

STUDIES ON THE VOCALISATION OF THE SEA COW  
*DUGONG DUGON* IN CAPTIVITY

R. V. NAIR AND R. S. LAL MOHAN

Mandapam Regional Centre of C.M.F.R. Institute, Mandapam.

ABSTRACT

The voice of the sea cow, *Dugong dugon*, is recorded for the first time, which is a chirp-squeak of frequency 3 kHz. The sound is compared with that of the American sea cow. The probable utility of the sound is discussed.

Schevill and Watkins (1965) observed underwater sound in Florida manatee *Trichechus manatus latirostris* and added that the 'Sirenia or sea cows may now be added to the roster of aquatic mammals known to utter underwater sounds....' Hartman (1969) reported that the sound of Florida manatee includes chirp, squeaks, squeals and screams. Later Evans and Herald (1970) recorded underwater sound in a young male Amazon manatee, *Trichechus inunguis*. But there seems to be no record of sound of sirenians on land and there is no authentic record of sound of dugong though 'bleating lamb-like cry' and 'whistling sounds' were attributed to it by Troughton (1928) and Kingdon (1971) respectively. Prater (1928), however, observed that the dugongs were not capable of making any vocal sound.

Vocalisation of a young male dugong measuring 145 cm was studied on 31-5-74 after draining the water in the aquarium tank in which it was kept. The dugong has been in captivity since 30-3-74 along with a female measuring 185 cm, in the aquarium of the Regional Centre of Central Marine Fisheries Research Institute, Mandapam Camp. The sound of the dugong was recorded for about 20 minutes by a 'cassette type' tape recorder using a 'low noise' tape and a microphone. While recording, the microphone was kept 10 cm away from the mouth of dugong. It may be added that no sound could be recorded from the female dugong which was also in the same tank.

The sound of the dugong was analysed by 'Radart' 530 model L.F. oscilloscope with a range of 40 Hz to 25 kHz. The sound consists of rather uniform chirp-squeaks of varying intensity and periodicity. The frequency of sound ranged between 3 kHz to 8 kHz and the squeaks were repeated with an interval of about 0.1 to 0.5 sec. The squeaks were of short duration of about 0.1 to 0.3 sec. The number of squeaks varied between 5 to 20 and lasted for about 1 to 8 sec. After a burst of squeaks there was a pause and then the sound continued as another burst. The sound was feeble and weak during the first ten minutes after draining the water from the tank. The intensity of sound and the number of squeaks per

burst increased as the dugong was exposed for more time. The sound was audible at about 3-4 meters when the dugong was exposed for more than 20 minutes.

During vocalisation the nostrils were closed and wrinkles appeared on the skin of the frontal area. Such wrinkles were not observed in the larger female dugong which did not make any sound. There seems to be some co-ordination between the movement of the wrinkles and the sound production. The sounds of Florida manatee, Amazon manatee and the dugong appear to be more or less same. All of them make chirp-squeaky sounds of short duration. The frequency of sounds of sirenians range from 2.5 to 8 kHz and the duration of the squeaks from 0.1 sec. to 0.5 sec. (Table 1):

TABLE 1. *Analysis of sound of Sirenians.*

Species	Frequency (kHz)	Duration (Sec.)	Interval of each squeak	No. of squeaks/burst
Florida manatee* ( <i>Trichechus manatus latirostris</i> )	2.5 to 5.0	.15 to .5	—	—
Amazon manatee** ( <i>Trichechus inunguis</i> )	6.0 to 8.0	.15 to .22	—	—
Dugong ( <i>Dugong dugon</i> )	3.0 to 8.0	.1 to .3	.1 to .5	5 to 20

\* After Schevill and Watkins (1965)

\*\* After Evans and Herald (1970)

It may be noted that the sound was recorded only in young male manatees and dugongs. It needs confirmation to decide whether young sirenians only are capable of making sound. It is possible that the sound-producing capacity gets obliterated as the animal grows.

While referring to the utility of vocal sound in manatees, Hartman (1969) observed that 'one predictable vocal reaction is the alarm duet between a mother and her calf as she calls it to her side before fleeing'. He also agrees with Schevill and Watkins (1965) and Evans and Herald (1970) that the sound production may be associated with emotional stages especially alarm and not associated with echolocation or navigation. However, the utility of the sound for short-range communication especially between the calf and mother cannot be overlooked. From the fact that the younger animals make vocal sound, it can be attributed to filial reaction.

EVANS, W. E. AND E. S. HERALD. 1970. *J. mammal.*, 51: 820-823,

HARTMAN, D. S. 1969. *Nat. Geogr.*, 136 (3): 342-353.

KINGDON, J. 1971. *East African mammals, an atlas of evolution in Africa*. Vol. 1. Academic press, New York.

PRATER, S. H. 1928. *J. Bombay Nat. Hist. Soc.*, 33 (1): 84-99.

SHEVILL, W. E. AND W. A. WATKINS. 1965. *Nature*, 205: 373-374.

TROUGHTON, E. L. 1928. *Aust. Mus. Mag.*, 3 (7): 220-228.