
A SOON-TO-BE CLASSIC IN THE LITERATURE ON SEA TURTLE BIOLOGY AND CONSERVATION

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Abstract.—We introduce the first contribution to the *Herpetological Conservation and Biology Classics in Herpetology* category in some years, in which Hykle et al. (2020) provide a synthesis of a governmental report prepared by F.D. Maxwell for the colonial British government concerning the biology, exploitation, and status of the sea turtle species of Burma (now Myanmar). We also provide access to a PDF of the entire Maxwell report. We then discuss the importance of historical accounts of economically important reptile species in general, providing examples of how data they contain may still be particularly relevant to modern studies of their biology and for their conservation.

Key Words.—*Caretta caretta*; *Chelonia mydas*; *Dermochelys coreacia*; Green Sea Turtle; Hawksbill Sea Turtle; historical records; Leatherback Sea Turtle; *Lepidochelys olivacea*; Olive Ridley Sea Turtle

After a 14-y hiatus, *Herpetological Conservation and Biology* again has published an article in its Classics in Herpetology category. The initial contributions that the journal published in this category (then called Classic Reprints) provided reprints of early important publications in the herpetological literature (Cagle 1953; Scott and Campbell 1982) with short accompanying appreciations of them (Bury et al. 2006; Trauth 2006). In contrast, the contribution by Hykle et al. (2020) provides a synopsis of a little known report prepared by F.D. Maxwell for the colonial British government in Burma (now Myanmar) in 1904 on the biology, commercial exploitation, and conservation status of the sea turtle species that occurred there (Maxwell 1904). The primary argument of the authors of this article is that while the little-known governmental report by Maxwell has not previously been considered a classic in herpetology, the breadth of topics it covers and the quality of the data it presents justify it being considered a classic contribution in the area of sea turtle biology and conservation. While primary attention is given to the Green Sea Turtle (*Chelonia mydas*) and Olive Ridley Sea Turtle (*Lepidochelys olivacea*), Maxwell also makes mention in his report of the Hawksbill Sea Turtle (*Caretta caretta*), the Leatherback Sea Turtle (*Dermochelys coreacia*), and even freshwater *Batagur* species.

The importance of historical accounts of reptile species for modern research has been recognized for years in herpetology. Most examples come not from government documents, but rather from travel memoirs written by naturalist explorers. For example, in our own research area focused on the conservation biology of South American freshwater turtles, *The Naturalist on the River Amazons* by Bates (1863) and the 1799–1804 travel narratives of von Humboldt and Bonpland (1826) are important references. Just as Maxwell provided estimates of Green Sea Turtle egg harvests of between 1,400,000 and 2,000,000 eggs

annually, these two sources estimated egg harvests of the Giant Amazon River Turtle (*Podocnemis expansa*) to be 48,000,000 eggs annually in the upper Amazon of Brazil (Bates 1863) and 25,000,000 eggs annually from the Orinoco of Venezuela (von Humboldt and Bonpland 1826).

Classic wildlife management theory (Caughley and Sinclair 1994) argues that to achieve sustainable use of a wildlife species, harvests should be set to maintain densities slightly above 50% of carrying capacity. But setting such population recovery goals is difficult when we have few ways to estimate pre-exploitation population sizes near carrying capacity (see Jackson 1997; Bjørndal et al. 2000). The estimates of egg harvests from these historical accounts, combined with a knowledge of average clutch size and re-nesting frequency for the species, provides us a means to obtain crude estimates of what densities of adult females were like early on in the process of the over-exploitation of these populations, thus offering guidance toward what might constitute reasonable densities to hope for in population recovery programs.

Historical accounts such as the report by Maxwell also may provide documentation of the former presence of a species in sites where it has been extirpated (Kittinger et al. 2013) or contain unique biological data, such as maximum body size records (von Humboldt and Bonpland 1826; Greer 1974) or even contain anecdotes of behavioral traits rarely seen in depleted populations of today (Mikloukh-Maklay 1892; Dinets 2015). For these reasons, we urge herpetologists to better appreciate available old grey literature reports and travel narratives, as they may well contain relevant information on economically important reptile species, and we commend Hykle et al. (2020) for their comprehensive synthesis of the report by Maxwell, including how they compare the information it contains with what is now known of the biology of these sea turtle species. Finally, the Hykle et al. (2020) article provides a

concrete example of how efforts to regulate harvests may fail miserably, even when the harvests are conducted by local peoples employing traditional techniques. This is a generalizable lesson, given that currently all seven species of sea turtles are classified as threatened despite the legal protection they have enjoyed (Stanford et al 2020) with numbers so depleted they no longer are able to fulfill their historical ecological roles (Lovich et al 2018).

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