

**FY07 CHIEF OF NAVAL OPERATIONS ENVIRONMENTAL AWARD
NATURAL RESOURCES CONSERVATION CATEGORY
INDIVIDUAL EXCELLENCE**

U. S. NAVY SUPPORT FACILITY, DIEGO GARCIA

NARRATIVE

BACKGROUND

Nominee: Antenor Nestor A. Guzman
Natural Resources Specialist, GS-04077-11
U. S. Navy Support Facility Diego Garcia

Diego Garcia's Environmental Division is comprised of a team of a GS-12 supervisor, two GS-11 environmental compliance specialists and a natural resource specialist, Mr. Antenor Nestor Guzman. This team is the focal point of all environmental matters on Diego Garcia. Mr. Guzman, a Biologist officially designated as the Natural Resource Program Manager, is the team's sole expert on natural resources, cultural resources and other biology-related matters on the island. The Division is under the NAVFAC Far East, Public Works Department Diego Garcia, and is in direct support of US Navy Support Facility (NAVSUPPFAC) Diego Garcia.

POSITION DESCRIPTION

NAVSUPPFAC Diego Garcia is located on a small atoll (Diego Garcia) of diverse marine and terrestrial wildlife all declared protected by the host country except for rats and feral cats. The atoll, located 7 degrees south of the equator in the middle of Indian Ocean, is home to two species of endangered sea turtles (green and hawksbill), 77 species of sea birds, vagrants and migratory birds, over two hundred species of plants, marine natural resources that are of global significance, 80 miles of scenic shoreline, and relatively intact offshore coral reef ecosystems. Diego Garcia lies at the southernmost tip of a long chain of coral reefs, atolls and islands comprising the Laccadives, Maldives and the Chagos Archipelago. It is the largest atoll of the Chagos Archipelago occupying 6,270 acres of land and a 30,656-acre lagoon. The highest on-island UK official is the British Representative (Britrep) who exercises full governmental and civilian judicial authority in Diego Garcia, the archipelago, and the Fish Reef Protection Zone within the archipelago. NAVSUPPFACDG, with an average total population of 3,000 (unaccompanied military/civilian and no outside community), occupies and actively operates on 3,700 acres of land and 17,920 acres of lagoon. In a remote and unique atoll with strong environmental advocacy of host country, Mr. Guzman must lead the protection and conservation efforts in order to effectively implement the Diego Garcia Integrated Natural Resources Management program while supporting quality of life with "no net loss" in Base operations.

AWARDS AND SERVICES

CNO Award-Winning Natural Resources Management Program, 2001 and 2005

Mr. Guzman pioneered and formally established the US Navy's Natural Resources Management Program in Diego Garcia in 1995. His 11 years of hard work, dedication and enthusiasm have since significantly contributed to a stronger reputation of the NAVSUPPFACDG as an

exemplary environmental steward in the region. His remarkable efforts directly contributed to NAVSUPPFAC Diego Garcia receiving the CNO Natural Resources Conservation Award for 2001 and 2005.

A Consistent Performance Awardee

Mr. Guzman's numerous and most recent individual commendations are the cumulative results of his sustained career of excellence in the service, reflecting positively on the US Navy. Sustained superior performer, consistently recognized for his outstanding efforts, awarded Civilian Employee of the Year (2005) and Civilian of the Quarter for July-September 2007. As the island's resident expert on Natural Resources Protection and Conservation programs, Mr. Guzman has gained an incredible record of accomplishments in a job that requires him to ensure that Navy activities in Diego Garcia, while meeting mission requirements, must comply with applicable natural resources protection laws, DOD policies and host country regulations.

ACCOMPLISHMENTS

INRMP Implementation

Mr. Guzman has been instrumental in both the initial development of the Diego Garcia Natural Resources Management Plan (NRMP) in 1999 and its major update into an Integrated NRMP in 2005 that incorporates the first ever Marine Biological Survey on Diego Garcia. His untiring devotion and technical expertise enabled the initial NRMP-recommended management actions to be completely and successfully exceeded on time and within budget, and resulted in an improved and well-established program. Aside from his major responsibilities associated with the implementation of the INRMP, Mr. Guzman does equally important duties and responsibilities as the Cultural/Archaeological Resources Program Manager, Performance Assessment Representative of the Contracting Officer for the pest control, refuse and recycling, and environmental annexes on Navy's largest and most comprehensive Base Operating Support (BOS) Contract. Additionally, he supports NAVSUPPFAC Diego Garcia as the Qualified Recycling Program Coordinator, and serves as a key member of the Diego Garcia Environmental Protection Council, technical adviser to the USAF-Navy Bird Aircraft Strike Hazard Team, and a regular contributor to various newsletters, including the Friends of Chagos.

