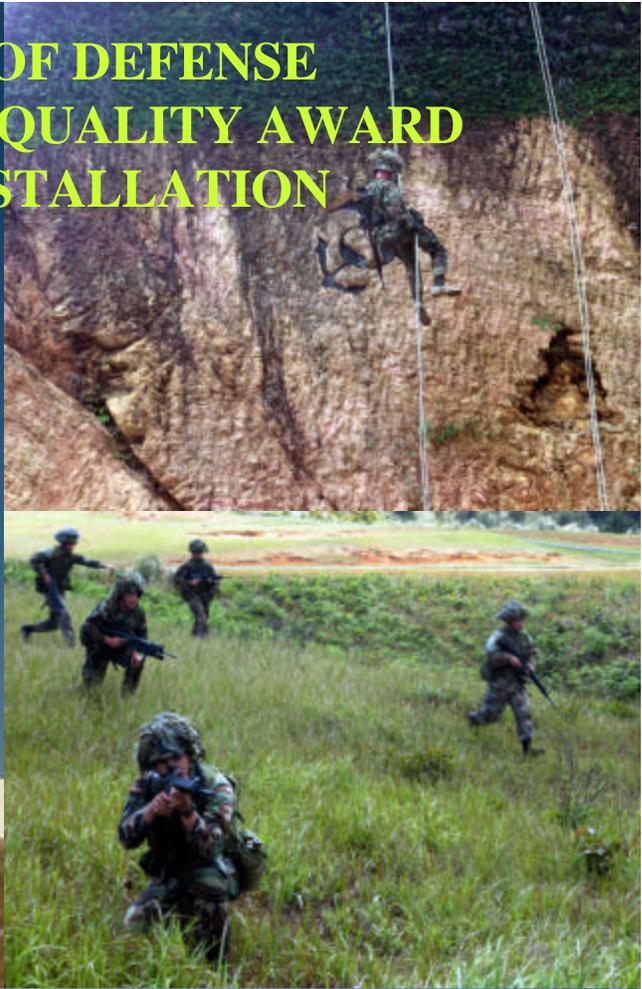


**SECRETARY OF DEFENSE  
ENVIRONMENTAL QUALITY AWARD  
OVERSEAS INSTALLATION**



**MCB CAMP S.D. BUTLER, OKINAWA, JAPAN  
JANUARY 2003**



## **INTRODUCTION**

Marine Corps Base Camp Smedley D. Butler (MCB Butler) is a very unique and complex overseas installation. Our numerous camps are located throughout the islands of Okinawa and Ie Shima; we have a training camp at the base of Mt. Fuji in mainland Japan; and we control the only remaining Jungle Warfare Training Center (JWTC) in DoD. We are also in the process of acquiring a Military Operations in Urban Terrain (MOUT) training facility in Guam. Our installations host over 3,000 species, of which approximately 260 are rare, threatened or endangered, inhabit our installations, and we have archaeological sites that are over 6,000 years old. The Commanding General and the Base staff are committed to protecting and preserving the land entrusted to us by our Japanese hosts. With 45 dedicated, highly trained professionals, MCB Butler has achieved environmental excellence with innovative and progressive ideas. MCB Butler is a leader in compliance, pollution prevention, and conservation. We solve problems through a team approach with various U S and Japanese agencies, organizations, and institutions.

