged since the legislation was passed as the most pressing concern impacting both military training and endangered species. By not clarifying the chairperson's role in overseeing the efforts of the Task Force, a highly directive and heavy-handed approach not conducive to consensus-building could have been followed, to the detriment of a process that is seeking full agreement on recommendations.

3. Balanced Representation — Ensure balanced inclusion of affected/concerned interests, and that all parties are willing and able to participate and select their own representatives.

- **Goldwater Task Force:** The enabling legislation stipulated the composition of the Task Force membership to include nine specific members from affected branches of the military, federal and state natural resource agencies, and regional wildlife and environmental interest groups.
- **Benefits:** By stipulating the composition of the Task Force and consultation with groups in selecting their representatives, the legislation largely averted debate and controversy regarding the balanced representation of affected and concerned interests. The congressionally authorized Task Force also provided an implicit exemption from complying with Federal Advisory Committee Act (FACA) requirements, thereby reducing the likelihood of litigation over the make-up and operating procedures of the Task Force.
- **Drawbacks:** Selection of Task Force members by the sponsoring agency, which also has a significant stake in the outcome, may be perceived by some as potentially biased and designed to achieve a pre-determined outcome. On the other hand, explicit designation of membership by organizational title or position could result in the appointment of individuals who lack the necessary skills required for productive collaboration. The legislation did not allow for the appointing of additional members if additional perspectives on an issue are

deemed necessary by the Task Force to provide informed and implementable recommendations. Potentially interested and affected entities that were not represented on the Task Force include the Tohono O’odham Nation, the National Park Service, the U.S. Border Patrol, and advocacy groups related to border issues.

4. **Group Autonomy and Use of Impartial Facilitator/Mediator** — Engage with all participants in developing and governing the process, including choice of consensus-based decision rules. Also seek assistance as needed from an impartial facilitator/mediator selected by and accountable to all parties.
 - **Goldwater Task Force:** The enabling legislation did not provide any specific guidance regarding what decision rules should govern the Task Force. However, the Task Force did adopt ground rules in which they agreed to strive for consensus on the substance of their recommendations and the wording of their Report to Congress. The legislation also did not provide any guidance regarding the use of impartial facilitators/mediators to assist the Task Force in reaching agreement on its recommendations. However, the legislation did authorize the chairperson to secure the services of experts, which allowed for assistance from USIECR in helping to design the process and in obtaining the impartial services of highly experienced and appropriately qualified facilitators. In keeping with “basic principles” for successful environmental conflict resolution processes, USIECR invited the members of the Task Force, or their designated representatives, to participate in selecting the team of facilitators that would be assisting them in reaching agreement.
 - **Benefits:** The legislation explicitly allowed the chairperson to use the services of outside experts, which was interpreted to include professional facilitators.
 - **Drawbacks:** With no guidance on agreement-seeking decision rules, a chairperson could have chosen to rely on voting and majority rule for developing recommendations. Such an approach would very likely not result in recommendations that would be broadly supported. Without assurances that a process will be facilitated by independent and impartial facilitators, some stakeholders, especially in high conflict situations, who are concerned about potential numerical imbalances in the overall composition of a Task Force, might be reluctant to participate.
5. **Informed Process** — Seek agreement on how to share, test and apply relevant information (scientific, cultural, technical, etc.) among participants; ensure relevant information is accessible and understandable by all participants.
 - **Goldwater Task Force:** The Task Force members together determined what information was needed to inform their discussions, as well as appropriate sources for the information. As the Task Force began to consider the impact of border issues on endangered species conservation and military training, it was able to invite the U.S. Border Patrol to provide its expertise and perspective on possible solutions.

