SUCCESS STORY

Eglin AFB - April 2002

PROACT

A Base-level Pollution Prevention Resource sponsored by HQ Air Force Center for Environmental Excellence

Spotlight On: Eglin AFB

Eglin AFB evolved from an Army Air Corp Tactical School initiative to establish a bombing and gunnery range, realized in 1933-34, when a Northwest Florida businessman leased and then donated 1,460 acres to the United States government. To date Eglin's main base and reservation encompasses over 464,448 acres and includes 95,000 square miles of military operating air space in the eastern Gulf of Mexico. During its history of testing and evaluating air armament the installation has undergone several redesignations, the latest being in the 1990's when it became the Air Armament Center (AAC). Presently, Eglin operates under the Air Force Materiel Command (AFMC), with the AAC hosting a multitude of units, including the 33rd Fighter Wing, 53rd Wing, Air Force Special Operations Command, U.S. Navy Explosive Ordnance Disposal School, U.S. Army Ranger Camp, and a Federal prison.

With responsible stewardship of Eglin AFB resources, the Environmental Management Directorate provides complete support of the AAC mission; and through senior leadership, ecosystem management, resource investment, and public outreach the environmental team has implemented unique and innovative measures. The successes illustrated within these pages highlights just a few of the outstanding measures implemented in five diverse programs by the Environmental Management team at Eglin AFB, whose dedication to the environment has been acknowledge in over 19 awards, including the 2001 General Thomas D. White Environmental Quality Award.

PROACT would like to extend a special thanks to Ms. Marnee Carlson, Environmental Public Affairs, whose assistance and contributions were invaluable in the development of this success story. Additional information on the successes presented or other innovations being developed at Eglin AFB may be obtained from Mr. Mike Spaits, Environmental Public Affairs Manager, DSN 872-2787 ext 333.

Environmental Success

Cultural Resources

Eglin AFB's Historic Preservation Division manages 1,600 archaeological sites and 125 historic structures ranging from American Indian hunting camps to World War II missile launch sites. Archaeological investigations have shown American Indian tribes, including the Pensacola, Chacato, Creek, Chiscas, Uchis, and Seminole, inhabited the northwest panhandle of Florida. Recently, archaeologists discovered the remains of two small buildings, which were determined to be from British colonists who occupied the area for only a short period of time, from 1763-1781.

Camp Pinchot

The coming of the railroad in 1883 opened up the forestlands of what is now the Eglin AFB reservation to the logging and turpentine industries. Laborers in the turpentine camps cut "catfaces" in the pine trees and collected the sap in clay or tin cups. These cups have been found nearly everywhere on the reservation, a testament to the extent and longevity of the turpentine industry in the Florida panhandle. The Forest Reserve Act of 1891 lead to the establishment of the Choctawhatchee National Forest in 1908, which was ceded to the War Department in 1940. Today Camp Pinchot, the headquarters for the Choctawhatchee National Forest, built between 1910-1914, is a historic district listed on the National Register of Historic Places, and it's 11 buildings are the oldest standing structures on Eglin AFB. In an initiative to preserve and reuse these buildings Eglin AFB rehabilitated them and opened Camp Pinchot as housing for the base's commanding officers, in the 1950's.

Military Occupation

Despite development by the railroad, the vast majority of forest was largely uninhabited and inaccessible until the 1930's when a bombing and gunnery range was established and the first of many secret missions were conducted. The remains of the concrete buildings, bunkers, launch ramps, and the missiles themselves now constitute significant archaeological sites, and are featured in the national Register of Historic Places. A unique and historic building still in operation is the McKinley Climatic Laboratory, which was completed in 1947. For over 50 years the McKinley Lab baked and froze more than 350 aircraft, 70 missile systems, and 2,000 pieces of equipment. The Lab can vary the temperature from minus 80 to plus 170 degrees Fahrenheit, creating snowstorms, ice storms, blizzards, downpours, and even sandstorms. The Lab was designated a National Engineering landmark in 1987, and listed on the National Register in 1998.

