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Department of Defense  
OFFICE OF PREPUBLICATION AND SECURITY REVIEW



FY 2017 Secretary of Defense

# Environmental Awards

Sustainability, Non-Industrial Installation  
Eglin Air Force Base

## 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. 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 Test Wing 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

Eglin AFB is committed to sustaining Department of Defense (DoD) missions while protecting one of the biggest natural infrastructure portfolios in the DoD. Eglin implements a holistic management approach to

reduce risks, maintain compliance, and continually improve processes and programs. Eglin preserves a remarkable assemblage of biodiversity, from the fire-dependent old growth long leaf pine forest to pristine white sand barrier islands, while simultaneously providing a proving ground and delivering the world's deadliest weapons to the warfighter.

## Recent Awards

- 2016 Secretary of Defense Environmental Quality Award, Team
- 2015 General Thomas D. White Environmental Quality Award, Team
- 2015 DoD Energy and Water Conservation Award
- 2014 Secretary of Defense Natural Resources Conservation Award, Team

## Summary of Accomplishments

### Livable Communities, Master Planning, and Green Buildings

Master Planning and public recreation are a cornerstone of Eglin AFB policy. The Florida Trail, a designated National Scenic Trail, traverses over 45 miles of Eglin's pristine forests. In addition, Eglin's main base facilities are connected via a ten-mile

biking/hiking/jogging trail, enabling Eglin occupants vehicle-free green avenues between dining halls, classrooms, hangars, flight line, child care, hospital, offices, theater, shopping, and recreational facilities.



### Take a Hike

Master Planning and public recreation are cornerstones of base policy. Eglin’s main base facilities are all connected via a ten-mile biking/hiking/jogging trail, enabling base occupants vehicle-free green avenues between the dining halls, classrooms, hangers, flight line, child care, hospital, offices, theater, shopping, and recreational facilities.

Additionally, Eglin’s Leadership in Energy and Environmental Design (LEED)-certified buildings provide resource efficiencies. The facilities use less water and energy, and reduce greenhouse gas emissions. As an added bonus, they save money. Eglin is a leader in DoD LEED certified buildings, with two LEED Gold and ten LEED Silver certified buildings.

To further green building initiatives, Eglin’s Energy Team enabled the construction of the Air Force’s first self-sustaining “Net Zero” energy building. A Net Zero building uses zero net energy consumption, meaning the total amount of energy used by the building on an annual basis is equal to the amount of energy generated on-site. Seven acres of parking spaces have utilized pervious pavement, enabling a smaller footprint and ensuring

aquifer recharge is not adversely affected by the mission.

### Compliance with Executive Order 13693

Executive Order 13693, *Planning for Federal Sustainability in the Next Decade*, requires agencies to increase efficiency and improve environmental performance while also making Federal facilities more resilient. As a result of Eglin’s Environmental Management System (EMS) continuous improvement efforts, an increase in the numbers of reportable spills resulting from poor marina operations were identified. To correct the situation, Eglin adopted a number of Florida Department of Environmental Protection (FDEP) practices and procedures to certify as FDEP Clean Marinas. These practices implement educational efforts to ensure marina users understand the most environmentally friendly method of marina operations. Since implementation, marina oil spills have been reduced to zero, and Eglin is one of only ten other marinas in Florida to receive the *Clean and Resilient* designation.



### Clean Marinas

As a result of increased numbers of reportable spills resulting from poor marina operations, the Team worked with Eglin personnel to adopt FDEP practices and procedures to certify as a Clean Marina. Eglin is one of only ten other marinas in Florida to receive the Clean and Resilient designation. Since implementation, marina oil spills have been reduced to zero.

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To focus efforts on reducing potable water consumption at Eglin, a leak detection audit was performed on 120 miles of water distribution lines, which identified and enabled fixes to approximately ten 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.

To further implement the requirements of Executive Order 13693, Eglin AFB combined an existing Environmental and Energy Management and Control System with negotiated time of use/real-time peak pricing rates in order to utilize load shed strategies and thermostatic control of more than 200 facilities. Efforts resulted in avoiding energy usage during periods of expensive power, mitigating energy waste, and offsetting Eglin-wide energy costs by \$3.4 million annually.