## **LOCATION**

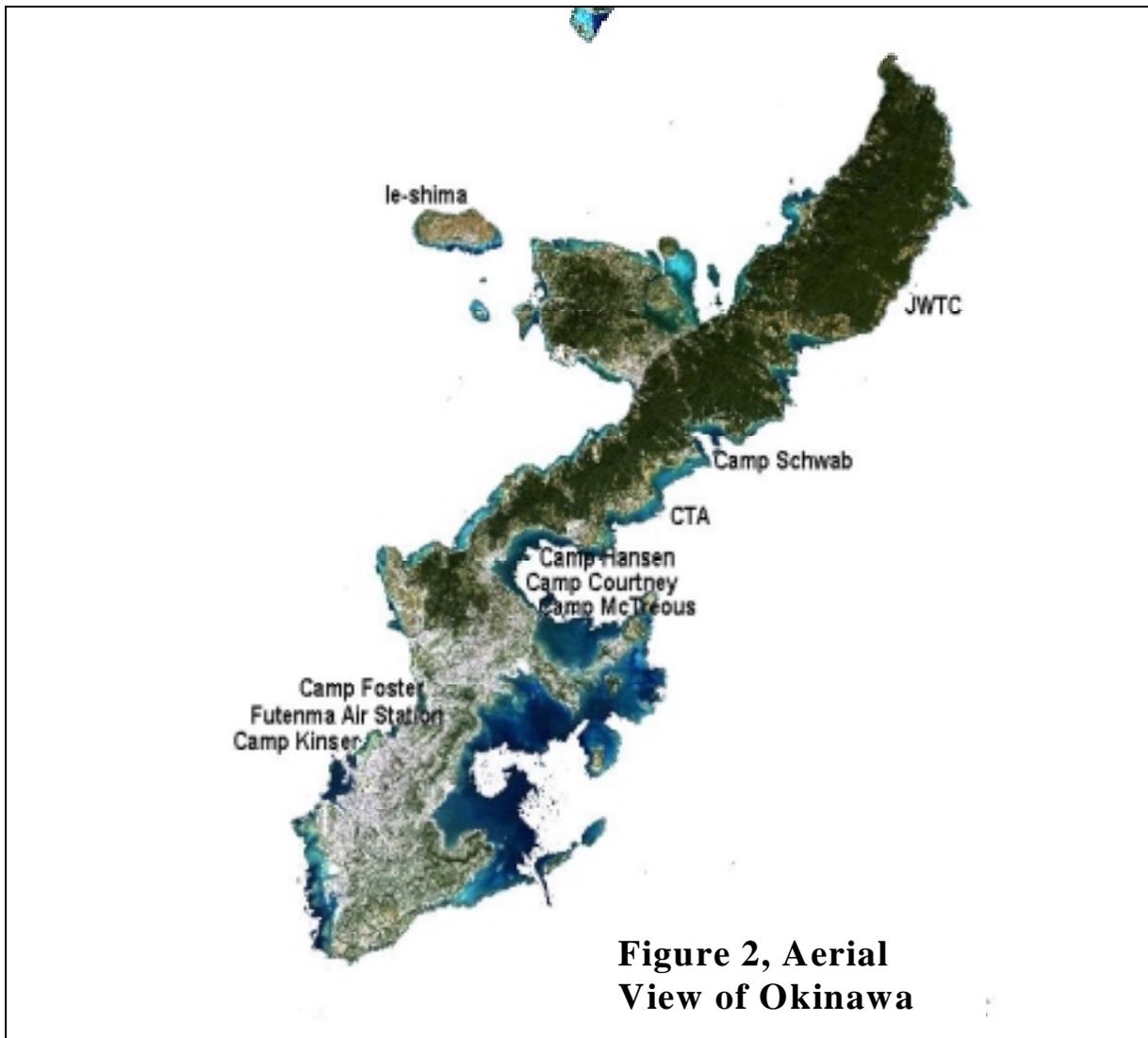


**Figure 1, Location of MCB Butler**

MCB Butler is the base support command for US Marine Corps ground forces on Okinawa and at Camp Fuji on Honshu Island, Japan (Figure 1). MCB Butler is composed of several installations of varying sizes and missions, covering approximately 45,280 acres with over 6,000 facilities, having a replacement value of over \$6 billion dollars. Approximately 16,700 active duty personnel and 3,500 U.S. and Japanese civilians live, work and train at MCB Butler. Headquarters for MCB Butler is located at Camp Foster. The majority of facilities that compose MCB Butler are located on Okinawa (Figure 2) and consist of: Camps Gonsalves, Schwab, Hansen, Courtney, McTureous, Lester, Foster, and Kinser. MCB Butler also includes the Jungle Warfare Training Center, Ie Jima

Auxiliary Airfield, Henoko Ordnance Ammunition Depot, the Central Training Area, Gimbaru Training Area, Kin Red Beach Training Area, Kin Blue Beach Training Area, Higashionna (Kadena) Ammunition Storage Point II, and Yomitan Auxiliary Airfield.

Marine Corps Air Station (MCAS) Futenma, also located on Okinawa, has an operational chain of command separate from MCB Camp Butler. However, support services such as environmental compliance, facilities, engineering and maintenance, fire department, and post office are operated by Camp Butler.



