

through a detailed examination of a series of conventions and protocols relating to living-resource management, mining, environmental protection, and polar tourism. These analyses are underwritten by a concern to demonstrate how various ATS regimes deal with long-standing tensions regarding sovereignty rights, external acceptance, scientific research, and the environmental management of the Antarctic. Evidence relating to these four issues is well presented, not least because the authors are cautious to acknowledge that discussing regime performance is inseparable from their evaluations of regime effectiveness. There remains a considerable number of problems confronting key actors and institutions within the ATS, ranging from fishing regulation and sovereignty rights around islands such as South Georgia to the management of tourism and the negotiations regarding a liability annex for the Madrid Protocol. The involvement of tour operators within the ATS regulatory process is further indication that the ATS has been remarkably successful in co-opting non-state actors and NGOs. The implications for regime regulation remain to be seen, but there can be little doubt that managing polar tourism is one of the pressing issues for the ATS in the new century. In terms of legitimacy, the ATS has, therefore, been effective in embracing new political actors such as ASOC whilst simultaneously ensuring that there has been a return to consensus over the Antarctic within the United Nations.

The final part of this collection considers the role of domestic politics in shaping attitudes and policy-making regarding the Antarctic and the Southern Ocean. The four case studies are based on the political and legal systems of Australia, Chile, Norway, and the United States. The purpose of this analysis is to consider how debates on domestic policies influence the role and position of these states within the ATS. Three out of the four states are claimants to the Antarctic, whilst the United States is one of the most influential non-claimant states within the ATS. In terms of assessing the interaction between domestic politics and the ATS, there are some excellent analyses of the Australian and Norwegian political and legal decision-making processes. Herr and Davis' investigation of the Australian context should serve as a bench-mark for future studies on the interactions of the domestic and the international. One area that deserves further consideration, however, is the usage of interview material, especially when it relates to key officials and institutions. Christopher Joyner's analysis of US Antarctic policy-making relies on the oral testimony of such key players as Tucker Scully. Joyner asserts, for instance, that 'issues have not become acutely emotional or made public' (page 418) because individuals tend to resist the temptation to indulge in political infighting. On the one hand, this may be a fair reflection of the US Antarctic policy scene. On the other hand, there is a need for some sense of caution in the usage of interview material, particularly when there is either little evidence of the interview material itself (and therefore this makes it hard for the reader to judge for himself) or when there is a

tendency for officials to rationalise retrospectively a particular state of affairs.

Overall, *Governing the Antarctic* is a well-produced and well-executed collection. The editors have done a great deal to ensure that the essays are linked together in an effective manner. The effectiveness and legitimacy of the ATS have been comprehensively assessed through a detailed consideration of existing regimes and other related organisations such as the International Seabed Authority. Questions regarding the creation of a secretariat remain to be settled. Chile's recent rejection of the Argentine request to host such a secretariat have caused new tensions to emerge over this particular issue. One area that could have been addressed in more detail was the implication of political and cultural globalisation for the management of the Antarctic region. The development of global media networks has transformed our collective capacity to visualise places such as Antarctica. The region is increasingly exposed to public scrutiny, and this reader would have liked to have read more about the possible implications for governing the frozen continent and the capacity of the ATS either to resist or influence alternative proposals for the management of the region at the *fin de mille*. (Klaus Dodds, Department of Geography, Royal Holloway, University of London, Egham, Surrey TW20 0EX.)

Reference

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WHALES, SEALS, FISH AND MAN. Arnoldus Schytte Blix, Lars Walløe, and Øyvind Ulltang (Editors). 1995. Amsterdam, Lausanne, New York, Oxford, Shannon and Tokyo: Elsevier. xiii + 720 p, illustrated, hard cover. ISBN 0-444-82070-1. Dfl 475.00; US\$297.00.

The question as to whether minke whaling should be resumed in the northeast Atlantic has been a contentious issue for some years, particularly because there has been disagreement between scientists, industry managers, and government officials about the information on which Norwegian minke whaling has been based. Further, in the mid-1980s, large numbers of harp seals migrated to the Norwegian coast, where at least 60,000 of them became entangled in fishing gear, resulting in heavy economic losses for fisherman.

To address these two issues, the Board of the Norwegian Fisheries Research Council decided to establish a programme of scientific research on the whales and seals in Norwegian waters. The programme ran for seven years, ending in 1994. Because so much of the information was considered to be of international interest, the programme steering committee decided to organise a symposium to present the results for discussion and dissemination. *Whales, seals, fish and man* represents the proceedings of this symposium, and outlines the major findings of the Norwegian programme. In addition, internationally renowned researchers were invited to submit papers on specific relevant topics, so that the volume includes results

from a wider geographical area than the seas around Norway, as well as contributions from non-Norwegian authorities.

