



2003
SECRETARY OF DEFENSE

NATURAL RESOURCES
CONSERVATION AWARD
INDIVIDUAL EXCELLENCE



MR. GREGORY W. LEE

MOODY AIR FORCE BASE, GEORGIA



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BACKGROUND

Mr. Gregory W. Lee, Chief, Analysis, Plans and Programs Element, Environmental Management Flight, 347th Engineering Squadron, Moody Air Force Base (MAFB), Georgia, is the focal point for Moody's outstanding accomplishments in natural resource management.

POSITION DESCRIPTION

Mr. Lee is responsible for preserving and protecting the unique natural resource environment at Moody AFB while, at the same time, supporting the vital Air Force (AF) missions. The focal point for ecosystem, land and forest management, fish and wildlife and pest management, he also represents the Air Force in community relations and education activities. He is a Certified Wildlife Biologist and supervises five staff members with natural and cultural resources experience and education.

AWARDS AND SERVICES

Mr. Lee distinguished himself by garnering the 2003 Air Force General Thomas D. White Individual Natural Resources Conservation, Award. His tremendous accomplishments at Moody represent the best practices in natural resource management in a multitude of conservation areas.

His efforts guarantee that the delicate ecosystem and all its components are preserved for generations to come. Coupled and interwoven with this awesome responsibility is Moody's complex mission

of organizing, training and employing a combat-ready, HC-130 and HH-60 rescue wing consisting of 4,054 military and civilian personnel including geographically separated units in Nevada and Arizona.

Mr. Lee was recognized for these accomplishments as the Supervisor Civilian of the Quarter Award for the 347th Rescue Wing and the HQ ACC Natural Resources Management Award, Small Base Category in 2001. He expertly planned and programmed studies and land management activities and ensured recreation facilities are optimized while the environment is protected.

ACCOMPLISHMENTS

Overall Conservation Management

The overall objective of MAFB's natural resources conservation program is to protect and preserve its 8,000 acres that reside in one of Georgia's most unique bionetworks, the 12,000-acre Grand Bay-Banks Lake Ecosystem. This ecologically rich area is home to 27 species tracked by the Natural Heritage Inventory, including 4 federally listed and 6 state listed species. Three distinct Carolina Bays comprise the ecosystem along with a myriad network of streams, creeks and upland forested watersheds that sustain it.

Carolina Bays are isolated wetlands in natural shallow depressions largely fed by rain and shallow groundwater. These bays generally have an elliptical shape and a northwest to southeast orientation. While Carolina Bays can be found throughout the

coastal plain areas in the Southeastern US, the Carolina Bays on MAFB are the most intact representatives remaining in Georgia. Of the 12,000 acres in the ecosystem, 8,000 acres (67%) are under the direct control and management of the staff at MAFB.

One unique feature of this ecosystem is the presence of Dudley's Hammock, the only mesic hardwood hammock known to exist in Georgia. Hammocks are small upland islands that exist within the context of larger wetland systems and possess unique vegetation characteristics. Dudley's Hammock is one of the only places in South Georgia where rare species, such as spruce pine, needle palm and greenfly orchids, can be found in abundance.

Mr. Lee developed a comprehensive Integrated Natural Resources Management Plan (INRMP) in September 2001 using a holistic management approach. Part of managing these rare resources is accurate data gathering and mapping. Using the latest Global Positioning System (GPS) and Geographic Information System (GIS) technology, Mr. Lee identified and mapped the various natural resources on the installation, including the boundaries of jurisdictional wetlands, forest stand boundaries, hunting areas, endangered species habitat and rare species assemblages located within Dudley's Hammock. In addition, Mr. Lee and his staff provide GPS and GIS support to the Georgia Department of Natural Resources (DNR) and the U.S. Fish and Wildlife Service that manage areas immediately adjacent to the installation. By maintaining this information in the MAFB GIS system, Mr. Lee was able to better manage natural resources based on their physical occurrence rather than based on artificial political boundaries.

Ecosystem Management

Moody AFB is home to the 347th Rescue Wing, the only Combat Search and Rescue

Wing in the Air Force. The wing also supports the 479th Flying Training Wing and the 820th Security Forces Group. With this highly intense mission and more than 3,600 activity duty personnel, 5,200 family members and 460 civilian workers, the responsibility to minimize impacts to these sensitive lands is enormous. Located in the lower coastal plain in South Georgia, only 30 miles north of the Florida border, Moody possesses a diversity of habitats.

