

northern Alaska. Discussed are the Alaska Eskimo Whaling Commission, the Eskimo Walrus Commission, the Yukon-Kuskokwim Delta Goose Management Plan, and several others. Huntington concludes that cooperative systems have good potential to provide effective management because they can focus on particular issues, have specific goals, and can adapt to the needs of subsistence hunters.

In the final chapter, Huntington suggests a set of criteria, based upon the findings in the previous four chapters, by which ten management regimes are qualitatively evaluated. The criteria concern such characteristics as legality, ecological relevance, cultural appropriateness, flexibility, and local involvement. Those regimes found to be most effective have clearly defined roles, are flexible, and have a high degree of local involvement, while those with low overall effectiveness lack cultural relevance, are difficult to implement, or fail to include local hunters in the management process. According to Huntington's analysis, examples of effective resource management regimes include the Alaska Eskimo Whaling Commission and the Yukon-Kuskokwim Delta Goose Management Plan. In contrast, migratory bird treaties have poor overall effectiveness because they are "rigid, culturally inappropriate, and difficult to change." Following this, the same criteria are applied to the management of walrus, caribou, geese, polar bears, and bowhead whales. Huntington concludes that walrus management is only moderately effective; although subsistence hunters can provide for their needs, there is no mechanism to adopt conservation measures until the population is declared depleted. Huntington views the effectiveness of bowhead whale management as "good," primarily because of the active role of the Alaska Eskimo Whaling Commission in managing the hunting.

Throughout the book, the dominant theme is that effective resource management systems require "intensive local involvement." Huntington views the interests of professional resource managers and local subsistence hunters as mutually supportive. Local hunters possess a great deal of detailed knowledge about game populations that is of value to managers. Also, without the cooperation of local hunters, conservation measures may be ignored and hence be ineffective. Therefore, according to Huntington, the best examples of effective management regimes are those that are "cooperative," where there is "a shared commitment to the ideas of local use and of resource conservation."

This book fills an important gap in that there are few overviews of the complex state of subsistence resource management in Alaska available to a general readership. Overall, the book is accurate, clear, and reasonably up to date. The reader should be cautioned, however, that subsistence management in Alaska is a rapidly changing issue. The book's strength is its dual focus on the needs of both the wildlife resources and the communities that depend upon those resources, as well as its clear acknowledgement that developing solutions to problems in subsistence management requires contributions by several disciplines, including biology, anthropology, and political science.

The book is recommended for several audiences. It will be particularly useful for those with little previous knowledge

about current subsistence issues in Alaska. The book could be effectively incorporated into university courses in anthropology and northern studies. Especially, because of its multidisciplinary approach, it is appropriate for use in courses in wildlife management and contemporary resource issues. Also, specialists may appreciate the overview of recent efforts to develop cooperative approaches to subsistence resource management and the update on the complex resource management situation that presently exists in Alaska.

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LORE: CAPTURING TRADITIONAL ENVIRONMENTAL KNOWLEDGE. Edited by MARTHA JOHNSON. Ottawa: International Development Research Centre and the Dene Cultural Institute, 1992. x + 190 p., maps, appendix. Softbound. Cdn\$14.95.

Traditional or indigenous knowledge is a rapidly growing focus of interest for Native and non-Native people in government, academia, and private organizations in Canada and throughout the world. Canadian Native people, of course, have historically had more than a passing interest in traditional knowledge. It has for countless generations been a way of life and understanding it intimately has been a prerequisite for a successful and fruitful existence. However, the ravages of a colonial history and social policies geared towards assimilation have distanced many Native peoples from their history and from an understanding of traditional knowledge. The recovery of traditional knowledge has been identified by many Native organizations as an integral tool for cultural repatriation and political empowerment.

In recent years interest in this area has also burgeoned among non-Native groups who are realizing that a wealth of knowledge is at risk of being lost. In Canada, examples of this increased interest and recognition include the creation of an interdisciplinary committee of academics to study indigenous knowledge at the University of Alberta, government utilization of traditional knowledge in studies such as the current Northern River Basin Study, the formation of five Canadian wildlife co-management regimes, and the rapid proliferation of projects documenting traditional knowledge.

Lore: Capturing Traditional Environmental Knowledge, edited by Martha Johnson, is a timely and strong contribution to a topic on which there has been little existing information and few descriptive books. Although *Lore* focuses on the environmental components of traditional knowledge, this book does not attempt an exhaustive examination of traditional environmental knowledge (TEK). Instead, the intent of *Lore* is to provide a comprehensive introduction to the subject and to summarize the results of a workshop on TEK held near Fort Good Hope in the summer of 1990.

