data from other sources, were incorporated into the Oregon BBA, to the overall benefit of atlas users.

There are some technical points to the data presentation that I did not find appealing or useful, though I will only mention the bigger ones here. For each species, there is a histogram which illustrates the probability that a person spending 20 h birding will encounter a species in a square from one of the five biogeographic regions of Ontario (and another bar illustrating the data for all of Ontario). On the y-axis are the labels for the five regions and the whole of Ontario; the x-axis shows the probability. There are two bars for each region, one for the first atlas, one for the second. Having both bars does give the reader a good idea of the change in abundance of the species. However, there are two issues with these histograms. The first is that the exact value of the probability is put at the end of each of the twelve bars…isn't that what the x-axis is for? For those very few people who need to know an exact value (e.g., a 59.9% chance of finding a House Finch in Lake Simcoe-Rideau) instead of the ballpark x-axis value of 60%, those data can be retrieved from the atlas project. For the rest of us, the data labels (made popular by many software packages) are simply so much clutter.

Secondly, regardless of the data, the x-axis is always calibrated in 20% increments, from 0-100%. That means, for species like the Ruddy Duck and Wilson's Phalarope, where eight of the twelve bars are at 1% or less, the reader barely sees the bars…why not scale the axis from 0-10% to show the data more effectively? This becomes ridiculous with birds like the Worm-eating Warbler and Northern Wheatear, which have some of the six categories blank, and *all* of the others with non-existent bars labelled at 0.0%.

Each of the species accounts features one photograph of the bird and sometimes a habitat and nest shot as well. The quality was from good to great… there were a few shots that I would have replaced, but nothing serious here. To increase the visual appeal, I would have included more habitat shots; both *The Birds of British Columbia* and *Birds of the Yukon Territory* had more of this, and I think that added quite a bit to those books [Neither of those books are atlases *per se*, but both do show distribution and breeding records]. A few photographers contributed many of the pictures, though overall there was a good diversity of photographers; that many peoples' works get featured is always good to see in a volunteer effort…so this is definitely a plus in my mind.

Finally, the cover photo. A Prairie Warbler? Really? Why? This bird was recorded in only 45 squares in Ontario — that's less than 0.5% of the total. If I were to ask you to name the best-known bird of the Yukon, what would it be? And yes, it's on the cover of their book. The widely-dispersed Red-tailed Hawk was a fine choice for the cover of the first atlas of Maritime birds. Surely something much more widespread and charismatic like their provincial bird, or one known to almost anyone who feeds birds in Ontario, like the Dark-eyed Junco, would have been more appropriate. The decision to have the very local Prairie Warbler as the coverbird just boggles my mind.

Overall my impression is that this is quite a good book that could have so easily become a great book. Ontario atlassers should be very satisfied with their second atlas – it largely presents the efforts of their long hours well; users of this book will be faced with a lot of information that is well-organized, and pleasing to read.

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RANDY F. LAUFF

St. Francis Xavier University, Antigonish, Nova Scotia B2G 2W5 Canada

The Return of Caribou to Ungava

A. T. Bergerud, Stuart N. Luttich, and Lodewiih Camps. 2007. McGill-Queen's University Press, Montreal, Quebec. 2007. 586 pages. 49.95 CAD Cloth.

This is the most comprehensive book on Caribou ecology and predator-prey relationships that has appeared in many years, perhaps ever. Not only is the research seminal, but the authors systematically dismantle paradigms that have been in vogue for years. According to the authors, Caribou biologists have wasted the last 50 years measuring lichens on winter ranges, when they should have been documenting plant production on summer ranges. Wolves, along with human hunters, both limit and regulate caribou populations, not habitat. Food on the summer range only regulates at high densities and only after the range has been overgrazed. Wolves are driving Woodland and Mountain Caribou to extinction. Caribou populations where Wolves are absent maintain densities 100 times

greater than predated herds. The reason arctic Caribou migrate to barren ground calving areas is to avoid Wolves tied to den sites at treeline. Even so, if it were not for periodic rabies epidemics, migratory Caribou populations would be severely limited by Wolf predation. Volcanic eruptions half a world away trigger population declines in arctic Caribou at high densities. And this is just for starters.

