

# Acoustics in Fisheries and Aquatic Ecology. Part 1

## Introduction

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Guest Editor

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Co-Conveners

The ICES Symposium on Acoustics in Fisheries and Aquatic Ecology (SAFAE) was held in Montpellier, France, from 10 to 14 June 2002. There were 303 participants from 37 countries, emphasizing the strongly international character of the meeting. This Symposium was the fifth organized by ICES in a series concerned with acoustics in fisheries and related fields. The first two were held in Bergen (1973 and 1982), the third in Seattle (1987), and the fourth in Aberdeen (1995; *ICES Journal of Marine Science*, Vol. 53, no. 2)<sup>1</sup>. To complete the historical picture, two symposia on the special problems of shallow-water acoustics should be mentioned, one held in London (1997) and one in Seattle (1999; *Aquatic Living Resources*, Vol. 13, no. 5). By 2002, however, it was seen that shallow-water, marine, and freshwater acoustics required a joint approach to problem-solving and the sharing of experience. It was therefore decided that this ICES Symposium would encompass all these applications within the general theme of acoustical methods for the study of aquatic biota and their exploitation.

Organized under ICES auspices, the primary sponsors of the meeting were the Institut de Recherche pour le Développement (IRD) and the Institut Français de Recherche pour l'Exploitation de la Mer (IFREMER); co-sponsors were the Acoustical Society of America, the UK Institute of Acoustics, the US National Marine Fisheries Service, and the Société Française d'Acoustique. The co-conveners were François Gerlotto (IRD) and Jacques Massé (IFREMER). They were assisted by a Scientific Steering Committee comprising Pablo Carrera (Spain), David Farmer (Canada), Masahiko Furusawa (Japan), D. Van Holliday (USA), William Karp (USA), Ole Arve Misund (Norway),

John Simmonds (UK), and Will Tesler (Russia). The conference secretariat was efficiently organized by Laurence Vicens from the Centre Halieutique of the IRD, which provided much logistical support, as did IFREMER, especially through the editorial work of Brigitte Milcendeau.

The main objectives of the Symposium were: to bring together scientists with diverse interests in fisheries and aquatic acoustics, covering a broad range of environments; to present their research in this rapidly evolving field; to review what can be achieved with new technology and theoretical approaches; and to consider future directions of study. There was a big response to the call for papers. The 256 abstracts submitted were allocated among the following ten theme sessions:

1. Acoustic-survey design, including data analysis
2. Combination of methods, comparing acoustic and other methods of assessment
3. Technology: innovations in equipment and data processing
4. Identification and classification of echo traces
5. Ecology, freshwater
6. Ecology, marine water
7. Avoidance: the response of fish to vessel noise, and biological acoustics
8. Fish and plankton behaviour, and physiological studies
9. Target strength, methods and results
10. Target strength, modelling and theory.

There were 106 verbal presentations and 140 posters, which together gave participants a unique overview of a huge amount of multidisciplinary research. Symposia of this kind are essential if scientists are to have any chance of keeping up with the rapid pace of developments in the field.

The publication of the proceedings is an important part of any symposium. The number of proposed manuscripts resulting from this one was substantial. It was therefore arranged that the papers would be published in special issues of two journals: Part 1 in the *ICES Journal of Marine*

<sup>1</sup>These ICES Symposia were preceded by a meeting of an editorial subcommittee convened under the Herring Committee in Charlottelund in 1954 to review, supplement, and update for publication material stemming from a questionnaire circulated in 1950 on the state of echosounding in Member Countries.

*Science*, Vol. 60, no. 3 (this volume) and Part 2 in *Aquatic Living Resources*, Vol. 16, no. 3. Papers were selected for each journal according to the relevant theme session. This volume contains 36 papers mainly on technological or physical topics (themes 1, 3, 4, 9, and 10 above). A further 30 papers, those mainly on ecological or biological topics (themes 2, 5, 6, 7, and 8 above), will be found in *Aquatic Living Resources*.

Readers are encouraged to consult both special issues since, together, they comprise the full SAFAE proceedings. Indeed, it is important to consider the entire range of the activities explored at the meeting. This shows how co-operation between specialists from many disciplines can achieve much more than narrowly focused research. Whatever the background, there is a common purpose in this

work, namely the study and protection of sustainable aquatic resources.

The timely publication of these proceedings owes much to the referees (listed at the end of this volume), who prepared prompt and comprehensive reviews, and to the authors, who made the required revisions to their manuscripts within tight deadlines.

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