

SECOND MEETING

On

DUGONG CONSERVATION AND MANAGEMENT

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VANUATU COUNTRY REPORT

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Republic of Vanuatu

THE STATUS OF DUGONG (DUGON DUGON) IN VANUATU

Introduction

The Vanuatu archipelago consists of a Y-shaped chain of 80 islands between the latitudes 13-20°S and longitudes 166-170° E. The total land area is 12,190 km². Most islands are mountainous and rugged, but a number of low-lying islands are present.

The population of Vanuatu is about 140,000 with around 80% leading a traditional way of life. In this shifting agriculture provides most food and is supplemented by hunting and gathering from reef, river and rainforest. About 15,000 people live in the capital, Port Vila, on Efate island.

The overall population density of Vanuatu is about 11.5 persons per km². In the rural areas it is less, about 9.9 per km². The coastal areas in general tend to have greater population densities than inland areas. Thus the greatest pressure on Vanuatu's natural resources, including fauna and flora, is the coastal regions of the islands.

Most of the country's revenue comes through tourism which is becoming a growing industry in Vanuatu. In addition, some of the country's revenue comes through the export of mainly beef, copra, cocoa and kava.

Distribution and status of the dugong

The islands of Vanuatu form the easternmost limit of the dugongs distribution. Elsewhere in the Pacific region dugongs are present in Papua New Guinea, New Caledonia and the Solomon Islands, Yap and Guam and Palau.. In at least the latter three localities it is rare, whilst large numbers are in some parts of Papua New Guinea. Large populations of dugong, perhaps the most numerous remaining in the world are still to be found in Australia.

Throughout its wide range, the dugong is considered to be an endangered species (IUCN, 1982). In many countries the dugong is legally protected and is intensively studied so that policies may be implemented for its conservation. In Vanuatu, the dugong is protected by the Fisheries Act No.55 of 2005, which forbids the capture of mammals in its territorial waters.

Map of the Republic of Vanuatu



Has there any specific studies being made on dugongs?

Several brief studies carried out on dugongs include, Anderson (1986); Anderson and Heinsohn (1978); Hudson (1977 and 1981);

The first detailed survey was done by M.R. Chambers and B.E.T Barker-Hudson in 1989.

Methods Used

The following brief report was based on the 1989 survey.

Two main methods were used in these dugong surveys – a postal questionnaire survey and an aerial survey.

The questionnaire was specially designed to collect information on:

- localities where dugong occur
- dugong abundance at these localities
- changes in dugong numbers
- importance of these localities as feeding areas
- dugong movements within the archipelago
- whether dugong are caught in this locality
- reasons for killing dugong
- seasonality in killing dugong
- numbers of dugong caught
- disappearance of dugong from localities
- people's concern about dugong
- custom laws and traditions about killing dugongs

