

NOTES

STUDIES ON SEA TURTLES — I

DISTRIBUTION AND NESTING SITES OF SEA TURTLES IN INDONESIAN WATERS

ABSTRACT

The paper presents the distribution of sea turtles occurring in the Indonesian waters. The important species found in this region are *Chelonia mydas*, *Eretmochelys imbricata*, *Dermochelys coriacea* and *Lepidochelys olivacea*. The nesting sites, particularly of *C. mydas* and *E. imbricata* in the West Sumatra Province, Belitung Island and Seribu Islets and in the Makassar Strait are noted. The need for conservation of the resource from overexploitation is stressed.

INDONESIA is a tropical country comprising of thousands of islands. The inshore sea off these islands is characterised by coral reef ecosystem supporting a variety of flora and fauna including sea turtles. The beaches of several of these islands serve as important nesting sites for the turtles. Of the seven known species of sea turtles in the world, five species occur in the Indonesian waters; these are Penyu daging *Chelonia mydas*, Penyu sisik *Eretmochelys imbricata*, Penyu belimbing *Dermochelys coriacea*, Penyu abuabu *Lepidochelys olivacea* and penyu pipih *C. depressa* occur in the Indonesian Archipelago. The present communication deals with the distribution and nesting sites of these turtles, particularly of the former two species. Between 1975 and 1980, several beaches in the West Sumatra Province, Belitung Island, Seribu (Thousand) Islets and Makassar Strait were surveyed. During this survey, the plants as well as the soil near the nesting sites were collected. The grain size of the sand samples was later analysed in the laboratory and the results shown in Fig. 1 and 2.

Results and discussion

The distribution of sea turtles in Indonesia is shown in Table 1 and Fig. 3.

West Sumatra Province

In the West Sumatra Province, *C. mydas* is the important and the main species found to

nest. There are several excellent turtle beaches particularly in Penyu and Katang-Katang Islands which are uninhabited by the people. From these islands thousands of turtle eggs are exploited by fishermen and sold at the Pading

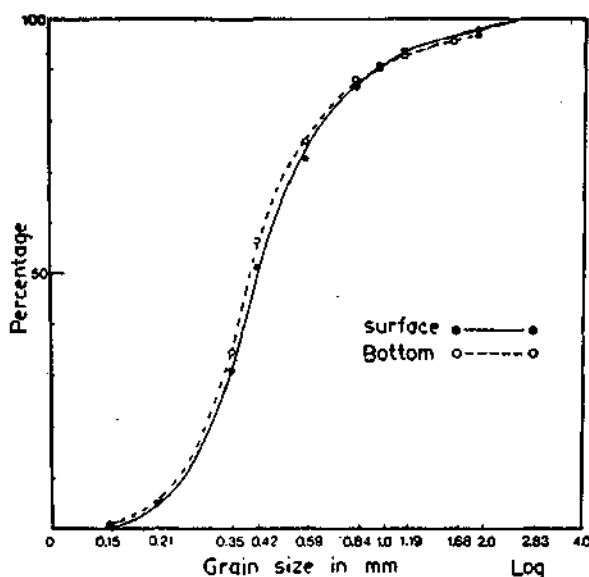


Fig. 1. Grain size of sand samples collected in Penyu Island.

City. It is reported that *E. imbricata* also visits the beaches of this region for nesting.

The grain size of the sand collected from the Penyu Island was between 0.21 to 0.84 mm (Fig. 1) and the important marine algae encountered in the inshore sea were *Gracilaria* and

Euchema. Along the beach *Pandanus*, *Sesuvium* and *Ipomea* were found to dominate, the former being more abundant. Numerous nests were observed where the vegetation grow in the form of dense bushes.