**Figure 2, Aerial View of Okinawa**

**MISSION**

The mission of Camp Butler is to provide training facilities, limited logistic support, and limited administrative support for Fleet Marine Force (FMF) units located on Okinawa and Camp Fuji. The III Marine Expeditionary Force (III MEF) is the major tenant of MCB Butler. III MEF's major components consist of the 3<sup>rd</sup> Marine Division, the ground combat component; 1<sup>st</sup> Marine Air Wing, the air combat component; 3<sup>rd</sup> Force Service Support Group, the logistics support component; and the 31<sup>st</sup> Marine Expeditionary Unit. III MEF and other deployed US forces support our national security strategy by providing personnel that could be deployed if a crisis arises.

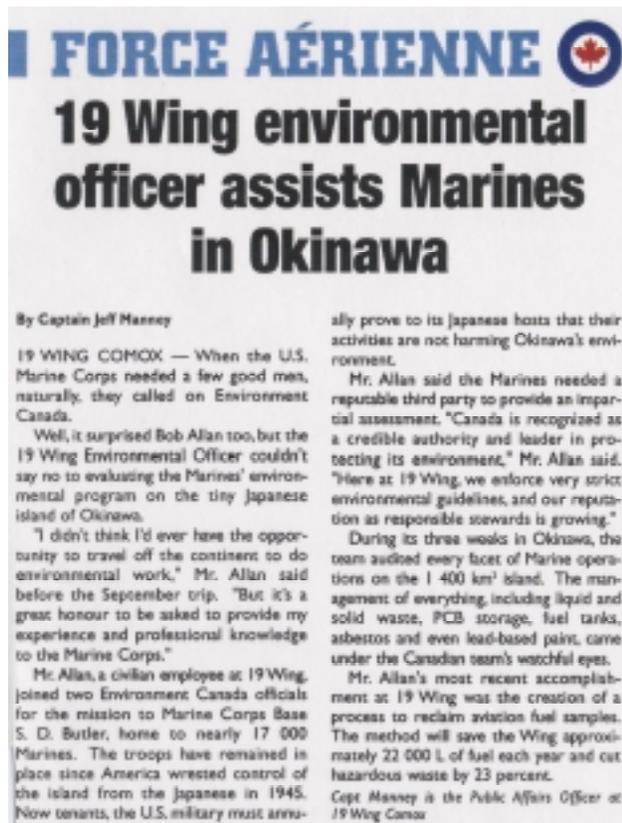


**Figure 3, Suspicious Package Response by Environmental Personnel**

The Environmental Branch has an excellent reputation with the operating forces, and strives to balance training needs with environmental protection. Since 9-11, the Environmental Branch has been an active participant in the War on Terrorism, by providing DoD components on Okinawa a Chem-Bio response team (Figure 3).

## **BACKGROUND**

The MCB Butler Environmental Branch was formed in 1995. In the seven years since the Branch was established, the 45 US military, Japanese, Marine Corps and US Forests Service civilians who work in the Environmental Branch have made enormous improvements in both supporting the operating forces and protecting the environment of Okinawa.



**Figure 4, News Article on Environment Canada Assisting MCB Butler with ECE**

Environmental stewardship, compliance, and support of the operating forces are now the focus of the Branch. Each year, awareness of the environment increases within the local community and Japanese Government. The new Japanese Ministry of Environment is beginning to place environmental issues on the highest political levels within Japan. The local prefecture government on Okinawa is also continuing to mature with regards to environmental compliance and protection. Thus in reality, the MCB Butler Environmental Branch responds to environmental regulations promulgated by DoD, the Government of Japan, the Okinawan Prefecture Government, and by the US Environmental Protection Agency (EPA) and Department of Interior (DOI). The need to follow such a diverse set of environmental requirements and support mission readiness is an enormous but interesting challenge for the professionals in the Environmental Branch.

The MCB Environmental Branch continues to work hard on a team approach to solve a multitude of environmental challenges and requirements. This "TEAM" not only consists of Marine Corps employees, but employees within

other US and Canadian Federal Agencies, along with Japanese and US Universities. The Branch has been very successful in forming alliances and working agreements with other US and Japanese Agencies. In the last two years, the Environmental Branch developed Memorandums of Understanding (MOUs) with the US Forest Service, the US EPA, and Environment Canada. The Branch has continued to work and train with the US Coast Guard, and we are investigating the possibility of interagency work with the US Geological Survey, and Keio University in Japan.

