Fiscal Year 2009 Secretary of Defense Environmental Awards Nomination

INDIVIDUAL NATURAL RESOURCE CONSERVATION

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PACIFIC MISSILE RANGE FACILITY, KAUAI HI

INTRODUCTION

Mission

The Pacific Missile Range Facility (PMRF) is the world's largest instrumented multi-environment Navy training range. Aircraft, surface vessels and submarines can simultaneously safely train on PMRF's underwater instrumented range. In addition, PMRF provides a missile and torpedo launch capability for Navy training as well as research, development, test and evaluation (RDT&E) programs including various programs of the Missile Defense Agency. Truly a unique national asset, PMRF's critical services support our readiness and national defense objectives.

▲ *Pacific Missile Range Facility*

Location and Acreage

Located within the Hawaiian archipelago on the Island of Kauai, the western-most of the main Hawaiian Islands, PMRF includes a land base and extends over an expanse of ocean with underwater instrumentation at varying water depths from 20 to 2,500 fathoms covering 1,100 square miles. PMRF's land base occupies a narrow coastal main base on the southwestern side of Kauai known as "Barking Sands" and five remote sites totaling 2,454 acres (993.5 hectares). The remote sites include a remnant volcanic crater rim (Kaula Islet), a harbor location (Port Allen), a steep coastal cliff (Mahaka Ridge), and forested sites at elevations greater than 3,700 ft (Kokee facilities.) From sea level to 3,800 ft. elevation, these locations are as varied in their climate and physical geography as in flora and fauna.

PMRF's "Barking Sands" gains its name from the special quality of the sands in the area that emit a "woofing" or barking noise when agitated or stepped on. Barking Sands is located on a low-lying coastal terrace, adjacent to and just south of the popular Polihale Beach State Park. The dominant feature of Barking Sands is a beach barrier dune with approximately 8 miles of coastline. This geologic feature separated the wetlands of the Mana Plain from the Pacific Ocean. Today, this strip of barrier dune varies in elevation from the historic Nohili Dunes at the north end (100'), to a nominal 15' elevation elsewhere. The highly endangered Hawaiian Monk Seal and threatened Green Turtle frequently haul out, or bask, on Barking Sands.

Six vegetation types are found within this barrier dune formation: Kiawe-Koa Haole Scrub (roughly 400 acres), Aalii-Nama Scrub (approx. 100 acres - among the largest remaining stands of this vegetation in the main Hawaiian Islands), and 100 acres include native Pohinahina-Naupaka dune vegetation, strand vegetation, drainage-way/wetlands vegetation along two drainage ditches, and ruderal vegetation along roadways and areas infrequently maintained. The remainder of the facility is either beach/dune sand, mowed, landscaped, or improved. Critical habitat has been designated along parts of Barking Sands for the endangered dune grass *Panicum niihauense*. Visiting seabirds protected by the Migratory Bird Treaty Act (MBTA) including the Laysan Albatross and two colonies of seasonal Wedge-Tailed Shearwaters, and four species of endangered and endemic water birds from the adjacent Mana Plain wetlands frequent the ditches which cross Barking Sands: the Hawaiian Coot, Hawaiian Common Moorhen, Hawaiian Stilt, and Hawaiian Duck.

Makaha Ridge is located approximately 7 miles north of Barking Sands, along the popular Na Pali coastline at an elevation of 1,700 ft. and is characterized by high volcanic uplands segmented by deeply incised V-cut valleys and bounded by exceptionally steep coastal cliffs. The dwarf iliau, *Wilkesia hobdyi* (a federally and State-listed endangered plant) is found on the rocky outcrops of the cliff overlooking Makaha Valley to the north. The dominant vegetation types are a mix of pine plantings/mixed scrub, and ruderal vegetation in those areas without improvements, landscaping, or routine mowing. The area has long been home for a colony of the endangered Hawaiian Goose, the State bird and locally known as the Nene.

