



BRUNEI DARUSSALAM

Introduction

Brunei Darussalam is a coastal state in Northwestern Borneo. It has a land area of 5,762 km² and 130 km coastline bordering the South China Sea. It shares a common border with the East Malaysian state of Sarawak. The country is divided into four administrative districts, namely Brunei-Muara, Tutong, Belait and Temburong (Sabri, 1996).

The majority of the population (about 60%) in Brunei Darussalam is concentrated in the Brunei-Muara district, whilst the least populated is the Temburong district. The main population centres are in the coastal zone accounting for over 85% of the population (Scura and Dalusung, 1992).

Agbayani et al. (1992) recorded a total of 33 islands in Brunei Darussalam. The majority of these islands are uninhabited and in a pristine state. Though the islands support few flora and fauna, some of them do provide shelters and breeding sites for sea turtle species. The beaches of Pelompong Island, for example, are used by turtles for nesting.

The seabed is predominantly sandy because of the two longshore drifts which bring with them huge accumulations of sand. Long stretches of sandy beaches interrupted only by a few rocky headlands dominates the coastline of Brunei Darussalam (White and De Silva, 1987). Made up of mainly fine-grained sand, the beaches generally provide recreational areas for the public. Pelompong Islet (sand spit) is an isolated natural sand spit islet whose sandy beach faces the South China Sea and local fisherman have seen turtles nest on this beach.

The sandy coastline of Brunei Darussalam provides suitable nesting sites for sea turtles. Out of the seven species found in the world, only four are found in Brunei Darussalam, which are olive ridley, hawksbill, green, and unconfirmed reports have also indicated that leatherback turtles have been seen frequenting areas near the oil platforms (Elkin 1991). Out of the four species mentioned, olive ridley is the most common species in Brunei Darussalam, followed by hawksbill (Mariani 2004).

No thorough studies have been carried out to determine the extent of the turtle populations in Brunei Darussalam. The first sighting of turtles in Brunei Darussalam was in 1989 when twelve hatchlings were found on the beach at Seria (Elkin 1991).

A few green turtles and hawksbill turtles are known to nest on Pelompong Spit, Muara, Tutong, Lumut and Anduki beaches from November to June (De Silva et al. 1992 and Mariani, 2004). No proper records are kept on the number of clutches and the amount of eggs deposited. However, the Museums Department had conducted a systematic study in 1992 on the breeding patterns of turtles along the Pelompong Spit.

The coastal waters of Brunei Darussalam are known to be in the migration paths of the sea turtles during their migration periods. Elkin (1991) noted that some turtles had been observed swimming away from the shore in a northwesterly direction.

