

FY 2013 Secretary of Defense

# ENVIRONMENTAL AWARDS

NATURAL RESOURCES CONSERVATION, TEAM:  
EGLIN AIR FORCE BASE, NATURAL RESOURCES TEAM

## BACKGROUND

Eglin Air Force Base (AFB) stands out as a jewel along Florida's Emerald Coast. The Eglin AFB Natural Resources Team (NRT) supports the largest Air Force (AF) installation in the world, encompassing 464,000 acres of land and 120,000 square miles of water ranges. The installation is the largest forested military reservation in the United States. This extensive area supports essential Department of Defense (DoD) missions while simultaneously attaining national notoriety as a showcase of diverse ecosystems that provide sanctuary to 106 rare and threatened and endangered (T&E) plant and animal species. The 96th Test Wing (96TW), Eglin's host unit, executes developmental test and evaluation enabling the warfighter to put weapons on target in all battlespace media while also providing support for all other "Team Eglin" missions as the installation host wing. Eglin deploys combat ready forces while delivering full spectrum support to the DoD's largest, most dynamic AF installation. Eglin AFB activities account for approximately 103,000 people visiting, working, and using the installation on a regular basis. This includes 16,000 active duty and reserve military personnel, 15,300 civilian employees within the 96TW and its 40 associate units, 29,000 dependents, and 43,000 retirees. The Eglin AFB NRT manages approximately 14,000 improved acres, 46,000 semi-improved acres, and 404,000 acres of unimproved lands utilizing the principles of a very robust Integrated Natural Resources Management Plan (INRMP).

Eglin's NRT consists of 32 Biologists, Foresters, Forestry Technicians, Fire Management Specialists and Fire Ecologist responsible for managing a remarkable assemblage of biodiversity of distinct natural community types and over 120,000 square miles of water ranges while enabling essential DoD missions. Recognized in this nomination are the following Natural Resources Civilians: Thomas L. Chavers, Natural Resources Program Manager; Bruce Hagedorn, Wildlife Program Manager; Kathy Gault, T&E Biologist; Dennis Teague, T&E Biologists and Invasive Species Specialist; Justin Johnson, Biologist & Outdoor Recreation Manager; Scott Hassell, Forestry Program Manager; William Pizzolato, Erosion Control Manager; Al Sustko, Reforestation & Timber Management; John Hiers, Wildland Fire Manager; and Brett Williams, Fire Ecologist.

## Major Duties and Responsibilities

The Eglin AFB NRT is responsible for providing long-range resource planning, program direction, coordination, and evaluation for Eglin's natural resources programs. They provide the expertise and supervision for managing all

aspects of the program as well as managerial planning for the diverse, interrelated forestry, timber sale, fire control, fish and wildlife, invasive species, erosion control and outdoor recreation programs. The NRT and support staff executed these programs enabling the maximum use of 464,000 acres of land and 120,000 square miles of water ranges by Eglin's users to maintain mission readiness while ensuring compliance with regulatory requirements.

## SUMMARY OF ACCOMPLISHMENTS

### Overall Natural Resources Conservation Management

The remarkable assemblage of biodiversity at Eglin AFB includes 34 distinct natural community types ranging from barrier islands to old-growth longleaf pine forests. Most of the habitat types found on Eglin AFB are fire-dependent ecosystems that require periodic fires to maintain biodiversity. The world-renowned prescribed burning program at Eglin AFB not only sustains these exceptional habitats, but compliments mission sustainability by reducing flammable fuels to the extent that munitions testing fires are less severe and easier to control.

The Eglin AFB NRT manages more than 227,000 acres that are open to the public for recreational use, including 55 acres of lakes, 186 miles of streams, 40 miles of Choctawhatchee Bay shoreline, and 20 miles of Gulf of Mexico shoreline. In 2012–2013, the NRT at Eglin AFB issued more than 35,000 recreational, hunting, and fishing permits.

