

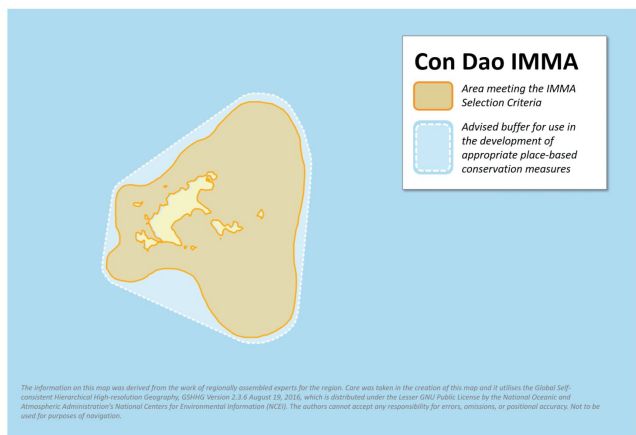
Con Dao IMMA

Description

Con Dao National Park is a nationally protected area in Ba Ria-Vung Tau Province. The Park is located about 100 km offshore of the southeast coast of Vietnam (Figure 1). This National Park includes 7 islands and 140 square kilometres of protected marine area. Located approximately 100 km from the Mekong River estuary, Con Dao National Park is affected by high nutrient discharges from the Mekong River. There are three main types of marine habitat in Con Dao National Park: coral reefs, seagrass beds and mangroves.

In Vietnam, the dugong is extremely rare, and little is known about the locally occurring dugongs in Con Dao National Park. Official records of dugongs on Con Dao Island can be dated back to 1977, when seven individuals were captured for biological specimen collections (Van Bree and Gallagher, 1977). There was also a recorded dugong sighting in Con Dao in 1995 (Lang Van Ken, 1997).

Sightings of dugongs in the Con Dao area were summarised in Pham (2003). However after 2003, there is a large gap of information on dugongs in the Con Dao archipelago (Hines et al., 2012). Since 2012, there have been no systematic dugong surveys conducted in the Park. However, the local Park staff records opportunistic sightings of dugongs during their routine patrols and seagrass bed monitoring (Con Dao National Park, 2013). In 2014, National Park staff reported a dugong calf entangled in a net (Con Dao National Park, 2014). In addition to dugong sightings, Con Dao rangers and staff mentioned the high frequency of opportunistic sightings of cetaceans (unidentified delphinids). Cetacean stranding events recorded by Con Dao rangers



Area Size

869 km²

Qualifying Species and Criteria

Dugong – *Dugong dugon*

Criterion A; B (1); C (2)

Marine Mammal Diversity

Dugong dugon

Summary

Con Dao is an archipelago located about 100 km offshore of the southeast coast of Vietnam. The Con Dao area is one of only two locations in Vietnam – the other being the island of Phu Quoc in the eastern Gulf of Thailand, that have had records of dugong sightings since the year 2000. The seagrass beds in Con Dao, which are mainly dominated by *Halophila ovalis*, *Halophila minor*, and *Halodule uninervis*, have been strictly protected from fishing and development by the National Park rangers. In combination with consistent dugong sightings reported by the park's rangers, Con Dao National Park potentially contains important foraging habitat for this population of locally occurring and possibly resident dugongs.

