

Book Reviews

Book Review Editor's Note: *The Canadian Field-Naturalist* is a peer-reviewed scientific journal publishing papers on ecology, behaviour, taxonomy, conservation, and other topics relevant to Canadian natural history. In line with this mandate, we review books with a Canadian connection, including those on any species (native or non-native) that inhabits Canada, as well as books covering topics of global relevance, including climate change, biodiversity, species extinction, habitat loss, evolution, and field research experiences.

Currency Codes: CAD Canadian Dollars, USD US Dollars, EUR Euros, AUD Australian Dollars, GBP British Pound.

HERPETOLOGY

Ecology and Conservation of the Diamond-backed Terrapin

Edited by W.M. Roosenburg and V.S. Kennedy. 2019. Johns Hopkins University Press. 296 pages, 79.95 USD, Cloth or E-book.

Diamond-backed Terrapin (*Malaclemys terrapin*) lives in estuaries in the United States from Massachusetts to Texas. Most species of turtles are associated with freshwater and a few are found in the oceans (sea turtles), but the Diamond-backed Terrapin is the only turtle species to permanently reside in brackish water,



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the narrow interface between the full saltwater of the ocean and the freshwater of the inland lakes and rivers. It is closely related to the map turtles, and the species share characteristics such as females being substantially larger than males, and feeding on molluscs and other hard-shelled invertebrates.

During the 19th and early part of the 20th century, Diamond-backed Terrapins were widely collected for food. By 1880, it is estimated that more than 200 000 individuals were caught each year. Philadelphia, New York City, and Baltimore were some of the larger markets, but Diamond-backed Terrapins were also shipped live to England, France, and Germany. Prices were as high as \$125 a dozen by the early 1900s, but by 1938, prices had dropped to \$36 a dozen because of declining demand. Nonetheless, the commercial harvest of Diamond-backed Terrapins caused the collapse of many populations.

This book collects together review papers on various topics related to the biology and conservation of this wide-ranging species. The book begins with an introduction by J. Whitfield Gibbons, a veteran turtle researcher. Part I, Biology and Ecology, includes 11 papers on field techniques, evolutionary history, taxonomy, genetics, geographic variation, reproductive behaviour, hatchling behaviour, osmoregulation, temperature-dependent sex determination, habitat use, and environmental toxicology. Part II, Fisheries and Con-

servation Challenges, includes seven papers on commercial harvest, habitat loss and road mortality, motorboats, bycatch from the crab harvest, environmental education, habitat restoration and head-starting, and concludes with a paper on the future of the Diamond-backed Terrapin. The papers were written by researchers (mainly from universities and government agencies) with experience with Diamond-backed Terrapins from across the range of the species.

The collected papers provide a broad and rich overview on the biology of this turtle. The concluding paper on the future of Diamond-backed Terrapins demonstrates the importance of collaborative work carried out over many years to accomplish conservation goals. And many threats, such as Diamond-backed Terrapins getting caught and drowning in abandoned crab pots set out to catch crabs, are still significant threats after years of work. Viable solutions have been suggested, such as the use of biodegradable panels which would mean that lost or abandoned crab pots would not continue to be death traps for years to come, but work on reducing the mortality from this threat is making only slow progress.

Although all of these papers specifically target Diamond-backed Terrapin, the contents of these papers are broadly applicable to other turtle species. In particular, the sections on threats (e.g., habitat loss, road mortality, and motorboats) and on environmental education are relevant to Canadian freshwater turtles. For example, injuries from boat propellers are a widespread threat for many turtles. Diamond-backed Terrapin research has found that individuals in the water dive deeper when a boat approaches, but only by about 30 cm, which is not enough to avoid being potentially hit by the propeller. In many cases, then, the specific details around Diamond-back Terrapin threats or issues are relevant to other turtle species, making this a highly recommended book for anyone working in turtle biology or conservation.

DAVID SEBURN
Ottawa, ON, Canada