The Kokee Sites are located in the Puu Ka Pele Dissected Upland, a highly eroded volcanic terrain characterized by numerous major valleys and established major drainage patterns at approximately 3,700+ elevations. These environs are characterized by a mixture of native and various invasive trees and shrubs. Frequently, dense thickets of blackberry and scattered mats of kikuyu grass are mixed with stands of native koa and ohia trees. Both native and introduced birds and insects are found throughout Kokee's surrounding habitats. Much of the surrounding land is designated as a State park and a tourist destination.

The remaining small remote sites includes Kamokala Magazines, located in the foothills approximately 2 miles inland from Barking Sands which share two of Barking Sands' vegetation types: koa haole scrub/forest and ruderal vegetation. The Port Allen facility is limited to a leased space on one side of a State-owned pier in a harbor at the mouth of the Hanapepe River.

Kaula Islet is a remnant of a crescent-shaped volcanic crater rim of approximately 108 acres. The Navy uses approximately 10 acres on the southern tip of Kaula for inert bombing practice. It is a globally important seabird colony with a documented 18 breeding species.

With the exception of Kaula Islet, all of these properties are included in the 24/7 security patrols assigned to the various sites. Public access is limited to the PMRF Recreation Pass program which allows fishing along approximately 4,000 ft. of beach adjacent to the PMRF active runway during weekends, holidays, and when the runway is closed. South of this area, from Kini Kini Ditch Outfall to the All Hands Club, fishing, surfing, swimming and general beach use are allowed 7 days/week. This broad-use area is approximately 1.5 miles in length. Protection of threatened and endangered species within this public use area is provided by Security staff. In the event a Hawaiian Monk Seal is hauled out or a Green Turtle is basking, the area is marked off with a security perimeter to insure that the animal is not disturbed.

Civilian and Military Population

PMRF manning includes 65 military members, 127 civilian employees, and 512 operations and maintenance contractor personnel.

▲Endangered Hawaiian Monk Seals napping on beach fronting the Pacific Missile Range Facility.

BACKGROUND

John R. Burger, Environmental Coordinator, NAVFAC HI Environmental Engineer & Scientist, is detailed to The Pacific Missile Range Facility, Barking Sands, Kekaha, Kauai, Hawaii.

Position Description

John Burger maintains on-site responsibility for the oversight and implementation of both the PMRF Integrated Natural Resource Management Plan (INRMP) and Integrated Cultural Resources Management Plan (ICRMP) , supports the preparation and finalization of numerous and varied National Environmental Policy Act (NEPA) documents including serving as the PMRF Tiger Team representative for the completion of the Hawaiian Range Complex (HRC)/PMRF Final Environmental Impact Statement (EIS)/Overseas Environmental Impact Statement (OEIS), serves as the resident resource for issues pertaining to various environmental compliance requirements and technical questions related to hazardous materials/waste, universal waste, and used oil (including development of a conservation/beneficial reuse option for used oil), serves as Department Head for PMRF Environmental Office on Command Staff, and interfaces with all levels of environmental professionals both within the Navy from Navy Region Hawaii to CNO N45, and with outside agencies and community groups including NOAA/NMFS, USFWS, APHIS/WS, Hawaii DOH and DLNR, and Kauai Invasive Species Committee (KISC) on a variety of natural resources management issues and programs .

AWARDS AND SERVICES

- Letter of Appreciation: DASN/I&E (D. R. Schregardus/Environment), 3 Jul 09 "for invaluable contributions to the successful completion of the HRC EIS."
- CNO FY 08 Environmental Award as Member of CNRH Cultural Resources Management Team, PMRF, 28 May 09
- CNO FY08 Cultural Resources Award/Small Installation, PMRF, 28 May 09
- Letter of Appreciation: CO/PMRF for both Environmental Award achievements above, 21 Jul 09.
- Citation from RADM T.G.Alexander, CNRH, as Recipient of CNRH Energy Award of the Quarter, 3Q/Individual/2008, for "providing an in-depth analysis and feedback for project design that will recycle used oil to generate hot water."
- Annual volunteer participant, as PMRF site coordinator (Nohili Ditch) and Site Leader (Kapaa Lookout) for the Humpback Whale National Marine Sanctuary "Ocean Count" on Kauai.
- Volunteer Member, Pacific Islands Regional Marine Mammal Response Network (NOAA/NMFS)
- Outreach to local environmental Non-Governmental Organizations (NGO) to develop a Natural/Cultural biome display outside PMRF Main Gate to depict the historical ecosystems of the prehistoric Mana Plain environs through a mixture of funded and volunteer efforts.
- Leader and coordination of on-base volunteer beach cleanups, including support of the International Coastal Cleanup annual event, continuing the previous support to the National Marine Debris Monitoring Program.