Natural Resources

Eglin AFB is comprised of 464,448 acres; 2,860 acres are improved lands, while 445,000 acres are considered wildlife habitat. The Natural Resources Branch, known as the Jackson Guard, supports the military mission through an integrated natural resources management approach employing the principals of ecosystem management. In addition, Eglin AFB has developed several cooperative agreements that greatly assist in the management and advancement of their diverse native community, which includes 67 rare plant species, 34 rare animal species, 11 Federally listed threatened and endangered species, and 81 Florida State listed threatened and endangered species. In all, the Jackson Guard collaborates with over 150 scientists and technicians from various universities, Federal and state agencies, and independent research organizations. The wealth of research completed at Eglin AFB has significantly added to the understanding of regional biodiversity and management of natural resources as indicated in being the recipient of the AFMC 2001 Natural Resource Management Individual/Team Award.

Forestry Management

The reservation boasts the largest remaining old-growth longleaf pine forest, ranging from 100 to 500 years, in the United States. Eglin AFB's ecosystem has dramatically improved over the past three years through the removal of sand pine and slash pine trees and the planting of 4.6 million longleaf pines, which are native to the Florida panhandle. Through commercial forestry, Eglin AFB has permitted companies to harvest 86,000 cords of sand pine and slash pine covering 16,000 acres, earning the installation approximately $3.7 million from 1999-2001. The restoration of 120,000 acres of longleaf pine sandhill habitat has gradually moved the area from a low quality ecosystem to a functional ecosystem.

Along with removal of non-native trees and planting of the longleaf pine, controlled burning has been implemented as an effective and necessary tool in rehabilitation of these forested ecosystems. However, smoke management constraints, mission requirements, and adjacent urban areas present significant challenges to the prescribed fire program. The Fire Management Section, headed by Mr. James Furman, uses range mission requirements, weather forecasts, satellite imagery, and a computer smoke plume prediction model in an attempt to schedule controlled burns when they will least affect all concerned. Through Environmental Public Affairs, the Fire Management Section does its best to ensure the surrounding communities are informed ahead of time concerning planned burns. This effort has resulted in a drastic reduction in the number of complaints received and resulted in an average of 40,000 acres prescribe burned annually.

Aftermath of a Successful Prescribed Burn

Species Management

There are 1,209 miles of streams, 64 miles of coastline, and 64,810 acres of wetlands providing for a variety of species on Eglin AFB, so much so, that it has been designated one of seven "National Hot Spots" of biodiversity by The Nature Conservancy. They have the only unlisted beach mouse species in the region, the only burrowing owl population in Northwest Florida, the fifth largest population of black bears, and almost half of Florida's snowy plover population. New species discovered on the reservation include the bog frog, flatwoods salamander, two other new salamanders, a new order of wasp, a new beetle, and a wingless grasshopper thought to be extinct.

With responsible stewardship of natural resources, the preservation of natural habitats, and supplemental habitat improvements, species of concern and threatened and endangered species are recovering. An exceptional example of Eglin's species management, headed by Mr. Carl Petrick, is the red-cockaded woodpecker, a Federally listed endangered species. The red-cockaded woodpecker requires living, old-growth longleaf pine trees, and with the proper management of longleaf pine stands, these woodpeckers are recovering in a much shorter time frame than anticipated. It was estimated in 1994 that a successful program might result in 250 breeding pairs by 2010; however, through Eglin's habitat management and species conservation actions, the red-cockaded woodpecker population has already grown from just under 170 breeding pairs to over 250 pairs. With the achievement of 250 breeding pairs, eight years earlier than anticipated, Eglin AFB has refocused its goal on now attaining a population of 450 breeding pairs by 2010.

Erosion Control

Clay, located a few feet under the surface was "mined" from easily accessible areas such as streambeds and gently sloping hills in the early 1900's for road compaction. Once depleted of clay, these pits became severe erosion areas, allowing rain to wash a tremendous amount of dirt and sand into rivers and streams. Over 120 of these clay pits have been identified on Eglin AFB. These pits contributed to high sediment runoff affecting water quality, resulting in a drastic decrease in the Okaloosa Darter population, a Federally listed species.

