



Impact of Land Use and Land Cover on Aquatic Macrophyte Community Composition in Small Streams: A Case Study from Cachar District of Assam in Northeast India

Nami Prasad and Tapati Das*

Department of Ecology and Environmental Science, Assam University, Silchar-788 011, India

**E-mail: tapatiecologist@gmail.com*

Abstract: Land use and land cover (LULC) profoundly influence the aquatic ecosystems through runoffs. The runoffs comprising of nutrient, as well as propagule of aquatic macrophytes (AMs), are expected to determine the physicochemical and biological characteristics of the aquatic environment. We tested this proposition by comparing the assemblages of AMs as well as the water and sediment characteristics in two small streams, each flowing through two different types of landscape, i.e., agriculture and human settlements. The study was done for a period of two years, i.e., from 2014 to 2016. Seventeen species of AMs belonging to 14 families were recorded, of which 7 were invasive aquatic macrophytes (IAMs). Taxa richness and diversity of AMs was higher in the stream flowing through the agricultural landscape while density and dominance of AMs were higher in the stream flowing through the landscape dominated by human settlement. Multivariate analysis revealed that stream depth and input of nutrients and organic matter from the adjoining riparian region play significant role in modulating the stream environment and AM community composition and abundance.

Keywords: Aquatic macrophytes, Stream, Habitat, Environmental variables, Cachar