The Eglin AFB NRT uses an Oracle-based relational database decision support system as a management tool. The system categorizes wildlife, forestry, wildland fire and monitoring components, providing real-time management-relevant reports through a web viewer interface. This state-of-the-art tool allows the Eglin AFB natural resource managers to define automated queries from foundational species and habitat databases saving immeasurable time and effort in reporting and decision-making based on resource inventories, surveys, and monitoring. This decision support system has sparked considerable interest from other DoD installations, is being used at 19 other AF installations, and will soon be implemented by the AF Wildland Fire Center as the standard for wildland fire database management AF wide.

The Eglin AFB outdoor recreation program provides maximum recreational opportunities in a manner compatible with the military mission, which often requires temporary closure to large portions of public access areas. In anticipation of the increased scope and complexity of military operations due to the arrival of the 7th Special Forces Group, the NRT developed a web-based process in 2012 to inform the public of short term closures of recreational areas. To initiate this process, the NRT created an entirely new system of Tactical Training Areas to use as a “common grid.” This common grid system is the foundation for the website map which graphically displays daily closure information and provides a three day forecast in spreadsheet format that the public can easily understand and use. The use of this system has increased safety, eliminated the need to permanently close 60,000 acres of land to the public, and reduced daily closures by up to 50 percent.

### Mission Enhancement

In 2013, the NRT completed the first-ever programmatic consultation with the United States Fish and Wildlife Service (USFWS) for the Red-Cockaded woodpecker (RCW). The programmatic consultation covers all actions taken on Eglin AFB property that may affect the RCW now and in the future. This ground breaking, one of a kind programmatic consultation resulted in a “blanket take” being assigned to the installation based on the RCW population size. As a result, no further consultation will be required as long as the population remains above the recovery goal of 350 potential breeding groups (PBGs). The current RCW population is 432 PBGs which represents an increase of more than 10 percent since 2010 and a 134 percent increase since the baseline population was established in 1994. The current population is only 18 groups away from the Eglin AFB ultimate mission flexibility goal of 450 PBGs. Based on previous years’ numbers of proposed actions/consultations on RCW’s it is estimated that 405 days of potential mission/construction delays will be saved annually as a result of this programmatic agreement.

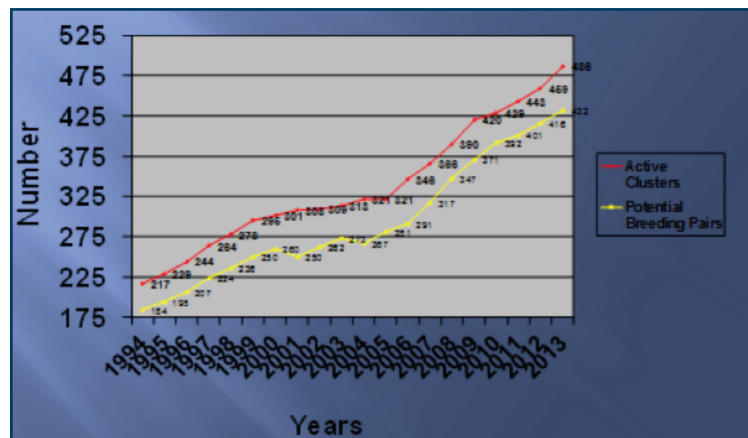


Figure 1: Eglin RCW Population Trends

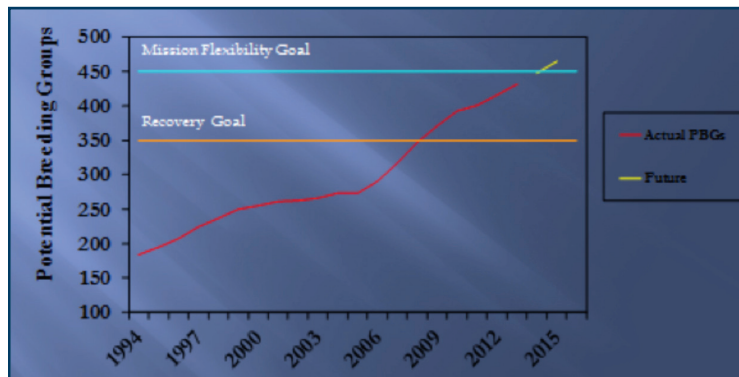


Figure 2: RCW Population Trends and Goals- Recovery goal reached in 2009; Mission flexibility goal reach in 2015