Native Vegetation Controls Errosion at Clay Pit

The Natural Resource Conservation Service partners with Eglin to conduct effective and efficient erosion control projects on these sites and volunteers spent over 550 hours planting native vegetation. Prior to starting the erosion control program, it was estimated over 23,520 tons of sediment per year, washed into streams. As the native grasses took hold, erosion and sediment washout was abated, the streams cleared, and the Okaloosa Darter population began to increase in numbers. It is now anticipated the Okaloosa Darter will be eligible for downlisting in 2002 and possible delisting by 2025. In recognition of this successful effort, and in competition with erosion abatement efforts all over the world, Eglin AFB was awarded the 2001 Environmental Achievement Award by the International Erosion Control Association.

Outdoor Recreation

Sixty percent of the reservation is open to year-round outdoor recreation. There are two quality fishing ponds comprising 42 acres, and seventeen other ponds totaling 173 acres also open to fishing. In addition, more than 62,000 acres are managed for controlled deer hunting. Studies have shown the deer herd population to be increasing, which is partly attributed to concerted efforts to re-habilitate the forest to its original condition, that of longleaf pine. An average of 12,000 permits are sold annually for hunting, fishing, camping, canoeing, wildlife viewing, bird watching, and other outdoor recreation activities, generating approximately $180,000 annually.

Since many areas of the reservation have been historically used for munitions testing, unexploded ordnance (UXO) is likely to be found just about anywhere, and can vary from small bullets, hand grenades, rockets and missiles, to bombs. Encounters with UXO during recreation activities are rare, but possible. In order to alleviate safety concerns, the Jackson Guard developed an excellent UXO brochure and 6-minute video. All individuals purchasing a hunting, fishing, or recreation permit at the Jackson Guard headquarters building must watch the video. They are also given the brochure and a map showing areas restricted, due to active ranges or a high potential for UXO.

Volunteer Program

There has always been strong community involvement at Eglin AFB. In 1999, the Jackson Guard took advantage of this untapped resource and successfully utilized volunteers to monitor marine turtle nesting sites. Since then, a full time volunteer coordinator was hired, Ms. Jennifer Mathers, to organize local citizens, retired military, off duty personnel, and college and graduate students to assist in natural resource projects.

Volunteers Monitoring the Santa Rosa Beach Mouse

Opportunities to volunteer exist year round and all volunteers receive training, coordinated by the Jackson Guard, before the start of each project. In 2001, Eglin AFB had over 400 participants contribute 5,000 plus hours to species monitoring projects and habitat restoration activities

Aside from community involvement, the media is used extensively to promote conservation messages, and Jackson Guard members frequently give tours/briefings to local school children, boy and girl scouts, local and international dignitaries, and civic groups. In addition, Eglin AFB hosted the international celebrity Steve Irwin, of the "Crocodile Hunter" television program, resulting in four internationally televised shows highlighting Eglin's conservation programs to an estimated viewing audience of 500 million.

Impact Analysis Process

Approximately 400,000 acres of Eglin AFB is undeveloped land, which through responsible stewardship supports compatible and multiple uses while sustaining the AAC mission. Essential to continued multiple uses and mission accomplishment is the analysis and planning of potential environmental impacts. Eglin AFB has successfully implemented an effective and thorough Environmental Impact Analysis Process (EIAP).

The EIAP process, managed by Ms. Elizabeth Vanta, Chief, Environmental Analysis Branch, has made it easier for personnel to submit and interdisciplinary working group members to evaluate and approve, Air Force Form 813. This system has made the Form 813 electronically available over the installation's intranet, allowing the forms to be completed and submitted from an individual's office via their computer. There are four easy steps in submitting a Form 813, and the database guides users through the process. After coordination with the UEC, the administrator notifies all working group members who need to review it via e-mail. Once all interdisciplinary working group members have reviewed the form, an e-mail is automatically sent to the administrator to determine if the request is ready for approval, needs further information, or is to be disapproved. At any time during the process the submitter can query the database to check on the status of the form.

An average of 890 forms are now processed annually using the electronic format. Coordinating the reviews electronically has not only allowed more forms to complete the review process, it has also reduced the amount of time a Form 813 spends in review, the average now being less than seven days. In addition, Eglin AFB has successfully complied with the Federal Facilities mandate to accommodate requests from commercial communications companies to site cell phone repeater towers on military installations. With a proactive approach, the base's Analysis Branch and interdisciplinary Environmental Impact Analysis Process Working Group are evaluating several locations, which are currently available and meet the companies' requirements, while continuing to support the ranges and the military mission.

