

## TÌNH TRẠNG VÀ SỰ BẢO TỒN BÒ BIỂN *DUGONG DUGON* Ở VIỆT NAM

*Nicholas J. Cox*

WWF Chương Trình Đông Dương

53 Trần Phú, IPO Box 151, Hà Nội, Việt Nam

**TÓM TẮT** Những bằng chứng trong những năm gần đây đã cho thấy sự suy giảm nhanh chóng quần thể Bò biển (*Dugong dugon*) trên khắp thế giới, đặc biệt là ở vùng Đông Nam Á. Có khả năng hiện nay tình trạng Bò biển ở Việt Nam (và các quốc gia láng giềng) còn tồi tệ hơn do thiếu những thông tin về tình trạng, sự phân bố của Bò biển và ít có sự quan tâm hiểu biết giữa những người đề ra giải pháp và cộng đồng địa phương về giá trị của Bò biển. Những chứng cứ chắc chắn đã cho biết rằng Bò biển thường di cư giữa các thảm cỏ biển ở Việt Nam, Campuchia và Thái Lan. Những bằng chứng gần đây ở đảo Phú Quốc nói riêng đã cho thấy ngư dân vẫn tiếp tục săn bắt Bò biển làm thức ăn và làm thuốc chữa bệnh.

Bò biển là động vật có vú sống ở biển có đời sống dài nhưng tỷ lệ sinh sản rất thấp. Thức ăn hàng ngày của Bò biển hầu như chỉ toàn bộ cỏ biển, thế nhưng các thảm cỏ biển cũng đang ngày càng bị đe dọa suy thoái bởi những phương thức đánh bắt hải sản mang tính hủy diệt, sự ô nhiễm môi trường và sự phát triển đô thị, hạ tầng. Đời sống phụ thuộc của Bò biển đối với thảm cỏ biển, tỷ lệ sinh sản thấp và những tập tính hiền lành, di chuyển chậm chạp đã khiến cho các nhà khoa học đưa đến kết luận rằng Bò biển là loài có nguy cơ bị tuyệt chủng cao nhất.

Ở Việt Nam những phương thức đánh bắt hải sản trái phép mang tính hủy diệt trong thảm cỏ biển là những đe dọa nghiêm trọng đối với hệ sinh thái cỏ biển và đồng thời cũng là mối đe dọa lâu dài đối với sự sinh tồn của Bò biển. Những thảm cỏ biển khỏe mạnh là nhân tố quyết định cho việc duy trì nguồn lợi hải sản và vì vậy bảo đảm cho tính bền vững lâu dài đối với sinh kế của cộng đồng ngư dân vùng ven biển.

Các nhà khoa học và quản lý đề nghị cần có sự nỗ lực phối hợp và cộng tác để tổ chức nghiên cứu về sự tồn tại của các quần thể Bò biển và thảm cỏ biển nhằm mục đích lập kế hoạch hành động bảo tồn đúng đắn. Thêm vào đó cũng cần tăng cường giáo dục và cổ động cộng đồng địa phương đối với giá trị bảo tồn tính đa dạng sinh học biển nói chung và bảo tồn Bò biển, hệ sinh thái cỏ biển nói riêng.

## THE STATUS AND CONSERVATION OF THE DUGONG *DUGONG DUGON* IN VIETNAM

*Nicholas J. Cox*

WWF Indochina Programme

53 Tran Phu, IPO Box 151, Hanoi, Vietnam

**ABSTRACT** *In recent years evidence has shown the rapid decline in the Dugong Dugong dugon population worldwide, particularly in SE Asia. The current situation now facing dugongs in Vietnam (and in neighbouring countries) is compounded by a lack of information regarding dugong status and distribution, and poor awareness among decision makers and local communities of the value of the dugong. Strong evidence suggests that dugongs are migrating between seagrass habitats in Vietnam and Cambodia and Thailand. Recent evidence from Phu Quoc island in particular has shown the continued hunting of dugongs for food and medicine.*

*Dugongs are long living marine mammals with a very low reproduction rate. The dugong diet consists almost entirely of seagrass, which is also increasingly threatened by destructive fishing techniques, pollution and development. The dugong's dependence on seagrass, its slow rate of reproduction and its gentle slow-moving habits has led scientists to conclude that the dugong is highly prone to extinction.*

