

DIVERSITY, DISTRIBUTION, ECOLOGY AND CONSERVATION OF DRACONID LIZARDS (REPTILIA: AGAMIDAE: DRACONINAE) IN SRI LANKA

MADHAVA BOTEJUE^{1*}, DINESH GABADAGE¹, MAJINTHA MADAWALA², THILINA SURASINGHE³, DUSHANTHA KANDAMBI², AMILA SUMANAPALA⁴, GAYAN EDIRISINGHE^{1,5} and SURANJAN KARUNARATHNA²,

¹Biodiversity Conservation Society, No: 150/6, Stanly Thilakaratne Mawatha, Nugegoda, Sri Lanka.

²Nature Explorations & Education Team, No: B-1 / G-6, De Soysapura Flats, Moratuwa, Sri Lanka.

³Department of Biological Sciences, Bridgewater State University, Bridgewater, MA, USA.

⁴Department of Zoology & Environment Sciences, Faculty of Sciences, University of Colombo, Colombo 07, Sri Lanka

⁵Wild Rescue Team, No. 183/6, Horana Road, Kesbewa, Piliyandala, Sri Lanka.

*madhavabotejue@gmail.com

The island of Sri Lanka is home to 21 species of draconid lizards including 19 (~90%) endemic species. Nearly 62% of these species are listed as threatened with 7 critically endangered, 5 endangered and 1 vulnerable, however this number may change as conservation status of four species described after 2012 are not assessed. A number of taxonomic revisions has taken place during the last two decade resulting in changes in draconid systematic at sub-family and species level. Since Muller (1887), 9 new species have been scientifically described from Sri Lanka and all these are endemic to the island. Lack of sufficient data on ecology and distribution of many these species is the major impediment in assessing their current conservation status as well as preparing species-specific and habitat-specific conservation action plans for concerned species. We conducted an island wide 12 years long surveys (2006-2018) covering more than 500 locations using visual encounter survey methods and opportunistic observations. Basic environmental parameters (e.g. humidity, temperature, light and rainfall) were also recorded. All locations were surveyed during day time (0600-1600 hrs) and night time (1800-2400 hrs) Data on road kills and animals killed by villagers were also used as additional sources of information on mortality. Villagers were interviewed using our own questionnaire forms. Conservation status of draconid lizards was evaluated based on the Red List categories and criteria (Versions 3.1). Deforestation, leading to habitat degradation and habitat fragmentation, are the main threats faced by Sri Lankan draconid lizards. Within South Asia, Sri Lanka suffers the highest rate of loss of forest cover, including other critical wildlife habitats; for instance, >50% of the forest cover has being lost during the last century alone due to exurban development, infrastructure expansion, and agriculture. Rapid lose of forest cover is especially prominent in the wet zone of Sri Lanka, where most species are point endemics. This situation is further substantiated by the fact that most of the wet zone-restricted endemic draconids are found in geographically and physiognomically isolated forest areas, e.g. *Calotes desilvai*, *Ceratophora erdeleni* and *Ceratophora karu* (only in Rakwana massif), *Calotes pethiyagodai*, *Calotes manamendrai*, *Ceratophora tennentii*, *Cophotis dumbara* (only in Dumbara massif), *Calotes nigrilabris*, *Ceratophora stoddartii*, *Cophotis ceylanica* (only in Central hills). Exotic pet trade and alien invasive species are growing threats for these lizards. It is imperative to have comprehensive research on diversity, distribution and ecology of draconid to fulfill the need of formulating species recovery plans for at least identified critically endangered and endangered species and their habitats.

KEYWORDS: community awareness, conservation, endemism, forest cover, habitat restoration, policy planning, research, threats