



2017 SECRETARY OF DEFENSE ENVIRONMENTAL AWARD ENVIRONMENTAL QUALITY - OVERSEAS MARINE CORPS BASE CAMP SMEDLEY D. BUTLER

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INTRODUCTION

Marine Corps Base Camp Smedley D. Butler (MCB Butler) is a dynamic collection of installations and training areas widely distributed throughout Okinawa, Japan. This creates various unique challenges requiring creativity and flexibility to excel as environmental leaders in the Pacific.



The island of Okinawa, Japan is a key training location for the Marine Corps. MCB Butler's innovative soil erosion efforts have been instrumental in protecting this vital coral habitat. *Photo by Maurice Dudley*

As the base support for III Marine Expeditionary Force (III MEF), MCB Butler provides training areas and support for current and future combat readiness. III MEF is a Marine-Air-Ground Task Force, rapidly deployable to conduct operations across the spectrum from humanitarian assistance to amphibious assault and high intensity combat. MCB Butler is also the command support element for Marine Corps Installations Pacific, which encompasses Marine Corps Installations in Hawaii, Japan, and Korea. Supporting more than 32,000 active duty military and civilians and encompassing over

45,000 acres, MCB Butler provides unique training opportunities in various environmental habitats: from the only U.S. Marine Corps Jungle Warfare Training Center (JWTC) to the only U.S.-controlled live fire ranges in Japan. More than 3,000 species of flora and fauna, of which approximately 260 are rare, threatened, or endangered, and hundreds of archeological sites can be found throughout MCB Butler. The complex types of training and facilities supported by MCB Butler necessitate a robust environmental program skilled in supporting military readiness while balancing environmental sustainability.

As environmental leaders, it is our mission to support our units and tenant organizations and be conscientious stewards of the Japanese lands entrusted to us. As a team, we integrate a customer-oriented attitude into our daily plans, programs, and operations, and motivate our personnel to protect the environment. We support the Marine Corps mission by sustaining an aggressive and innovative environmental program that allows for a collaborative environmental stewardship between the U.S. and Japanese governments.

ENVIRONMENTAL QUALITY ACCOMPLISHMENTS

ENVIRONMENTAL MANAGEMENT

MCB Butler, through the use of in-house staff and resources, maintains a fully implemented Environmental Management System (EMS). We also exceed Department of Defense requirements through the successful integration of a regional EMS incorporating three different



2017 SECRETARY OF DEFENSE ENVIRONMENTAL AWARD ENVIRONMENTAL QUALITY - OVERSEAS MARINE CORPS BASE CAMP SMEDLEY D. BUTLER

countries: Japan, Korea, and the U.S. Our management review board is chaired by our Commanding General (CG) and attended by senior leaders from all Marine Corps installations within Japan, Korea, and Hawaii. This high level of command support increases the visibility of EMS Objectives and Targets throughout the region and promotes continual improvement through shared challenges, successes, and lessons learned.

EMS Objectives and Targets are developed with the support of a cross-functional team, which includes Major Subordinate Command and tenant representatives, and are approved by the CG. In FY15 and FY16, MCB Butler exceeded EMS Targets to include: the diversion of 66% of non-hazardous solid waste; the accurate cradle-to-grave tracking and risk-reducing audit of 1,843 hazardous waste containers; and the improved efficiency of our Qualified Recycling Program.

HAZARDOUS WASTE MANAGEMENT

In FY15 and FY16, our Hazardous Waste Management Program initiated a hazardous waste risk reduction audit procedure as part of the annual Environmental Management Systems Objectives & Targets. Our hazardous waste personnel were entrusted by the CG to review, monitor, and verify all hazardous waste released for Treatment Storage and/or Disposal Facility in addition to contractor provided service from Defense Logistics Agency-Hazardous Material Management Center. The completed audit resulted in a total review of 1,843 hazardous waste containers and highlighted numerous discrepancies, which ranged from container mismarking to mixed waste streams and packaging issues. The FY16 audits revealed 345 errors and led to the rejection of more than 100 containers for final disposition. The successful implementation of the risk reduction audit procedure allowed for 1,422 waste containers to be properly identified and marked for final disposition, accounting for \$514,000 in disposal cost. In addition, 161 Hazardous Waste Profile Sheets were reviewed, corrected, and approved, pinpointing issues with incorrect waste coding and identification. This auditing system reduced liability to the Marine Corps by ensuring accuracy and complete cradle-to-grave tracking.