Environmental Compliance

To ensure military missions are supported while protecting and sustaining the resources existing on Eglin AFB, the Environmental Compliance (EMC) Division established "standing committees" lead by senior personnel. In addition, each organization on Eglin AFB has a Unit Environmental Coordinator (UEC) who serves as a link between the EMC Division and shop-level personnel for all environmental issues. Eglin has enjoyed an outstanding compliance inspection record since 1994; all inspections for regulatory requirements have resulted in zero violations cited. Eglin can track its success to the outstanding teamwork developed through the UEC Council. This level of teamwork has been accomplished

through monthly meetings, an Eglin specific UEC Handbook, and the implementation of the UEC Information Center (website), which houses an electronic library, compliance checklists, document control system, and a calendar of upcoming events. Through cooperation, hard work, and education of base personnel the, EMC Division has achieved an award winning compliance program. The program received in 2001, the AFMC Pollution Prevention Award and the White House Closing the Circle Award in Recycling, and a State of Florida Award for the Duke Field Wastewater Treatment Plant. This award represents the best operated plant in the state for its class and will be submitted to the Environmental Protection Agency for national competition. EMC manages compliance for six permitted wastewater systems and oversees 10 Public Water Systems.

Hazardous Material Management

AFMC has chosen the Hazardous Material Management System (HMMS) as the means of managing hazardous material issue and turn-in at AFMC installations. Therefore, Eglin AFB, plus most tenant units and organizations, such as Duke Field, and the Army and Navy tenant units, use HMMS. The HMMS at Eglin AFB operates through the Hazardous Material Cell (Hazmat Cell), from which all purchase requests are processed. When the program was first initiated, Eglin AFB had over 70 issue points; currently there are only 37. Mr. Tom Prier, Hazardous Material Program Manager, stated Eglin AFB has shown a much greater reduction rate than the 10% per year goal established by AFMC: 22% in 1999, 25.5% in 2000, and 57.8% in 2001. These outstanding reduction rates are attributed to the Hazmat Cell.

A shining example of the Hazmat Cell program is the operation at Duke Field, in which Ms. Dana VanWinkle supervises all purchasing and issue for 26 shops using 203 hazardous materials in support of 14 aircraft. Hazardous materials are usually issued in kits that are assigned to an aircraft or shop; however, kits or hazardous materials can also be signed out to individuals. Kits assigned to a shop must be returned after 30 days, when they are inventoried and re-issued. Kits or materials signed out to individuals must be returned within 24-hours. All hazardous materials are logged into the system using bar coding, when a bright yellow label is applied. The presence of any hazardous material container without a yellow label is immediately suspect and results in an investigation to determine if it is indeed a hazardous material, and if so, how it was obtained, and what it is doing in the shop or maintenance area.

Inventory of Kit and Bar Coding of Hazardous Material

This system has worked extremely well for all units and organizations on Eglin, and has resulted in very few instances of hazardous materials being used without authorization. Bioenvironmental Engineering personnel survey each of the 400 shops annually and check hazardous material use. If they discover materials not on the shop's authorization list, they contact the Hazmat Cell in an effort to determine what it is doing in the shop. They also notify the Hazmat Cell when they find authorized hazardous materials no longer being used, which are then removed from the shop's authorization list.

Dredge Permit

In obtaining a permit from the Army Corp of Engineers and the Florida Department of Environmental Protection (DEP) to dredge the channel from the Choctawhatchee Bay to Ben's Lake Marina on Eglin AFB, it was discovered that three beds of protected seagrass lay in the planned dredge area. Mr. Dan Robeen, Environmental Compliance Engineering Chief, worked with regulators to mitigate damages to the beds. One bed was determined to be deep enough, not posing problems for boaters and by decreasing the proposed dredge area by 3000 feet, this bed would not be disturbed. However, the two other seagrass beds were in direct path of the dredge area.