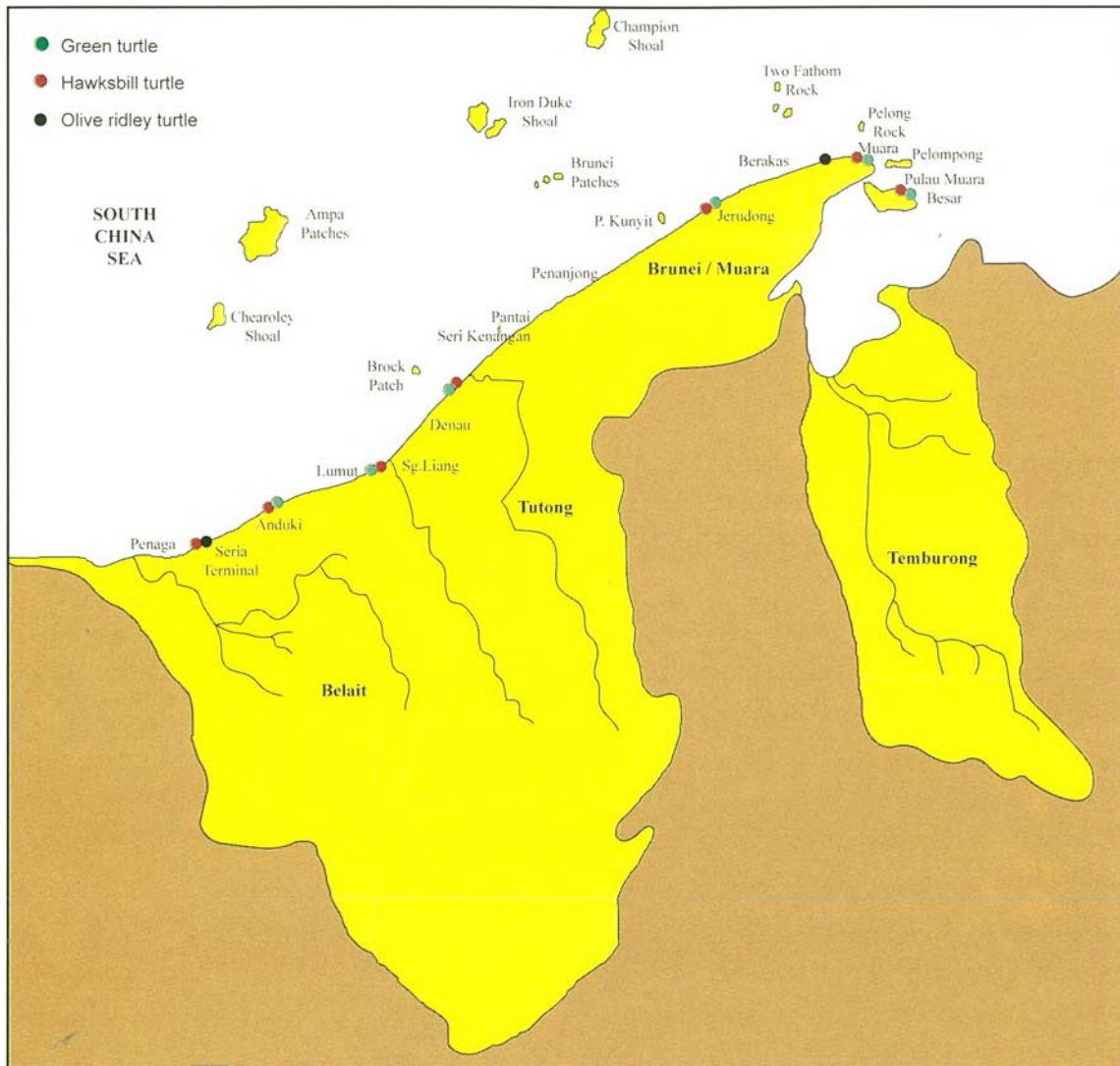


Figure 4. Distribution of Sea Turtle Nesting Beaches in Brunei Darussalam

Because of the many oil platforms in the coastal waters of Brunei Darussalam, the platform legs and bracings have provided excellent substratum for the growth of marine organisms such as soft corals. Turtles have been spotted by divers feeding on the organism afforded by the oil installations. These installations may also provide shelter and protection for the turtles from dangers such as predation and trawl fishing activities (Sabri, 1996).

Research and conservation efforts by government agencies have been very minimal at the initial stage. However, starting in May 1998, there has been an upsurge in the government effort that the dwindling sea turtle populations be saved from further decline.

The government strategy encompasses around the need to maintain the biodiversity and the population of the sea turtles. Initially, efforts are geared towards the creation of awareness among the public, especially the school children. The setting up of the National Sea Turtles Management and Conservation Committee and its programs are testimonial of the government's efforts to realize its strategy of increasing the sea turtle populations.

Sea Turtle Conservation and Enhancement

Legislations and Regulations

Sea turtles are listed under CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) and Brunei Darussalam became a party of CITES since 2 August 1990. Three species of sea turtles, namely the green turtle, hawksbill turtle and leatherback turtle, are protected by the regulation under Chapter 102 of the Wildlife Protection Act, 1978 (revised 1984). The Act was created to make provision for the protection of wildlife and for the establishment of wildlife sanctuaries. It comes under the jurisdiction of the Museum Department.

The Department of Fisheries (DOF) has a provision for the protection of sea turtles under the Fisheries Act of 1973. Chapter 61, Section III, Part 5 (o) of the Primary Resources, is authorized to make regulations “to regulate the catching or killing of turtles and their eggs”. It proposes that “No person shall – (a) disturb, take, sell, purchase or have in his possession any turtle eggs; (b) interfere with any turtle nest; or (c) take, sell, purchase or have in his possession any undersized turtle”. The proposed amendment also states that “No person shall take, sell, purchase or have in his possession any turtle or part thereof during the period of any close season for that species of turtle specified pursuant to a sub-regulation” as notified by the Director of Fisheries from time to time in the *Government Gazette*. This notification also includes for the Director of Fisheries to specify ‘turtle species, the size, weight and a closed season’. Even with these stringent measures, efforts are still needed to educate the public on the need to protect turtles, especially when they come ashore to nest, not to disturb their nesting habitat and not to harvest their eggs (Sabri, 1996 and Mariani, 2004).

Hatcheries

The threat of the dwindling numbers of nesting turtles in Brunei Darussalam has prompted both the Museums Department and the DOF to collaborate in a program to produce sea turtle hatchlings under laboratory conditions. In 1991 and 1992, the DOF had successfully hatched 67 turtles out of 107 eggs after 59 days incubation. A total of 56 hatchlings were released into the sea and 11 hatchlings were kept at the Hasanah Bolkuah Aquarium. The condition of the sand was kept as close as possible to the natural conditions and the temperature and moisture content monitored regularly (Sabri, 1996).

