

EXTREME CONSERVATION: LIFE AT THE EDGES OF THE WORLD. By JOEL BERGER. Chicago: The University of Chicago Press. ISBN 978-0-226366-265. 376 p., maps, b&w and colour illus., index, bib. Hardbound. US\$29.75.

“My narrative,” writes Joel Berger in *Extreme Conservation*, “is based on thirty-three expeditions, including nineteen in the Arctic, seven in Mongolia, and seven in the Himalayas and Tibetan Plateau” (p. xx). From these expeditions, he offers glimpses into the “cryptic and complex lives” (p. xx) of muskoxen, wild yaks, blue sheep, the strange “proboscis-dangling” (p. 187) saiga that Mongolians call the *bukhun*, the Tibetan chiru, and others. Importantly, his observations also take in various humans that share the high altitude and high latitude habitats of his other animals. And perhaps even more importantly, he offers not only glimpses but sweeping views into the world of field biology and insights regarding that increasingly endangered species, the researcher who spends more time with boots in the mud than with eyes on a computer screen.

In these pages, Berger attends meetings, writes grant proposals, and wears animal skins to sneak up on his subjects. He trains with heavy backpacks prior to field excursions that involve copious quantities of rain and snow. He is charged by muskoxen, detained by Russian officials, and annoyed by the sometimes parochial nature of other scientists.

Read closely—for the author does not dwell upon his own sacrifices—and understand that the life of the field biologist is a life away from home, from family, from mattresses, from security. Read even more closely—for just as he does not dwell on sacrifices, he does not dwell on personal satisfaction—to understand that this career path, this calling, offers that all too rare commodity in today’s world: the opportunity to pursue adventure while performing useful work.

Much of what is described here in narrative form can be found elsewhere, in the necessarily dry language of scientific journals. Although Berger laments the difficulties of publishing academic papers based on a small number of very hard-won data points, he also lists, in an appendix, dozens of papers that have come from his efforts and that can be found in the likes of *Conservation Biology* and *Science*. In other words, his work has the indelible stamp of respectability, and yet here he is to some degree out on a limb, with the audacity to talk as though readers should care not only about results and interpretations but about what it takes to acquire data. His words describe the ways of the world that he has experienced, ranging from the value of long-term relationships with one-time graduate students to the challenges of maintaining funding streams to explaining the value of his investigations to Indigenous people.

And, further, he recognizes the limitations of his field. “Doing science,” he writes, “is not conservation” (p. xxi). Which means that he and his like-minded colleagues have to go beyond the ordinary realms of their trade, “donning a human face, inspiring people to care, engaging people who

listen, and ultimately persuading decision makers to act” (p. xxi).

By virtue of his topic, much of what appears in these pages is tragic. There are muskoxen without heads. There is the loss, in May 2015, of something like 210 000 saigas, about half the known population, killed “in a synchronous collapse” that left their corpses “strewn for miles and miles across the steppes of Kazakhstan” (p. 207). There are feral dogs preying upon chirus. And there is the master tragedy of our times, climate change, impacting Berger’s species with stealthy ferocity.

Conservationists are sometimes accused of hypocrisy, of pointing fingers at others while ignoring their own contributions to the challenges faced by wildlife. But Berger’s fingers point, at least at times, squarely back at Berger himself. He realizes that chasing and darting animals from helicopters separates cows and calves—that “capture myopathy” (p. 204)—can be fatal. “We didn’t purposefully separate animals,” he reports with candor, “but our darting operation produced an unintended test in which we detached some females from groups” (p. 47). What he sees troubles him. “Scientists can be coldhearted or compassionate. Ethics and welfare matter. The idea of gaining information at any cost is not the part of research I wanted” (p. 51). And so he changes his research approach to accommodate less invasive methods.

