



Dawkinsia exclamatio,
an endemic restricted
to the Kallada River in
southern Kerala.

WILD update

Floods and fish: Exclamatio Barb in River Kallada

The state of Kerala was impacted by an extreme flooding event in August 2018, considered to be the worst in 100 years, resulting in close to 400 human mortalities and displacement of several hundred thousand people. The unprecedented floods gave rise to landslides and changes in the morphology and flow patterns of many of the rivers, which originate and flow through a global biodiversity hotspot – the Western Ghats. While the socio-economic and anthropogenic impacts of the floods have been discussed widely, there has been little focus on the impacts to biodiversity, and in particular freshwater ecosystems, which comprise a large share of the State's natural capital. A comprehensive study is being carried out to assess the impacts

of the catastrophic floods on the habitats and populations of several single location endemic and threatened species in the rivers of Kerala. Comprehensive field surveys are being carried out in four major river systems affected by floods, viz, Periyar, Chalakudy, Pampa, and Achankovil, in addition to micro-habitat-based surveys in six critical freshwater fish habitats including Periyar Tiger Reserve, Valparai, Malakkapara, Santhampara, New Amarambalam, and Shenduruney Wildlife Sanctuary to determine the abundance, population status, and impacts to the habitats of the 'single-location fish species'. This survey is supplemented by unstructured interviews and focus group discussions with relevant stakeholders including local fishers, forest guards, local



communities residing along the river banks, and researchers.

Surveys carried out in the Kallada River, particularly in three areas, (i) upstream of, (ii) downstream of, and (iii) actual range of *D. exclamatio*, an endemic species of the river indicated no changes to either the morphology of the stream habitats or to the populations of the species. Kallada River received less impacts of the floods compared to other river systems of the State and could be the reason for this unaltered state of species and habitats.

Catch per effort (calculated as catch of the species obtained in 5 continuous cast nettings* and 5 scoop net operations at a habitat) of the species was seven in the post-flood sampling compared to five during the pre-flood surveys carried out in 2013.



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Impacts of the 2019 catastrophic flood on single-location endemic freshwater fish species of the Western Ghats