TABLE 1. Distribution and most important nesting beaches of sea turtles in Indonesia

Species	Location	Potential
Green turtle	<i>Sumatra</i>	
<i>Chelonia mydas</i>	Penyu Is. (West Sumatra) Bengkulu Beach Aceh Riaw Archipelago	Major Minor Unknown* Unknown*
	<i>Java</i>	
	Pangumbahan, West Java Citirem, West Java Cibulakan, West Java Tasikmalaya, West Java Sukomade, East Java Barung, East Java	Major Major Minor Minor Major Major
	<i>Bali</i>	
	Lebih Beach	Minor
	<i>Lombok</i>	
	Kute Beach	Minor
	<i>Sumbawa</i>	
	Ai Ketapang beach	Minor
	<i>Kalimantan</i>	
	Paloh Beach Bilang 2 an Haji Is. Laut Is. Kumai Beach	Major Major Major Major Minor
	<i>Southwest Suluwesi</i>	
	Buton	Unknown*
Hawksbill	<i>Sumatra</i>	
<i>E. imbricata</i>	Penyu Is. (West Sumatra) West Sumatra Beach Bengkulu Beach Kalmambang Is. (Belitung) Tukung Is. (Belitung) Mamperak Is. (Belitung) Segama Is. (Belitung)	Minor Major Minor Major Major Major Unknown*

Species	Location	Potential
	<i>Java</i>	
	Panjang Kecil (Seribu Is.) Semut Kecil (Seribu Is.) Sepa Kecil (Seribu Is.) Belanda (Seribu Is.) Gosong Sepa (Seribu Is.) Barung Is. (East Java) Karimun Java	Minor Minor Minor Major Major Major Unknown**
	<i>Bali</i>	
	Bualu Beach Bali Barat Beach	Minor Minor
	<i>Sumbawa</i>	
	Genale Beach	Minor
	<i>Riaw Archipelago</i>	
	Midai Is., Durai Is., Pahit Is., Penjalin Is., Mangkai Is., Keramat Is., Serasan Is., Bungai Is., Perhantu Is., Sempadi Is., Sendea Is., Kemudi Is., Jantai Is., Kelarik Is., Bugan Is., Panjang Is., Laut Is., Wie Is., Menggiring Is., Sendulang Is., Mendare, Is.	Unknown*
	<i>Maluku</i>	
	Hiu Is., Kayoa Is., Tujuh Wahai Is., Seram Is., Tujuh Latahalat Is., Wetar Is., Seira Is.	Unknown*
Ridley <i>L. olivacea</i>	<i>Sumatra</i> West Sumatra Nusa Tenggara Is.	Unknown**** Unknown***
Leatherback <i>D. coriacea</i>	<i>Sumatra</i> West Sumatra Pendek Beach (Bengkulu) Bali Strait Kangean Is. Ai Ketapang Beach Manokwari Beach (Irian) Timor Sea Arafuru Sea	Unknown*** Unknown*** Minor Unknown** Unknown** Unknown* Major Unknown** Unknown**
Flatback <i>T. depressa</i>		

* Source from Fisheries District.

** Caught by local fishermen

*** Caught by fishermen

**** Their eggs in trade at Muara, Padang City

Belitung Island and Seribu Islets

Significant nesting locations for *C. mydas* were not observed in Belitung and Seribu (Thousand) Islets. However, these islands are potential sites for *E. imbricata*. The important nesting sites in the Karimata and Gaspar Straits are Tukung, Kalmambang, Mamperak, Long,

Makassar Strait

In the Makassar Strait lying between Kalimantan and Sulawesi Islands, *E. imbricata* nests in several small islands and coral cays, the most important nesting grounds adjacent to coral reef islands and cays are Flores Sea, Spermonde Islands and North of Bali. *C. mydas* are abundant in Berau District in the Bilang-Bilangan Island, Semamak and Derawan. The local government collects large amount through licence from merchants who exploit the turtle eggs from this region.

