

hits the mark was made to me by a member of the Canadian Rangers, a branch of the reserve military drawn from northern communities (and about which Lackenbauer is an acknowledged authority). This particular Ranger brought a copy of *Arctic Front* along on Operation Nanook 2009, the Canadian Forces major sovereignty operation in the eastern Arctic that year. He called it a good read that gave him context that few others on the exercise had been able to provide. He lent the book to at least two other military personnel and hasn't seen it since. The authors should be gratified to see their work shared in this way, as should Canadians concerned about the future of our country's North.

Douglas Clark, School of Environment and Sustainability, University of Saskatchewan

***The Big Thaw: Travels in the Melting North.* By Ed Struzik. Mississauga, ON: John Wiley & Sons Canada, Ltd., 2009. x + 278 pp. Maps, illustrations, index.**

Ed Struzik is an Edmonton-based journalist who has been writing about climate change for as long as the phrase has been part of the general public's lexicon. In 1992, having already studied and written about the Arctic for a decade, the naturalist-turned-reporter wrote an article for *Equinox* magazine on the impacts of shifting climatic conditions, as researchers understood them at the time, on the region's people, environment, and wildlife. The scientists' conclusions (and thus Struzik's article) were largely speculative since no one yet had a grasp on just what was happening in the North. (It could be argued, of course, that we still don't.) In the intervening years, Struzik maintained contact with scientists in a wide range of disciplines, accompanying them on research trips across the Canadian Arctic on numerous occasions. These professional relationships—not to mention enduring friendships—provided Struzik with a from-the-beginning vantage point from which to view the progress of climate change research in the Arctic. His newest book, *The Big Thaw: Travels in the Melting North*, is an accumulation of his observations over the past three decades.

The book takes its narrative and thematic structure from eleven trips taken by the author over an eighteen-month period in which he met local residents, public officials, Inuit hunters, bush pilots, and others who live and work in the Arctic. The primary goal of his excursions, however, was to visit several government and university scientists at their field research stations and to observe their work both *sui generis* and in relation to the

larger climatic picture. Considering the polar bear has become the “poster animal” of the North and the melting of its sea ice habitat the metaphor of choice for the potentially devastating effects of global warming, it is perhaps not surprising that the first chapter of *The Big Thaw* features Struzik accompanying biologists from the Canadian Wildlife Service as they conduct a long-term census of the animals in the southern Beaufort Sea. Subsequent chapters focus on other wildlife studies, including those of the pika, beluga whale, narwhal, muskoxen, caribou, and the red ground squirrel, one of the few species likely to benefit from a warming climate. Struzik also takes part in an expedition/sea ice study aboard the icebreaker *Louis St. Laurent*, traverses and takes measurements of glaciers in the Northwest Territories, studies ice cores extracted from mountains in Kluane National Park, observes coastal erosion in Tuktoyaktuk in the western Arctic, chronicles the spread of chemical toxins and disease vectors in various northern regions, and pays a visit to the Canadian Forces Maritime Warfare Centre in Halifax, where the geopolitical implications of climate change are analyzed.

In all of these cases, Struzik is the self-confessed layman among the experts and is unafraid to acknowledge his own clumsiness in moving through one of the most challenging environments on the planet. But his workmanlike approach and lyrical prose result in an accessible book that describes the changing Arctic ecology by describing those who are forced to change along with it, and that explains the science by telling about the scientists. One of the book’s strengths is how its author contextualizes present circumstances by relating past events in the Arctic, some going back mere centuries and others millions of years. That Struzik devotes relatively few pages to the usual topics found in books about climate change, such as international accords and the debate over anthropocentric forcing versus natural variability, is in no way a shortcoming of the work. Struzik leaves those discussions to others while he focuses on the land, air, ice, and sea. In his harrowing account of a snowmobile trip across cracked and jagged sea ice with a hunter named Gabriel Nirlungayuk, for example, Struzik juxtaposes his own anxiety with the confidence and inestimable knowledge of his guide, thereby demonstrating how the Arctic is an environment in great flux and that climate change might yet outpace the ability of humans and every other living creature to adapt to it. A more clear and frightening explanation of what is to come is not likely to be found, especially in more technical works.

In telling such stories, Struzik shows that science is ultimately a human endeavour. The dedicated men and women who conduct climate change research in the North have been coming back to the same sites for years, in

some cases having taken on projects from senior scientists who started long-term observations decades before anyone could have guessed their present utility. Many of these researchers stumbled into their respective fields as eager but uncertain graduate students for whom an opportunity presented itself through luck or accident. These researchers are usually under-funded, but, as the author makes clear, they often can't imagine doing anything else and are willing to accept the risks to personal safety that inevitably accompany their work. Struzik is not the first writer to assert that advances in science are both a function of the people involved and a product of the historical contexts in which they occur. But in the case of the changing Arctic, he has made this point with an engaging narrative that will appeal to a broad audience.

The Big Thaw is not without an agenda. A note on the dust jacket states that a percentage of net sales of the book will be donated to World Wildlife Fund–Canada. The work also features few voices of those reputable scientists who challenge the dire predictions of climate change impacts or at least question the value of far-reaching conclusions drawn from disparate research findings. But anyone who dismisses the book as an environmentalist screed is missing the point. The story Struzik tells is ultimately about humans in the Arctic and what they observe is happening to their world.

Ross Coen, University of Alaska Fairbanks; former Climate Change Policy Analyst for the U.S. Senate Committee on Commerce, Science and Transportation

Awakening Siberia. From Marginalization to Self-Determination: The Small Indigenous Nations of Northern Russia on the Eve of the Millennium. By Lennard Sillanpää. *Acta, Politica* No. 33. Helsinki: Department of Political Science, University of Helsinki, 2008. xvi + 612 pp.

Awakening Siberia is a comprehensive, insightful look at the small Indigenous peoples of northern Russia written by the Canadian scholar, Lennard Sillanpää. Sillanpää has studied and worked with minority and Indigenous groups in Canada and Scandinavia throughout his professional career. He wrote this study in collaboration with the University of Helsinki and the Russian Academy of Sciences in Moscow.

The various Indigenous nations in Russia's North range in numbers from a few hundred to 42,000, and total 250,000. They inhabit vast tundra, taiga, and forest regions stretching from the Kola Peninsula in the west to the Bering Strait in the east, an area that constitutes two-thirds of Russia's territory. They