ISSN: 2457-0761

JBC-APRF-6(1): 464-464, 2022

JOURNAL OF BIODIVERSITY AND CONSERVATION

SHORT COMMUNIATION

Homonoia riparia Lour (Euphorbiaceae): an important ecological indicator of perennial streams

Prapti Kondaji and Sanjeet Kumar*

Biodiversity and Conservation Lab., Ambika Prasad Research Foundation, Odisha

*Corresponding author: sanjeet.biotech@gmail.com

ARTICLE INFO

Article History

Received: 27th Feb 2022

Received in revised form: 11th March 2022

Accepted: 12th March 2022

Keywords: Perennial Stream, Plants, Indicator, Climate Change

ABSTRACT

Climate change and anthropogenic activities like mining are causing irreversible changes in nature thus unbalancing the ecological systems globally leading to a loss of both biotic and abiotic wealth. Most changes observed are related to the water bodies. In most areas around the world, perennial streams are drying up or going extinct. The lost streams lead to an extinction of associated floral & faunal species. Human settlements have also been observed to face the problems of water scarcity due to the desertification of these streams. The scientific communities are worried and trying to rejuvenate them in order to maintain the ecology of the existing streams. For the above-mentioned reasons, the authors found it necessary to understand the relationship of floral and faunal species with the streams as indicators. Keeping this in view, we surveyed the perennial streams of the Bonai Forest Division to get key species as indicators of perennial streams. The results revealed that out of 30 streams, authors found Homonoia riparia in common near all the observed perennial streams of the study areas. The habitat, associate species and photographs of the key-identified species are provided to understand its role as a biological indicator.

Plate 1: Habitat and vegetative parts of *Homonoia riparia*, a-b) Habitat; c) Habit; d) Flowers

The origin of several water sources join together and run downwards making a perennial stream. They play an important role in the forested areas. They provide nutrients, water sources and serve as a habitat for unique taxa. Anthropogenic activities like mining create an imbalance in the origin of water source mechanisms due to which the streams network would be adversely affected. The consequences could be pollution and a decline in the quantity of water from sources (Sun et al. 2020). The declination of water quantity leads to the death of the streams (https://geographyandyou.com/opencast-mining-river-catchment-and-the-plight-of-odisha/). In many mining areas, very less or no water is observed in perennial streams during summers or sometimes throughout the year (https://geographyandyou.com/opencast-mining-river-catchment-and-the-plight-of-odisha/). In this ecological situation, the indicators taxa of perennial streams should be identified at an alarming rate. Considering these problems in mining areas, an attempt has been made to document the associate taxa and enumerate the key indicator species of perennial streams of Bonai Forest Division (BFD), Odisha where Barsuan, Koira and Kuliposh ranges come under mining impacted areas (Kumar et al. 2022). The Barsuan & Koira ranges of BFD in particular, enjoy numbers of perennial streams having rich biowealth and at the same time, they are affected due to mining activities. During survey of 30 streams in both ranges, authors found one common plant species available in & around all observed streams of the study areas. It was *Homonoia riparia* (Plate 1). It is a shrub belonging to Euphorbiaceae family which

usually grows on the rocks of perennial streams. The most common enumerated associated plant species of *Homonoia riparia* are *Ardisia solanacea, Cyathocline purpurea, Melastoma malabathricum, Psydrax dicoccos* etc. The results revealed that *Homonoia riparia* could be an indicator of perennial streams along with its associated plants. The restoration of this plant along with associated species could be helpful in rejuvenating the perennial streams in mining areas like the Bonai Forest Division of Odisha state, India.

ACKNOWLEDGEMENT

Authors are thankful to the Divisional Forest Officer, Bonai Forest Division and the local communities for their due co-operation.

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