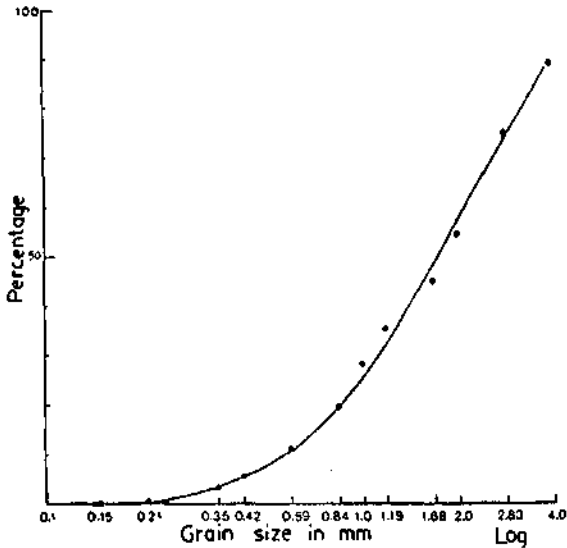


Fig. 2. Grain size of sand samples at the bottom of rest of Gosong (Coral Cay) in the Seribu Islets.

Pangan, Ketupang, Santuang, Nangka, Buku, Oyam, Kweel (Nuitja, 1976 b; Nuitja and Uchida, 1982). The best nesting sites for *E. imbricata* is Seribu Islets are found in Belanda, Sepa, Segama and several Gosong (coral cays). The sand sample collected from Gosong or coral cays was composed of big coral sand having grain size between 1.00 and 2.83 mm. *E. imbricata* as well as their eggs are over exploited in Belitung and Seribu Islets. Several marine algae such as *Gracilaria* and *Thalassia* are found here. The algae representing the genera *Gracilaria*, *Cymodocea* and *Zostrea* are also found to grow on the coral reefs of Kalmambang and Tukung. The shell of *E. imbricata* are sold as souvenirs in Pasar Ikan and Pasar Baru at Jakarta.

Utilization

The trade in sea turtle products, in addition to the meat and eggs, includes calipee for soup, hides shells and stuffed specimen for souvenirs especially at Padang, Jakarta, Bali, Ujung Pandang, Berau, Balikpapan, Samarinda, Bengkulu, Sukabumi, Belitung and Seribu Islets. However, the overfishing of adults at certain centres and harvesting of eggs from their nesting beach pose serious threat to the sea turtle population. This problem requires careful study, to ensure judicious exploitation and conservation of the resource.

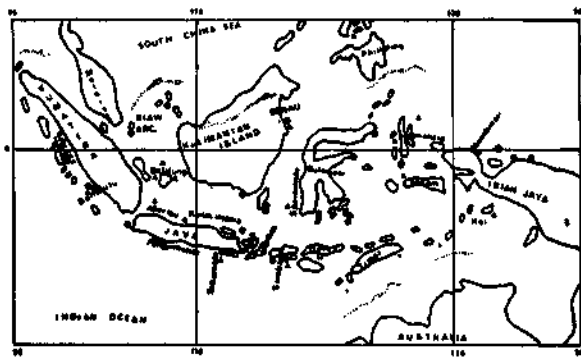


Fig. 3. The distribution of sea turtles in Indonesia. ● Nesting sites of green turtle, △ Nesting sites of hawksbill, □ Nesting sites of olive ridley, ■ Nesting sites of leatherback and ?— Nesting sites of flatback turtle.

Management and research programme

A management and research programme on the sea turtle population was started in 1975 along the South Sumbawa area, which forms one of the bases of turtle barn in the Indian Ocean. The fishermen from Bali, Bajo and Bugis used to catch the turtles which were abundant in the region. The coral reefs of this area are also heavily exploited and the natural habitat of the sea turtles are destroyed. A rational management system involving suitable measures for the protection of nesting sites, feeding

grounds of turtles in the coral reefs and the eggs and hatchlings are immediately required to conserve the valuable resources of this region. Further, the replenishment of the resource through release of turtle hatchling during favourable seasons would also go a long way to improve the turtle resource of this area.

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