

fisheries potential of many of the fresh waters of the Northwest Territories. The fact that the recommendations of the 1972 Federal-Territorial Task Force on this matter have largely gone unheeded is a sad comment on Canadian attitudes toward our northern freshwater fishery resources, particularly when one recognizes that existing government agencies and institutions have been assigned the responsibility for such necessary research. The authors of the monograph are left with the dubious honour of being forced to quote verbatim from the 1972 Task Force recommendations.

In the section discussing possible future expansion of the fishery, the reader is alerted to the fact that, even after intensive studies in areas like the MacKenzie Valley and delta, serious deficiencies still remain in our understanding of vital aspects of fishery management. As the authors point out, our ignorance of conditions in most other areas considered for new fisheries or industrial development is, by definition, even greater.

The final and concluding chapter of recommendations presents a fair, lucid appraisal of strategies which could help to resolve the problems or deficiencies discussed. The authors take advantage of the most recent data in formulating their recommendations. Throughout there is the well-justified sentiment that objective attempts to plan for, and manage, northern fishery resources are frustrated by a lack of data on those resources. The authors perhaps overstate the point (in bold face type) that, for instance, all too often detailed studies of projects end at the preliminary impact assessment stage and we therefore have little verification of impact predictions. This view, however, has been expressed elsewhere (Stirling *et al.*, 1979), and most resource managers and aquatic scientists working in the north would surely agree with the sentiment, however strongly it may be expressed.

One of the principal values of the review is that it allows the reader quickly to assess problems of existing data deficiencies and current practices of northern aquatic resource management. The monograph demonstrates that serious problems do, indeed, exist and must be resolved before wider resource developments may be objectively attempted. In particular, the recommendation that local residents could be trained in the Northwest Territories and employed to upgrade information on domestic fisheries seems worthy of serious consideration. The recommendations concerning sport fishing, local marketing of fish protein and the development of commercial fishing strategies are also perceptible.

One cannot help but be touched by the authors' final comment regarding the lack of orga-

nization and difficulty in accessing the data necessary for the review. This difficulty was encountered, apparently, notwithstanding the existence of major institutions established to maintain and facilitate the dissemination of just such material.

In general the monograph is free of formal or typographical errors and is well-written and highly readable. While suffering somewhat from a clear delineation of sections and sub-sections, which probably could have been aided by a numbering of chapters, this does not detract from the overall value of the review.

The Science Advisory Board deserves congratulations and support for taking the initiative in commissioning this work. At very least it will serve as a readable overview of much of the published and unpublished data on northern aquatic resources. Perhaps it is not too much to hope that it will reach audiences wider than scientists and resource managers, who must continue to labour with the serious difficulties noted in the monograph. May it bring about a change for the better in the attention presently devoted to studying the aquatic resources of the Canadian Arctic.

REFERENCE

STIRLING, I.R., WALLACE, R.R. and GLAZIER, G.T. 1979. An environmental research and management strategy for the eastern arctic region: A discussion. *Northern Perspectives* VII (6): 4-9.

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LE PERGELISOL AU QUEBEC-LABRADOR. SPECIAL ISSUE OF GÉOGRAPHIE PHYSIQUE ET QUATERNAIRE, Vol. 33 (3/4), 1979.

Le pergélisol au Québec-Labrador is a collection of 12 papers written in English or French, with abstracts in English, French and German. Topics range from a regional discussion on a proposed history of permafrost development (Ives), to such site specific topics as a description of permafrost and the active layer in the forest-tundra zone (Gray *et al.*). For the convenience of the readers, the contributions of various articles in this special issue are summarized in an introduction by Gray.

In his paper on permafrost distribution in Québec and Labrador, Brown raised the important question of what permafrost is contemporary and what is relic; and whether the present

permafrost is in equilibrium with environmental conditions. Given an increasing amount of temperature data from deep bore-holes and ground temperature records spanning several years, the spatial and temporal aspects of permafrost distribution can be appreciated more fully (cf. papers by Nicholson, and Taylor and Judge). This in turn allows a correlation of permafrost occurrence with such physical controls as climate, terrain and vegetation: a theme repeated by several papers dealing with permafrost distribution in Quebec. In this regard, the contemporaneity of permafrost in the Chic-chocs Mountains of Gaspé permits Gray and Brown to extrapolate the extent of permafrost bodies based on the vegetation factor alone.

The development of permafrost was also related to the presence of suprapermafrost groundwater. Nicholson's paper on permafrost variation near Schefferville provides predictive equations for ground temperature using snow depth and a groundwater factor. Wright's article on active layer hydrology further demonstrates the role of water in modifying the development of the active layer.

Other papers dealing with the active layer include Seguin and Crépault's geophysical study of a palsa field and Pilon *et al.*'s comparison of thermal and radar active layer measurements. It appears that a refinement of both geophysical techniques may allow more general applications in permafrost mapping. In terms of applied reasearch, Garg's paper on the mining of frozen iron ore is of special interest.

The scope of *Le pergélisol au Québec-Labrador* falls far short of the International Permafrost Conferences. This issue, however, appeared between two such conferences. In view of its timing, and particularly the fact that the last permafrost conference had an official submission deadline 18 months ahead of the 1978 meeting, the present issue provides a welcome update of information on permafrost research, at least for the Québec-Labrador region.

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OCEANOGRAPHIC ATLAS OF THE BERINGSEABASIN, By M. A. SAYLES, K. AAGAARD and L. K. COACHMAN. Seattle: University of Washington Press, 1980. 170 pages, maps, tables, bibliography. ISBN 0-295-95545-7, \$15.00 U.S.

This book is a welcome contribution to the physical oceanography of one of the lesser

known oceans, Bering Sea. Heretofore, there has been no adequate oceanographic description of this ocean in book form and therefore this book fills an important gap.

This book is entitled *Oceanographic Atlas of the Bering Sea Basin* and although the title indicates it as being an atlas, it contains nine pages of text that presents an up-to-date discussion on the physical oceanography of the Bering Sea which, in my opinion, is a bonus to the reader. Although the text is brief, it contains important aspects of oceanography — the water mass characteristics and circulation and their respective seasonal changes, etc., which are not found elsewhere except in specialized scientific papers.

The book starts with a brief, straightforward introduction, followed by a section on data. Here the authors state that only data that met a certain standard quality were considered. While such a procedure is completely proper, one would have liked to see a little more detail on how the data were put through quality control process. Table 1 lists which data were "corrected", but there is no indication of what these corrections were. This applies also to the reason given for the rejection of Soviet data. A more detailed explanation of this "data smoothing" would have been helpful to the interested reader.

The section on volumetric analysis is excellently done in both the text and in the coloured illustrations. The figures representing the volumetric distributions viewed perspectivey are very informative.

In this analysis the authors correctly use potential temperatures rather than *in situ* temperatures. It would have been helpful if the authors had stated why they chose the former. They could have stated that the former was chosen because it is more convenient to represent data from all depths and that the use of potential temperatures at least eliminates the effect of depths on temperatures. Alternatively, they could have stated that since the adiabatic lapse rate for sea water for the region is approximately 0.1°C per 1000-metre depth, the magnitude of the potential temperatures in the upper 300-metre depth or so is numerically equivalent to the *in situ* temperatures.

The sections on water mass characteristics, horizontal distributions, and dynamic topography provide a good physical oceanographic description of the water not readily found in any oceanographic books.

All figures are well drawn and the colour-coded graduations of contours make it easier to interpret the data presentation. The only criticism I have, and this is a very minor one, is that the lines and labels for the illustrations depicting vertical sections of oceanographic properties are rather heavy and are not consistent with the