

The Verde Island Passage Marine Biodiversity Conservation Corridor



The **Verde Island Passage Marine Biodiversity Conservation Corridor** is one of the richest fishing grounds and top tourist destinations in the Philippines. It forms part of the Mindoro-Calavite-Tablas Triangle, bounded in the north by the province of Batangas, in the south by Oriental and Occidental Mindoro, in the west by the Lubang Islands and the Luzon Sea and in the east by Tayabas Bay.

The Verde Island Passage is a special management area under five provinces of approximately 1.14 million hectares. It is about 100 kilometers long and only about 20 kilometers across at its narrowest point. The channel is relatively deep with maximum depth of about 1000 meters along the northwest coast of Mindoro. The South China Sea and Pacific Ocean waters converge in this passage, bringing in nutrients that sustain the diversity of marine life in this area (Villanoy, et al. 2007).



A study by Carpenter and Springer (2005) highlighted the global importance of the Verde Island Passage. Sixty percent of all the species in this corridor overlapped in a 10 km² area. Thus the Verde Island Passage is now more popularly known as the **center of the center** of marine biodiversity – a place with the greatest concentration of marine species in the Indo-Malay-Philippine Archipelago.



The Verde Island Passage is a highly productive fishing ground for both traditional and commercial fishers, and where coastal tourism and development is booming. It is a major sea lane with commercial and fishing vessels regularly passing through to reach the international ports of Batangas, Manila, and Subic Bay.

Political action based on a strong commitment to manage and conserve a marine environment that is as large as Verde Island Passage is imperative. We must ensure that future generations will continue to benefit from the interlocking goals of conservation and economic prosperity.

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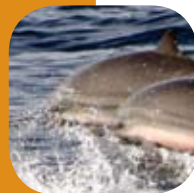
At the crossroads of conservation and economic development

The Verde Island Passage marine biodiversity conservation corridor in the Sulu-Sulawesi Seascape is a conservation hotspot, an area with very high biodiversity but also an area that experiences the most severe threats.

The Verde Island Passage is home to numerous tourism businesses and has great potential for ecotourism development. However, threats to its underwater treasures are plagued with increased threats from coastal infrastructure development, pollution, and destructive fishing.

Verde Island Passage is known for its beautiful beaches and dive sites – a popular destination among local and foreign tourists. There are numerous beach resorts lining the coastline of Batangas province, as well as several dive sites – all providing economic opportunities to the coastal communities of Verde Island Passage. The area is likewise a major site for the collection of aquarium fishes. Steps to develop a sustainable mechanism for the aquarium fish trade through certification of collecting sites, as well as fishers engaged in the business is now underway.

In a survey conducted in 2006 (Dolar, et. al), several cetacean species were recorded in the Verde Island Passage with the Risso's dolphin (*Grampus griseus*) having the highest number of sightings. The following species were also identified: spinner dolphin (*Stenella longirostris*) spotted dolphin (*S. attenuata*), bottlenose dolphin (*Tursiops truncatus*) and Fraser's dolphin (*Lagenodelphis hosei*). Skeletal remains of a stranded dwarf sperm whale (*Kogia sima*) were also found which may indicate the presence of the species in the area.



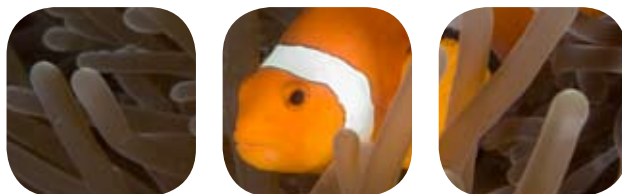
Sea turtles (hawksbill, olive ridley and green turtles), giant groupers, whale sharks, marine mammals, and giant clams thriving in the area are in danger against man-made interventions in the Verde Island Passage. The presence of port and energy facilities (oil, gas, and geothermal) also impacts on the marine environment and resources of the area

Fishing is one of the major activities of coastal communities in the Verde Island Passage. There are thousands of registered fisherman and fishing crafts in the various coastal municipalities, as well as registered commercial fishing vessels – all taking a toll on the thriving fisheries of Verde Island Passage. But the challenge of managing a sustainable fishing industry remains, as destructive fishing methods and unsustainable harvests are reported in the area.



To assure a consistent commitment throughout the governance structure, the *Executive Order No. 578*, title: *Establishing the national policy on biological diversity prescribing its implementation throughout the country, particularly in the Sulu Sulawesi Marine Ecosystem and the Verde Island Passage Marine Corridor*, was signed last November 8, 2006 by Philippine President Gloria M. Arroyo.

Under this order, CI-Philippines is a member to the Ad Hoc Task Force that drafted the Verde Island Passage Framework Plan, which defines the extent of the Verde Passage corridor wherein 1.14 million-hectares of coasts and waters are appropriately managed. Under the framework plan, a group was organized and was tasked to implement management activities in Verde Passage.