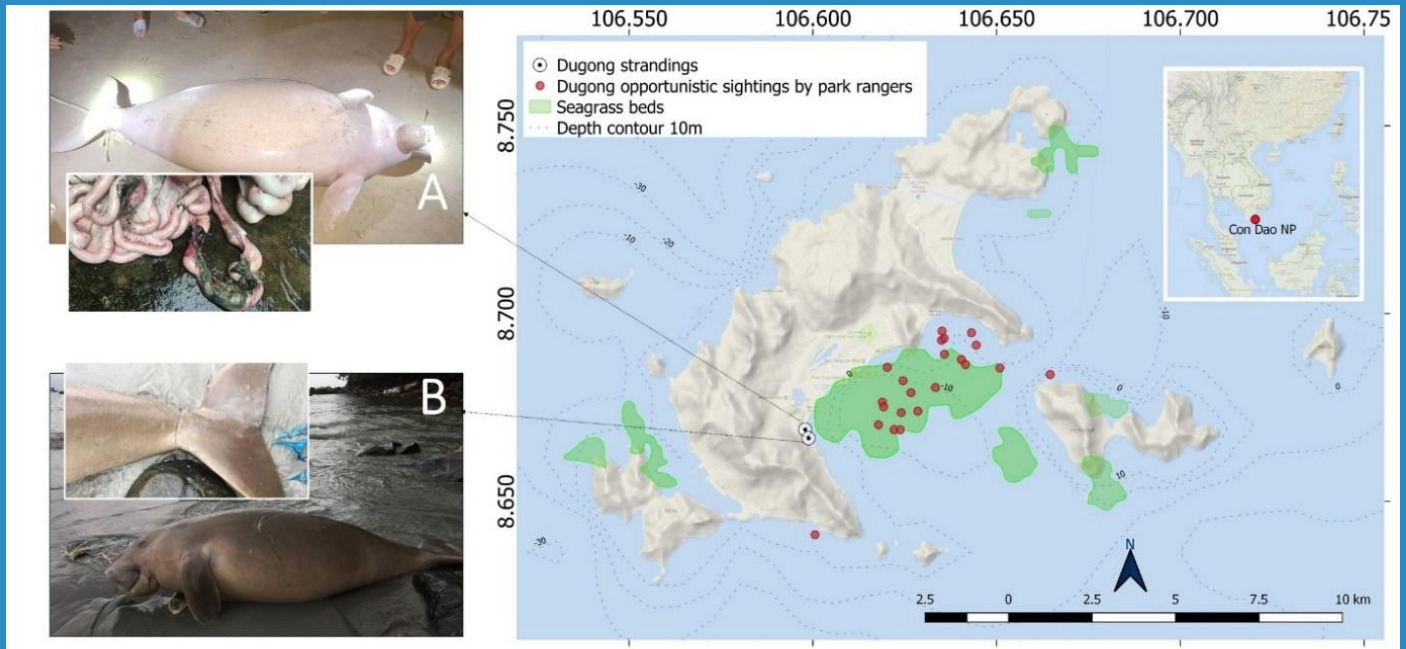


Figure 1: Map of the Con Dao National Park and archipelago. Seagrass extents (Pham 2003), dugong stranding (Nguyen pers.comm 2018) and sightings areas (Con Dao National Park, 2013, 2014, 2015, 2016, 2017) are also depicted. Figures 1A and B are examples of dugong stranding from 2018 (Nguyen pers.comm 2018).

include Pygmy sperm whale *Kogia breviceps*, Indo-Pacific Bottlenose Dolphin *Tursiops aduncus* and Melon-headed Whale *Peponocephala electra* (Con Dao National Park, 2014, 2015, 2016, 2017).

The Con Dao area is one of only two locations in Vietnam – the other being Phu Quoc Island, that have had relatively recent dugong records (records made after year 2000) (Cox et al. 2003, Hines et al. 2012). The seagrass beds in Con Dao, which are mainly dominated by *Halophila ovalis*, *Halophila minor*, and *Halodule uninervis*, have been strictly protected from fishing and development by the National Park rangers (Con Dao National Park, 2013).

Criterion A: Species or Population Vulnerability

The dugongs have been assessed as Vulnerable on a global scale in the IUCN Red List of Endangered species (Marsh and Sobotzick, 2015). The dugong (*Dugong dugon*) is a coastal marine mammal inhabiting tropical and subtropical coastal waters (Marsh et al. 2011, Hines et al. 2012). Dugongs have

been prioritized for conservation by three international conservation conventions including: The Convention on Biological Diversity (CBD); the Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES); and the Convention on Migratory Species of Wild Animals (CMS) (Marsh and Sobotzick, 2015).

Dugongs are also mentioned in the Coral Triangle Initiative as species whose habitats need to be protected (Marsh and Sobotzick, 2015). All conventions mention the lack of robust ecological data for dugong conservation.

Criterion B: Distribution and Abundance Sub-criterion B1: Small and Resident Populations

Since 2002, no systematic research has been conducted on the dugong in the Con Dao archipelago, which results in enormous gaps of information on the abundance and distribution of dugongs as well as anthropogenic threats. Cox (2002), reported observing a total of 33 individuals,

including several calves between 2000-2002. Cox believed there were about 10 dugongs in the Con Dao area but this estimate was mainly based on his observations in one location, not a formal survey of the whole archipelago (Cox, 2002). The World Wildlife Fund (WWF) also conducted an interview survey in Con Dao and Phu Quoc islands but only to document inadequate information on the dugong (Adulyanukosol, 2002; Hines et al., 2005). From 2010 until October 2018, several opportunistic sightings of dugongs were made by the marine patrolling team of the Con Dao National Park. In addition the Park is located approximately 100 km offshore of the southeast coast of Vietnam. It is inferred that the individuals in the locally occurring population are an isolated group. In summer 2018, two dugongs were found dead in the Park. Necropsies performed by trained veterinarian of Con Dao National Park showed signs of interactions with fishing gear, such as rope marks on the flukes, and intestine perforations

potentially caused by shallow remnant fishing hooks in a seagrass bed. For such a small population, two mortalities within two weeks could be a significant threat to what we assume is a small group of animals (Marsh and Sobotzick, 2015).