*In Vietnam illegal and destructive fishing techniques in seagrass habitats cause serious threats to seagrass ecosystems and in turn to the long-term survival of the dugong. Healthy seagrass habitats are critical to maintaining fish resources and therefore for ensuring long-term sustainability of coastal fishing community livelihoods.*

*It is recommended that a concerted and coordinated effort be made to conduct research on existing dugong populations and seagrass beds in order that a conservation action plan is formulated. There should also be efforts to educate and encourage local communities about the value of conserving marine biodiversity in general, and dugongs and their seagrass habitats in particular.*

## **I. INTRODUCTION TO THE DUGONG DUGONG DUGON**

Dugongs are the world's only herbivorous marine mammal, requiring 25kg or more of seagrass on a daily basis. Therefore, not surprisingly, dugongs spend a lot of time in seagrass beds, which is a vitally important factor to consider when we are discussing how to conserve dugongs in their natural habitat.

Dugongs can live to be 70 years old. Female dugongs give birth for the first time when they are between 6 and 17 years old, and then only every 2.5-5

years. The female bears a single calf, occasionally twins, after a pregnancy of about 14 months. Newborn calves weigh about 30kg and are 1.2 metres in length. Dugong calves are dependent on milk for at least the first 18 months of their lives and so stay with their mothers during all this time. This strong mother-calf tie is important factor, particularly in the survival of small dugong populations, for orphaned dugong calves have little chance of survival. Once mature, dugongs are often solitary and although are regularly seen in large herds of several hundred animals in Australian waters,

groups are usually small, particularly in SE Asia.

Adult dugongs can grow to 3 metres in length, and weigh between 250-400kg although individuals up to 900kg have been recorded.

When feeding on seagrass, dugongs leave a characteristic feeding trail in the seabed, up to 15m long. These feeding trails can be used to indicate the presence of dugongs in select areas, particular in areas where actual sightings are unconfirmed or the population density is low.

## **II. DISTRIBUTION IN VIETNAM**

Though very little precise information is available regarding the distribution and population size of dugongs in Vietnam, as is the case in much of the rest of Southeast Asia, there are clearly far fewer dugongs in Vietnam today than there were 25 years ago.

Veteran Vietnamese fishermen have reported seeing groups of dugongs in excess of 20 individuals in the north and south of the country, but not in the last 10-15 years.

Until recently, Con Dao National Park was the only known location in Vietnam where regular dugong sightings were confirmed, however recent investigations in one of Vietnam's newest national parks; Bai Tu Long, revealed encouraging information about recent sightings, and also around the island of Phu Quoc, where dugong hunting occurs annually. Other unconfirmed information of dugong sightings in Vietnam come from Co To islands in Quang Ninh, Quang

Binh Province, and Can Gio Biosphere Reserve in the Can Gio District of Ho Chi Minh City but investigation into these sightings is still necessary.

Of the fishermen interviewed in Phu Quoc regarding dugong hunting, one veteran claims to have caught more than 100 dugongs during his lifetime, while another displayed the skulls from 6 dugongs caught in the last 2 years.

In Con Dao, based on seagrass assessments made by scientists from the Nha Trang Oceanography Institute and supported by WWF, the estimated number of dugongs in the area is 15-20 individuals. And through the author's observations in Con Dao in 2001 and early 2002, based on the number of individuals seen in one seagrass bed over a 3 month period, the author estimates only 10 dugongs remaining in Con Dao.

## **III. THREATS**

The specific hunting of dugongs for meat and medicinal purposes used to occur in Con Dao frequently, according to local fishermen, prior to the establishment of a nature reserve there in 1984, and probably continued until 1994, though less intensely. As a result, dugongs are now rarely seen in Con Dao.

In Bai Tu Long National Park, again, according to local fishermen, hunting with spears still occurs though most dugong mortalities appear to be through accidental drowning in fishing nets. Hunting around Phu Quoc island is undoubtedly a serious threat to the long-term survival of dugongs in Southern Vietnam, as is the accidental

drowning of dugongs in fishing nets as a result of an increase in fishing effort in key dugong habitats.