Our coolant recycling system reduces the need for expensive contracts by utilizing in-house personnel and resources.

Our Hazardous Waste Management Program made great strides in reducing the overall amount of hazardous waste requiring disposal. In an effort to reduce waste and the associated costs of disposal, MCB Butler has implemented critical recycling and reuse programs that have resulted in cost savings totaling more than \$867,000. In FY15 and FY16, our in-house coolant recycling program reformulated more than 200 drums of coolant for customer reuse resulting in a cost savings of \$165,884.42 to Marine Corps units. This program significantly reduces off-site transfers, minimizes risks to the environment, and protects local communities.



2017 SECRETARY OF DEFENSE ENVIRONMENTAL AWARD ENVIRONMENTAL QUALITY - OVERSEAS MARINE CORPS BASE CAMP SMEDLEY D. BUTLER

The MCB Butler Hawker Battery Reuse Program rejuvenated nearly 500 batteries in FY15 and FY16, which were then sent out as reuse free of charge. This generated a total cost savings of approximately \$179,000 through the significant reduction of new battery purchases. The skilled efforts of our waste handling technicians recouped 70% of waste batteries turned-in. The program has been so successful that no conditioned battery has made its way back through the waste disposal process.



MCB Butler's Hawker Battery Reuse Program has significantly reduced the amount of battery waste.

During FY15, MCB Butler coordinated and shipped more than 42,000 pounds of Polychlorinated Biphenyl (PCB) Waste for retrograde to CONUS under the Toxic Substances Control Act approval waiver. Through the diligent efforts and successful coordination of this shipment, all in-storage PCBs were eliminated at MCB Butler. With a streamlined operating procedure, all PCB-related high voltage equipment removed from service is processed and tested by expert Environmental Affairs Branch staff, further reducing the potential of mishandling and impacts to the local community.

NATURAL AND CULTURAL RESOURCES MANAGEMENT



Kuroiwa's Ground Gecko and Great Nawab Butterfly are Natural Monument Species that have been located in the Kushi Watershed area through a flora and fauna survey.

Proper management and protection of Natural Resources aboard MCB Butler begins with a comprehensive inventory of the plants and animals that inhabit the installation. The Kushi Watershed, located in the northern portion of Okinawa in Nago City, encompasses an area of approximately 1,880 acres, more than two thirds of

which are situated within MCB Butler's Central Training Area (CTA). During FY15, the Natural Resources Management Program began conducting a flora and fauna survey of the watershed that yielded a total of 415 species of vascular plants and 740 species of terrestrial and aquatic animals. One protected species, the Japanese Wood Pigeon was detected. Three Natural Monument Species, designated by the Okinawa Prefectural Government, were also identified within the study area: Kuroiwa's Ground Gecko, Anderson's Alligator Newt, and the Great Nawab Butterfly. These discoveries within the CTA, coupled with proper mitigation strategies, have provided for mission success with minimal impact to important Host Nation species.



2017 SECRETARY OF DEFENSE ENVIRONMENTAL AWARD ENVIRONMENTAL QUALITY - OVERSEAS MARINE CORPS BASE CAMP SMEDLEY D. BUTLER

Natural Resources Conservation

Okinawa's intense rainfall, steep slopes, and thin soils make soil erosion a constant challenge. Ongoing military training activities have the potential to reduce the natural vegetation and increase erosion: helicopter landing zones and heavily traveled trails have the potential to increase erosion; live-fire munitions damage the soil and vegetation upon impact. For Okinawa where the environmental relation between terrestrial and coastal zones is close, prevention of red soil erosion is not only vital for maintaining the training areas, but is also important for conserving the delicate coral reef ecosystems that foster some of the highest biodiversity on the planet.

Okinawa's sub-tropical climate provides the island with a rainy season that runs from late April through June, and a typhoon season that spans May through November. With extensive rainfall and typhoons, the frequent occurrence of natural landslides leads to soil run-off into the adjacent coastal zone. To stabilize the slid slope and prevent erosion, MCB Butler's Natural Resources Program employs the cost effective and environmentally conscious technique of soil nailing with vegetation matting, an alternative to hard-armor erosion control techniques. This technique was applied to projects in the JWTC in the northern part of the Island in FY15 and FY16. Vegetation matting was selected to protect the delicate environment of the JWTC, which provides habitat for many endangered and protected species. This work contributed to maintaining the vitality of these locations in support of the Marine Corps training needs and preserving delicate fauna and flora in Okinawa.