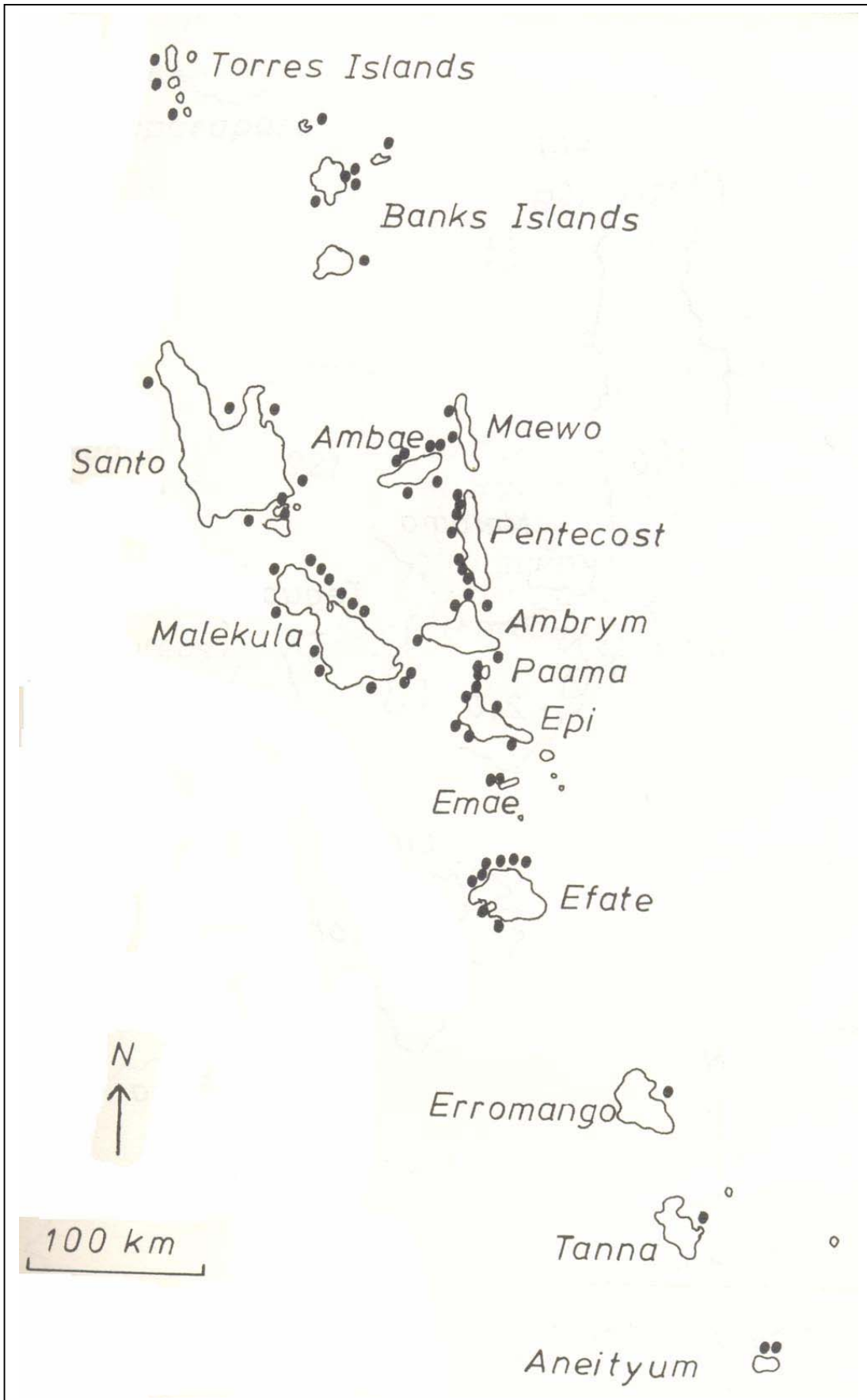
The aerial survey was aim at locating areas in which the dugong occur.

From both surveys, it showed that the dugong is widely distributed throughout Vanuatu. It occurs on every major islands especially in the sheltered waters of the country. Dugongs were reported to occur in small groups of rarely more than 10 animals.

The majority of reported dugong localities are either from the west coasts of islands and in sheltered bays of larger islands. They occur very close to the coast in association with shallow bays and fringing reefs or platform reefs and the shelter and seagrass beds that may be associated with these areas.

As the dugong is a herbivore feeding almost entirely on seagrasses, the distribution and abundance of seagrasses will be the ultimate factors determining their numbers and distribution. At the present time, little is known of seagrass distribution in Vanuatu. On a recent survey of coral reefs there were nine species of seagrasses. They were *Cymodocea rotundata*, *C. serrulata*, *Enhalus acoroides*, *Halodule pinifolia*, *H. uninervis*, *Halophila ovalis*, *Syringodium isoetifolium*, *Thalassia hemprichii* and *Thalassodendron ciliatum*. All these species are reported by Nishiwaki and Marsh (1985) to be eaten by the dugong.

Map of Vanuatu, with generalised distribution of reported dugong localities ()



The questionnaire survey provided no reliable information on dugong movements. It appears that in Vanuatu dugong hunting is not a widespread tradition or way of life. It also appears that in Vanuatu the dugong appears to be killed almost entirely for food, oil being a subsidiary reason. There are no records of dugong flesh being sold in the markets.

Dugongs are killed by a large number of methods but the most common way is by spearing. This means that most dugongs are killed by traditional methods and not modern ways.

Environmental significance and implications

Local

From the detail survey of the dugong carried out in 1989 by M.R. Chambers and B.E.T Barker-Hudson, the results have established that the dugong is distributed throughout the archipelago. The national population is made up of small numbers of dugongs at many localities, including all the major islands and island groups. Generally, the dugong is not extensively hunted and appears to have little cultural significance. In a few localities the dugong is regularly hunted and in these areas it does appear to have a cultural value, but from the reported catch-rates it does not seem to be a major item of the subsistence diet.

Results also show that dugong numbers are not decreasing through hunting pressure. Additionally, there appears to be no pressures from pollution, accidental mortality or loss of seagrass beds at present or in the foreseeable future.

