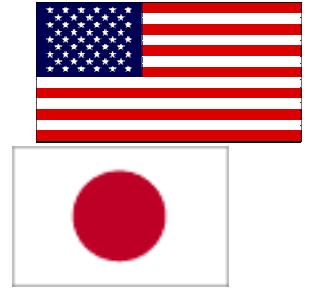




Environmental Quality – Industrial Installation, Overseas  
MCB Camp S.D. Butler  
Okinawa, Japan  
January 2005



## **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. Our installations host over 3,000 species, of which approximately 260 are rare, threatened or endangered, 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. Through persistent efforts in developing relationships with the diverse scientific and political communities in Okinawa, we have identified common interests, developed relationships, and created partnerships that have made our environmental protection program a leader in the Pacific.

## **PROGRAM/SUMMARY ACCOMPLISHMENTS**

### **EMS Development.**

We believe that the future of environmental compliance, both within MCB Butler and throughout the Federal government, lies in establishing and implementing an effective EMS. An Executive Order requires the establishment of an EMS at all federal facilities by December 31, 2005. Headquarters Marine Corps selected MCB Butler as an overseas military installation prototype test site for EMS development and implementation. MCB Butler has been partnering with Headquarters Environmental Protection Agency (EPA) on EMS development.

MCB Butler's goal is to establish an EMS that incorporates environmental considerations into the day-to-day operations of all organizations and tenants on the camps and ultimately integrates protection of the environment with the mission. In 2003 and 2004, MCB Butler made significant progress in developing an EMS that will achieve this goal. As part of the Pre-Implementation Phase of the EMS process, we completed the development of an implementation plan, gained senior management approval of the EMS, and established EMS core teams. During the Planning Phase, a gap analysis was completed by the US EPA for each camp and the impacts and aspects at each of the camps was completed. A database was developed to track the impacts and aspects and it has been linked to our Geographic Information System (GIS). As part of the Do Phase of EMS development, a draft of an EMS manual was completed and EMS awareness was promoted at all levels of the Command and throughout the base. Additionally, the Japanese community was involved through a briefing provided to the Okinawa Prefecture Government. Finally, numerous personnel on the base and in the local Japanese community received EMS training provided by the joint US EPA/MCB Butler EMS Development Team.

Although much work remains before we can say that we have successfully implemented our EMS, we feel that the actions initiated during the last two years have provided the baseline required to successfully establish an EMS that meets our goals and is effective in allowing us to show our Japanese neighbors that we have a well-rounded environmental program. Additionally, although we partnered with EPA, we are proud of the fact that the vast majority of the work is being

completed “in-house” which results in both a savings for taxpayers’ and the development of expertise and ownership of the process by MCB Butler personnel. One other fact we are very proud of is that many of the EMS tools we developed are now being used by other Marine Corps bases in the US and other DoD components in Japan.

**Response to the CH-53 Accident in Ginowan City.** The MCB Butler Environmental Branch was an integral part of the response and follow-up actions required after the 13 August CH-53-D helicopter accident in Ginowan City. The Environmental Branch was one of the first Marine Corps organizations on-scene and still continues to play an important role in this very serious issue.

In late August, MCB Butler awarded a contract to a local Japanese environmental firm to conduct the environmental assessment at Okinawa International University. The contract for the environmental assessment was developed following the guidance in the Japanese Soil Pollution Law of 2002. Prior to beginning the assessment, the draft-sampling plan was provided to the Okinawan Prefecture Government (OPG), Ginowan City, Okinawa International University, and the Naha Defense Facilities Administration Bureau (DFAB) for comments and concurrence.