In a 2011-2013 project to identify mission avoidance zones where turtles are less likely to be impacted by test and training missions during the nesting and non-nesting seasons, Eglin AFB tagged 30 threatened loggerhead sea turtles with satellite transmitters.

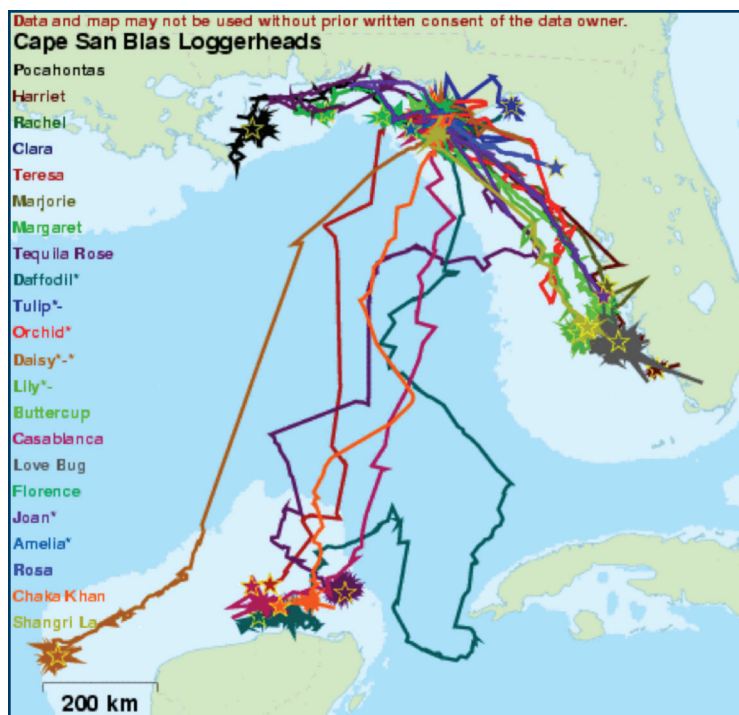


Figure 3: Cape San Blas Loggerheads Satellite Transmitter Map

The taggings, which occurred on both Eglin AFB’s Santa Rosa Island (SRI) property as well as its Cape San Blas (CSB) property, will produce data and corresponding mission avoidance zone for use in consultations with the National Marine Fisheries Service and USFWS. By effectively demonstrating reduced impacts to sea turtles, consultation times have been reduced by 105 days, with commensurate cost savings. In addition to saving the military consultation time and money, this research has been published in scientific literature and is also being pooled with data from other researchers working in the Gulf of Mexico to learn more about the overall movements of adult female loggerhead turtles.

The NRT also initiated a new protocol to address resource management problems and monitor Army training events. Previously, reports from field personnel were the only documentation of training-related environmental damage, which in some cases had reached reportable levels. Now during each 20 day training cycle (an average of 12 training cycles per year), Eglin AFB biologists meet with US Army Ranger instructors two days ahead of their scheduled training missions to review and discuss any recurring, seasonal, or area specific natural resource issues. Incorporating this information, Ranger instructors were able to execute their training missions to minimize natural resource disturbance. During post training surveys after 4,000 troop days of training covering 38,700 acres the training resulted in no reportable incidents and zero violations documented.