The Branch has also set a goal to obtain ISO 14001 certification in the future. ISO 14001 is a recognized international standard for environmental management. To reach this goal we have teamed up with EPA Region IX who will assist us with ISO development. Also, the Vancouver Region of Environment Canada is providing technical assistance for our ISO 14001 goal. MCB

Butler is the only overseas DoD installation attempting to achieve certification; this goal will greatly increase the visibility and credibility of our environmental programs with the local community and government. In September 2001, personnel from Environment Canada and the Royal Canadian Air Force performed our Environmental Compliance Evaluation (ECE) (Figure 4). This was the first time that either agency assisted a DoD installation on an environmental inspection, and it gave us the opportunity to have outside regulators evaluate our programs. In doing so, we showed our local hosts our resolve in implementing the laws, rules, and regulations applicable in the protection of the land entrusted to us, and earned us credibility and trust from our hosts in the Japanese Government.

## **PROGRAM SUMMARY/ACCOMPLISHMENTS**

For a Branch that has only been in existence for 7 years the number of accomplishments in a wide spectrum of environmental programs is impressive. All these accomplishments were completed in a cost effective and timely manner.

### **POST 9-11 SUPPORT**

After the Terrorists Attacks of 11 September 2001 and the anthrax episodes across the US, MCB Environmental Branch along with III MEF's Explosive Ordnance Disposal (EOD) platoon was tasked by the Commanding General of MCB to develop, equip, and train a Weapons of Mass Destruction (WMD) Response Team to support the US Army, Marine Corps, and Navy on Okinawa. Archeologists, habitat biologists, environmental engineers, environmental scientists and other environmental staff members took the lead on this new endeavor. With the assistance of US Coast Guards Pacific Coast Strike Team, the MCB Environmental Branch had a 24-seven chem-bio response team ready by November of 2001. Personnel from the Environmental Branch and EOD responded to nearly 20 suspicious package incidents. Though not a typical environmental function, the team formed by the environmental branch ended up being a main WMD training provider in Japan. Personnel from the environmental branch provided WMD training to US Consul General Office on Okinawa, the US Embassy in Tokyo, and Japanese fire departments on Okinawa. The MCB Environmental Branch will continue to provide WMD training for all DoD components and the US State Department personnel on Okinawa.

### **WATER QUALITY PROGRAM**

Due to the unique nature of MCB Butler, where our potable water sources come from off our installations, we invited technical experts from the US EPA to assist MCB Butler to ensure that we could continue to provide safe and high quality water to the US Naval Hospital. Technical experts from EPA Regions VI and IX were invited by the Commanding General to work with the environmental branch to complete a Sanitary Survey and Comprehensive Performance Evaluation (CPE) on the Camp Lester Drinking Water Plant (Figure 5).



**Figure 5, EPA Personnel Installing Water Monitoring Equipment**

Performing frequent sanitary surveys are an important element in helping water systems protect public health. The Lester drinking water plant is owned and operated by the Marine Corps and produces approximately 800,000 gallons of potable water per day. The primary purpose of a sanitary survey is to evaluate and document the capabilities of the water system sources, treatment, storage, distribution network, operation and maintenance, and overall management to continually provide safe drinking water and to identify any deficiencies that may adversely impact a public water system's ability to provide a safe and reliable water supply. The CPE was completed to evaluate performance capabilities of each part of the water treatment plant.

The recommendations provided by the US EPA are being used to support a planned upgrade project currently under design. The Environmental Branch's goal was to ensure that the upgrades will ensure compliance with future more stringent water quality requirements that will be promulgated by EPA in the near future. Also, by completing the CPE, it helped streamline the design process, which will save time and money. The partnership with EPA will continue as the project moves through construction. EPA will provide review comments on the design and participate in all decisions on this project. The design will be completed and reviewed by all stakeholders by 1 June 2003. Construction of upgrades is scheduled for award by 30 September 2003.

EPA personnel from Regions VI and IX provided a welcomed assurance to plant operators and supervisors who are mostly Japanese Nationals unfamiliar with the US regulatory system. The partnering with USEPA helped build US and Japanese teamwork in giving the both operators and managers a US perspective on water plant operations.