**Environmental Personnel recover fuel from the accident site**

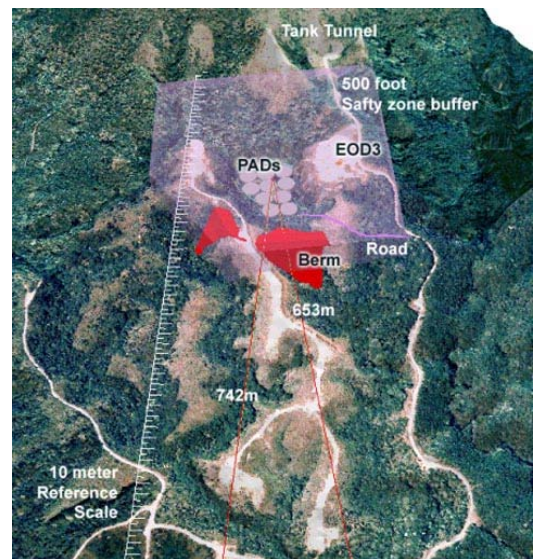
After JCAC determined that there was no threat to human health from radiation, the environmental assessment began. All sampling for the assessment was completed by 18 September.

The final report for the environmental assessment was completed in December of 2004 and copies were provided to all stakeholders. The environmental assessment that was completed at Okinawa International University was a true joint effort between MCB Butler and federal, prefectural, and local Japanese governments.

**Geographic Information Systems.** The MCB Butler Environmental Branch’s Geospatial Modeling Section is the only DoD component in Japan who is member on the Government of Japan’s GIS Master Planning Implementation Group, and the Okinawa Prefecture GIS Working Group. MCB Butler’s GIS personnel attend working group meetings and provide technical direction as

Because of the concerns of the Japanese public, the contract was modified to include sampling for Strontium 90 and other radioactive substances. The Japan Chemical Analysis Center (JCAC) from Chiba Prefecture, the only firm in Japan certified to perform this type of work was contracted for support.

The environmental assessment began on 13 September with the JCAC screening the assessment site for potential radiation. Local media covered the entire environmental assessment; they were on site the entire time.



**3-D Rendering of Active Range**

a member of these groups. Our efforts and expertise have helped us obtain a large amount of off-base Geospatial data, which helps us manage issues such as storm water and the spread of the Pine Bark Beetle. Because MCB Butler is a member of these working groups, we are able to see the new technologies being implemented in Japan and it gives the Japanese Government visibility of how the DoD uses GIS to protect their land. We have also provided GIS training to Japanese officials from Ministry of Environment, OPG, and the Okinawan Prefecture Power Company. The Environmental GIS section also supports many of the mapping needs for the Marines to train on Okinawa. By working with the Marines we help them with their training needs but it also helps us identify possible impacts to the environment.

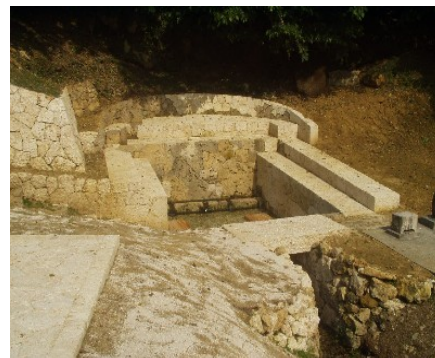
**Community Outreach and Environmental Training.** MCB Butler continues to provide outreach programs, we deliver environmental presentations to on-base and off-base schools, as well as contribute to Cub Scouts, Boy Scouts and Girls Scouts. The Environmental staff ran the Ecology section of the 2004 Greater Okinawa District Boy Scout summer camp. The joint U.S./Okinawan activities that MCB Butler sponsored during Earth Week are some of our most successful events. In 2004, our personnel teamed with the local community to provide educational programs at on-base and off-base schools that described the effects of pollution on the marine environment. The students and other volunteers worked together throughout the week to perform beach cleanups at various locations on Okinawa. Groups also worked at cleaning areas around our bases. As Col. Glenn Wagner, Camp Commander, Camp Foster stated, “We want to show in action, not just words, that the military community does care about the environment.” The program was a huge success.



During 2003 and 2004, the Environmental Branch’s Training Section conducted over 100 classes of various lengths and in different specialized environmental subjects. This training was divided into internal and external distinct categories based on who provided the training. The Environmental Branch provided instructors for the internal training. Over 2000 Marines, Civilians, and other members from DoD Services attended internal training courses. Internal classes included (1) Environmental Compliance Mobile Course 24-hour, (2) Environmental Compliance Refresher Course 8-hour, (3) Natural Resources Management Training, and (4) Geographic Information System Training. External Training included (1) Secondary Road Design Course, (2) GPS Training, and (3) Stream Ecology and Assessment Training provided by the US Forest Service. The US EPA also provided EMS Awareness Training, and the US Coast Guard provided Spill Response Training.