- **Benefits:** The authority in the enabling legislation to secure the services of experts allowed the Task Force to obtain the information and technical advice it deemed necessary.
 - **Drawbacks:** It is possible that certain information related to military training, national security and preparedness could be deemed too sensitive to be shared with civilian stakeholders.
6. **Accountability** — Participate in process directly, fully, and in good faith; be accountable to the process, to all participants and to the public.
- **Goldwater Task Force:** Throughout the process, nearly all the Task Force members remained fully engaged and demonstrated a good faith effort and accountability in fulfilling its mandate from Congress. No efforts were made to engage or inform the general public about the work of the Task Force.
 - **Benefits:** The congressional mandate imparted considerable consequence and importance to the work of the Task Force. This helped encourage a highly motivated effort on the part of its members.
 - **Drawbacks:** The lack of engagement with the general public could result in some people questioning the legitimacy of the process and in the recommendations of the Task Force not receiving broad support.
7. **Openness** — Ensure all participants and public are fully informed in a timely manner of the purpose and objectives of the process; communicate stakeholder authorities, requirements and constraints; uphold confidentiality rules and agreements as required for particular proceedings.
- **Goldwater Task Force:** The Task Force met in forums that were technically open to the public. However, no public notice, meeting announcements, or public comment periods were provided. The ground rules developed with assistance of the facilitation team helped clarify the role of participants and established mutual expectations and agreements about how the Task Force process would be conducted.
 - **Benefits:** The enabling legislation provided clear guidance regarding the purpose of the Task Force and the end product that Congress expected.
 - **Drawbacks:** The enabling legislation did not provide any guidance on how the general public should be involved, if at all. Any process seemingly hidden from the public eye may be vulnerable to subsequent public criticism. Other outside stakeholders not kept informed about the work of the Task Force process may question the process used to develop its recommendations and therefore seek to undermine their implementation. Furthermore, the legislation did not suggest or encourage Task Force members to reach out to their particular constituencies to seek their feedback and concurrence as the final recommendations were being developed.
8. **Timeliness** — Ensure timely decisions and outcomes.
- **Goldwater Task Force:** The legislation establishing the Task Force became law on November 24, 2003. The legislation required submission of the Task Force’s Report to Congress fifteen months later on February 28, 2005.

However, due in part to unanticipated personnel re-assignments, the Task Force was not convened until October 12, 2004, allowing only four months to accomplish its mission.

- **Benefit:** Realistic deadlines help focus participants' efforts and tend to enhance the efficiency of deliberations.
- **Drawback:** The delayed convening of the Task Force created extremely tight time constraints on the process. Such a seemingly unrealistic deadline raised serious concerns and questions about the legitimacy of the process and the genuine commitment of the Department of Defense to support the effort that would be required. Although the work of the Task Force managed to be completed by Congress's deadline, the quality of the final product was impacted to some extent.

9. Implementation — Ensure decisions are implementable; parties should commit to identify roles and responsibilities necessary to implement agreement; ensure parties will take steps to implement the agreement and to obtain the necessary resources.

- **Goldwater Task Force:** The Task Force members went to great lengths to craft recommendations that were creative while still grounded in reality.
- **Benefits:** The enabling legislation empowered the Task Force to recommend means of addressing significant impacts on military training and to propose any legislative or administrative actions deemed appropriate.
- **Drawbacks:** The Task Force determined that military training and endangered species protection are significantly and increasingly impacted by illegal entrants and associated enforcement activities. However, effective solutions to the border issues were considered by the Task Force to require comprehensive policy reforms that were beyond the expertise and jurisdictional purview of the Task Force.

10. Funding and Resources — Successful collaborative problem solving and environmental conflict resolution efforts require adequate staffing and funding resources to provide the expert independent impartial facilitation and mediation services that are often needed, as well as financial assistance to some participants for travel costs.

- **Goldwater Task Force:** The Task Force was adequately staffed and funded to allow the hiring of professional facilitators and the provision of financial assistance for travel costs when needed.
- **Benefits:** A congressionally mandated task force is likely to be able to obtain the funding required to implement it, either through specific Congressional appropriation or agency funds.
- **Drawbacks:** If adequate funding to conduct task force proceedings is not specifically appropriated, some agencies may not have the financial resources available to re-allocate the necessary funds to implement a process design that is based on established "best practices" and agreed upon "basic principles." If the sponsoring agency, which also has a large stake in the outcome of the process, also directly funds the provision of facilitation services, it is more difficult to ensure the independence and impartiality of the facilitators to skeptical participants.

C. Recommendations for Design of Task Force Processes

Collaborative processes are particularly effective in helping diverse, contending interests reach agreement and implement decisions. Credible processes, however, require more time up front for assessment, process design, convening, and information sharing, but the benefits are realized later through enabling participants to reach broad agreement, strengthen relationships, and ensure the likelihood of timely implementation.

Based on its expertise in designing successful collaborative processes and on the interpretation of the results from the end of process evaluation questionnaires completed by the Task Force members, USIECR offers the following recommendations to those considering use of a legislated task force approach to resolving conflicts between military training objectives and protection of endangered species at other military training and testing ranges.

