

ZOOLOGY

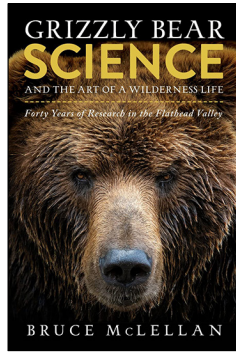
Grizzly Bear Science and the Art of a Wilderness Life: Forty Years of Research in the Flathead Valley

By Bruce McLellan. 2023. Rocky Mountain Books (RMB). 336 pages and 16 colour plates, 32.00 CAD, Paper, 15.99 CAD, E-book.

This book is a fascinating account of Grizzly Bears (*Ursus arctos horribilis*) that inhabit the Flathead region of southern British Columbia, just north of the Montana state line. The author describes his research in-depth, combining fascinating anecdotes with important science in an easy-to-read tome. The book is over 300 pages long, but I found it a relatively quick read. I greatly enjoyed the personal narratives of McLellan's field experiences intertwined with his stories of raising two children with his wife Celine without many modern amenities, like running water. The couple lived in a small, remote cabin next to the Flathead River and endured floods that washed away some of their camp and forest fires that burned areas around them. Their children grew up immersed in nature and both ultimately obtained graduate degrees related to bear ecology.

McLellan writes with authority and a deep knowledge of his study subjects. Readers get close to many of the bears that he captures in foot snares to radio-collar. He then tracks them in the spring when they wake from hibernation to feed on animal carcasses that died during the winter, as well as greens (i.e., grasses, clovers, horsetails, Cow Parsnip) and roots (i.e., sweet vetch roots, Glacier Lily bulbs; pp. 63–68). McLellan follows his study subjects in the summer as they seek huckleberry patches at higher elevations that have been impacted by wildfires—the fires help facilitate growth of the berries. This high-energy fruit allows the bruins to pack on fat to make it through winter hibernation (pp. 70–74).

This book is the author's life work on bears. He even reminisces on the first grizzly he saw in 1958 when he was four years old in Banff National Park (p. xii). Childhood sightings aside, the book really begins in 1978 when he captures Rushes (pp. 5–6, 12), a big male bruin and the first of 170 collared grizzlies (and over 200 captured bears) in his 42 years of research (pp. xiii, 22). That first male, estimated to be 291 kg, is difficult to sedate—the bear charges the author, although his movement is limited by the length of the chain attached to the snare. Once successfully radio-collared, Rushes and the other study subjects are an



important portal into a new world of understanding about bears. Radiotelemetry provides a revolutionary amount of data for McLellan to analyse (pp. 9, 11, 57).

One thing that is very apparent throughout this book is the individual nature of bears. The author names and follows them for years, sometimes even for the duration of their lives. His team focusses on monitoring females over males, because males have huge home ranges, are more difficult to follow, and don't tell as much about the population ecology of bears as do females (pp. 136, 186). Plus, keeping a collar on males is difficult because they have huge necks, often over 76 cm in diameter, which is on par with the size of their heads (p. 136). In his targetting of female bears, we learn about Blanche, Melissa, Elspeth, Aggie, Jennie, and Maggie, among other individual bears living in the Flathead Valley (e.g., pp. 285–286, and throughout the book). Those radio-collared bears teach McLellan about Grizzly Bear ecology in his study area. For example, we learn that both sexes are not territorial like most carnivores (p. 138), and that females do not disperse over long distances, which slows the range expansion of this species (pp. 143–144). Incredibly, he follows two females for >27 years and another one for 32 years (pp. 22, 142).

Using up-close observations, the author describes how females are mostly vegan, while males eat more meat—it makes up 38% of their diets (p. 61). When huckleberries are ripe in the late summer, bears eat 26 to 36 kg of them each day (pp. 82–83). Female grizzlies can go from an average of 97 kg before berry season to 129 kg afterward. Males go from 161 kg to 192 kg during that same timeframe (p. 82). Bears are active for 15 hours a day when feeding on fruit (p. 106). This gorging is important as they need enough fat to make it through hibernation, which is an amazing adaptation given that bears are the only large mammals that hibernate (p. 86). McLellan has also studied American Black Bears (*Ursus americanus*) in the Flathead Valley and has observed some of those bruins doubling their weight while eating blackberries over a roughly three-week period; one was so fat it looked like a “bloated tick” (p. 81)!

