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Rapid assessments of reptile diversity

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18.1 Introduction

As of March 2015, a total of 10,178 reptile species have been described (Uetz and Hošek, 2015), at least 165 (>1.62%) of these in the preceding year (2014) alone. The conservation status of a majority of the newly described, or even of relatively familiar species, remains unknown. An earlier assessment of the conservation status of a large representative sample of the world's reptile fauna indicates that a significant proportion is threatened (Böhm et al., 2013). This makes a case for urgency in initiating studies on their conservation requirements, foremost among these being distributional and abundance data, as typically obtained during surveys constrained by time and other resources.

Reptiles play important ecological roles, *inter alia* forming significant animal biomass (Iverson, 1982), constituting important linkages in the ecosystem by providing dispersal mechanism for plants (Hnatiuk, 1978; Fialho, 1990; Olesen and Valido, 2010), contributing to environmental heterogeneity (Kaczor and Hartnett, 1990), having keystone functions in maintaining ecosystem structure (Ashton, 2010), and fostering important symbiotic associations with an array of organisms (Lago, 1991; Witz et al., 1991). Crocodylians are also known to maintain wet refugia during droughts, which are used by a variety of other organisms from macroinvertebrates and fish to turtles (Mazzotti et al., 2008). Many turtles and several crocodylians are scavengers, helping release nutrients locked up in dead tissue (Burroughs et al., 2014). Reptiles are regularly on the menu of predatory mammals, birds, fish, large invertebrates, including spiders, and even themselves (see Cook, 1987; Bauer, 1990; Martín and Lopez, 1990); they are also predators for a range of invertebrate and vertebrate species. Fossorial snakes may help aerate hard soils, allowing air to access rainforest tree roots (Rajendran, 1977) in a sense behaving as ecosystem engineers (*sensu* Jones et al., 1994) by significantly modifying and maintaining habitats.

Reptiles are important predators of insect (Bhanotar and Bhatnagar, 1976) and rodent (Lim, 1974; Whitaker and Advani, 1983) agricultural pests. Additionally, venom extracted from certain snakes is used for the production of life-saving drugs, including anti-venin serum for snake-bites (McCleary and Kini, 2013; Zouari-Kessentini et al., 2013). A number of large lizards and snakes, and nearly all of the world's turtles, are sought for food, medicine, or the pet trade (Valencia-Aguilar et al., 2013). Because of