

FY 2013 Secretary of Defense
ENVIRONMENTAL AWARDS

ENVIRONMENTAL QUALITY, TEAM:
KADENA AIR BASE, ENVIRONMENTAL TEAM

INTRODUCTION

Kadena Air Base (KAB), the largest US military installation in the Asia-Pacific region spans 11,000 acres of East China Sea coastline on the island of Okinawa. The largest island within the Ryukyu chain, Okinawa is centrally located between; Japan, China, Taiwan, and South Korea. Home of the 18th Wing, KAB boasts the largest combat operations group in the Air Force. Its diverse capabilities are comprised of special operations, combat search and rescue, aerial medical evacuation, intelligence, surveillance, reconnaissance, airborne air control, aerial refueling, air mobility, and air superiority. This composite force of combat-ready fighter, air refueling, airborne warning, and rescue aircraft is reinforced by the largest Mission Support Group and Civil Engineering Group in the Air Force. Managing over \$6 billion in resources, the 18th Wing provides facilities for the US Navy, US Marine Corps, US Army, and over 30 other tenant units. The base population totals more than 20,000 people including; active-duty military, DoD civilians, families, Japanese civilian workers, and contractors. Contributing significantly to the island's economy, the base's annual economic impact on Okinawa is estimated at \$700 million



A crew chief from Joint Base Elmendorf-Richardson's 525th Aircraft Maintenance Unit signals Capt. Brad Roberts, 525th Fighter Squadron F-22 pilot, to prepare to taxi onto Kadena's flight line, March 31. During their stay with the 18th Wing, the group of F-22 Raptors, their pilots and maintainers from JBER worked hand-in-hand with Kadena's Airmen and aircraft from numerous squadrons on the base and also with Marines and their aircraft from Marine Corps bases on-island. Training to build a greater Pacific presence across all branches of DoD. (U.S. Air Force photo/ Airman 1st Class Maeson L. Elleman)

PROGRAM SUMMARY

To augment the many operations on KAB, and assure the highest level of environmental stewardship, the 718th Civil Engineering Squadron (CES) Installation Environmental Element (KAB team) must continually foster a culture of environmental quality and awareness, to include resource conservation, sustainable development, waste minimization, and pollution prevention. This "endless engagement" with the KAB community is critical to maintaining a healthy relationship with our local and regional Japanese partners.

KAB team strives to provide the finest expertise, support, and management possible while upholding a culture of continuous improvement embodied in KAB's Environmental Management System (EMS). KAB team uses EMS, which consists of planning, education, evaluation, and review processes, to evaluate environmental aspects and impacts of operations, and provides a framework for base-wide environmental awareness and compliance. A comprehensive inventory of mission aspects has allowed KAB to assess high risk activities and develop management plans and policies to reduce environmental liabilities while maintaining the highest mission success rate possible.

For many newcomers, incorporating an unfamiliar legal and regulatory framework with their new assignments can seem unnerving. A cornerstone of KAB's EMS is ensuring these newcomers are well equipped with the knowledge of applicable Japanese and U.S. laws, regulations, and policies. By training 3,700 island newcomers, 700 Hazardous Waste Accumulation Point Managers, 1,035 Hazardous Material Managers annually, the KAB team has one of the Air Force's largest environmental training programs.



Ensuring Kadena's residents are aware of the unique Okinawan environment and the role it places in community relations. The 18th Wing Commander plants a cherry tree in celebration of Earth Day with the mayor of Kadena-cho. Partnership with the local governments is a keystone of the 18th Wings success.

A mature Environmental, Safety, and Occupational Health Compliance Assessment Management Program (ESOHCAMP) solidifies KAB's training foundation through continual environmental auditing, assessment, and improvement programs to identify and correct potential issues. The KAB team performs annual inspections in-house, averaging 150 shop-inspections per year, with over 120 findings corrected last year alone. ESOHCAMP has proven year after year to improve overall environmental performance across the installation, culminating in 100% conformance and a positive "culture of environmental awareness at KAB" finding, during the last external ESOHCAMP comprised of assessors from outside installations.

To maximize dissemination of new environmental plans and policies an excellent information network is maintained at KAB, directed by the KAB Environmental, Safety, and Occupational Health Council. Twice a year, new objectives and targets are proposed for action, progress is presented, and initiatives are implemented if necessary. Through the utilization of expert Cross Functional Teams, these new plans, policies, and objectives are incorporated into KAB's every day operations and business practices.

The EMS process has proven critical to maintaining a high level of performance within the KAB team during a period of reorganization and reduced manpower. With only nine highly dedicated program managers, the framework of EMS allowed the team to support the largest military construction (MILCON) portfolio in the DoD while continuing to track operations and improve our waste reduction, hazardous waste management, hazardous materials management, natural and cultural resources management.



