

CANIDS OF THE WORLD: WOLVES, WILD DOGS, FOXES, JACKALS, COYOTES, AND THEIR RELATIVES.

José R. Castelló. 2018. Princeton University Press, Princeton, New Jersey, USA. 331 pages. \$29.95 (paper). ISBN: 978-0-691-17685-7.

Canids of the World is one of those reads where just when you think that something cannot be beat, this book comes out. What I mean by that is that I have read many works on wolves and other canids, most recently Nate Blakeslee's *American Wolf* (Way 2017), and I have enjoyed and been enthralled with many of them. But *Canids of the World* may take the cake for being the most impressive book available on canids. For a modest price of just under \$30.00, you can own a book that has over 600 amazing high-resolution glossy photographs of every canid species (and subspecies) known from around the globe. These color plates, which are based on real photographs, are the core of this guide (p. 25). *Canids of the World* is an extremely detailed book and a very impressive feat to fit all of the information on canids into an attractive, manageably sized field guide of 331 pages.

Canids are the most widespread carnivoran family as they occur throughout the world from the Arctic to the tropical forests, living just about everywhere except Antarctica (p. 20). Given the book's dense content, author José Castelló does a fantastic job of making this book accessible and readable to a wide audience. As the book's cover jacket notes, "This stunningly illustrated and easy-to-use field guide covers every species of the world's canids, from the gray wolf [*Canis lupus*] of North America to the dhole [*Cuon alpinus*] of Asia, from African jackals [*Canis* spp.] to the South American bush dog [*Speothos venaticus*]. It features more than 150 superb color plates depicting every kind of canid and detailed facing-page species accounts that describe key identification features, morphology, distribution, subspeciation, habitat, and conservation status in the wild. The book also includes distribution maps and tips on where to observe each species, making *Canids of the World* the most comprehensive and user-friendly guide to these intriguing and spectacular mammals."

I would concur with that assessment as the book really does discuss every species and subspecies of canid, is abundantly illustrated, depicts species in similar poses for quick and easy comparisons with other species, explains key identification features and natural history characteristics (such as distribution, reproduction, behavior, habitat, and conservation status), draws on the latest taxonomic and scientific research, and includes detailed range maps. The book's design really is superb. The photography shows each canid species covered in the guide from various angles, and each species account is filled with a bevy of information. Although intended as a field guide, this book is a must purchase if you have an interest in or are fascinated by canines.

Canids of the World starts with an important 20-page Introduction that summarizes and lays out the book's major framework for depicting the family's 37 extant species covering everything from the diminutive fennec fox (*Vulpes zerda*) to the large gray wolf. Castelló accurately describes the nomenclature confusion as to whether some animals are varieties or hybrids of other species or if they are deserving of unique species status such as the red wolf (*Canis rufus*), eastern wolf (*Canis lycaon*), and African wolf (*Canis lupaster*). There is a phylogenetic tree of the Canidae on page 15, which nicely depicts the relationship among the various canid species. We also learn that about 25% of canid species are threatened and in need of protection (p. 23), but I did notice after reading the book that many of them are not threatened. It was heartening to read how common so many of the species are, especially foxes and most medium-sized canids.

The book is organized into four major sections: South American canids, wolf-like canids, red fox-like canids, and gray fox-like canids. The beginning of each of those sections is phenomenal as there is a short one-page introduction followed by a multi-page spread showing all canids in that group next to each other. The canids are set behind a white background, which gives great clarity to each individual species. I admit that I am not too knowledgeable about many of the South American canids, so it was cumbersome to read and process the information on so many of them and their subspecies, especially given that many are a plain gray in color, such as the crab-eating fox (*Cerdocyon thous*), hoary fox (*Lycalopex vetulus*), Sechuran fox (*Lycalopex sechurae*), pampas fox (*Lycalopex gymnocercus*), chilla (*Lycalopex griseus*), and the larger culpeo fox (*Lycalopex culpaeus*). Similar to the confusion with the South American canids, three red fox-like canids (Tibetan fox [*Vulpes ferrilata*], pale fox [*Vulpes pallida*], and Ruppell's fox [*Vulpes rueppellii*]) are called sand foxes, yet the fennec fox, living in sand dunes as its ideal habitat (p. 205), was not included as one of them.

The section on wolf-like canids was a great read and was right in my wheelhouse for canine material. I found few errors during my detailed read of this section but did notice that the range of the eastern coyote (*Canis latrans* var. or *Canis latrans* × *lycaon*) or coywolf on page 121 was too broad. Given that the midwestern coyote (*Canis latrans* × *thamnos*) is a different variety (with little to no wolf introgression) of coyote, I thought that the northeastern coyote (*Canis latrans* var. or *Canis latrans* × *lycaon*) should have been given its own separate account (Way and Lynn 2016). The eastern wolf section indicated that the "Great Lakes wolf" (p. 83) was a synonym but I understand the Great Lakes wolf (*Canis lupus* × *lycaon*) to be a hybrid between the eastern and gray wolf (Rutledge et al. 2015). Lastly, the distribution map for the northwestern wolf (*Canis lupus occidentalis*; p. 89) does not include Yellowstone National Park, but the range of the plains wolf (*Canis lupus nubilus*; p. 91) does include that

area; this differs from my understanding of wolf distribution in the northern Rocky Mountains (Smith and Ferguson 2006). Given that subspecies accounts are not always accurate, and likely overlap with others, these comments do not distract from the manuscript. And these nitpicking observations aside, I thought the five-page picture spread (p. 75–79) of wolf-like canids was worth the price of the book alone.

It was amazing how many species had red fox (*Vulpes vulpes* or *Vulpes fulva*) listed as a similar species which is due to their enormous geographic range (p. 210–260). Given my background of studying the eastern coyote/coywolf (Way and Lynn 2016), it was comical to read about what I think of as the miniscule red fox being described as so much bigger than those other fox species from all over the world. I also found it interesting that the author classified red foxes in North America (*Vulpes fulva*) as a different species than their larger European counterparts (*Vulpes vulpes*; p. 210).

This book has a treasure trove of information; the text is written in small font to pack in more material per page. I found some (about a dozen) minor errors throughout the book, but they did not affect the read. One noticeable mistake was on page 241 where the main predator of the Palestinian red fox (*Vulpes vulpes palaestina*) was listed as the coyote, which would be impossible given that the coyote is the only truly native large canid found in North America (p. 74) and does not occur in the Old World. Most people will use this resource as a field guide and thus will not read this book in-depth, but I found that it was exhausting to read the book from cover-to-cover, as I did, given the abundance of descriptive material. The text also is very repetitive, especially for species that have large ranges and many varieties, such as the section on red fox that covers 50 pages. Conversely, when sighting a canid species in the field in a specific area, the details and information in the text will be very helpful to assist in keying the species. Lastly, I found myself constantly converting body mass in kilograms to pounds in the species description sections and might suggest that a future edition use both metric and English units of measurement to make them transferable to all researchers in the field.

I thoroughly enjoyed *Canids of the World* and highly recommend this book for nature enthusiasts. The book is phenomenally illustrated and will look great on anyone's coffee table or in their library, especially given the very reasonable price of the book.—Jonathan (Jon) Way, Founder of Eastern Coyote/Coywolf Research, 89 Ebenezer Road, Osterville, Massachusetts 02655, USA.

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