**Cultural Resources Management.** Since our Bases are so geographically dispersed throughout Okinawa, we must coordinate with over 14 different towns, cities, villages, as well as OPG and DFAB, in conjunction with the identification and management of cultural resources on our facilities. Because of the substantial amount and historical and cultural significance of buried cultural assets on MCB Camp Butler, more than 60% of all construction projects require archaeological monitoring, test digs, and/or archaeological excavations. During the past two years, MCB Butler archaeologists, the only two DoD professionally trained archaeologists in the Far East, have performed 64 test digs and project monitoring events and assisted local authorities in the performance of five major archaeological excavations. The joint respect between our archeologists and local Japanese archeologists is not only something MCB Butler is very proud of, but it also enhances our mission effectiveness by allowing projects to proceed in a timely manner.

Funded through the DoD Legacy Program, the MCB Environmental Staff completed the restoration of Chibuga Springs Historic Site, one of two spring restoration projects completed by our branch. Villagers used these 400-year-old springs as a water source for religious and daily livelihood needs. The springs, however, fell into disrepair after World War II. Both the local municipality and the MCB Butler Environmental Staff provided technical direction for the restoration of the spring. The design was based on actual interviews with local villagers who remembered the original site. Since completion, the site has been a popular visiting area for local governmental officials, museum operators, local schools, and others wishing to pay respect to the site. This openness has generated a positive understanding from the local communities about MCB Butler's commitment for respecting the significance of our host nation's culture.



**Chibuga Spring Restoration Project.**

**Red Soil Erosion Control.** The impacts of red soil erosion from construction sites, agricultural areas, landslides, roads, helicopter landing zones, live-fire impact areas and other critically eroding lands continue to be one of Okinawa's most significant environmental issues. Through our Memorandum of Understanding with the US Forest Service, and our good working relationships with the local red soil management governmental entities, 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. Although the Marine Corps is only a minor part of the problem, we are involved in a majority of the political issues associated with red soil erosion control. For this reason, the Environmental Branch has developed a watershed management approach to this problem. However, watersheds do not end at the fence line. Therefore, we have been unrelenting in our effort to team with personnel from the Okinawa Prefecture Red Soil Institute, DFAB's Red Soil Countermeasures Section, local universities, research field stations, local municipalities and town officials to develop new and more effective methods for red soil erosion control and analytical methods for determining the impacts of those controls.



**Red soil runoff from agriculture and construction (Pacific Ocean).**

We have been very successful in incorporating new erosion control technologies to implement environmentally friendly solutions to erosion control. We are continuing with an aerial hydro-seeding program and have established vegetation on more than 13 hectares in our impact areas at a cost of \$670,000. This program was started as a demonstration project to show the Naha DFAB, OPG, and municipal governments in Okinawa that this was a viable solution for red soil erosion control for the areas where ground access is difficult due to remoteness or existence of unexploded ordnance.



**Before and after photos of the benefits of soil-nailing technology on Camp Hansen.**



Major contributors to red soil runoff from our installations include failed slopes and dirt roads that run throughout the Central Training Area and the JWTC. To combat these problems, we have field-proven several new techniques for slope stabilization to include multi-function filter fabrics, soil-nailing, and vegetative-cover plantings. All of these techniques emphasize a greener more cost-effective solution that involves use of vegetative cover and minimal to no concrete. We have also implemented low maintenance road designs that deviate completely from existing Japanese designs. The Japanese Government's Red Soil Countermeasures Section has completely revised their

corrective measures approach and has implemented our methods instead. They have also begun requesting our support for future project locations and designs. This is a success we are extremely proud of.

