



FY 2016 Secretary of Defense

Environmental Awards

Environmental Quality, Individual/Team, Eglin Air Force Base Environmental Quality Team

Introduction

Situated along the Emerald Coast and extending into the heart of Florida's panhandle, Eglin Air Force Base (AFB) is home to the 96th Test Wing (TW). Encompassing 464,000 acres of land and 120,000 square miles of water ranges, the installation is responsible for the development, acquisition, testing, deployment and sustainment of all air-delivered conventional weapons. The 96th TW and its 50 associate units accomplish their missions through a symbiotic relationship with 106 rare and endangered plant and animal species found in 34 distinct ecosystems.

More than 250,000 acres of Eglin's reservation are open sites to the 11,000 military personnel, 9,500 civilian employees, 57,000 family members and retirees and the general public. Eglin's total economic impact to the area exceeds \$2.7 billion annually.

Background

The Eglin AFB Environmental Quality (EQ) Team consists of 43 professional engineers, physical scientist, biologists, archeologists, foresters, forestry technicians, environmental protection specialists, fire management specialists and fire ecologists. The EQ Team is committed to enabling Eglin and Department of Defense (DoD) missions while protecting one of the biggest natural infrastructure portfolios in DoD. The EQ Team implements a holistic management approach to reduce risks, maintain compliance and continually improve processes and programs.

Position Description

The Eglin EQ Team preserves a remarkable assemblage of biodiversity, from the fire-dependent old growth long leaf pine forest to pristine white barrier islands, while providing a proving ground and delivering the world's deadliest weapons to the warfighter. The EQ Team consists of four separate sections: Environmental Compliance, Natural Resource Management, Cultural Resource Management and Environmental Planning.

Recent Awards

- 2014 Secretary of Defense Natural Resources Conservation Award, Team
- 2014 Florida Department of Environmental Protection (FDEP) for its diversion efforts with a Recycling Recognition Honor
- 2012 General Thomas D. White Environmental Quality Award, Installation



Eglin EQ Team

Members of Eglin's EQ Team consist of a wide variety of professionals, including engineers, scientists, biologists, foresters, archaeologists, fire ecologists, environmental protection specialists and more. Eglin's Team is tasked with providing excellent support to the management of the DoD's largest forested installation.



Community Partnerships

Brig. Gen. David Harris, 96th Test Wing commander signs a memorandum of agreement between the community and the base for an Eglin Energy Resource and Innovation Partnership. This initiative will help Eglin reach its goal to reduce facility energy intensity 37.5% by FY20 and increase electricity generated with renewables 25% by FY25.

Partnerships

The EQ Team is a member of Okaloosa County's Green Team Awareness Taskforce, consisting of 25 base and local business leaders. The taskforce meets monthly to discuss environmental and energy issues affecting the local community. The EQ Team is a lead member of the Tri-County Community Partnership Initiative. The Community Partnership is a framework through which military installation, civic and business leaders collaborate to develop creative ways to leverage resources to reduce operating costs, increase capabilities or improve services. They are also a member of the Gulf Coastal Plains Ecosystem Partnership, comprised of 10 state and federal agencies in cooperation with private organizations, addressing regional natural resources issues. The partnership focuses on extending Eglin's ecological boundaries and supports connectivity to the surrounding natural habitats. Additional conservation partnerships include FDEP, Florida Forest Service, United States Fish and Wildlife Service (USFWS), National Park Service, Florida Fish and Wildlife Commission, Northwest Florida Water Management District, Nokuse Plantation, Longleaf Alliance, and the US Forest Service.

Accomplishments

Waste Reduction Efforts

The EQ Team spearheaded the reuse of 18,000 tons of Wastewater Treatment Plant (WWTP) sludge, cooking oil, tires and antifreeze, saving the base \$3 million in disposal costs while diverting solid waste from the landfill. They also successfully enabled the reclamation of 13,000 gallons of JP-8 by removing water contamination and making the material usable, saving \$2,500 in disposal costs and saving \$80,000 in material costs. The Team facilitated the reuse of all shipping crates and pallets achieving a total of 1,600 tons of solid waste diverted from landfills while saving \$290,000 in disposal costs. By partnering with the FDEP to reclassify 67,000 gallons of diesel fuel for use in tactical vehicles, the Team saved \$220,000 for use on other Eglin missions.

A leak detection audit was performed on 120 miles of water distribution lines, which identified approximately 10 million gallons per year of water loss due to smaller leaks at hydrants and valves. Eglin removed irrigation from potable water mains, saving an additional 20 million gallons of water per year.

Environmental Management System

The Eglin EQ Team maintains an Environmental



Team Efforts

EQ Team members remove illegally dumped debris from the Eglin reservation. The Team partners with FDEP, FFS, USFWS, the Florida Fish and Wildlife Commission and others.

