



2018 Secretary of Defense

Environmental Awards

Natural Resources Conservation, Small Installation
F. E. Warren AFB

Introduction

Situated in the heart of the American West, Francis Emroy Warren Air Force Base (F. E. Warren AFB) in southeast Wyoming is home to the 90th Missile Wing and host to the 20th Air Force. The 90th maintains and operates 150 Minuteman III Intercontinental Ballistic Missiles (ICBM) and 15 separate missile alert facilities, spanning a 9,600-square mile region into Colorado and Nebraska. The Missile Wing's mission is to, *Defend America with the World's Premier Combat-Ready ICBM Force*. The installation is also host to the 582nd Helicopter Group, with two helipads and eight UH-1s, generating thousands of sorties annually.

F. E. Warren AFB's 5,866 acres of rolling uplands contain many western habitats, ecotypes, geologic forms, and botanical assets. Specifically, 1,585 acres are categorized as improved acres, 621 acres as semi-improved, and 3,660 acres as unimproved. Over most of

the installation, F. E. Warren AFB implements conservation, restoration, and wildlife management activities. The installation fulfills a vast and balanced natural resources mission while implementing outstanding outdoor recreational opportunities in accordance with the Sikes Act. For example, there are 2,165 acres available for hunting, fishing, and other outdoor recreation.

F. E. Warren AFB's Integrated Natural Resources Management Plan (INRMP), required by the Sikes Act, is a planning document based on the principles of ecosystem management. The INRMP integrates military mission requirements, environmental and master planning documents, cultural resources, and outdoor recreation to ensure both military operations and natural resources conservation are included and consistent with stewardship and legal requirements. The F. E. Warren AFB INRMP is supported by a critical Tripartite Agreement guiding and directing all activities

related to natural resources management. The latest INRMP annual review and update occurred on March 16, 2017, and was approved by the United States (US) Air Force, US Fish and Wildlife Service (USFWS) and the Wyoming Game and Fish Department (WGFD). The INRMP contains eco-friendly resource management tasks incorporating an extensive array of environmental and natural resources management solutions. The annual update to the INRMP ensures both timely and pertinent information is considered for changing installation resource, species, habitat, and outdoor enthusiast needs. The purpose of an annual update is to assess performance in meeting Department of Defense (DoD) natural resources focus area metrics that measure INRMP effectiveness and partnership success.



Francis E. Warren AFB

With 5,866 acres of rolling uplands, F. E. Warren AFB provides refuge for a variety of natural communities and rare and endangered plant and animal species. It is also the center of maintenance and readiness for America's premier combat-ready ICBM Force.

F. E. Warren AFB takes advantage of many cooperative arrangements established between the Air Force and other agencies to execute a well-rounded and complex natural resources management program. Supportive agreements, memoranda, and interagency collaboration

form the foundation of the natural resources program and are established as a result of the INRMP.

Two new cooperative agreements between WGFD and F. E. Warren AFB promote Sikes Act compliance through pronghorn hunting and wildlife management. One agreement institutes State of Wyoming wildlife law enforcement presence and the second agreement establishes a state-operated Hunter Management Area on the installation. These two agreements are examples of beneficial actions which have proven instrumental for successful INRMP implementation. The agreements were signed in 2017 and provide hunting rules, safety requirements, wildlife law enforcement, permitting methods, and public outreach to successfully hold archery pronghorn hunting opportunities. The agreements directly support and strengthen the Air Force and DoD mission by reducing both pronghorn population numbers and Bird/Wildlife Aircraft Strike Hazard (BASH) safety issues. In addition, the agreements provide outdoor recreation in the form of big game hunting on over 1,700 acres for sportsmen and their families.

Overall Natural Resources Conservation Management

F. E. Warren AFB is responsible for providing long-range planning, program direction, coordination, and expert supervisory evaluation for the natural resources program. Diverse activities include interrelated urban forestry, wildland fire control, fish and wildlife management, invasive/noxious species management, erosion control, threatened and endangered species management, and outdoor recreation and education opportunities. The staff execute programs enabling the maximum use of all 5,866 acres, while maintaining and strengthening mission readiness and ensuring compliance with regulatory requirements. The

majority of the installation is open for recreational use in the form of fishing, hunting, hiking, and wildlife viewing for 5,560 military and civilian personnel, family members, and retirees.

Summary of Accomplishments

Threatened and Endangered Species

For the past 30 years, F. E. Warren AFB has been making great strides toward threatened and endangered species protection and recovery.