Between 1997 and 2000 in Con Dao, 9 dugong deaths were recorded – of which at least 3 were dugong calves. The likely cause of death in most cases is accidental drowning in unattended fishing nets. One other possibility is starvation through reduced seagrass habitat. This may be as a result of sedimentation, and/or the slow process of seagrass recovery following damage caused by typhoon Linda in 1997.

The biggest direct threat to dugongs, therefore, is the use of fixed fishing nets in shallow seagrass beds - dugongs occasionally become entangled in such nets. For seagrass beds, sedimentation and destructive fishing techniques such as the use of push-nets is the largest direct threat.

#### **IV. REGIONAL SIGNIFICANCE**

The regional significance of the dugong is that it is a migratory species. So, the responsibility to conserve dugongs and their habitat is shared among several countries.

In Australia, satellite-tagging research has shown that dugongs can move more than 600km in one week or less. So there it is an almost certainty that dugongs move long distances that may involve crossing 2 or more international boundaries. The question is whether the seagrass habitats are sufficiently close together to enable dugongs to migrate, and also whether they are able to cross expanses of deep water. Seagrass is sometimes found in water as deep as 40m, and dugongs

have been observed feeding in such deep water in Australia, so it is possible that Vietnamese dugongs do the same in certain locations.

However, if they don't, the ability for dugongs to migrate between suitable seagrass habitats is dependent on the survival of a 'network' of seagrass beds. Similar to the way that a network of terrestrial protected areas provides corridors for species to migrate through, the establishment of a well-conserved network of seagrass habitats along the entire coastline from Vietnam in the east, to Thailand in the west, could potentially help to ensure the necessary conditions for dugong survival in this particular part of Southeast Asia.

#### **V. OPPORTUNITIES & RECOMMENDATIONS**

In terms of research, the immediate priority is to find out where dugongs are still regularly seen. This can be done through coastal community surveys, but needs to be backed up with field surveys using skilled observers. One additional option is through the use of satellite tracking techniques. The use of satellite tracking of small dugong populations is somewhat of a contentious issue, mainly because of the risks involved in capturing dugongs in order to fit them with satellite tags. However, it is the only tool available to provide us with information about dugong movements over long distances. We also need to build up an accurate picture of the extent of seagrass habitats through existing maps and

field surveys by marine scientists. Satellite tagging is probably best to be considered only as a last resort, and priority should therefore be given to less risky and expensive methods.

The education and involvement of local communities, is also a critical component. For many people, the value of the dugong is, or at least was, purely for meat and medicinal purposes, and they are largely unaware of its ecological benefits.

When discussing dugongs it is of course, also important to discuss seagrass, as dugongs are almost totally dependent on it. There are many benefits of seagrass, including: stabilisation of sediments in shallow water, which is important for reducing erosion, supplying nutrients to the inshore marine ecosystem through decomposition, and acting as nurseries and sheltering grounds for important commercial species such as shrimp and lobster larvae. So, as well as providing a vital direct food source for dugongs, marine turtles and birds, seagrass ecosystems have a major role in providing for the economic activities of many coastal communities. It is therefore, in the interest of local communities to act as stewards of their local environment.

The dugong could be used as a flagship species for marine

conservation in the near shore marine environment in general, and as an indicator species for seagrass ecosystem conservation in particular, if, local communities, conservationists and other decision makers accept the dugong as more than just a marine mammal, but rather a key species as part of a much more complicated and inter-related system.

And efforts at the local level will not be enough. There is an urgent need for trans-boundary cooperation. It is unlikely that dugongs were ever seen here in such large numbers as they are in Australia, but there is a genuine desire to conserve the remaining and clearly endangered dugongs that are found along the entire coastline, governments and conservationists from Thailand, Cambodia and Vietnam must work together and it is therefore recommended that urgent attention be given to the preparation of a conservation action plan for all three countries. WWF Indochina Programme is leading the way for dugong conservation in Vietnam and beyond, and through their efforts and in collaboration with other agencies such as the Nha Trang Oceanography Institute; there is the potential for significant progress and success in this field.