

**Herpetological Surveys on
Diego Garcia**

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Appendix J

Introduction

The Chagos archipelago has a depauperate herpetological assemblage due to its isolation. Few surveys have been performed on Diego Garcia again due to the isolation but also due to restricted access for military reasons. While there are few, if any, native reptiles and amphibians, Diego Garcia receives cargo from all over the Middle East, Asia and the Pacific Rim. The risk for exotic introductions is high.

Methods

Reptiles were sampled by timed visual transects (during the day and night) and adhesive glue board trapping (sticky traps). Both terrestrial and arboreal habitats were sampled. Sampling areas include the base housing area, Beach House 292 area, and Minni Minni Conservation area. Select specimens were preserved with formalin and deposited in the Bishop Museum, Hawaii.

Results

Three lizards and one toad were documented. These include: *Hemidactylus frenatus* (House gecko), *Lepidodactylus lugubrus* (Mourning gecko), the agamid, *Calotes versicolor* (Garden lizard), and *Bufo marinus* (Marine toad). Specimens of all three lizard species were deposited in the Bishop Museum, Hawaii.

H. frenatus was not found in forest habitat. It was found only around or on buildings. This is not unusual for this species, which is often commensal with human habitation. *L. lugubrus* was found in and around buildings and also in forest habitat, island wide. It was not common in forest being much more abundant in and around human habitation.

Surveys for *C. versicolor* documented a small but expanding population in the Beach House 292 area. Surveys, in July 2003, in this and the surrounding areas showed this species to be in the immediate vicinity of the beach house and no individuals were sighted across the road. Surveys in the same areas in March 2004 documented this species much farther south and now across the road around the athletic fields. It has not yet been documented north of this area (was not seen in the vicinity of the Brit Club).

Discussion and Invasive Species Issues

The two gecko species were abundant in the inhabited areas of Diego Garcia. Both gecko species have been previously documented and have presumably been there for a long time (Barnett and Emms, 1997) and might indeed be native species.

The Garden lizard (*Calotes versicolor*) is a recent introduction. First documented in 2001 (Guzman pers. comm.). It will presumably spread island wide in the future. It is difficult to predict the impacts of an exotic lizard. The Chagos group does not have great reptile diversity so there are no other diurnal lizard species to compete with or impact. The presence of one alien species can make it easier for another to become established and

that, second, species can have severe effects on the habitat. An example would be the presence of *Anolis* lizards on Guam that have aided the establishment of the Brown Treesnake (*Boiga irregularis*) by being excellent prey for juvenile snakes.

Within the last 15 years there have been a number of snakes captured at the ports of entry. These include: a viper (possibly an *Echis* species) from the Middle East, a Reticulated Python (*Python reticulatus*), and a probable Wolf snake (*Lycodon* species). There was also a probable Brown Treesnake sighting but the specimen was not collected. Presently, environmental staff conducts bi-yearly training and education for port workers on the capture and identification of exotic species.

Recommendations

Continue documenting the spread of the agamid lizard *C. versicolor*.

Exotic species education and training for appropriate Navy personnel needs to be continued and expanded (more education materials, e.g. posters, videos, brochures, etc).

Proper training for snake capture needs to be given to port personnel. One highly venomous snake (possible *Echis* species) has been killed at the airport and fortunately no one was hurt. Due to planes and cargo coming in from Southeast Asia and the Middle East there is the possibility for transfer of any number of viper (Viperidae) or cobra (Elapidae) family species. Indeed, the viper that was killed previously was on a plane from Oman (N. Guzman pers. comm.).

Due to the isolation of Diego Garcia it is doubtful that the correct antivenin, if needed, could be administered within 24-48 hours of a venomous snake bite. This contingency needs to be planned for with a standard operating procedure (SOP) for venomous snake bite. Environmental/medical staff needs to be able to identify (or have the resources/guides to enable them to do so) venomous snakes at least to family and/or genus level. Diego Garcia medical staff needs to know proper snake bite first aid. The closest sources of antivenin (such as the Pasteur Institute in Bangkok, Thailand) need to be identified and the logistical network determined for quickly acquiring species-specific antivenin.

References

Barnett, L.K. and C. Emms. 1997. Herpetological observations in the Chagos archipelago, British Indian Ocean Territory. British Herpetological Society Bulletin, No. 59.