

the essays break down assumed distinctions between conservative and liberal political positions, with each author drawing from the approaches of many political parties and stakeholders. For non-expert readers, it offers a clear and accessible introduction to Arctic issues, supplemented by a helpful acronym guide. Yet the depth of its coverage and nuanced analysis means that specialists, too, will find much of interest. Each chapter is clearly written and free of jargon, and the organizing strategy of addressing each issue in turn makes it easy to compare points of convergence (for example, the need for a more clearly defined Canadian northern strategy and the direct participation of the prime minister) and divergence (such as the probability of international conflict in Arctic regions at home and around the world) between the authors' positions. Colour maps interspersed throughout the book provide useful visual references for the various geopolitical issues discussed, and the appendix helps contextualize and compare the authors' recommendations with the federal government's strategy.

Although not part of the book's stated objective, one notable omission is a chapter from a northern Aboriginal group. Each author criticizes the marginalization and lack of recognition of Aboriginal voices in Canadian Arctic politics, but the absence of a dedicated chapter in *Canada and the Changing Arctic* reproduces this exclusion. This voice could perhaps be included in a foreword, introduction, or conclusion in a future edition.

This is the only noteworthy flaw in an otherwise compelling book that delivers on its promise to provide a range of opinions and allow the reader to come to his or her own conclusions. With the Arctic increasing in importance in both Canadian and international politics, this book will have enduring relevance. Instructors and graduate students in Northern Studies, Political Science, and Policy Studies, as well as policy analysts and writers, will find this an essential read.

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ELLAVUT/OUR YUP'IK WORLD & WEATHER: CONTINUITY AND CHANGE ON THE BERING SEA COAST. By ANN FIENUP-RIORDAN and ALICE REARDEN. Seattle: University of Washington Press, in association with Calista Elders Council, Bethel Alaska, 2012. ISBN 978-0-295-99161-0. 354 p., maps, b&w illus. and colour plates, notes, references, index. Softbound. US\$45.00.

*Ellavut/Our Yup'ik World & Weather: Continuity and Change on the Bering Sea Coast* is the ninth book produced by the Calista Elders Council (CEC) in their efforts to document and share oral traditions. Ann Fienup-Riordan, an

anthropologist with decades of experience working with Yup'ik elders, teamed with Alice Rearden, a transcriptionist and translator, to produce this ethnographic summary from the Yukon-Kuskokwim Delta Region. "Much has been written about the importance of observation and practice in learning the techniques necessary to thrive in the subarctic. Less well-known is the importance placed on verbal instruction" (p. 29), and so the book is largely justified.

The first CEC publication was *Wise Words of the Yup'ik People: We Talk to You Because We Love You*. It is clear that with *Ellavut* the primary intended audience continues to be Yup'ik youth and future generations. This book, however, is also well written for anyone with an appreciation for the Arctic and relationships between an indigenous people and their surroundings.

By my estimate, quotes from the book's 99 Yup'ik elder contributors, who are listed individually in the front matter, comprise roughly 50% of the text. As their stories and verbal instructions eloquently weave together, the book vividly describes an earlier world. Most contributing elders were born prior to the 1930s when people still lived in small settlements and didn't cluster around schools. "Contemporary elders are the last to grow to adulthood in *qasgit*, where they received oral instructions that they continue to view as the moral foundation of a properly lived life" (p. 39). *Qasgit* (plural of *qasgi*; communal men's houses) were eventually replaced by single-family dwellings in the mid-century.

"Elders recall the time when, as they say, the land was thin. Then the boundaries between the ordinary and the extraordinary were more permeable, and the people encountered unusual, sometimes frightening things... Although the land may be thicker now, many still view it as sentient and knowing, capable of responding to human actions in the world" (p. 108). Some of these usual, frightening things are described, such as encounters with *ircenrraat* ("other-than-human persons," p. 54) that live inside the hills around Nelson Island. In a section that discusses the *teggalquurtellret*—ancestors that long ago turned to stone figures, which remain visible today—we are reminded of darker periods in history. During the 1918 influenza epidemic, stone figures changed their positions, reflecting their sentience of the human condition.

The thread that holds the book together is its focus on *qanruyutet*—wise words or instructions. "One should not follow one's own mind, but rather the *qanruyutet* and *eyag-yarat* [traditional abstinence practices]" (p. 35). *Qanruyutet* educate people on practical skills while conveying the responsiveness of the natural world. They guide one's interaction with the environment and, as the authors assert, have the potential to shape and change lives.

