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Ronald Orenstein is a zoologist and wildlife conservationist who has written extensively on a wide range of natural history issues. His most recent books are *Turtles, Tortoises and Terrapins* and *Ivory, Horn and Blood: Behind the Elephant and Rhinoceros Poaching Crisis*.

Michael and Patricia Fogden are widely considered the world's finest photographers of hummingbirds. They live in Costa Rica.

Hummingbirds

HUMMINGBIRDS

Ronald Orenstein

Photography by Michael and Patricia Fogden

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Hummingbirds

25-km. stretch of road northwest of Acapulco, Mexico; the Dusky Starthroat (Cordylus orise), known to survive only in two tiny forest fragments in northwestern Colombia, with the total suitable habitat thought to total no more than 25 sq. km.; and the Sapphire-bellied Hummingbird (*Leptopygia biller*), restricted to small areas of mangrove forest on the Caribbean coast of Colombia. Four Critically Endangered pufflegs (*Eriocnemis*) are confined to remnant areas the western Andes of southwestern Colombia and northwestern Ecuador, where mountain forests are rapidly being destroyed. The Turquoise-throated Puffleg (*Eriocnemis goiavi*) of Ecuador has not been definitely recorded since the 19th century. Despite an uncertain sight record in 1976, it may already be extinct. The Black-breasted Puffleg (*E. alpestris*) is known only from a few mountains in northern Ecuador. Two others, confined to the Cauca district of Colombia, have only been known in science for a few years. The Colorful Puffleg (*E. irisulata*) was first found in 1967. The Golden Puffleg (*E. aurea*), described as recently as 2007, has only been found in elfin forest habitat that probably covers less than 10 sq. km. Even that tiny patch is disappearing, replaced by agriculture and illegal coca plantations. The Juan Fernandez Firecrown (*Selasphorus jamaicensis*) is now confined to an area of 11-sq. km. on Robinson Crusoe Island, Chile, where it suffers from destruction of native forests, predation by introduced rats, nest robbery by the recently-arrived Austral Thrush (*Zosterops lateralis*), and possible competition from its widespread and more numerous cousin the Green-backed Firecrown (*S. saphirina*) (see p. ix). There are probably only about 1,100 birds left.



Of the species listed as Endangered, the Chilean Woodstar (*Fulica yarellii*) survives in a few cultivated valleys in the deserts of far northern Chile. Once common, its population crashed after 1970. Today, perhaps 1,200 birds remain. In de-

cline coincided with the onset of pesticide use and invasion by a close relative, the Peruvian Shearwater (*Puffinus peru*). The shearwater hybridizes with the woodstar and may compete with it, but the effect of its arrival is unclear. Key to the woodstar's recovery may be the restoration of native trees, now reduced to tiny patches and often eradicated by local farmers.

A century ago the biggest problem hummingbirds faced was the massive international trade we described in Chapter 1. This was followed in the mid-twentieth century by another huge trade, this time in living birds, many of which did not survive the rigors of shipment or the difficulties of avian life. The ruby crown and golden throat of the Ruby-topaz Hummingbird (*Chrysomitris motacilla*) made it the most sought-after of all Brazilian hummingbirds by the international cage-bird trade until Brazil banned exports of wild birds in 1967. Before that, according to an 1883 guide to a hummingbird collection in the British Museum, it was "sent over to Europe in large quantities for the purposes of decoration of ladies' hats and dresses; and were it not for the extreme abundance of the species it would have been long ago exterminated."

The harm trade was doing was recognized in 1967, when all hummingbirds but one were listed on Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora, or CITES. Today, CITES Parties seeking to export hummingbirds, alive or dead (or hummingbird parts like feathers, or even DNA samples), must first make a finding that doing so will not harm their wild populations. Only then can they issue the necessary export permits. There are exceptions (CITES is rather complicated), including one for captive-bred birds. The Hook-billed Hermit (*Glaucis aenea*), has been listed on the even stricter Appendix I since 1975. Appendix I bans commercial trade altogether, again with certain exceptions. Trade is probably not a particular threat to this Endangered, but rather plain, species, but perhaps the added status is just as well: its habitat has now been reduced to under 500 square kilometers, and there may be fewer than 1,000 birds left.

Much of the trade in wild hummingbirds dried up after the CITES listing, and after the passage of laws such as the Wild Bird Conservation Act (WBCA). The WBCA, first passed in 1992, effectively banned the import of wild-caught CITES-listed birds, including hummingbirds, into the United States. Hummingbirds are, nonetheless, still caught. In May 2010, customs authorities in French Guiana intercepted a tourist from the Netherlands attempting to leave the country with sixteen hummingbirds of



"If there are more extraordinary birds than hummingbirds — the exotic creatures the Brazilians call beija-flores, flower-kissers — it is difficult to imagine what they might be. No other birds fly with their precision and aerial mobility. None lives at the extreme metabolic pace that sets hummingbirds apart not just from birds, but from all other vertebrates. That tiny gem in your garden — should you live in the Americas where all hummingbirds are found today — is a marvel."

