

*Hamadryad*, Vol. 22, No. 2, pp. 121 - 122, 1998  
 Copyright 1998 Centre for Herpetology  
 Madras Crocodile Bank Trust

### Evaluation of Sea Turtle Nesting Beaches for Promoting Participatory Conservation at Sundervan Beyt Dwarka, India

Evaluation of sea turtle nesting beaches was undertaken at Sundervan Beyt Dwarka and within the vicinity of Dunny Point, in the Gulf of Kachchh, Gujarat State, India, with the following objectives: 1. identification of nesting beaches; 2. identification of nesting sea turtles; 3. determination of the "wow" factor to sell conservation education with reference to sea turtles; and 4. development of a conservation strategy for implementation.

Methods included: 1. preliminary beach survey; 2. day and night surveys of identified beaches during high tide; and 3. interviews with the local people.

#### Findings of the survey:

1. According to local information from ferry and trawl operators, two species of sea turtles are known to nest at Beyt Dwarka, the olive ridley (*Lepidochelys olivacea*) and the green (*Chelonia mydas*). A carapace of a leatherback sea turtle (*Dermochelys coriacea*) was found, but nesting in this species appears doubtful. It is possible that hawksbill sea turtles (*Eretmochelys imbricata*) may also be found off the coast.

2. During surveys of the beach near Dunny Point, a number of bone fragments including pieces of plastron, carapace and skull of a green turtle was found near Hanuman Dandi.

3. Some old and new signs of nesting were observed. Three favourable nesting areas were identified. The first was close to Dunny Point, the second near Hanuman Dandi, the third south-west of Hanuman Dandi.

4. Typical turtle crawl tracks were observed on all the mentioned beaches. Two different sets of tracks were found. Track widths at Dunny Point averaged between 33-36 cm, while tracks seen in the vicinity of Hanuman Dandi measured about 110 cm. It appears evident that the olive ridley and the green are the species involved.

5. The ecological characteristics of beaches (sandy/muddy/rocky) were recorded for their interpretive value, for the purpose of initiating sea

turtle conservation education programme at Dunny Point. At places, marine organisms, from invertebrates (including corals) to higher forms, were accessible. The shore bird diversity was found to be rich.

6. Jackals (*Canis aureus*) and wild boar (*Sus scrofa*) were the primary egg predators at most beaches, and a number of depredated nests were seen. This was also emphasized to the local people. While there appeared to be no poaching of eggs for human consumption, sea turtle eggs were found to be used as horse feed. The contents of eggs were mixed with jaggery (brown sugar, locally called 'gur'), and fed to cart-pulling horses, supposedly to make them strong.

7. Meetings were held with local fisherfolk, customs officials, naval personnel and former local village and Panchayat heads, to seek information on sea turtles and their opinion on conservation. This exercise reveals a common consensus for sea turtle conservation. Some of the suggestions included providing in situ protection, with the aid of barbed wire fencing at nesting beaches to discourage jackals and wild boar or even wire mesh cover over individual nests. Plans for hatchery rearing was also discussed.

8. Sundervan Beyt Dwarka already has an on-going marine nature camp programme as part of overall environmental education thrust. These camps cater to a wide range of target groups, such as school children, nature club members, as well as family groups. The value of this particular site has been recognised as a potential EE facility to focus on sea turtle conservation and incorporate conservation education concepts to the existing marine camp programmes. Steps in this direction have already been made on a trial basis. In this regard, an introduction to the fascinating world of sea turtles has become part of the camp curriculum. Campers are taken for turtle walks to nesting beaches and some of them sight turtles off the coast. Such first hand experiences help build a concern for sea turtles and related issues and generate awareness.

Beyt Dwarka can be recognised as an environmental education facility with special reference to sea turtle conservation education programmes. The outdoor camping arrangement at Dunny Point is located close to nesting

beaches. Fortunately, the camping activities commence during the nesting seasons and participants are organized into smaller groups to patrol the nesting beaches in an attempt to ward off predators such as jackals and wild boars. A demonstration hatchery is planned for the next camping season, where campers will be trained to pinpoint nests and translocate eggs. This will attempt to organize community participation. Meanwhile, sea turtle conservation education material, such as brochures and posters, are being designed for communication geared towards awareness and action.

Without local support at Beyt Dwarka, this survey would not have been possible. Hemuba, a village head and former Panchayat leader, who is also the caretaker of Sundervan Beyt Dwarka and his son Ganshyam provided information on sea turtles and nesting habitats at Beyt Anvar, the local ferry and fisherman provided vital identification clues to sea turtle species. An enthusiastic band of volunteers from Bhumata helped nightly beach walks. This survey was supported by A. J. Urfi, Sundervan Nature Discovery Centre, Ahmedabad. Field support at Dunja Point was provided by Rajendrasinh Jadeja.

---

E. K. Nareshwar, Sundervan Nature Discovery Centre, S. M. Road, Jodhpur Tekra, Ahmedabad 380 015, Gujarat, India.

---

Received: 25 May, 1997  
Accepted: 10 November, 1997

*Hamadryad* Vol. 22, No. 2 pp 122 - 123 1998  
Copyright 1998 Centre for Herpetology  
Madras Crocodile Bank Trust

#### Captive Breeding of *Varanus salvator andamanensis* Deraniyagala, 1944

*Varanus salvator andamanensis* Deraniyagala, 1944, the Andaman water monitor, is endemic to the Andaman islands. The habitat range of this subspecies includes wet evergreen forests, dried flat and wetlands and littoral forests. They also inhabit mangroves and small remote islands, including South Sentinel, which is only 1.61 sq km in area. Lizards on this particular island attain

large sizes, males often exceeding 2.5 m in total body length (H. Andrews, pers. comm.).

There is little information of the biology of the species on these islands. Hatchlings are noticed during March and April, and the lizard is known to feed on eggs of sea turtles and crocodiles, as well as crabs in mangrove marshes at low tide. They have been sighted swimming across mangrove creeks, and even in coral reefs. Although commonly hunted by tribals and settlers for meat, there is no trade in skins, and population declines are not suspected.

The first captive breeding effort for the Andaman Island subspecies was taken up at the Haddo Mini Zoo, Port Blair, Andaman Islands. In 1995, the zoo acquired two female lizards from the Shoalbay area and Mini Bay, both in the South Andamans, and in 1996, a male from the Mayabunder area in the Middle Andamans. All three lizards were wild caught, and no initial measurements are available. On 30 April, 1997, they were measured. The male was 148 cm in total body length (TBL), 71 cm in snout-vent length (SVL) and weighed 9.0 kg. The females measured 133 and 104 cm (TBL), 61 and 56 cm (SVL) and weighed 5.75 and 3.75 kg, respectively. Both females had tail tips missing. One male measuring over 2 m (TBL) from South Sentinel Island, was added to the breeding group in March, 1997.

All animals were housed in an enclosure measuring 13.1 x 9 m, with a wall height of 1.85 m. The substrate is sand and grey soil that is typical of these islands. The enclosure is landscaped with a tree, bamboo clumps, dead logs and shrubs, and has a central pond measuring 4.2 x 4 m and is 0.32 m deep. The lizards are fed chopped beef and chicken ad libitum.

On 8 August, 1996, two eggs were noticed on the soil surface and were found missing the next day, and were presumed eaten either by rats or the monitors themselves. It was unclear which female produced these eggs and there was no evidence of further eggs or nests in the enclosure. On 4 April, 1997, however, four hatchlings were found within the enclosure. By the end of the month, three more were observed, in addition to the discovery of a dead hatchling. It was not possible to determine if these hatchlings were