



**MEMORANDUM OF UNDERSTANDING  
ON THE CONSERVATION AND  
MANAGEMENT OF MARINE TURTLES  
AND THEIR HABITATS OF THE INDIAN  
OCEAN AND SOUTH-EAST ASIA**

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15 October 2019

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8<sup>TH</sup> MEETING OF THE SIGNATORY STATES

Da Nang, Viet Nam, 21-25 October 2019

Agenda Item 9.2

**PROPOSAL FOR INCLUSION OF CON DAO NATIONAL PARK, VIET NAM  
INTO THE IOSEA SITE NETWORK**

*(Prepared by Viet Nam)*

Action requested:

- Consider the proposal
- Decide on the site's inclusion in the Site Network in the light of the Advisory Committee's evaluation

# SITE INFORMATION SHEET TEMPLATE (Version: 19 July 2013)

## in support of a formal proposal to nominate a site for inclusion in the IOSEA Marine Turtle Site Network

The completed Information Sheet is intended to be submitted to the IOSEA Secretariat, through the national IOSEA Focal Point. As the contents will serve as the primary basis for evaluation of site nominations, responses should be as comprehensive as possible.

1. **Date of submission (DD/MM/YYYY):**   
*The date on which the Site Information Sheet was completed.*

2. **Name and address of compiler(s), if not the IOSEA Focal Point**  
*Name and contact information (including affiliation) for the individual(s) who prepared this information sheet, for formal submission through the national IOSEA Focal Point.*

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Functional Title:	Deputy Director	
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Email:	huecondao@gmail.com	

3. **Country:** *The name of the country in which the site is located.*

4. **Name of site:** *The name of the site (alternative names should be given in brackets).*  
  
Local name: Vuon quoc gia Con Dao

5. **Geographical coordinates**  
*The geographical coordinates (latitude and longitude) of the **approximate centre** of the site, expressed in 'decimal degrees'. For example, the location of the IOSEA Secretariat in Bangkok is 13.763483°, 100.508157°. If the site consists of two or more discrete units, the coordinates of the centres of each of these units should be given. (Add any additional coordinates in a separate annex.)*

*Decimal Degrees*

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## 6. General location

Describe the general location of the site. This should include the site's distance (in a straight line) and compass bearing from the nearest significant administrative centre, town or city. The human population of the listed centre and its administrative region should also be stated. (See also the information requested under point 24: Site Map)

**Con Dao National Park** is located in the Con Dao archipelago, Con Dao District, Ba Ria - Vung Tau province. It is situated off the south-east coast of Viet Nam, which is 180km from Ba Ria - Vung Tau province, about 80km from the mainland Mekong Delta region and 230km from Ho Chi Minh City. The local population here is 7,085 people (District official report in 2018). Con Dao National Park consists of 14 islands, of which 13 islands are uninhabited and there is a lighthouse on the Bay Canh island.

**Con Dao archipelago** is an archipelago of 16 mostly uninhabited islands, of which the largest is Con Son island (only inhabited island) with a year-round fresh water supply. Of Con Son island's area of 5,400 ha, 4,500 ha are an uninhabited area under Con Dao National Park.

In the remainder of this document, the codes that appear in square brackets alongside each of the titles below refer to sections of a separate document describing the evaluation criteria, which will be informed by the proponents' submission. **Proponents are encouraged to consult the Evaluation Criteria document<sup>1</sup> for more explanation of the rationale behind each criterion and of the detailed information to be used for evaluation purposes.**

## 7. Area [N3]

The approximate surface area of the site to be included in the network (in hectares or square kilometers). If the site is an island, indicate also the total surface area of the coastline directly relevant to turtle conservation. Area should correspond to the map provided under point 24.)

Con Dao National Park has a total area of 19,990.7 ha with 14 islands comprising two functional components as follows:

Terrestrial Component: 5,990.7 ha

- Strictly Protected Zone: 4,215.6 ha
- Ecological Restoration Zone: 1,755.1 ha
- Administration and Service Zone: 20 ha

and a Marine Protected Component: 14,000 hectares

- Strictly Protected Zone: 1,735.1 ha
- Ecological Restoration Zone: 2,740.2 ha
- Development Zone: 9,524.7 ha

There are 14 marine turtle nesting beaches around the islands, with a total coastline of about 3,500 m and an area of 24 ha.

The offshore area is important as inter-nesting habitats for Green Turtles (*Chelonia mydas*) and feeding grounds for Hawksbill Turtles (*Eretmochelys imbricata*).

## 8. Physical features of the site [EB1- 4, S5, S6, N1]

Describe the principal physical characteristics of the site, including the marine turtle habitat types occurring at the site. List the ecosystem types included in the site (nesting beach, foraging habitat, reproductive habitat, migratory habitat) and the approximate area in hectares (or km<sup>2</sup>) of each habitat type included. Indicate whether the site's physical attributes are shared by other sites in the country, or are exceptional/unique.

The topography of Con Son Island is mountainous, and dominated by a granite ridge, which runs from south-west to north-east, sheltering the bays on both sides of the island from strong winds. The highest points on the island are the summits of Mount Thanh Gia and Mount Chua, at 577 m and 515 m respectively. The smaller islands reach a maximum elevation of 200 m (BirdLife International and MARD 2004). There are no permanent water sources on any of the islands of the Con Dao archipelago, only seasonal streams. In the rainy season, water is plentiful but, in the dry season, there is a serious lack of fresh water. Three reservoirs collect water during the rainy season to supply the local population during the dry season.

**Nesting habitats:** there is a total of 14 nesting beaches with an area of about 24 ha, of which 8 important nesting beaches are located on small islands, surrounding Con Son island.

<sup>1</sup> Criteria for the Evaluation of Nominations to the Network of Sites of Importance for Marine Turtles in the Indian Ocean – South-East Asia Region, IOSEA Marine Turtle MoU Secretariat. <http://ioseaturtles.org/sitenetwork-evaluation.php>

- Bay Canh island: 4 nesting beaches, with a coastline of about 1,700m (Cat Lon beach, Duong beach, San beach and Xi Mang beach). The topography is uneven, and the island is 5.7 km in length and 3 km in width. The highest summits are at 352 m and 310 m above sea level. The average slope is from 20° to 25°, the soil layer is from 30 cm to 60 cm in depth, stony outcrops cover 20% of the island, and there are few large emerging stone blocks on the island. Amongst the beaches here, Cat Lon Beach is the longest with the highest number of marine turtles emerging and laying eggs in Viet Nam.
- Tai island: 1 nesting beach, with a coastline of about 90m. It is mainly medium to coarse - grain sand and coralline sand.
- Tre Lon island: 1 nesting beach, with the coastline of about 180m. This beach is getting eroded due to rising sea level and losing its area every year.
- Cau island: 2 nesting beaches, with a total coastline of about 170m. These 2 beaches are covered by dead coral.
- Other 6 nesting beaches are on Con Son island. They have medium to coarse - grain sand and coralline sand.