The objectives of this book appear to be threefold. First, *Lore* seeks to broaden the reader's understanding of the

breadth of TEK and to describe the widespread opposition to the recognition of TEK as a legitimate, if alternative, source of information. Second, *Lore* proposes alternatives to conventional means of gathering and compiling information. *Lore* places a high priority on participatory approaches as the appropriate means of capturing traditional environmental knowledge. The authors suggest that compiling TEK is only part of the objective. Although TEK has an intrinsic value, such knowledge also strengthens indigenous communities culturally and politically. However, this can only occur if the holders of that knowledge identify, initiate, and retain ownership of research projects. The final objective of the book is to document a number of case studies presented at the Fort Good Hope workshop. The workshop attracted a diverse group of researchers interested in traditional knowledge from around the world.

Editor Martha Johnson, who helped coordinate the workshop, is well suited for the task. Although Johnson is non-Native, she knows her subject well. She holds a master's degree in anthropology specializing in Inuit folk ornithology and is former research director for the Dene Cultural Institute (DCI). In this capacity, she was the joint project coordinator for the DCI's 1989-91 Fort Good Hope TEK pilot project and the Fort Good Hope workshop.

Lore is a short, descriptive book, not an involved analytical work. Nonetheless, it explores the breadth and range of traditional knowledge and provides a perspective that will interest both experienced practitioners and those taking their first look at this subject. *Lore* seeks to strengthen the credibility of TEK by discussion and case study illustration. The various case studies and projects described in the book were the focus of an international workshop on TEK held at a traditional Dene camp during the summer of 1990 on the remote shores of the Mackenzie River near Fort Good Hope.

Lore has a strong political component, promoting the integration of Western and traditional environmental knowledge. It advocates that both Western biologists and traditional knowledge holders should widen their perspectives and by doing so benefit from the knowledge of each other's discipline.

The strengths of *Lore* lie in its introduction, in the contrasting perspectives highlighted in the case studies, and in its appended case study summary. The introduction is particularly strong, providing a succinct and comprehensive discussion on the differences between Western environmental knowledge and TEK. Barriers to the acceptance of TEK within conventional disciplines are explored and strategies for integrating Western scientific knowledge with TEK are discussed. In 20-odd pages Johnson brings out the essential elements of TEK and addresses, in this reviewer's mind, most major issues of debate and discussion on the topic.

The case studies offer some unique perspectives on TEK and the effects its recovery has on local indigenous holders of that knowledge. The case studies presented by the researchers include a broad range of projects spanning different cultures and geography. Rather than attempting to catalogue traditional and Western environmental knowledge, these case studies describe the general intent of the projects and identify the factors that contributed to or diminished their success.

The DCI pilot project case study is rigorous in integrating TEK with conventional applications of ecological investigation. Moreover, this case study shines as an honest portrayal of the practical difficulties of implementing community-based projects. Authors Johnson and Rutton pull few punches when detailing the difficulties confronted in involving community members as driving forces and decision makers of the project.

The Belcher Island study describes a cooperative management plan for a re-introduced reindeer herd and in doing so provides an excellent illustration of the parallels between TEK and Western assessments of reindeer foraging patterns. The author presents lengthy selections of interview transcriptions, which allow the readers to make these connections on their own.

The Marovo Solomon Island case study presents an ideal to which all community-based projects may aspire. In many community projects, concerns are raised about the way in which benefits from the project flow back to the community and about the degree to which the community retains control over the project or research process. This case study portrays an outstanding feeling of partnership between the community and investigators. Researchers are welcomed as partners in learning more about the environment and ecology of the Marovo lagoon. The community encourages a two-way exchange, with community members and researchers acting as both students and teachers.

The Sahel Oral History Project describes a process for collecting TEK in support of a community forestry program throughout all sub-Saharan Africa. Unique from the other studies, this project was initiated by an outside agency and the project results are intended to benefit outside interests.

The weakness of *Lore* is in two areas. First, it is heavy on description. Only in the appendix are significant analysis and critique raised. Indeed it is curious that this discussion was relegated to the appendix rather than forming an appropriate concluding chapter. While Johnson appears to have intended the case studies to speak for themselves, some readers may feel that the description comes to an abrupt halt with the conclusion of the final case study. The reader is left wondering about the implications of the different approaches and about the future direction for research in traditional knowledge. Although the appended workshop summary does an admirable job in the space allowed, readers may be left thirsty for a more in-depth discussion.

Participatory action research (PAR) is referred to in the foreword, the introduction, and some of the case studies as a necessary part of any TEK research project. However, both the term and concept of this relatively obscure research approach are never defined or explored. The case studies, which employ both conventional and quasi forms of participatory research, describe in detail their research methods. However, nowhere in the book are these techniques evaluated with respect to how they conform to PAR techniques. Having read this book, readers unfamiliar with PAR will be little wiser on how this important technique is integral to research into TEK.

