

## DIVERSITY, DISTRIBUTION AND BATHYMETRIC PREFERENCES OF FRESHWATER TURTLES IN LOWER SARJU RIVER, NORTH INDIA WITH SPECIAL REFERENCE TO *HARDELLA THURJII*

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**ABSTRACT :** Sarju river flowing through the Himalayan foothills is recognized as a key turtle conservation habitat holding remarkable freshwater turtle diversity. This study is a strenuous attempt to document the diversity, distribution and relative abundance of freshwater chelonians in the lower Sarju River along with their bathymetric preferences in order to prioritize certain river sections as critical habitats of various threatened species including the elusive, Crowned River Turtle (*Hardella thurjii*). The entire length of the river (ca. 205 km) from source to confluence was trekked and canoed. A total of 289 turtles, representing nine species were encountered via 50 observation points. Six of the nine species recorded in this short unprotected river stretch are endangered in IUCN Redlist. Indian Roofed Turtle (*Pangshura tecta*) was the most abundant and widely distributed species observed at 28 sites followed by Indian Flapshell turtle (*Lissemys punctata*) and *H. thurjii* recorded at 16 and 8 sites, respectively. Nine important habitats were identified and ranked considering the species diversity, abundance, extent of habitat, and its potential to support conservation intervention. Interesting observations were made with the species such as *P. tecta*, *H. thurjii*, Indian Peacock Softshell Turtle (*Nilssonina hurum*) and Spotted pond turtle (*Geoclemys hamiltonii*), which utilized a variety of depth levels from bottom to top of the water column as compared to the other species. Though utilizing varied depth range, *H. thurjii* was largely observed when river formed deeper pools with heavily vegetated foraging areas. The information will help in the future to refine conservation strategies as well as the supplementation and recovery program of one of the most enigmatic species across North Indian subcontinent.

**Key words :** Conservation, crowned river turtle, depth preference, nesting, Terai Arc Landscape, turtle priority area.

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### INTRODUCTION

After nonhuman primates, turtles and tortoises are the most threatened vertebrates facing a high risk of extinction due to unprecedented loss of habitat, consumption for food and traditional medicines and escalating demand in the pet trade. With the conservation programs globally focusing towards prioritizing and protecting areas that house charismatic mammals, birds and other larger vertebrates, turtle diversity is often overlooked adding to the vulnerability of these enigmatic organisms (Roll *et al*, 2017). Their prosaicness further disparages their importance as the ecosystem components worthy of protection. Unfortunately looked down as ordinary organisms, their importance can only be appraised

by recognizing their indispensable role in several ecosystem processes and services as energy flow, trophic status, mineral cycling, scavenging and even in seed dispersal and soil dynamics (Lovich *et al*, 2018; Stanford *et al*, 2020). These undervalued roles that turtles and tortoises play in terrestrial and aquatic ecosystems underline how their decline may lead to substantial loss of ecosystem functions.

As for most of the imperiled organisms, loss of habitat is one of the major threats to turtles and tortoises. Averting turtle extinctions in this century calls for protection of important habitats, especially hotspots of species diversity. With 80% (around 340) taxa occurring in 16 major hotspots, protecting roughly 24 million sq km or about