Kanna Watershed Archaeological Survey



The Field crew exposed the remains to a historic farmstead outbuilding during the Kanna Watershed Survey.

During FY 15 and FY16, our Cultural Resources Program conducted numerous projects to inventory the cultural resources under its care and maximize efficiency in management of those resources.

As a follow up to the 2011 archival research of the CTA, an extensive inventory and field verification survey was initiated for the Kanna Watershed Basin in early 2015. At more than 2,100 acres in size, the Kanna watershed is comprised of high, forested mountains and steep, rugged valleys. The largest archaeological survey to take place in the CTA, the objective focused on locating sites previously



The failed slope near Classroom 1 at the JWTC was effectively stabilized with the use of soil nailing and vegetation matting.



2017 SECRETARY OF DEFENSE ENVIRONMENTAL AWARD ENVIRONMENTAL QUALITY - OVERSEAS MARINE CORPS BASE CAMP SMEDLEY D. BUTLER

identified in historic maps and documents and uncovering unknown features to be considered for future protection. In the course of this survey, more than 100 archaeological sites were visited and recorded. These sites included the locations of agricultural fields and dwellings, World War II era bomb shelters and charcoal kilns, tomb complexes, and road systems that promise to shed light on both historic and prehistoric activities in this area.

ENVIRONMENTAL STEWARDSHIP

Earth Week

In FY15 and FY16, MCB Butler hosted numerous activities throughout Earth Week at the various camps, which were open to active duty, families, and members of the local community. Activities ranged from beach and community clean-ups to energy and water conservation.

Hosted by Camp Hansen, approximately 100 active duty Marines and Sailors, as well as local children from Kagei Pre-school in Kin Town, participated in the annual Okukubi River clean-up and the Nature Mirai Kan eco-tourism park mangrove planting.

Marines and Sailors at Camp Schwab assisted the Henoko Senior Citizen's Association with the clean-up of Matsuda-No-Hama beach. This annual cleanup focused on removing all trash and debris deposited on the beach over the past year. Following the beach clean-up, the Marines and Sailors assisted in clearing the senior citizen's recreation field of weeds and brush. The clean-up, held in preparation for the Henoko Dragon Boat race, showcases that MCB Butler not only cares about the environment on Okinawa, but also the local traditions.

At the southern end of the island, military members and the local community gathered to clean-up Ginowan's Tropical Beach and Park. This event led to the removal of 200 pounds of debris and brought together approximately 150 military and local community members, giving them a shared purpose and allowing them to create new relationships. Overall, the various Earth Week activities foster positive interactions between the military community and Okinawan citizens through collaborative environmental stewardship efforts.

HOST NATION COORDINATION

The annual Environmental Forum brings together resource managers, scientists, and engineers from the Okinawa Prefectural Government, Department of Environmental Affairs (OPG) and the MCB Camp Butler Environmental Affairs Branch. The forum consists of two parts – an



Top: Local children and U.S. military planted mangrove species as part of Earth Week.

Bottom: Marines and Sailors assisted the Henoko Senior Citizen's Association in the annual clean-up of Matsuda-No-Hama.



2017 SECRETARY OF DEFENSE ENVIRONMENTAL AWARD ENVIRONMENTAL QUALITY - OVERSEAS MARINE CORPS BASE CAMP SMEDLEY D. BUTLER

informational exchange on environmental projects and site visits to areas throughout Okinawa, including on the Installation.

In FY15, OPG was provided a tour of our recycle facility and visited noteworthy cultural sites located on Camp Foster. The Environmental Forum Site Visit marked the first time OPG had the opportunity to see first-hand how MCB Butler is working towards protecting the environment on Okinawa. One of the cultural sites visited, Chibuga Spring, is recognized as a local folklore cultural property by Chatan Town. Dating back to the 16th century, Chibuga Spring is a significant cultural center for Tamayose Old Village. For centuries, Chibuga Spring supplied surrounding villages with fresh drinking water and irrigation for farming, and it is an important part of sacred ceremonies. In 2004, MCB Butler, supported by funds from the Department of Defense Legacy Program, joined the Tamayose Residential Community Group and the Chatan Town Board of Education in a project to restore the spring to its original state. Today, the spring appears much as it did 200 years ago, and remains a place of deep cultural significance for local citizens. The Environmental Forum continues to be a great success and serves as an example of the Marine Corps' commitment to continued environmental stewardship and support of the U.S.-Japan alliance.