The book chronicles the history of the George River Caribou in Labrador and Quebec from near extinction during the early 1900s to an estimated 600 000 animals before the herd declined. The authors explore the various hypotheses that have been proposed to explain these fluctuations and present data set after data set to separate between competing explanations. In addition, the authors discuss virtually every other Caribou population that has been studied in North America, Scandinavia, and beyond, including the difference between migratory and sedentary herds, which is key to understanding this species' ecology.

To the south of Ungava are small non-migratory populations of Woodland Caribou that are being driven to extinction by Wolf predation. But in reality, Moose and White-tail Deer are to blame. Historically, these areas sustained low-density, widely-spaced Caribou that in and of themselves could support few or no Wolves. Moose and whitetails were absent. But since the early 1900's, Moose and whitetails have extended their range providing alternative prey for Wolves, where none existed before. The Wolves then drive the more vulnerable Caribou ever downward. That is to say, the addition of alternative prey did not buffer predation on Caribou, but instead increased predation pressure, contrary to what many people would expect. But that is not the most intriguing part.

Why were Moose and whitetails absent historically and prehistorically? The authors contend that logging changed coniferous forests to secondary deciduous species favored by Moose and whitetails. In this I believe they erred because fire history data indicate there was always a strong deciduous component in those forests. Besides, Moose and Whitetails can survive on a winter diet of Balsam Fir, as they do on Isle Royale and Anticosti Island. Instead, I believe that native hunters once kept eastern Moose populations in check, as I know native hunters did in western North America, where there are more Moose today than at any time in the last 12 000 years (see *Alces* 33:141-164). Historically and prehistorically, native hunters extirpated Moose over large areas because, like the Wolves discussed above, humans had a multitude of alternative prey, including vegetal resources and fish unavailable to carnivores. As aboriginal hunting pressure declines, prey populations increase. In fact, the authors note that the influenza epidemic of 1918 decimated native populations on Ungava, which in turn allowed Caribou to increase.

I certainly commend the authors for presenting data on aboriginal peoples since the time Ungava was first inhabited and for describing how human hunting impacts Caribou. Most other studies of ungulate ecology begin with the premise that native people are irrelevant because everything was a "wilderness" untouched by the hand of man prior to the arrival of Europeans; e.g., see *The Kruger Experience.* As I have explained elsewhere, however, this is a fatal error. The authors did not make that mistake, but I would suggest they need to look deeper into human evolutionary ecology. Take the seemingly random movements of Caribou, a subject covered at length in this book.

Unfortunately, the authors neglected to consult Binford's data on Inuit Caribou hunters — see *Numamint Ethnoarchaeology.* One of the questions Binford asked was how do caribou hunters select a direction to hunt when they have no prior knowledge of where the Caribou are? The Inuit base their decisions on what we in the West would call mysticism. By careful observation, however, Binford determined that Inuit pre-hunt behavior was simply a random number generator. That is to say, in these cases, the Inuit hunted randomly, which makes perfect ecological sense, odd though it may seem.

If the Caribou moved in a predictable pattern, they would be easy prey for aboriginal hunters, as the authors note when the Ungava herd is forced by topography to cross the George River at Indian House Lake. If the hunters hunted in a predictable pattern, the Caribou would quickly learn to avoid the hunters, and the people would starve. The solution to the Caribou's problem is to move as randomly as possible, while the solution to the hunter's predicament is to hunt randomly. This co-evolution occurred over thousands of years and probably is the only evolutionary stable strategy available to both Caribou and humans and then only because the Caribou's range was vast and diverse. The authors note that even when Ungava Caribou numbered only 15 000 animals, spread over an immense area, aboriginal hunting alone kept the herd from increasing. Using dog sleds, native hunters would follow caribou tracks for days, until the animals were killed or the trail lost.

The *Return of Caribou to Ungava* should be read by everyone with even a passing interest in northern ecology, caribou management, or predator-prey relationships. It should also be read by historians, anthropologists, and archaeologists.

CHARLES E. KAY

Utah State University, Logan, Utah 84322-0725 USA