Bears roam tremendous distances, especially males (p. 137), and this inevitably leads them into conflicts with humans. McLellan, a hunter of ungulates (i.e., deer, Elk), finds it difficult to stay objective after Rushes, that first bear he captured, is shot and

killed from a roadway (pp. 21–22). Over time, he captures hundreds of grizzlies and never has to shoot one out of fear for his safety (pp. 180, 202), yet he documents many bears shot near roads, even yearlings (pp. 184–186). This angers him as it isn't ethical hunting and is often done illegally, serving no purpose. He eventually deduces that roads equal dead bears (p. 191), so by protecting relatively pristine areas bears—especially females—can survive longer, even though they don't necessarily need wilderness areas to survive. Most bears (82%) in his study are killed by people (p. 189), and there is a high rate of unreported kills (p. 190).

The book is easy to understand, even when the author presents more technical information, such as graphs of his findings (e.g., pp. 80, 84, 109, 113, 117, 263–264). However, I liked his stories the most as they provide snapshots of a bear biologist in action and what it's like to study these magnificent animals. There are times when he gets within one metre of a young grizzly (p. 113) and three metres of a large male (p. 120); wild grizzlies in wild places make him feel so “amazingly alive” (p. 120). His most memorable encounter is when a Golden Eagle lands on a ridgeline one metre from him as he watches Grizzly Bears foraging below (p. 195). The two sit side by side for a few seconds before the bird flies off. I found it interesting that he most values that sighting, given that he has been within literal ‘spitting distance’ of all the large animals in the Flathead Valley, including within five metres of a wild wolf (p. 193).

I enjoyed the description of McLellan darting a big male grizzly and the adventure that he has after that, which involves him following and finally finding the

bear in a forest not knowing if he is sedated (pp. 233–239). Once the bear is discovered asleep, the author then has to hold the large bruin's head out of a frigid stream so the bear won't drown. There is another riveting story of a darted female that gets within three metres of him, and he debates whether he will have to shoot her if she attacks (pp. 280–282). I wondered why all team members aren't required to carry bear spray in situations like that. That would seem to be an obvious solution to avoid a potentially lethal encounter.

I really enjoyed *Grizzly Bear Science and the Art of a Wilderness Life*. McLellan writes with perspective and candour. He summarizes much of the major findings from his study, including the bears' vital need for high-energy foods like berries (which is the best predictor of grizzly densities in his study area), and the importance of coexistence to protect bears—especially females—because most bears die from human causes, even in populations not hunted by people (pp. 222, 254, 257). I appreciated the author's positivity at the end of the book when he states that he is amazed (and never thought it would be possible) that there would now be 1000 grizzlies in northern Montana and >700 in the Yellowstone area. Both populations are also spreading to the Great Plains (p. 268). At the end of the book, he notes how lucky he is to have spent a life studying grizzlies (p. 275). He also states that it is easy to coexist with bears with a little bit of money and much human effort and caring (p. 276).

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EDITOR'S COMMENT: Also see this Note in the same *Canadian Field-Naturalist* issue about Army Cutworm Moths being potential food for Grizzly Bears. That study was done in an area of southeastern British Columbia (BC) that includes the Flathead River Valley; it's the non-mountainous finger extending into BC from the United States just west of the Alberta–BC border on Figure 2b.

Peterson, E., and G. Mowat. 2024. First known observations of migratory Army Cutworm Moth (*Euxoa auxiliaris*) in the southern Canadian Rocky Mountains. *Canadian Field-Naturalist* 138(2): 175–180. <https://doi.org/10.22621/cfn.v138i2.3141>