### **Material Management**

Eglin maintains an 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 hotline, calendar of relevant events, training, material usage reporting, monthly air monitoring input, and record keeping documentation. It is a one-stop-shop for all components of the environmental program and satisfies the myriad of documentation requirements online, saving individual shops time and resources while minimizing mission impacts. Using the website, mission planners identify current environmental constraints surrounding planned missions and can properly evaluate mission needs, environmental requirements, and geographical locations. As a result, electronic resources ensured Eglin's exemplary compliance record while maintaining over 170 permits and 115 tank registrations with no fines

or penalties from 243 sites inspected; the impact is zero mission interruptions from non-compliance.

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

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 wastewater treatment plant process from Eglin treatment plants to county-owned treatment plants as primary concern. The Eglin EMS 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 wastewater treatment plant exceedances for four consecutive calendar quarters, eliminating any concerns and enabling a transparent transition to county wastewater treatment with no mission delays. The EMS Team also identified Hazardous Waste as a significant environmental aspect. During the accomplishment period, Eglin was paying its waste hauler collect and recycle batteries. The Team established an EMS

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objective to reduce disposal costs and increase waste diversion. They worked with shops to identify batteries to recycle, vendors to purchase the commodity, and the logistics to process them through the Eglin Recycling Center. This objective successfully saved \$40,000 in waste disposal costs and returned \$25,000 to the warfighter.

The Eglin EMS Team placed a major emphasis on the Air Force Solid Waste Diversion goal during the award period. The Team worked with organizations and shop supervisors to identify cost-effective diversion possibilities, resulting in a tool box of multiple reuse and recycling methods that were used to exceed the DoD non-hazardous solid waste diversion goal of 50 percent for FY15. The Team successfully led Eglin AFB to exceed the goal by nearly 30 percent, with a 78 percent non-hazardous solid waste diversion rate.



### **Reduce, Reuse, Recycle**

The installation placed a major emphasis on the Air Force solid waste diversion goal. Eglin established multiple methods for reuse and recycling to exceed the DoD non-hazardous solid waste diversion goal of 50 percent for FY15. The Team successfully led Eglin AFB to exceed the goal by nearly 30 percent, reaching 78 percent non-hazardous solid waste diversion.

### **Recycling Program**

Eglin spearheaded the reuse of 18,000 tons of wastewater treatment plant sludge, cooking oil, tires, and antifreeze, saving the base \$3 million

in disposal costs while diverting solid waste from the landfill. The Environmental Office successfully enabled the reclamation of 13,000 gallons of JP-8 fuel by removing water contamination and making the material usable, saving \$2,500 in disposal costs and \$80,000 in material purchase costs. The office 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 Office saved an additional \$290,000 for use on other Eglin missions.

Innovative recycling and reuse thinking produced two artificial reefs created from approximately 2,000 tons of concrete material. The concrete pieces were originally targets on the Eglin range that had outlived their usefulness. The *Concrete to Reefs* initiative is the result of an innovative partnership between Eglin AFB, the Air Force Research Laboratory, and Okaloosa County, and is a direct result of both the Tri-County Community Partnership Initiative and the Air Force Community Partnership Program. Eglin saved more than \$60,000 in concrete disposal costs, and the local community gained two artificial reefs that will enhance the local residents and tourism base with more SCUBA diving and fishing opportunities. In addition to the recreational benefits, the reefs provide new habitat for a variety of aquatic species.

Unique and beneficial partnering propagates the Eglin solid waste diversion goal. Currently, Eglin either recycles or reuses approximately 78 percent of the solid waste it creates, exceeding the DoD goal by nearly 30 percent. In addition, Eglin's exemplary waste management, reuse, recycling, and mulching program saves the base \$3.5 million in waste disposal costs.



### **Concrete to Reefs**

Two artificial reefs were created from approximately 2,000 tons of concrete material provided by Eglin. The Concrete to Reefs initiative is the result of an innovative partnership between the base and Okaloosa County, and is a direct result of the Air Force Community Partnership Program. Eglin saved more than \$60,000 in concrete disposal costs, and the local community gained two artificial reefs that will enhance the local residents and tourism base with more SCUBA diving and fishing opportunities.

### **Procurement of Sustainable Goods and Services**

As one of only 13 major range test facility bases in the DoD, Eglin AFB realized the importance of sustaining the operational test mission by partnering with the Eglin Real Estate Office to stand up the DoD's first-ever Environmental Monitoring of Real Estate Outgrants working group, with the objective of reducing National Environmental Policy Act (NEPA) non-conformances associated with the 247 real estate outgrants on base. Furthermore, the Eglin Environmental Planning Office led an interdisciplinary team of subject matter experts to complete an Environmental Assessment for the C-146A bed-down and consolidation at Duke Field.

Eglin furthered the national goal of 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 22 percent.