### **Foraging habitats**

The waters of Con Dao offer feeding habitats for green turtles (*Chelonia mydas*) and hawksbill turtles (*Eretmochelys imbricata*); green turtles are more commonly present while the Hawksbill Turtles are less. The surface area of the foraging habitats is still unknown.

## **9. Ecological resources [EB1- 4, S5, S6, N1]**

*Describe the ecological resources at the site, including marine turtles and other noteworthy biodiversity. Describe the marine turtle species / management units occurring at the site, if they are known. Where possible, provide an abundance estimate for each marine turtle species/management unit (e.g. in terms of average number of turtles nesting annually or foraging). Evaluation Criteria EB1a and EB1b offer guidance on how to describe the relative importance of a site frequented by one or more marine turtle species. Indicate whether the site's ecological resources are shared by other sites in the country or are exceptional/unique.*

The Con Dao archipelago is located on the boundary between two sea currents: a warm current from the south, and a cold current from the north.

Con Son Island and many of the other islands of the archipelago are extensively forested. According to the revised investment plan, the national park supports 5,990.7 ha of forest, equivalent to 81% of the total terrestrial area. To date, 1,077 vascular plant species have been recorded at the National Park, including 91 species of medicinal plants. One outstanding feature of Con Dao's flora is that 44 plant species were discovered for the first time here on the islands. A number of these species are named after the site, including *Dipterocarpus condorensis*, *Ilex condorensis*, *Pavetta condorensis* and *Psychotria condorensis* (Anon 2009).

To date, 29 species of mammal, 85 species of bird and 46 species of reptile and amphibian have been recorded at the National Park. Although the number of species is relatively low, the density of individual species is often high, and there are a number of endemic taxa, including an endemic subspecies of Black Giant Squirrel, *Ratufa bicolor condorensis*. The bird fauna of Con Dao National Park is not well studied. However, a number of bird species recorded at Con Dao are not known from any other site in Viet Nam, including the Nicobar Pigeon *Caloenas nicobarica*, Red-billed Tropicbird *Phaethon aethereus*, Pied Imperial Pigeon *Ducula bicolor* and Masked Booby *Sula dactylatra* (Nguyen Chi Thanh (Eds.) 2004).

The marine ecosystems at the National Park include mangroves, coral reefs and seagrass meadows. Mangroves cover a total area of 31 ha and are distributed around Ba Island, along the west coast of Bay Canh Island, and along the north and south coasts of Con Son Island. The coral reefs at Con Dao are among the most pristine in Viet Nam, and are distributed in shallow waters around the islands, covering a total area of about 1,800 ha. The coral reefs support high levels of marine biodiversity (Devantier 2002), including over 370 coral species. Surveys conducted by Nha Trang Institute of Oceanography have shown the presence of 1,323 species of marine fauna and flora, including 44 species listed in the Red Data Book of Viet Nam (ADB 1999). With 153 species, the recorded mollusc diversity of Con Dao is the highest compared to any other of Viet Nam's offshore islands (ADB 1999). The National Park supports around 1,040 ha of sea-grass meadows, which support a small population of the globally threatened marine mammal, Dugong, *Dugong dugon*, numbering around 12 individuals (Anon. 2009).

### **Marine turtles**

The beaches around the Con Dao islands are the important nesting sites for 2 species of marine turtles, namely

the green turtles (*Chelonia mydas*) and Hawksbill Turtles (*Eretmochelys imbricata*), both of them are listed in Red Book Viet Nam and Red Book IUCN.

Although both Green Turtles and Hawksbill Turtles have been recorded nesting on Con Dao islands Green Turtle nesting is more common and no Hawksbill Turtle nesting has been recorded in recent years, albeit they occur in Con Dao waters. For Green Turtles, the average number of nests per season is approximately 1,500, with the highest number of nests (2,455) laid in 2016. Between 2015 and May 2019, the total number of rescued (relocated) nests recorded was 6,759 with 615,295 eggs – 500,293 hatchlings were released to the sea. The annual average number of green turtles that contributed to this nesting effort is approximately 500 individuals per season. Figure 1 summarizes the annual nesting abundances of green turtles at Con Dao National Park since 1994.

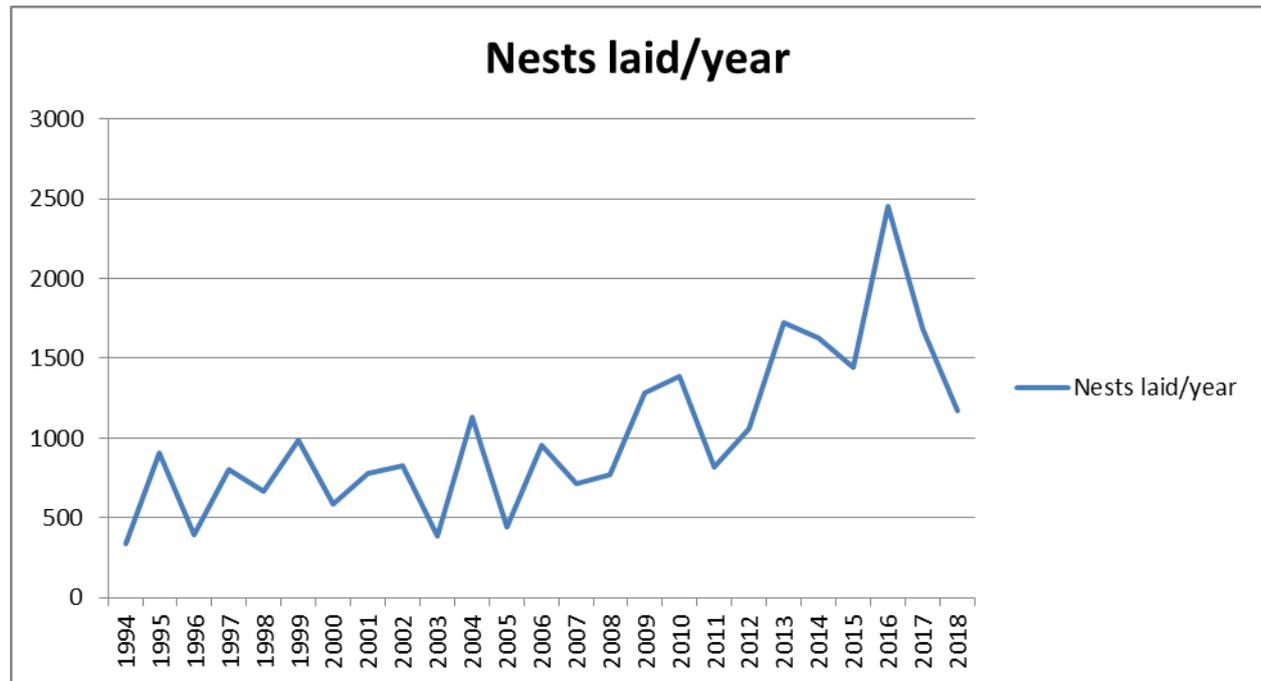


Figure 1. Census data for green turtle nesting on Con Dao islands spanning 25 years, 1994-2018