## TRAINING

MCB Butler's Environmental Training Section provides environmental education and professional development training for all US Services in Japan. As the regional training provider, MCB Butler understands the need for providing quality environmental training to a large, but isolated population. Maintaining professional certifications and educational competence is cost prohibitive in such a remote location. Creative methods must be utilized to overcome obstacles and control costs while reaching the broadest possible audience (Figure 6). We provide the majority of environmental training within DoD in Asia. We are the only training provider in Japan or Korea who provides natural or cultural resources management training to stay in compliance with overseas environmental standards, and we do this at no charge.



**Figure 6, Bilingual Training Provided by MCB Environmental Staff Members**

The Environmental Training Section collaborates with other government agencies to acquire professional expertise for on-island training in a variety of subjects at minimal costs. The US Coast Guard provides HAZMAT technician level training, incident response training, and oil spill on water training, along with WMD response training. The US EPA provides a water and soil

sampling training course, SPCC, tank designer and inspector training, and risk assessment training. The US Forest Service provides soil erosion training, sediment monitoring/watershed training, and GPS training.

In-house personnel from the environmental branch provide a 24-hour Environmental Compliance Course (ECC) in Japanese and English; a 40-hour NEPA course; a 40-hour natural resources management course, a 24-hour cultural resources management course; a GIS/GPS course; plus we provide 8-hour refresher courses in HAZWOPER and HAZMAT handling in both English and Japanese. All courses taught by our staff are free to DoD, State Department and Japanese government officials.

In the last two years we have provided over 100 environmental courses and trained over 3,000 active duty Marines, Sailors, Soldiers, Airmen, State Department personnel, Japanese and US civilians, and prefecture government employees. Plus we also teach local city firemen on WMD response. Our goal is to continue developing new cost effective training courses and fulfill the needs of our customers and to protect the environment.

## **EROSION CONTROL**

We have been aggressively incorporating new erosion control technologies to implement environmentally friendly solutions. We feel we have one of the best erosion control programs within DoD; and both the Army Environmental Center and US Forest Service would attest to this statement. This is another area where we have taken a team approach to a complex problem. Through our MOU with the US Forest Service and our good working relationships with the Okinawa Prefecture Red Soil Institute, we are implementing a comprehensive erosion control program to prevent red soil from reaching the ocean where it can impact the coral reefs surrounding Okinawa. Our plan is based on a watershed approach, where we work with local governments to find the best solution. A comprehensive erosion program is crucial if we are going to sustain our training areas and protect the coral reefs. We have funded over \$1,500,000 for four range de-mining and reconstruction projects that incorporate new technologies in bullet entrapment and soil erosion control at some of our active known distance ranges. These projects will not only de-lead the ranges, but will also provide red soil erosion preventive measures such as weirs, silt screens and detention ponds. Erosion of the impact berms will also be minimized by the use of rubber media bullet catchment devices or deceleration devices that prevent the bullets from impacting the bare soil (Figure 7)

We are continuing with an aerial hydro-seeding program and have seeded over 11 hectares in our impact areas at a cost of \$670,000. This program was started as a demonstration project to show the Japanese government that this was a viable solution for red soil erosion control. Now the Japanese



**Figure 7, Construction of Rubber Media Bullet Trap**

government is actively using this technology for erosion control. We are also trying new techniques such as multi-function filter fabrics, road stabilization compounds, and soil nailing to control erosion. All of these techniques emphasize more use of vegetative cover and less concrete, resulting in a softer green solution.

MCB Butler has worked hard on erosion and sediment control for years, and in early 2002, one of the top US Forest Service soil-stabilization experts joined our staff on a two-year work detail. Okinawa's intense rainfall, steep slopes, thin soils and highly engineered watercourses make erosion control very difficult task. The added expertise from the US Forest Service will assist us in transferring erosion and sediment control technology to road builders, trainers, Government of Japan engineers and Okinawa Prefecture scientists.

