

BOOK REVIEW

Path of the puma—the remarkable resilience of the mountain lion

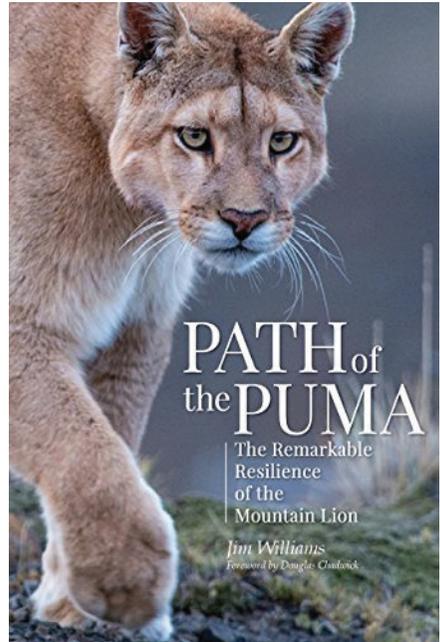
Jim Williams. 2018. Patagonia Books, Ventura, California, USA. 311 pages (hard cover). \$24.95.

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Jim Williams, an employee of Montana Fish, Wildlife and Parks for nearly 30 years, has written a very informative and entertaining summary of his career and his convictions as they relate to wildlife conservation in North and South America. As indicated by the title, the species of primary interest is the mountain lion (*Puma concolor*), but the conservation ethic espoused by Williams clearly extends to all species, the importance of habitat to their continued persistence, and the value of intact and functional ecosystems. Jim's concerns extend from the near-arctic reaches of North America to the southern part of South America, which encompasses the geographic range of what he refers to throughout the book as 'America's lion'.

The first half of the book is based largely on personal experiences and lessons learned during his career in wildlife conservation and management. Rather than being a detailed treatise on the ecology of mountain lions, Williams takes the reader through a history of his involvement with conservation, culminating with an emphasis on the need for management practices that will ensure the persistence of the mountain lion across its range. Williams has 'walked the walk' for nearly 3 decades and, thus, is well-qualified to 'talk the talk' of management and conservation, and the importance of both to the persistence of wild things and the habitat upon which they depend. He does this in a series of 21 chapters, each of which could be described as a stand-alone essay, and each of which is based on experiences and knowledge gained during a life-long career in conservation.

The first several chapters touch on personal aspects of Williams' career, beginning with an aerial observation of a mountain lion pursuing a bighorn sheep (*Ovis canadensis*) and the subsequent capture of that lion as part of an extensive investigation of predators and prey (Enk 1999, Enk et al. 2001). Chapter 2 describes his early life and interest in nature, a move from Iowa to California, school, first job as a professional, and his desire to enter a graduate program at Montana State University (MSU), where he successfully completed his graduate degree while investigating mountain lion ecology (Williams 1992). In Chapter 3,



Jim provides detailed snippets of several events experienced while attending MSU, including insight into the politics of wildlife management in a rural, small-town setting, a subject that I gained a special appreciation for during my own career in wildlife conservation.

Conservation of individuals, habitat, and population connectivity are subjects addressed in chapters 4 and 5, where Williams emphasizes the value of each in easily understood language. Chapter 6 is dedicated to a description of the wildlands of northwestern Montana, an area referred to as the Crown of the Continent and, clearly, a region that has had a profound impact on Jim's thinking, his career, and his lifestyle. The near extirpation of the mountain caribou, an apparent ecotype of woodland caribou (*Rangifer tarandus caribou*), efforts to translocate mountain caribou for conservation purposes, the potential role of predation in efforts to ensure the persistence of that taxon in the absence of habitat loss, and the expansion of mountain lions from their then current range ("... but what struck me most was how far these lions had traveled east") are discussed in the next chapter.

I can relate well to the experiences that Williams describes in Chapter 8 (Locals Only) and Chapter 9 (Suburban Lions). Indeed, we each have experienced the sometimes-uncomfortable situations that can develop during town-hall meetings held in small, rural communities where residents, already suspicious of government, frequently resent any regulatory change that might impact hunting opportunity. Jim was addressing changes needed to ensure the persistence of mountain lions, and I was addressing changes deemed necessary to correct unacceptably low ratios of male to female mule deer. In both cases, however, public trust and understanding prevailed and, as noted by Williams, "... hunting isn't always about the science. Sometimes, it's about social license—about having the people's support for wild nature...". Williams goes on to emphasize that hunters and anglers may provide more practical support for the conservation of habitat and wildlife than all the dedicated conservation groups combined, an extremely important, albeit often-ignored, contention. And, Jim and I both have dealt with livestock depredation and potential human safety concerns associated with mountain lions. In Montana, a zone management strategy was adopted to minimize the potential for mountain lions to 'misbehave'; in California, a voter initiative banned the take of any mountain lion unless it already had killed livestock, a pet, or a human, or was perceived to be an imminent threat to public safety, and is a law that is unlikely ever to be changed (Bleich and Pierce 2005).

