

MARINE CONSERVATION

The marine environment of Papua New Guinea is vast, diverse and significant both globally and locally for the many Papua New Guineans who rely on its products for subsistence and income. PNG's coastline is over 17,000 km long and the Exclusive Economic Zone is more than 1.7 million km².

Photo by Francesco Ungaro on Unsplash

Papua New Guinea (PNG) is part of the 'Coral Triangle' the global centre of diversity for corals and other tropical marine life. The country sits along the West Pacific Flyway, an area important for seabirds, and its waters are theon migratory paths offer whales, turtles and tuna and its waters support important habitat and feeding grounds for turtles and dugong.

6% of the world's coral reefs



> 1,600
reef fish

43
mangrove species



500
stony corals

7
seagrass species

Blue carbon opportunities abound – mangroves and seagrasses sequester and store large amounts of carbon in both the plants and sediments. PNG's extensive marine ecosystems present opportunities for 'blue economy' projects to support coastal communities.

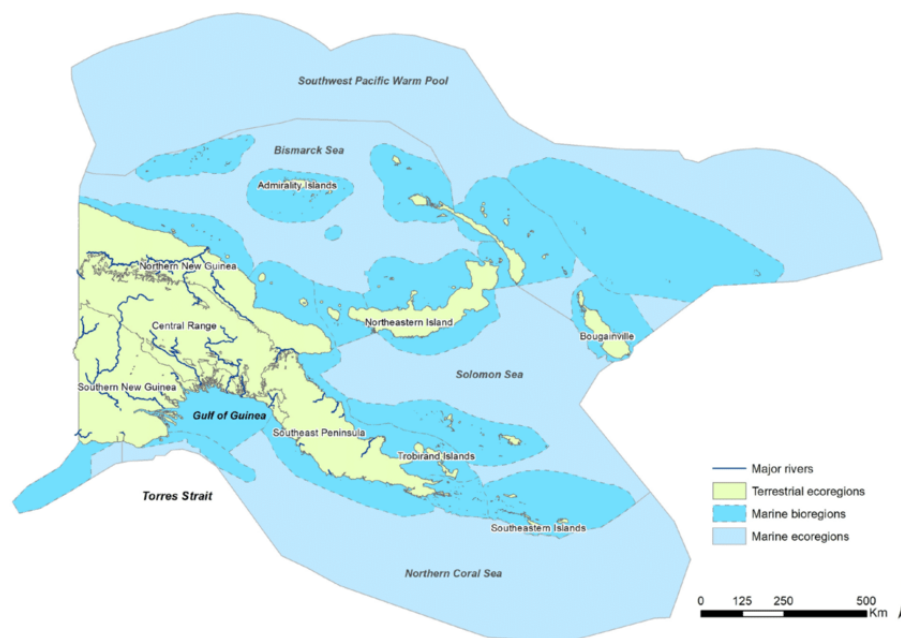


Figure 1. Marine ecoregions of Papua New Guinea

Tulloch, Vivitskaia & Atkinson, Scott & Possingham, Hugh & Peterson, Nate & Linke, Simon & Allan, James & Kaiye, Alu & Keako, Malcolm & Sabi, James & Suruman, Bernard & Adams, Vanessa. (2021). Minimizing cross-realm threats from land-use change: A national-scale conservation framework connecting land, freshwater and marine systems. *Biological Conservation*. 254. 108954. 10.1016/j.biocon.2021.108954.

ECOREGIONS AND ECOSYSTEMS

PNG has **the highest marine biodiversity richness of the Pacific Ocean countries.**

There are five large marine ecoregions in PNG (Figure 1).

The South-west Caroline Islands and Northern PNG are critically important for streaked shearwaters, fish and coral reefs. The New Britain Trench region (more than 8,000 m deep) contains highly productive fisheries and its hydrothermal vents are sites of high biodiversity and endemism.

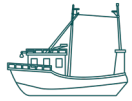
Key marine ecosystems in PNG include inshore lagoons, mangroves, seagrass beds, fringing and barrier reef systems, shallow banks, and deep offshore areas comprising slopes, abyssal plains, trenches, canyons, ridges, seamounts and deep ocean vents. These ecosystems, particularly mangroves and seagrass, sequester carbon and can protect shorelines from erosion. Keeping them healthy and intact is key in future climate mitigation strategies.

THE PEOPLE

About 8 percent of PNG's population live within **1 km of the sea**, dispersed among 4,000 rural coastal communities. Traditionally, coastal communities have relied on marine resources for income, food, medicines, cultural values and physical protection from severe weather (e.g. mangroves and fringing coral reefs).

