

**SOME OBSERVATIONS ON THE SEA COW, *DUGONG DUGON*
FROM THE GULF OF MANNAR AND PALK BAY DURING 1971-1975***

ABSTRACT

Sex ratio of the mature male and female dugongs was about 1 : 1 and that of younger size groups was 0.6 : 1.0. The size distribution varies from year to year. The size groups 150-199 cm were dominant in all the years except during 1972. March, August and October were the months when most of the dugongs got entangled in the nets. Dugongs are found fairly in good numbers around the Islands Valai thivu and Musal thivu in the Gulf of Mannar and Devipattanam and Tondi in Palk Bay. Gulf of Mannar accounted for 76% of the dugongs. Large size dugongs were more common in Tondi (Palk Bay).

NAIR, LAL MOHAN AND RAO (1975) reviewed the works on the Indian dugong, studied its systematic position based on morphometric characters and investigated aspects such as length-weight relationship, growth and longevity. The present communication deals with the distribution, occurrence and sex ratio in the Gulf of Mannar and Palk Bay.

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Material and Methods

Data on 146 dugongs of size range 1.0-3.4 m which got entangled in the nets set for fishes in the Gulf of Mannar and Palk Bay during January, 1971 to September 1975, were collected using the proforma developed by Nair *et al.* (1975). Most of the dugongs caught were brought to Keelakarai where there is good demand for its meat. It is reliably learnt that about 10 per cent of the animals were consumed in the place where they are caught. The sex ratio was studied by analysing the sexes by X^2 -test. The total length was divided into 50 cm class intervals and the percentage of each size group was analysed.

Distribution

About 24 per cent of the dugongs were obtained from Palk Bay. They were mostly caught from Devipattanam and Tondi forming about 73.7% of the dugongs from this area. It was observed that the largest size group (300-349 cm) were common in Tondi, Valinokam and Thirupalakudi of Palk Bay than in the Gulf of Mannar (Table 1). The vast beds of sea grass (*Cymodocea ciliata*) found along Tondi and Devipattanam Coast may be the reason for the congregation of dugongs in these areas.

TABLE 1. Occurrence of dugong in various places of the Gulf of Mannar and Palk Bay

Places	Length group in cm						Total	%				
	100-149		150-199		200-249				250-299		300-349	
PALK BAY	F	M	F	M	F	M	F	M	F	M		
Memisal	1	—	—	—	—	—	—	—	—	—	1	0.7
Tondi	—	—	—	2	—	—	2	4	1	1	10	6.8
Nambuthalai	—	—	1	—	—	—	—	—	—	1	1	0.7
Valinokam	—	—	—	—	—	1	1	—	—	2	4	2.8
Thirupalakudi	—	—	—	—	—	—	1	—	—	1	2	1.4
Devipattanam	5	—	1	2	3	1	1	3	—	—	16	10.9
Mandapam	—	—	1	—	—	—	—	—	—	—	1	0.7
Thankachimadam	—	—	—	—	1	—	—	—	—	—	1	0.7
GULF OF MANNAR												
Pulli thivu	—	1	—	—	—	—	—	—	—	—	1	0.7
Musal thivu	2	3	11	6	1	2	2	2	—	—	28	19.1
Mulli thivu	1	—	—	—	—	—	—	—	—	—	1	0.7
Valai thivu	1	2	12	8	5	4	4	5	—	—	41	28.7
Puthumadam	—	—	—	—	1	1	—	1	—	—	3	2.0
Manouli thivu	2	1	5	1	—	—	2	1	—	—	12	8.2
Periapattanam	—	—	1	2	—	1	3	1	—	—	8	5.4
Appa thivu	—	—	1	1	2	—	2	—	—	—	6	4.2
Nallathani thivu	—	—	—	—	—	—	1	—	—	1	2	1.4
Ervadi	—	—	1	1	1	—	—	—	1	—	4	2.8
Tuticorin	—	—	2	—	—	—	1	1	—	—	4	2.8
TOTAL	12	7	36	23	14	10	20	18	2	6	146	100.0
%	8.2	4.7	23.9	16.7	9.6	6.9	13.7	12.4	1.4	3.5		

