

WWF International Corals Initiative

# Sulu Sulawesi marine ecoregion

Geographic location: Philippines (70%), Indonesia (20%), Malaysia (10%)

## Background & biodiversity

The Sulu and Sulawesi marine ecoregion ranks among the most diverse and productive marine systems in the world, and lies at the apex of the Coral Triangle. Recently recognised as a marine hotspot, the region has a huge variety of tropical marine habitat types, ranging from the fringing reefs surrounding its thousands of islands, to some of Southeast Asia's largest and most intact stands of mangroves. The complex oceanography and tectonic history has produced unique features such as the jelly-fish lake at Kakaban in the Derawan Islands, the underground river in Palawan and a wide range of reef habitat types.

These varied ecosystems nourish extreme biodiversity, with over 2,000 species of marine fish recorded in the shallow waters of the Philippines and Indonesia alone, not to mention at least 400 known species of marine algae, 16 species of sea grass, 33 species of mangroves, at least 400 species of corals, five of the world's seven species of sea turtles, and at least 22 species of marine mammals, including the endangered Dugong dugon and the rare Irrawaddy dolphin. It is also home to the prehistoric Indonesian coelacanth species, and the largest nesting populations of green turtles in Southeast Asia.

## The social & economic picture

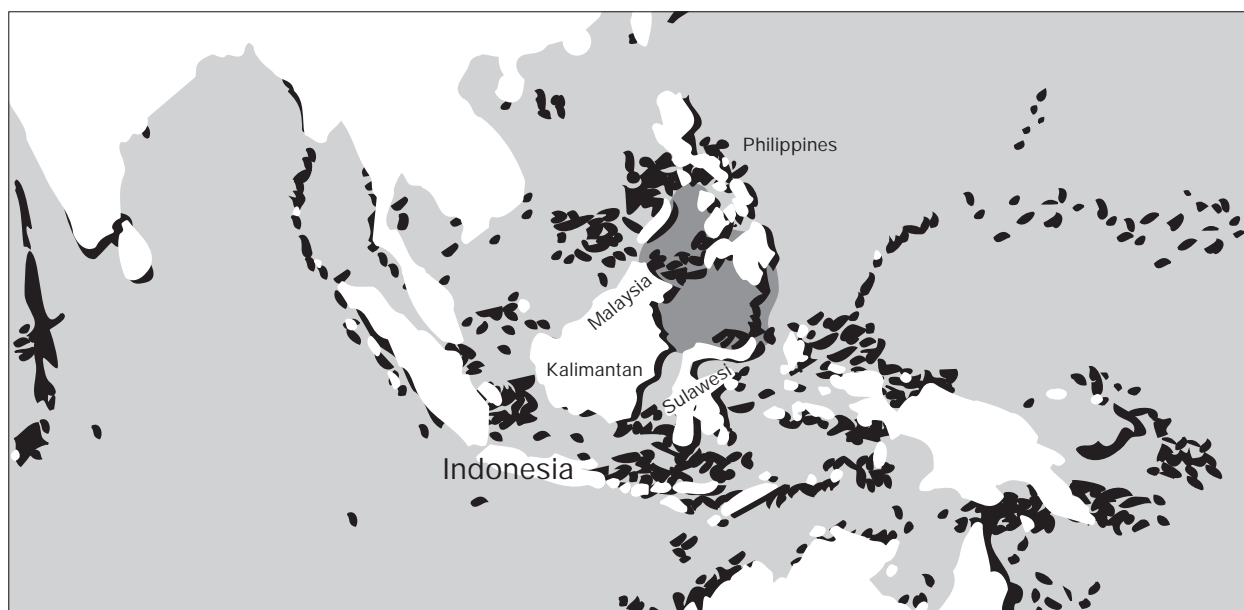
It seems natural, then, that commercial fisheries also thrive here. The narrow channels between the major basins provide important corridors for migratory species including large populations of economically important marine species such as yellow fin, skipjack and big-eye tuna, shrimp, and many other species. The fisheries productivity of reefs is extremely high, and individual reefs have been estimated to support yields of between 3 and 36 tons of fish per km<sup>2</sup> per year. With average annual harvests reaching nearly a billion US dollars, this has provided food and livelihood security for millions of coastal peoples.

