

Project title: Coral reefs monitoring to propose coral reefs effective management and conservation measures in Cat Ba National Park

Project duration: 2021 – 2025

The geographic area of the proposed project:

Cat Ba National Park has a total area of 17,362.96 hectares (of which the islands area is 10,912.51 hectares, the sea area is 6,450.45 hectares) being located within the boundaries of Hai Phong and Quang Ninh province. The park is isolated from the mainland, which minimizes the immigration of animals, especially mammals from other regions.

Therefore, the park's biodiversity resources are not diverse in species composition, yet of significance in terms of conservation with typical features of island ecosystems, which are endemic and rare values. Some basic research projects in the 1980s found that Cat Ba has about 196 sea fish species belonging to 66 families; 177 coral species belonging to 15 families; 658 benthic species belonging to 146 families; 102 seaweed species belonging to 35 families; 131 zooplankton species belonging to 46 families; 400 phytoplankton species;... The research will be conducted in Gio Cung, Van Ta and Ba Dinh strictly protected zones.

Project idea

Although the coral reef ecosystem has great importance in coastal and offshore islands in terms of land conservation and human existence, for the last 10 years, coastal research programs in the Cat Ba Archipelago have shown a sharp decline of coral reefs over time in which some coral reefs were completely destroyed.

The latest research by Do Van Khuong in 2011 noted a decrease by 50% in coral coverage compared to 2008. The current status of coral reefs is poorly developed, Cat Ba was warned as one of the four coral reefs areas being seriously deteriorated among 19 researched coastal coral reef areas in Viet Nam.

The decline includes coverage status and species composition. This project will use the survey and monitoring results to recommend coral reefs management and conservation measures in Cat Ba National Park.

Through the survey, experts said that the seawater quality in the coral reef ecosystem area along Cat Ba island is showing signs of local pollution, some parameters of seawater are higher than the quality standards as proposed by ASEAN.

The strongest causes of coral reef degradation mainly come from human activities such as fishing, over-fishing, aquaculture, pollution from marine litter, freshening of seawater, impacts from tourism activities, cruise ships...

This project focus on doing the survey and monitoring the coral reefs status in 3 sites, based on the result the authorities can publish a long-term plan to help preserve the coral ecosystem. The information about coral status is vital because it provides a total picture including coral coverage level, coral species, detailed information of morphology, color, and skeletal structure.

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The objectives are to conduct the survey, assess, and monitor the coral reefs coverage and hard coral species composition in 3 strictly protected zones. Three methods of implementation are described below.

- Applying the Reefcheck method to survey coral reefs on a 100-meter transect line along the coastline: Using Manta row to do a preliminary survey and assess quickly coral reefs status. This process is performed by a towing boat connecting with the observer (who is already equipped with Manta board, waterproof writing paper) and is towed on the water survey, the tow line is parallel to the reefs zone, slope. Key parameters used to quickly assess the status of coral reefs include alive coral coverage, soft coral, and dead coral in accordance with the specifications of the coverage classification method. The classification of coverage by the Manta tow method includes 5 levels.
- Coral coverage identification: After selecting the appropriate transect, the Reefcheck method (Hodson & Waddel, 1997), with advantages of rapid reef status assessment, low costs, and limited research duration, is applied to assess the quality of the reefs. based on the coral reef morphology, two 100 meters transect lines are placed along with the shoreline of the reef flat and reef slope zones. Reef bottom records are taken from the 4 transect segments with 5-meter distance: 0 - 20 m, 25 - 45 m, 50 - 70 m, 75 - 95 m.
- Hard coral identification: The survey of hard coral species richness in each location is conducted by collecting samples along the transect in parallel with the shorelines of the reef flat and slope zones. The identification of species on site is based on the external morphology, living color, and typical skeletal structure that are easily recognizable according to the taxonomic materials by Veron and Pichon (2000). All coral species that appear in the surveyed transects will be being filmed and photographed by using a specialized high-resolution camera. The data collection allows researchers to analyze species components in the laboratory based on the morphology and skeletal structure.

The expected output is the data set of coral reefs survey and monitoring in 03 locations, report on the survey and monitoring results with recommendations on coral reefs management and conservation measures in Cat ba National Park. Photos of surveying and sampling activities will be stored.

The Cat Ba National Park will benefit from monitoring results to make evidence-based measures to conserve coral reefs within the national park.

Coral reefs attract diverse groups of marine species, so they are considered the most productive ecosystems in the world. In coastal ecosystems, coral reefs create a diverse habitat with a large number of burrows on the reef, providing the organic matter source, shelter, nursery for organisms, making a vital ecological area to maintain and regenerate marine sources. Therefore, in the long term, the fishing community will benefit the most from this project when coral reefs are preserved and tourists will have a chance to see the corals once it is sustainably managed.

Relevance to VB4E thematic areas

The project directly contributes to the two focus themes of VB4E: biodiversity conservation and marine & coastal conservation. It also indirectly supports the theme of sustainable tourism development.



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Management structure: Cat Ba National Park Management Board is the key partner for the project implementation.

The fieldwork monitoring activities will be conducted by management officers of Cat Ba National Park with technical advice by IUCN experts. IUCN will organize monitoring, evaluation and learning (MLE) trip for the National Advisory Body members who would supervise the project progress.

Total Budget: US\$10,000/year * 5 years on rolling basis

Co-financing: In-kind contribution from the Cat Ba National Park Management Board and IUCN would mobilize funding from other sources to co-finance the project

Contact Information

Please contact the coordinator at VB4EAlliance@gmail.com for further information if you are interested in the project idea.