Interagency Collaboration

Through partnerships with USFWS and WGFD, the F. E. Warren AFB natural resources program operates endangered black-footed ferret pre-conditioning pens. The facility is capable of housing six family groups at one time and can house up to 90 animals per year.

The USFWS endangered species recovery goal to establish 10 successful endangered black-footed ferret populations with 1,500 breeding adults throughout the range of the species is enhanced by F. E. Warren AFB efforts. Pre-conditioning pens on the installation are capable of housing six black-footed ferret family groups at one time and up to 90 animals per year. In addition, the installation annually surveys for the federally threatened Preble's meadow jumping mouse ensuring its habitat needs are documented and provided for many years to come. Stakeholders including F. E. Warren AFB, WGFD, USFWS, Wyoming Natural Diversity Database, and the University of Wyoming have worked together to support

aggressive species and habitat management. Natural resources program staff are paving the way for threatened and endangered species recovery, employing scientific excellence, and developing a workforce of conservation leaders.



Long-Term Studies for Conservation

Through a partnership with the Wyoming Natural Diversity Database, F. E. Warren AFB has accomplished a 30-year complete population census for one of the largest populations of Colorado butterfly plants in existence, and the only one on federal lands. The census has contributed to appropriate management and recovery of this threatened species.

Long-Term Studies for Conservation

The Colorado butterfly plant is a rare short-lived perennial herb that requires periodic disturbance either through flooding, mowing, burning, or grazing to maintain the open to semi-open streamside and meadow habitat it occupies. F. E. Warren AFB hosts one of the largest populations of Colorado butterfly plants in existence, and the only one on federal lands. The installation has established a research natural area that includes known, naturally-

occurring populations. Through a partnership with the Wyoming Natural Diversity Database, F. E. Warren AFB accomplishes an annual census of Colorado butterfly plants, contributing significantly to the management and recovery of this threatened species.

Innovative Invasive Plant Management

F. E. Warren AFB continuously seeks to expand knowledge for strategically managing problematic invasive plants in rangeland ecosystems. One currently executed multi-year project seeks to improve the ability of natural resources managers to reduce invasive weed impacts by evaluating a combination of multiple management approaches. This project increases the productivity, diversity, and quality of desirable native vegetation to improve wildlife habitat and provide other

ecosystem benefits. The objectives are accomplished by evaluating the efficiency of targeted grazing by sheep in reducing weeds while enhancing the condition of desirable vegetation. Scientific researchers compare effects of targeted grazing to chemical weed control, integrate grazing and herbicides, and evaluate the reintroduction of desirable species within the framework of a strategic weed management program to augment species diversity for wildlife habitat.

Fish and Wildlife

In accordance with the INRMP, fish and wildlife-related achievements at F. E. Warren AFB are diverse and eco-friendly. Achievements include development of an internal database for tracking a 250+ pronghorn herd. Bird strike management objectives are



Innovative Weed Management Techniques

In 2017, sheep arrived at F. E. Warren AFB. The sheep support pesky invasive and noxious weed management.

being met by instituting a Canada goose egg addling and depredation program. This program has resulted in a 50% reduction in resident Canada geese with zero incidents of goose-related BASH incidents over the last two years. F. E. Warren AFB has also implemented a bat house tracking technology for an optimally-positioned structure capable of holding 6,000 bats, thereby reducing damage to historic buildings, obtaining and complying with federal and state migratory bird salvage permits, and ensuring bird/bat strike management compliance with mission and USFWS requirements. The installation also strategically mapped threatened Preble's meadow jumping mouse habitat while preserving 500 acres of habitat. F. E. Warren AFB instituted eco-friendly initiatives using perforated pipe structures through beaver dams to minimize the flooding potential of developed areas while allowing dams to remain intact. This approach resulted in reduced stream channel erosion and increased groundwater levels. Preble's meadow jumping mouse habitat improved due to the resulting riparian vegetative cover enhancement. F. E. Warren AFB coordinated and implemented the first ever pronghorn hunt on over 1,700 acres in 2017, allowing 50 hunters to pursue big game archery hunting

opportunities, while reducing herd strike hazards. Managing the herd size closer to carrying capacity improves herd viability and health.

