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MARINE MAMMALS OF BORNEO: A PRELIMINARY CHECKLIST**Isabel Beasley and Thomas A. Jefferson****ABSTRACT**

The island of Borneo includes the Malaysian states of Sabah and Sarawak, the Indonesian state of Kalimantan, and the Islamic sultanate of Negara Brunei Darussalam. Although there has been little work done on marine mammals in this area since the 1950's, a number of species have been recorded from the island, mostly from strandings and opportunistic sightings. Of these, 16 have been confirmed based on reliable records. Three brief research visits to Sabah and Sarawak have shown that the poorly-known Irrawaddy dolphin is common in several estuaries along the north coast of Borneo. Preliminary work found an average group size of 4.4 ± 2.19 S.D. ($n=28$). Seven individuals were photo-identified. In addition, evidence of coastal populations of Indo-Pacific hump-backed dolphins, finless porpoises, and dugongs was gathered. More work on all these species is planned to assess populations, identify threats, and ensure the animals are effectively conserved.

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by

Isabel Beasley and Thomas A. Jefferson

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INTRODUCTION

In 1950, C.A. Gibson-Hill wrote, "There are still extremely few records of cetaceans from the coast of Sarawak, and several of the limited few have not been published. To the best of my knowledge there are no established records from Brunei and North Borneo (now Sabah)" (Gibson-Hill 1950, p. 288). Although the cetaceans of northern Borneo have not received much directed study since then, our knowledge is much improved since Gibson-Hill made his comments. However, many of the available records remain unpublished or are hidden in obscure references. In order to rectify this situation as best as we can, we provide here an annotated checklist to the marine mammals (including the dugong) of the island of Borneo. It reviews all records known to us, published and unpublished, and presents a number of new records obtained by us on three recent trips to the area. These new records add ecological and morphometric data for Irrawaddy dolphins (*Orcaella brevirostris*), finless porpoises (*Neophocaena phocaenoides*) and

Indo-Pacific hump-backed dolphins (*Sousa chinensis*) and provide the first records for one species, the sperm whale (*Physeter macrocephalus*), and one beaked whale genus, *Mesoplodon*.

STUDY AREA

The island of Borneo includes the Malaysian states of Sabah and Sarawak, with the islamic sultanate of Negara Brunei Darussalam between the two. The larger southern part of the island is the Indonesian state of Kalimantan (Fig. 1). Borneo covers an area of 700,000 square kilometers. It is the third largest island in the world, stretching from about 4° south of the equator to 7° north. The climate is tropical and the region is characterised by dense jungle with many large river systems throughout. The coastal waters of Sarawak are relatively shallow and are surrounded by the South China Sea. The waters off Brunei and western Sabah, are somewhat deeper, although a shallow shelf extends some distance from the coast. The Sulu Sea, between north-eastern Sabah and the Philippines, is quite deep, although shallow shelves exist between Sabah and two Philippine islands – Palawan and Mindanao. The Celebes Sea, between eastern Sabah and the Indonesian island of Sulawesi, is deep, and there is a very narrow shelf off the coast of Sabah, near the south-eastern border with Kalimantan.

METHODS AND MATERIALS

Two brief research visits were made to Sabah in May 1996 and April 1997, and one brief visit to Sarawak in June 1997. During May 2 to 5, 1996, the second author participated in the Joint Malaysia/Philippines Marine Mammal Training Workshop, which was held in Sandakan, Sabah. The workshop consisted of two practice survey days on May 4 and 5. Both were full days of survey into Sandakan Bay and the waters northeast of the bay. Approximately 70 km of survey effort were conducted during these two surveys (Dolar *et al.* in press).

A further trip to Sandakan was undertaken during April 1997 by the first author. A total of 316 km of survey effort were conducted during six days of preliminary surveys. Fourteen kilometers of survey were conducted around Sandakan Harbour and nearby Berhala Island on April 6. One hundred, twenty seven kilometers of the eastern coastal waters, Mumyung and Kinabatangan river systems were surveyed on April 7, 16 and 17. Eighty eight kilometers of survey were conducted out to nearby Selingan Island (oceanic waters) on April 18 and 19, and 48 kilometers of survey were conducted in Sandakan Harbour on April 20. Photographs were taken of the dorsal, ventral and lateral aspects of a dolphin skull on Selingan Island, Sandakan, for later identification.