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## Land Use Management

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Eglin AFB foresters improved mission efficiency by using herbicide applications instead of repetitive mechanical treatments to reduce maintenance costs by 60 percent at a newly created Unmanned Aerial Vehicle (UAV) test area. The environmentally compliant application of herbicides by certified professionals saved more than 300 man hours and approximately \$18,000 in maintenance costs.

The Eglin AFB NRT also saved the AF \$720,000 in range maintenance costs by innovatively removing more than 4,200 tons of un-merchantable trees via a fuel wood sale at the Duke Field runway. This effort increased the 96TW telemetry tracking ability by 50 percent by dramatically improving the line of sight.

As specified in the INRMP Erosion Control Component Plan (ECCP), 10 wetland riparian and 20 T&E species sites

are to be rehabilitated per year. The NRT exceeded this goal by rehabilitating a total of 132 sites during FY 2012–2013. Another 56 sites impacting protected species (the previously endangered but recently de-listed Okaloosa darter and the Gulf sturgeon) were completed, improving 62 acres of habitat, plus the NRT improved 76 wetland sites or riparian zones.

The implementation of standardized construction specifications streamlined erosion control construction and resulted in the ECCP exceeding the previous years' ECCP metrics by four times. Previous project sites had fully engineered design packages, which were time consuming and expensive. The new process allows a civil engineer and a soil conservation technician to plan, design, and perform construction layout in the field. This change eliminated the need for customized job specifications and allowed four more sites to be restored for the same amount of money it would have cost previously to plan for a single site. The process improvement allowed for construction of additional sites and reduced the contract period of performance by more than three months. The effectiveness of these erosion control techniques was proven when Eglin AFB experienced its second wettest summer since 1940 without any significant site erosion.

On Test Area C-62, the NRT created long-term erosion stability by repairing over 60 acres of gullied land. The NRT worked hand-in-hand with explosive ordnance disposal teams during the process to ensure unexploded ordnance safety was maintained. Effective topographic best management practices restored vegetative cover and improved access for fire suppression vehicles allowing for better control of wildfires and prescribed fires. The end result was more than 60 new acres available for the AF mission and for Eglin AFB T&E species.

## Forest Management

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The Eglin NRT saved the Air Force \$720,000 in range maintenance costs by innovatively removing more than 4,200 tons of un-merchantable trees via a fuelwood sale at the Duke Field runway. Eglin's forestry program is self-sufficient and directly supports the AF test and training missions. They are also charged with managing the largest contiguous acreage of longleaf pine forest in the world.

Eglin AFB foresters restored 12,200 acres of longleaf pine habitat through logging operations by removing 150,000 tons of invasive sand pine. Likewise, the team created 250 acres of new longleaf habitat by converting a former effluent spray field into a longleaf forest creating 12,000 acres of new RCW habitat.

Restoring native groundcover accelerates restoration in degraded habitat and improves the quality and diversity of crucial endangered species foraging areas. The NRT harvested and planted a record 200 pounds of native grass seed to restore groundcover in critical endangered species habitat. These efforts resulted in a seven percent increase in available habitat and brought Eglin AFB closer to the accomplishment of the overall goal of 450 potential breeding groups of RCW's.

The NRT executed 314 prescribed fires on more than 200,000 acres on the Eglin AFB reservation. This exceeded the prescribed fire acreage goal of 90,000 acres per year by an additional 10 percent over this period, while causing zero mission impact due to the application of science-based smoke management practices. The Eglin AFB prescribed fire program reduced the severity of potential wildfires by 40 percent while enhancing the sustainability of the fire-dependent longleaf forest ecosystem. Prescribed fire also restored and maintained the habitat for multiple federally-listed species including the RCW, the reticulated Flatwoods salamander, and the Eastern indigo snake.