Nearly two-thirds of the book is divided into chapters by components of the natural world: weather, land, rivers and lakes, snow, ocean, and sea ice. Each of these chapters is followed by a list of related Yup'ik terminology. Impressively, the chapters on snow and sea ice include lists of more than 70 terms each. Most of the *qanruyutet* relate to safe travel and manners for respecting the forces of nature. The

importance of place-names, traditional methods for navigation and predicting weather, and the necessity for certain tools (e.g., *qanikiurun*/snow shovel, *ayaruq*/walking stick, *egcik*/gaff) are a few of the topics discussed, in part to remind a younger generation of the dangers of travel, especially as the increasing use of technology, global positioning systems (GPS), and snow machines has made the wilderness more accessible.

The chapter focused on the ocean is unique with its emphasis that, unlike other aspects of the natural world, “the ocean cannot be learned” (p. 215). This is because the ocean is ever changing and highly responsive to human action and thought. While one may never understand the ocean, elders strongly caution that *qanruyutet* are of utmost importance for survival when traveling its “pitiless” waters (p. 219). A partial preview to this chapter can be found in a recent paper by Fienup-Riordan and Carmack (2011), entitled “‘The Ocean is Always Changing’: Nearshore and Farshore Perspectives on Arctic Coastal Seas.”

Readers seeking to learn about observations of recent environmental change in the Yukon-Kuskokwim Delta region must hold out for the final chapter, “The world is changing following its people.” Climate change is described as an “undercurrent of concern” throughout the elders’ discussions. Numerous observations are offered, such as food spoilage caused by warming temperatures, increased windiness, greater unpredictability in the weather, and sinking land due to permafrost melt. The authors emphasize that “Elders did not distinguish between various human impacts on the environment, including the effects of commercial fishing or overhunting, and the ‘natural’ effects of climate change. Instead elders continually referred to the role played by human action in the world when describing changes in the environment or species availability” (p. 42). The book ends with a powerful acceptance of responsibility from a people that are, ironically, immensely removed from the scientifically understood causes of climate change. The world, *ella*, is changing because people are no longer treating it with care and respect, and the Yupiit are no longer following the *qanruyutet*.

Throughout, the authors remain staunchly on track with delivering the documented verbal instructions and knowledge of Yup’ik elders. They sparingly and carefully weave in input from expert scientists to offer glimpses into efforts to better understand how local and traditional knowledge compares with scientific understandings. In the end, *Ellavut* leaves a clear impression that the Yup’ik worldview and knowledge base have resulted from a thin line being drawn between the seemingly practical and ordinary and the spiritual and extraordinary, all of which are equally important to remember when living a proper life. “Since they always gave instructions in the *qasgi*, my mother would tell me to go and listen, that the elderly men would talk about things I would never forget” (Simeon Agnus of Nightmute, July 2007, p. 164).

The single piece that I looked for in the book but did not find was the authors’ reflections on the process of working

with the CEC and producing the text. The only sections written in first person are the acknowledgments and the opening sentence: “On a blizzard March afternoon in 2008, Alice Rearden and I met with a dozen elders and young people gathered in the Chefnak community hall to document discussion on their way of life” (p. 3). The remainder of the book builds firmly on the conversations that took place in the Yup’ik language at this and many similar gatherings. *Ellavut* is a great example for the value of recording focused discussion at small gatherings, as opposed to the interview approach for documenting knowledge.

At a paperback price of US\$45, *Ellavut* is a tremendous value, not because of its attractive layout and careful organization, but for the impressive quantity of information distilled to its 354 pages, which include 3 maps and 68 photos and illustrations. It is not a book to read and pass on to others, but one to hold on to; it has lasting significance.

#### REFERENCE

Fienup-Riordan, A., and Carmack, E. 2011. “The ocean is always changing”: Nearshore and farshore perspectives on Arctic coastal areas. *Oceanography* 24(3):266–279.

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PERMAFROST HYDROLOGY. By MING-KO WOO. Berlin: Springer-Verlag, 2012. ISBN 978-3-642-23461-3. xii + 563 p., 442 colour and b&w figures, 20 tables, references, appendices, index. Hardbound. €249,00; US\$349.00.

Snow, ice, and frozen ground dominate the hydrological response of high-latitude catchments. Until resource development (~ 1970) initiated interest in the hydrological cycle of this sparsely populated region of the world, very little effort had been expended either to collect relevant data or to analyze the data collected. First, national hydrological and meteorological data networks were extended northward. Hydrologically oriented research studies that tried to quantify how snow, ice, and frozen ground may impact and alter the hydrology response of sub-Arctic and Arctic basins followed shortly. The net result was that we were very slow to gain an understanding of the hydrological cycle of cold regions.

Today, hydrological monitoring is still sparse, and most of the results of past research are found scattered around in scientific journals such as *Arctic*. Researchers have made occasional efforts to pull together results from numerous studies, such as the American Society of Civil Engineers monograph (1990) entitled *Cold Regions Hydrology and*