

Editorial

The second international Shallow Water Fisheries Sonar (SWFS) conference was held at the University of Washington in Seattle, USA, from 7 to 9 September, 1999. This conference followed three years after a pioneering workshop in this specialized field hosted by Nan Duncan at the Royal Holloway College, University of London in September, 1996. This second SWFS conference attracted an even larger international group of scientists from North, Central and South America and Eastern and Western Europe. Attendance and number of submitted papers more than doubled over the first conference, testifying to a significant growth in the use of sonar for fishery surveys in shallow environments. The Seattle location was chosen because it is one of the major centers of scientific and industrial sonar expertise in the world, with a long tradition of riverine and coastal sonar development. Overall a total of 73 papers were submitted, which, due to the constraints of time, were divided into 40 selected for oral presentations, and the remainder presented as posters. Although many authors chose not to submit a written paper, this volume presents 20 peer-reviewed papers that reasonably span the range of topics covered during the conference. It is our hope that this volume effectively documents the state of development and application of shallow water fisheries sonar that existed in 1999.

This conference was focused on the particular techniques and challenges found in the use of sonar systems in shallow waters. We can loosely define shallow waters as those conditions where boundary interactions create significant limitations to fish detectability. Examples of these conditions are found in rivers, lakes, shallow coastal regions, and in the vicinity of hydro-electric structures. Generally, these applications have employed relatively high-frequency, high-resolution systems (such as split-beam sonar) in either vertical or horizontal orientations. The use of sonar in such environments is thus characterized by relatively short operational ranges, interference from boundary reverberation and reflections, limitations due to transducer near-field effects, and for horizontal sonar the orientation of fish within the sonar beam. These characteristics greatly complicate sonar use, generally rendering ineffective the more-established techniques employed in deep water cases. On the positive side, the smaller, more confined environments allow greater ease in evaluating sonar performance through close comparisons with visual, video, or net catches.

Since the first SWFS workshop, we perceive a maturation in the understanding and use of fisheries

sonar in shallow waters. In 1996, much of the work was concerned with justifying the first tentative trials of sonar systems, as opposed to using more traditional techniques such as nets or electric fishing. By contrast, in 1999 many of the papers were focused on field verification of the sonar results and pursuing detailed examinations of acoustical issues that generate biases in fish counts. As in the first conference, the majority of papers were concerned with the counting of migratory fish in rivers, with a strong emphasis on tracking both juvenile and adult salmonids with split-beam systems. The majority of this work with salmon was performed for commercial and sports fishery management purposes by government agencies in the United States (dominantly Washington and Alaska), Canada, and Western Europe. Clearly, this focus documents the emergence of split-beam sonar techniques as an accepted and routine method for managing riverine fisheries. At the same time, a variety of novel applications and new technologies, such as multi-beam and sidescan sonar systems, were presented for monitoring fish in shallow marine and lake environments. Finally, the conference also included diverse applications focused on zooplankton, insect larvae, larval fish, plant and bottom sediment classification applications.

This conference was ably organized by the members of the SWFS steering committee, comprised of Janusz Burczynski, Francois Gerlotto, Jan Kubecka, Nan Duncan, Peter Dahl, Richard Thorne, and Pepe Cardenas. In particular, Janusz Burczynski and BioSonics Inc. provided logistical support for the conference registration and world-wide web page, and Peter Dahl was the liaison with the University of Washington. The steering committee is particularly grateful for the financial support of the sponsors. Their support enabled attendance by several scientists from Russia and Poland, who would otherwise have been unable to attend. At the closing of this conference it was proposed to hold the third SWFS meeting in conjunction with the fifth ICES (International Council for the Exploration of the Sea) fisheries acoustics meeting to be held in Montpellier, France in June of 2002 (see www.ices.dk). We look forward to seeing the further achievements of the SWFS group on display in Montpellier.

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