

growing status of this project. As each new volume is produced it adds to the benchmark status of the existing volumes as a primary source of information on the world's birds. The format has remained stable for the last several volumes, which makes it easy to use and compare. The photos are top rate despite the small and obscure nature of these species. I know how difficult

it is to get **any** photographs of such little and active sprites, let alone artistic ones of birds singing or displaying. *Handbook of the Birds of the World* has now reached biblical reference status.

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Conservation of the Black-tailed Prairie Dog: Saving North America's Western Grasslands

Edited by John Hoogland. 2006. Island Press, Washington, DC. 350 pages paperback U.S. \$35.

It is amazing how the conservation of an animal as interesting and entertaining as the Black-tailed Prairie Dog can be so controversial. But controversial it has been in the last few decades as environmental interests have woken up to the fact that the campaign of Prairie Dog poisoning and habitat loss has resulted in a range contraction to less than 2% of the historical geographic distribution. To this day many ranchers actively dislike Prairie Dogs for their competition with livestock for rangeland resources. In contrast, some conservation practitioners think that enough other species rely on the habitat created on Prairie Dog colonies that Prairie Dogs should be considered a keystone species. In my own practice as a biologist at Grasslands National Park, Saskatchewan, I have frequently been taken aback by how polarized the opinions on Prairie Dogs can be between individuals and groups that often share many similar core values.

The book, *Conservation of the Black-tailed Prairie Dog: Saving North America's Western Grasslands* is the brain child of Dr. John Hoogland who has researched the behaviour of Prairie Dogs at Wind Cave National Park in South Dakota since the mid-1970s. Dr. Hoogland felt that there was a need to summarize the extensive scientific literature on the Black-tailed Prairie Dog in a non-technical format designed to highlight the information's relevance to conservation. To accomplish this Dr. Hoogland engaged 30 other specialists and challenged them to draw out the lessons for conservation from their areas of specialty. These lessons are explored through 18 chapters on topics such

as natural history, social behaviour, competition with livestock, keystone species, human attitudes, and how to establish new colonies of Prairie Dogs. The chapter authors are all respected specialists and do an excellent job of relating their topic area to the central theme of the book: the conservation of Black-tail Prairie Dogs.

The only significant criticism I have is that Dr. Hoogland repeatedly states in Chapter 2 that Black-tailed Prairie Dogs do not hibernate. This is odd because published studies have shown that Black-tailed Prairie Dogs use facultative torpor (Lehmer et al. 2001). In fact, in southwestern Saskatchewan, at the northern edge of their distribution, Black-tailed Prairie Dogs spend as much as 95 days a year in winter torpor bouts lasting 7.6 to 13.6 days with minimum core body temperatures ranging from 7.1 to 11.6°C (Gummer 2005). Clearly, this behaviour deserved to be recognized and discussed as to how it might relate to efforts to conserve this species. Despite this small failing, I fully recommend this book to anyone interested in the conservation of this fascinating social rodent or who wants to become better informed on conservation issues on the Great Plains.

Literature Cited

Gummer, D. L. 2005. Geographic variation in torpor patterns: The northernmost populations of prairie dogs and kangaroo rats. Ph.D. dissertation, University of Alberta. 210 pages.

Lehmer, E. M., B. Van Horne, B. Kulbartz, and G. L. Florant. 2001. Facultative torpor in free-ranging black-tailed prairie dogs (*Cynomys ludovicianus*). *Journal of Mammology*, 82(2): 551–557.

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Migrating Raptors of the World: Their Ecology and Conservation

By Keith L. Bildstein. Cornell University Press, Sage House, 512 East State Street, Ithaca, New York 14850 USA. 332 pages. U.S.\$35.00 Cloth.

Raptors and bird migration both hold great fascination throughout the world, so the combination of the two topics makes for an irresistible book. Bildstein is a foremost world authority. Based at Hawk Mountain, the world's first site dedicated to the conservation of hawks and the watching of their migration, he is the Sarkis Acopian Director of Conservation Science. Bildstein tells us that "a bad day at Hawk Mountain Sanctuary is better than a good day anywhere else."

