Title : Diversity and Distribution of Freshwater Bivalves in the Mae Kuang River Basin, Chiang Mai Province, Thailand

Author(s) :
1. Piratsaya Kosripipat **Student ID :** 650510258
2. **Student ID :**
3. **Student ID :**

Major : Zoology

Advisor(s) :
1. Assistant Professor Dr. Nattawadee Nantarat
2.
3.

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ABSTRACT

Freshwater bivalves are an ecologically important group of benthic invertebrates. They are classified within the phylum Mollusca and class Bivalvia. The bivalves play key roles in nutrient cycling, sediment stabilization, and water filtration in freshwater ecosystems. The Mae Kuang River Basin is a major tributary of the Ping River in Chiang Mai Province, northern Thailand. It is an important freshwater resource supporting agriculture, domestic water use, and aquatic biodiversity. However, the diversity and distribution of freshwater bivalves in this river system have limited scientific attention. This study aimed to investigate the diversity and distribution of freshwater bivalves in the Mae Kuang River, Chiang Mai Province, an area that has been relatively understudied and to investigate physicochemical effects on diversity and distribution of freshwater bivalves. Field surveys and water quality measurements were conducted at 17 sampling sites along the river. A total of 162 individuals were identified, comprising 4 subclasses, 4 orders, 2 families, 3 subfamilies, 5 genera, and 21 species. Living bivalves were found at six sites (Sites 1, 2, 4, 5, 7, and 12), characterized by wider channels, muddy–silty substrates mixed with sand. Site 5 exhibited the highest species evenness and diversity (Simpson's Diversity Index = 1.00; Shannon–Wiener Index = 2.01; Menhinick's Index = 2.24), while the highest dominance values occurred at Sites 1, 7, and 12. *Corbicula* sp. 2

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showed a strong association with high dissolved oxygen (8.28 mg/L), whereas *Corbicula iraradica* was related to salinity and stony substrates. The findings contribute valuable information for biodiversity conservation, environmental monitoring, and sustainable river basin management in northern Thailand.

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