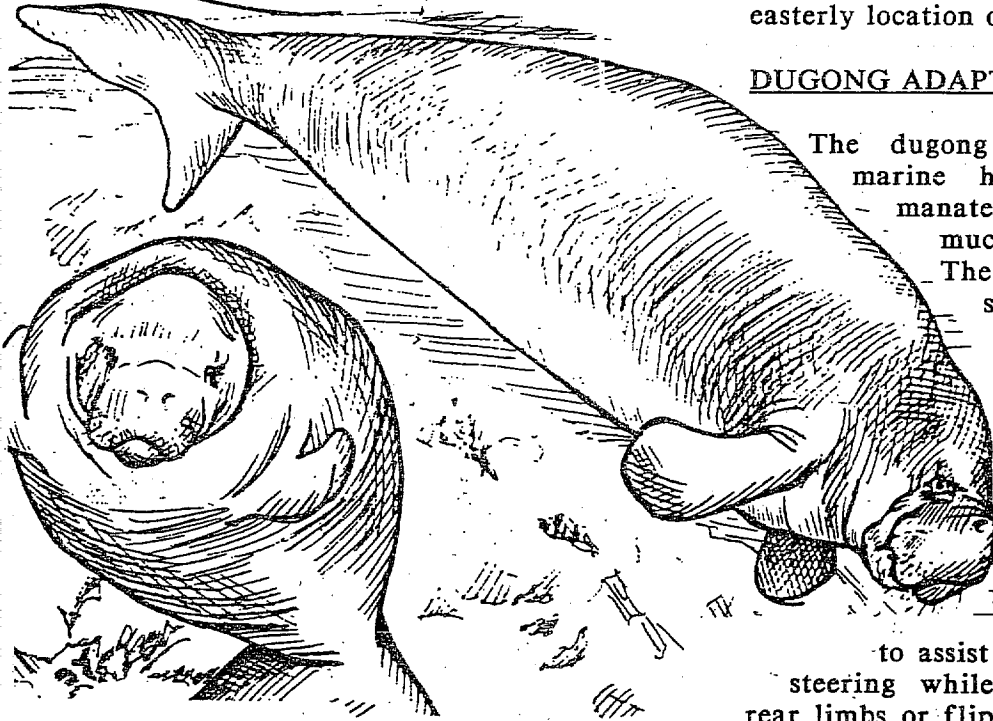


# THE DUGONG - GENTLE GIANT OF VANUATU'S SEAS

*Submitted by Jim Currie - ALO Vanuatu*

The dugong (kaofis in Bislama, vache marine in French) is Vanuatu's largest mammal, and also one of its least known.



It grows to 3.3 metres in length and to over 400 kilograms in weight. This shy and gentle animal lives in clear, shallow, coastal waters throughout the Vanuatu archipelago.

It belongs to the group of animals known as sirenians, the only other living members of which are the manatees from the Caribbean, West Africa and the Amazon river. Although the dugong superficially resembles a dolphin or small whale, the two groups of animals are not closely related. In fact, the nearest living relative of the sirenians is the elephant. Sirenians and elephants are believed to have evolved from a common ancestor.

The only other contemporary member of the sirenians is Steller's sea cow. This very large animal, up to 8 metres long and 6 tonnes in weight was discovered in 1741 living on two remote sub-arctic islands in the north Pacific. By 1768 it was extinct after ruthless hunting by whaling crews for its meat and oil.

The dugong occurs along tropical coastlines from east Africa, Asia and Australia to New

Guinea. In the West Pacific it also occurs in New Caledonia, Solomons, Yap, Guam, Palau and Vanuatu. Its occurrence in Vanuatu is especially noteworthy because it is the most easterly location of its worldwide distribution.

## DUGONG ADAPTATIONS

The dugong is the world's only true marine herbivorous mammal. The manatees, also herbivorous, spend much of their time in rivers. The dugong lives entirely on sea grasses and so it is confined to areas where these grasses are found - clear, shallow, sheltered waters of tropical regions.

The dugong is very well adapted to living in the sea. The front limbs, besides being used to assist in feeding, are also used for steering while swimming. There are no rear limbs or flippers. The tail, with horizontal flukes rather like a whale, provides propulsion for swimming with steady up and down movements. Normally, the dugong is a slow, graceful swimmer but it can make short sprints when alarmed. The skin, grey to bronze in colour with white patches in older animals, is tough, thick and smooth. The body is stocky due to a thick layer of blubber underneath the skin. The head is large and the eyes small - its eyesight is believed to be rather poor.

