

ecological repercussions of an industry with worldwide impact would be lost to historians and those who need historical data in such projects as marine mammal censusing. In sum, this is an important reference book, not meant for the casual student, but absolutely essential for the research library and the professional scholar deeply involved in the subject. To put it another way, the researcher or library that makes frequent reference to the standard works, such as Starbuck's *History of Whaling*, Hegerty's addition to Starbuck, Langdon's two books and, most recently, Honore Forster's *The South Sea Whaler: An Annotated Bibliography* (Sharon, MA., 1985), will find Sherman's work to be well worth the substantial price of this volume.

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BIBLIOGRAPHY ON THE FATE AND EFFECTS OF ARCTIC MARINE OIL POLLUTION. By S.C. YOUNG. Environmental Studies Revolving Funds Report No. 026. Ottawa: ESRF, 1986. 212 p. Cdn\$50.00.

This bibliography is a product of a collaborative effort between the Arctic Science and Technology Information System (ASTIS) — for which Stuart C. Young, of the Arctic Institute of North America, Calgary, undertook the demanding task of compiling the bibliography — and the Environmental Studies Revolving Funds, which is a creature of the Canada Oil and Gas Lands Administration and which performed the less demanding task of levying a reluctant oil and gas industry to fund the enterprise.

To quote the ASTIS order form:

The bibliography contains 748 citations on the physical, chemical, and biological fate, and on the biological effects, of petroleum and its hydrocarbon constituents in arctic seas. Virtually all citations have abstracts, and one or more location codes indicating libraries where the document can be obtained on interlibrary loan. [It] is 212 pages long, plus a 12 page introduction.

As is described in its Introduction, the bibliography is largely based on a 1980 Environment Canada Report, "A selected bibliography on the fate and effects of oil pollution relevant to the Canadian marine environment" (Report EPS-3-EC-80-5), by A.L. Samson, J.H. Vandermuellen and P.G. Wells, which was a product of the Arctic Marine Oilspill Program's now defunct Standing Committee on the Fates and Effects of Oil.

Perhaps it is a sign of changing economic times that the Environment Canada report, with its 1794 citations, was distributed *gratis* until it became out of print, while the ESRF report, with 748 citations, sells for Cdn\$50.00. It is available for purchase from the Arctic Institute in Calgary or from Pallister Resource Management Ltd. of Calgary. A microfiche version is available for \$24.00. It is noteworthy that Environment Canada makes available *gratis* as part of its EE Series reports a set of 15 reports comprising various bibliographies on oil and hazardous material spills.

The objective of this bibliography is to provide a convenient and complete bibliography of the physical, chemical and biological fate and biological effects of oil in the geographic region of the Arctic, including Cook Inlet, the Gulf of Alaska and selected other areas, and including laboratory studies of arctic relevance. This reviewer cannot resist noting that the accepted authority for the "area of maximum sea ice extent" is none other than the Central Intelligence Agency. The stated objective is clearly satisfied, and in a "user-friendly" fashion. The primary citations are listed by author, with indexes for subject, geographic region, title and serial — e.g., journal or proceedings. Particularly useful is a statement of document availability. Each citation is followed by an abstract, usually prepared by the author, which is invaluable to the user as an indication of content and scope.

Interestingly, only 7 of the 748 citations are to papers in this journal.

The primary criticism that can be levelled at the content of the bibliography relates to its scope. Much information about arctic oil spills can be obtained from temperate spills. For example, the Buz-zard's Bay spill was in ice conditions, and useful experiences have been gained from other temperate winter events. Unfortunately these are excluded. Insights into behaviour of oil spills in the arctic summer can be gleaned from accounts of temperate spills. Oil spill detection and tracking studies have been excluded, as has work on oil spill disper-sants, although work on the fate and effects of oil/dispersant mixtures has been included. The compiler has clearly stated such limitations, and while arguments can be advanced that the bibliography would have benefitted from a wide scope, it is not easy to "draw a better line."

It is not clear why the scope of this bibliography should be restricted to the Arctic, since many Canada lands, such as the Hibernia area, are not arctic.

A search for omissions was fortunately not very successful. The chapter "Oil Pollution in Ice-Covered Arctic Waters" by Weller in the text by Geyer (Marine Environmental Pollution I, Hydrocarbons, Elsevier) is not included. The pioneering work on the Alert Bay beach spill by Green, Buckley, Cretney and Wong (Pacific Marine Science Report 74-9) is absent. There are no citations at all to the work of C.S. Wong. Of the eight chapters in Engelhardt's text *Petroleum Effects in the Arctic Environment*, three have been omitted, obviously consciously.

It is questionable if some citations, such as to the Oil Spill Intelligence Report, should be included. The EE Series of reports by the Environmental Emergencies Branch of Environment Canada is not cited. But these are relatively minor criticisms that spring from a personal belief that bibliographies should err on the side of including rather than excluding.

In summary, this is a valuable bibliography, which deserves a place on the bookshelf of those concerned with researching or commenting on the environmental effects of petroleum development in the Arctic. Unfortunately in these times of tight budgets it is unlikely that it will get the exposure it deserves because of its excessive cost. If the ESRF really wants to disseminate information of this type, it should do so in a less profiteering fashion.

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ICE SCOUR BIBLIOGRAPHY. Edited by C. ROSS GOODWIN, JEAN C. FINLEY and LYNNE M. HOWARD. Environmental Studies Revolving Funds Report No. 010. Ottawa: ESRF, 1985. xi + 99 p., index. Softbound. Cdn\$40.00.

Ice scour (gouge, plough mark, furrow, score) is defined as the disturbance of subaqueous bottom sediments by floating ice. When an ice keel loads and disturbs the sea floor, it either becomes grounded and ceases to move on, or, if it has sufficient energy under the influence of swell, currents, wind or pressure from other ice, the keel penetrates the sea floor sediment and excavates a trough, which is referred to as a scour. Two types of ice scours are important in influencing seabed disturbance — iceberg scours and sea or lake ice pressure ridge scours. Ice and iceberg scour is a significant process in high latitude environments and as such is important to both the glacial scientist and engineer. Both modern and relict scour can represent a hazard to sea floor facilities, such as hydrocarbon pipelines. It is for this reason that the bibliography was initiated and funded by the Environmental Studies Revolving Funds, a petroleum industry research fund administered by Canada Oil and Gas Lands Administration of the Canadian Government.

The bibliography begins with a short Introduction, in both English