

All of this is prelude to Weeden's focus on Alaska. He convincingly argues for meaningful and pervasive change in human understanding and behavior if we are to create a lasting northern society. Such change will involve communities, institutions of governance, science, economy, and most important, the orientation of every person toward nature. Weeden outlines some ideas and strategies for helping people develop social institutions, economies, and patterns for thinking and doing that are congruent with the character of the North.

*Messages* is written in three parts. In the first the author presents a survey of Alaskan lands and waters, in which the state's industrial and economic endeavors are dynamically embedded. The intent here is to discover features of the landscape and seascape that can guide sustainable use of natural resources. I found this a succinct and yet very informative summary of the biotic and abiotic factors that have shaped and will continue to shape Alaska and other realms of the far North.

Discussions of climate, oceanic primary productivity, terrestrial biomes, and plant and animal cycles provide the reader with a working knowledge of what is Alaska. It is a place of low diversity but tremendous numbers, a place of living systems that are vast but less efficient at energy transfer than those in southern climes. It is a land of natural cycles, some spanning days, others decades. The main strategy among living things in the North is to conserve. And so strategies of opportunism, high mobility, pioneering capacity, and adaptability are rewarded by survival. While Weeden couches this discussion in terms of plants and animals, the reader cannot escape the author's intent, which is to reinforce the idea that humankind's existence in the North depends on recognizing and working within these same natural principles.

Weeden concludes this part with a chapter entitled "Messages from Earth." He urges people to look at the "nature of nature" in Alaska and try to read the messages therein when developing or exploiting resources. He points out that timber harvests in Alaska need to be planned on century-long replacement times; oil rigs need to be designed to withstand extreme wave forces in the Gulf of Alaska and Bering Sea; not as many animals can be grazed on tundra as on temperate grasslands; and structures on or near earthquake faults should be invested in sparingly. These and hundreds of similar messages from earth can serve as guidelines toward confident and sustainable northern living.

Part two of *Messages* is entitled "The Learning Process." Weeden begins this section by asking, "Are we listening? Are we learning?" The earth's aquatic and terrestrial systems present myriad messages of "permission and constraint, invitation and warning." But our viewpoint of life in northern latitudes has often been myopic. Weeden discusses at length the environmental stewardship of three activities in Alaska: placer mining, logging, and agriculture. These and other activities carry a host of lessons on how things could have and should have been done. The author's treatment of them in Alaska is in places judgmental and blameful, but he is quick to point out that progress often "rides on the back of recent guilt." Indeed, he concludes this chapter on a positive note, indicating that some or parts of the "messages" have been received. Placer mining has moved toward a more responsible future. Southeast Alaska is still gridlocked over crucial issues of forest management, but there is an emerging sense of uniqueness and value of ancient forests. And in the case of agriculture, once it was realized that Alaska cannot compete with the grain production of Kansas or the milk produced on dairy farms in Wisconsin, a more prudent philosophy of learning to walk before trying to fly was adopted.

The last two chapters of part two, "Fitting into the Country" and "Towards Enduring Societies," offer guidelines for sustainable living in the North. Here Weeden expands on, and shapes within a northern existence, ideas in Walter Firey's *Man, Mind, and Land*. Both authors conclude that the most enduring natural resource practices are at the same time profitable, socially acceptable, and ecologically supportable. At any given time many practices meet only one or two of these criteria and are inherently unsustainable. Weeden supports this model of

sustainable development with several Alaska-based examples. He considers such things as human carrying capacity of the North in relation to the cyclical nature of northern economies and he suggests ways to smooth out the curves. Weeden offers a pointed discourse on the northern traditions of indigenous peoples and the concept of bioregionalism. I found his advocacy of stronger local levels of social decision making and land stewardship to be most convincing and appropriate.

Part three of the book is entitled "Gifts." The message here is simple but, I am afraid, often overlooked. The North has bestowed numerous gifts to humankind. In the process of "gift exchange," however, we exploit what nature provides without considering to whom or in what state that gift will pass. Weeden's prevailing message is that earth care must be the primary science and concern of society.

It has been a long time since I have enjoyed reading a book as much as I did this one. Bob Weeden has that rare talent of taking the dry, often emotionless findings of science and embellishing them with feelings from the heart so that one cannot help but pause to reflect. The resulting work is pertinent to every "Earthrider," particularly those residing or interested in the North. *Messages from Earth* belongs in the classroom and on your personal bookshelf — it is a must read for everyone.