The dugong has no external ears, the openings to the ears being small holes at the back of the head. The paired nostrils, which can be opened and closed, are situated on top of the snout allowing the dugong to breathe air without raising head or body out of the water. When submerged, the nostrils are closed. Dugong bones are exceptionally dense and heavy. This adaptation allows them to sink and move along the sea bed with little expenditure of effort - rather like the heavy lead weights of a SCUBA diver.

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## DUGONG BEHAVIOR AND LIFE CYCLE

The dugong has a maximum life span of approximately 50 years. Females mature at 8-18 years of age and give birth to single calves, about 1.2 metres long, after a years gestation. The mother and calf form a very strong bond between each other and remain together for 1-2 years. The calf will suckle the mother for much of this time although it can eat sea grasses quite soon after birth.

The late development of sexual maturity, coupled with the long calf-dependency period, means that most dugongs give birth to only five or six offspring during their lives. Thus dugongs have a very low rate of potential increase in numbers and this makes them vulnerable to exploitation.

Most dugongs are now probably found in Australia, where they occur in Queensland, Northern Territories and West Australia. Here, they may occur in herds of several hundred. The herds, in some areas at least, make seasonal migrations to seek warmer waters in the winter months. Dugongs also occur singly, in mother-calf pairs and in small groups. Much remains to be discovered about their life cycle and general behaviour.

## EXPLOITATION AND HUNTING OF DUGONGS

Throughout much of their range the dugongs have declined greatly in numbers and have become extinct in many areas. This decline is due to several reasons. Dugongs are hunted. A large animal yields up to 150 kilograms of meat and 5-8 gallons of oil. Other parts of the animal are used as well. Tusks of males are used to make cigarette holders, vertebrae for bracelets, skin for drums and belts, bones for making needles, hooks and kitchen utensils. Dugongs are also caught accidentally and drowned in fishing nets, killed in collisions with fast moving boats and poisoned in pollution incidents. Damage to and loss of sea grass beds has also caused dugongs to disappear in some areas. These factors coupled with the dugongs limited capacity to reproduce and improved hunting methods have prompted officials to classify the animal as "vulnerable to extinction."

At worst, it could meet the tragic fate of Steller's sea cow and become totally extinct.

Hopefully, this will not be the case as there is now great concern for the welfare of dugongs. However, more local extinctions will probably occur.

## DUGONGS IN VANUATU

In Vanuatu, very little is known about the dugongs. It is widely distributed throughout the country but probably does not occur at all islands or on all the coastal areas of the larger islands. There are very few large areas of shallow sheltered waters with extensive sea grass beds.

At the present time the Environment Unit of the Ministry of Lands Energy and Rural Water Supply is conducting a study to find out more about the dugong in Vanuatu. This study is made up of two parts - a questionnaire survey and an aerial survey. The questionnaire forms have been widely distributed throughout Vanuatu in an attempt to discover basic information about the dugong - where it occurs, numbers, seasonal movements, methods and reasons for capture, numbers caught and custom laws and stories relating to it.

The second part of the study involves an aerial survey to locate and count dugongs. This method has been successful in Australia and Papua New Guinea. Surveys are made by flying at an altitude of 900 feet at a speed of 170 knots. In the clear coastal waters of Vanuatu, dugongs will be clearly visible.

It is hoped that the two pronged study will provide much valuable information and reveal large numbers of dugongs in Vanuatu. If however, the survey reveals that the dugong population is endangered, then strict conservation measures will be introduced. The dugong is already protected by law in Vanuatu where is illegal to hunt them. The offense is punishable by fines of up to 10 million vatu, the equivalent of US\$100,000.

Throughout much of its range the harmless and peaceful dugong has disappeared. There is little doubt that the worldwide trend will continue in the future. It is hoped that this fate can be avoided in Vanuatu.

( EDITORS NOTE: This article appears courtesy of WAIKA - The Journal of the Vanuatu Natural Science Society and was written by M. R. Chambers of the Environment Unit. Illustration by Gail Perkins)