Berger’s final section offers what he calls “a conservation umbrella” (p. xx), a working hypothesis intended to tie together his learnings. Berger is, after all, a scientist, and this book is most likely to appear in the science and nature sections of bookstores and libraries. But this is also a book about what it is to be human in a world seemingly bent on the destruction of nature, and with that in mind it is not the author’s conservation umbrella that leaves me with my deepest impressions, but rather his penultimate sentence. “When there is no room in our hearts for gentleness and when sympathy disappears from our vocabulary, so does conservation” (p. 333). These words, from a scientist, are nothing short of profound.

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BREAKING THE ICE: CANADA, SOVEREIGNTY, AND THE ARCTIC EXTENDED CONTINENTAL SHELF. BY ELIZABETH RIDDELL-DIXON. Toronto, Ontario: Dundurn Press, 2017. ISBN 978-1-4597-3897-3. 343 p., maps, colour illus., notes, bib., index. Softbound. Cdn\$28.99. Also available in epub and PDF formats.

Elizabeth Riddell-Dixon has done it again. She has written a “must read” book for anybody interested in understanding the United Nations Convention on the Law of the Sea

(UNCLOS) and how it shapes Canadian foreign and Arctic policy. In *Breaking the Ice*, she explains how UNCLOS and its provisions on the extended continental shelf have been developed and determined for the Canadian Arctic region. Her writing is first-rate and her research is outstanding. She brings a rare clarity to what can be a very confounding and technical issue.

She provides an understanding of both the process in which a country may claim and determine the outer limits of its extended continental shelf and the means by which Canada follows these procedures in a manner that is both understandable and engaging. Many have difficulty fully understanding the legal, technical, and political requirements of determining what an extended continental shelf is and where it ends. In terms of the law of the sea, the extended continental shelf is the physical underwater extension of the continent beyond the 200-mile Exclusive Economic Zone. Its main significance lies in the fact that if a coastal state can show it has one, it may claim sovereign rights over the resources that lay on its soil and subsurface (i.e., oil and gas). In chapters 2 to 5 she takes the reader through a voyage of understanding in which she explains how the convention allows maritime nations to determine the outer limits of their maritime boundaries. She then shows how Canadian scientists and officials persevered to engage upon the very challenging task of defining the Canadian Arctic extended continental shelf.

She also opens up an academic debate over the intentions and decisions of the Harper government on how to proceed with the Canadian efforts. Chapter 6 focuses on the December 2013 decision by the Harper government to carry out further scientific research when the scientists had thought that they were complete. She characterizes this decision as being based on the Harper government's distrust of the Canadian scientific team, as well as a desire to include the North Pole in the Canadian submission. This is where it gets interesting.

It is entirely possible that she is correct. If this is the case, Canada will pay heavily for the conceit of wanting to have the North Pole included in the Canadian submission. However, is this the case? There are two reasons for suggesting that there may be a counter-narrative to the one that she suggests. First, from a methodological perspective, the one challenge of her outstanding examination is that, as is her norm, she has interviewed everyone to whom she acquired access. The interviews are a critical element of the overall picture that she paints. However she faced the problem that most Canadian academics now face. She was unable to get access to the political elites and specifically Stephen Harper, who is at the centre of this issue. This failing is, of course, not her fault and represents an overall reluctance of most politicians of any political persuasion to grant interviews reflecting upon their actions and decisions. This reluctance is particularly the case with the senior members of the Harper government, which results in an imbalance in her examination. The full understanding and stories of the scientists are clearly understood but there

is not the counterbalance of the rationale of the Harper government for why it did what it did. She is able to report on all of the sources that she could find, but the Harper government propensity for secrecy means that there is not a direct understanding of why Harper and his cabinet did what they did when they told the scientists to continue their work.