Criterion C: Key Life Cycle Activities

Sub-Criterion C2: Feeding Areas

Without a systematic survey, there is limited information on the abundance and distribution patterns of dugongs in this area. The seagrass beds in Con Dao, which are mainly dominated by *Halophila ovalis*, *Halophila minor*, and *Halodule uninervis*, have been strictly protected from fishing and development by the National Park ranger, and their presence and the number of dugong sightings around Con Dao National Park has been frequently used to argue that dugongs are foraging in the Park (Pham, 2003). This



Figure 2: Stranded dugong individual recorded by Con Dao ranger in 2018. Photo: Con Dao National Park

was backed up by the historical occurrence and consistency of dugong sightings. We suggest, based on the consistency of sightings over time, that the seagrass meadows in this area are important feeding grounds for the dugong, especially as the Park is isolated from the mainland. Additionally, the necropsy of two freshly stranded dugongs found in Con Dao in August 2018 revealed a stomach full of seagrass, implying that these dugongs could have foraged in nearby seagrass.

Supporting Information

Adulyanukosol, K. 2002. Report of Dugong and seagrass survey in Vietnam and Cambodia. Kanjana Adulyanukosol, Phuket Marine Biological Centre, Phuket 83000 Thailand. 4 pp.

Cox, N. 2002. Observations of the Dugong *Dugong dugon* in Con Dao National Park, Vietnam, and recommendations for further research. Unentitled Report. 8 pp.

Cox, N., Tran, C.K., Hines, E. 2003. Proceedings of the Workshop on the Conservation of the Dugong and Seagrass Habitats in Vietnam January 20-2- 2003. World Wildlife Fund (WWF), Indochina Programme, Hanoi, Vietnam.

Con Dao National Park website. 2013. Made Available from <http://www.condaopark.com.vn/vn/tai-nguyen-sinh-vat-bien-con-dao.html>

Con Dao National Park. 2014. Annual report on monitoring valuable marine animal. Internal report (in Vietnamese). Made Available from <http://www.condaopark.com.vn/vn/tai-nguyen-sinh-vat-bien-con-dao.html>

Con Dao National Park. 2015. Annual report on monitoring valuable marine animal. Internal report (in Vietnamese). Made Available from <http://www.condaopark.com.vn/vn/tai-nguyen-sinh-vat-bien-con-dao.html>

Con Dao National Park. 2016. Annual report on monitoring valuable marine animal. Internal report (in Vietnamese). Made Available from <http://www.condaopark.com.vn/vn/tai-nguyen-sinh-vat-bien-con-dao.html>

Con Dao National Park. 2017. Annual report on monitoring valuable marine animal. Internal report (in Vietnamese). Made Available from <http://www.condaopark.com.vn/vn/tai-nguyen-sinh-vat-bien-con-dao.html>

Lang Van Ken. 1997. New Record of dugong in Con Dao waters, southern Vietnam. *Sirenews* 27: 17-18.

Hines, E., Adulyanukosol, K., Somany, P., Sam Ath, L., Cox, N., Boonyanate, P., and N.X. Hoa. 2008. Community interviews to assess conservation needs of the dugong (*Dugong dugon*) in Cambodia & Phu Quoc, Vietnam. *Oryx* 42(1): 113-121.

Hines, E., Reynolds, J., Mignucci-Giannoni, A., Aragones, L.V., and M. Marmontel. 2012. *Sirenian Conservation: Issues and Strategies in Developing Countries*. Edited Volume. The University Press of Florida.

Pham, H.D. 2003. The primary assessment on the dugong population in Viet Nam. Pages 64-71 Proceedings on the 4th SEASTAR 2000 Workshop. Kyoto University, Kyoto.

Isaac, N.J.B., Turvey, S.T., Collen, B., Waterman, C. and Baillie, J.E.M. 2007. Mammals on the EDGE: Conservation priorities based on threat and phylogeny. PLoS ONE 2.

Marsh, H. and Sobotzick, S. 2015. *Dugong dugon*. The IUCN Red List of Threatened Species 2015: e.T6909A43792211. 8235
<<http://dx.doi.org/10.2305/IUCN.UK.2015-4.RLTS.T6909A43792211.en>>

Nguyen, V.V. 2018. Con Dao National Park. Personal Communication.

Van Bree, P. J., and Gallagher, M. D. 1977. Catalogue de la collection des mammifères marin du Museum de Bordeaux. Ann. Soc. Sci. Nat. Char-marit 6: 289-307.

Acknowledgements

We would like to thank the participants of the 2018 IMMA Regional Expert Workshop for the identification of IMMAs in the Northeast Indian Ocean and Southeast Asian Seas region. Funding for the identification of this IMMA was provided by the Global Ocean Biodiversity Initiative funded by the German government's International Climate Initiative (IKI). Support was also provided by Whale and Dolphin Conservation and the Tethys Research Institute.

**MARINE MAMMAL
PROTECTED AREAS
TASK FORCE**

IUCN SSC WCPA IMMA

Supported by:
Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety

based on a decision of the German Bundestag

Gobi TETHYS since 1986 WDC WHALE AND DOLPHIN CONSERVATION

Suggested Citation: IUCN-MMPATF (2022) Con Dao IMMA Factsheet. IUCN Joint SSC/WCPA Marine Mammal Protected Areas Task Force, 2022.

PDF made available for download at
<https://www.marinemammalhabitat.org/portfolio-item/con-dao/>