

**RINGED SEALS IN THE NORTH ATLANTIC.** Mads Peter Heide-Jørgensen and Christian Lydersen (Editors). 1998. Tromsø: North Atlantic Marine Mammal Commission. 273 p, illustrated, hard cover. ISBN 82-91578-04-4. NOK350.

Ringed seals (*Phoca hispida*) are uniquely important in the Arctic. Their extensive range around the pack and fast ice at high latitudes, as far north as the North Pole, has sustained remote Inuit populations through many centuries, providing year-round food, clothing, and fuel. More recently they have provided hunters with a variable financial income through the vicissitudes of the international trade in seal products. Ringed seals are equally vital for polar bears, providing breakfast, lunch, and dinner.

Yet their extensive and remote distribution, which supports the wide-ranging activities of their predators, makes it exceedingly difficult to census and monitor population parameters and to establish and implement management plans. *Ringed seals in the North Atlantic* is a response to a request from the North Atlantic Marine Mammal Commission to review the present knowledge of ringed seals so that gaps, essential to informed management, can be identified.

The first chapter reviews the current patchy knowledge of the biology of ringed seals and provides an introduction to the remainder of the book. The uncertainty involved in censusing ringed seals is emphasised by the phrase that the world population is 'at least a few million.' Six following chapters provide detailed regional accounts of the abundance and population trends of ringed seals. Equally important is the documentation of the variety of methods used to obtain these estimates. The reader is immediately aware of the logistic and statistical difficulties involved in studying animals that spend a variable portion of their time hauled out on (or in) the ice and that range to the remotest corners of the polar ice. This had led to a variety of methodologies. Aerial survey counts, classified by ice type, are extrapolated to regional estimates. Indirect measures include surveying breathing holes and breeding lairs. Population size is also estimated from the number of ringed seals required to sustain the polar-bear population. The documentation of such diverse methodologies and varying statistical treatments draws attention to the wide confidence limits, when they exist at all, associated with such estimates. It is to be hoped that a rational comparison of techniques may lead to increased co-ordination and comparability of regional surveys.

Two chapters deal with the analysis of hunting records from Canada and Greenland. At the peak of hunting, approximately 100,000 ringed seals were taken annually from each country. However catch levels are subject to international market forces and were often significantly less. It is obvious from these chapters that interpretation of catch records requires insight into the social imperatives of the hunters, as well as an occasional pinch of salt!

The final four chapters deal with reproduction failures, tag-recapture studies of movement, diet, and the uptake of

heavy metals. The last of these chapters documents elevated, although variable, levels of heavy metals in some ringed seals. This reviewer would, however, have liked to see some interpretation of these levels, as far as is possible, in terms of clinical dysfunction and morbidity.

The major achievement of this book is that it makes many studies that were previously spread throughout the mists of the grey literature, or in languages other than English, available to a wider audience in one volume. It does so with an authoritative style and includes many tables and figures. Most importantly, it is fully and extensively referenced. It is set out in an attractive and readable style and includes more than 20 colour photographs.

The future of the ringed seal is uncertain. The fates of northern hunters and polar bears are thus similarly uncertain. Ringed seals face threats from pollution and the unknown, yet potentially dire, consequences of global warming. Current work on their movements and association with ice will indicate how they may adapt to changing conditions. But there is still much to be learned about the basic ecology of ringed seals. In summary, this reviewer strongly recommends this book as both a synthesis and bibliography of current knowledge up to 1998. It is an essential foundation on which to plan future studies of this key Arctic species. (Bernie McConnell, Sea Mammal Research Unit, Gatty Marine Laboratory, St Andrews University, St Andrews, Fife KY16 8LB.)

**ALASKA AND THE U.S. REVENUE CUTTER SERVICE 1867–1915.** Truman R. Strobridge and Dennis L. Noble. 1999. Annapolis: Naval Institute Press. xiv and 226 p, illustrated, hard cover. ISBN 1-55750-845-3. US\$32.95.

The US Revenue Cutter Service was active in Alaskan waters between the region's purchase from Russia in 1867 and the service's amalgamation with other departments to form the US Coast Guard in 1915. Indeed, for much of this period, it would not be an exaggeration to state that the service *was* the US government, at least as far as the coasts of the territory and the offshore islands were concerned. The cutters, a generic term including some substantial vessels, of which at least one, which was a river steamer on the Yukon, performed law-enforcement duties, particularly with regard to fur-seal exploitation, and a wide range of other tasks, both for governmental and other official bodies and also for private individuals.

Most of those with polar interests will be aware of the most famous cutter of all, *Bear*, and of the most notorious cutter officer, Captain Michael A. Healy. They may also know of the involvement of the cutters in the search for *Jeannette*, and of the famous overland relief expedition of 1897–98, during which men of the service drove a herd of reindeer to provide food for beset whalers. But few will be aware of the other tasks that the cutters undertook throughout the period in question. These included the mounting of exploratory expeditions, often inland, the provision of