In her analysis of the Harper decision, she spends considerable time discussing the challenge that is now created with regards to relations with Denmark. She points out that Canada's decision to include the North Pole in its submission has hurt relations with that country. She also points out that in terms of geography, Denmark probably has the better claim to the North Pole. If the equal distance principle is used—which is one of the main ways to decide on conflicting international maritime claims—the North Pole is closer to Greenland (Denmark) than to Canadian northern land territory. Therefore, she questions why Canada would hurt its relations with Denmark to examine a spot that it is unlikely to gain.

Unfortunately, she does not extend the same analysis to the region regarding the potential overlap that may exist between Russia and Canada regarding the Lomonosov Ridge. She shows that Canadian scientists had shown that this is a continental fragment and therefore can be used by Canada as part of its submission (p. 208–209). As she points out, the Russians have already indicated that they will also use it within their submission. So the question arises, where is the equal distance point between Canada and Russia? Since this is not discussed in the book, it is not entirely clear where that point is; it appears that it is not at the North Pole but beyond it and towards Russia, which means that Canada may be able to claim parts of the Lomonosov Ridge that go beyond the North Pole. But as she shows, up to the December 2013 cabinet meeting, Canadian scientists had only gone to the North Pole and not beyond in their expeditions. The reason for not going beyond seems to come back to an agreement in which several European sources suggest that there had been an understanding that the North Pole would be the endpoint for Denmark and Canada (p. 222, note 29). If so, such an agreement could give Russia a larger section of the Lomonosov Ridge than if the equal distance principle was applied. So this raises the question, was the decision made to continue the science about ensuring the North Pole was included in the Canadian submission, or was it about ensuring that Canada was not prematurely surrendering parts of the Lomonosov Ridge to the Russians? To a large degree this comes down to the agreement that seemingly used the North Pole as the dividing point between Russia, Denmark, and Canada. Was such an agreement sanctioned by a preceding government, or was it an understanding reached by the scientists of the three nations who were cooperating closely at the time? Since there has never been any official statement on it, nor did Riddell-Dixon or any other researcher find any evidence of an actual agreement, it is impossible to know for certain. If there was an official agreement, then the Harper government's decision to break it is serious. But if that is

the case, why were there no protests by either the Russian or Danish governments? If it was an understanding reached by the scientists and officials but not officially sanctioned by the Canadian government, then the Harper government did have the right to move beyond it. It is possible that the Harper cabinet saw this agreement as limiting the Canadian claim to the region and not specifically about the North Pole. What seems to validate this possibility is that even after Harper's defeat, the Trudeau government continued to support the 2015 and 2016 missions. For a government that said it was restarting good relations with Russia, it seems inconceivable that the Trudeau government would miss the opportunity to publicly chastise the Harper government's decision to continue northward on its scientific exploration unless there was good reason to believe that the Canadian claim would be supported further by this science, which she shows was the case (p. 194–203).

This counter-narrative to what is offered by Riddell-Dixon suggests that rather than being mean-spirited and simply wanting to include the North Pole for political reasons, the December 2013 decision by the Harper government really represented an effort to ensure that the Canadian claim did not needlessly surrender large areas along the Lomonosov Ridge to Russia. Of course, the problem is the uncertainty regarding the existence of any preceding agreement concerning the North Pole as an end point. Riddell-Dixon was able to provide only two citations from European sources suggesting that such an agreement existed. The continued over-reliance on secrecy within

the Harper government also means that the government was unwilling to publically defend or explain its actions. So ultimately, it is not known for certain why the decision was made to commission the 2015 and 2016 additional research. If Riddell-Dixon is right, it demonstrates the type of expenditure that the Harper government was willing to spend simply to make itself look good. If she is wrong, the government was exercising its core prerogative to be the final arbitrator of determining the boundaries of Canada and not leaving this determination to the actions of unelected officials and scientists. Thus, she succeeds in opening up an issue that will require further research and study!

Overall, Riddell-Dixon has written an extremely important book on the Canadian efforts to determine the outer limits of its continental shelf. The book should be read by anybody interested in Canadian Arctic policy. It is equally important for the debate that she has now opened up on a critically important issue.

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