Management System (EMS) using an intranet website which includes compliance guidance documents, instructions, checklists, environmental aspect inventory, Geographic Information System mapping, equipment photos, online material issue reporting, compliance assistance hot line, calendar of relevant events, training, material usage reporting, monthly air monitoring input and record keeping documentation. It is a one-stop-shop for all aspects of the environmental program and satisfies the myriad of documentation requirements online, saving individual shops time and resources while minimizing impacts to the mission. The website also ensures Eglin's database records contain the most accurate and timely information. Additionally, the website enhances communications through information exchange between organizations and the EQ Team. Using these tools, mission planners identify current environmental constraints surrounding planned missions and can properly evaluate mission needs, environmental requirements and geographical locations. As a result, the tools have ensured



Maintaining Compliance While Saving Money
Members of the EQ Team check a culvert for storm water compliance. Due to the Team's efforts, the FDEP granted Eglin a waiver for reduced sampling protocol, saving more than \$13k per sampling cycle.

Eglin's exemplary compliance record while maintaining over 170 permits and 115 tank registrations with no fines or penalties from 243 sites inspected and zero mission interruptions.

The EQ Team ensures an EMS fully conforming to Air Force and international standards is able to provide timely and accurate plans and procedures, identifies the most significant environmental issues and ensures compliance to environmental laws and regulations. The EQ team maintains 27 plans and permits in order to communicate the most current regulatory requirements.

The EQ Team focuses on ensuring Eglin personnel understand what they have to accomplish in all environmental arenas. Additionally, the Team identifies the most significant environmental issues affecting the Eglin mission each year. The EQ Team maintains 19 environmental training courses either computer-based or taught by Eglin environmental program managers, a comprehensive environmental webpage and multiple base instructions while accomplishing community outreach to 1,000 students at local schools. The Team managed the training of 3,000 base personnel covering all shop level training requirements. This EMS successfully identified four objectives to drive improvement in environmental processes and enhance the installation mission, as described below.

The Team identified an increase in the number of reportable spills resulting from poor marina operations. The Team worked with Eglin personnel to adopt FDEP practices and procedures to certify as Clean Marinas. These practices implement educational efforts to ensure marina users understand the most environmentally friendly method of marina operations. Eglin is one of 10 other marinas in Florida to receive the Clean and Resilient designation. Since implementation, marina oil spills have been reduced to zero.

As a result of the EMS aspect evaluation process, wastewater treatment was identified as a priority area under the Eglin Water Quality program. Eglin's EMS identified the transitioning of its WWTP process from Eglin treatment plants to county owned treatment plants as a key contributor. The EQ Team worked with plant operators and shop supervisors to ensure only allowable wastes were discharged to the

treatment plant. EMS objectives were established to label all drains in industrial spaces to educate personnel. The result of efforts included no WWTP exceedances for four consecutive calendar quarters, enabling an invisible transition to county wastewater treatment with no mission delays.

The EMS also identified Hazardous Waste as a significant environmental aspect. During the accomplishment period, Eglin was paying its waste hauler to have batteries collected and recycled. The EQ Team established an EMS objective to reduce disposal costs and increase waste diversion. The Team worked with shops to identify batteries to recycle, vendors to purchase the commodity and the logistics to process them through the Eglin Recycle Center. This objective successfully saved \$40,000 in waste disposal costs and returned \$25,000 to the warfighter.

The EQ Team placed a major emphasis on the Air Force Solid Waste Diversion goal. The Team worked with organizations and shop supervisors to establish diversion possibilities. The Team established multiple methods for reuse and recycling to exceed the DoD non-hazardous solid waste diversion goal of 50% for FY15. The Team successfully led Eglin AFB to exceed the goal by nearly 30%, with a 78% non-hazardous solid waste diversion.

National Environmental Policy Act

Through compliance with the National Environmental Policy Act (NEPA), the Eglin EQ Team ensured zero negative mission impacts. In accordance with NEPA, the Environmental Planning Office pointed the way to environmental compliance by evaluating almost 1,100 Requests for Environmental Impact Analysis and 2,464 Base Civil Engineer Work Requests. The Team also completed 106 Environmental Baseline Surveys and associated Waivers, and expertly managed two Environmental Impact Statements and completion of 12 Environmental Assessments. Implementation of the innovative online Environmental Impact Analysis system enabled the Eglin EQ Team to coordinate with planning, legal, public affairs, bioenvironmental and safety officials across the base in a web-enabled platform, reducing required labor costs for interdisciplinary reviews by 75%.

The EQ Team furthered the national goal of



Archaeology Screening

An EQ Team member conducts screening on an Eglin archaeology site. Eglin surveyed 13,740 acres during the reporting period, clearing land for future missions.

pursuing alternative energy sources by facilitating and completing an Environmental Assessment for a 30 megawatt solar photovoltaic array project on 245 acres of Eglin property. This proactive effort made the \$200 million project viable and raised Eglin's percentage of renewable energy sources to 19%.

