

Con Dao Proposed Marine Protected Area

Alternative site name(s)

Con Son, Poulo Condore

Province(s)

Ba Ria-Vung Tau

Status

Proposed

Management board established

No

Latitude

8°34' - 8°49'N

Longitude

106°31' - 106°45'E

Bio-unit

05a - Mekong Delta



Conservation status

On 1 March 1984, the establishment of Con Dao National Park was decreed by Decision No. 85/CT of the Chairman of the Council of Ministers. The area given in this decree was 6,000 ha (MARD 1997). On 31 March 1993, an investment plan for Con Dao National Park was approved by Decision No. 135/TTg of the Prime Minister. The area of the national park given in this investment plan was 15,043 ha (ADB 1999), comprising a terrestrial component of 6,043 ha and a marine component of 9,000 ha (Anon. 1990). On 16 May 1998, a revised investment plan for the national park was approved by Ba Ria-Vung Tau Provincial People's Committee. The area of the national park given in the revised investment plan was 19,998 ha, comprising a terrestrial component of 5,998 ha and a marine component of 14,000 ha (Anon. 1997). Together with Cat Ba National Park, Con Dao National Park is one of only two decreed protected areas in Vietnam to include a marine component.

The establishment of a marine protected area at Con Dao was first proposed by Hai Phong Institute of Oceanography in 1995. In this proposal, the area of the proposed marine protected area was not defined (Nguyen Huy Yet and Vo Si Tuan 1995). Con Dao was subsequently included on a list of 16 proposed marine protected areas compiled on behalf of MOSTE in 1998

(Nguyen Chu Hoi *et al.* eds. 1998). The proposal to establish a marine protected area at Con Dao was reiterated by the Asian Development Bank (ADB 1999) in their marine and coastal protected areas systems plan for Vietnam. In the ADB proposal, the area of the proposed marine protected area was given as 29,400 ha, comprising a marine component of 23,000 ha and a terrestrial component of 6,400 ha.

Topography and hydrology

Con Dao proposed marine protected area is centred on an archipelago of 14 islands, the largest of which, Con Son, covers 5,800 ha. The archipelago is situated about 80 km off the coast of southern Vietnam. The highest point on Con Son island is 577 m, while the deepest point of the marine component is 50 m below sea level. However, most of the marine waters around the islands are less than 30 m deep.

Biodiversity value

The shallow waters of the Con Dao archipelago support coral reefs, seagrass beds and mangroves. The commonest coral reef forms are fringing reefs and patch reefs. The dominant coral genera include *Acropora*, *Porites*, *Pachyseris*, *Montipora* and *Pavona*. The coral reef ecosystem supports a high diversity of coral reef fish, and 202 species have been recorded to

Con Dao Proposed Marine Protected Area

date. The recorded density of coral reef fish at Con Dao is higher than at any other site in Vietnam (ADB 1999).

The seagrass beds at the proposed marine protected area are dominated by *Thalassia hemprichii* and *Halophila ovalis* (ADB 1999). These beds are an important feeding ground for the globally threatened Dugong *Dugong dugon*, which is known to occur at Con Dao (Cox 2000).

The mangroves are characterised by *Bruguiera gymnorrhiza*, *Avicennia alba* and *Rhizophora mucronata*, and are an important nursery area for fish species (ADB 1999).

The beaches of the Con Dao archipelago are nesting grounds for two marine turtle species: Green Turtle *Chelonia mydas* and Hawksbill Turtle *Eretmochelys imbricata*. At the four main beaches, there are around 1,000 marine turtle landings each year (Nguyen Thi Dao 1999).

Conservation issues

According to ADB (1999), destructive fishing techniques are not widely practiced in the waters of the Con Dao archipelago. However, ADB (1999) report over-exploitation of marine products by both local fishers and fishers from other areas, which has led to the disappearance of lobsters, sea cucumbers and rare molluscs from some reefs. Many fishing boats visit the islands to resupply with freshwater or to shelter from storms. This results in anchor damage to reefs, habitat disturbance and pollution (ADB 1999).

The population of Dugong at Con Dao has declined in recent years and now is estimated to be only 10 to 20 animals. The main causes of the population decline are believed to be injury from boat propellers, entanglement in fishing nets, and loss of seagrass beds. If unchecked, these factors threaten to cause the extinction of the Dugong population within a few years (Nguyen Thi Dao 1999, Cox 2000).

The loss of seagrass beds is also a threat to Green Turtles, for which they are an important food source. Seagrass beds are very susceptible to environmental changes, especially siltation and changes in hydrology, which result from infrastructure development on the islands. Other threats to marine turtles at the proposed

marine protected area are use of high intensity lights by fishers, collection of turtle eggs for food, pollution and loss of nesting beaches to infrastructure development (Nguyen Thi Dao 1999).

The population of the islands is expected to grow to 10,000 people within the next 5 to 10 years, which will increase the pressures on the marine ecosystem. ADB (1999) report that the district and national park authorities have serious concerns about the effects of current and future infrastructure development, population growth and tourism development on the environment.

Since 1993, the activities of Con Dao National Park management board have included patrolling and protecting the marine environment. For these tasks, the national park has two patrol boats (ADB 1999). The national park management board also protect the marine turtle nesting beaches, and have established turtle hatcheries on four islands, with support from the WWF Indochina Programme (Nguyen Thi Dao 1999). It is not clear whether, if a marine protected area is established at Con Dao in the future, the marine component will continue to be managed by the national park management board or be placed under a different management authority.