## Fish and Wildlife

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Approximately 140 newly-drilled artificial RCW cavities were created in old growth longleaf pine trees during the award period to increase the rate of occupation for the restored habitat. Previous studies on Eglin AFB have shown growth rates averaged one to two percent using standard management practices, however, with intensive management, such as drilling cavities, herbicide use on dense hardwoods in clusters, translocation of juveniles, and removal of sand pine encroachment in cluster sites, the rate increased six to seven percent.

The NRT initiated a sea turtle nest-sitting program composed entirely of volunteers. Since 2011, volunteers have donated 1,762 hours ensuring that hatchlings reach the water by spending nights on the beach observing nests that are about to hatch. Based on previous rates of disorientation and predation, this program increased the number of hatchlings making it to the water by more than 30 percent. Increased hatchling survival rates will lead to increased population numbers, especially important for Gulf of Mexico loggerheads which are experiencing population declines.

The endangered reticulated Flatwoods salamander is a very rare amphibian which is found primarily on Eglin AFB property. As a result of drought conditions reducing successful breeding the population is presumed to be declining. During



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the winter of 2011– 2012, drought conditions were again present so the NRT tested methods of artificially hatching eggs and raising larvae. Eggs from natural ponds that were drying were removed and transferred to artificially created ponds within the natural habitat. A total of ninety eggs were added to the ponds. All of the eggs were successfully hatched and at least seven metamorphosed and returned to the surrounding habitat. In addition, other sets of eggs were collected, hatched, and reared in a laboratory environment to determine methods of rearing captive salamanders for an assurance colony.

## Other Natural Resources

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The Florida Natural Areas Inventory (FNAI) identified populations of 55 state-listed plant species on the Eglin AFB reservation. These populations range from a few plants in a single location to abundant occurrences distributed across the Eglin AFB landscape. The NRT completed re-surveys of all populations of these rare species using in-house resources with no additional funding. There is currently a petition to federally list six of these species. Accurate surveys and continued monitoring are vital to conserving these rare species and will help avoid and mitigate military testing and training impacts which in turn could eliminate the need to federally list any of these species.

The NRT teamed with the Florida Fish and Wildlife Conservation Commission to create a Black Bear Management Plan and the first Black Bear Management Unit (BMU) in the state. The plan helps maintain sustainable black bear populations throughout Florida for the benefit of the species and humans. The Eglin AFB BMU is estimated to have approximately 82 bears. This plan was instrumental in helping remove the black bear from the state's threatened species list in 2012.

## Invasive Species Control and Pest Management

The areas around Eglin AFB often harbor high numbers of migrant vultures. These birds and their movements present dangerous air safety issues for both military and commercial aircraft near the airfield. Historically, the NRT has used vulture effigies to manage roosts that threatened the 64,116 annual air operations on its airfield. The Eglin AFB NRT teamed with the USDA National Wildlife Research Center and Wildlife Services on a study to capture vultures and wing tag the birds with ID patches and fitted some birds with satellite global positioning system transmitters. The study provided pinpoint data on vulture roost locations and bird movements. Roost locations are regularly updated and made available to pilots through Notice to Airmen postings, improving flight safety in the skies in and around Eglin.

By aggressively locating, mapping and treating invasive non-native plant species, the NRT has eliminated the spread of invasive species on AF property. All known areas of established exotic species including the Eglin AFB main base and more than 30 miles of urban interfaces were treated or controlled and have entered a maintenance phase of invasive species management enhancing the natural habitat and species. Eglin AFB is also a member of the Six River Cooperative Invasive Species Management Area which facilitates cooperation among a network of land managers working to address the growing threat of invasive non-native species in northwest Florida.

## Conservation Education



The Eglin NRT hosted the Prescribed Fire Combustion and Atmospheric Dynamics Research Experiment (RxCADRE). The collaboration was a set of unprecedented prescribed fire experiments in which more than 100 renowned fire scientists and support staff used Eglin's forest to fully instrument and measure fires in a controlled environment. All data and results were shared fully among the fire research and management communities making impacts across the globe.