▲ *Laysan Albatross surrogate adult parent and PMRF adopted chick at Kilauea Point National Wildlife Refuge on northeast Kauai*

ACCOMPLISHMENTS

Overall Natural Resources Conservation Management

At a facility which includes an active runway and provides island terrestrial habitat for popular migratory seabirds, the active management of a Bird Aircraft Strike Hazard (BASH) program is critical. John's 2004/2005 Laysan Albatross (LA) surrogate parenting program not only addressed the BASH issue but quieted a concern with the public which was very much interested in the protection of these majestic birds. The LA surrogate parenting program prevents the fledging of LA chicks from Barking Sands. An outstanding example of cooperative conservation, the LA eggs are relocated from PMRF by the US Dept. of Agriculture's Animal and Plant Health Inspection Service (APHIS)/Wildlife Services and U.S. Fish and Wildlife Service to LA nests at the Kilauea Point National Wildlife Refuge (KPNWR), thereby enhancing colony development on the opposite side of the Island of Kauai. Since LA fledging fidelity is very strong, this greatly reduces the potential for a KPNWR bird to seek to nest at PMRF when becoming an adult, reducing the BASH potential. Each year refinements are made to improve the hatching success of PMRF eggs and further reduce the number of return flights by captured adults, who are also relocated to KPNWR. Last season adults at the extreme north end of Barking Sands, far from the active runway, were left to incubate eggs naturally. All other eggs were removed immediately and placed in incubators as was the prior practice. During mid-December, all eggs that could be placed at KPNWR were delivered, including both natural and artificially-incubated eggs. Data analysis confirmed two significant findings: (1) by not capturing nesting pairs upon discovery, but instead allowing them to complete their re-acquaintance/mating/nest building/egg laying process, return rates for nesting birds (flying back from KPNWR to mate) were approximately ½ of those recorded in previous years. This represents a reduction in BASH potential that recognizes the natural biology of the species, and (2) hatching success was 100% for the natural incubation, and 70% for the incubated eggs. The program has been embraced by the public as a positive example of three federal agencies working in concert for the good of this majestic seabird.

PMRF's main base at Barking Sands includes a popular Morale, Welfare and Recreation (MWR) beach cottage area. Mixed within the beach cottage area is a healthy and growing colony of the migratory wedge-tailed shearwaters, locally known as "wedgies." These seabirds, protected by the Migratory Bird Treaty Act, nest in between rocks or sandy burrows. Tensions were arising between cabin users and the wedgies as the colony size increased. John initiated a program, involving MWR and base security staff, as well as NAVFAC PAC and State of Hawaii biologists to maintain and enhance the habitat and encourage appreciation for these birds. John has guided grounds maintenance and new cottage construction so that nesting under the cottages is less desired burrowing habitat. He also engaged and involved the local Save Our Shearwaters (SOS) group which focuses on the protection of the wedgies as well as the night-flying sea birds, Newell's Shearwater, Hawaiian Petrel, and Band-rumped Storm Petrel, found almost exclusively on Kauai. John initiated the placement of an SOS Aid/Rescue Station for these night-flying sea birds when downed by wires, buildings, or lights. In addition he developed a program with SOS so that cottage colony birds could be used each season for the training of banding volunteers. SOS volunteers perfect their banding technique under expert supervision at the PMRF wedgies colony, recognized by the Kauai Endangered Seabird Recovery Project as the showcase colony on Kauai.

Mission Enhancement

During the development of the HRC/PMRF EIS/OEIS, it became evident at public hearings and in communications with cooperating Federal and State agencies that there was a general lack of awareness of the natural conservation practices in place at PMRF, a beach-front military facility with restricted public access and an abundance of natural resources. John took the initiative to educate these groups through presentations, responding to questions, and sharing information, as to the stellar stewardship that PMRF provided to these resources. Through his own initiative, in collaboration with PMRF public affairs staff, PMRF's reputation as a steward of the environment has been greatly enhanced within the local community and agencies.