A total of 133 eggs were collected by the Museums Department in Pelompong and given to the DOF for a similar program in 1992. The conditions of the eggs were variable with some eggs found to be slightly dehydrated. After an incubation period of 60 days, a total of 18 turtle hatchlings emerged and were released into the sea. Some of the hatchlings were kept under tank conditions until they reached a size of approximately 18-20 cm before they were released (Sabri, 1996).



Plate 30. Releasing of Sea Turtle Hatchlings in Brunei Darussalam

A temporary hatchery was built in Meragang in 2001 by the DOF and a total of 935 olive ridley and 97 hawksbill eggs were collected from nesting beaches. A total of 917 olive ridley and 63 hawksbill turtle hatchlings emerged after an incubation period of 56 to 59 days in a styro-foam box.

In 2002, a total of 2,678 olive ridley and 159 hawksbill eggs were collected from nesting beaches by the DOF and turtle egg collectors as well as turtle volunteers. A total of 2,097 olive ridley and 87 hawksbill hatchlings were kept under tank conditions for about 3-4 month before being released (Mariani, 2004).

The year 2003 saw a total of 1,378 eggs collected of which 1,308 were olive ridley and 70 hawksbill. The total number of hatchlings were 954 olive ridley and 62 hawksbill respectively. A total of 3,270 olive ridleys and 173 hawksbills hatchling were released between 2001-2003.

Protected Areas/Sea Turtle Sanctuaries

At present, Brunei Darussalam does not have protected areas or turtles sanctuaries. However the Department of Fisheries has started an initiative to establish a national turtle sanctuary. An area of approximately 5.2 hectares in Meragang Beach has been identified as the most suitable area. The project obtained its funding from the 8th National Development Program and is expected to be completed in 2005. The center will provide infrastructure and facilities to support the various activities including research under the National Turtle Management and Conservation Program.

Education/Public Awareness

Beside production of publications, such as posters, articles and various media announcements, campaigns through exhibitions and talks were also conducted at schools and children/students holiday camps. There was also an activity called “Adopt a Turtle and Release” for a fee of US\$ 18.00. This activity was very popular among students, general public, private and public institutions. Funds collected under these activities were deposited into the National Turtle Trust Fund. Activities to educate and create awareness in sea turtles conservation were jointly organized by schools, banks, Brunei Shell and DOF.



Plate 31. Educational Activity Related to Conservation of Sea Turtles in Brunei Darussalam

Tagging and Satellite Telemetry Tracking Activities

Sea turtles tagging activities are carried out under the Turtle Management and Conservation Program. Several staff of DOF and a number of volunteers have been trained to conduct tagging activities. These activities started in 2000 at Muara and Sungai Liang beaches. Inconel tags provided by MFRDMD were used. However, due to lack of human resources, limited number of activities were carried out. Until the year 2003, a total of 31 turtle had been tagged, out of which 19 were olive ridleys, 7 hawksbills and 5 greens. Brunei Darussalam has not started satellite tracking activity at present (Mariani, 2004).



Plate 32. Tagging activity of Green Turtle in Brunei Darussalam

International/Regional Cooperation

The list of international and regional organizations that Brunei Darussalam has collaborated with is as follows:

1. ASEAN Regional Centre for Biodiversity Conservation (ARCBC) sponsored a workshop on turtle conservation and management in 2003.
2. Marine Fishery Resources Development and Management Department (MFRDMD) of the Southeast Asian Fisheries Development Center (SEAFDEC), Malaysia provided 300 pieces of inconel tags in 1998.

There are also regional and international treaties related to the conservation and protection of sea turtles that Brunei Darussalam is signatory to, namely:

1. Brunei Darussalam became a member of CITES since 2 August 1990.
2. The Memorandum of Understanding on ASEAN Sea Turtle Conservation and Protection that was signed on September 12 September 1997 by the ASEAN Ministers on Agriculture and Forestry.

Research Activities

Sea turtles research is still at the initial stage in Brunei Darussalam and it is envisaged, with the establishment of the 5.2-hectare sanctuary in Meragang Beach by 2005, more research activities would be undertaken. Key persons who are previously and currently active in sea turtles issues in Brunei Darussalam are listed as below:

1. Ms. Mariani Haji Sabtu
Fisheries Department,
Ministry of Industry and Primary Resources,
Jalan Menteri Besar,
Berakas BB 3910, Brunei Darussalam
Tel: 673-2-772788, 673-2-770066
Fax: 673-2-770065
E-mail: mariani_sabtu@fisheries.gov.bn
marianisabtu@yourmailnow.com
2. Mr. Hariel Haji Simpol
Fisheries Department,
Ministry of Industry and Primary Resources,
Jalan Menteri Besar,
Berakas BB 3910, Brunei Darussalam
Tel: 673-2-770066
Fax: 673-2-770065
E-mail: turtlebrunei@hotmail.com