Executive Summary 2019

The State of Marine and Coastal Resources and Coastal Erosion

2562

สรุปย่อสำหรับผู้บริหาร

สถานการณ์ด้านทรัพยากรทางทะเลและชายฝั่ง และการกัดเซาะชายฝั่งของประเทศไทย

กรมทรัพยากรทางทะเลและชายฝั่ง
กระทรวงทรัพยากรธรรมชาติและสิ่งแวดล้อม

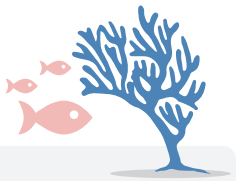
Executive Summary

The State of Marine and Coastal Resources and Coastal Erosion 2019

The state of marine and coastal resources and coastal erosion 2019

The state of marine and coastal resources and coastal erosion 2019 is the second report prepared in accordance with the Promotion of Marine and Coastal Resources Management Act 2015. This report is one the mandate of the Department of Marine and Coastal Resources as stipulated by law. The main objective of this national report is to inform stakeholders at all levels about the state of marine and coastal resources and coastal erosions as well as to improve an understanding of these issues. The DPSIR (Drivers – Pressures – States – Impacts – Responses) assessment framework was used to identify drivers at different levels, pressures caused by various activities, state of marine and coastal resources and coastal erosion and their impacts, and responses to the problems.

1. State of Marine and Coastal Resources

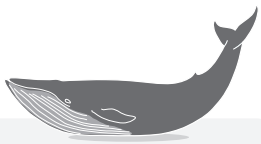


Coral reef

The total area of coral reefs in Thailand is approximately 149,025 rai (1 square kilometer equals 625 rai) The coral reef area increases due to the discover of reef in Pattani and Narathiwas. Approximately 73,365 rai of the coral reefs are distributed in the Andaman Sea, including Ranong, Phang Nga, Phuket, Krabi, Trang and Satun and another 75,660 rai are found in the Gulf of Thailand. A comparison of coral reef status in the Andaman Sea and the Gulf of Thailand between 2017 and 2018 found that **the coral reef condition in 2018 is better than those in 2017**. Many reefs are recovered from previous damages. The Andaman reef which were in very healthy to healthy increases to 18.2% and 37.1%, respectively. The Andaman reef which were in poor and very poor condition reduces to 34.2%. For the Gulf of Thailand, coral reef in very healthy and healthy condition increases to 39.1 and 21.1, respectively. The poor and very poor coral reef condition reduces to 39.8%

Seagrass

Thailand has a total of 98,912 rai (139.7 square kilometers) of seagrass beds. There are 63,624 rai in the Andaman Sea and 35,288 rai in the Gulf of Thailand. According to the surveys in 2018 new seagrass beds were discovered in Trand (Koh Chang), Ranong and Phuket (Koh Rang Yai). The seagrass beds with very healthy condition declined from 6.6 % to 4.8 % and the one with healthy condition declined from 22.3% to 12.0%. Generally, the status of seagrass observed in 2018 was mostly in fair condition, which its proportion increased from 56.0% to 65.6%.



Rare and endangered marine species :
Sea turtles, Dugongs, Dolphins and Whales

The status of rare and endangered marine species prior to 2007 reported five species of sea turtles including green turtle, hawksbill sea turtle, olive ridley sea turtle, leatherback sea turtle, and loggerhead sea turtle, distributing along the coasts of the Gulf of Thailand and the Andaman Sea. However, the nesting grounds of four species were found naturally except the loggerhead sea turtle. Only one species of dugong, Dugong dugon, was reported in Thailand inhabiting in the seagrass beds of the Gulf of Thailand and the Andaman Sea. Trang Province has been recognized as an area with the largest dugong population in Thailand. Twenty-seven species of dolphins and whales are found in Thailand consisting of two groups: resident and migratory.

In 2018, three species of sea turtles laid eggs such as Green turtles (246 nests), Hawksbill turtles (167 nests) and leatherback sea turtles (2 nests).

The statistics in the last 16 years (2003-2018) shows that 4,539 individuals of stranded rare marine species were recorded. An increasing trend in the number of stranding was detected during that period. The highest number of stranding was recorded in 2018 (625 individuals), followed by that observed in 2017 (567 individuals). Sea turtles (53%) exhibited the highest proportion of stranding followed by dolphins and whales (43%) and dugongs (4%).

Water quality degradation, red tide, and oil spill

Coastal water qualities in most locations observed in 2018 had fair quality. The coastal water quality near the estuary of main rivers such as the Chao Phraya and the Tha Chin have been degraded. The coastal water quality tended to be improved from the previous years. The coastal water qualities in most locations (66.47%)) were of good quality while 21.56%, 2.40%, and 1.20% of the rest were of fair, poor, and very poor quality, respectively.

In 2018, six oil spill incidents have occurred in the eastern provinces such as Chonburi, Rayong and Trad, and in Chumphon in the western Gulf of Thailand. For many times, tarballs were also found along the beaches in Rayong (6 times), Chumphon (1 time), Surat Thani (1 time) and Prachuab Kirikhan (1 time) and Phuket (9 times).

Marine debris

In 2018, the amount of solid waste in 23 coastal provinces was 11.47 million tons. Of which 6.73 million tons (59%) was properly disposed, 2.93 million tons (25%) was recycled. An amount of 1.81 million tons (16%) was improperly disposed in which about 210,000 tons (12%) were plastics. Furthermore, around 21,700–32,600 tons (10% - 15%) of the plastics can be possibly contaminated in the sea.

