

ZOOLOGY

Wolves of the Yukon

By Bob Hayes. 2010. *Wolves of the Yukon* Publishing. Druckerei Fritz Kriechbaumer. 278 pages, 27.99 CAD, Paper.

Wolves of the Yukon was an engaging and highly enjoyable, easy read with a simple but most accurate book title. While I have never been to the Yukon, this paperback put it on the map as one of my bucket list destinations. It is an area that is pure wilderness, with Moose (*Alces americanus*) and Caribou (*Rangifer tarandus*) outnumbering people 10 to one and one Gray Wolf (*Canis lupus*) for every five humans (p. 125). My basic research on the Canadian Territory (i.e., Googling it) showed that today there are about 35 000 people living there and given that there are 5000 wolves inhabiting the region (pp. 102, 118, 126, 170, 251), the ratio is now more like seven to one. Nonetheless, this Territory is about as pristine as a large area gets with an amazing lack of people living in “the very last remaining mountain wilderness of North America” (p. 10). It is an area dominated by many of the large mammal inhabitants which have been there since the Pleistocene over 10 000 years ago.

Bob Hayes researched wolves in the Yukon for nearly 20 years from 1982–2000. He radio-collared hun-

dreds of wolves, pioneering research on the kill rate by wolves of Moose, Dall’s Sheep (*Ovis dalli*), and woodland and migratory Caribou. He also studied the effects of wolf control on wolf and prey populations, guiding original research on non-lethal ways of controlling predation. He came to understand many aspects of wolf biology, including pack dynamics, reproduction, food habits, kill rates, dispersal, den selection, scavenger competition, and cause and rate of mortality (p. 247).

Using a combination of narratives and easy-to-follow essays, Hayes traces the history of the Yukon wolf from the end of the Ice Age to the present day. Each chapter begins with a vignette or field experience that relates to the theme of the chapter. In the first couple of chapters, which starts 20 000 years ago on the Mammoth Steppe, we learn about some now extinct animals such as the Giant Short-faced Bear (*Arctodus simus*), Woolly Mammoth (*Mammuthus primigenius*), and Yukon Horse (*Equus lambei*; a perfect prey item for wolves back in that epoch), among others, that lived in Beringia, a vast treeless plain or steppe resembling the high grassland

plateaus of Mongolia today (p. 21). The beginning of Chapter 1 painted the scene of a pre-historic pack of wolves hunting Caribou and losing their carcass to an enormous Giant Short-faced Bear. It was highly captivating. The first seven chapters, all in the section “History”, started with fictional events but were based on real-world experiences that the author has had with modern-day wolves which haven’t changed much since the Pleistocene (p. 20). The chapters then described ecological conditions since the most recent glaciation and include the relation between ancient and modern native people and wolves. Chapter 5 is set in the late 1800s and here we learn about the importance of Jack London’s and Robert Service’s writing and the linking of wolves and wilderness, especially the Yukon region. I thought that the first section of the book did a great job of setting the stage for the second—and longer—section.

The second of the two parts of *Wolves of the Yukon*, “Understanding”, included nine chapters on Bob Hayes’ research. The beginning chapter stories in this section were based on his or his colleagues’ field notes and explored his original investigations into wolf relations to Moose, Caribou, Mountain Sheep (*Ovis canadensis*), Ravens (*Corvus corax*), Grizzly Bears (*Ursos arctos*), and human hunters. Hayes does an admirable job of describing the importance of radio-telemetry to studying wolves and gives many engaging accounts of him darting wolves from helicopters (pp. 154–164). He described finding uncollared wolves as searching for the proverbial needle in a haystack (p. 163). I couldn’t stop reading that chapter (9)! Using radio-telemetry, Hayes found that, despite humans killing them liberally, wolves were the number one cause of death of other wolves (p. 163). In section two, we discover that Moose are the “perfect prey” (Chapter 10) and that wolf numbers throughout the Yukon most closely parallel Moose distribution with abundance and pack sizes being bigger (> 10) in areas with increased Moose densities (p. 137). In fact, Yukon wolves are some of the largest in the world because of their reliance on this large prey item (pp. 56, 171). I also learned that, although wolves mostly kill young and old (i.e., not prime-aged) Moose, most are healthy and in good condition (p. 177).

