Planes and Pronghorns
Share Vast Luke Range

Luke Air Force Range (LA FR) was identified as “the best major reserve of unspoiled desert in the Southwest” in a 1976 study of natural regions by the U.S. Department of the Interior.

This finding reflects the fact that military use has had comparatively little impact on most of the 2.7 million acres of this Air Force range in southwestern Arizona. Several target complexes, totaling fewer than 20,000 acres, are designated air-to-ground and gunnery locations. On the rest of the range – an area twice the size of the state of Delaware – the native species of the desert coexist with overhead aircraft activity. The 800,000-acre Cabeza Prieta National Wildlife Refuge, established in 1939, is part of LA FR. Airspace over it is used for military training.

LA FR has a unique combination of plants, wildlife, geological resources, cultural features and vast open space. Important prehistoric and historical sites chronicle the experiences of Indians and pioneers. The area, which ranks with Death Valley as one of the hottest in the nation, is rich in the life forms of the Sonoran Desert. Among the plants, creosote predominates. Saguaro, ironwood, mesquite, ocotillo, and many small shrubs and grasses are common. The rare Kearny sumac and unusual elephant tree also occur on the range. Wildlife species include at least 40 mammals, 200 birds, and many reptiles, amphibians

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Renewable Natural Resources

Photographs: Wildlife on the Luke Air Force Range includes Sonoran pronghorn antelope (top) and bighorn sheep. (Photos by Dave Daughtry, Arizona Game and Fish Department.)
and insects. The larger animals living here are the endangered Sonoran pronghorn antelope, desert bighorn sheep, mountain lion, mule deer, white-tailed deer, javelina, coyote, kit fox and bobcat.

To advance its stewardship of the natural and cultural resources within LAFLR, the U.S. Air Force has engaged the services of the University of Arizona College of Agriculture to prepare a long-term and comprehensive resource management plan.

Five government agencies share major responsibility for managing resources on LAFLR: the U.S. Air Force, Arizona Game and Fish Department, U.S. Marine Corps, U.S. Bureau of Land Management, and U.S. Fish and Wildlife Service. The planning process that the authors began last spring will assist these agencies in their management efforts. For example, more inter-agency cooperation should result from the plan. So should a better understanding of the scope and significance of resources on LAFLR. The plan will help the agencies identify and respond to resource-related problems such as pressures from mineral development, recreation and other interest groups desiring access to LAFLR resources.

The purpose of the plan is not to challenge military training on LAFLR. These vital defense activities are a given condition around which the plan will evolve. The plan will provide for coordination of military and other uses of the range with resource management needs.

Military Use of the Range

Early in 1941, the officer in charge of Luke Airfield received orders from the War Department to locate a desert area where flight crews could be trained in air combat. A site was needed that was large, uninhabited, and consisted almost entirely of public land. The current commander of the Phoenix-area Luke Air Force Base, Col. Arley
McRae, relates that the task of finding such an area was then assigned to a young officer named Barry Goldwater, an Arizona native familiar with the state’s resources. Thus, the future senator drew the first boundaries of Luke Air Force Range.

The original factors for which it was chosen, plus its excellent year-round flying weather, have made LAFR exceedingly important to the military for 43 years. Its remoteness grows in significance as urbanization elsewhere in the nation forces flight restrictions on modern, high-performance aircraft at smaller training facilities. Air crews train at LAFR nearly 365 days a year, with an intensity that has made safe and efficient scheduling a military science in itself.

The entire LAFR is administered by the Air Force through Luke Air Force Base, but several branches of the military share use of the range. LAFR is divided into the Gila Bend Sector in the east and the Yuma Sector in the west. Air operations in the east are controlled by the Tactical Air Command at Luke, and the Marine Corps Air Station at Yuma controls air use in the Yuma Sector.

On the Gila Bend Sector, combat aircraft from the Air National Guard in Tucson, Tucson’s Davis-Monthan Air Force Base, Williams Air Force Base southeast of Phoenix, and Luke Air Force Base regularly participate in training. Also, air combat groups from around the country are routinely assigned to combat training in Arizona to use LAFR. The Yuma Sector is regularly used by Marine and Navy pilots from Yuma Air Station and pilots from five air stations in southern California. Temporary duty pilots from Navy and Marine Corps stations elsewhere train at LAFR, too.

Although some indiscriminate weapons release and firing occurred in the range’s early years, air-to-ground combat activity is now restricted to about a dozen target areas that get intensive use.

The air space over LAFR is divided into several maneuvering ranges, categorized by type of use. They include manned ranges where spotters evaluate precision air-to-ground weapons delivery; tactical ranges with targets such as tank groups and convoys; and air-to-air ranges that use pilotless drones and towed targets, and where jets have mock dogfights. Besides combat training, some weapons testing has occurred at several remote locations on LAFR.

Cultural Resources

The record of human use of the LAFR area goes back about 10,000 years. Scattered evidence of the first people here has been found in several places on the range. Other, more widespread, evidence shows that between 900 and 1300 A.D., ancestors of the present-day Papago and Yuman-speaking groups, and perhaps others, used the region. Their occupation was likely transient in nature. They hunted animals and gathered seeds and fruits from local plants. Seashells found at LAFR sites suggest early commerce, with shells used as currency. Early day Indians probably passed through this area on their way to and from the Gulf of California to get shells and salt. More permanent occupations likely existed in the southeastern portion of LAFR, where floodwater farming appears to have been practiced.