Other documented values

Around the Con Dao archipelago are some of the most important fishing grounds of southern Vietnam, and the waters of the archipelago are an important breeding and nursery area for a range of marine organisms. In this way, the waters of Con Dao proposed marine protected area contribute to the maintenance and sustainability of the region's fisheries and the local economy (ADB 1999).

In addition, Con Dao marine protected area has high potential for the development of ecotourism in the form of snorkeling, diving and visiting the marine turtle nesting beaches. This potential is already beginning to be realised, although with negative as well as positive environmental impacts.

Related projects

Three conservation projects with a focus on marine conservation have been implemented at Con Dao in

recent years. Firstly, WWF, together with Global Environmental Consultants Ltd., implemented the *Con Dao Coastal and Marine Environmental Management Demonstration Project*, with funding from the Asian Development Bank (ADB). The objectives of this project were to develop a coastal and marine environmental management plan and an ecotourism plan for the national park. Secondly, the WWF Indochina Programme, Nha Trang Institute of Oceanography and Hong Kong University of Science and Technology implemented a Danida-funded project on marine biodiversity conservation in 1998. Thirdly, the WWF Indochina Programme implemented a second Danida-funded project on marine biodiversity conservation in 2000.

In addition, there is one on-going project at Con Dao National Park. For the last five years, the WWF Indochina Programme has been working with the national park management board to implement a marine turtle conservation project. This project has initiated a turtle monitoring programme, and has set up five artificial hatcheries to protect turtle eggs from natural damage. This project is funded by WWF International, WWF US and WWF Netherlands (Nguyen Thi Dao pers. comm.).

ADB are currently supporting a regional technical assistance called *Coastal and Marine Environment Management in the South China Sea (East Sea)*, partly supported by a grant from the Swedish Development Cooperation Agency. This project aims to promote improved management of coastal and marine resources in the region, and is being implemented by MOSTE. Under this project, a draft coastal and marine protected area systems plan for Vietnam has been compiled, which reviews a number of candidate sites for inclusion within a revised national system of 30 marine and coastal protected areas. Con Dao is included in this plan.

Literature sources

ADB (1999) Draft coastal and marine protected areas plan. Hanoi: Asian Development Bank.

Anon. (1990) [Investment plan for Con Dao National Park]. Con Dao: Con Dao National Park Management Board and the Centre for Natural Resources and Environmental Studies. In Vietnamese.

Anon. (1997) [Investment plan for Con Dao National Park: 1998-2002]. Ho Chi Minh City: Ho Chi Minh City Sub-FIPI. In Vietnamese.

Anon. (1998) [Con Dao National Park special issue]. *Bien [The Sea]*: August, September and October 1998. In Vietnamese.

Con Dao National Park Management Board (2000) [FPD questionnaire]. Con Dao: Con Dao National Park Management Board. In Vietnamese.

Con Dao National Park (2000) Con Dao National Park, Vietnam. Tourist map of by Con Dao National Park.

Con Dao National Park (2000) Ecotourism in Con Dao National Park. Tourist booklet for Con Dao National Park.

Cox, N. (2000) Vietnam's gentle sea cow teeters on brink of extinction. *Vietnam News* 16 September 2000.

Hardcastle, J. (undated) Tourism development on Con Dao islands: a case study in action. Unpublished discussion paper.

Ngo An (1999) Effects of the Typhoon No. 5 on the protective power of the vegetation cover of Con Dao National Park. *Lam Nghiep [Vietnam Forest Review]* February 1999: 17-19. In Vietnamese.

Nguyen Chu Hoi, Nguyen Huy Yet and Dang Ngoc Thanh eds. (1998) [Scientific basis for marine protected areas planning]. Hai Phong: Hai Phong Institute of Oceanography. In Vietnamese.

Nguyen Duc Ngan (1994) [Building forestry database and vegetation map in Con Dao National Park]. Ho Chi Minh City: Ho Chi Minh City Sub-FIPI. In Vietnamese.

Nguyen Huy Yet and Vo Si Tuan (1995) [Information on proposed marine protected areas on the coast of Vietnam]. Hai Phong: Hai Phong Institute of Oceanography. In Vietnamese.

Nguyen Thi Dao (1999) Marine turtle status report in Con Dao National Park. Hanoi: WWF Indochina Programme.

Nguyen Truong Giang (1998) [Marine turtle conservation plan]. Unpublished report to Con Dao National Park Scientific Department. In Vietnamese.

Con Dao Proposed Marine Protected Area

Ross, M. and Andriani, A. D. (1998) Marine biodiversity conservation at Con Dao National Park, Vietnam. Hong Kong: Institute of Environment and Sustainable Development, Hong Kong University of Science and Technology.

Scott, D. A. (1989) A directory of Asian wetlands. Gland: IUCN.

Vo Si Tuan ed. (1995) [Survey report on the biodiversity resource utilisation and the conservation potential of Con Dao island]. Nha Trang: Nha Trang Institute of Oceanography. In Vietnamese.

Vo Si Tuan ed. (1995) Survey report on the biodiversity, resource utilization and conservation potential of Con Dao islands (south Vietnam). Nha Trang: Nha Trang Institute of Oceanography.

Vu An Ha, Nguyen Thanh Son, Hoang Dung and Vu Van Bien (1983) [Science report on Con Dao protected area]. Hanoi: Forest Inventory and Planning Institute. In Vietnamese.

Wildash, P. (1967) An ornithological expedition to Poulo Condore (Con Son). Newsletter of Ornithologists Association of Vietnam 1: 19-29.