In order to ensure corrective actions are effective, we have partnered with Igei Village, Kin Town, Red Soil Institute, OPG Water Section, and OPG Countermeasure Section to implement a watershed-monitoring program at two watersheds in the Central Training Area. The Mitoku watershed is fairly undisturbed and is being used as baseline data. The Kan watershed is more disturbed due to military ranges and training sites in the area. We constructed the monitoring stations based on a U.S. Forest Service model. They are automated and take samples as the flow rate changes in the stream. The samples are then taken to the OPG water lab for analysis for suspended solids. OPG analyzed more than 250 water samples for us in the last two years. The data is being shared and will be used to develop a Universal Soil Loss Equation for Okinawa. Once developed, scientists throughout Okinawa will use this equation to evaluate red soil runoff in the future.



**U.S. Forest Service personnel assist the Environmental Branch with the newly constructed water monitoring stations in the Igei watershed area.**

**Rare and Endangered Species Protection.** The northern part of Okinawa contains unique, subtropical forests of which the Marine Corps controls a significant amount. The JWTC in northern Okinawa is the last such facility in DoD and comprises 19,356 acres of largely unbroken forest. Due to the largely undisturbed habitats of this installation, some 3,000 species, of which approximately 260 are rare, threatened or endangered, are found there. Working with local governments and technical experts is critical to understanding how to manage the land and environment entrusted to us. We closely coordinate with OPG officials concerned with the impacts of training on rare and endangered species resident in Yanbaru area of Okinawa, and work with Ryukyu and mainland university researchers to better understand habitats at JWTC. In 2004 we are funded the first-ever Okinawa Rail survey in JWTC. We are also cooperating with Japan's MOE and the University of the Ryukyus on research into the natural history and habitat needs of the rare Long-armed Beetle.

Poaching continues to be a problem in northern Okinawa. Many Okinawan plants and animals are found only in Yanbaru, home of the JWTC. Their rarity often equates to high market value in Japan and Europe, which in turn leads to poaching of rare orchids, amphibians and the Long-armed Beetle (for which fewer than 50 breeding trees are known to exist). Because we are committed to protecting these species, our entomologist is a member of a Yanbaru group dedicated to the public education and prevention of poaching.

**Invasive Species Control.** Protecting the natural environment of our installations also means ensuring that invasive species are controlled. We understand that problems associated with invasive species, such as Pine-Wilt disease and mongoose migration do not end at the fence line. We are aggressively working with many local governmental and scientific personnel to develop solutions and take action. The Marines are very proactive in cooperating with Okinawa Prefecture and DFAB in Pine-Wilt disease control. This includes locating, cutting and burning infected trees, and working with prefectural scientists on innovative control measures. Pine-wilt beetles entered Okinawa in the 1970s in a shipment of Kyushu lumber. Since then, they have attacked and severely degraded the Ryukyu Pine, designated as the prefectural tree of Okinawa. Dead trees are eyesores on an island dependent on tourism.



Mongoose penetration into Yanbaru is an equally serious problem. Mongoose movement into new areas has occurred much faster than expected and has become a significant environmental issue to the Okinawans over the past couple of years. Stomach-content analysis of trapped mongooses has shown that their diet includes the endangered Okinawa Rail and the Pryer's Woodpecker, both endangered species. Along with feral cats, mongooses have the potential to drive the Okinawa Rail into extinction. Working via the Environmental Subcommittee, we have cooperated with OPG, and the Ministry of Environment to implement control measures in the JWTC. These measures include intensive trapping of both mongooses and feral cats. To date, we have trapped more than 200 mongooses.

## **CONCLUSION/SUMMARY**

Anti-military groups on Okinawa continue to use environmental issues, accurately or not, as weapons against the U.S. military's operations and presence on Okinawa. MCB Butler has undertaken a huge obligation to protect the resources entrusted to us and to make sure local scientists, environmental activists and politicians are aware of our commitment to environmental protection. We correct misperceptions and misstatements of fact when discovered, are open with both supporters and critics, and reach out at several levels through numerous meetings, training sessions, and visits to schools, civic groups, and Japanese Government agencies. We invite local groups onto our bases to show off our successful programs, discuss solutions to as-yet unresolved problems, and equally important, show that we have nothing to hide. We work hard to make our neighbors partners in our work. By doing so, we have been very successful at ensuring that environmental problems, perceived or real, do not degrade or limit the Marine Corps' presence and operational capability in Okinawa.