The management of Eglin's red-cockaded woodpecker has exceeded the target population size given by the United States Fish and Wildlife Service (USFWS). To free-up assets in order to execute other high priority land management practices, the base re-initiated consultation with USFWS under Section 7 of the Endangered Species Act. In doing so, the Team successfully amended Eglin's red-cockaded woodpecker 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 more than \$20,000 and 400 man-hours annually.

### **Compliance with Sustainable Landscaping**

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. Building on the past success of the erosion control program, Eglin AFB 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. Additional efforts have focused on restoration of hydrology in Eglin streams. Forming partnerships with the Army, USFWS, Mid-Bay Bridge Authority and The Nature Conservancy, Eglin has replaced 16 road-stream crossings with bridges or other structures designed to allow increased mission flexibility, improve hydrology, and maintain habitat connectivity in ten creeks inhabited by a threatened fish species, the Okaloosa darter.

In addition, a high priority Okaloosa darter recovery action was accomplished in 2015 with removal of the former Eglin railroad crossing across Turkey Creek. This project included the

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removal of two ten-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.



### **Eglin Streams**

Forming partnerships with the Army, USFWS, the Mid-Bay Bridge Authority, and the Nature Conservancy, Eglin replaced 16 road-stream crossings with bridges or other structures designed to allow increased mission flexibility, improve hydrology, and maintain habitat connectivity in ten creeks inhabited by a threatened fish species, the Okaloosa darter. In addition, a high priority Okaloosa darter recovery action was accomplished in 2015.

A change in mission dynamics on Eglin required quick action to accommodate new test area and mission requirements. By harvesting nearly 3,000 tons of un-merchantable “fuelwood” from the test area C-80B expansion, the Eglin foresters were able to save the Air Force \$330,000 in land clearing and disposal fees. Eglin’s Forestry Team completed the clearing two months ahead of schedule, ensuring the test area could adapt to new requirements without delay.

The Eglin Forestry Team successfully created 3,000 acres of new longleaf habitat by planting a DoD record 1.5 million longleaf pine

seedlings in areas that were formerly degraded forest habitat. Through both longleaf and native grass planting, as well as mid-story control and timber harvests, over 4,000 acres of threatened and endangered species habitat was created or restored in an area deemed by *America’s Longleaf Initiative* as a, “Significant Longleaf Landscape.” Forest management activities also increased the amount of available habitat for multiple federally-listed species including the red-cockaded woodpecker, the reticulated Flatwoods salamander, and the Eastern indigo snake.

Eglin 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 25 percent of Eglin’s land area from the need for Section 110 inventory survey, for a cost savings of at least \$17.7 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, and highly targeted investigations, resulting in a 30 percent savings in cost and time over traditional survey methodologies.

### **Education, Outreach, and Partnering**

In the face of increased military training tempo and next generation weapon system research and development, the integration of volunteers into the Eglin Natural Resources Team has proven instrumental as the force multiplier necessary to maintain conservation and mission support standards. This robust volunteer program resulted in more than 12,509 man-hours being donated in support of 12 major conservation projects, as well as augmenting Natural Resources Team field crews executing day-to-day direct mission support functions.

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Recent volunteer-aided efforts include: red-cockaded woodpecker translocations; Gulf sturgeon monitoring; sea turtle nesting surveys; Okaloosa darter stream erosion control projects; and Santa Rosa beach mouse, burrowing owl, and bog frog population monitoring. In addition, six organized clean-ups managed almost exclusively with volunteer resources resulted in 22,450 pounds of illegally dumped solid waste being removed from the Installation for proper disposal.

Eglin AFB 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 Installation 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 ten state and federal agencies in cooperation with private organizations, addressing regional natural resources issues.

Eglin is helping to implement a national effort to better communicate science, technology, engineering, and math on base and in local schools, which hinges on engaging students about the wonders of science. One strong avenue to engage students is wildlife education, which serves 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 about science.

Eglin AFB also works closely with local organizations to increase public awareness of historic and cultural resources. The base actively participated in the Thunderbird Intertribal Powwow, Earth Day, and Pioneer Day, and hosted its fourth 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.



### **Education and Outreach**

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Eglin participated in eight quarterly partnering meetings with FDEP. The Installation dedicates one day each quarter for face-to-face meetings with regulators. FDEP meetings enable Eglin AFB to understand regulator intentions and processes as well as provide a chance to explain mission requirements. This partnering effort creates a formidable team focused on meeting both Eglin's mission needs and environmental responsibilities.