FOREWORD

This volume is the result of an international conference on 'Marine benthic habitats and their living resources: monitoring, management and applications to Pacific Island countries' held in Noumea, New Caledonia 10–16 November 1997. The conference was sponsored by the South Pacific Applied Geoscience Commission (SOPAC) and the Intergovernmental Oceanographic Commission (IOC) of the United Nations Organization, and co-sponsored by France, the Territory of New Caledonia and its provinces (Loyalty Islands, North and South), the *Institut Français de Recherche pour l'Exploitation de la Mer* (IFREMER), *Institut de Recherche pour le Développement* (IRD, previously Orstom), US National Science Foundation (NSF), the Secretariat for the Pacific Community (PC, previously SPC), the Netherlands Geoscience Foundation (GOA), the Swedish International Development Cooperation Agency (SIDA/SAREC) and the European Union. It was hosted by New Caledonia, IRD and PC. The conference was attended by 141 participants from 26 countries and territories.

The aim of the conference was to address the general concern about the degradation of marine benthic (bottom) habitats with the consequential decay of biodiversity and the impact upon endangered species. At this conference it was well established that biodiversity is definitely a subject of international concern. Because human activities have deleteriously affected both terrestrial and marine habitats, there is concern that the diversity of species occupying these habitats will decline, perhaps even leading to extinction of some species.

Although the conference was put on by the SOPAC Technical Advisory Group and oriented towards the fisheries concerns expressed by South Pacific island nations, the radical decline of commercial, sport and exotic fisheries throughout the world along with the impending loss of a variety of benthic communities, necessitated that the conference seek fundamental solutions that would be useful worldwide. The participants in the conference concluded that the ultimate goal for the region with regard to concerns about biodiversity and habitats was to facilitate technology transfer to Pacific island countries, so as to assist with the characterization and subsequent management of seabed habitats and their living resources and ensure their sustainability. They also concluded that a universal standard in characterizing habitats should be developed and that world-wide dialogue should be established to address common biodiversity and habitat concerns.

This volume presents the articles that resulted from presentations made at the conference. These papers are far-ranging and many present case histories of habitat-related studies. One paper addresses fisheries resource problems in the Pacific 'Marine benthic habitats in the Pacific island. A case study of Guam' by M. Gawel. Two other papers address the understanding of marine resources in the Economic Zones, especially the fisheries resources and include 'Marine resources of the Economic Zone of New Caledonia' by J.-M. Auzende et al. and 'Fisheries for orange roughy (*Hoplostethus atlanticus*) on seamounts in New Zealand' by M. Clark.

Although the above-mentioned papers deal specifically with environmental problems and fisheries resources, almost all describe a methodology that was used to characterize a benthic habitat. In that regard, four papers address methodologies for defining and characterizing benthic habitats. They are 'Applications of GIS to habitat assessment and marine resource management' by K. Stanbury and R. Starr, 'A comparison of the fish fauna from beam trawl samples, camera sled photographs and submersible observations in benthic deep-sea habitats off central California' by G.M. Cailliet et al., 'Benefits of swath mapping for the identification of marine habitats in the New Caledonia Economic Zone' by S. Van de Beuque et al. and 'Datalogging instrument arrays: powerful yet inexpensive tools for recording the heterogeneous physical environment of coral reefs' by S.W. Moore.

Five papers address habitat characterization and present schemes and methods to define and map marine benthic areas. These papers included 'A classification scheme for deep seafloor habitats' by H.G. Greene et al., the 'Development patterns of fringing and barrier reefs in New Caledonia' by G. Cabioch et al., 'The relationship between depth, substrate and ecology: a drop video study from the southeastern Australian coast' by I.M. Williams and J.H.J. Leach, 'The importance

of habitat features in low-relief continental shelf environments' by R.J. Malatesta and P.J. Auster, and 'Mapping marine habitats with high resolution sidescan sonar' by J.E. McRea et al.

In this emerging field of habitat characterization we feel that the papers presented in this issue will contribute a significant foundation for the building of the multidisciplinary science of marine benthic habitats. Much more needs to be done in this field and we hope that these papers will stimulate the community into undertaking cooperative investigations of the habitats of the ocean for the purpose of protecting biodiversity.

Jean-Marie AUZENDE [a, b], H. Gary GREENE [c], René GRANDPERRIN [b], Gregory M. CAILLIET [c]

[a] Ifremer/DRO/GM; see [b] for present address
[b] IRD, BP A5, 98848 Noumea cedex, New Caledonia
[c] Moss landing Marine Laboratories, PO Box 450, Moss Landing CA 95039, USA