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MARINE AND COASTAL AQUATIC BIODIVERSITY

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Marine and coastal areas support a rich assortment of aquatic biological diversity that contributes to the economic, cultural, nutritional, social, recreational and spiritual betterment of human populations. Indeed, life originated in the world's oceans and over the millennia has evolved into the diverse forms used today by a variety of stakeholders, including commercial and artisanal fishers, fish farmers, developers and tourists.

TREMENDOUS BIOLOGICAL DIVERSITY

Of the known phyla on Earth, nearly all are found in the marine environment; 20 phyla are found nowhere else.

FAO Fisheries and Aquaculture Department maintains information contributed by countries on the use of this biodiversity for food, economic returns and livelihoods. More than 28 000 species of fish have been described and the vast majority of the 52 000 crustaceans and 112 000 molluscs species live in marine environments. Despite a comparatively small number of species, the marine mammals are an important component of aquatic biodiversity.

VALUABLE RESOURCES

The marine waters in 2005 produced about 84 million tonnes of seafood with catch data reported for over 1 300 marine taxa; farming of over 260 taxa of fish, molluscs and crustaceans produced 18.8 million tonnes, whereas the production of kelp, seaweed and other aquatic plants contributed an additional 14.7 million tonnes.

Many marine and coastal species are extremely high valued, such as tuna, lobster, crab, shrimp, abalone and numerous specialty products such as Fugu (potentially deadly puffer fish considered a delicacy in parts of Asia), surimi (pure fish protein extracts) and fishmeals and oils. They are thus capable of generating foreign exchange and economic opportunities in many areas. The harvest of small, fast-growing pelagic species such as sardine and anchovy provides large quantities of inexpensive and high-quality animal protein that is widely used in agriculture and aquaculture feed formulation.

An important component of the biodiversity is comprised of marine mammals which, depending on areas or culture, have a high value as an economic resource to be harvested sustainably or as emblematic species to be preserved in their own rights or for non-consumptive uses (e.g. for tourism).

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DIVERSITY OF HABITATS

Biological diversity of estuarine, marine and coastal areas is related to the diversity of aquatic habitats. Coastal waters and estuaries constitute the interface of inland and marine environments and are some of the most productive waters. Coral reefs are hot-spots of biodiversity. Other important habitats include soft-bottom continental shelves and upwelling continental shelves, which are also extremely productive; in contrast are the open oceans, including the deep sea, which are vast, but much less productive per unit area than other habitats, and polar oceans with important enrichment processes that sustain other fishery resources (e.g. krill).

TRANSBOUNDARY RESOURCES

In light of the connected nature of the world's marine and coastal areas, much of the biodiversity is distributed across or migrates through political boundaries. Migrations are often necessary for the survival of the stocks as spawning, feeding and nursery sites may be thousands of kilometres apart. Management of fisheries exploiting these stocks has been specifically addressed by the 1982 UN Convention on the Law of the Sea in the Articles dealing with transboundary stocks (those extending across more than one Exclusive Economic Zone (EEZ) and straddling stocks (those occurring not only in EEZs but also extending into the high seas). The UN Fish Stocks Agreement specifically addresses the responsible use of the latter.

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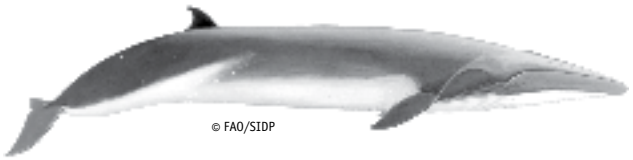

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THREATENED BIODIVERSITY

Marine and coastal biodiversity are threatened by the impacts of a growing human population that overharvests the diversity and affects the habitats that the diversity depends on. Approximately three-quarters of the world's population live within 60 km of marine coastal areas and marine and coastal biodiversity is a valued resource. FAO regularly assesses the state of world fisheries and aquaculture and has reported that of the major fish stocks, 23 percent are underexploited or moderately exploited, 52 percent are fully exploited, 17 percent overexploited, and 8 percent of stocks are depleted or recovering from depletion. Land-based activities threaten sensitive near shore areas such as coral reefs and mangrove forests with pollution, sedimentation and habitat clearing for other development. FAO is working with international conventions such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the World Conservation Union (IUCN) to help assess the threats to marine and coastal species and promote awareness of critical issues. International plans of action have been developed on threatened marine species such as sharks and seabirds. The FAO Code of Conduct for Responsible Fisheries aims at ensuring sustainable use of aquatic biodiversity, integrating the requirements of the 1982 Convention, the UN Fish Stocks Agreement and the Convention on Biodiversity.

The implementation of the Code is underpinned by the implementation of four International Plans of Action: to reduce fishing capacity (to eliminate overfishing); to combat illegal fishing; to protect seabirds from accidental capture in longline fisheries; and to improve shark fisheries management.

Learn more:
www.fao.org/fishery

Further information about the work of FAO on biodiversity is available at:
www.fao.org/biodiversity