Furthermore, Eglin's EQ Team led an interdisciplinary team of subject matter experts to complete a \$3.2 million Supplemental Environmental Impact Statement (SEIS) for the first-ever F-35 bed down. These efforts led to the successful completion of the SEIS with the signing of the Record of Decision. The final bed down of 59 F-35s supports operational needs of the Initial Joint Training Site and successfully integrates the DoD's newest stealth fighter into the local area.

Inventory/Predictive Model

The Eglin EQ Team continues to lead the way toward meeting the DoD goal of completing its inventory of historic properties. Using a robust, statistically validated predictive model for archaeological site location, Eglin has been able to focus survey dollars where they are most effective. Implementation of the predictive model has effectively eliminated 38% of Eglin's land area from the need for Section 110 inventory survey, for a cost savings of at least \$20 million. Pushing forward with the remaining inventory, Eglin surveyed 13,740 acres,

clearing much of that land for future missions. Approximately 3,500 acres of the survey was conducted utilizing light detection and ranging (LiDAR) and highly targeted investigations, resulting in a 30% savings in cost and time.

Gulf Regional Air Space Strategic Initiative (GRASI)

At Eglin there is a greater emphasis on training missions as opposed to traditional testing missions. The former typically require much more space to accommodate and it is becoming increasingly difficult for operations to de-conflict. Range R-2915, for example, is projected to be utilized an average of 14.5 hours per day, roughly 40% above what is needed for scheduling flexibility. Simply put, the range is getting crowded and Eglin needs alternate locations for training mission overflow. The base has partnered with the Florida Forest Service (FFS) to develop GRASI, which will allow Eglin and its tenant organizations access to thousands of acres of nearby FFS land for training. The EQ Team partnered with local Tribes and the Florida State Historic Preservation Office to support the initiative. Through careful analysis, consultation, negotiation and close cooperation, the majority of the area covered by the initiative was cleared of cultural resources concerns without any fieldwork. The effort expedited moving the initiative forward and reduced the area requiring archaeological survey by 49%.

Erosion Control

Building on the past success of the erosion control program, the Eglin EQ Team has continued to restore aquatic habitat for federally listed species. The erosion control program has restored one borrow pit and 30 nonpoint sites to prevent an estimated 4,500 tons of sediment from entering the Yellow River annually, thus eliminating the need for maintenance. The Yellow River is Eglin's northern boundary and home to the Gulf of Mexico sturgeon and four species of freshwater mussels, all federally threatened. In recent years, efforts have focused on restoration of hydrology in Eglin streams. Forming partnerships with the Army, USFWS, the Mid-Bay Bridge Authority and The Nature Conservancy, Eglin's EQ Team has replaced 16 road-stream crossings with bridges or other structures designed to allow increased mission flexibility, improve hydrology and maintain

habitat connectivity in 10 creeks inhabited by a threatened fish species, the Okaloosa darter and six Yellow River tributaries; a river occupied by five other threatened species. In addition, a high priority Okaloosa darter recovery action was accomplished in 2015 with the removal of the former Eglin railroad crossing across Turkey Creek. This project included the removal of two 10 foot diameter culverts, a creosote railroad trestle and excavation of 28,000 cubic yards of earth fill from the floodplain, thus improving hydrology and habitat connectivity for the Okaloosa darter and ensuring safety for more than 17,000 recreational users. Commitments for future improvements in Eglin watersheds continue with additional sites strategically identified for resource protection. In all, the projects accomplished by Eglin will ease the regulatory burden and provide mission flexibility while promoting stable habitat for protected species.

Consultations

DoD prioritized the ability of US combat aircraft to detect, engage and neutralize small watercraft threats as its third-most important weapons testing goal for the near-term. DoD envisions this capability in counter-terrorist operations becoming only more critical to the US military's ability to project power in defense of our nation and its allies, and views Eglin Gulf and estuarine test and training ranges as ideal settings for DoD to develop such counter-terrorist tactics. Directly supporting this priority, the EQ Team's consultation team engaged both mission proponents and regulatory agencies to ensure the desired test activities were compliant with NEPA, the Endangered Species Act, the Marine Mammal Protection Act and the Magnuson-Stevens Fisheries and Conservation Management Act. The consultation team steered and expedited the consultation and analysis processes in 2014, receiving concurrence on the Biological Assessment and an Incidental Harassment Authorization permit within a period that saved 330 days compared to the standard timeline. These mission consultations were only two of the 25 total for which Eglin received concurrence with regulatory agencies during the accomplishment period.