Sub-regional and regional

In the Southwest Pacific dugongs are found in Micronesia (Yap, Guam and Palau) and Melanesia (Papua New Guinea, the Solomon Islands, New Caledonia and Vanuatu). In Micronesia it is rare and must be considered in danger of extinction. In Melanesia, the dugong is fairly common in some areas of Papua New Guinea. In some of these localities it is extensively hunted and is widely sold in markets. In New Caledonia and the Solomon Islands the status of the dugong is not known, but it is hunted in both countries.

So far as is known at present then, Vanuatu has the region's only reasonable dugong numbers that are not subjected to any great pressures that could lead to a marked decline in their numbers. It is not possible to make an accurate estimate of dugong numbers in Vanuatu. However, from the 1989 survey, it was reported from nearly 100 localities and must presumably occur at other ones as well. The average number reported from each locality is about 2 or 3. Thus there are probably at least 200 or 300 dugongs in Vanuatu and possibly many more.

Global

Globally, the dugong is widely distributed from east Africa to the South-west Pacific. Across much of this range, the dugong has already disappeared and is becoming rare in many other places. These declines and extinctions are caused by factors not

operating in Vanuatu – over-hunting, high accidental mortalities, pollution and loss of seagrass beds.

Vanuatu is the easternmost point of the dugong range. Thus it appears that at this eastern limit, the dugong population is secure for the foreseeable future. Vanuatu's dugong population is probably not large compared to numbers elsewhere (at least several thousands occur in Australia). Vanuatu is perhaps, however, one of the few countries throughout the dugong's extensive range in which it is not in danger of decline or extinction.

Management and Policy

It is an objective of the Vanuatu Government to create a system of protected terrestrial and marine areas in Vanuatu. When the question of establishing marine reserves is considered in more detail, then areas known to contain relatively large numbers of dugong, as well as other marine fauna and flora of value, should be given priority. Such areas would include”

- a) Havannah harbour, Undine Bay and the extensive intertidal reef flats to the east of Kakula island (which contain rich seagrass beds). This area probably serves as one continuous dugong habitat.
- b) The Maskelyne islands
- c) The Port Stanley area of Malekula, including Uri and Uripiv islands
- d) The Hog Harbour area of Santo.

The 1989 survey showed that dugongs in Vanuatu are apparently found at many localities, usually in small numbers. Thus, any marine reserve designed to have dugongs as a major component of its value should be fairly large. The small numbers of dugong present in any one small locality would be comparatively highly at risk of extinction through hunting, accident, disease or cyclone.

Although coastal developments, and therefore increased pressures on the dugong, are slight and expected to remain so for the foreseeable future, they will occur from time to time. Thus for any small resort planned to be built in areas where dugongs are found, the project developers had to produce an Environment Impact Assessment (EIA) report. In this report, the developers should be advised to restrict speed boat activities to an identified spot within the area, in order to reduce to a minimum the chance of accidental collisions with dugong.

At the present time the dugong is protected by law in Vanuatu. Large fines can be imposed for killing them, so far as is known no-one has ever been prosecuted for killing a dugong. The law in fact refers to ‘marine mammals’ and is probably more geared to preventing the killing of whales for commercial reasons than the subsistence killing of dugongs. In view of the small numbers of dugongs killed and the difficulty of enforcing such a law in remote localities anyhow, there appears to be little to be gained from attempting to stop the killing of dugongs in Vanuatu, so long as it is confined to subsistence food and ceremonial requirements. The situation should be kept under review however, and if any noticeable increase in the killing of dugongs occurred, resulting in for example the sale of meat in markets, then the law should be enforced.

Recommendations for follow-up and further work

These are some of the recommendations to consider in doing further work on dugong conservation in both Vanuatu and the region:

Work in Vanuatu

- More detailed studies would be required if a major developing programme affecting coastal regions were to be implemented.
- The most suitable area for a dugong study in Vanuatu would be the Havannah Harbour and Undine Bay, North Efate.
- Fourteen years now since the last detailed survey in 1989, a follow up survey needs to be done to determine if any changes have occurred, and the situation reviewed again after that.
- Educational initiatives should be undertaken by the Environment Department and Fisheries Department for turtle conservation and protection. This should include articles and items for the press, and radio in Vanuatu. These information should also be related to the Ministry of Education so that they can be incorporated into the primary and secondary school science and social science curriculum.
- More studies should be made on the cultural uses of the dugong, so that this can be incorporated into conservation and protection programmes of the dugong.

Overseas work

- So far as is known, the status of dugongs in New Caledonia and the Solomon Islands is poorly understood. Studies should be also carried out in these countries, so as to complete the dugong picture for its southwest Pacific distribution.
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