## 10. Cultural importance [S1]

*Describe the cultural / religious / spiritual importance of the site (e.g. in terms of historical associations, spiritual traditions, religious significance etc.), as well as non-consumptive traditional beliefs/practices, in relation to marine turtles. If possible, provide references to published/unpublished historical or other accounts, which may give an indication of relative importance in a national context.*

Con Dao's largest island, Con Son island, was once called the "Devil's Island" for its role as a brutal political prison under French colonization in Indochina from 1862 until 1954. The Americans took over Con Dao's prison in 1955, built additional prison systems, and then left after the American - Viet Nam war ended in 1975. Nowadays, Con Dao prison systems are an attractive and famous destination for domestic and international tourists.

Before 1987, catching and eating marine turtles' meat and eggs were not prohibited. After this time, the marine turtle conservation practices were implemented by Con Dao National Park and the first two marine turtle conservation stations were established in 1989, and other three stations in 1996. With great protection and conservation efforts by the Vietnamese Government, there has been a dramatic decline of illegal marine turtle hunting and egg collection.

## 11.

## 12. Jurisdiction [G1]

*The name of the government authority with: (a) territorial jurisdiction over the site, e.g. state/province, region or municipality etc.; and the name/description of the authority with (b) functional jurisdiction for conservation purposes, e.g., Department of Environment, Department of Fisheries, traditional owners, etc.*

Con Dao National Park is an unit under the jurisdiction of Provincial People's Committee of Ba Ria - Vung Tau province.

The administrative management for conservation of Con Dao National Park is under the direct management and supervision of Ba Ria - Vung Tau provincial Department of Agriculture and Rural Development.

## 13. Management authority [G1]

*Name, address and contact details of the body responsible for the direct local conservation and management of the site.*

The Provincial People's Committee of Ba Ria - Vung Tau province.

Provincial Department of Agriculture and Rural Development

Con Dao National Park Management Board

Mr. Nguyen Khac Pho

Director of Con Dao National Park

Email: [khacpho@condaopark.com.vn](mailto:khacpho@condaopark.com.vn) or [phonk@bqlvqgcd.baria-vungtau.gov.vn](mailto:phonk@bqlvqgcd.baria-vungtau.gov.vn)

Phone: +84 254 3830150

Address: Ma Thien Lanh Street, Residential zone 3, Con Dao District, Ba Ria - Vung Tau province.

## 14. Current protected status and governance framework [G1, S4]

*Describe any applicable legislation / regulations (or traditional laws / norms) relevant to the protection / conservation of marine turtles and their habitats at this site, and comment on their effectiveness. Include details of how any incompatible human activities and/or uses of land and sea at the site are prohibited or mitigated.*

*Mention any nationally relevant protected area status, international conservation designations and, in the case of transboundary sites, bilateral or multilateral conservation measures which pertain to all or part of the site. If a protected area or reserve has been established (at a national/regional level), give the date of its establishment and size. If only a part of the site is included within a protected area, the area of marine turtle habitat that is protected should be noted.*

*International designations may include sites listed under the UNESCO/World Heritage Convention, Man and Biosphere Reserve Network, Ramsar Convention, other site conservation networks, etc. Where appropriate, list the IUCN (1994) protected areas management category(ies) that apply to the site.*

On 31 March 1993, the Prime Minister adopted Decision No.135/TTg to establish Con Dao National Park. On 21 January 2009, the Prime Minister adopted Decision No.120/QD-TTg to approve investment in and development of Con Dao National Park till 2020. The area of the National Park defined by Decision is 19,998 ha, comprising a terrestrial component of 5,998 ha (including strictly protected zone, ecological restoration zone, and administrative and service zone), a marine conservation component of 14,000 ha (including strictly protected, ecological restoration zone, and development zone), and a buffer zone area of 20,500 ha. The related national laws and regulations protect Con Dao National Park's functional zones from harmful activities, and particularly keep residents out of the islands. All of the turtle nesting beaches and foraging areas are located inside the strictly protected zone.

In 2003, the Ministry of Fisheries (MoFi merged with the Ministry of Agriculture and Rural Development in 2017) was given the mandate to design and manage a system of Marine Protected Areas (MPA) in Viet Nam. Since 2007, the state management of MPA has been under the mandates of the Ministry of Agriculture and Rural Development and recently stipulated by Fisheries Law 2017.

A system of sixteen (16) MPA including Con Dao National Park, were approved by the Prime Minister (Decision No.742/QD-TTg dated 26 May 2010 and Decision No. 45/QD-TTg 08 January 2014). In accordance with Biodiversity Law and Fisheries Law, and the list of the IUCN (1994) protected areas management categories, Con Dao National Park (including MPA component) is a Category II: National Park.

## **National governance framework**

The Fisheries Law promulgated by Viet Nam's National Assembly dated 21 November 2017 and Decree No.26/2019/ND-CP dated 8 March 2019 promulgated by Vietnamese Government on detail provision and implementation of the Fisheries Law, regulated marine turtles as aquatic species banned for import and export.

Government Decree No. 42/2019/NDCP of 16 May 2019 on administrative sanctions in the fisheries sector and the Decree No.155/2016/ND-CP of 18 November 2016 administrative sanctions in the environment protection provide detailed regulations of sanctions on violations relating to marine turtles.

Circular No.04/2017/TT-BNNPTNT dated 24 February 2017 of the Minister of Agriculture and Rural Development adopting the list of species of wild flora and fauna regulated in Appendices of Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) listed marine turtle species in Appendix I.

Biodiversity Law regulated that the distribution area of endangered species shall be conserved in protected areas (Article 7; Article 41; Article 44; Article 46).

Decree No.160/2013/ND-CP dated 12 November 2013 of the Government regulating the criteria to determine species and the management regime of species included in the List of endangered, precious and rare species prioritized protection regulate that marine turtles are determined as "endangered, precious and rare species" and hunting and harvesting marine turtles are prohibited (Article 11; Article 12; Article 15).

Criminal Code 2015, 2017 promulgated by Viet Nam National Assembly regulate that any person illegally hunting, killing, rearing, storing, capturing, transporting, trading marine turtles shall be liable to a fine between VND 50 to 300 million (c. USD 2,200 to 13,500) or face a penalty of 6 months - 3 years imprisonment (Article 242).