The Coastal Zone Management Act (CZMA) requires growth within the coastal zone to be managed in such a way as to, preserve, protect, develop, and where possible, to restore or



Sea Turtle Rescue

Team Eglin's Fire Rescue assist EQ Team members in rescuing a disoriented loggerhead sea turtle. Eglin volunteers contribute over 2,000 hours to sea turtle monitoring annually.

enhance the resources of the nation's coastal zone. Eglin AFB lies within the coastal zone; therefore all growth on Eglin must be regulated accordingly. In 2015, the EQ Team revised Eglin's General Negative Determination Agreement (GNDA) under the CZMA with the State of Florida and obtained approval to double the area under which Eglin infrastructure improvements could be covered. Moreover, Eglin Natural Resources secured an additional three years of coverage under the GNDA for such projects to be developed moving forward. This GNDA expansion will cover countless Eglin infrastructure improvements that previously would have required over 1,000 man hours of processing.

The management of Eglin's Red-cockaded Woodpecker (RCW) has exceeded the target population size given by the USFWS. To free-up assets in order to execute other high priority land management practices, the EQ Team re-initiated consultation with USFWS under Section 7 of the Endangered Species Act. In doing so, the Team successfully amended Eglin's RCW Programmatic Biological Assessment and obtained USFWS concurrence on a reduced requirement for the labor-intensive manual

preparation of active cavity-nesting trees before prescribed fire is applied. Reducing the level of cavity tree preparation across Eglin has saved the Air Force over \$20,000 and 400 man hours annually.

Community Relations

The EQ Team is helping to implement a national effort to better communicate science, technology, engineering and math (STEM) in schools, which hinges on engaging students about the wonders of science. One strong avenue to engage students is wildlife education which can serve a dual purpose of linking students to both science and the natural world. As part of this effort, the Smithsonian Institution created a data platform called eMammal that gathers wildlife photographs and their metadata from citizen scientists and wildlife professionals. The collection of over six million images of wildlife serves as a platform to teach students science.

An example of eMammal's potential to engage students is a project in the Florida Okaloosa School District. This school district has a large number of Eglin-based military families. eMammal is a major partner in the Okaloosa Science Community Involvement, Engagement,



Earth Day, 2014

Children from the Eglin Elementary School participate in the Earth Day event. The EQ Team coordinated interactive displays on topics such as natural and cultural resources management, recycling and hazardous material management.

Networking, Capacity and Enhancement (SCIENCE) Initiative, a DoD Education Activity grant entering its second year. As part of the grant, the EQ Team has outfitted 25 district schools with camera kits and partnered them with volunteer teams that deploy camera traps across local public lands and Eglin's reservation. To date, 52 adult volunteers recruited by Eglin have spent over 1,000 hours deploying cameras and gathering images while leading teams of students from local schools. Approximately 200 students have participated. The wildlife images are identified by students and volunteers and uploaded to a school district-specific webpage. The EQ Team developed science curriculum that teaches students how to develop hypotheses about local wildlife, test them with camera trap data and understand the concepts of habitat and ecosystems. The curriculum also links to a data analysis webpage that allows students and the public to calculate

species richness, composition and habitat association and uses these metrics to compare to other eMammal projects. While students build a sense of place by learning about local wildlife, the wildlife images from around the world link students to other ecosystems, many of which have deployed military personnel.

Eglin's volunteer program recruits more than 230 volunteers annually that devote more than 5,500 hours to ecosystem assessments, forest restoration projects, prescribed fire and sea turtle monitoring. Approximately three man years are saved due to volunteer efforts. Sea turtle volunteers alone contribute over 2,000 hours to surveying for nesting activity, monitoring nests and nest sitting to ensure that hatchlings make it to the water safely. Volunteers participate in multiple reservation cleanups where illegal dumping has occurred and beach cleanups to remove washed up marine debris. Over 77,145 pounds of municipal solid waste, 33,340 pounds of metal and 7,458 pounds of tires have been removed from the Eglin reservation and beaches during the accomplishment period.

The EQ Team also works closely with local organizations to increase public awareness of historic and cultural resources. The Team actively participated in the Thunderbird Intertribal Powwow, Earth Day, and Pioneer Day and hosted its third annual Archaeology Day. Through these events over 6,500 local children were exposed to archaeology and cultural history through educational materials and displays and hands-on experiences such as mini-excavations and Native pottery-making techniques. A rotating artifact display in the Natural Resources building lobby consistently shares Eglin's pre-military story with over 20,000 visitors per year. A virtual archaeology display was added to the new iSportsman web page to extend public engagement and reached more than 9,000 viewers in just four months.

The Team participated in eight quarterly partnering meetings with the FDEP. They dedicate one day each quarter for face-to-face meetings with regulators. This meeting enables the EQ Team to understand regulator intentions and processes as well as provides Eglin a chance to explain mission requirements. This partnering effort creates a formidable team focused on meeting both Eglin's mission and environmental responsibilities.