Land Use Management

Mr. Lee spearheaded the formation of the Grand Bay-Banks Lake Council with members from the Nature Conservancy, the Georgia DNR, the U.S. Fish and Wildlife Service and 57 participating private landowners. Recognizing that ecological systems crossed political boundaries, this group was formed to cooperatively manage the entire ecosystem as one unit and to gather and share ecological information among all the partners. The group's dynamic teamwork resulted in a Cooperative Stewardship Plan for the Grand Bay-Banks Lake Ecosystem that details the highly unique attributes the watershed provides to the ground water, surrounding croplands and to endangered species.

Moody AFB and Mr. Lee set the standard for others to follow. An incredible sense of commitment led Mr. Lee to secure a \$100,000 Legacy Program Grant from the DoD to study the hydrologic connectivity and gain a better understanding of the relationship between current management actions and resultant water flows and quality within the Grand Bay-Banks Lake association.

This outstanding initiative continues to pay big dividends. Currently, MAFB and Georgia DNR personnel systematically adjust water flows in the various bays and impoundments by seasonally raising and lowering the water elevations via

strategically located water control structures. Water is let down in the spring season to promote vegetative under story growth and then reflooded in the winter for waterfowl habitat and to manage the habitat of the state listed round-tailed muskrat. Another major product from this grant was the completion of a Site Conservation Plan for the entire Grand Bay-Banks Lake Ecosystem, including the 100,000-acre watershed that drives the hydrological functioning in the system.

This Site Conservation Plan identified potential threats to the integrity of the ecosystem and quantified the fact that unchecked development encroaching on the boundary of MAFB would be detrimental to the functioning of the ecosystem. Because of its relative pristine conditions, MAFB was chosen by Region IV EPA to serve as a background “bench mark” as part of a larger, regional storm water investigation into normal nutrient loading and cycling. With the success of the initial Legacy Program, a follow-on request to the DoD for \$150,000 was made and is currently under review by Legacy Program Managers.

This comprehensive new proposal includes the completion of the hydrologic mapping and will attempt to quantify the historical fire regime for the ecosystem, including identifying the impact of man’s interruption of the naturally occurring fire ecology on natural resources. This study will include the entire 100,000-acre ecological boundary, thus the results will have regional benefits and will be used by regional planners and natural resources managers as tools to assist the management of resources throughout South Georgia and North Florida.

Mr. Lee’s long-standing goal of having significant acreages of native longleaf/slash pine forests with native herbaceous species reestablished on MAFB provides the central focus for land management in the area. He

aggressively pressed for studies of the Carolina Bays to determine the best management practices and ensure the continued existence of the state-listed round-tail muskrat, Sandhill cranes and other associated species. As a result, public awareness of the contribution of MAFB to the overall regional diversity in Georgia was increased.

FOREST MANAGEMENT

Properly managed ecosystems and multiple use management enable a land area to yield many benefits. Mr. Lee is instrumental in MAFB’s long history of forest management. Total forested acres are 7,469 of which 2,610 acres (35%) are considered upland and 4,859 acres (65%) are forested wetlands.

The MAFB forestry program uses adaptive



management to facilitate both forest management and to provide support to the military mission. During 2003, elements of the 347th Rescue Wing approached Mr. Lee with desires to expand a current 25 acre open field “drop zone” to accommodate heavy equipment drops by C-130 pilots.

The area immediately surrounding the existing drop zone consisted of mature Loblolly pines and scattered poor quality hardwoods. Being on top of every situation, Mr. Lee was aware that the area was already scheduled for harvest so he accelerated the timing of the area’s timber sale and expanded it to 300 acres in support of mission requirements. This sale alone generated more than \$250,000 in revenue for the forestry program.

Working with Georgia DNR personnel, areas within the new drop zone boundary were designated as hunting dog training areas and

also serve as food plots for deer and game birds. Mr. Lee's quick actions allowed the Georgia DNR to manage these areas and the installation saved clearing and maintenance costs and avoided the potential risk of invasion by noxious vegetation.



Mr. Lee orchestrated and funded an Urban Forest Inventory that identified, catalogued and risk ranked more than 9,000 trees and forested islands that included 100 different species with an estimated value of more than \$12,000,000. MAFB has many landscaped islands of mature Loblolly Pine and Live Oak trees scattered throughout its land. Mantled with shrouds of Spanish Moss, the base has a very definitive "Old South" feel about it. These and other landscaped areas with Dogwood and Crepe Myrtle plantings lend aesthetic value and promote quality-of-life. For base master planning purposes, this one effort also identified areas of high landscape, aesthetic or unique value for consideration and/or preservation. The project's superior merits and Mr. Lee's sound management practices resulted in support for this project by the Georgia Forestry Commission and the Air Force Center for Environmental Excellence (AFCEE).

