

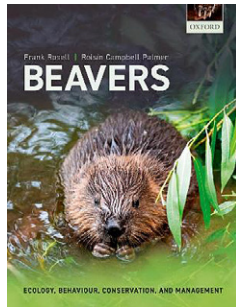
## Beavers: Ecology, Behaviour, Conservation, and Management

By Frank Rosell and Róisín Campbell-Palmer. 2022. Oxford University Press. 512 pages, 110.00 CAD, Hardcover, 54.95 CAD, Paper. Also available as an E-book.

Eurasian Beaver (*Castor fiber*) was a mainstay of the fur trade that occurred a millennium or more ago in Europe and Asia where, eventually, it and other furbearers became scarce over a huge area. The search for new sources of fur (and fish) stimulated the discovery and exploitation of wildlife in the New World. In a mere three centuries, between 1600 and 1900, North American Beaver (*Castor canadensis*) was sought and removed from much of its natural range; it survived in only the most inaccessible regions of the continent. Reintroductions sourced from these remote areas after 1900 prevented its extinction and ensured its return to the wider landscape.

Now a detailed and data-rich book has been published, encompassing the significant studies of beavers that have taken place in the 21st century. The authors have included historical information spanning many centuries, but their emphasis is on biology. Improved marking, genetic studies, use of cameras mounted on drones or in a lodge, and landscape models have all contributed to an increased understanding of these large rodents and their habitats. Writing from Europe, the authors tackle both Eurasian Beaver and North American Beaver in one large volume. Reading this book from the land of *canadensis*, one might be skeptical of the result, but the authors carry it off successfully, speaking of all beavers when warranted and noting differences between the two species as needed. *Castor fiber* and *C. canadensis* are genetically distinct, but their lives are more alike than different. How people perceive them also does not vary greatly from continent to continent.

There are many children's books about beavers and quite a few popular and scientific accounts written in North America for adults since 2010. All reveal a fascination with beavers as builders or ecosystem engineers. This book expands the breadth of information available by dealing with the two species in 11 chapters, including the following: Beaver Morphology and Physiology (Chapter 3); Activity Patterns and Life History (Chapter 6); Territoriality, Communication, and Populations (Chapter 7); and Mortality and Morbidity (Chapter 8). Did you know that male beavers have a vestigial uterus? Or that the dried castor sacs sold to perfume manufacturers once contained



urine? When it comes to the posterior of the beaver, no part of its unusual anatomy is left unexplained. Indeed, the depth of information throughout this book is excellent.

The reintroduction of native beavers to many European countries, including Scotland, (North American Beaver was successfully introduced into Finland and spread to Russia) and to the mountainous American West has stimulated considerable research in the receiving areas. (North American Beavers introduced to the far south of Argentina have spread to Chile, also stimulating research into the harms to native ecosystems in both countries.) Although Canada has a substantial portion of the world's beaver range, much of the North American research referenced in the book's 44 tables and 164 figures, including photographs, took place in the USA. For instance, in Chapter 8, only 7% of references were derived from research in Canada, although in Chapter 5, 13% of references do so. Perhaps the review of this chapter by Glynnis Hood of the University of Alberta and Ken Tape of the University of Alaska improved that result.

The success of beavers everywhere depends greatly on their interactions with people. Chapter 10 discusses the various techniques used to study beavers in the wild and how to raise them in captivity if needed. Chapter 11 (Living with Beavers: an 'Adorable Nuisance'?) discusses the wetlands formed behind every beaver dam versus those disappearing through human development projects, such as conversion to housing or agricultural use. As a charismatic flagship species, beaver conservation also helps countless other species like sedges, toads, and shrews. The authors muse about the successful reintroductions of Eurasian Beaver into Europe, where beaver hunting is banned, and the relaxation of laws needed to deal with human-beaver conflicts. In the future, they argue that it may be necessary to incorporate green spaces into urban areas to provide more habitats for beavers if populations are likely to expand.

The book is written in a scientific style for academics and professional biologists, but it will also be of interest to amateur naturalists. It includes a detailed Contents and a thorough Index. Each chapter has an extensive References section in the absence of the same at the end of the book, and colour photos make up the majority of the figures. There are occasional misspellings or words missing, which is not unusual in a lengthy book these days. The most grievous error is the use of 'exasperated' when 'exacerbated' was

meant, and ‘antidotal accounts’ is more likely to be a result of autocorrect during editing (p. 391 and p. 423). There are indexing errors; for instance, Chile is not found on p. 387 and flagship species is not found on p. 406 or p. 423. These shortcomings are annoying. However, this work could stimulate more research on North American Beavers across their northern range (in Canada) and better define their role in carbon

storage through build-up and storage of sediment and plant material. Just as carbon will persist for decades in rich meadows after beavers move on, this book’s overall usefulness as a handy reference about all things beaver will also persist.

ROSEMARY CURLEY  
Stratford, PE, Canada

©The author. This work is freely available under the Creative Commons Attribution 4.0 International license (CC BY 4.0).