Decision No 82/2008/QĐ-BNN dated 17<sup>th</sup> July 2008 of the Minister of Agriculture and Rural Development adopted the list of endangered aquatic species in Viet Nam which need protection, reproduction and development. In this Decision, the green turtle and hawksbill turtle were classified as endangered species of Viet Nam.

National Plan of Action on conservation of marine turtles in Viet Nam over period 2016 - 2025 (NPOA - Marine Turtles) approved by the Decision No.811/QĐ-BNN-TCTS dated 13 April 2016 of the Minister of Agriculture and Rural Development with the overall objective to conserve, effectively and sustainably protect marine turtle populations and their habitats in Viet Nam.

## **International framework**

On 12<sup>th</sup> September 1997: As an ASEAN Member State, Viet Nam signed an MoU for international cooperation for the conservation of marine turtles in Jakarta, Indonesia.

Viet Nam is also a signatory to:

- Convention on Biological Diversity.
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).
- Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar Convention).
- Convention on Migratory Species/ MoU on Conservation and management of marine turtles and their habitats in Indian Ocean and South-east Asia (CMS/IOSEA).

In 1995, the World Bank's publication on Global Representative System of MPA listed Con Dao as a priority area. On 18<sup>th</sup> June 2013, the Ramsar Secretariat recognized Con Dao National Park as the 2,203<sup>rd</sup> Wetland of International Importance in the world, the 6<sup>th</sup> Ramsar site and 1<sup>st</sup> Marine Ramsar site of Viet Nam.

In 2009, Viet Nam Record Book Centre certified Con Dao National Park as the breeding and releasing place for the largest marine turtle back to the sea in Viet Nam; the only place in Ba Ria - Vung Tau province.

Con Dao National Park is proposed to join IUCN Green List of Protected and Conserved Areas; Con Dao marine areas are recognized as Important Marine Mammal Areas (IMMAs) by IUCN.

## 15. Land/sea tenure/ownership [G1]

*Provide details of ownership of the site and ownership of immediate surrounding areas (e.g., state, provincial, private, etc.) which may have a bearing on the conservation of the site. Describe any local or customary law relevant to the land / sea tenure, and explain any terms that have a special meaning in the country or region concerned.*

100% of the Park area is owned and fully managed by the Government of Viet Nam.

The land in the surrounding area is partly under the use rights of tourism service providing companies, households; some islands are unpopulated (state-owned/managed)

20,500 ha of marine areas surrounding MPA Component of the Park are designated as buffer zone and is owned/managed by Con Dao National Park Management Board (state-organization).

## 16. Socio-economic values and land/ocean uses and activities within the vicinity of the site [EB4, G5, S2, S5, S6]

*Describe, in general terms, the principal social and economic values of the site, including human activities and land uses (past, current and planned) within the vicinity of the site (e.g., agriculture, fishing, resource extraction, grazing, water supply, urban/industrial development, tourism, outdoor recreation, education and scientific research), irrespective of whether or not they are considered to directly impact the conservation of marine turtles. Some indication of the relative importance of each form of land use should be given, whenever possible.*

### **1. Economic value**

#### **- Fisheries**

The Con Dao archipelago supports important fishing grounds not only for local fisheries but also for fishing boats originating from other provinces of Viet Nam. With the shallow continental shelf, Con Dao and adjacent areas support a productive coastal fishing ground. Located more than 100km from the mainland, the fishing grounds of Con Dao are relatively less exploited than other coastal areas of Viet Nam. This area is also a spawning/nursing ground for many fish species such as mackerels, squids and bivalve molluscs.

Local fishermen in Con Dao operate in the near-shore with gear such as gillnets (drift gillnet, trammel net, stow net), lines (hand lines, near-shore long line) and by dive-fishing. There are about 220 local fishing boats in Con Dao (reported in 2018). The dive-fishing communities used to catch fish (grouper, giant clam) causing the depletion of fish stocks and harm to marine biodiversity. They have been supported by Con Dao National Park and local government to change their jobs to transporting tourists under livelihood programmes and locally-based fisheries management strategies.

Con Dao is also an important service and docking port for offshore fishing vessels in the southeast waters of Viet Nam. To save cost, many offshore fishing vessels sell their catch to fish carriers logistics service vessels, and then come to Con Dao for re-fueling, ice, food, etc., before returning to sea for their next fishing trip. Catch from offshore fishing vessels are not landed on Con Dao because of very low processing capacity and demands.

#### **- Marine tourism**

Tourism in Con Dao has been developing rapidly in terms of the number of tourists (from 90,000 in 2013 to 286,171 tourists in 2018) and revenue. In recent years, there has been a sharp increase in the number of tourism projects implemented or seeking permission for investment in Con Dao. Con Dao has high potential for ecotourism development in the form of snorkelling, diving and visiting marine turtle nesting beaches. This potential has been already recognized, although with negative as well as positive environmental impacts.

### **2. Land use**

Con Dao National Park's marine area is a protected area that serves for biodiversity conservation and ecotourism. In the terrestrial component, most of the activities are prohibited. In the marine components, all resource extraction activities are prohibited (except traditional fishing, which is allowed with conditions in development zones). Navigation and tourism activities are allowed by the Management Board on a limited basis under the supervision and control of the Park's rangers.

The entire land area outside the Park has been used for fishing and raft aquaculture.

In the sea area, all destructive fishing activities are prohibited. Other activities that can pollute or destroy the

natural ecosystems are also banned.

**17. Factors adversely affecting the site's overall ecological character, as well as threats to marine turtles and their habitat at the site [EB4, S2]**

*Describe the human and natural factors negatively affecting the ecological character of the site, both within and in the vicinity of the site. These may include existing, new or changing activities/uses, major development projects etc., which have had, are having, or may have a detrimental effect on the natural ecological character of the site. For all adverse and change factors reported, supply measurable/quantifiable information (if such data exist), as well as information on the scale, extent and trend of the change factor and its impact. For example, describe in terms of the percentage of coastline (or other area) modified/affected by a particular threat; for egg collection, describe in terms of number of nests, per species, per year. Mention also data-deficient threats, where a threat is known to be present but is not quantified. Collectively, this information should provide a basis for monitoring of ecological character of the site.*

**Human-induced threats**

- Overfishing and destructive fishing practices: There are concerns related to the fishing practices by outside fishermen using high-intensity lights for photo-attraction of fish, gillnets, shrimp trawl nets and longline hooks. These fishing techniques and gear over coral reefs are indiscriminate in nature and the catch includes a significant by-catch of small fish and marine turtles.
- Fishing vessels docking in the islands for refueling, ice, fresh water or for sheltering during storms may generate noise and light pollution, damages to coral reefs, disturbance to foraging and nesting of marine turtles.
- Illegal hunting, poaching and collection of marine turtles and their eggs for trading. In 2016, one person was arrested for illegally storing 116 Green Turtle eggs and was sentenced to 10 months in prison.
- Every year, a large amount of untreated waste from vessels washes ashore on tidal flats, which caused environmental pollution.
- In recent years, the socio-economic situation in Con Dao district has been developing rapidly; the number of aircrafts and ships for transportation purposes from the mainland to Con Dao has increased, as has the number of visitors to Con Dao. This situation has led to the exploitation of marine resources, including extraction of rare animals and plants to meet growing demands of travelers for food (fish and molluscs) and for souvenirs (especially snails and corals).