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In 2012, the Eglin NRT re-landscaped the exterior of the office with extensive native plant landscape in an effort to educate the more than 20,000 annual visiting members of the public to promote the use of native plants. An aspect of the landscape is the incorporation of a cultural resources theme which has a trail with several interpretive signs explaining historical aspects of the local area including homesteading, fire control, logging, and other uses of the forest such as the turpentine industry.

## Community Relations

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The NRT's volunteer program has been instrumental in the success of many natural resource programs. In 2012 and 2013, volunteers gave 11,289 hours of time participating in 12 T&E species projects including RCW translocation, Gulf sturgeon monitoring, sea turtle nesting surveys, and Okaloosa darter stream erosion control projects. Volunteers assisted with population monitoring of the Santa Rosa beach mouse, burrowing owls, and bog frogs as well as four beach cleanups that helped to remove 5,508 pounds of debris from shorebird and sea turtles nesting habitat. The volunteers also conducted six cleanups to remove 47,164 pounds of household waste debris illegally dumped on Eglin AFB reservation.

The Eglin AFB NRT hosted six special events specifically designed to provide high quality outdoor experiences for local children. More than 100 youth hunters along with their accompanying parent or guardian participated in weekend deer and feral hog hunts held each January and February. The Eglin AFB spring youth fishing rodeo also drew more than 500 children annually and resulted in a fresh stringer of channel catfish for all the participants. In addition to these special youth recreational opportunities the Eglin AFB NRT hosted 100 mobility impaired hunters, including 20 "Wounded Warriors," for a weekend hunting event. Many of them remarked it was one of the most memorable events of their lives.

## Environmental Enhancement

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The Eglin Natural Resources Team volunteer program has been instrumental in the success of many environmental programs. In 2012 and 2013, volunteers gave 11,289 hours of time participating in T&E species projects, Gulf sturgeon monitoring, sea turtle nesting surveys, native tree planting, and Okaloosa darter stream erosion control projects. The volunteers also conducted six cleanups to remove 47,164 pounds of household waste debris illegally dumped on Eglin AFB reservation.

Funding from the National Environmental Education Foundation was used to install over 700 plants at two stream restoration sites using 58 volunteers and 477 work hours. This event restored native vegetation to hillsides completing the restoration of these two sites at no cost to the AF. This project improved habitat for the protected Okaloosa darter while educating the public.

## Natural Resources Compliance Program

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In 2012, Eglin AFB renewed the General Negative Determination Agreement (GNDA) with state regulatory agencies in accordance with the Coastal Zone Management Act (CZMA). The GNDA is a unique agreement between Eglin AFB and the State of Florida designed to reduce paperwork, decrease processing time, and still ensure compliance with the CZMA. The renewed and revised GNDA streamlined the clearinghouse review process for Air Force proposed actions by eliminating de minimis and routine actions from further regulatory review. The 2012 GNDA increases mission flexibility and will save the AF over 1,140 man-days per year in processing time while ensuring the AF remains in compliance with this federal law.

The Eglin AFB NRT is responsible for managing the DoD's largest public use outdoor recreation program and annually issues more than 17,000 permits. In 2012, the NRT completed an extensive renovation on the 175 acre Anderson Pond Recreation Area, the biggest and most used outdoor recreation site, which included improved primitive camping facilities and nature trails, construction of additional picnic pavilions and an 18-hole disc golf course. With sharply reduced manning and funding for security, the NRT reached out to the City of Niceville Police Department (NPD) for assistance. Anderson Pond is located in close proximity to the city and a Memorandum of Agreement was entered into to allow NPD to provide law enforcement services, including routine patrols, enforcement of applicable Florida statutes and to respond to complaints. Since implementation of this agreement no incidents of vandalism have been documented at the Anderson Pond Recreation Area. This cooperative service ensures good order and discipline, promotes a family oriented atmosphere and protects our investment, all of which come at no additional cost to the installation.