

EVIDENCE FOR A RESIDENT DUGONG POPULATION IN THE JOHOR STRAITS BETWEEN MALAYSIA AND SINGAPORE

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INTRODUCTION

Before 1990, Dugongs (*Dugong dugon*, (Muller)) were rarely reported in the Johor Straits, in Malaysian waters or in Singapore. From 1924 to 1990 there were only 11 known sightings and strandings of dugongs in this area. In contrast, between 1994 and March 1999 reports of 12 strandings, 6 live individuals caught in fishing nets (2 were mother and calf pairs), and 22 aerial survey sightings suggested that dugongs inhabit the area. In fact, dugongs were considered only as transitory in the Johor Straits area until the observations made in 1999 strongly supported the hypothesis that all stranded and sighted individuals might belong to a resident population.

METHODS

Reports of dugong sightings and strandings from the general public and scientists (staff of the Department of Fisheries Malaysia)

Aerial surveys conducted by the Department of Fisheries Malaysia
- on the 25th of March 1999
- on the 11th of May 1999 with the assistance of Professor Helene Marsh, James Cook University, Australia

Genetic studies carried out on 2 juvenile dugongs washed ashore 2 months apart

RESULTS

CHRONOLOGY OF KNOWN SIGHTINGS AND STRANDINGS OF DUGONGS IN THE STATE OF JOHOR, MALAYSIA AND SINGAPORE

- 1924
1 male dugong found stranded at Pulau Tekong (Johor Straits, Singapore)
- 1949
1 dugong found at Teluk Paku, Johor. Specimen preserved and kept at Singapore museum
- 1970's
Reports of dugongs hunted at Kg. Pendas Laut, Johor
- 1994
1 female and 1 calf dugongs captured in a fishing net at Pulau Sibul, Johor
- 1995
5 dugongs (sex and size unknown) found stranded at Sekakap, Johor
- 1996
1 dugong (sex and size unknown) found stranded at Pulau Sibul, Johor.
- 1998
1 dugong (sex and size unknown) found stranded at Tanjong Sedili, Johor
- 25/01/1999
1 male dugong found at Pasir Puteh, Johor, and kept by a fisherman. The dugong was released on 8th March at the place where it was first captured. It was found dead on 10th March 1999
- 27/02/1999
1 dugong (sex and size unconfirmed, thought to be female) found dead at Pasir Changi, Singapore.
- 14/03/1999
1 female dugong found dead at Western Pulau Ubin, Singapore (1)
- 17/03/1999
1 male dugong found dead at Southern Pulau Ubin, Singapore (2)
- 18/03/1999
1 highly decomposed adult dugong (sex and size unknown) found at South-Eastern Pasir Gudang, Johor (3)
- 23/03/1999
1 male dugong found dead at Pasir Gogok, Johor (4)
- 24/03/1999
1 female and 1 calf dugongs found alive trapped inside a fishing stake (kelong) at Pasir Gogok, Johor. Released at the same place.
- 25/03/1999; aerial survey
3 dugongs sighted off Pasir Puteh (Western Pulau Nenas, Pasir Gudang), Johor.
- 26/03/1999
1 dugong released from a fishing net (Kelong) at Pasir Gogok, Tanjong Pengelih, Johor
- 11/05/1999; aerial survey
-at least 10 adults and 1 calf dugongs off Pulau Sibul Hujung, Johor
-6 adult dugongs at Western Pulau Besar, Johor
-1 adult dugong at Western Pulau Rawa, Johor
-1 adult dugong at Sungai Perapat, Johor
-presumed dugong feeding trails in *Halophila ovalis* beds at the mouth of Sungai Boh off Sungai Pulai, Johor

GENETIC STUDIES

The 2 juvenile dugongs wahed ashore 2 months apart were close relatives, most likely siblings



South East Asia



The Johor Straits,
Between Malaysia and Singapore



A Kelong in the Johor Straits



Locations of the dugongs found dead in March 1999



Photograph by Paul K. Anderson:
Mother and calf

DISCUSSION

•Dugongs have rarely been reported in the Johor Straits, in Malaysia or in Singapore, prior to the 1990's. The chronology of known sightings and strandings of dugongs in this area only reports 11 events from 1924 until the 1990's. Then, the history is more detailed between 1994 and March 1999, with 40 observations, suggesting that dugongs inhabit the area. In fact, dugongs were considered only as vagrant in the Johor Straits area until the 1999 observations lead to the conclusion that all individuals may belong to a resident population.

•The aerial survey conducted by the Department of Fisheries Malaysia with the assistance of Professor Helene Marsh confirms this hypothesis. 19 dugongs were recorded in one day.

•Genetic studies also tend to confirm the existence of a dugong population in the Johor Straits. 2 juveniles, washed ashore 2 months apart, were shown to be close relatives. The only social bond known for the dugongs is the mother-calf association. Thus, 2 siblings or close relatives would have different home ranges and little social contacts. Therefore, it is very unlikely that these 2 close relatives would have traveled to the Johor Straits, at the same time, from elsewhere: they probably inhabited the Johor straits.

•Past research on sea grass distribution and aerial surveys carried out by the Department of Fisheries Malaysia in March 1999 and again in May 1999 strongly support this hypothesis. Several sea grass beds were located in the area, including some with feeding trails in *Halophila ovalis*, a preferred food item by dugongs.

CONCLUSION

There is a strong evidence for a resident dugong population in the Johor Straits.

Based on this hypothesis, long terms research studies have been launched:

•An integrated study of endangered marine species in the Exclusive Economic Zone waters of Malaysia, with emphasis on the dugong and its habitat, has been recently proposed by the Department of Fisheries Malaysia

•A long term study of the marine mammal status in Singapore waters has been undertaken at the Tropical Marine Science Institute, National University of Singapore. This research project, called the Singapore Wild Marine Mammal Survey (SWiMMS),

AFFILIATIONS

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