

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

muskoxen in zoos and on game farms are limited but have steadily increased in North America since the pioneering efforts of John J. Teal in Vermont in the 1950s. The wool of muskoxen, termed *qiviut* by the Inuit, is a very fine, exceptionally warm fiber and has sparked interest in the potential of raising muskoxen on a commercial basis. The author sets out to condense in written form many years' experience of working with captive muskoxen, particularly four years spent with the Musk Ox Development Corporation (MODC), established in 1964 in Fairbanks and currently located in Palmer, Alaska. This book is intended as a down-to-earth guide to feeding, handling, raising, breeding and managing muskoxen in captivity, and as such it is largely successful.

Muskox Husbandry is well organized into twelve chapters and six appendices. The longer chapters are devoted to handling, facilities, veterinary care, calving and weaning, while shorter chapters describe basic muskox taxonomy and ecology, feeding, mating, determination of pregnancy, *qiviut* collection, animal identification and transportation. The chapters on facilities and animal handling, calving and weaning are particularly strong, reflecting Groves's knowledge of muskox behaviour. The author emphasizes throughout that captive muskoxen are tamed wild animals, not domesticated livestock bred for many generations to be docile. They must be worked with intensively when young to become manageable; otherwise they can become difficult and sometimes dangerous. Groves describes in some detail the ways in which muskoxen respond to various situations and offers many insights into methods of gently manipulating their behaviour. After several years' experience working with captive muskoxen at the University of Saskatchewan, we often found ourselves nodding in agreement at common experiences and observations.

Unique and useful plans for pens, pastures, feeders and barn layout are included in the chapter on facilities. Muskoxen tend to worry fences, particularly during the breeding season, and pens intended for mature males must be strong enough to withstand the charge of a 350 kg bull. More than one pickup truck has been relegated to a wrecking yard following a lost argument with an ill-tempered muskox bull! There are suggestions for erecting fences on permafrost, arrangement of chutes and pens for mating, weaning, weighing and intensive handling. The chapters on calving and weaning are detailed and leave the reader well prepared for these important events. Groves believes that the key to having tractable muskoxen is intensive training of young animals, and she describes specific methods of bottle feeding, halter breaking and maintaining gentle but firm control of their behaviour. She has had unique success in maintaining control of mature males outside the breeding season.

The chapters on feeding, veterinary care and pregnancy determination could have been stronger had they been written by someone with a more specialized knowledge of these areas, but the information presented is accurate and provides a good starting point for those interested in keeping muskoxen. Common health problems in captive muskoxen have included wounds from fights, parasites, heat stress, worn teeth and some infectious diseases. Although calving problems are rare, newborn muskoxen are prey to some

serious diseases in captivity. Scouring (diarrhoea) has been a frequent cause of neonatal mortality in several captive muskox herds. As Groves clearly describes, calving and the early postnatal period are critical times, requiring considerable care and attention if calves are to survive the first few weeks of life.

At times we felt that the focus of the book was rather heavily weighted toward the management and handling used at one particular facility. A greater experience of muskoxen kept at other facilities would have broadened the book's scope somewhat. It was a bit surprising that there was little mention in the book of the economic aspects of muskox husbandry. For someone considering muskoxen as a source of *qiviut* and profit, a basic discussion of costs and revenues would have made a useful addition. The MODC operation, a non-profit cooperative, is the largest and longest-running commercial muskox operation in North America, and the author must be aware of the difficulties of realizing financial gain from *qiviut* sales. Groves points out early, however, that the book is primarily a summary of her four years' experience with the MODC herd, and it is consistently apparent that her focus is on the delights and frustrations of working with these unique animals rather than on the economic bottom line.

"If not needed to feed calves, the milk is good in coffee and makes excellent yogurt and ice cream" (Chapter 8, Calving). Groves's writing is easy to read. Her style is straightforward and peppered with unusual observations and inventive suggestions. The writing is sometimes chatty and the book could have been more rigorously edited; some sections might have been condensed. The figures and tables are simple and easily followed, and the text is printed in large, legible type on acid-free paper. The book is well indexed and referenced, contains lists of equipment suppliers and notes where expertise on specific areas of muskox biology may be found. The appendices and text summarize essential but previously scarce information on the use of vaccines and other drugs, commonly measured blood chemistry values and feed requirements of muskoxen.

As a practical guide for those interested in keeping muskoxen, this book can be warmly recommended and is well worth the price. The book is not intended as a general text on the biology of muskoxen, but Groves refers the reader to useful sources at the end of each chapter. *Muskox Husbandry* will find a welcome home on the shelves of muskox owners, veterinarians and anyone interested in the biology of muskoxen.

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THE INUIT AND THEIR LAND: THE STORY OF NUNAVUT. By DONALD PURICH. Toronto: James Lorimer and Company, 1992. 176 p. Softbound. Cdn\$16.95.

The creation of Nunavut is the culmination of a dream of the Inuit in the Central and Eastern Arctic. Donald Purich, director of the Native Law Centre at the University of