In order to preserve this resource, Eglin AFB proposed to re-plant the seagrass to Camp Timpoochee – a portion of Eglin AFB leased to the University of Florida which hosts a summer learning camp. Mr. Robeen enlisted the aid of Environmental Management, the 96th Services Squadron, Eglin Dive Club, and even personnel with the Florida DEP to transplant over 1500 plugs of seagrass. The undertaking was well worth the effort; three months after the re-plant all plants were surviving and undergoing monitoring by the Bureau of Aquatic Preserve.

Solid Waste Management

The Qualified Recycling Program on Eglin AFB is one of the largest in the Air Force, consisting of three separate facilities: the Recycling Center, Used Oil Center, and Yard Waste Operation. The combined facilities contributed to an approximate 9,500 ton diversion of municipal solid waste, waste lumber and yard trash from landfills. The success of the program is attributed to personnel awareness and participation as well as to the hard work and dedication of Mr. Johann Behnken, Recycling Program Manger, who gives briefings to local schools, colleges, and civic groups regarding the environmental aspects of recycling and affirmative procurement.

The Recycling Center accepts all types of recyclable materials and operates three established routes: running six trucks, collecting from central points and military family housing. In addition, the Center accepts various recyclable materials from the community and capitalizes on free labor from the Federal prison, located on Eglin, to collect, separate, and process the material. One of the more interesting items recycled at Eglin AFB is the plastic sleeves used to ship some larger caliber bullets. The Used Oil Center accepts used petroleum, oil, and lubricant but mainly processes off-specification JP-8 and diesel fuel, used oils, and used hydraulic fluid. The wood yard, operated by the 796th Civil Engineer Squadron, provides the mulch that, in partnership with Okaloosa County, is used for soil stabilization of an old Air Force landfill.

First Title V Air Permit

Eglin AFB received the first ever Title V Air Permit in the AFMC and one of the first in the Air Force. Extensive partnering with the State of Florida contributed to the development of a co-written Title V Air permit, facilitating environmental compliance and enhancing regulatory partnership with state regulators. To maintain and manage compliance with the Title V Permit, Eglin developed an Air Source Managers program to train air emissions equipment operators and shop managers. This includes in-shop training targeting specific equipment and processes. As a result, the State of Florida's annual inspections of Eglin AFB's air program have resulted in zero violations.

Range Management

Eglin's ranges include 724 square miles of land and 98,000 square miles over water. To achieve the goal of sustainable access to the ranges on Eglin AFB, it was determined a companion Range and Airspace Action Plan (RAAP) be developed to address the broader challenge of range sustainment. The Munitions Action Plan

quantifies munitions used, defining chemicals released and understanding their fate and transport in the environment. In applying this approach to the RAAP, a more inclusive model is presented in order of effectors, receptors, environmental consequences, and alternatives. To develop this comprehensive plan, the 46th Test Wing created a map of the current and historic use of all ranges, and established goals and objectives for the future. By using a geographical information system, the 46th Test Wing is able to provide an accurate representation of how past and present range activities interface with natural and cultural resources and public access.

Spatial Data

Eglin AFB has made extensive use of geographical information system (GIS) technology over the years, and is now bringing GIS to full maturity to support the ranges, restoration projects, and the reservation's natural and cultural resources. Digital mapping of the entire reservation, as well as individual ranges, to a high degree of accuracy has been completed. Intergraph-based GIS implementation at Eglin AFB is providing a user-friendly interface enabling managers, engineers, and scientists easy access to spatial information. This GIS Web interface process was established in three distinct tiers:

- Tier I is the most user-friendly, and was developed through the creation of the Eglin GIS home page. It contains an entire series of previously created maps that can be viewed, downloaded, and printed through an Internet browser. These maps show basic coverage (buildings, roads, utilities), test area physical features (targets, towers), environmental and cultural considerations (streams, endangered species, archaeological sites), and specific coverage for the test ranges.

- Tier II is more functional and was developed when it was discovered that over 80 percent of GIS requests were met by simply creating a map of a particular geographic area with specific coverage (i.e., buildings, roads, utility lines, and elevations) overlaid on one another. Since this activity was simple to perform, an interface was developed enabling the end-users to easily create and plot their own maps. This tier allows users to select and overlay any number of coverage items to custom-build the map they need using their own computer.