### **CAMP SUPPORT/POLLUTION PREVENTION**

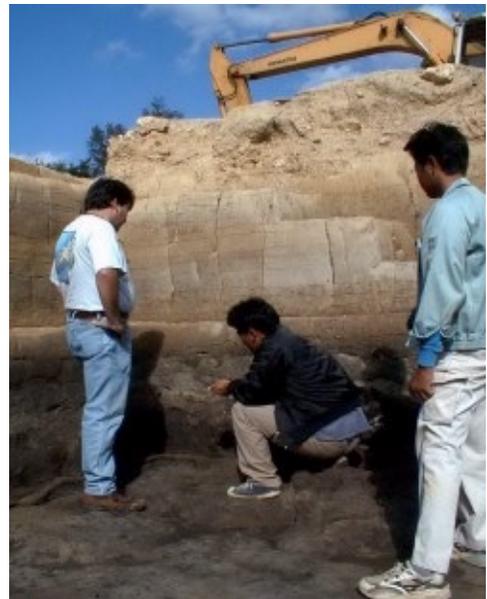
Pollution prevention is one of the cornerstones of our environmental program on Okinawa. MCB Butler has recently completed a comprehensive storm-water pollution prevention plan, the first within Asia. This plan, jointly developed by storm water experts from four Navy Engineering Field Divisions will greatly enhance our ability to control storm water. MCB Butler was the lead driving force in the startup and implementation of the Defense Logistics Agency (DLA) Joint Environmental Material Management System (JEMMS) on Okinawa. JEMMS is a true life-cycle management system for HM/HW for all DoD components, and thanks to MCB Butler, the first place it is being used is on Okinawa. JEMMS gives our engineers and scientist real time data, which will help us further reduce HM/HW inventories and processes.

On Solid Waste (SW) Management we have worked closely with our contractors and Marine Corps Community Services recycling personnel to reduce SW generation. The DoD Measures of Merits (MOMs) goal for 2005 is reduction of SW by 40%; in fiscal year 2001 we have already achieved a reduction of 32%.

To ensure operational support to the Air Wing, the Environmental Branch is working closely with the Defense Energy Support Center on a comprehensive redesign of all aircraft fueling facilities at MCAS Futenma. Presently, the Hot Fuel Pit at MCAS Futenma cannot refuel C-130s and other large aircraft. Though not strictly an environmental project, the Environmental Branch took the lead on this important project and is working as the engineer-in charge to ensure the it is properly designed and constructed to meet both user needs and protect the environment.

### **CULTURAL RESOURCES MANAGEMENT**

We feel our Cultural Resources Management Program is the pride of DoD in Asia. MCB Butler is the DoD cultural resource training provider and the technical consultant for US Forces in Japan. We currently have the only DoD employed professional archeologists in the Far East. Our two archeologists' have gained the professional



**Figure 8. MCB Butler Archeologist at a Test Dig**

confidence of the local archaeological community and have been certified by the Okinawa Prefectural Government (OPG) to monitor and approve all archaeological work conducted in Okinawa. MCB Butler Archeologist not only oversee Marine Corps projects but they also assist the Army and Navy on a regular basis. We have also assisted archeologists from OPG on how to work on a contaminated site. Our archeologists develop a site cleanup plan to both mitigate the site and protect the potential cultural assets. Since our Archeologists are HAZMAT tech certified they conducted the field excavations in the potentially contaminated area for OPG archeologists on this project. We are the only DoD activity in Japan that is recognized by Government of Japan officials to approve archaeological clearances. This is an accomplishment we are very proud of!

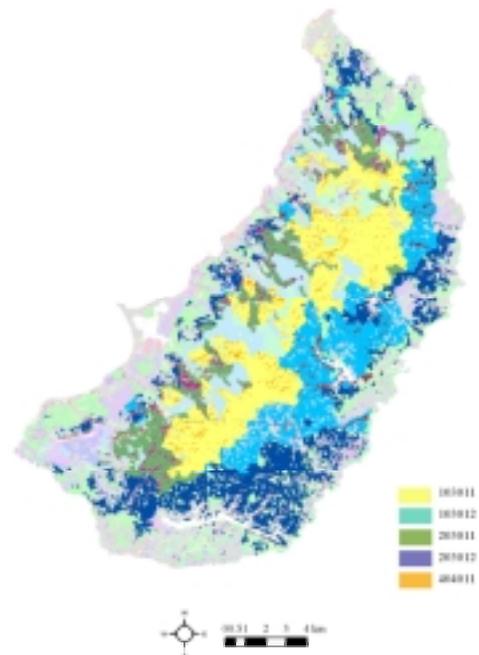
MCB Butler conducts a cultural assets survey before beginning any construction project whether funded under the Japan Facilities Improvement Program or by the US Government. In all cases, the survey team closely consults with the municipal archaeologist responsible for the area in question. If necessary, MCB Butler relocates a project upon finding previously unknown cultural assets. We have completed cultural resources inventories for approximately 80% of all properties currently managed under MCB Butler and are integrating the collected data into an island wide Geographic Information System. We are also working with the Ginowan City and the Okinawa Prefecture Government in Okinawa to jointly develop GIS archaeological database. This will greatly enhance future planning needs.