Mr. Guzman's approach to Integrated Natural Resources Management Program (INRMP) implementation shows remarkable ability to create successful partnerships among Diego Garcia residents. Benefits include cost savings, information and education and community-capacity building through volunteer efforts. Perhaps, his most enduring contributions are in the areas of controlling spread of invasive plant species, rat control, feral cat removal, sea turtle conservation and study, bi-annual island-wide voluntary beach cleanup coordination and sponsoring MWR events to promote conservation programs, specifically:

Implementing Educational Program

- Strengthened environmental awareness and education campaign by producing and posting educational brochures and posters on endangered and protected species and pest/invasive species alert notices (i.e., prevention of accidental introduction of brown tree snake) using all available means of communications on the island, e.g., newsletters, intranet, local radio and TV stations.
- Conducts twice-a-month Island Indoctrination to promote environmental and natural resource awareness to newly deployed military/civilian personnel, and awareness training on

Diego Garcia Final Governing Standards to the base operating contractors' key personnel during the start of the new BOS contract in 2006.

- Implemented the botanical educational awareness program by indicating the scientific and common names on plants situated in areas frequented by visiting and island personnel.
- Integrated the natural resource program into recreational activities by promoting/coordinating regular upkeep of 18-mile jogging/walking/biking nature trail and R&R site at the eastern nature reserve by military and civilian volunteers. Use of the nature trail and R&R site during recreational activities has generated island community interest in nature and instilled in them the needs to protect the environment.
- Promotes environmental awareness by coordinating Earth Day (April) and Sea Turtle month (November) activities such as 5km fun run/walk, and photo, slogan, trivia and T-shirt design contests.
- Coordinates and implements the semi-annual brown tree snake awareness training for personnel involved in receiving and staging incoming cargo from off-island location such as Singapore and Guam.

Control of Alien and Invasive Plant and Animal Species

- Implemented an annual, sustainable, low-budget approach to control spread of invasive ironwood (*Casuarina equisetifolia*) and sensitive plant species (*Mimosa invisa* and *Mimosa pudica*) including shoreline flora protection from the parasitic "vine dodder" (*Cassytha filiformis*). Due to the delicate groundwater aquifers restricting the use of herbicide, Mr. Guzman promoted regular flame weeding, hand-pulling and incineration methodology at a rate of 370,000 sq. ft. of cleared area per year at a cost of \$0.06 per square foot. Total eradication of *Mimosa invisa* was completed in 2006.
- Implemented an effective low-cost, permanent grid-type rodent control methodology in housing areas and work spaces that are still presently in use.
- Continuously monitors the effect of rhinoceros beetles to coconut trees. These beetles caused detrimental damage to coconut trees on Diego Garcia in the 1990's. A biological agent, baculovirus was introduced to this species in the mid 1990's and has since been successful in controlling rhinoceros beetles up to present time.
- His recommendation to utilize the BOS contract Pest Control Annex to perform cat control vice ongoing USDA cat eradication methodology realized a reduced operating cost of 60% and without adverse impact to the overall objective of the program. As the initiative progressed over the years, red footed booby population doubled and the colony of seabirds expanded tremendously on the eastern arm of the atoll. Low flying white breasted moorhens and the nocturnal Audubon's gained relative abundance in 2005 from uncommon status in 1996. Ground-nesting red-tail tropicbirds and wedge-tailed shearwaters gained relative foothold and continued to breed year round. At present, despite few remaining feral cats in the wild, the impact of feral cat population to the bird population has become insignificant.
- Developed a standard quarantine procedure during importation of aggregates to prevent accidental introduction of unwanted/invasive plant and animal species. Diego Garcia is completely dependent on imported aggregates and fill materials for construction and landfill cover.