**Natural threats**

- With climate change sea-level rise is expected to affect marine turtles through loss of nesting and feeding habitats and flooding of nests. A study in 2014 examined the nesting sites of marine turtles in Con Dao National Park under three likely sea-level rise scenarios. The study results suggested that 55% to 76% of the nesting areas will be flooded by 2100 (Chu, T.C, 2014).
- On the other hand, increased sand temperatures may lead to changes in sex ratios or potentially result in mortality for hatchlings. Increased ocean water temperatures may lead to coral bleaching and other damage to marine turtle feeding habitats.
- In recent years, a number of natural disasters such as Linda Typhoon (1997), the phenomenon of water temperature increasing (1998, 2010, 2016), and the sudden reduction in salinity (2005) have had negative impacts on marine biodiversity, especially the coral ecosystem of Con Dao, but thanks to the conservation and management efforts of Con Dao National Park, the coral ecosystem has recovered and is increasing in cover area.

**18. Conservation and management interventions taken [G2, G3]**

*Describe conservation and management interventions already taken at the site to address threats. Note that some of this information may have been recorded in abbreviated form in the IOSEA Site Data Sheets, available online ([www.ioseaturtles.org/reporting](http://www.ioseaturtles.org/reporting)). Any application of coastal and marine spatial planning, or integrated coastal/marine zone management planning, involving or affecting the site should be noted.*

*Describe the management planning process for the site, including the state of implementation of any management plan that has been developed and approved for the site. Describe any other conservation measures taken at the site, such as restrictions on development, management practices beneficial to wildlife, closures of hunting, etc. (Note that information on any monitoring schemes and survey methods should be given under point 19, below.)*

*Where applicable, describe the involvement of local communities and indigenous people in the participatory management of the site, including co-management activities, surveillance and enforcement, and performance evaluation.*

n 2009, the Prime Minister decided to fund the Investment Plan for Protection and Development of Con Dao National Park until 2020 with a total amount of VND 320 billion (c. USD 16 million).

Following the plan, the terrestrial component of the National Park (5,590.7 ha) was divided into three functional zones: Strictly Protection Zone (4,215.6 ha), Ecological Zone (1,755.1 ha) and Administration - Service Zone (20 ha), and the marine component (14,600 ha) was also divided into three functional zones: Strictly Protected Zone (1,375.1 ha), Ecological Restoration Zone (2,740.2 ha), and Development Zone (9,524.7 ha). The plan includes specific programmes such as management and protection of biodiversity resources, forest fire control, ecosystem rehabilitation, scientific research, and ecotourism and environmental services, awareness raising and livelihood enhancement for local communities, human resource development, infrastructure development and forest enrichment, etc.

National Plan of Action (NPOA) on Conservation of Marine Turtles in Viet Nam over the period 2016 – 2025 was drafted.

According to the NPOA - Marine Turtles, between 2016 - 2020, Viet Nam will develop and enhance a legal framework for the protection and conservation of marine turtles, and improve and apply new fishing gears to protect marine turtles.

In this way, 100% of natural egg laying areas will be protected. Two new marine turtle rescue centers shall be established and operated effectively in Ba Ria - Vung Tau and Khanh Hoa provinces. 100% of MPA/national parks (with MPA component) staff will be provided with training on marine turtle conservation. 100% of local communities living in and around MPA /national parks (with MPA component) and 100% of captains of fishing vessels employing drift-net, drag-net, tunny-net, trawl net, gillnet, purse seine net and lines, and tuna fishing vessels shall be trained to improve awareness and skills to protect and conserve marine turtles. Database on marine turtles shall developed and operated effectively at the Directorate of Fisheries. Over the period 2020-2025, Viet Nam will attempt to equip at least 5% of the total number of gillnetters and 10% of the trawlers installed with turtle excluded equipment (TED). 100% egg laying areas of marine turtles shall be protected properly with complete institution, mechanism, policies on marine turtle protection the organizational system, mechanisms and policies for marine turtle conservation in accordance with the National Plan of Action on Biodiversity Conservation. A database of marine turtles allowing the connection from the Directorate of Fisheries to national parks, marine protected areas and provincial Sub-Departments of Fisheries will be established in the Directorate of Fisheries.

A marine turtle conservation project for 2017-2020 is approved and funded by Ba Ria - Vung Tau Provincial People Committee with the main objective of improving hatching rate of turtle eggs and restoration of the marine turtle population in Con Dao. The Park has accordingly formulated and been implementing annual marine turtle conservation with some main activities of cleaning the nesting beaches, tagging nesters, monitoring females, transplanting eggs for incubating and releasing hatchlings to the sea.

In the management planning process, local people are participating in an alternative livelihood program (transferring from fishing to marine turtle conservation-based ecotourism) and in local marine resource protection teams (40 people per team) to collaborate with enforcement forces in patrolling and handling violations related to marine turtles. The Management Board also collaborates with a tourist enterprise, Con Dao Resort Co. Ltd., to successfully restore the nesting beach at Dat Doc, Con Dao district (period 2018-2020), which could be considered as the first marine turtle conservation model with a tourist company involvement in Viet Nam.

## **19. Conservation interventions proposed, but not yet implemented [G2, G3]**

*Provide details of any concrete conservation measures that have been proposed, or are in preparation, for the site, including any proposals for legislation, protection and management. Summarize the history of any longstanding proposals that have not yet been implemented, and differentiate between those proposals that have already been officially submitted to the appropriate government authorities and those which have not as yet received formal endorsement, e.g., recommendations in published reports and resolutions from specialist meetings. Also mention any management plan that is in preparation but has not yet been completed, approved or implemented.*

According to the NPOA - Marine Turtles over the period 2016 - 2025, one national park (Con Dao National Park) becomes a member of the IOSEA Marine Turtle Site Network and one Marine Turtle Rescue Centre would be established in Ba Ria - Vung Tau province in 2020. However, there has been no planned budget for implementation yet.