Chapter 11 describes many exciting encounters between wolves and Dall’s Sheep in highly remote, pristine, mountainous regions. However, neither Hayes nor his associates ever witnessed an actual sheep kill by wolves (p. 189). And because sheep live in steep and dangerous areas, wolves have little effect on their populations (p. 194). In fact, wolves that rely on sheep live in small, unstable packs (p. 195). The next chapter (12) describes some very interesting behavioural observations of wolves in the Arctic region of the Yukon. There they are vagabonds and have no fixed territory because of the migratory nature of their main prey, Caribou (p. 201). This behaviour remains the norm for northern wolf packs until one goes south and into the taiga region where the presence of Moose provides a food-base for wolves to live year-round on territories (p. 203).

In the remaining chapters (13–15), also highly absorbing, we learn that Muskrat (*Ondatra zibethicus*) and other small animals are important summer foods (pp. 214–215) and that fish, even in the winter, are important to some packs (pp. 215–217), which can have the added benefit of taking pressure off Moose and Caribou. Ravens are easily the most important scavengers of wolf kills (pp. 223–225), especially for small packs or pairs where the birds can remove impressive amounts of meat from a carcass (pp. 225–228). There was a fascinating description of Ravens aggressively attacking a pair of wolves even while Hayes was trying to dart the wolves for collaring purposes (pp. 230–231). And, what would a book about wolves in the far north be without including a chapter (15) on bear-wolf relations? While they are mutual enemies, it is rare for them to kill each other, although it does happen, as Hayes vividly describes (pp. 238–240).

The last chapter of *Wolves of the Yukon* tells why broad-scale killing of wolves to increase game should ultimately end. Hayes believes that it is cost inefficient and biologically and morally wrong and, ultimately, short term in nature as wolves recover quickly from control actions (pp. 249–251). Here we learn that fertility control works best in reducing predation pressure and is a much more publicly accepted, non-lethal wolf management technique (pp. 253–255). He raises profound arguments about how to value and conserve the largest remaining tract of complete wilderness on the continent, poignantly stating that “Despite the constant challenges the wolf has faced since the Pleistocene it has endured and succeeded in becoming the primary force shaping the Yukon wilderness today. It has survived prey extinctions since the ice age... In the last hundred years the Yukon timber wolf has recovered from trapping, hunting, bounties, poison, and aerial control campaigns. Despite this persecution the wolf has endured... with as many wolves ranging through the Yukon today as thousands of years ago” (pp. 258–259). To this end, Hayes can be credited for contributing to the *Yukon Wolf Conservation and Management Plan* (2012, Environment Yukon), which assures that wolves have a right to live in the Yukon and that hunting laws value wolves as a big game animal, and for researching non-lethal methods to control wolf numbers (p. 253).

I really enjoyed this book. Despite being 278 pages, it was a relaxed and quick read. Because it was self-published, I did notice a dozen or more errors, but these were all very minor and easy to interpret (and ultimately to fix with a potential new edition). There was no index at the end of the book which prevented searching for specific information unless you kept notes (which I did), but there was a nice bibliography including many of his papers. I found it interesting that Hayes often referred to wolves in the Yukon as timber wolves which I thought was a term for wolves well to the south. There were many maps throughout the book including a pull-out on the cover insert and at least one per chapter. I found these immensely helpful in relating to a region that I have yet to visit. Kudos to Bob Hayes, who had a

great 20-year research career and gave the world a gift by putting in the effort to make this self-published book available for all who want to learn about wolves living in one of the most remote regions of the world. Well done!

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