Consistent with this effort, Mr. Lee was instrumental in MAFB's continued designation as a Tree City USA for the fourth year that included annual Arbor Day ceremonies. During Arbor Day, Mr. Lee

organized base visits by local elementary and middle school children who are given a half-day educational and interpreted tour through the Grand Bay elevated boardwalk. Few visitors to Moody leave without being touched in some way by the natural beauty that exists in and around the base.

Fish and Wildlife Management

Mr. Lee aggressively integrates forestry management practices into the ecosystem management paradigm, resulting in multiple-use purposes. MAFB has a large population of state threatened gopher tortoises. Gopher tortoises are keystone animals in the fragile, crowded ecosystem and their burrows also provide habitat for the indigo snake -- a federally and state threatened species. In addition, up to 200 other animals depend on these burrows for survival.



Relatively open forest canopy conditions with extensive areas of herbaceous vegetation are ideal for gopher tortoise habitat. By integrating proper forest timber management, allowing the follow-on selective removal of hardwoods by base personnel for domestic firewood use and using prescribed burning, the installation succeeded in promoting and restoring both tortoise and indigo snake habitat. Concurrently, Mr. Lee ingeniously placed radio transmitters on nine gopher tortoise to track and monitor their daily movements. This study, conducted completely with in-house staff, will help determine habitat use and quantify potential effects on gopher tortoise populations from military training.

Mr. Lee's involvement with a project means that it is relevant, thorough and will achieve positive results. He designed and initiated

an Upper Respiratory Tract Disease (URTDs) surveillance study for gopher tortoises, which was a first of its kind in South Georgia. By knowing which gopher tortoise populations are infected with URTDs, Mr. Lee can relocate the tortoises from military construction and training sites without fear of introducing URTDs to an uninfected population.

Mr. Lee cross-fed preliminary results from this study at the 2002 National Military Fish and Wildlife Association Annual Meeting. Every gopher tortoise burrow on the installation was identified using GPS and added to the GIS database. These burrows are now monitored annually for use by gopher tortoises and indigo snakes. In-depth knowledge of endangered species on the base has proven valuable in consultations with regulators such as the U.S. Fish and Wildlife Service.

In addition to monitoring gopher tortoise and indigo snake populations, Mr. Lee also proactively initiated surveys for newly listed species, such as the federally threatened Flatwoods Salamander.

Other Natural Resources

Moody AFB has widespread hunting and fishing programs on the main base open to installation personnel and active-duty members. Mr. Lee directly administers the hunting program and he mustered the support of approximately 20 volunteers, known as "hunt masters." About 30 hunters participate in this annual program. Serving two purposes, the deer-hunting program was designed to intertwine with the Bird Aircraft Strike Hazard (BASH) management program and hunters are placed in specific areas to help reduce deer numbers around the airfield.

Mr. Lee fostered a unique partnership with the Georgia DNR that paid unforeseen dividends. A license agreement with the

Georgia DNR allows the eastern half of the installation to be managed, along with adjacent state-owned property, as the Grand Bay Wildlife Management Area. This agreement benefits the Air Force by allowing the GA DNR to assist with wildlife management activities,

including prescribed burning, while at the same time increasing opportunities



for installation personnel and the general public to participate in outdoor recreation. As an added benefit, when the Georgia DNR assists with MAFB prescribed burning, resultant air emissions (i.e., acetylaldehyde) are not required to be included in base quarterly air emissions reports.



Mr. Lee formulated and implemented a natural resources education and awareness program that

addresses potential impacts of military training on endangered sea turtles in the Gulf of Mexico by providing awareness brochures to 25 military installations throughout Florida and Georgia. He created and distributed a "Moody Field and Range Training Card" for civilian and military personnel to increase awareness of species such as the gopher tortoise and indigo snake. Military personnel training on the base can carry this laminated guide into the field and if they encounter an endangered species or have an environmental problem, they have information and phone numbers readily available.

Mr. Lee totally revamped the Moody AFB fishing policies. With more than 1,000

fishermen using Moody lakes annually, fishing remains the main consumptive use on base. Traditionally, fisheries management consisted of annual stocking of game fish without consideration of existing populations or success of the stockings. Upon arriving at Moody AFB, Mr. Lee stopped this practice and implemented scientific fisheries management techniques on installation lakes, starting with creel surveys and population estimates. Based on these surveys, it was determined that the lakes were fully stocked and additional fish that were added on an annual basis were being consumed before they reached legal size limits.