**Project “Transplanting, recusing?? turtle eggs and hatchlings to restore the turtle population in Con**

**Dao in dealing with climate change in the period of 2017-2020” supported and funded by People’s Committee of Ba Ria - Vung Tau Province.**

In this project, all marine turtle eggs are collected and transferred for incubation to hatcheries with fencing by the Con Dao National Park. This method keeps turtle eggs being protected from illegal collectors and rising sea level. Additionally, 60% of hatchery areas are covered to maintain the optimal temperature for turtle nests to balance the sex ratio. Camera surveillance will be installed at the hatcheries in 2019.

**20. Current / proposed scientific research and monitoring [G4]**

*Describe any current and/or proposed scientific research on marine turtles and their habitats, as well as information on any special facilities for research. In particular, describe past and current marine turtle monitoring activities at the site (e.g., tagging, satellite tracking, genetic sampling, nesting and foraging ground surveys, ongoing beach monitoring, etc.). Describe the survey methodology in sufficient detail to allow for an assessment of its efficacy. Indicate the number of years of continuous monitoring, and whether data have been used to estimate trends in the size of the management unit. Cite relevant published papers in support of the submission.*

**Database integrating tagging, nesting incidence monitoring and hatchery data**

Since 1994, the number of marine turtle nests and total eggs laid on the beaches in Con Dao National Park have been being monitored and recorded. Nesting marine turtles were observed and identified according to the descriptions of Nguyen T.G (2009). All the nests were excavated and transferred for incubation to selected hatcheries. Total egg number, unhatched egg number, damaged egg number and hatchlings released were also recorded. In 25 years (period 1994-2018), a total of 25,345 turtle nests and 2,281,072 eggs were recorded, and 1,815,827 turtle hatchlings were released back to sea with an average hatchling emergence success of 80%.

Since 1998, approximately 3,000 nesting females have been tagged and recorded. The number of marine turtles emergences on Con Dao’s beaches accounted for over 90% of their nesting? populations in Viet Nam. The nesting season is all year round, but mainly from March to November, 50 - 200 eggs are laid each time, the nesting interval is from 2 - 8 years, an adult turtle can be from 100 - 160 kg in weight, the incubation time is an average of 55 days.

**Satellite Telemetry**

In 2006, satellite tracking of green turtle populations was conducted for the first time in Viet Nam. 04 satellite transmitters were attached to green turtle nesters in Con Dao in the project, named, “Viet Nam sea turtle tracking”. The project was led by the WWF Viet Nam Country Programme, in partnership with IUCN Viet Nam, the Vietnamese Ministry of Fisheries, and Con Dao National Park, with support from the Danish Royal Embassy in Hanoi (DANIDA) and with technical assistance from the Marine Research Foundation (Pilcher, 2018).

The satellite tracking results showed that the probable feeding areas for green turtles are within the water of Palawan Island (Phillipine), Phu Quy Island (Viet Nam), and Truong Sa island (Viet Nam).

**21. Current / proposed communication, education, and public awareness activities [S3]**

*Give details of any existing and/or planned site-based programmes, activities and facilities for communication, education and public awareness, including training. Comment on potential opportunities for future educational and outreach activities at the site.*

- Con Dao National Park initiated an public awareness program through lectures on marine turtle conservation for students, local communities, tourists, and visiting fishermen from other provinces fishing in the Con Dao area. Approach for each group uses different contents and methods. The activities include school curricula, propaganda campaigns, quiz contests, training courses, leaflets, posters etc. on the importance of biodiversity conservation and sustainable use of natural resources.
- Tourists visiting Con Dao National Park are guided and get involved in the monitoring of nests, tagging, transfer of eggs into hatcheries and release of turtle hatchlings to sea. This program was greatly appreciated by the tourists.
- The Management Board encourages local communities to sustainably use natural resources by participating in eco-tourism activities and to switch to alternative incomes with less negative impacts on biodiversity. The community has shifted from near-shore fishing to tourist transportation, trade, bee keeping, and guest houses for tourists. Capture fisheries are allowed in the development zone with traditional methods. Guide boats, tourism ships are discouraged from anchoring directly on coral reefs, or sea grass, and instead are tied to the fixed moorings. The development of low impact tourism activities that has less impact on wetland biodiversity such as swimming and diving for coral reef watching, observation of marine turtles laying eggs

etc. are encouraged.

- Communities' consultation in biodiversity conservation planning is encouraged to develop the regulations for conservation of marine resources in Con Dao.

- Twice a year, Con Dao National Park, together with local people and agencies, organizes events of collecting and treating ocean debris in the islands. These events not only contribute to a healthy marine environment but also raise locals' awareness of environment preservation and protection.

- The Management Board in co-operation with other NGOs (e.g. IUCN Viet Nam, Education for Nature - Viet Nam) run marine turtle conservation campaigns, such as organizing volunteer teams to conserve marine turtles; establishing Turtle Safe Zones in restaurants and hotels on Con Dao island. As of May 2019, there were 180 volunteers contributing 1,504 working days to participate in the transfer of 1,430 nests with 128,629 eggs and the release of 62,217 hatchlings to sea.

## 22. Financial resources available for management of the site and other activities [G5]

*Identify human and financial resources (including in-kind contributions) available to support immediate and near-term activities, as well as resources available to sustain site-based activities in the longer-term (e.g. in relation to monitoring, management interventions, surveillance and enforcement, and performance evaluation).*

All of the activities related to the monitoring and research on turtles and the conservation management of the site are supported and funded by the People's Committee of Ba Ria - Vung Tau Province.

In 2009, the Prime Minister decided to fund the Investment Plan for Protection and Development of Con Dao National Park until 2020 with a total amount of VND 320 billion (c. US\$ 16 million).

## 23. Additional resource needs at the site [G5]

*Where specific needs are identified (e.g. skilled personnel, specialized training, facilities, field equipment etc.) indicate how marine turtle conservation activities are presently impaired on account of their unavailability (e.g. inability to carry out regular surveys, to conduct certain types of research, to monitor certain parts of the range etc.) This information may be useful for compiling a general picture of deficiencies and resource needs that could be presented to potential programme sponsors.*

Before 2017, it was reported that Con Dao National Park staff-members were struggling to carry out conservation efforts within the limited budget. There tended to be a shortage of equipment and supplies such as boats, fuel, etc. Also, the main nesting beaches were located in remote islands, the living conditions here were difficult without electricity, ground fresh water, and telephone signals.

After 2017, with support and investment by the People's Committee of Ba Ria - Vung Tau province, the living conditions on islands have been better, with artificial reservoirs being built and solar power systems being installed.

However, Con Dao National Park has been facing the problem of the lack of human resources, especially skilled staff.

So far, no genetic study has been conducted for the marine turtle population in Con Dao.