Hazardous Waste Accumulation Point Students watch while an 18th Wing Airmen responds to a simulated hazardous material spill on Kadena AB. This emergency management exercise hones Kadena's spill response capabilities. Kadena Environmental also teams with the local Okinawan government three times a year for training exercises. (U.S. Air Force photo/Airman 1st Class Amanda Grabiec)

ACCOMPLISHMENTS

KAB EMS has successfully integrated with existing systems to track and manage hazardous waste disposal, hazardous materials acquisition, pollution prevention, waste diversion, spills, cultural, and natural assets yielding outstanding progress in all environmental programs.

Waste Reduction

The CEIE Qualified Recycling Program (QRP) has made significant progress towards Air Force solid waste diversion goals by using EMS as framework to identify and manage daily operations that generate waste and pollution. Through base-wide education the 718th CES has created a successful recycling program, diverting an average of 11,000 tons from the base municipal solid waste stream and avoiding over \$500,000 in waste disposal costs annually. The KAB QRP is completely self-sustaining, and earns an average of \$500,000 annually. This additional revenue is reinvested in the program to continually increase the amount of waste recycled and reused by fully funding a recycling center, purchasing recycling equipment, and distributing informational materials.



U.S. Air Force Staff Sgt. Lauren Snyder, from 18th Wing Public Affairs, brings recyclable items to the recycle center on Kadena AB, Japan, June 21, 2013. The new rolling recycle bins were distributed to DoD Family Housing. Kadena AB Qualified Recycling Program purchased 2,100 recycling containers during the award period. (U.S. Air Force photo by Capt. Heather Boytim/Released)

The limited amount of real estate on Okinawa for landfilling has placed a growing emphasis on solid waste reduction not only for KAB, but island-wide. With teamwork from the 18th Contracting Squadron, KAB team was able to fully incorporate integrated solid waste management plan requirements into all contract specifications, thus diverting 97% of all construction waste from landfills. This construction waste diversion was critical in management of Kurashiki Landfill, KAB's largest airspace obstruction. Height management of Kurashiki Landfill was a huge win, reducing the operational risk of aircraft taking off and landing from KAB.

Hazardous Waste

Hazardous waste produced on KAB requires transportation to mainland Japan and the U.S. for disposal. This overseas transportation requirement creates regulatory and cost factor challenges, increasing the importance of effective hazardous waste management. A unique regulatory environment including international maritime law and multiple nations' requirements for transportation, environment, and health requires flawless tracking of waste from cradle to grave. The KAB Hazardous Waste Program (HWP) diligently tracks and documents thousands of manifests annually with their EMS, enhancing program accountability and regulatory compliance status. Through this proactive use of EMS, the KAB HWP was also able to reduce its annual hazardous waste disposal expenditure from \$372,000 to \$180,000 a reduction of 48%.

Activities contributing to this cost savings included:

- Partnering with other US military branches to implement a battery collection system at all DoD installations on Okinawa, eliminating thousands of pounds from multiple installation's hazardous waste stream.
- Developing a fluorescent light bulb recycling contract diverting 22,000 pounds of hazardous waste a year.
- Managing a centralized rag recycling contract for all maintenance shops on KAB recycling and reusing 300,000 rags and avoiding 20,000 pounds of hazardous waste annually.

Hazardous Materials Management

The KAB team's Hazardous Materials Management Program (HMMP) has shown it is second to none in its pursuit of process improvement to ensure long-term sustainability of the mission. The HMMP has utilized existing information systems to improve the process of materials procurement and life cycle management at KAB. Always beginning with a solid foundation of education, the HMMP trained over 1,000 hazardous materials managers in material substitution, process change, improved shelf life management procedures, and the use of Enterprise Environmental, Safety, and Occupational Health Management Information System (EESOH-MIS) tracking and procurement software. This base wide education and increased use of EESOH-MIS resulted in reduced expired shelf life materials disposal costs by \$100,000 over two business quarters allowing KAB to exceed its hazardous waste reduction goals. After continued improvement of the hazardous materials tracking process, the HMMP was able to save an additional \$788,000 over the remaining fiscal year 2013. Yet another unforeseen benefit of tracking process improvement was the reduction of annual inventory error rate from 4% to a mere 0.78% at the Hazardous Materials Pharmacy.

Conservation Programs

A multifaceted mission placed within a fragile network of over 1,000 cultural features and 150 protected species places large demands on the conservation team at KAB. These demands require a determined conservation department willing to work outside the box to get the job done while allowing the mission to thrive.