Critical Conservation Partnerships

CI-Philippines and its local partners are putting information together as basis for the future conservation of the Verde Island Passage Conservation Corridor. Partners include the University of the Philippines in the Visayas Foundation, Inc. (UPVFI); the University of the Philippines-Marine Science Institute (UPMSI) through the Marine Environment and Resources Foundation, Inc. (MERF); De La Salle University; Tropical Marine Research for Conservation (TMRC); the Protected Area and Wildlife Bureau (PAWB) through the Pawikan Conservation Project (PCP) and the Department of Agriculture - Bureau of Fisheries and Aquatic Resources (BFAR), Tanggol Kalikasan (TK), WWF, and Philippine Council for Aquaculture and Marine Research and Development (PCAMRD).

The first phase of CI activities in the Verde Island Passage focused on research and studies which updated ecosystems information and identified stakeholder perceptions on the state and threats to the area's marine environment. It also recommended activities to improve local capacities for conservation management and policy enforcement. Results indicated the necessary locations of Marine Protected Areas (MPAs) and networks, the need to develop MPA plans, and organize the operations and support for a more active and functional corridor-wide enforcement strategy.



The next phase of conservation work in Verde Island Passage will center on site-based implementation of these recommendations, generate support for corridor-wide conservation and management, and pursue a sustained national interest.

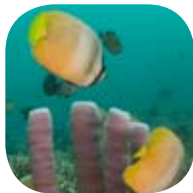


“Connectivity” is an ecological concept that refers to the exchange of elements between various habitats. In the marine context, these habitats could be adjacent coral reefs, sub-tidal seagrass meadows, mangrove-fringed shorelines, coastal estuaries, or any other environments in the coastal marine ecosystem. Demographic connectivity then refers to the movement of living organisms between, nearby, or more distant, local populations, whether these be juveniles or adults, or pelagic eggs and larval stages. This living connectivity facilitates the dispersal of marine lifeforms - growing, surviving, and reproducing – across these habitats, driven by physical and behavioral responses of the organisms to the water mass in which they travel. *(Definition adopted from www.gefcoral.org)*

Conservation Outcomes

Targeted research conducted in the Verde Island Passage provide the scientific basis for the design of an ecologically functional network of MPAs. Key findings include:

- There are specific municipal clusters that are more “ecologically connected” to form basis for the establishment of MPA networks within the Verde Island Passage. Examples of these are: Lubang Islands (Looc-Lubang municipalities), Calatagan-Lian-Nasugbu-Balayan and Mabini-Tingloy-Verde Island (Batangas City).
- There are at least 3 major potential areas for MPA establishment. These are northeastern Mindoro (including Puerto Galera area), northeastern Tingloy, and southeastern Calatagan. In addition, reef areas in Lubang Island were also identified to have good potential for MPA establishment.
- Coral reef communities in Mabini and Verde Island are extremely diverse, but are still threatened by impacts from overfishing, siltation and pollution. Suggested management recommendations include significantly reducing fishing efforts. However, substantial funding is required annually in order to improve management and enforcement activities in these areas.



Studies revealed that the ocean currents of Verde Island Passage are relatively stronger along narrow channels like Maricaban Strait. There is a general westward direction of ocean currents in the Verde Island Passage, forming eddies along coastal areas, and concentrating marine life in specific areas like Calatagan. This enhances species survival throughout the Verde Island Passage.

Conservation Outcomes



Sea turtles, dolphins, manta rays and sharks are the animals commonly caught accidentally as by-catch. Research was conducted to quantify the incidence of by-catch of marine mammals, seabirds, sea turtles and other threatened marine animals in the coastal municipalities of the Batangas side of the Verde Island Passage. Seven fishing gears commonly used in the *barangays* visited were identified as responsible for these catches, including the drift gill net and the baby purse seine net which has the highest number of by-catch incidents.

A signature campaign supported by eight municipalities and one city (Nasugbu, Calatagan, Balayan, Bauan, Mabini, Tingloy, Lobo, San Juan, and Batangas City) indicated local stakeholder support for the establishment of a network of marine protected areas in the Verde Island Passage. These municipalities established the Batangas Province Bay Watch Network which now conducts regular enforcement and patrols.

Training courses on integrated coastal management on the code of conduct for responsible fisheries, and on local governance were provided to address the continuous need to enhance local capacities for effective coastal and marine conservation.





The Verde Island Passage is a conservation hotspot that requires special attention and immediate management action.

Be at the center of conservation.

Take part in the conservation of Verde Island Passage.



If you are interested to learn more about Conservation International's Sulu-Sulawesi Seascape, contact:

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Photos by Juergen Freund and Louella Dolar