The region is also a popular marine tourism destination globally. It draws scores of tourists whose interests are diving, snorkelling and other marine-based tourism activities. Where mass tourism can pose a threat, well managed ecotourism is a potential source of financing to ensure the continued management and conservation of marine protected areas (MPAs) and could provide additional livelihoods and other economic benefits to the coastal communities.

To put this in perspective, the region has the highest population density in the world (141 persons/km<sup>2</sup> compared global average of 59). Around 60% of this population density is concentrated in, and thus dependent on, coastal areas. But these coastal populations are growing rapidly - with an average growth rate of over 2% per year, the population is expected to double in the next 35 years!

## Key threats

The boom in population numbers can have negative impacts on the coastal environment, which translate into lower levels of health and well being for both the reefs and the people. Excavation, dredging, and shore conversion have increased greatly due both to the rapid population growth and to rising demand for space to accommodate coastal development. Destructive and illegal fishing practices have resulted in a dramatic decline in commercially important species in recent years. Such fishing methods have compromised the reefs, reducing biodiversity, damaging coastal habitats, and disrupting ecological processes. Other damaging harvests include the quarrying of corals and coral stones for reclamation and construction, especially in coastal villages. Moreover, despite the laws prohibiting coral gathering, illegal gatherers harvest huge amounts, which are mostly smuggled out of the countries for the aquarium industry and other purposes.



Pollution is also a problem. This includes direct sewage disposal, discharges from shipping, industrial waste, sediment and nutrient runoff. Human populations have a serious impact on marine ecosystems, particularly as 70% of all sewage discharged to the sea is untreated. Siltation, a result of deforestation and run-offs from agricultural activities, also poses serious threats to coral reef ecosystems. Finally, the trend toward global warming hit a significant number of reefs in the region in 1997-1998, causing death by bleaching.

### Conservation solutions and WWF

The establishment of MPAs in the Sulu Sulawesi marine ecoregion has been recognized by a broad range of stakeholders as crucial to managing and conserving marine biodiversity and resources. The challenge lies in getting new parks designated and in ensuring that protected area networks are created to allow for connectivity between the different sites.

WWF has been active in marine conservation for nearly ten years in the Philippines and almost twenty years in Indonesia. The emphasis in that time has been on building capacity and skills in designing and implementing protected areas and finding conservation and livelihood solutions for communities who depend on coastal and marine resources on a day to day basis. In this spirit, WWF pioneered an ecoregion conservation process involving almost 300 individuals and organizations and institutions from the three countries, representing a broad range of sectors, including regional bodies, national agencies, local government units, scientific institutions, and other non-government organizations. The strategy adopted was to implement immediate conservation actions while planning for ecoregion conservation.

These actions include:

- Facilitating the development and adoption of the Ecoregional Conservation Plan by the major stakeholders of Indonesia, Malaysia and the Philippines
- The development of a framework for a network of MPAs in the ecoregion and the implementation of marine enforcement/protection activities in key sites such as Tubbataha Reef World Heritage Site and the Bunaken Marine Park
- The development and initiation of a tri-national fisheries management strategy
- The development and adoption of a tri-national turtle conservation program
- The development of full-blown model ecotourism and fisheries sites in line with the objective to develop operational, sustainable, and conservation-linked livelihood systems
- Pioneering conservation finance solutions, such as private sector investments in conservation-linked enterprises and the establishment of operational user fee systems to support the cost of conservation and management of key sites and species
- The sharing of information on ecoregion conservation initiatives through publications, reports and websites

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