

Book Review

Protection of aquatic biodiversity—Proceedings of the World Fisheries Congress, Theme 3, edited by David J. Philipp, John M. Epifanio, J. Ellen Marsden, Julie E. Claussen & Robert J. Wolotira (Jr) (Oxford & IBH Pub. Co., New Delhi) 1995, pp. x+282, Hard cover, Rs. 595/- [ISBN 81-204-0971-X]

Global patterns of biodiversity call explanations of the obvious contrasts between different ecosystems. Even the best known contrasts, such as the tropical-polar gradients, have many possible explanations but no satisfactory quantitative model. Aquatic ecosystems, in the context of the richness of species, are less diverse than their terrestrial counterparts. However, the diversity of phyla in the aquatic ecosystems roughly doubles that on land. Moreover, the marine environment is rather poorly known and new species and ecosystems are continuously being discovered from deep sea trenches, oceanic hydro-thermal vents and extreme polar oceans. Generally, the biodiversity is understood to be the sum and interaction of the variations that exists among populations, species, communities and ecosystems, and is commonly recognized as phenotypic or external variation. However, there is growing evidence to support the hypothesis that the species are actually mosaics of genetically divergent units—populations, stocks, evolutionary significant units and metapopulations.

Enhanced emphasis on the protection of aquatic biodiversity arises from the fact that aquatic organisms, especially finfishes and shellfishes, “are the only major food resource of mankind that is primarily supplied through direct harvest from wild populations”. Further the fishes are more strongly affected by environmental fluctuations as they have large phenotypic variation but lower heritabilities. There are well demarcated differences among freshwater, anadromas and marine fishes with respect to distribution of genetic variation

within them. The typical differences observed among fishwater and marine species, “presumably reflect fewer geographical barriers in the marine environment and a large potential for dispersal of eggs and larvae of many marine species”.

Aquatic biodiversity is threatened in three different ways. Populations may get endangered or even may become extinct, due to overexploitation, habitat losses, disease introduction and displacement with other species or populations i.e. introduction of exotic species. Secondly, losses of gene and gene complexes that distinguish populations may occur through hybridizations, resulting from a variety of activities. Lastly, loss of genetic variability within a population may occur through intentional or unintentional selection or through reduced population size.

In the present context, the book under review, is a compilation of twenty-two papers, presented in the workshops and sessions of Theme 3 of the World Fisheries Congress held in Athens, Greece from 5th to 8th May 1992. Some of the important themes are: loss of species, introduction of exotic species and loss of genetic variability. Very interesting case studies from capture and culture fisheries in different biogeographic regions have been most explicitly elaborated. Evolving a conservation ethics, based on principles like, society needs, to develop an economic viewpoint i.e. the humans are part of nature, not above it or below it; to abandon the totally selfish and arrogant stand that renewable resources, like fisheries, are solely meant to be used or alter; biodiversity, being society's wealth needs to be quantified; to achieve long term sustainability of biodiversity, as also to implement self-sustainability, is the hall mark of this interesting book.

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