The top-ten most common types of marine debris found in Thailand included other plastic bags, plastic bottles, glass bottles, Styrofoam cups/plates, plastic straws/stirrers, rope, drink cans, grocery bags, Styrofoam food boxes, and food plastic bags

Mangrove and beach forests

The mangrove forests are found in twenty-four coastal provinces with a total area of 2.869 million rai in which about 1.538 million rai is the pristine mangroves. The largest mangroves are found in the lower Andaman Sea with its area of about 651,161 rai, followed by the Upper Andaman Sea and the Gulf of Thailand with the total areas of 449,767 and 157,064 rai, respectively.

The data in 2014 indicated that there were 23,687.79 rai of beach forest, 20,922.99 rai of peat swamps and 16,600.38 rai of terrestrial forest. At present, many beach forests have been destroyed and converted to tourism facilities while none of the natural characteristics and ecological importance remained. Furthermore, some have mistakenly understood that they introduced non-native plants such as coconut trees, ornamental palm trees to the beach forest for aesthetic purpose, which causes drastically change the beach forest ecosystem.

Coastal erosion

Thailand has a total of coastlines of 3,151.13 kilometers. There are 2,039.78 kilometers in the Gulf of Thailand and 1,111.35 kilometers in the Andaman coast. An intensive field surveys and monitoring of coastlines change from satellite images indicated that;

A) The total length of coastal erosion is 726.76 km, which can be classified as;

(1) Coastline facing erosion which have not yet been mitigated was 89.28 km.

- **Severe erosion :** 22.51 km.
- **Moderated erosion :** 29.37 km.
- **Less erosion :** 37.40 km.

(2) Coastline facing erosion which have been mitigated was 637.48 km.

B) Coastlines which has no erosion was 2,424.37 km, which can be classified as;

(1) Equilibrium coastline : 1669.74 km.

(2) Deposited coastline : 37.65 km.

(3) Coastline which has been reclaimed by various structures : 70.57 km.

(4) Rocky shores and headland : 494.21 km.

(5) River mouth : 152.20 km.

There are three types of **causes of coastal erosion.**

1) **The destruction of natural coastal protection** such as mangrove, sandy beach and coral reef.
2) **The consequences of current coastal protection structures** such as Jetty, breakwater, seawalls, revetment and port.
3) **Other causes** such as change of boat channel from dredging and the change of coastline to the new equilibrium which is the natural phenomena of coastal morpho-dynamics and storm surge.

2. Recommendation

The current state of marine and coastal resources and coastal erosion in 24 coastal provinces indicated the trend of degraded marine and coastal resources caused mainly from human activities. The human activities such as coastal development, tourisms, industries, communities, agricultures, aquacultures fisheries and marine transportation affected coastal water qualities, marine litters, sedimentation and the degradation of marine and coastal resources.

The responses to cope with the degraded state of marine and coastal resources and environment are as followed.

- Increase knowledge from Research and monitoring of marine and coastal resources
- Strengthening the participation of communities and private sectors
- Protecting and patrolling of marine and coastal resources for sustainable uses
- Marine and coastal resources rehabilitation
- Reduce impact from mainland and island into the sea
- Established Mangrove conservation areas and Marine and Coastal Protected Areas.
- Implement laws and regulations
- International collaboration and agreement

3. Recommendations for improving marine and coastal resources governance.

An analysis of the marine and coastal resource situation under the DPSIR framework has suggested improvements to the management process in order to make it better operational or manageable as details below:

1) Strengthening effective law enforcement

The Department of Marine and Coastal Resources is responsible for managing marine and coastal resources in accordance with the law since 2002. At present, there are sufficient laws for implementing to protection marine and coastal resources in the country. Effective law enforcement is a key concern. Law enforcement should be expedited to determine areas and measures to protect marine and coastal resources according to Article 18, 20, 21, 22 in important areas under the 2015 Promotion of Marine and Coastal Resources Management Act.

In addition to legal issues. institutional capacity and work processes are the other two key elements contributing to effective coastal management leading to the long-term sustainable use of coastal resources.

2) Capacity building

To enable the Coastal Committee to work more efficiently, the DMCR should consider improving the number, qualifications and knowledge of provincial coastal committee. Also there is a need to increase the secretariat efficiency for driving the provincial coastal committee working processes. In addition, empowerment staff capacity to carry out effective community engagement, communication, and leadership are also important issues to focus on.

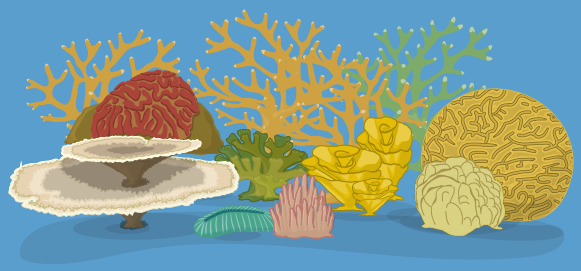
3) Information needs and research priorities

Knowledge needs include coastal erosion, coastal boundaries, coastal lines, classification and analysis of issues that reflect the real situations of the area, the essence on the significant area to be declared as a protected area (Article 20), or the area that may have been impacted from serious potential damage (Article 17), and understanding of land rights In the place where the banks sprouted.

Research to address or support the management of marine and coastal resources in practice, including efficient mangrove forest restoration, coral restoration, monitoring of coastal erosion mitigation operations, and development of indicators of community participation and local administrative organizations in managing marine and coastal resources, etc.

4) Integration, Participation and Communication

Integration, participation and communication are essential element part of the operational process that stimulate effective coastal management. The law stipulates the appointment of formal multi stakeholders committee as the platform to promote or facilitate the integration among multiple uses and sectors for effectively manage the planning and management of marine and coastal resources. However, despite the legal mechanism, integrated work or inter-agency coordination remains a challenge that needs to be addressed. Improve communication and dissemination of information to be effective is also needed.



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