- Tier III will be the most functional and is based on Intergraph's GeoMedia product, but is still under development at this time. In its basic format, it is one of the simpler spatial analysis tools, with Microsoft Windows® driven queries prompting the user for spatial operators and displaying pick-lists of variable values.

Environmental Restoration

Eglin's Installation Restoration Program (IRP) was the lead agency for the identification of all unexploded ordnance (UXO) sites for clean-up and worked with a Range Inventory Team consisting of members from the 46th Test Wing, Air Armament Center Real Estate Office, Range Safety Office, Explosive Ordnance Disposal (EOD), Jackson Guard, and Cultural Resources Office. Completion of the Range and Site Information Questionnaire was the first step in building the Air Force's restoration program for closed, transferred, and transferring ranges contaminated with UXO. The questionnaire is sent out annually, with the 2000 questionnaire focusing on cataloging the locations of ranges, whereas the 2001 survey focused on the activities at the range and the potential impacts of those activities. The GIS information compiled by the 46th Test Wing on the past and present range activities will aid the Air Force in the development of a UXO restoration fund and prioritize the ranges that need to be restored.

Permitting

All environmental clean-up actions on Eglin are governed under the Corrective Action provisions of the Resource Conservation and Recovery Act. A recent partnering effort between Eglin's IRP managers, Environmental Compliance Division, U.S. Environmental Protection Agency, and the Florida Department of Environmental Protection resulted in a permit that protects the environment, allows Eglin to accomplish its mission, and save money. The hard work of this team resulted in completion of the permit one year ahead of schedule, saving approximately $10,000. This partnering agreement and the resultant permit have become models for other Department of Defense installations in Florida to emulate.

Partnering

A strong partnership between Eglin, its prime contractors plus state and federal regulators is the secret of their success to date. Most industrial permits cover operations and usually do not address more than 20 to 30 clean-up sites. Eglin's size and mission resulted in a permit addressing 118 clean-up sites and another 160 areas of concern. Sites on Eglin's remediation list include many arsenic dip tanks used for cattle in the mid 1900's; the defoliant Agent Orange, tested in varying strengths on the reservation during the 1970's; and weapons testing sites, primarily the A-10 aircraft 30mm gun, which used depleted uranium ammunition. Because of the partnering agreement, Eglin ended up with a permit that is legally enforceable without being overly restrictive. Mr. Thomas Churan, Restoration Chief, stated the partnership has saved time and money promoting a better and faster clean-up of Eglin sites. The partnering agreement has saved Eglin AFB an estimated $6 million since 1995.

The Key to Success

Colonel Michael R. Newberry, Director of the Environmental Management Directorate, stated one goal of AAC is to be a champion of environmental stewardship and through four cornerstones, Eglin AFB has established and implemented a unique environmental program.

➢ Leadership Focus

By communicating environmental accomplishments and short falls of Performance Indicators, consisting of senior leadership from commanders and organizations, to personnel and the community, AAC has successfully established the environment as a priority.

➢ Management Approach

Being proactive and responsive to environmental issues is integral to the success of AAC's mission, which is achieved by leadership at all levels, providing the best value in services, public outreach, and shared expertise.

➢ Resource Investment

Investment in resources to ensure environmental compliance with Federal and state standards is critical in maintaining mission access to ranges, and through partnerships and community involvement limited manpower can be multiplied.

➢ Public Outreach

Public Affairs is utilized to their fullest extent to inform personnel and the community about key environmental messages, environmental education, and leadership involvement with the community and distinguished visitors.

The depth of Eglin's program is immeasurable – consisting of strong leadership and personnel dedicated to conserving and improving the environment; an outstanding environmental management system (EMS), which allows the Environmental Management team to continually assess and improve their management practices; the countless volunteers and partnerships with non-military organizations; and the involvement/ education of the community with public outreach initiatives such as earth day celebrations and open house events.

Pollution Prevention Success Stories - Eglin AFB, April 2002

Success stories are a product of PROACT, a service of the Environmental Quality Directorate, Headquarters Air Force Center for Environmental Excellence (HQ AFCEE/EQ), Brooks AFB, Texas. Any comments or suggestions are welcomed and should be directed to PROACT at DSN 240-4240, (800) 233-4356, or pro-act@brooks.af.mil.

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