Criticisms noted, *Lore* provides a number of excellent illustrations of traditional knowledge in a variety of cultural

contexts. The case studies alone provide a testament to the wealth of knowledge and depth of understanding that indigenous people have of their own local ecology. Ultimately this knowledge is of tremendous value as policies and planning initiatives are adapted to more equitably meet the needs of Native people. This book will interest a wide readership, from those with direct interests in researching TEK to individuals looking for inspiration on ways to involve their own communities in uncovering and documenting their own local knowledge.

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NUNAVUT ATLAS. Edited by RICK RIEWE. Edmonton: Canadian Circumpolar Institute and the Tungavik Federation of Nunavut, 1992. Circumpolar Research Series, No. 2. 270 p., 150 b&w maps, 70 b&w photos. Hardbound. Cdn\$150.00.

The *Nunavut Atlas* is the second compilation of land use and renewable resource information published for the Inuit-occupied portion of the Northwest Territories during the last two decades. The first effort, the *Inuit Land Use and Occupancy Project (ILUOP)* (Freeman, 1976), broke methodological and theoretical ground at the time of its appearance. The present atlas, as its editor points out, owes a great debt to the *ILUOP*. However, political changes, notably the Nunavut Agreement, and the fact that almost 20 years have passed since the last comprehensive land use research effort, require that an updating of the state of Inuit land and wildlife relations be done. The *Nunavut Atlas*, like its predecessor, is, if nothing else, testimony to the dedication such research requires.

The *Atlas*, however, is not a simple clone of the *ILUOP*. First, it avoids some of the representational problems regarding data well known from that original volume. Second, it expands beyond the basic land use database established in the 1970s by integrating information on archaeological presence, wildlife movements and special sites and at least a qualitative scaling of land use intensity. All of this is helped by a 1:500 000 scale map format, rather than the 1:1 000 000 scale of the *ILUOP*.

I suspect that there will be considerable comparison to the *ILUOP*, as well as discussion of how effectively (or not) the *Nunavut Atlas* presents its data. In this regard, I have mixed feelings. To me, a weakness of this volume is that it lacks the regional overview essays found in the *ILUOP*. These provided much-needed texture to the basic material. Here, the editor relies on brief explanations keyed to the icons that populate each map; unfortunately, these are not always as informative as might be desired. On the other hand, the *Atlas* welcomingly uses animal and feature icons, rather than the *ILUOP*'s coloured circles and dots, to present its information. Too often the density of dots-circles overwhelmed both *ILUOP* maps and users.

I found other features in the *Atlas* to appreciate and question at the same time. The 27 community area maps that form the atlas's second section clue the user to the general sweep of local land use. These would be even more useful, however, if pertinent topographic sheet designations were indicated here and on the main index map. Also, the placing of wildlife maps next to land use sheets is welcomed, but in the case of the former, one can see a reader spending considerable time trying to decide if a circled area indicates, for example, a caribou calving area or the extent of local winter-summer movements. Perhaps the feature of the land use maps I found most to my liking was that the overlapping interests of two or three communities to an area/resource are actually discernible.

It is certainly possible to critique the *Nunavut Atlas* much more extensively. For instance, I suspect a cartographer (which I am not) might have complaints about the loss of definition of physiographic features on many of the land use maps. My basic utility test, however, consisted of examining the land use-wildlife maps (p. 64-65, 66-67, 98-99) relevant to Clyde River. To my surprised relief, the information on these six maps compared very favourably with the data I have accumulated on that region for the past 20 years. I only wish the editor had found a way of grouping all the Clyde sheets so that they appeared consecutively.

The *Nunavut Atlas* should prove to be a valuable, if cumbersome and pricey, research tool. Its field site utility, for obvious reasons, will be limited but, more positively, it will ensure that all of us spend additional time in our respective university libraries. One further, and important, note. The *Atlas*'s last six foldout maps provide the only clear identification of Nunavut-claimed lands that I am aware of and should be used with copies of the Nunavut Agreement.

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MUSKOX HUSBANDRY; A GUIDE FOR THE CARE, FEEDING AND BREEDING OF CAPTIVE MUSKOXEN. By PAMELA GROVES. Fairbanks: Institute of Arctic Biology, University of Alaska, 1992. Biological Papers of the University of Alaska Special Report No. 5. 148 p., 15 figs., 6 tables, 76 refs., 6 appendices, index. Softbound. US\$30.00.

"Buddha and Mak also were special muskoxen for me. I raised them from calves and they, along with my raven, would go berry picking with me in autumn. They were all good friends . . ." (Acknowledgements, p. xiii).

From the outset it is clear that Pam Groves writes about muskoxen with deep affection and a desire to convey to the reader both sober scientific knowledge and her continuing fascination with these woolly, prehistoric-looking creatures. There cannot be many people who could write of berry picking in the company of muskoxen and describe special ways of caring for "geriatric muskoxen"! The numbers of