His wide knowledge derives in part from his travels to each of the world's main hawk-watching sites. Figure 1 displays the five major hawk pathways throughout the world and Figure 7 shows the 12 locations where 100 000 or more raptors pass by. In addition to studies at Hawk Mountain, banding of thousands of raptors has occurred at Cedar Grove, Wisconsin; Cape May, New Jersey; Hawk Ridge on Lake Superior, Minnesota; the Goshute Mountains, Nevada; the Manzano Mountains, New Mexico, and Golden Gate Observatory, California. Notable Old World banding sites are Chokpak Pass, Kazakhstan, and Elat, Israel. Switching

to birds counted overhead, 851 600 Honey Buzzards flew over Elat in the spring of 1985; there the spring flights are much larger than in fall. Elsewhere large numbers are counted in the fall: an average of 730 000 at Corpus Christi, Texas; 5 200 000 near Cardel in the state of Veracruz, Mexico; 1 950 000 at Keköldi Indigenous Reserve, Costa Rica, and 380 000 over the Strait of Gibraltar at the western end of the Mediterranean. In Veracruz, sometimes dubbed the “river of raptors,” 2 677 355 Turkey Vultures were counted in 2003, 2 389 323 Broad-winged Hawks in 2002 and 1 197 850 Swainson’s Hawks in 2003, including 782 653 in one day, 17 October that year.

Recent advances in technology have provided a big boost to raptor migration studies. Application of satellite radios to 117 Ospreys and 51 Golden Eagles added immeasurably to our understanding of the speed and variability of migration. Nine satellite-tracked Honey Buzzards averaged 270 km/day across the Sahara Desert, with brief stopovers suggesting that most fasted during at least this leg of their trip south. Since raptors often reduce energy requirements by soaring in thermals, Bildstein has included a map and three diagrams of the major deflection/updraft corridors. Raptors are able to orient and navigate simultaneously (setting a direction and then achieving it), using internal magnetic cues, visible landmarks, the sun by day, the stars for the few species that migrate by night. Despite a great deal of research, their navigational prowess still exceeds human comprehension. In at least nine species, including harriers, accipiters and two falcons, the juveniles precede the adults in southward migration, yet come spring the adults often head north first. In the Osprey and a few other species, juveniles spend an extra year in the tropical wintering habitat before returning north at two years of age.

A positive feature is that a number of hawk watching stations, including Hawk Mountain, were found

ed as conservation measures. Incensed by the carnage along the Kittatinny Ridge at Hawk Mountain, Rosalie Edge purchased the property and hired Maurice Broun to patrol it and count the raptors. Rachel Carson, in *Silent Spring* in 1962, used the 25-year Hawk Mountain counts, especially of declining Bald Eagles, to support her arguments concerning the impact of organochlorine pesticides, especially DDT, on the reproductive success of birds of prey.

Bildstein’s final chapter is perhaps the strongest. It explains the widespread effects of bounties, not completely eliminated in Pennsylvania until 1969. From 1917 to 1952, Alaska territory paid bounties on 128 000 Bald Eagles. Today, the main threats to raptors are habitat loss and environmental contaminants, an example being a painkiller, diclofenac, fed to cattle in India, that has led to population declines of over 90 per cent for three species of vulture that eat dead cows.

My only criticisms are small ones. Because owls are also raptors, the absence of any mention of their nomadic movements, cyclical irruptions and migrations is somewhat contrary to the title of this book that is restricted to diurnal raptors. Readers of the main text might believe that DDT has long been banned everywhere, but in fact it is still being used in tropical countries to combat malaria and yellow fever. Only in the Glossary does Bildstein inform his readers that DDT is “still used by public health organizations to control malarial mosquitoes.”

The writing is clear. Each chapter (I have only touched on a few highlights) ends with a synthesis and summary of the main points. This book is a treasure. It belongs in every high school and college library and in the library of every raptor enthusiast.

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Land Snails of British Columbia

By Robert G. Forsyth. 2004. Royal British Columbia Museum, Victoria, British Columbia, Canada. 188 pages. \$35. Paper.

The study of snails has certain advantages for a naturalist. For one thing, unlike birds or butterflies, they move slowly enough to be identified! However, anyone who has ever tried to identify snails will know that there is a dearth of readily accessible information out there to help with the task. This is a lack that Robert Forsyth has set out to remedy with his guidebook, providing help with the identification of 92 species of land snails and slugs found in British Columbia. This book is similar in layout and format to other recent guidebooks from the Royal British Columbia Museum, a handy 5.5” × 8.5” soft cover book, easy to slip into a backpack or daysack.

Each taxon is provided with a “species account” that consists of a description of the animal, its distribution,

and its natural history (basically its habitat preferences). Each account also includes information on the etymology of the animal’s name, some remarks, usually dealing with taxonomic issues or species with which it may be confused, and references. The species are arranged in taxonomic order. These accounts form the bulk of the book (128 pages). Most taxa are illustrated by line drawings or black-and-white photographs. For the planispiral snails, the images generally include the upper (apical) surface, lower (umbilical) surface, and apertural view. For the conspiral snails, the images generally consist of an apertural view and a distal view. There are also 33 colour images, of which 23 are of slugs. These colour images are generally much crisper and more useful than the black and white photos. Forsyth includes some brief discussion of eleven other taxa that he considers of doubtful occurrence in British Colum-