



VALUING



PLANNING



MANAGING

MARINE ECOSYSTEM SERVICES IN THE PACIFIC



What marine and coastal ecosystem services exist in the Pacific and why are they important?

The Pacific marine environment provides a wide range of benefits to millions of people in the Pacific and hundreds of millions of people around the world. These benefits (called ecosystem services) are often not visible in business transactions or national economic accounts, and their value is usually perceived only when we lose them. Limited land resources and the dispersed and isolated nature of communities make inhabitants of Pacific island countries uniquely dependent upon the various benefits of marine ecosystems. Identifying, measuring and valuing marine ecosystem services can provide useful information to improve their wise use and management in the Pacific.



Ecosystem services, including marine ecosystem services in the Pacific, include a broad range of connections between the environment and human well-being and can be divided into four categories (see table below).

Provisioning services are the “products obtained from ecosystems” (e.g. fish); Regulating services are the “benefits obtained from the regulation of ecosystem processes” (e.g. coastal protection); Cultural services are the “non-material benefits people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation, and aesthetic experiences” (traditional fishing and traditional marine resource management systems); Supporting services “are necessary for the production of all other ecosystem services”(e.g. nutrient cycling, biodiversity).¹ Some of these values are described in more detail, below.



PROVISIONING

- Seafood
- Building Materials
- Minerals

REGULATING

- Coastal Protection
- Carbon Sequestration

CULTURAL

- Tourism
- Recreation
- Cultural Identity

SUPPORTING

- Nutrient Cycling
- Photosynthesis
- Habitat

Seafood is extracted, in Pacific Island countries, from reefs, lagoons, estuaries, and the open sea. This extraction of food includes household harvest for home-consumption (subsistence) and household or industrial-scale harvest for sale locally, regionally, or internationally. This service provides food-security to many Pacific households, income to local fishers and export companies, and government revenue from taxes and license fees.

Minerals and aggregate can be removed from beaches, reefs, lagoons and the ocean floor surrounding Pacific islands. Aggregate (sand and coral) is often used locally in building and road construction, while high-value deep sea minerals will most likely be sold in global markets.

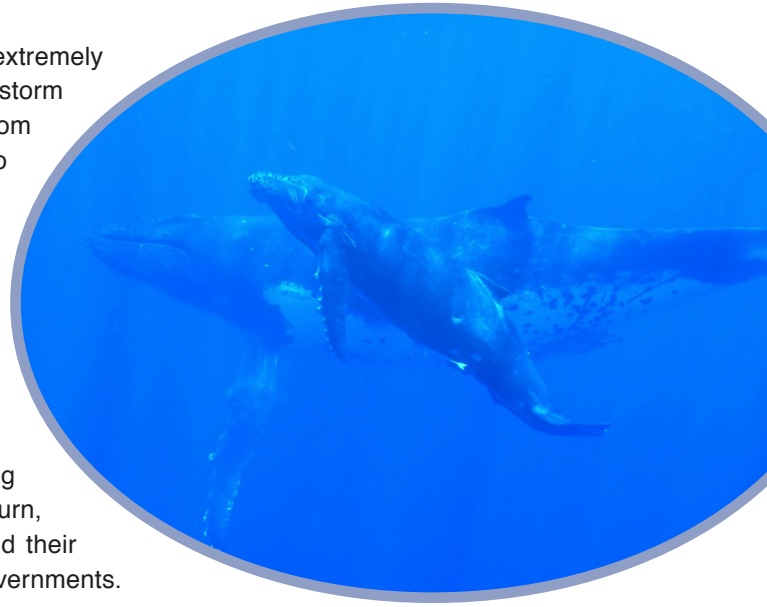
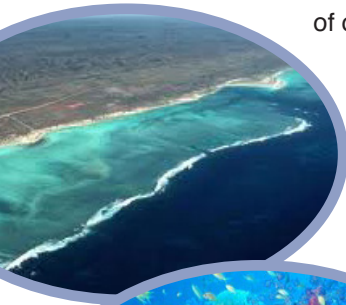


1 Definitions from the Millennium Ecosystem Assessment (2005).



Coastal areas, particularly small Pacific Island atolls, are extremely vulnerable to flooding and erosion from wave action and storm surges. Mangroves and reefs provide coastal protection from damaging storms. Marine ecosystems across Oceania also absorb and store carbon from the atmosphere (carbon sequestration), helping to mitigate global climate change.

Marine and coastal ecosystems provide a wealth of opportunities for tourism and recreation by both inhabitants of the Pacific and foreign tourists. Tourists flock to Pacific islands for their warm climate, gorgeous beaches, and captivating marine activities; their activities, in turn, provide income to local businesses and their employees and tax revenue for governments.



Cultural values of marine ecosystems in the Pacific include the values that Polynesian, Melanesian and Micronesian people place upon their maritime cultural heritage and identity, traditional knowledge of and education about marine resources, and their spiritual, religious, and moral values that are intertwined with the marine environment. Some Pacific Islanders hunt and consume particular marine species that play important roles in cultural events that are part of their heritage. The value of sea turtles for Fijians, for example, is mostly social and spiritual because transactions involving turtles are a means to ensure recognition of hereditary identity and position within the hierarchy of the clans and leaders². For others, traditional sea-faring practices and knowledge provide a sense of pride and unique cultural identity.



Pacific marine and coastal ecosystems house remarkable biological diversity. A biodiverse ecosystem is more resilient – it can better adapt to human pressures. Biodiversity supports many of the previously described ecosystem services and also contributes directly to human well-being since many people hold values for the continued existence of unique and diverse ecosystems and species in the Pacific.



FURTHER READING: www.macbio-pacific.info/marine-ecosystem-service-valuation/

2 Morgan, Christopher R. 2007. "Property of Spirits: Hereditary and Global Value of Sea Turtles in Fiji" *Human Organization* V66:1.



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