All Camps educate their people on the significance of tomb areas and other cultural assets. Such areas are strictly “off-limits.” Tours with local communities are conducted on a regular basis to promote awareness of the many significant traditional Okinawan cultural assets that are located on the camps, and to illustrate how the Marine Corps is working to preserve these sites.

## NATURAL RESOURCES MANAGEMENT

The US Marines on Okinawa train on some of the last large tracts of sub-tropical rain forest left in Asia. These lands, in central Okinawa and the Yanbaru in northern Okinawa, support one quarter of Okinawa’s Red Data Book plants, one fifth of all Japanese listed reptiles and one quarter of Japan’s listed amphibians. Many of the species are found nowhere except Okinawa. To manage this sensitive environment, MCB Butler habitat experts carefully study every project to minimize the impact on the natural resources we oversee.

The Environmental Branch recently finished a study to determine whether feral animals and mongoose were a threat to the Okinawan Rail or other listed species at JWTC. We also developed a cooperative relationship with scientists at Keio and Kyoto Universities and the Yanbaru Wildlife Research Center on joint research and management projects (Figure 9).

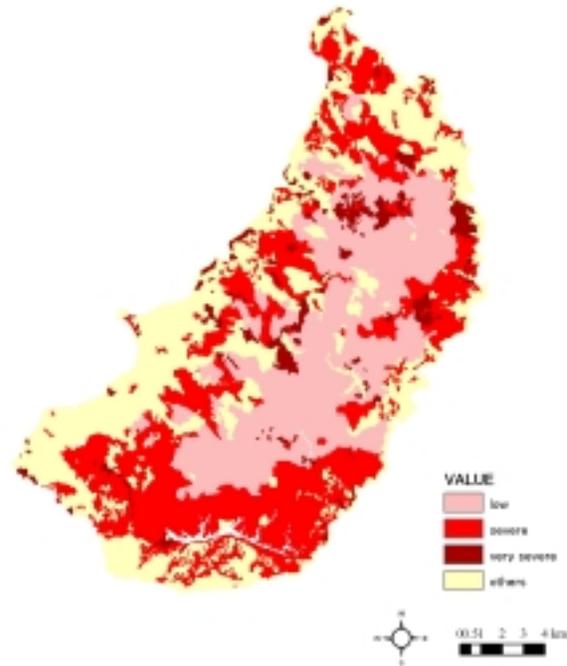


**Figure 9, Prototype Ecotope Model (Ecological Function Model) Developed for JWTC by Keio University**

The Environmental Branch and Yanbaru Wildlife Research Center staff is also planning joint efforts to reduce poaching in JWTC. The MCB Butler staff is studying gate closures, cooperation with Japanese police, over flights by Marine aircraft, boundary posting and cooperation with wildlife and plant researchers in an effort to stop poaching in and around JWTC.

Under an agreement with the Japanese Government, the Marines will give back a substantial portion of the Jungle Warfare Training Center within the next few years. The Marines are working with the Nature Conservancy of Japan, the Okinawa Prefectural Government (OPG) and Keio University to better understand the Yanbaru and then use that understanding to manage the areas for maximum ecological and training integrity (Figure 10). One goal of the work, bioregional management, under which the Prefecture, the Government of Japan, four local Okinawan townships and several non-governmental organizations will share data and management responsibilities for the Yanbaru.

MCB Butler is occasionally asked to provide space for other DoD branches on Okinawa. Two recent projects required special efforts by MCB Butler environmental staff. The Army's Special Forces on Okinawa need a new training facility, and do not control enough land themselves to meet their needs. MCB Butler natural and cultural resources staff worked with Special Forces personnel, range designers from the Corps of Engineers and other planners. They wrote a tight-deadline environmental review and worked with visitors from the US to make sure they understood the weather, soil, topography and other aspects of the chosen site to minimize environmental impact while providing a realistic training range for Army Special Forces. A second challenge was the relocation of a National Security Agency (NSA) large telecommunications facility, the "Elephant Cage," from Yomitan peninsula to the Central Training Area. The site chosen is a difficult one. MCB Butler staff advised site planners and engineers on erosion control, relocation of affected species, and other aspects of the plan.