- Vigilantly supervised the successful sanitation of two visiting ships infested with black and brown widow spiders moored in the lagoon. Mr. Guzman’s focused attention to detail was crucial to the successful eradication efforts preventing introduction of these venomous species onto the atoll, thus maintaining a venomous-spider-free island.

Propagation of Native Plant Species

- Implemented the continuous propagation of native plants for landscaping and as replacement plants for ironwoods (an invasive and non-native tree) and other unwanted trees by operating a local nursery through the BOS contract. At present, the nursery maintains sufficient number of seedlings to support various onsite projects requiring landscaping and re-vegetation.

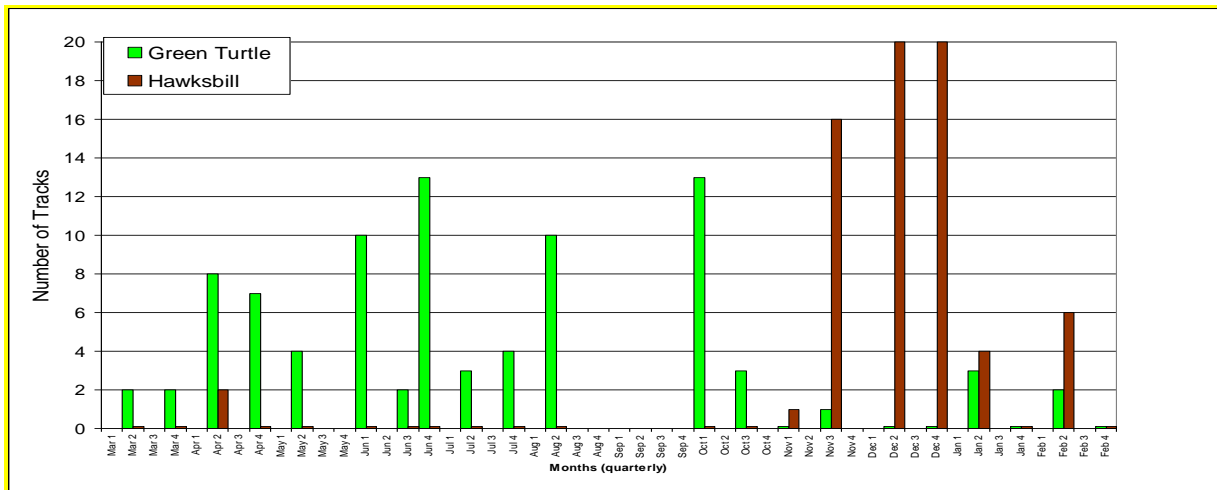
Reducing Bird Aircraft Strike Hazard (BASH)

- Worked closely with the Navy and Air force BASH teams as natural resource technical adviser; justified and obtained prior and extended approval from U.K. to shoot target birds (cattle egret) and increase area of kill zone, respectively, and to remove the bird rookery located 800 meters away from the airfield that successfully reduced the bird population on the active airfield to a manageable level. Ultimately, these joint efforts tremendously decreased the bird strike incidents to only 2 in 2006 and 2 in 2007 (versus 12 in 2004 and 2005 and 105 in 2001-2003).

Protecting Wildlife and Endangered Sea Turtles

- Mr. Guzman’s zeal for biology and wildlife species has been an advantage to the island. He promoted the relocation of threatened coconut crabs

- For ten years now, Mr. Guzman has coordinated the semi annual voluntary beach cleanup participated by nearly 1,200 military and civilian volunteers annually to clean 12 miles of seaside beach in preparation for the sea turtle peak nesting season, resulting in annual average collection rate of at least 28 truckloads of non-biodegradable garbage brought in by ocean tides each year. Studies show that the removal of these non-biodegradable items results in higher percentage of egg-hatched survivability.



Seasonality of Turtle Nesting at Diego Garcia from March 2006 to February 2007

- In collaboration with UK-based International Sea Turtle Research, Mr. Guzman led on-island volunteers in conducting regular surveys of two index sites at Diego Garcia. This study is

the first ever conducted in the Chagos Archipelago and the data compiled is being used to determine nesting seasonality, beach accessibility to turtles (if nesting substrate is accessible to turtles year round), obtain genetic samples of nesting population thru DNA profiling, egg clutch survival rate and systematic cataloging of photos of beach changes. Data gathered are submitted to Flora and Fauna International. His contributions to this project are highly commended and acknowledged in the international arena for global protection of endangered sea turtles posted by Ms. Mortimer in the Indian Ocean Southeast Asian Marine Turtle Memorandum of Understanding in Sep 2007. Report can be viewed at <http://www.ioseaturtles.org>.