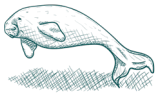
THREATS

Most of PNG's marine and coastal ecosystems and species are not well protected. Key threats include:



Overharvesting of marine resources

Local fishers target finfish and invertebrates and have exclusive rights to traditional fishing grounds within 3 to 12 nautical miles from the coast. Some decline of coastal fisheries due to unsustainable harvesting (e.g. decline in fish size, and few mature fish in some areas).



Illegal harvest of marine animals

International fishing and harvesting of high value products (e.g. beche-de-mer or shark fin, dugong and turtle) by coastal residents.



Commercial fishing

- Shark fin fishing is increasing, with impacts on diverse shark species, including endangered species
- Prawn, barramundi and lobster fisheries operate without by-catch reduction devices, with impacts on turtles, dolphins, sharks, and rays
- **18 percent of the global tuna stock is in PNG**, with over-exploitation of yellowfin and bigeye tuna.



Invasive species and crown of thorns starfish



Marine pollution

Riverine and offshore disposal of mine waste, oil spills, garbage disposal, ship discharges and agricultural and industrial runoff.



Climate Change

Sea level rise (loss of land, inundation and saltwater intrusion), rising temperatures, coral bleaching, ocean acidification and cyclones and storms.



Deep-sea bed mining

Is a potential new threat to little researched ocean ecosystems.



Sedimentation

Due to land use change.

GOVERNANCE

Conservation planning and agreements are in place at several levels in PNG.

- * **Coral Triangle Initiative** addresses priority seascapes, fisheries management, marine protected areas and threatened species
- * **Torres Strait Treaty** protects the traditional way of life and livelihood of traditional peoples allowing traditional fishing and free movement
- * **Dugong Sanctuary** established in Western Torres Strait which prohibits the sale of dugong meat in the 13 PNG Treaty villages and Daru and the sale of turtle meat
- * **Proposed Protected Areas Act** will establish a strong basis for local community-based management of marine and coastal areas and for large Marine Protected Areas (MPAs) off-shore
- * **Locally Managed Marine Areas (LMMAs)** (LMMAs) encompass near shore waters and coastal resources that are largely or wholly managed by coastal communities. Local communities utilise adaptive customary management to support sustainable marine resource use, build tradition, tenure and social capital, and improve livelihoods and food security

Some LMMAs are protected by conservation deeds or local government by-laws, but others have no legal backing. Many LMMAs are unmanaged and under-resourced.



Photo by David Clode on Unsplash

PROGRAMS IN PLACE

Diverse programs are being undertaken with the assistance of conservation organisations (international and local) and governments at all levels to assist in marine conservation.

Pacific-EU Marine Partnership Programme promotes a healthy Pacific Ocean and strong governance - addressing coastal fisheries, threats to marine biodiversity, climate change/disasters, education and training.

World Conservation Society is supporting coastal communities in New Ireland Province, including: establishing MPAs – PNG is committed to establishing 7,500km² worth of MPAs in the Bismarck Sea (tripling the current MPA coverage in PNG); improving community engagement, capacity building; data collection and monitoring; improving fisheries management.

Australia - EU Pacific Resilience Partnership - building capacity to address climate change and resilience.

'Good oceans, good business' - Global Fund for Coral Reefs and UN Capital Development Fund support 'blue enterprises' to accelerate sustainable livelihood opportunities. Initial focus is blue economy initiatives in Kimbe Bay.

Kikori River program - addressing dolphin by-catch, community education and conservation (monitoring dolphin sightings, strandings, by-catch).

Promoting traditional sustainable marine conservation, e.g. **Gwala Rising (Milne Bay Eco-custodians)** and **Mangoro Market Meri** (The Nature Conservancy).

Conflict Islands Conservation Initiative works works with communities in the Conflict Islands to provide education, training and improve conservation of marine ecosystems and species (e.g. turtles, sharks, rays) and conduct research.

YUS Conservation Area is establishing and managing marine ecosystems.

WAYS FORWARD



Establish and manage Marine Protected Areas and collaboratively managed inshore LMMAs, **including 'mountains to mangroves' systems**



Address major threats in collaboration with relevant extractive sectors (e.g. mining, agriculture, forestry, fishing)



Support the implementation of programs of marine species conservation (e.g. dugong, turtle, sharks, rays) – habitat protection, monitoring, enforcement



Expand blue carbon and blue economy programs across coastal areas



Increase support and engagement for local and provincial governments and community-based organizations



Improve livelihoods for coastal communities with a climate-resilient focus



Support coastal and marine ecotourism projects with guidance and grant opportunities.



This factsheet is a summary from the Environment and Climate Analysis for the 2022 Common Country Assessment and has been prepared by the United Nations Development Programme in Papua New Guinea. For more, see <https://environment-climate.png-nrmhub.org/>