

Guia Sonora De Los Anfibios De Cuba (Sound Guide of the Amphibians of Cuba). Roberto Alonso, Ariel Rodriguez, and Rafael Márquez. 2007. Alosa sons de la natura. 1 compact disc; pp. 28; ISBN 978-84-611-6417-2. Price \$26.00

For those interested in the vocalizations of frogs and toads, and who are also residents of a democracy that nevertheless restricts travel to Cuba, the Sound Guide of the Amphibians of Cuba may be as close as you ever come to hearing the calls of Cuban frogs. Non-U.S. residents, on the other hand, will be able to use this high-quality guide as a rich resource on your travels to Cuba to help identify members of this Caribbean island's frog fauna.

The guide includes a bilingual (Spanish-English) booklet that accompanies a one 1-hour long CD with 99 different recordings of the island's frog species. English translations of the Spanish text are conveniently reproduced in a different color throughout, making it easy to read in your language of choice. The introduction in the text provides a brief but informative background on both the Cuban frog fauna and the biogeographic regions of the island. Color maps showing the topography and political boundaries of the island, including the names of mountain ranges and archipelagos of surrounding small islands, prove extremely useful for those less familiar with these details, as these regions are referenced in the passages describing each species. One minor criticism of the booklet's introduction is that it does not include a brief section on the basics of frog vocal behavior, which might have been nice for the uninitiated herpetologist and bioacoustician.

Coverage of the island's frogs is impressive. The guide includes the calls of 58 of the island's 62 species, 55 of which are endemic and in the genus *Bufo* or *Eleutherodactylus*, and three of which are introduced (*Eleutherodactylus planirostris*, *Osteopilus septentrionalis*, and *Rana catesbeiana*). For each species, the text provides a small color photograph, a citation to the relevant scientific literature first describing the species, a list of the recordings for that species that correspond to tracks on the CD, a qualitative 3-point scale describing call amplitude, and a brief description of the species' body size, habitat, calling behavior, and geographic range, as well as elevational limits for montane species. The booklet does not include sufficiently detailed physical descriptions of each species to facilitate unequivocal identification, so it is not intended as an exhaustive field guide and cannot be used as such.

The booklet and CD are nicely organized in parallel, first by taxonomy and then alphabetically within each taxon. So using the two together is no problem, but using the guide in a particular region of Cuba would require some skipping around among pages and CD tracks. For all but one species, the recordings include several exemplars of the male advertisement call from one or two different individuals. The recordings for many species also include examples of other call types, such as release calls, distress calls, and additional advertisement call types, as well as brief male-male interactions or the sound of an entire chorus. The CD also includes seven excellent recordings of natural frog soundscapes of mixed-species choruses. The duration of each recording ranges from 1 m 45 s down to just 3 s, the latter being of just a single call. Most recordings are in the 15- 45 s range, which is perhaps a little too short to allow one to gain a full appreciation for the often subtle differences among the calls of closely related species without repeating tracks over and over. Including spectrograms in the booklet might have been helpful in this regard.

The recordings themselves are of generally high quality, although a few are plagued by unavoidable background noise or tape-hiss. For recordings with background noise, the sources of noise are usually identified in the text (e.g., conspecific or heterospecific

frogs, songbirds, insects, rain, or river noise). Several of the recordings have been filtered to remove background noise, and the filter cutoffs are indicated in the text. Unfortunately, the CD is not narrated, meaning that it can only be used in conjunction with the accompanying booklet. So do not plan to learn your Cuban frog calls by uploading the CD to your iPod.

Overall, the Sound Guide of the Amphibians of Cuba is a welcomed introduction to the calls of Cuban frogs. The guide is available for purchase from the publisher's website (www.sonidosdelanaturaleza.com). So on your next trip to Cuba, I highly recommend taking this handy little guide along with your headlamp and hip-waders, a proper amphibian field guide, and, of course, your favorite Hemmingway novel.

Mark A. Bee
Department of Ecology, Evolution, and Behavior
University of Minnesota
USA