F. E. Warren AFB expanded its fishing program and introduced new gamefish species resulting in over 800 yearly fishing license sales and 3,300 catchable-size fish stocked annually in installation lakes for recreational opportunities. Fish habitat was also improved through a \$25,000 lake aerator project to enhance the fishery through improved water quality. Installation personnel organized and promoted fishing derbies for disadvantaged persons with scores of veterans and children participating.

Other Natural Resources

F. E. Warren AFB operates a robust urban forestry program and has been honored for 29 consecutive years with the Arbor Day Foundation's prestigious Tree City USA Award. Annually, a celebration is held to recognize the military staff responsible for ensuring the continued presence of tree resources on the installation. Some of F. E. Warren AFB's trees were planted as long ago as 1885 to honor infantrymen serving at that time. These trees provide physical and



Expanded Interagency Collaboration Leads to Big Game Hunting Opportunities

2017 marked the first ever archery-only pronghorn hunt at F. E. Warren AFB. The hunt enhanced recreational outdoor opportunities, while simultaneously improving installation safety operations.

mental benefits to staff and emit beauty, while also providing shade and serving as windbreaks with energy saving benefits. The shade from trees reduces the need for air-conditioning in the summer, and in the winter trees reduce heating costs by breaking the force of winter winds.

Conservation Education

Working with school systems to improve the science curriculum in Laramie County, F. E. Warren AFB helps to further the education of hundreds of students and youth of all ages at local schools and on the installation. Installation staff and volunteers from the F. E. Warren AFB community participate in Stream Team workshops held at local community schools. The workshops and fishing derbies allow scientists and natural resources managers to team with families, students, teachers, and other community members to identify key natural resource issues and raise awareness. Workshops teach the importance of natural biodiversity not just in

the wild, but also in our backyards. Students learn valuable lessons about field monitoring and data collection techniques, and gain understanding of the diversity of fish and wildlife in the local area.

Community Outreach

In the face of increased military training tempo and next generation weapons systems, the integration of volunteers into the F. E. Warren AFB natural resources program has proven instrumental as the force multiplier necessary to maintain conservation and mission support standards. F. E. Warren AFB's robust volunteer program supports conservation projects and field crews with day-to-day direct mission support execution. Recent volunteer-aided efforts included stream cleanups and mentoring youth and post-traumatic stress disorder war veterans in realizing the therapeutic effects and psychological benefits of recreational fishing on stocked installation fishing waters. In addition, organized cleanups managed almost exclusively with volunteer



Volunteers in Action

Organized stream cleanups across F. E. Warren AFB contribute high-quality assistance in improving the environment. The cleanups, managed almost exclusively with volunteer resources, helped to reduce waste from the installation for disposal.

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Tasked with managing the complex outdoor recreation program, the F. E. Warren AFB natural resources program utilizes specialized outdoor recreation staff to perform user-friendly and one-on-one interactions for installation recreational permit issuance and information exchange. Developed and customized by F. E. Warren AFB natural resources personnel, the procedure ensures maximum outdoor user satisfaction in the program with over 800 satisfied participants annually.

F. E. Warren AFB has 17 grazing acres specifically for horse pastures including stables. These grazing acres have allowed F. E. Warren AFB to host an incredibly important event through the *Horses4Heroes Program*. This program's mission is to make horseback riding affordable and accessible to service members, veterans, survivors, first responders, and their immediate families. F. E. Warren AFB supports this program honoring those whose service and sacrifice keep us safe and free.

Mission Enhancement

By openly and transparently collaborating with other natural resources stakeholders, F. E. Warren AFB successfully minimizes natural resources impacts across the installation. Implementation of the INRMP using the Tripartite Agreement framework has resulted in zero natural resource Notices of Violation having been issued by federal and state regulators. This, in turn, ensures continued access to the military land, air, and water resources needed to enhance and accomplish F. E. Warren AFB's testing, training, and operational activities.

Ongoing and continuous collaboration with WGFD and USFWS also saves time and money by reducing project review time and ensuring necessary mitigation actions are proactively identified and taken prior to project implementation. Early, intensive collaboration has reduced lengthy and costly consultation timeframes that can impact training, on-installation projects, and mission readiness activities.

The significant and lasting accomplishments of the F. E. Warren AFB natural resources program clearly demonstrate it is a leader. While much has already been accomplished, F. E. Warren AFB's natural resources program continues to excel, and stands poised to take the program to new heights. In so doing, the F. E. Warren AFB natural resources program will continue to support the Air Force's national defense mission and ensure the long-term sustainability of our nation's priceless natural heritage.