**Figure 10, Prototype Disturbance Level Map Developed for JWTC by Keio University**

MCB Butler has taken the lead within DoD on Okinawa on the Pine Wilt Disease problem. Pine Wilt Disease is spread by nematodes carried by the Pine Bark Beetle, and was accidentally introduced to Okinawa in 1973. Since its introduction, tens of thousands of Ryukyu Pine, the Prefecture Tree of Okinawa, have had to be destroyed after being infected by the disease. In FY 2002, 81,126 infested trees were found on Okinawa. The environmental branch spent \$90K on cutting and burning infested pines in FY 01 and 02.

The conventional treatment strategy, cutting and burning infested trees or, when that isn't possible, cutting and fumigating infested trees, has been very expensive and not particularly effective. Recognizing that fact, FE Environmental has taken the lead on a possible new tactic. This method involves understanding the variables, such as slope, tree stand age, etc., that promote resistance to

the disease, and gradually using that information to create healthy, disease-resistant stands of Ryukyu Pine.

This problem is an extremely political issue, with some local newspaper articles implying that U.S. military installations are Pine Wilt Disease “hotspots” that are breeding sites for the beetle. This is not the case and we are starting to change this perception by working closely with local researchers, and by publicizing our efforts to control the disease.

To accomplish this, the Marines recently brought over Dr. Flanagan from the U.S. Forest Service. He and a Marine representative visited and met with the OPG administrative personnel and researchers to exchange knowledge about the disease and its control. The Environmental Branch also used Dr. Flanagan’s visit to host a meeting with other Okinawa DOD branches to share information.

The Environmental Branch will conduct a survey to collect basic information in support of Dr. Flanagan’s control plan. The collected information, shared with OPG and neighboring localities, will be a large step toward regional cooperation to solve the spread of this problem.

## **HOST NATION RELATIONSHIP**

The MCB Environmental Branch coordinated and hosted the second annual Okinawa Prefecture Government/US Forces Japan Environmental seminar for local Government officials. Because of our well-known working relationship with Government of Japan environmental agencies, U S Forces Japan only ever tasks MCB Butler to develop and coordinate these annual environmental seminars with local Japanese environmental officials. These seminars are developed to explain DoD environmental programs to federal, prefecture, and local Japanese Government agencies. This last seminar had nearly 100 participants from DoD and the Government of Japan.

## **SUMMARY**

MCB Butler has shown that with innovation and dedicated employees, environmental compliance and protection can be achieved in a highly cost effective manner. We have excelled at teaming up with other agencies and experts to continue our goal to be a world-class environmental program. Other installations, both overseas and in the U.S. could use MCB Butler as a role model in developing working relationships with other agencies to improve their own environmental programs. US Forces Japan is using MCB Butler as a model to teach other DoD activities to work with Japanese government agencies. Our successes in working with agencies outside our normal organizational chain can be used as a model to promote environmental leadership throughout the Department of Defense. We are dedicated to seeking better and less expensive ways to protect the environment and support the training needs of our operating forces. With our environmental programs, Marines and Sailors are able to train to be the best in the world while preserving the environment for future generations and leaving a minimal footprint on the environment.

## **ENVIRONMENTAL QUALITY - OVERSEAS INSTALLATION**

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### Summary Paragraph:

MCB Butler has shown that with innovation and dedicated employees, environmental compliance and protection can be achieved in a cost effective manner. They have excelled at teaming up with other agencies and experts to continue to be a world-class environmental program. Other installations, both overseas and in the US could use MCB Butler as a role model in developing relationships with other agencies to improve their own environmental programs. MCB Butler's success comes from working with numerous federal agencies and universities to promote environmental leadership in Japan. They are dedicated to seeking better and less expensive ways to protect the environment and support the training needs of our operating forces. MCB Butler's environmental programs allows Marines and Sailors the ability to train to be the best in the world while preserving the environment for future generations and leaving a minimal footprint on the environment.