TABLE 2. Occurrence of dugongs during different months in Gulf of Mannar and Palk Bay

Places	J	F	M	A	M	J	J	A	S	O	N	D	Total	%
	F M	F M	F, M	F M	F M	F M	F M	F M	F M	F M	F M	F M		
PALK BAY														
Memisal	..	- -	- 1	- -	- -	- -	- -	- -	- -	- -	- -	- -	1	0.7
Tondi	..	- -	- 1	- -	- 1	- -	- -	- -	1 4	2 -	- 1	- -	10	6.8
Nambuthalai	..	- -	- -	1 -	- -	- -	- -	- -	- -	- -	- -	- -	1	0.7
Valinokam	..	- 3	- -	- -	- -	- -	- -	- 1	- -	- -	- -	- -	4	2.8
Thirupalakudi	..	- -	- -	1 1	- -	- -	- -	- -	- -	- -	- -	- -	2	1.4
Devipattanam	..	- 1	1 -	- 1	- 1	1 -	1 -	- -	4 -	2 1	1 -	- 1	16	10.9
Mandapam	..	- -	- -	- -	- -	- -	- -	- -	- -	- -	1 -	- -	1	0.7
Thankachimadam	..	- -	- -	- -	- -	- -	- -	- -	- -	1 -	- -	- -	1	0.7
GULF OF MANNAR														
Pulli thivu	..	- -	- -	- 1	- -	- -	- -	- -	- -	- -	- -	- -	1	0.7
Musal thivu	..	2 2	3 1	4 8	1 -	1 -	1 -	- -	1 -	1 1	1 1	- -	29	19.8
Valai thivu	..	1 1	2 1	4 2	2 3	1 2	1 1	7 -	5 2	2 -	- -	- 1	41	28.0
Puthumadam	..	- -	- 1	- 1	- -	- -	- -	- -	- -	- -	- -	1 -	3	2.0
Mulli thivu	..	- -	- -	- -	- -	- -	- -	- -	- -	- -	1 -	- -	1	0.7
Manouli thivu	..	- -	- -	- -	3 1	- -	- 3	- -	- -	4 1	- -	- -	12	8.2
Periapattanam	..	1 -	1 1	- -	- -	- -	- -	- -	1 2	- -	- -	1 -	8	5.4
Appa thivu	..	- -	- -	1 -	- -	- -	2 -	- -	1 -	1 1	- -	- -	6	4.2
Nallathani thivu	..	- -	- -	- -	- -	- -	- -	- 1	- -	1 -	- -	- -	2	1.4
Ervadi	..	- -	- 1	- -	- -	- -	- -	- -	1 -	1 -	- -	1 -	4	2.8
Tuticorin	..	- -	- -	- -	- -	- -	- -	- 1	2 1	- -	- -	- -	4	2.8
TOTAL	..	4 7	7 7	12 13	6 6	3 2	5 4	8 -	8 10	13 1	11 5	6 2	146	
%		7.5	9.5	17.1	8.3	3.4	6.2	5.5	13.0	8.1	10.9	5.5	100.0	

NOTES

The Gulf of Mannar and Palk Bay are alternatively calm and rough depending upon the prevailing monsoons. A female dugong of 3.1 m caught at Tondi in October had a well developed foetus measuring about a metre in length.

Size distribution

The number of dugongs getting entangled in the nets in each year ranged from 23-39 (Tables 4 and 5). The size distribution during the years 1971 to 1975 as given in the Table 5 does not indicate any pattern. However, the size group 150-199 cm formed more than 50% of the total capture except in 1972.