During June, 1997, three days of marine mammal surveys were conducted around Kuching, Sarawak. A total of fifteen hours of survey were conducted. Six hours of survey were undertaken on 5 June in the waters of the Santubong branch of the Sarawak River and offshore to the Satang Islands. On 6 June, 5.5 hours were spent searching the waters of the Sarawak River and offshore to the end of Cape Sipang. On 9 June, 3.5 hours were again spent surveying the waters of the Sarawak River and offshore to the Satang Islands.

During the sighting surveys, one to two observers searched for marine mammals from 5-7 meter vessels. Survey effort was relatively informal, however, the survey areas were designed to cover all representative habitats of cetaceans and sirenians. All marine mammals encountered were recorded and position – using a handheld Global Positioning System (GPS), time, group size, Beaufort state and behaviour were noted.

In addition to sighting surveys, marine mammal skeletal material at the Sarawak Museum was examined, measured and photographed by the second author. Specimens were measured using vernier and dial calipers. A full inventory of specimens examined at the museum is available on request from the authors.

SPECIES CHECKLIST

Blue whale (*Balaenoptera musculus*)

Payne *et al.* (1985) reported unconfirmed sightings of blue whales north of Sabah. The mounted balaenopterid skeleton at the Sarawak Museum (see below) is listed as this species, but it is actually referable to either *B. edeni* or *B. borealis*.

Fin whale (*Balaenoptera physalus*)

An 18-m whale stranded in Lundu, Sarawak, has been reported to be of this species, although a small blue whale is not out of the question (Banks 1931; Gibson-Hill 1950). In addition, there are several unconfirmed stranding reports for Sarawak (Payne *et al.* 1985).

Bryde's whale (*Balaenoptera edeni*)

The Bryde's whale is the most common balaenopterid in most tropical regions. Although they can not be identified to species, two strandings of balaenopterids in Sarawak in the 1890's may have been of this species (Medway 1977). The complete, mounted skeleton of a whale stranded at

Pusa, Sarawak, in January 1909 is on display at the Sarawak Museum (SMZ 70.13; Plate XXV). This specimen is listed as *B. musculus*, and has been reported in the literature as *B. borealis* (Gibson-Hill 1950; Medway 1977; Payne *et al.* 1985). However, after examining the specimen, which is about 9 m long, we feel that it is an example of *B. edeni*. The baleen plates are dark gray with light, moderately coarse fringes. There were two additional reported strandings of this species on the Sarawak coast in 1956 and 1957 (Harrisson and Jamuh 1958; Payne *et al.* 1958). Five sightings have been reported from Brunei, some in which the diagnostic three head ridges of this species have been observed (Elkin 1992).

Minke whale (*Balaenoptera acutorostrata*)

There is a skeleton of this species in the British Museum of Natural History from northern Borneo (Leatherwood 1986). This is the only minke whale record for Borneo.

Humpback whale (*Megaptera novaeangliae*)

Slijper *et al.* (1964) reported an unconfirmed humpback whale sighting off the north coast of Borneo, and one sighting record off Sarawak was mentioned by Payne *et al.* (1985). There are also unconfirmed sighting reports off Sipidan Island, Sabah (Corkeron 1995).

Sperm whale (*Physeter macrocephalus*)

Kayan charms in the Sarawak Museum contain teeth that have been reported to have come from sperm whales, thereby implying the existence of this species in Sarawak (Banks 1931; Gibson-Hill 1950). However, in actuality, these teeth appear to have come from a large delphinid, such as the short-finned pilot whale or false killer whale (Corkeron 1995). The first confirmed record of a sperm whale in Borneo is that of a live-stranded individual at Matu-Daro, near Kuching, Sarawak, in early October 1995 (C. Leh, pers. comm.; Sarawak Tribune, 3 October 1995). The whale subsequently died; the skull was buried in the area, and will be placed in the Sarawak Museum collection upon unearthing (C. Leh, pers. comm.).

Pygmy sperm whale (*Kogia breviceps*)

The only record appears to be the stranding on 19 February 1958 of a pregnant female pygmy sperm whale at Buntal, Sarawak (Harrisson and Jamuh 1958). The skull of this specimen is still in the Sarawak Musuem (Plate XXVI).