

ABSTRACT

Aura Dian Pratiwi. 24020122130081. Species Composition, Distribution and Morpho-Anatomical Characteristics of Bryophytes in the Riparian Zone of Lake Matano South Sulawesi. (Supervised by Lilih Khotimperwati and Jumari).

Bryophytes play critical ecological roles in microclimate retention, erosion control, and as potential bioindicators. The riparian zone of Lake Matano features unique geochemical ultramafic rocks rich in nickel and iron, which may influence bryophyte community composition through environmental selection; however, such information remains limited. This study aimed to inventory bryophyte species, describe their morpho-anatomical characteristics, analyze species composition and distribution, and assess station clustering patterns in the riparian zone of Lake Matano, South Sulawesi. Sampling was conducted using the exploration method across seven observation stations representing various substrate types. Species identification was based on morpho-anatomical features of both gametophyte and sporophyte phases. Community similarity was measured using the Sørensen index, and station clustering was analyzed using the Unweighted Pair Group Method with Arithmetic Mean (UPGMA). The results recorded 46 bryophyte species belonging to 11 families from Marchantiophyta and Bryophyta divisions. Lejeuneaceae (dominated by the genus Lejeunea) was the most dominant epiphytic family with 21 species (45.7%), followed by Calymperaceae with 8 species (17.4%). Species distribution was highly localized and uneven, with the highest richness occurring on epiphytic substrates within dense canopy stations such as Nuha, Kali Dingin, and Pulau Lakai. Sørensen similarity values ranged from 0 to 0.53, indicating high variation in species composition. UPGMA analysis yielded two main station clusters representing distinct patterns of species composition similarity; the first cluster was characterized by high epiphytic diversity in well-vegetated areas, while the second comprised more open habitats near anthropogenic activities and nickel mining operations (Pantai Ide and Pantai Salonsa). Morpho-anatomical adaptations, such as saccate lobules in Lejeuneaceae, support moisture retention for epiphytic survival. These community characteristics reflect bryophyte adaptation to riparian vegetation gradients, highlighting the potential of specific taxa (e.g., Fissidentaceae, Pottiaceae, and Hypnaceae) as local bioindicator candidates for ultramafic environments.

Keywords: *Bryophytes, Lake Matano, riparian zone, species distribution, Sørensen similarity, UPGMA.*