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THE AURORA WATCHER'S HANDBOOK. By NEIL DAVIS. Fairbanks: University of Alaska Press, 1992. 262 p., figs., 27 colour plates, bib., index, glossary. Softbound, US\$20.00. Hardbound, US\$35.00.

The aurora is a hallmark of the culture of the North: a companion to the outdoorsman, a source of fear to generations of children, a generator of legends. To the scientist it is a fiery signature of the electrical coupling between the sun and the earth. The auroral light draws the eyes of the geophysical community to the polar skies for answers to questions about the earth in space.

Neil Davis has spent a lifetime under the aurora, coming to know it as have only a handful of persons — observing it, analyzing it, discussing it with colleagues, writing about it. Through *The Aurora Watcher's Handbook*, Professor Davis shares a full understanding of the aurora with the curious reader.

Professor Davis is what physicists term "a good explainer." He has written the book in a smooth, how-it-works style, and his presentation is remarkably clear. The book is loaded with examples and analogues and highlighted with anecdotes. Always, plenty of simple diagrams are utilized and there are more than enough color figures to aid and entertain the reader. A carefully compiled glossary is included in the back of the book. It appears that Professor Davis expended much effort on this book, forming from his lifetime of knowledge a coherent and comprehensible picture of the aurora for the non-specialist.

The book thoroughly covers the aurora, from large aspects to small details, from the sun to the earth. The types of aurora commonly seen in the sky are catalogued, and the big picture of auroral patterns on the earth is presented. Clues to the causes of the aurora are examined, the processes giving rise to auroral-light emission from the gas of the upper atmosphere are extensively discussed, and the dynamic behavior of aurora is described and the mechanisms behind the behavior are explained. Professor Davis covers the complete chain of events from the sun to the atmosphere that act to create auroras, and he covers the essential details of every link of the chain.

The excitement of science is the pursuit of what is not known, not the study of what is already understood. Professor Davis points out very clearly some of the unanswered questions about the aurora: e.g., the elusive behavior of the electrical gases (called plasmas) in

space that somehow deliver power to the aurora, the unknown mechanisms that must be operating 5000–10 000 km above the atmosphere to produce the auroral glow, and the mysterious mechanisms that allow the electrical wind from the sun to couple to the earth's magnetic field.

The reader is urged to carefully observe the aurora: to watch and, particularly, to listen. Observing hints are offered and very practical advice about photographing aurora in cold weather is given. Controversial reports of sound associated with the aurora are presented (scientists say "no" — everyone else says "yes"), and Professor Davis provides information and encouragement about how non-specialists can have their observations placed into the scientific record.

A chapter discussing legends of the aurora is included. However, unlike the presentations in other aurora books, which typically attempt to survey auroral folklore throughout the Arctic, this presentation is a personal view that reflects upon stories and explanations the author himself has heard from people living in Alaska and Canada. This approach deals more with the reactions of people to the aurora than with its cultural importance. This is refreshing and, I believe, much more enlightening than another survey of legends.

This book will be an asset to any library in the North. High-school and college students will find information about the aurora at all levels; with some thought, a physics course emphasizing the aurora could be taught from it. After-work learners will be rewarded handsomely for the time spent with this book. *The Aurora Watcher's Handbook* will be appreciated by any person curious about the aurora, from hunters and hobbyists to auroral experts. Scientists will find it a thorough refresher and more — this auroral researcher learned plenty.

There are several coffee-table books about the aurora available; for spectacular photographs and art reproductions, those other books will satisfy. Much different, the goal of *The Aurora Watcher's Handbook* is to provide a path for an understanding of the aurora, and it is very successful. *The Aurora Watcher's Handbook* is a book for the armchair, not the coffee table.

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**WHOSE NORTH? POLITICAL CHANGE, POLITICAL DEVELOPMENT, AND SELF-GOVERNMENT IN THE NORTHWEST TERRITORIES.** By MARK O. DICKERSON. Vancouver: University of British Columbia Press, 1992. (A joint publication of the Arctic Institute of North America and UBC Press.) 233 p., maps, figs., tables, b&w illus., notes, bib., index. Softbound, Cdn\$19.95. Hardbound, Cdn\$39.95.