## 24. References [e.g. S1, G2, G4]

*List key references relevant to marine turtle records and to the site, including management plans, major scientific reports, and bibliographies. When a large body of published material on the site is available, only the most important references need be cited, with priority being given to recent literature containing extensive bibliographies. Reprints or copies of the most important literature should be appended whenever possible. Provide website addresses of references where available.*

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

Anon (2009) Investment Plan for development of Con Dao National Park, Ba Ria-Vung Tau Province to 2020 (attached to Decision No. 120 QD/TTg of Prime Minister on 21 January 2009). (in Vietnamese)

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Chu The Cuong, Nguyen Duc The, 2014. Predict the impact of global warming on sea turtle populations in Viet Nam.

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Nguyen Chi Thanh (Eds.) (2004). *Animal and plant resources of Con Dao National Park*. Agriculture Pub. Hou. (in Vietnamese)

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

Nguyen Truong Giang. 2009 . Manual of Research and Conservation of Sea Turtle. The Viet Nam Culture and Information Publishing House. (in Vietnamese)

Pilcher N. 2018. Viet Nam Sea Turtle Tracking Project. Data downloaded from OBIS-SEAMAP (<http://seamap.env.duke.edu/dataset/373>) on yyyy-mm-dd and originated from Satellite Tracking and Analysis Tool (STAT; [http://www.seaturtle.org/tracking/index.shtml?project\\_id=179](http://www.seaturtle.org/tracking/index.shtml?project_id=179)).

VAST (2007) Red List of Viet Nam. Sci. Tec. Pub. Hou., Hanoi

Vo Si Tuan (Eds.), Nguyen Huy Yet & Nguyen Van Long (2005). *Coral reef ecosystems of Viet Nam*. Sci-Tec. Pub. Hou., Ho Chi Minh City (in Vietnamese).

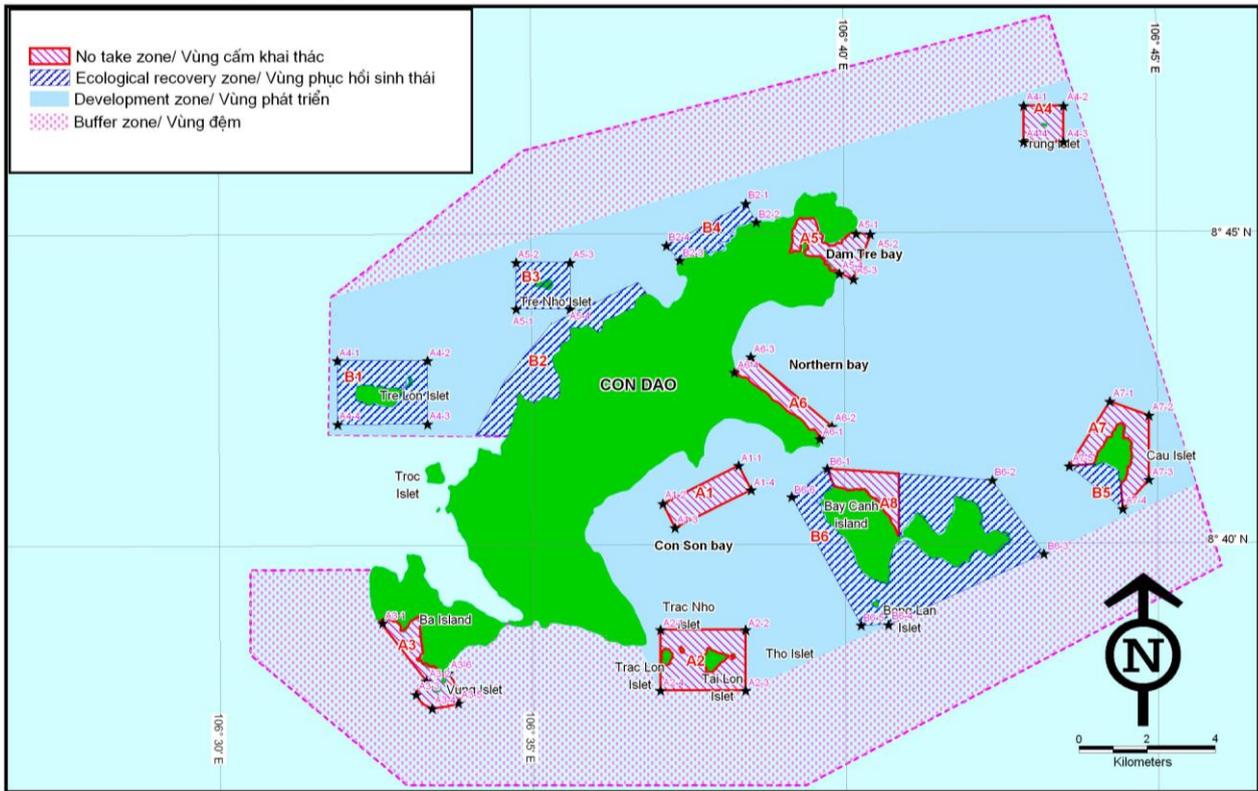
## 25. Site map [N2, N3]

*The most detailed and up-to-date map of the site available should be appended to the Site Information Sheet in digital and/or hardcopy format. The ideal site map will clearly show the area boundaries of the site, scale, latitude, longitude and compass bearing, administrative boundaries (e.g., province, district, etc.), and display basic topographical information, the distribution of the main site habitat types and notable hydrological features. It will also show major landmarks (towns, roads, etc.). Indications of land use activities are especially useful.*