Fish and Wildlife

Given PMRF's beachfront location and restricted public access, the threatened Green Turtle and highly endangered Hawaiian Monk Seal frequent the base. John has established a close and collegial working relationship with Wildlife Services' Field Service Technicians who in the past focused only on the BASH program and predator control. With John's infectious enthusiasm for the Green Turtles and Hawaiian Monk Seals, these technicians now, during their BASH patrols along the runway and coastal fringe, also record observations of haul outs and basking of these marine species. Sightings are logged by the PMRF Environmental Office to establish data regarding the presence of Hawaiian Monk Seals (HMS) and Green Turtles on Barking Sands. HMS information is routinely shared with the federal and state agency representatives on Kauai. This practice has created trust and transparency as well as a baseline indicating that the on-going national defense training and RDT&E activities at Barking Sands cause no harm to these species, but to the contrary provide areas where disturbing human interaction is prevented. It also contributes to documentation on the species maintained by other agencies.

▲*Prop-struck adult, female Green turtle rescued at PMRF by PMRF and State staff. The turtle was air-lifted to Oahu, treated by NOAA veterinarians, released on Oahu, and has returned twice to PMRF.*

One particular event captured local and regional media attention in May of 2009, when a seriously injured female green sea turtle, estimated to be over 50 years old with a weight approaching 300 lbs. was discovered by a Wildlife Services' Field Technician during a routine BASH patrol. Routine tour, dive and recreational fishing boats traverse the ocean in front of Barking Sands on a daily basis on their way to the popular Na Pali coast. The turtle had been apparently struck by a propeller near the rear of her carapace,

nearly severing her spinal cord. She was rescued by PMRF personnel and released to the DLNR for crating and air-shipment to the island of Oahu, where her injuries were treated by NOAA experts. They restored her carapace with stainless steel wire, silicon, epoxy and fiberglass. Released the following day off Oahu, officially inscribed "UAI" but known to PMRF as "Ding," she has twice been observed back at PMRF since her surgery.

Other Natural Resources

The Kauai Endangered Seabird Recovery Project (KESRP) recently identified a possible solution to the problem of artificial light interference with the navigation systems of ground dwelling/night-flying migratory sea birds: "green lights" produced by the Philips Lighting company in Europe. Tested and evaluated on North Sea drilling/production rigs, KESRP inquired for interest , John engaged, and PMRF is currently working with both KESRP and Philips to develop a pilot program to retrofit critical Barking Sands lighting to provide the necessary lighting for force protection and safety, while testing the green lights for efficacy in preventing fallout. The remote location and specific areas where artificial lighting is required at Barking Sands, and where fallout of Newell's shearwaters can be correlated with nearby light sources, provides an opportunity to test these lights in a more controlled situation.

Invasive Species Control

In another example of cooperative conservation, when John was advised that funding was not available for the control of the invasive (and painful if stepped on) Long Thorn Kiawe (LTK), he leveraged year-end funding for a reduced eradication project. Working with the Kauai Invasive Species Control (KISC) team, he suggested a new approach using a hydro-mulcher affixed to the end of a large excavator to shred the LTK to stump-height. KISC could then saw-cut and treat the stumps to kill the roots. The excavator would negotiate around stands of native vegetation and selectively destroy the LTK while not disturbing any buried cultural resources that might be present in the underlying sand. A small dozer was used to windrow the cuttings, creating open area for seeding with native vegetation and natural recovery. The approach included coordination with KISC for routine return on a regular basis to spray seedbed re-growth at an early stage when herbicide application would be effective. Not only has this approach been far more cost effective than the former KISC manual-cutting method (1 week with an excavator equates to 1 year of KISC team using chain saws); re-growth has been prevented. This approach continues through the present with only a fraction of LTK original growth remaining to be destroyed, and re-growth of prior clearings prevented. KISC has used PMRF/Barking Sands as a success story in the control of invasive species. John has been asked to advise other land-holding organizations/agencies including the U.S. Army National Guard on this process.