To support a demand for additional fishing opportunities, Mr. Lee initiated a program to stock 8-12" long channel catfish in the fall as "put and take" fisheries. These fish are too large to be consumed by predatory fish. Each spring, the installation is host to a children's fishing rodeo, where the children mainly catch these channel catfish. The children compete for prizes and are educated on natural resources issues in South Georgia.

Outdoor recreation activities are not limited to consumptive uses. Numerous visitors come to Moody AFB and the Grand Bay-Banks Lake ecosystem to watch birds and wildlife. Because of the management efforts at MAFB and the Grand Bay-Banks Lake Council, the Grand Bay Wildlife Management Area (WMA) was designated an "important bird area" in the state by the Audubon Society.

Mr. Lee also flawlessly implemented a nuisance animal response program relocating rattlesnakes, alligators, bats and a host of other species. The motto here is: "Better to Live With Them!" Prior to his arrival, the standard practice had been to destroy these nuisance animals. Mr. Lee ramrodded an installation-wide education program to help base residents understand these animals and their place in the overall ecosystem. Over

the past three years, Mr. Lee and his staff relocated 12 alligators, 10 rattlesnakes and several bats and other species to areas where they will not conflict with humans.

Pest Management



A true problem-solver, Mr. Lee's efforts resulted in the first base-specific bird avoidance model (BAM).

Exotic species of any type can quickly become a problem and thwart the best management practices if unchecked. The cattle egret is an exotic bird that has overtaken many fields in the south and has become a major contributor to the Bird-Aircraft Strike Hazard (BASH) problem at MAFB. Cattle egrets began nesting south of the installation and are out-competing the native water birds for nest sites.

Concerned about the expanding BASH problems posed by this expanding cattle egret population and the presence of numerous black and turkey vultures and Sand Hill cranes, Mr. Lee initiated a three-year study of bird migration and movement patterns around Moody AFB. Using cutting-edge technology by placing satellite transponders on Sand Hill cranes and radio transmitters on vultures, he directed radar observations on the bird movements be monitored at various places around the airfield. Data from this study was resourcefully incorporated with published research data already available to develop the bird avoidance model.

Another BASH problem involved an Environmental Assessment to expand the BASH depredation zone to extend outward in a five-mile radius around the base. Six

years of aircraft strike data indicated that almost 40% of bird strikes occur within this zone of influence. Mr. Lee diligently initiated a study on the population dynamics of vultures using a roost site immediately south of the installation. Information from this study will be used to develop techniques to minimize risk to pilots and aircraft.

Further assisting with the BASH program, he promoted the conversion of grassy lands adjacent to the flight lines to single-species Bahia grass stands. These areas are maintained in strict accordance with promulgated grass height standards. Airmen at MAFB are far safer now with the implementation of the BAM model and continued affiliated coordination and monitoring with Valdosta State University field ornithologists.

Mr. Lee led the research and development effort of a lake management plan for two main fishing areas on base with exotic species problems. Water hyacinth and hydrilla were present in Mission Lake and Grassy Pond and had overtaken the lakes to the extent that boating and fishing were basically impracticable and natural foraging by bald eagles and ospreys was hampered. Mr. Lee followed integrated pest management procedures designed to reduce exotic weed populations in the new plan.

After coordination with the Georgia DNR, the U.S. Fish and Wildlife Service and the Lowndes County Extension Service, the plan for exotic aquatic weed removal was implemented. This plan consisted of the integration of annual winter lake drawdown, selective herbicide application and the use of sterile grass carp to eliminate the exotic vegetation. This plan was implemented in 2000 and both lakes are now clear of exotic vegetation.

CONSERVATION EDUCATION AND COMMUNITY RELATIONS

Community relations and conservation education at, and by, Moody AFB and Mr. Lee are vital keys to a successful natural resources management program.

Valdosta State University students and faculty are routine MAFB visitors particularly to Dudley's Hammock to see and study the unique ecosystem. Other visitors include the State DNR, the Audubon Society and the Nature Conservancy.

Mr. Lee created and distributed an in-depth bird and amphibian call reference compact disc to help increase base personnel knowledge and understanding of local species.

As founder and member of the Grand Bay-Banks Lake Council, MAFB is assured its interests and concerns are addressed in an open public forum. As a highly respected member of these committees, Mr. Lee forged a relationship with the regulatory community that facilitated approval of proposed military mission and installation construction activities. Regulators know and trust Mr. Lee and his unprecedented insight and they are acutely aware of his stewardship programs at Moody AFB. This relationship provides greater flexibility in conducting military actions. His vast vita includes: certification as a Wildlife Biologist; Certified Prescribed Burner; Member of the Wildlife Society and Georgia Chapter; and member and membership chair of the National Military Fish and Wildlife Association.

