

able and more information is needed to predict the future of the park bison. The author cleverly leads us through this debate showing how views changed and how personal agendas and politics have played a role at the expense of science. He concludes that "if other human priorities are set in place, then enlightenment, not agendas, should rule the day." Selected references and an index help to make this book a source of enlightenment for the management of the buffalo wolf ecosystem.

The book will appeal to a wide audience and is perhaps structured to do that. As a biologist I would have appreciated a little more development in some areas, perhaps at the expense of information about people. The differentiation of Plains and Wood bison was not sufficiently explained. There are some interesting aspects to discuss here (for more information on separating the two kinds of bison and other information, see Mitchell and Gates 2002). As another example, much more could have been said about the starlings observed perching on the bison in chapter 3. They are a reminder of the impact of humans, even in this remote wilderness. They spread from a flock introduced to New York City in 1890. At the time this may have been the furthest north that they had spread in Canada and clearly they were not confined to human habitations such as Fort Smith. This is additionally interesting because it is a reminder of another careless introduction which contributed later to the major bison controversy in Wood Buffalo Park. Although I would like to have seen more in some areas, the book is not without anecdotes including subjects such as pollination of waterlilies, history of bush pilots, change in traditional experience of nature by native people and movement distances of lynx, etc. It is probably a good thing that Carbyn is able to focus to the extent that he does because there is so much to say in the experience of nature in the Canadian north.

Like most dedicated biologists and teachers, Carbyn has taken a number of hard hits. One of these was when the CWS wolf study program was terminated.

### Grassland Grouse and their Conservation

By Paul A. Johnsgard. 2002. Smithsonian Institution Press, Washington, D.C. Hardcover. 157 pages. \$34.95 U.S.

When Paul Johnsgard perceived that most grassland races of grouse had decreased in numbers since he wrote *The Grouse of the World* in 1983, and that some were apparently doomed to follow the "Heath Hen" into extinction, he responded by writing yet another book. Johnsgard is well qualified for the task. He writes lyrically, draws exquisite sketches, and is cited in the *Seventh American Ornithologists' Union Check-List* as an authority on the taxonomy of the Greater and Lesser prairie-chicken.

The first chapter deals with the decline of the Heath Hen and its final extirpation on Martha's Vine-

yard. Of course many government programs are not based on long term visionary thinking, but I am not sure that I can accept Carbyn's view that this is usually a consequence of leaders lacking vision. Leaders are often just not strong enough to break away from the constraints of ignorance surrounding them. Without actually saying so, Lu Carbyn reminds us that independent and visionary thought as well as implementation of personal goals are characteristic of some people. Fortunately, these people help to compensate for the lack of long term visionary thinking elsewhere. Carbyn has a message for biologists. He describes how in field study, intuition and imagination play an important role. We are reminded to think like a scientist – but not to the exclusion of being a naturalist. He notes that "we should be taking from nature... a sense of what it is rather than its soul." The style of writing is personal and conversational with digressions and flashbacks. It is a very pleasant read.

This book promotes wilderness which is a part of Canadian heritage and identity and this alone makes it a valuable contribution. It also presents a fascinating biological and historical perspective on wolves and bison in Wood Buffalo Park. It introduces the world of a biologist. It will bring to many readers an understanding of the science, issues and politics of biology. Anyone can learn from it and enjoy it. By educating in numerous ways it will contribute to the protection of nature. It should be a source of pride for Canadian field biologists.

PAUL M. CATLING

170 Sanford Avenue, Ottawa, Ontario K2C 0E9 Canada

### Literature Cited

- Mitchell, J. A., and C. C. Gates. 2002. Status of the Wood Bison (*Bison bison athabasca*) in Alberta. Alberta Sustainable Resource Development, Fish and Wildlife Division, and Alberta Conservation Association, Wildlife Status Report Number 39, Edmonton, Alberta. 32 pages. <http://www3.gov.ab.ca/srd/fw/status/reports/bison/body.html>
- Rutter, R. J., and D. H. Pimlott. 1968. The world of the wolf. J. B. Lippincott Company. New York. 202 pages.

yard, off the coast of Massachusetts. The remainder of the book provides us with a detailed account of recent population trends among the various races of grassland grouse, and provides current rough population estimates for each. Such detailed state-by-state accounts of declining ranges and populations for almost all races makes for depressing reading.

The Lesser Prairie-Chicken, whose closest ecological partners are Shinnery Oak and Sand Sage, is holding its own in one part of Kansas, but its range has decreased greatly in each of its five states. In New Mexico, the population has dropped from 40 000 to 1000; in Oklahoma, from 15 000 to less than 3000; in Colorado, numbers have dropped by about 97 per cent; in Texas it has dropped to about one-third of one per

cent of its historic numbers. In a few areas of contact with its larger relative, the Greater Prairie-Chicken, some hybridization occurs.