▲*Long Thorn Kiawe (LTK) an invasive species problem on West Kauai; undergoing "hydromulcher"/excavator destruction Existing native plants left undisturbed; barren sandy areas re-seeded with native species.*

Community Relations

The waters surrounding the Hawaiian Islands are famous for being able to view the surface displays by Humpback whales associated with their annual calving and mating rituals. The waters off Barking Sands are favored by local tour boat companies as a great place to observe these whales. In February 2009 when a deceased calf floating south of Barking Sands was observed by a tour boat, John was immediately engaged. Coordinating with the Command, Security, and the PAO internally, and NOAA and DLNR externally, John was the lead in establishing a necropsy plan with the regional NOAA Stranding Coordinator. During the course of two days, John worked closely with the NOAA/PIRO Stranding Coordinator, Hawaii Pacific University Stranding Team, NOAA contract veterinarians, Kauai Stranding Volunteers (of which John is a member), and a Native Hawaiian cultural practitioner to provide logistic, security and cultural support to the necropsy team. A total of 41 individuals from the Commanding Officer to heavy equipment operators supported this effort - from the initial County of Kauai Lifeguards and PMRF boat crews who recovered the whale to the final blessing over the buried remains. It was another example of cooperative

conservation that not only was the right thing to do but contributed immeasurably to credibility of the Navy's environmental stewardship. These types of cooperative efforts are essential to establishing critical inter-agency confidence and effective communications in the event of a potential future unusual stranding event that might be attributed to Navy activities within the Hawaii Range Complex.

▲ *Native Hawaiian Cultural Practitioner conducting pre-necropsy blessing ceremony for deceased Humpback whale calf; brought to/PMRF/Barking Sands in support of NOAA necropsy.*

In another initiative, John has engaged local organizations to create living displays of historic native vegetation at PMRF, an area known to native Hawaiians as Mana. Integrating natural and cultural resources and using the concepts of collaborative conservation, John worked initially with the National Tropical Botanical Gardens and the Kauai Westside Watershed Council to develop biome displays that characterized the principal prehistoric ecosystems that predated western arrival to Kauai: dry forest, boulder/foothills, beach and wetlands. These living displays have been created outside the PMRF Main Gate on the grounds surrounding the Pass and ID Building. John involved a local Hawaiian Charter School, Le Kula Ni'ihau O Kekaha, to have the students research each plant's use and significance to Native Hawaiian practices to include in interpretive signage. The location outside the gate allows the sites to be used as a community and teaching resource. The students of the Charter School intend to share their native knowledge with other students here on Kauai.

As part of Earth Day, 2008, John and PMRF Public Affairs staff created a walking experience through established trails within the base's beach dunes and beach area with local high school students. It included a formal native Hawaiian chant and greeting protocol and hula before the area was entered, coupled with discussions of both natural and cultural resource awareness and appreciation.

For the past several years, and most recently with the September 19, 2009 "International Coastal Cleanup" day, John organized a group of PMRF volunteers to conduct beach cleanup activities.

John regularly supports the Command and Public Affairs Office as the resident PMRF subject matter expert on natural resources for base tours. Visitors have included Congressional delegations, officials from DoD, the Missile Defense Agency, as well as State and county officials, local schools and a myriad of non-governmental organizations.

▲ PMRF volunteers for the Sep 09 International Coastal Cleanup Day display their haul. The team collected over 175lbs. of debris on 3,500 ft. of isolated beachfront.

CONCLUSION

The Pacific Missile Range Facility enjoys a reputation within the community as a trusted steward of the many natural and cultural resources within its boundaries. This reputation is directly attributable to John Burger's efforts. John has developed unprecedented communication channels and exceptionally positive working relationships with outside peers and natural resource organizations. By raising the level of community awareness of and confidence in PMRF's commitment to protection of natural resources, PMRF is in a far better position to offset the inaccurate image that is characterized by those opposed to a military presence on Kauai. In its place, the community believes in the tremendous value of this particular military range in sustaining sensitive ecological habitat, flora and fauna, while restricting human encroachment and providing a nationally significant military training and testing asset.