

Part VI

Assessment of Marine Biological Diversity and Habitats

Chapter 33. Introduction

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The biodiversity of the world's oceans directly supports many of the services and industries reviewed in Parts III, IV, and V, and may be affected by how the various social and economic benefits are used. To ensure the ongoing availability of those benefits to current and future generations, and to maintain healthy oceans, it is essential that the uses made of the ocean are sustainable, both individually and in the aggregate. In Part VI we examine ocean biodiversity from several perspectives, and when trends are apparent, link those trends to their main drivers. From this multi-perspective investigation of biodiversity trends, we obtain the third part of the information to be integrated in this first Assessment. This information may contribute importantly to improving global ocean literacy worldwide, and informing policies and selection of management measures from local to global scales.

The Convention on Biological Diversity¹ (CBD 1992) emphasizes that “biodiversity” exists on many scales: from genetic diversity within populations, through diversity of populations of the same species, the diversity of species in ecosystems, to the diversity of habitats within geographic areas. The diversity at all of these scales reveals patterns and structures

consequences are not feasible for the entire ocean, at even one of these scales.

Therefore Part VI presents overviews of these biodiversity features first spatially, and then followed by more focused examinations of key species groups and habitats. From these overviews, it is possible to present an analysis that integrates how global ocean biodiversity is changing as a result of the impacts of humanity's uses of the ocean, with the ability of the ocean to sustain itself, and humanity's uses of it into the future.

Chapters 34 and 35 present the main global patterns of diversity of populations, species, and habitats. Chapter 34 summarizes what has been learned about the nature and scales of those global patterns of diversity in species, and the dominant natural

¹ United Nations, *Treaty Series*, vol. 1760, No. 30619.

gradients that underlie those patterns, including features of the seabed such as depth, topography and types of substrate, of the water column such as temperature, salinity, nutrients and currents, and planet-scale features such as latitude, seasonality, and

Arctic Ocean and the Southern Ocean, and for the open-ocean and deep-sea areas of all the oceans together.

For all but the open-ocean division, the trends are generally reported separately for coastal and offshore/shelf areas, because the species and habitats, and the main drivers of trends, often differ in the near-shore and the offshore/shelf areas. Even at this

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