

## **Fish Biodiversity and Water Quality of Tropical Forest Streams Adjacent to the Western Boundary of Kinabalu Park, Sabah**

### **ABSTRACT**

Modification and degradation of habitats outside the boundaries of a national park may result in the park's integrity being compromised. Thus, the present study aims to document variation in freshwater fish and water quality of tropical forest streams adjacent to the western boundary of Kinabalu Park, Sabah. Concurrently, fish samples and environmental parameters were collected at six stations covering a total streamline length of 10 km. The three most abundant species were *Tor tambra* (34.4%), *Barbodes sealei* (19.5%), and *Lobocheilos ovalis* (12.4%). *Tor tambra* exhibited a negative allometric growth pattern (coefficient < 3) and was in poor to fair condition ( $0.8 < \text{Fulton's condition factor} < 1.2$ ). The highest fish abundance was found in downstream stations with species addition. Metrics of diversity, such as Shannon's diversity index and the Margalef index of species richness, decreased as elevation increased from 100 to 600 metres above sea level. The water quality of the forest streams is good, classified as Class I and/or Class II by Malaysia's National Water Quality Standards, except for ammoniacal nitrogen at station 6, which was classified as Class III. Higher turbidity, orthophosphate, and ammoniacal-nitrogen values were found near the Podos village. In conclusion, the altitudinal gradient of fish biodiversity was observed in the forest streams near Kinabalu Park. Regular water quality monitoring of the downstream river is necessary, as indicated by the potential domestic impacts on the river.