Beginning with chapter 10, the remainder of the book addresses conservation issues in the southernmost part of the mountain lion's geographic distribution. In my opinion, this is the most interesting part of the work, albeit largely because of my lack of familiarity with that part of South America known as Patagonia. Williams describes the beginnings of his involvement with conservation in that area and emphasizes the personal roles that well-intentioned individuals have played in attempting to piece back together a system that, previously unbeknownst to me, has been heavily fragmented by anthropogenic development and agricultural activities. He describes in some detail the ecological relationships between predators and prey, the vast stretches of grasslands and steppes, and the geography of this fascinating region. Prior to reading *Path of the Puma* I knew little of this vast area, the ecological problems that prevail, or the ongoing efforts to conserve what remains of a functional ecosystem and to restore what can be restored.

Patagonia has been ecologically damaged, not only by anthropogenic development, but also by the presence of exotic species that have altered the primary prey base of mountain lions and other carnivores in that part of the world. Indeed, following its introduction

the European hare (*Lepus europaeus*) has spread largely across the southern half of South America (Bonino et al. 2010), and in so doing has become an important source of protein for the native canids, as well as other native felids that are themselves the subject of a separate chapter. Further, the introduction and spread of red deer (*Cervus elaphus*) has contributed to further alteration of the landscape, and domestic sheep and cattle, while altering the landscape, have largely replaced the native guanaco (*Lama guanacoe*) as the primary native grazer and formerly the most important prey of the mountain lion. Moreover, the desire to eliminate predation on domestic ungulates has played a major role in the ecology and status of mountain lions.

The presence of vast ranches owned by sometimes willing sellers or individuals primarily interested in conservation, when combined with the financial means, efforts, and persistence of others dedicated to the restoration of intact ecosystems, is gratifying and are examples of some of the successes that Jim Williams has been instrumental in facilitating. Indeed, Jim has been an important player in ongoing efforts to ‘rewild’ portions of Patagonia and ensure a future for America’s lion in that part of the world, and through *Path of the Puma* he is sharing those ventures with others.

This book contains much about natural history, ecology, and conservation. Jim includes a chapter on wild felids that share portions of the landscape with mountain lions, and touches on the plight of the huemul (*Hippocamelus bisulcus*), an endangered South American cervid. Perhaps more meaningful, however, he includes information on the ways that some of the local populace that formerly made a living as *leoneros* (those that hunted lions to protect domestic livestock) have become involved in conservation and are now contributing to efforts to better understand and conserve the remaining ecological integrity of Patagonia. And, the many scientists, wealthy benefactors, and visionary conservationists dedicated to this goal are recognized for their efforts toward that end.

Williams makes a several generalizations, some of which I question—at least in the context presented—or appear to be contradictory and include statements regarding prey images of mountain lions (pp. 44, 60, 101; but see p. 122), and population regulation (p. 135, but see pp. 65, 98, 150; see also Pierce et al. 2000). There are other generalizations with which I strongly concur, however, including the advantages of maintaining mature males in harvested populations (p. 136), the need to minimize the presence of mountain lions in suburban neighborhoods (p. 148) and, especially, Jim’s insistence that habitat protection must be the primary conservation focus (pp. 122, 132). Moreover, the importance of an understanding of natural history to conservation is emphasized through his admonition (p. 40) that, “... unless you’re there, in the field, you miss the relationships that make nature work—the weather and the wind and the topography and the light that can explain *why* a cat was in a particular place at a particular time” is paramount advice to researchers but, unfortunately, is a topic that has been largely de-emphasized in wildlife curricula of late (Bleich and Oehler 2000, Bleich 2018).

The book is very well written and contained surprisingly few errors. The few minor glitches that were noted (e.g., use of lowercase initial letters for genera [p. 23], missing letters in words [pp. 58, 127], occasional misspellings of scientific names [pp. 60, 75], inconsistent spelling of surnames [pp. 137, 139], or inclusion of extraneous words [p. 284]) do not detract from the value of the text. I do believe an index would have been helpful, as would have been the inclusion of appropriate literature citations and a more detailed map of Patagonia.

As noted by Maurice Hornocker, “[*Path of the Puma*] ... is a prime example of Jim

Williams' dedicated effort to inform and enlighten a broad audience on the ecological and cultural importance of this charismatic apex carnivore". From my perspective, Jim has been successful in doing so and those that are unfamiliar with a vast portion of the range of the mountain lion, as was I, will benefit especially from the information contained in the text.

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