

Riparian Vegetation Dynamics: Mapping And Assessment Of Flood Impact 2018 On The Riparian Vegetation Of Chalakkudy River

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Kerala experienced an abnormally high rainfall from 1st June 2018 to 19th August 2018. This resulted in severe flooding in 13 out of 14 districts in the State. The main reason for the flood is the mismanagement of the dams in the Chalakkudy River. The torrential flow uprooted many Riparian Island and forest Vegetation. This important to understand the extent of damage happened to the riparian forest and also to understand the depth of the impact on community stretch and species composition, and to map the vegetation after the flood.

The selected area for the study is the Chalakkudy River. The Chalakkudy River is a main flood affected river, Chalakkudy River in central Kerala have relics of unique low elevation riparian forest ecosystem, The River distributed along the different altitude. Such low altitude riparian forest vegetation is a rare phenomenon in Western and are rich in endemic plant diversity, hence need urgent attention and conservation measures.

The area selected for the study is the main river of the Chalakkudy River from Orukombankutty up to Thumboormozhi in which maximum amount of low elevation riparian vegetation reported. The study aims to understand the riparian vegetation dynamics thorough mapping, assessment of the impact on extent, structure and composition of the vegetation.

The Mapping of the flood affected river basin by Google Earth QGIS, Ground survey for the rapid assessment of impact flood carried out based on physical feature of the area, and also phytosociological sampling is carried out to understand the flood impact on species composition and structure. This will provide an in- depth understanding of the impact of flood as qualitative and quantitatively Field survey were carried out for understanding the impact of flood 2018 on the structural composition of the riparian vegetation at Vazhachal region in which we had sample pre flood data.

Phytosociological parameters like Density, Frequency and Dominance were calculated

for better understanding of the structural composition. The mapping of the riparian forests from Orukombankutty up to the Thumboormozhi area of Chalakkudy River revealed that there were 283.54 Ha of riparian forest spread. Total of 30 locations noted, 23 % of areas were washed out during the flood. 50% of the area had a heavy impact 20% were partially impacted and the remaining 6% area only less impacted. This indicates the majority of the riparian vegetation 73% has a severe impact. Comparison of the phytosociological characters in the different impacted zones indicated a difference in species diversity, the total number of individuals, density and Basal area. A detailed structural analysis of the impacted vegetation shows that facultative riparian species are highly resistant to the flood including the torrential flow and dam water release that most of the riverine habitats were protected by the existing riparian vegetation. Most of the riparian vegetation showing the trend of resilience but the loss of trees and shrubs has affected the essence of the vegetation composition.

Received: 19th March 2019

Revised and Accepted: 10th April 2019

Published: 30th June 2019