Another resounding success for the natural resources program is the augmentation of the staff by the Valdosta State University (VSU) Student Co-op Program. Under this program, Mr. Lee obtained the services of biology and environmental geography students that assist in the daily workings of

the program. This is a true win-win situation for both the installation and the students.

Moody's commitment and partnership with VSU is highly regarded by the community. Students are assigned projects in their areas of interest, such as water monitoring, endangered species management or GIS technology and use their educational skills in assisting in day-to-day operations. Returning the favor, these students are provided valuable hands-on experience and instruction in natural resources management. When they graduate, they will already have up to four years of federal experience on their resume.

Environmental Enhancement



The unique ecosystem in and around MAFB was shaped by hydrology and the occurrence of periodic regional wildfires. In fact, this ecosystem continues to depend on recurring forest fires for its existence. Prescribed burning is an effective tool to restore and maintain native ecosystems comprised of fire-adapted species. As a Certified Prescribed Burner, Mr. Lee initiated a prescribed burning program at Moody AFB and directs efforts to annually burn up to 800 acres a year. As part of this effort, Mr. Lee proactively developed a Wildland Fire Operational Plan in partnership with the MAFB Fire Department, the Grand Bay Range operating contractor, the MAFB Operations Group, the Georgia DNR and the Georgia Forestry Commission.

This plan outlines goals and responsibilities for wildland fires, including the suppression or containment of wildfires that might hamper the military mission. In addition to restoring native ecosystems, prescribed burns also support Moody's BASH program by removing ground level habitat used by undesirable bird species while maintaining military field training areas in realistic and usable conditions. All MAFB prescribed burns are closely coordinated with the State DNR, the Georgia Forestry Commission, local fire departments and all organizations at MAFB involved with mission operations.

Mr. Lee astutely developed a cooperative agreement with the U.S. Forest Service to allow Forest Service wildland firefighter trainees' access to MAFB to train on controlling prescribed burns. This mutually beneficial agreement provides the installation with free trained personnel for prescribed burns, saving valuable natural resources dollars for application in other areas. In support of the Wildland Fire Operational Plan, Mr. Lee conscientiously transferred Air Force forestry funds to the State of Georgia to assist in manning a fire watchtower that is critical to the early detection of wildfires on or near the installation that may prove a hazard to flying operations. As a result of Mr. Lee's efforts, the Georgia Forestry Commission and the Georgia DNR laud the Moody AFB prescribed burning program as a model for other organizations to follow.

Mission Enhancement

Mr. Lee's initiatives are widespread. He coordinated with state and federal agencies, as well as private corporations and landowners, to locate off-base areas suitable for helicopter landing zones on private, state and federal lands throughout northern Florida, southern Georgia and North Carolina. Once identified, Mr. Lee and his team conducted Environmental Baseline

Surveys and Environmental Assessments for each of these sites, including in-staff surveys for endangered species and archeological resources. Over the past two years, these efforts resulted in the approval of 22 new helicopter landing zones in a variety of habitats, thus ensuring the continual training of the 347th Rescue Wing helicopter pilots remains current.

Natural Resource Compliance Program

In addition to employing his hands-on management style and developing an “air tight” BASH program, Mr. Lee genuinely enjoys looking at and protecting natural resources from all perspectives. Under his direction and participation, the natural resources element at MAFB is also responsible for conducting or overseeing all National Environmental Policy Act (NEPA) actions. The list of mission support NEPA documents he has generated is impressive. Some of these documents include:

- 820th Contingency Response Group bed down;
- construction of a maintenance hangar;
- combined arms training range expansion;
- location of 50-caliber machine gun target area;
- construction of a shoppette; and
- construction of a Consolidated Base Support Center.

MAFB rarely uses contract support for implementing NEPA investigations and as a result, Mr. Lee’s efforts saved the government an estimated \$500,000 over the past three years. He directed and participated in 5 Environmental Assessments in FY 03, 7 in FY 02 and 7 in FY 01. Almost all EAs were for mission support requirements and all resulted in Findings of No Significant Impact.

Mr. Lee's background in natural resources allows him to approach the documentation of

environmental impacts from a different perspective. All of these actions have withstood the scrutiny of federal, state and private conservation agencies and public review with few, if any, comments.

CONCLUSION

The success of the natural resources program at Moody Air Force Base is directly attributed to Mr. Lee’s stalwart professionalism, dedication and outstanding guidance. He is a consummate team player with top-notch abilities who consistently gives 100% of his time, knowledge and abilities. He is dedicated to using his capabilities with outside agencies, engineering planners and his staff to consistently preserve and protect natural resources while supporting the United States Air Force mission.