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**Congruence patterns of aquatic communities in a tropical river basin, Malaysia**

(2021) *Shengtai Xuebao/ Acta Ecologica Sinica*, 41 (1), pp. 50-56.

**DOI:** 10.1016/J.CHNAES.2020.12.001

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**Abstract**
The loss of aquatic biodiversity in tropical streams of SE Asia is evident due to increasing anthropogenic activities. Therefore, there is a necessity for immediate and feasible conservation plans. Effective conservation planning depends on successful application of surrogate groups. However, progress of this approach is hindered by the paucity of relevant reports based on cross-taxon congruence analysis. In this study, we investigated congruence patterns among aquatic groups (Plecoptera, Trichoptera, Ephemeroptera, Odonata and fish) in six rivers located in the Kerian River Basin (KRB), Malaysia. Species richness was significantly correlated among aquatic groups (except for Ephemeroptera and Trichoptera where r=0.040 and P=0.202). The strongest relationship in species richnesswas reported between Ephemeroptera and Plecoptera. The Mantel's r coefficient of similaritymatrices (based on the Bray-Curtis distance measure) showed a positive correlation between the matrices of Ephemeroptera-Trichoptera and Plecoptera-Trichoptera. However, a negative relationship was reported between Odonata-fish matrices. The relationships between average Trichoptera-Odonata distance to the centroid (i.e. beta diversity) among the aquatic groups were also investigated. The strongest relationship in the average to the centroids was reported between Ephemeroptera and Odonata (R2 = 0.424, P < 0.05). However, the weakest relationshipwas reported between Trichoptera and fish with R2 value of 0.024. It is concluded that richness of Plecoptera, Odonata and fish showed correlations patterns, and these can be used as surrogates for each other with some restrictions. © 2020 Ecological Society of China.

**Author Keywords**
Congruence; Conservation; Freshwater communities; Malaysia; Tropical stream

**Index Keywords**
Ephemeroptera, Odonata, Plecoptera, Trichoptera

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**Publisher:** Science Press

**ISSN:** 10000933
**Language of Original Document:** English
**Abbreviated Source Title:** Shengtai Xuebao Acta Ecol. Sin.
2-s2.0-85102257010
**Document Type:** Article
**Publication Stage:** Final
**Source:** Scopus