The devolution of government in the Northwest Territories has been a subject of increasing study and debate over the last decade, perhaps as a result of recent recognition of aboriginal rights to self-government. The latest work, *Whose North?* by Mark O. Dickerson, offers a very readable and thoughtful analysis of the circumstances and events leading to political change, with focus on the current question of political legitimacy. For a historian, especially, Dickerson's search into the past as a means of understanding the present and future is a refreshing departure from the complex theories and models which so often characterize traditional political science methodology. The stated objective was to place the process of political change in the N.W.T. within a historical evolutionary context for clearer understanding of the multiple issues and tensions inherent in the more recent pressures for increased decentralization. In this respect, he has succeeded admirably.

The high quality of reproduction is reflective of the contents. The chapters are well organized and clearly identified; the massive number of tables, maps and figures are all listed and accurately captioned; the

index is exceptionally detailed; and the extensive bibliography includes not only the appropriate classic studies and relevant government documents, but is heavily weighted with very recent sources. One has the first impression that many years of careful study went into this work. A closer examination of the contents found no contradictions.

Creative thought is also evident. While there are only three photographs, they are strikingly symbolic. On the one hand, the magnificent cover photograph of an isolated indigenous community leaves no doubt as to "whose North" the author refers to. In stark contrast, the sombre black and white photographs of the 1966 Territorial Council and 1991 Legislative Assembly dramatically illustrate the changes occurring over the past 25 years, not only in terms of gender, ethnicity and formality, but in the age of those bearing the responsibility of government. Without names to focus on individual identity, the reader is drawn to consider the general nature of representation. Throughout, however, all factual information and secondary analysis are fully substantiated by detailed footnotes and further clarified by numerous tables, charts and chronologies. Moreover the text is written in a style for easy comprehension by readers with diverse interests in the North.

The strengths of *Whose North?* lie partly in its logic and readability, which can be easily comprehended by educated yet relatively uninformed readers. Equally significant is the degree of accuracy and relevancy of historical evidence that gives full support to the critical analysis and proffered solutions of current problems. Ironically, any weaknesses are directly linked to the strengths, in that the suggested solutions may become outdated by rapidly changing circumstances. In that event, it is hoped that a revised edition might be published to retain the excellent historical analysis which is of more lasting importance.

In the first chapter, Dickerson sets out his objective, approach and thesis. Precise definitions of "political development" as compared to "political change" are crucial to Dickerson's thesis, which argues that political change is not synonymous with political development but can just as readily lead to decay, in spite of the growth of political structures and institutions. From this perspective, a "southern" transplant of Canadian democracy may well fail to meet the cultural and governance needs of the northern aborigines.

From here, the plot of the book follows a natural sequence, with the second chapter setting the stage by outlining the influence of climate, geography, demography and early European contact. The first act of this four-part historical drama begins in chapter 3, which describes the evolution of process and policy decisions under the appointed council from 1920 through 1950. The next chapter, aptly titled "Changing the Policies, Not the Process . . . 1950-1967," focuses on the persistence of colonial attitudes despite the introduction of new policies to meet the more socially conscious sensitivities of postwar liberalism. Chapters 5 (1967-79) and 6 (1979-91) trace the changes in political structures required to facilitate the devolution of power to the territorial government.

Dickerson builds up compelling historical evidence to show that differing attitudes of the native and non-native residents are deeply rooted in the more distant past, as are their means of dealing with those differences. The conclusion seems almost self-evident: the justification for more decentralization of power to the local or regional level to meet the diverse cultural needs of a territory perhaps more fragmented by multi-level differences than southern Canada. As Dickerson argues, too many aborigines have testified formally and informally to their dissatisfaction with authority centralized in Yellowknife, despite the apparent enthusiasm expressed by the non-native community. Thus, while the Northwest Territories achieved representative government and moved steadily towards more responsible government along the precedent set by Alberta and Saskatchewan, this "political change" does not signify "political development" according to Dickerson's definition.

Having declared the source of tensions as being attitudinal differences rooted in diverse cultural traditions, the author attempts to allay any fears and doubts about the wisdom of granting "Native self-government." Explaining how local or regional autonomy is the "cornerstone" objective of native land claims, economic development and cultural