TABLE 4. Size and sex distribution of the dugongs during 1971-1975

Months	Length groups in cm										Total	%
	100-149		150-199		200-249		250-299		300-349			
	F	M	F	M	F	M	F	M	F	M		
January	—	—	2	1	1	3	1	1	—	2	11	7.5
February	2	2	4	3	—	1	1	1	—	—	14	9.5
March	1	2	5	6	2	1	4	3	—	1	25	17.1
April	—	1	5	3	1	1	—	1	—	—	12	8.3
May	1	—	2	1	—	—	—	1	—	—	5	3.4
June	1	—	1	3	1	—	2	1	—	—	9	6.2
July	—	—	5	—	3	—	—	—	—	—	8	5.5
August	—	—	3	1	1	3	5	4	—	2	19	13.0
September	2	—	2	1	2	—	4	1	1	—	13	8.9
October	4	—	1	1	2	—	3	4	1	—	16	10.9
November	1	1	4	1	1	—	—	—	—	—	8	5.5
December	—	1	1	2	—	1	—	1	—	—	6	4.2
Total	12	7	35	23	14	10	20	18	2	5	146	100.0
Percentage	8.4	4.7	23.9	15.7	9.5	6.8	13.7	12.4	1.4	3.5		
X ² test		1.3		1.28		0.66		1.05		0.64		
5%		n.s.*		n.s.		n.s.		n.s.		n.s.		

* Insignificant.

TABLE 5. *Size Distribution of the female and male dugongs*

Size Groups (cm)	1971		1972		1973		1974		1975		Total	%
	F	M	F	M	F	M	F	M	F	M		
100-149	4	1	1	—	3	1	4	4	—	1	19	13.1
150-199	10	5	3	2	7	1	7	8	9	6	58	39.6
200-249	1	1	7	4	1	4	4	—	—	2	24	16.3
250-299	5	2	4	2	4	2	5	4	3	7	38	26.1
300-349	—	1	—	—	1	—	1	2	—	2	7	4.9
Total	20	10	15	8	16	8	21	18	12	18	146	100.0
X ² test	3.35		2.13		2.66		0.23		1.2			
At 5%	n.s.*		n.s.		n.s.		n.s.		n.s.			

*Insignificant.

Sex ratio

The data on sexes and size range of dugongs are presented in Table 6. It may be observed that the females were dominant in the length groups 100-149, 150-199 and 200-249 cm. The ratio was 1 : 0.58, 1 : 0.65, and 1 : 0.71 respectively. But the sex ratio of the 250-299 cm group was found to be close to 1 : 1 whereas in the 300-349 cm group males were found to be dominant.

TABLE 6. *Sex ratio of dugong during 1971-1975*

Size group in cm	Numbers		Total	Percentage		X ²	5%	1%	
	Female	Male		Female	Male				
100-149	..	12	7	19	65.0	35.0	1.80	n.s.	n.s.
150-199	..	35	23	58	62.0	38.0	3.37	n.s.	n.s.
200-249	..	14	10	24	60.0	40.0	1.00	n.s.	n.s.
250-299	..	20	18	38	52.6	47.4	—	n.s.	n.s.
300-349	..	2	5	7	28.5	71.5	1.28	n.s.	n.s.
Total	..	84	63	146	57.5	42.4	3.31	n.s.	n.s.

Though there is an apparent dominance of females in the younger groups, when the data were analysed by X^2 -test the deviation from the expected 1 : 1 ratio was not significant at 5% level. It was further observed that the sex ratio differs from year to year. During 1971 to 1974 the females were dominant over the males while in 1975 males were dominant (Table 2). To find out whether there is any congregation of females or males in various months during 1971-75, the data were further analysed and it was observed that more number of females were caught in March, July and October in 1971, June, July and September in 1972, February, September and November in 1973, April and October in 1974 and September in 1975. The males were found to be dominant in April and December in 1971, July and August in 1972, March and June in 1974, February and March in 1975 (Table 4).

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REFERENCE

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