EMS and EQA Implementation

- Conducted Environmental Quality Assessment and Environmental Baseline Study on USAF deployed forces occupied/operation areas in 2006 to evaluate the environmental health at Camp Thunder Cove and document the overall environmental compliance status of the USAF operational activities in Diego Garcia. The report included management recommendations for improved environmental compliance during future deployments.
- Collaborated with NAVFAC Pacific in developing the program-specific Environmental Management System plan for the Natural Resources program.

NEPA-like Environmental Documentation

- In 2006 and 2007, conducted environmental assessments of 104 various-type projects requiring NEPA-like environmental documentation to ensure that natural and cultural resources were not adversely impacted and mitigating measures are accomplished. One example is the AMMO Pad construction project that required removal of over 1,000 coconut trees in a 1.5 acre forested area and relocation of 265 threatened coconut crabs (*Birgus latro*) displaced by this project.
- With no expert marine biologist on site, Mr. Guzman initiated and conducted a joint US Navy and USAF medical personnel effort to gather data and document two unusual events in DG lagoon waters in 2006; fish kill in March 2006 and an algal bloom in June 2006. The cause of the fish die-offs was unclear. The algal bloom is believed to have been caused by high levels of mineral and organic substances in the water, however, concentration did not reach a level that was detrimental to marine animals.

- Presently coordinating the site survey for dredged material characterization and joint US-UK marine biological surveys in support of future construction projects at the deep draft wharf.

Protecting Shoreline

- Closely supervised the following projects to restore in-place soil damaged by the natural shifting of shoreline sand and strong storm-driven seaside waves.

(1) Construction/repair of interim shore defenses from erosion by reutilizing 280 tons of construction and demolition concrete debris and 80 tons of excavated fill materials to prevent further attrition of a 2-mile stretch of shoreline and to protect the majority of the northwestern portion of Diego Garcia where US military assets are situated. This effort also eliminated importation of materials and the relative risks of introducing invasive plant/animal species; realizing a total cost avoidance of nearly \$327,000 on imported fill materials and boulders.

(2) Re-vegetation of 320-yards of ocean-current-disturbed shoreline with scaevola and native trees to restore the continuous vegetated rim of at least 10-15 feet wide.

(3) Manual clearing of vegetation infested with parasitic plant (false dodder plant or *Cassytha filiformis*) along 230,000 sq ft of shoreline to prevent further damage to the plant corridor that protects the area from erosion. The use of herbicides in DG is restricted due to potential negative impacts on delicate groundwater sources and marine lives.

(4) On-site survey and technical evaluation of the atoll shoreline to determine causes of serious soil erosion problems that are impacting mission critical facilities and associated infrastructures, evaluate the level of threat to the shoreline and address the urgency of remedial actions. The study included identification and design of appropriate infrastructure protection concepts, an Erosion Control Management Plan and a five-year remedial phasing plan.

COMMUNITY SERVICE WORK

The remote location of Diego Garcia and the absence of outside community limit Mr. Guzman's capability to provide community service to island personnel only. His active community involvement is evident in the following:

- Active participation in private and recreational/athletic organization, e.g. former president and adviser of the 82 strong Overseas Civilian Employees Association, past president and adviser of DG Golf Association.
- Active participation in the Self-Help construction and painting of the of the sea turtle view decks at Turtle Cove, a restricted foraging area of sea turtles.
- Promoted nature awareness as a regular member of the DG Biking Club; regularly using the nature trail for off-road biking and private organization fitness programs.
- Provided technical recommendations to island residents in the propagation of ornamental and plants and locally-grown vegetables within their designated residential areas in support to Quality of Life and landscaping programs, e.g., proper application of organic vice synthetic fertilizers, types of plant species, etc.
- Member of the UK-based *Friends of Chagos* (recently renamed *Chagos Conservation Trust*), a registered organization whose objectives are to promote conservation, scientific and historical research and to advance education concerning the Chagos Archipelago.