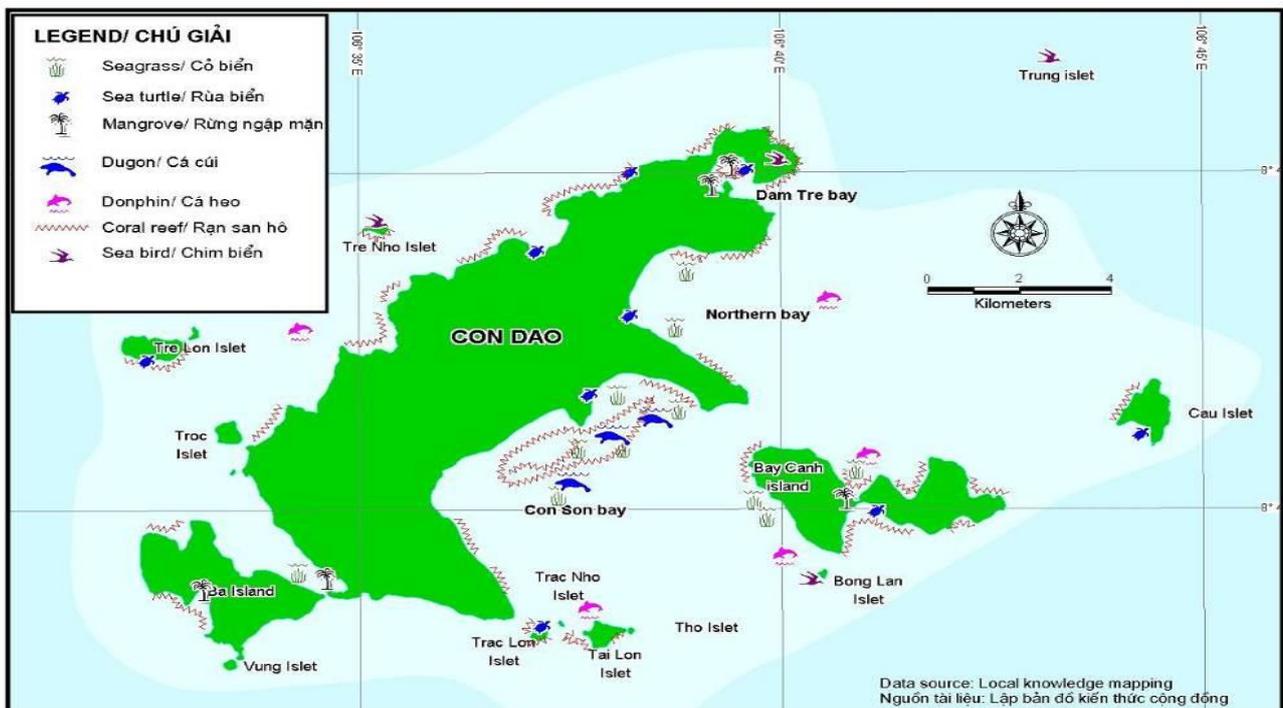
*If applicable (and available), provide a zoning scheme to indicate areas where certain activities that might be incompatible with turtle conservation are permitted, buffer zones, and areas where such activities are not permitted (i.e. sanctuary areas).*

*The optimum scale for a map depends on the actual area of the site depicted. Generally, the map should have a 1:25,000 or 1:50,000 scale for areas up to 10,000 ha; 1:100,000 scale for larger areas up to 100,000 ha; 1:250,000 for areas exceeding 100,000 ha. In simplest terms, the site should be depicted in some detail. For moderate to larger sites, it is often difficult to show detail on an A4 sheet at the desired scale, so generally a sheet larger than this is more appropriate. While an original map is not absolutely necessary, a very clear image is desirable. A map exhibiting the above attributes will be more suitable for scanning.*

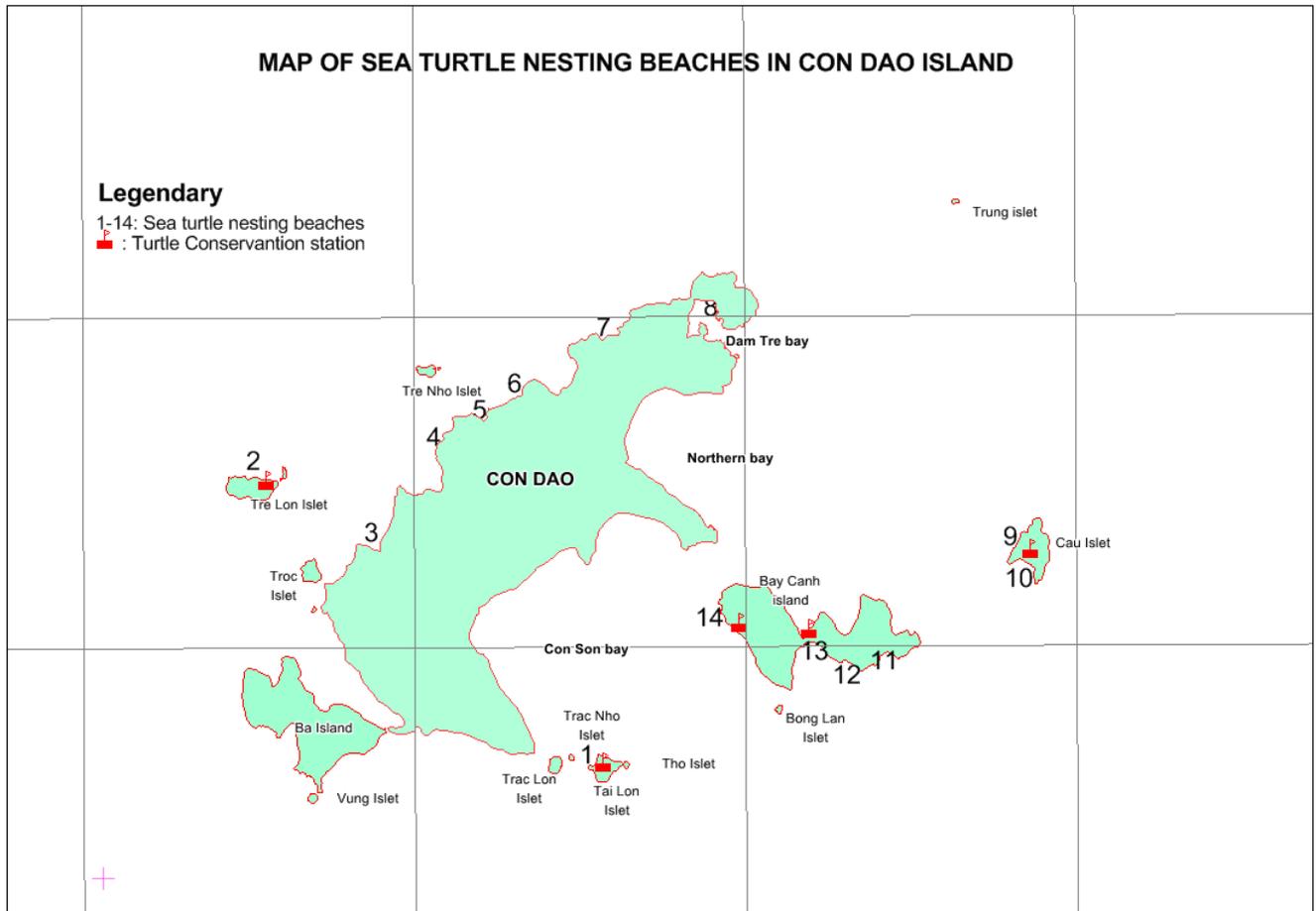
**ZONING PLAN OF CONDAO MARINE PROTECTED AREA  
 QUY HOẠCH PHÂN VÙNG BẢO TỒN BIỂN VQG CÔN ĐÀO**



**Map 1: Zoning plan of Marine Protected Area component of Con Dao National Park.**



**Map 2: Marine Biological Resources at Con Dao National Park**



**Map 3: Location of nesting beaches in Con Dao islands**