Several archaeological studies in the last 50 years, including some sponsored by the Air Force, have scratched the surface of the area’s cultural past. More extensive work would improve the picture of the past and help locate sensitive sites where military or other activities

Aluminum-skinned darts, towed on cables behind powered aircraft, are used for aerial target practice. Brock Tunicliff inspects one that stuck into the ground on the range, probably after its cable was severed by cannon fire from an F-16 jet fighter. (Photo by Margot Garcia.)
might do significant damage.

El Camino del Diablo — the road of the devil — is the focus of most written history about the area. The first European to travel this route was Melchior Diaz in 1540. He was seeking cities of gold and crossed what is now LAFR on the way to the Colorado River. On his return trip, Diaz fatally lanced himself while hunting. More than 150 years later, the Jesuit priest Eusebio Kino traveled the region while exploring for routes to California and spreading the Christian doctrine to the Indians. During these journeys from 1699 to 1702, Kino named and mapped several LAFR landmarks recognized today, including Tule Tank and Tinajas Altas.

Few people crossed the camino in the years between Kino and the California Gold Rush. After the discovery of gold in California in 1849, many fortune seekers came from the United States and Mexico to Quitobaquito Spring in what is now Organ Pipe Cactus National Monument. The spring marked the beginning of the Camino del Diablo, the route west. It was the '49ers who named the camino the devil’s road. Scores of people died along the camino from exhaustion and thirst. Several of their graves are still visible.

Other historical sites in LAFR include mines and mining camps, additional grave markers, water tanks, wells and occasional artifacts discarded by early visitors. Also, prehistoric artifacts still exist at both remote and accessible sites. The LAFR plan will include methods to inventory, manage and protect these cultural resources.

Major Wildlife Resources

The area’s natural resources include minerals, air, visual resources, wildlife, vegetation, groundwater and rare surface water. Of these, wildlife typically draws the greatest public interest. In fact, public concern about dwindling bighorn sheep numbers in the area was the force behind establishment of Cabeza Prieta National Wildlife Refuge in 1939. Ninety bighorns were believed to be on the refuge then. Now, the manager of the refuge, Roger Di Rosa, estimates that the number has grown to 250 to 300. The population of bighorns on LAFR land outside the refuge has also increased. The U.S. Fish and Wildlife Service and the Arizona Game and Fish Department work to ensure that the bighorns have sufficient habitat and protection from poaching and disturbance. The Air Force has helped with wildlife management through financial support, law enforcement assistance and scheduling.

In addition, the Air Force has substantially supported the recovery program for the Sonoran pronghorn antelope. In the United States, this subspecies, which once numbered in the thousands, is found exclusively within LAFR and Organ Pipe Cactus National Monument. Because only about 100 to 125 animals remain in this country, the Sonoran pronghorn is on the endangered species list.

Ten antelope were radio-collared in October 1983 as part of the Sonoran pronghorn recovery plan. Information from these animals will help the sub-species survive by increasing knowledge of their population number, home range, food needs, fawning areas, and, potentially, the effects of human activities such as military operations.

The Planning Process

In 1979, the UA School of Renewable Natural Resources began a resource plan for Cabeza Prieta National Wildlife Refuge. Air Force
interest in that project eventually led to an agreement between the Air Force and the university for the school to develop a plan for the entire LAFR. Air Force coordinators of the project are Lewis Shotton, chief environmental officer for the Tactical Air Command, and Lt. Col. Richard Coullahan, commander of the civil engineering squadron at Luke Air Force Base. The five agencies with resource responsibilities on LAFR agreed in 1982 to cooperate in managing the natural and cultural resources on the range. They further agreed to help in the development of a plan by providing necessary information.

The UA planning process for LAFR has two phases. The first is a year-long initial planning assessment to be finished by April 1984. It has included aerial and overland reconnaissance of LAFR, examination of the roles of related government agencies, and collection of resource inventory data. To identify management issues, the core planning team has met separately with 11 state and federal agencies that have responsibilities within or adjacent to LAFR. Besides the principal five, they include the National Park Service, Border Patrol, Customs Service, Army Corps of Engineers, Arizona State Land Department and State Parks Development. Phase I will also include development of data management systems and a planning format for Phase II. Large amounts of resource and management data exist for an area the size of LAFR, so a systematic means of organizing and using this information is needed. Computer technology and other data management methods will be used.

The two-year Phase II will be based on the Phase I product of a concise planning format developed through an overview of the resource planning needs of LAFR. Phase II will draw on an expanded group of UA planners and researchers from such fields as archaeology, economics, geology, law, botany, ecology and wildlife management. The final planning document will be designed as a useful framework through which the agencies involved with LAFR can identify and address current and future resource management issues.

### Danger Restricts Range Use

Non-military access to Luke Air Force Range is highly restricted for four reasons: for preventing interference with military operations, for security, for protection of the fragile desert environment, and for safety. To the public, this last reason is most critical. Since 1941, an enormous variety of explosive weaponry has been used on the range. The Air Force reports that there is some live ordnance on the ground surface and that buried live ordnance is widespread. The buried explosives include missiles and three-pound to one-ton bombs. Therefore, travel on parts of the range can be extremely dangerous. People who make unauthorized entries are subject to prosecution for criminal trespass. To apply for authorization to visit Cabeza Prieta National Wildlife Refuge, write to the U.S. Fish and Wildlife Service in Ajo.