The Greater Prairie-Chicken vanished from Tennessee by 1850, Kentucky by 1874, Arkansas by 1913, Ohio by 1934, and Michigan by 1983. Hunting seasons were closed permanently in Missouri in 1907, Colorado in 1937, Minnesota in 1943, North Dakota in 1946, Wisconsin in 1956, and Oklahoma in 1998. The last known nesting in Iowa was in 1952, but after reintroduction attempts there are now 44 males on six booming grounds. In Kansas, Nebraska and South Dakota, populations remain large enough to permit an annual hunting season, but even in these three states the area occupied has decreased drastically.

The *attwateri* subspecies once may have numbered 100 000 birds when it occupied six million acres of Gulf Coast prairies, mainly in southeastern Texas. Now that predators take 53 per cent of nests, brood survival to eight weeks is 34 per cent, and adult annual survival rates vary from 11 to 36 per cent, the population has dropped to about 45 birds. This race appears to be doomed.

The Greater Sage-Grouse, specifically adapted to sagebrush, has dropped from a population of near 2 million in 1950 to about 200 000 in 2000, and it has been extirpated from Nebraska, Oklahoma, New Mexico, and Arizona. In the late 1970s it was still being shot by hunters at the rate of 83 000 per year in Wyoming alone. In Saskatchewan, the population dropped by up to 92 per cent between 1970 and 2000.

In 2000, when the Gunnison Sage-Grouse was named a new species, *Centrocercus minimus*, it occupied only a small portion of its former range in southwest Colorado and adjacent Utah. Fewer than 5000 adults remained. Johnsgard notes that this new species, due to the "glacial rate of movement of the federal legal process ... might well be endangered before [it is] officially recognized as threatened, and extinct before [it is] classified as endangered."

### Crows: Encounters with the Wise Guys

By Candace Savage. 2005. Greystone Books #201-2323 Quebec Street, Vancouver, British Columbia V5T 4S7 Canada. 113 pages. \$27 Cloth.

Several years ago I overheard a person say "He must have been slow to volunteer. He's got stuck with crows." They were talking about me. I had actually been one of the first to volunteer to write sections of the original Ontario breeding bird atlas and I had deliberately asked for crows as my assignment. Why do people think of these birds as common, black and noisy, and therefore dull?

I have always found crows to be entertaining, clever and well worth watching. It is comforting to know there

Finally, two of the three grassland subspecies of the Sharp-tailed Grouse have shown drastic decreases in range, including a loss of 90% of the range of *T. p. campestris* in Wisconsin and Michigan and 60% in Minnesota, even though their habitat has changed less than that of any other grassland grouse species. In the far west, an even more drastic loss of range (92%) has occurred for *T. p. columbianus*. Since 1998 it has been listed as threatened in the state of Washington; satisfactory populations survive only in British Columbia.

The greatest strength of this book is the detailed maps of past and current ranges of each race. Descriptions of the mating rituals of each race are especially well done. I have minor criticisms. Coverage is less detailed for all grassland grouse in the Canadian provinces; Johnsgard fails to state conclusively that the Greater Prairie-Chicken is officially considered to be extirpated from Canada, and that the recovery team for this species was disbanded in 1994. It is not true that hybridization between Greater Sage-Grouse and Sharp-tailed Grouse occurs only in eastern Montana and eastern Wyoming; it has also been reported from extreme southern Saskatchewan. The disruptive effect of Ring-necked Pheasant cocks at Greater Prairie-Chicken leks is barely mentioned.

The final chapter asks, "Can the fabric be mended?" For some races of grassland grouse, the Greater Sage-Grouse in Canada, the Lesser Prairie-Chicken and the *attwateri* race of the Greater Prairie-Chicken in the United States, it may already be too late. "As agriculture became more mechanized and the farms larger, fewer and fewer acres were spared from increasingly effective pesticides and herbicides ... the prairie grouse began a long, slow, but certain descent into oblivion."

No one knows what the future holds, but Johnsgard certainly has raised the alarm call.

C. STUART HOUSTON

863 University Drive, Saskatoon, Saskatchewan S7N 0J8  
Canada

is at least one person who shares my enthusiasm for these wonderful birds. Candace Savage has collected tales and myths about the crows of our world. For the crow fan this is delightful reading. For the crow-deficient minds of others this book will offer enlightenment.

The author has sifted through both archaic stories and modern research on the black crows (the gaudy jays do not get mentioned). She covers the biology, social structure and interactions, communications and tool-use to try and answer the key question. Are crows intelligent? Crows have been observed by many of us doing things that suggest they have mentally resolved a problem. The difficulty is their behaviour can be explained in other ways. The research that Savage