Members of OPG gathered at Chibuga Spring on Camp Foster to learn about how MCB Butler is preserving critical Okinawan cultural assets.

Collaborative Partnerships

MCB Butler has forged numerous collaborative partnerships with various local and government agencies. Because the boundaries of MCB Butler cross into several local municipalities, our Cultural Resources Management Team coordinates with twelve individual Boards of Education, which oversee municipal cultural resources and assets.

Throughout FY15 and FY16, the Cultural Resources Management Team conducted five separate Board of Education consultations on four different projects where significant cultural resources were known to exist. During one coordination effort, MCB Butler's Cultural Resources Management Team worked closely with the Ie Shima Board of Education during a cultural asset survey at the Ie Shima Training Facility. We also coordinated with local archaeologists from the Ginowan City Board of Education and members of the Aragusuku Hometown Association for access to the West Futenma Housing area of Camp Foster as part of a land return to the Government of Japan. Close coordination with the local Boards of Education ensures Host Nation concerns are addressed early in the project planning process and adds to the greater body of archaeological surveys and knowledge for Okinawa.

Our Natural Resources Program Manager also maintains valuable relationships with the local government and non-government organizations, such as the Naha Environment Conservation Office of the Ministry of the Environment, OPG, municipal governments, and Conservation and



2017 SECRETARY OF DEFENSE ENVIRONMENTAL AWARD ENVIRONMENTAL QUALITY - OVERSEAS MARINE CORPS BASE CAMP SMEDLEY D. BUTLER

Animal Welfare Trust. Regular meetings on mongoose eradication, Okinawa Rail conservation, and invasive species management were attended throughout FY15 and FY16. These meetings share lessons learned in control and conservation efforts, as well as new methods and techniques to be applied inside and outside of the military fence line.

SPILL RESPONSE TRAINING



Station personnel participate in a simulated spill drill during SPILL EX. These exercises provide real world scenarios to aid in overall awareness and contingency planning.

In FY15, Marine Corps Air Station (MCAS) Futenma kicked off its Summer Spill Campaign, designed to reduce POL spills. A first of its kind, the Summer Spill Campaign was designed to ensure outreach to all units and tenants aboard MCAS Futenma and focused on relevant educational topics and stakeholder interaction. The plan included eight educational email blasts (two per month), Hazardous Waste container lid checks, vehicle spill kit checks, personal protection equipment checks, and a unit spill drill contest. The Summer Spill Campaign sparked changes in the reporting policies of Station Order 4020.3d MCAS Futenma Oil and Hazardous Substances Pollution

Contingency Plan. The Campaign acted as a springboard for the planning of the Station-wide Spill Drill, SPILL EX, completed in early FY16.

The results of the Summer Spill Campaign include an increased awareness of vulnerable areas; increased awareness of reporting procedures, roles, and responsibilities; and a decrease in POL spills aboard MCAS Futenma. The Summer Spill Campaign is set to be an annual event at MCAS Futenma, and lessons learned from this campaign can be used to adapt a Summer Spill Campaign across MCB Butler installations.

CONCLUSION

Despite the challenges of being in a remote overseas location with a unique environmental and political climate, MCB Butler continues to be a leader in enhancing environmental quality while sustaining the Marine Corps' ability to effectively train and maintain readiness. Our outstanding waste minimization efforts are especially important because of our isolated location and limited landfill space. The success of our Hazardous Waste Management Program has resulted in significant cost savings to the Marine Corps and demonstrates our dedication to protecting the environment entrusted to us. We continuously strive to ensure that our program supports military readiness through our extensive Natural and Cultural Resources Management Programs, which are critical to effective training. The success of stakeholder interactions is reflected in MCB Butler's numerous partnerships and collaborations with local municipalities and agencies, continually improving relations between the people of Okinawa and the Marine Corps.