

# **FLOWS OF ENERGY AND MATERIALS IN MARINE ECOSYSTEMS**

## **Theory and Practice**

**Edited by**

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## PREFACE

The impetus for the conference held at Bombannes, France in May, 1982 arose out of a Scientific Committee on Oceanic Research (SCOR) Working Group on "Mathematical Models in Biological Oceanography". This group was chaired by K.H. Mann and held two meetings in 1977 and 1979. At both meetings it was felt that, although reductionist modelling of marine ecosystems had achieved some successes, the future progress lay in the development of holistic ecosystem models. The members of the group (K.H. Mann, T. Platt, J.M. Colebrook, D.F. Smith, M.J.R. Fasham, J. Field, G. Radach, R.E. Ulanowicz and F. Wulff) produced a critical review of reductionist and holistic models which was published by the Unesco Press (Platt, Mann and Ulanowicz, 1981). One of the conclusions of this review was that, whether holistic or reductionist models are preferred, it is critically important to increase the scientific effort in the measurement of physiological rates for the computation of ecological fluxes. The Working Group therefore recommended that an international meeting should be organized which would attempt to bring together theoretical ecologists and biological oceanographers to assess the present and future capability for measuring ecological fluxes and incorporating these data into models.

An approach was made to the Marine Sciences Panel of the NATO Science Committee who expressed an interest in funding such a meeting. They awarded a planning grant and a planning group was formed consisting of M.J.R. Fasham, M.V. Angel, T. Platt, R.E. Ulanowicz, G. Radach, F. Wulff and P. Lasserre. The group met at the Arcachon Biological Station of the University of Bordeaux in October 1980. It was decided to organize a meeting that would be a mixture of keynote speeches on what were considered critical or neglected aspects of the marine food chain, plus working group forums on the major functional categories of energy and matter transfer within the food chain. Professor Lasserre offered to act as local organizer and search for a suitable location in the Bordeaux region.

The proposal for a NATO Advanced Research Institute on the "Flow of Energy and Materials in Marine Ecosystems: Theory and Practice" was accepted by the NATO Marine Sciences Panel and the meeting was

held at the "Les Dunes" Village de Vacances at Bombannes, Carcans, France, between the 13th and 19th May, 1982. As well as the funding from NATO generous financial assistance was received from SCOR and the French National Research Council which enabled us to provide travel assistance to many of the participants. It was generally agreed that the bringing together of biological oceanographers and ecologists from different countries and with different specializations created an intellectually stimulating and exciting meeting and I hope that some of this excitement has spilled over into the book. I also hope that the Working Group reports will fulfil their intended function of surveying the achievements and problems in their field and, perhaps more importantly, stimulating future research.

Finally, I would like to thank Prof. Pierre Lasserre, his wife Bernadette and his staff for their untiring organizational efforts during the conference which did so much to make it a success.

M.J.R. Fasham

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