A large portion of that mission is continued development and sustainment of KAB's infrastructure. To augment 718th CES during the planning and execution process, the KAB team utilizes geospatial mapping to eliminate construction delays due to cultural resource issues like tombs, shrines, and protected species within construction footprints. The conservation programs will continue to rely heavily on this portion of EMS to track future growth within the program and ensure asset protection.

Natural Resource Management



Working to preserve endangered orchid species on Kadena AB. The natural resources management team relocates protected orchids to make room for critical construction. Kadena Natural Resources Program has consistently continued to make great strides to ensure conservation of endangered species.

The island of Okinawa is well known for its natural resources, including a rich biodiversity and plethora of ecosystems unique to the region. KAB's vast natural resource portfolio rivals any installation in the world with many natural wonders existing within a rocks throw of the flight line. To protect and preserve these natural resources on Okinawa, the Government of Japan has promulgated a Law for the Conservation of Endangered Species (LCES) of Wild Fauna and Flora, similar to the Endangered Species Act. The LCES aims to ensure the conservation of endangered species of wild fauna and flora and contribute to the conservation of natural surroundings for present and future generations. KAB currently has 70 protected flora and 80 protected fauna species flourishing in a multitude of ecosystems ranging from marine coral reefs to upland, broadleaf-evergreen forests.

With such a large number of protected species within 11,000 acres, a multi-faceted approach must be implemented to ensure a successful Natural Resource Program (NRP). Beginning with a well-developed EMS the NRP is able to identify and track all existing and emerging endangered natural resources on KAB. Once identified, EMS supports prioritization of critical species and habitats, so these areas may be highlighted for protection projects. This process has allowed KAB to make huge strides in habitat management.

While supporting recent operations and construction, CEIE NRP has:

- Located 22 protected plant species while augmenting range operations. Relocated five species unknown to previously exist on KAB from range infrastructure improvement areas to safe habitat within the munitions complex, so the mission could continue without delay.
- Translocated 12 protected species (over 300 plants) to a thriving habitat critical to maintaining operations at an Air Defense Artillery location.
- Teamed with Joint Base Pearl Harbor – Hickam to eliminate invasive red mangrove, restoring four acres of coastal endangered species habitat and averting non-compliance issues.
- Developed the 18th Wing's first Operational Range Assessment (ORA) to assess the environmental impacts of munitions use on operational ranges. Evaluating plant species, habitat, and encroachment issues this ORA secures future training and operations on four ranges.
- Located 13 protected plant and animal species while clearing the way for an essential weather radar site and immediately set mitigation plans into motion, saving yet another vital construction project.

The KAB team's NRP continues to make great strides to ensure conservation of endangered species. Nevertheless, without sufficient public engagement and education this incredible progress can be wiped out. To avoid this, the KAB team is in constant engagement with the public by writing news articles in popular media sources and participating in local environmental symposiums and lectures. Education has always been the key to KAB's conservation programs safeguarding these vital resources for generations to come.

Cultural Resource Management



National Geographic films Kadena AB Cultural Resources Program, featuring the many tombs and archeological sites at Kadena AB. This wealth of archaeological and historic cultural assets held within Kadena's gates requires a hands-on approach to locate, document, and preserve these assets while allowing construction and operations to thrive. Cultural asset preservation is a priority to local Okinawans and plays a large role in maintaining a strong relationship between Kadena AB and its host communities.

A wealth of archaeological and historic assets are held within KAB's gates. In fact, KAB has such a complex and interesting history that National Geographic chose to recently feature the installation in a television special highlighting its diverse cultural and archaeological sites. Many of these sites are traditional folk sites, including shrines (prayer sites), WWII revetments, tombs, remnants of villages, banyan trees, field terraces, and other features that are important to Okinawan folklore. Their preservation is a priority to local Okinawan authorities and plays a large role in maintaining a strong relationship between KAB and its host communities.

To comply with legal requirements to protect and manage cultural resources, KAB-specific guidelines for the implementation of a cultural resources management program were developed. Important elements included an historic preservation plan and an integrated cultural resources management plan. The guidelines based on the requirements of these plans establish standard operating procedures to ensure compliance with applicable laws and regulations while facilitating the management and preservation of significant prehistoric, historic, and archaeological resources.

With the aid of EMS, the KAB team's cultural resource program has been able to implement these plans without hindrance to the mission. For example, the completion of an expedited \$460,000 cultural test dig project to clear a critical construction footprint allowed the base to secure a \$235 million special operations mission bed-down, and the successful execution of multiple archaeological surveys cleared the way for \$130 million in MILCON projects.