The volume comprises 67 papers divided into eight discrete sections. The first section deals with stock assessment, and includes estimates of whale and seal populations from regions that include the Greenland Sea, the Gulf of Maine, and the northeast Atlantic generally. Not only are the results of specific population counts given, such as line-transect surveys of harbour porpoises in Canada, but there is an interesting review of the various methods available.

The second section concentrates on stock identity and social organisation, and covers some new and exciting research, including the application of electrophoresis to DNA fragments of fin, sei, and minke whales. The data indicate that there are substructures within different populations of fin whales from different geographical locations, and that hybridisation between blue and fin whales occurs and that the offspring can be fertile. A study of parasites as biological indicators provides an alternative, and inexpensive, method of assessing both social structure of and stock identification in marine mammals.

The section on bioenergetics and that on distribution, diet, and feeding ecology have more papers on pinnipeds than on cetaceans (a total of 15 on seals and walruses, compared to only five on whales). This is perhaps not surprising, given that whales are more difficult to study in terms of their foraging ecologies and bioenergetics; seals spend at least some time out of the water. However, the few cetacean contributions that are presented in these sections are sound, and include useful estimates on the food requirements of minke whales, and an overview of methods (such as satellite telemetry and data loggers) that offer considerable potential for the future study of the foraging ecologies of dolphins and porpoises.

Recent advances in life history studies are covered in the section about population dynamics; these include an assessment of incremental growth layers in the periosteal zone of the tympanic bullae of minke whales. This paper assesses counting methods using reflected and transmitted light microscopes conducted on both thin-translucent and acid-etched thick sections. X-ray micro-analysis was also conducted to examine any variation in the levels of calcium and phosphorus between the mesosteal and periosteal bones. Results indicated that there was no variation in mineral content, either between different growth layers or between the different types of bone. The author also suggests that etched sections in reflected light and thin sections in transmitted light tend to give results of equal reproducibility, indicating that either method provides a useful approach for estimating age or as a basis for exploring other age-related information.

The final three sections contain papers relating to the impact that humans have had on marine populations. These are divided into: the interaction of marine mammals with the fishing industry; how pollution has affected

whales and seals; and the cultural, social, and economic aspects of marine environment exploitation.

Perhaps the message that emerges most strongly from the fisheries section is that the relationship between seals, whales, and their environment is complex — for example, while minke whales may shift among prey on an annual basis, fin whales seem to operate on decadal changes, and these time frames need to be taken into account when considering management plans. The papers in the section relating to pollution suggest that although there are strong indications that anthropogenic contamination can have a significant effect on marine populations, the exact impacts are difficult to quantify, and even more difficult to predict. There is clearly a need for continuing research in this area, and it is to be hoped that the preliminary results presented in *Whales, seals, fish and man* will inspire further research.

This volume is an excellent addition to the ever-growing body of information about the marine environment, and it is a pity that there is not space enough to mention more of the contributions here. I have only two complaints, although neither are major. First, I would have liked short introductions to each of the sections, perhaps explaining the rationale behind their selection and providing a summary of some of the major scientific discoveries and breakthroughs that are documented or revealed here. The second irritation is that there is no proper index: the keyword index provided does not in any way suffice. *Whales, seals, fish and man* will prove to be an important reference text, not only for biologists, but for anyone wanting accurate, up-to-date information on marine mammals in the northeast Atlantic, and as such it deserves a decent index. However, this should not deter anyone from purchasing what is an immensely valuable contribution to marine mammal science. (E. Cruwys, Scott Polar Research Institute, University of Cambridge, Lensfield Road, Cambridge CB2 1ER.)

MAKING A WORLD OF DIFFERENCE: ESSAYS ON TOURISM, CULTURE AND DEVELOPMENT IN NEWFOUNDLAND. James Overton. 1996. St. John's, Newfoundland: Institute of Social and Economic Research, Memorial University of Newfoundland. xv + 296 p, illustrated, soft cover. ISBN 0-919666-73-6. \$Can24.95.

Tourism continues to be a front-burner issue in many parts of the world. In perhaps most places, including Newfoundland, tourism is seen by promoters as the answer to economic difficulties, particularly the decline of extractive or consumptive industries. In the small Newfoundland communities where chronic unemployment has been exacerbated by crises in the fishing industry, this expectation of tourism's potential is strong. Yet, James Overton states, the outcomes of tourism development have never been debated seriously in Newfoundland. This volume is intended to bring critical commentary to the topic and to provoke discussion about tourism, development, and culture in Newfoundland. The specific focus of the book is tourism itself, with material on culture and development