

INTRODUCTION

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The North Pacific Marine Science Organization (PICES) celebrated its tenth anniversary in 2001. To mark this occasion, the Science Board topic was chosen as “Ten years of PICES science: Decadal-scale scientific progress and prognosis for a regime shift in scientific approach”. This symposium was held on October 8, 2001, at the opening of the Tenth Annual Meeting of PICES, in Victoria, Canada. Nine papers were presented during this session, eight of which are included in this volume.

The symposium was designed as a celebration and reflection on the first ten years of scientific progress by PICES, and to provide a look to the future of the marine sciences in the North Pacific. Current or recent Chairmen of the Scientific Committees of PICES (see Figure 1 for a diagram of the organizational structure of PICES) were invited to review the history and major

accomplishments of their Committees, and to look forward to critical issues and concerns for the future. Each of these “disciplinary” presentations was followed by an invited presentation, often by someone not normally associated with PICES, which took a broad view of the grand themes, issues and challenges facing that discipline. This format provides an interesting dialogue between where PICES is now and how it got here, and where it could/should go in the future.

In the first paper Warren S. Wooster, as one of the principal founders of PICES and its first Chairman, provides an overall history of the events leading to the formation of the organization and its major accomplishments. He also suggests future extensions of PICES’ role in the North Pacific, including possibly providing more specific information or advice to policy makers on the state of the North Pacific Ocean.

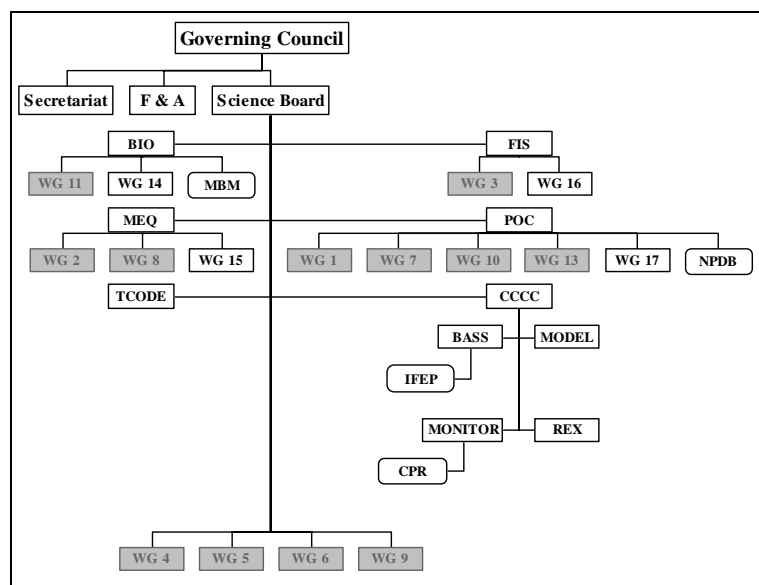


Fig. 1 Organizational chart of North Pacific Marine Science Organization (PICES). Boxes in grey indicate disbanded groups.

Paul H. LeBlond reviews the history of the Physical Oceanography and Climate Committee (POC), and comments on POC's potential role in developing marine operational modelling. D. E. Harrison and Neville Smith provide a complementary view on the significance and importance of the future of ocean prediction and forecasts.

Tsutomu Ikeda and Patricia A. Wheeler review the history of the Biological Oceanography Committee (BIO). They distil three primary themes from the past ten years of PICES activities in biological oceanography: (1) regional and basin-scale comparisons of lower and upper trophic levels; (2) the importance of life history strategies, alternate food webs, and understudied groups of organisms; and (3) the roles of trace metals and biogeochemical cycling. The "independent" broad overview is presented by Timothy R. Parsons, who provides a critical and thought-provoking commentary on the maturity of biological oceanography as a branch of the marine sciences, and what is needed to help it to mature.

Douglas E. Hay *et al.* have written a critical review of the role played by the Fishery Science Committee (FIS) in helping to understand changes in fish populations in the North Pacific. They conclude that while the FIS Committee has done an excellent job at facilitating communication of fisheries science around the Pacific, its contribution to initiating collaborative scientific projects regarding the health of fisheries and mechanisms affecting the abundance of living marine resources has been more marginal. Hay *et al.* discuss a theme that is repeated in a number of the presentations from the Scientific Committees: that some committees have concentrated on enhancing communication of science (for example through symposia at the PICES Annual Meetings), whereas others have also emphasized developing new collaborative scientific activities.

One committee, which has focussed on the latter aspect (while not ignoring the former), is the Marine Environmental Quality Committee (MEQ). Richard F. Addison *et al.* describe the events leading to their hosting of a practical workshop on comparisons and development of common assessment methodologies for marine

environmental quality problems. This paper is followed by Macdonald *et al.*, who present a very thorough review of the stresses on the North Pacific marine system, how these should be studied, and how PICES might contribute to their study and to understanding their significance.

The final paper in this symposium (and in this volume) is by Perry *et al.*, who examine the history, objectives, accomplishments and problems of the primary inter-disciplinary program of PICES, the Climate Change and Carrying Capacity (CCCC) Program. This program was designed and implemented to bridge across the four "disciplinary" committees of PICES, and to specifically engage and consciously involve physical and biological oceanographers, fishery scientists and, though to a lesser extent, marine environmental quality scientists in an integrated program to study one of the major drivers of change in the North Pacific: climate change.

A map of the PICES area (Fig. 2) identifies key geographic features and locations mentioned in the papers included in this volume. In addition, an Appendix at the end of the volume deciphers the numerous acronyms referred to in these papers.

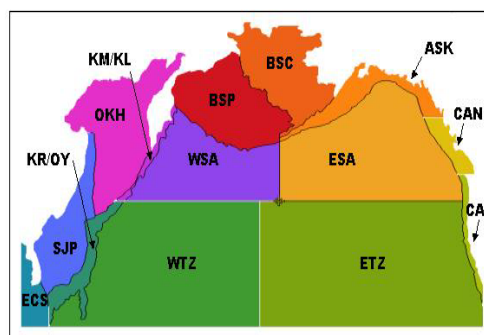


Fig. 2 Sub-regions in the PICES area (north of 30°N and including the marginal seas) of the North Pacific Ocean. ASK - Gulf of Alaska Continental Shelf; BSC - Bering Sea Continental Shelf; BSP - Bering Sea Pelagic; CAN - California Current North; CAS - California Current South; ECS - East China Sea; ESA - Eastern Subarctic; ETZ - Eastern Tropical Zone; KM/KL - Kurile Islands Region; KR/OY - Kuroshio/Oyashio Region; OKH - Sea of Okhotsk; JP - Sea of Japan; WSA - Western Subarctic; WTA - Western Tropical Zone.

The accomplishments and products from PICES research activities are still being produced, and many more have yet to appear. PICES has recently been very successful at publishing the papers presented in the many symposia and sessions during its Annual Meetings in special volumes or sections of established scientific journals. This has greatly helped the dissemination of “PICES science”, and the marine sciences generally, in the North Pacific. Over the first ten years, scientists of the PICES member nations have learnt to work together productively,

as evidenced by the many reports of PICES Working Groups and multi-authored papers cited in the reviews in this volume. The challenge for PICES in the next decade is to move beyond a focus on scientific communications into a defining role of the principal scientific issues in the North Pacific, and perhaps into providing consensus scientific advice on critical marine problems facing the nations of the North Pacific. If the past can be used to predict the future, it should be a very active and exciting next ten years for PICES.