1. If it is Congress's intent, consider explicitly stipulating that processes aimed at making recommendations for resolving controversial issues should be facilitated by independent facilitators or mediators and aimed at reaching the broadest agreement or consensus possible. Recommendations reached through consensus tend to produce high quality agreements that are more likely to be durable and successfully implemented. When third-party facilitators are to be used, actively engage the process participants in selecting the facilitators who will be assisting them in reaching agreement. Similarly, provide guidance on the intended role of the chairperson. Collaborative approaches benefit from having a chairperson who plays a facilitative, consensus-building role, which requires certain requisite skills. Such direction, without being overly prescriptive to allow for necessary flexibility, can be very helpful in guiding the development of a specific customized design of a process that is appropriate to the special needs, constraints and requirements of the particular situation.
2. Encourage agencies and organizations engaged in efforts to resolve environmental conflicts to ensure that their staffs are familiar with best practice guidance and basic principles for designing, convening and participating in collaborative problem solving processes. At the start of conflict resolution efforts, allow time to ensure that appointed members develop an understanding of the collaboration skills needed to produce a successful outcome.
3. Provide the time and resources to conduct early diagnostic consultation and an assessment of the particular situation prior to designing and convening a process. This can help ensure that all the relevant issues have been identified and particularly affected stakeholders that need to be represented are included, which is especially important in high conflict situations for a process to be broadly viewed as legitimate. Furthermore, it may be necessary to provide funding assistance for travel expenses to avoid creating unintended obstacles to participation for some stakeholders.

4. Assure that the actual participants around the table have the requisite authority to make decisions on behalf of their agency or organization. If designated agency officials are unable to participate directly, provide explicit guidance for delegating decision-making authority.
5. Anticipate the amount of time that will be needed to generate the required information to ensure a well-informed process. Good solutions rely on the use of the best available information. To build agreement on a recommended solution, information must be accessible and shared by all participants. The information itself must be viewed as legitimate and factual. Anticipate the likelihood that some participants may not accept the validity of certain information depending on its source. Allow for mechanisms such as “joint fact-finding” or peer review, which are often needed to work through and resolve scientific and/or technical disagreements. Provide flexible authorization to bring in additional experts, as needed, to help inform a process.
6. Provide firm deadlines with specified conditions for obtaining a one-time extension, if requested by the full membership of the Task Force. Ensure that enough time is programmed for internal agency reviews of final products before the deadline for submission to Congress.
7. Provide clear guidance regarding the public involvement expectations associated with a Task Force process. Recognize that transparency and openness help ensure support for the outcome among those who do not participate directly. Encourage participating stakeholders to actively conduct outreach within their constituencies.
8. Provide clear direction and expectations regarding the final product for which the Task Force is accountable, but allow some flexibility to address unanticipated needs or new developments.
9. Consider using a third-party convener, such as the U.S. Institute for Environmental Conflict Resolution, to help design and manage a conflict resolution process, especially in situations of low trust and high controversy to help ensure stakeholder confidence in the integrity of the process and in the independence and impartiality of the facilitators or mediators.

Appendix A

Task Force Members and Support Staff

BMGR Task Force

The National Defense Authorization Act for FY2004, Section 322, ordered the Secretary of Defense to establish the Barry M. Goldwater Task Force. The Task Force included the following individuals:

- Carl McCullough, Air Force Range Officer and Task Force Chairman
- James Uken, Range Officer at Barry M. Goldwater Range
- Robin Rand, Commander of Luke Air Force Base, Arizona
- James Cooney, Commander of Marine Corps Air Station, Yuma, Arizona
- Steve Williams, Director of the United States Fish and Wildlife Service
- Roger DiRosa, Manager of the Cabeza Prieta National Wildlife Refuge, Arizona
- Duane Shroufe, Director Department of Game and Fish of the State of Arizona
- Jon Fugate, Yuma Valley Rod and Gun Club (wildlife representative)
- Jenny Neeley, Defenders of Wildlife (environmental representative)

Support Staff

Throughout the deliberations, support staff played a valuable role in participating at meetings, drafting and reviewing documents, and ensuring a productive process that generated thoughtful results. Staff include:

- Bryan Arroyo, United States Fish and Wildlife Service*
- David BeMiller, U.S. Border Patrol**
- John Chiamonte, Randolph Air Force Base
- Mike Coffeen, Cabeza Prieta National Wildlife Refuge
- Peter Costello, Luke Air Force Base*
- Brian Dolan, Arizona Desert Bighorn Sheep Society*
- Dale Goodrich, United States Air Force
- Jeffrey Harrison, United States Air Force
- Khalid Irshad, United States Air Force
- Daniel Karls, Marine Corps Air Station Yuma
- Sally Macon, Randolph Air Force Base
- Mary Jo May, Luke Air Force Base
- Curtis McCasland, Cabeza Prieta National Wildlife Refuge*
- Kevin O'Berry, Luke Air Force Base
- Ronald Pearce, Marine Corps Air Station Yuma
- Clint Riley, United States Fish and Wildlife Service
- Steve Sample, United States Air Force
- Brock Tunncliff, Resource Perspectives, Inc.
- Larry Voyles, Arizona Game and Fish Department*
- James Wilson, United States Air Force
- Ken Yargus, Marine Corps Air Station Yuma

Facilitation Team

- Dennis Donald, The Osprey Group
- Dennis Ellis, Meridian Institute
- Mike Eng, United State Institute of Environmental Conflict Resolution
- John Huyler, The Osprey Group
- Connie Lewis, Meridian Institute

Document Production and Logistics Support

- Sue Bromley, URS Corporation
- Jon Vlaming, URS Corporation
- Celeste Werner, URS Corporation

*Staff who served as representatives for designated Task Force members at one or more of the Task Force meetings.

**Mr. BeMiller participated as an information resource only and not as part of the deliberative process.

Appendix B

Potential Projects and Associated Costs for Sonoran Pronghorn Recovery

Various agencies are spending resources to help in the recovery of the Pronghorn. The proposed projects listed below elaborate on priority efforts to recover the Pronghorn. The Arizona Fish and Game Department estimates that these efforts in total would cost about \$600,000 annually over the recovery period.

These efforts are consistent with the priorities established in the Sonoran Pronghorn Recovery Plan. The Task Force believes these efforts will improve the likelihood of the Pronghorn recovery and, over time, lessen the impact of Pronghorn-related restrictions on Department of Defense operations at the Goldwater Range.

The highest priority needs, as discussed in the body of the report, are to continue and enhance the captive breeding program, efforts to provide augmented water and forage, and to sustain projects with Mexico that would increase the population and genetic diversity of the Pronghorn in Arizona.

Priority projects are:

1. Captive breeding program. There are two parts to this task. One is to continue the funding for an existing site on the Cabeza Prieta National Wildlife Refuge. In addition, the Task Force believes it is important to establish a second site off the Range. The timing of this initiative is considered important since possible sites in either Arizona or California are likely to be developed or impacted over time so that they could no longer provide suitable habitat for the Pronghorn in the future. The captive breeding program is estimated to cost approximately \$200,000 per year.
2. Forage enhancements. The highest mortality for the Pronghorn has occurred as a result of severe drought conditions and the inability of the Pronghorn to adapt to these conditions, as they have historically, by utilizing important habitat, now inaccessible because of widespread habitat fragmentation. For fawns, the impact from drought is particularly severe in the early summer months during their weaning period when water can be in very short supply. In mid-summer monsoon rains can provide sufficient water resources for the animals. In the short term, there is a need to utilize forage enhancement plots as an emergency recovery strategy, and to install the necessary infrastructure. There is also the accompanying need for annual operations and maintenance for these systems. The former is estimated to cost approximately \$400,000 over a two-year period while the latter would require more than \$100,000 annually.

3. Mexico projects. Projects with Mexico are less costly, but nonetheless vitally important. There are two populations of Sonoran Pronghorn in Mexico, in addition to the single U.S. population on the Range. There is no longer any natural interaction between the Pronghorn populations in Mexico and the population in Arizona. It is consequently important that there be continuing collaboration with Mexico, as there has been over the last decade, to assist in increasing the numbers of Pronghorn in Arizona and to add variability to the genetic mix of the herd that currently exists on the Range. Funds would be needed for annual surveys in Mexico and for the capture and relocation of animals. The approximate cost for this work is \$50,000 per year.

There are other potential projects that the Recovery Plan identifies that should be pursued as well, but these three areas are the priority tasks for the recovery of the Pronghorn. Predictable sustained funding is not currently in place to pursue these activities. Reflecting the needed collaboration, the responsible parties for these and other activities related to the recovery include the Air Force, Marine Corps, Fish and Wildlife Service, the Arizona Game and Fish Department, the Recovery Team and others.