

ASSESSMENT OF FISH AND MACROINVERTEBRATES IN STREAMS ASSOCIATED WITH MINERAL SOIL AND PEATLAND IN KUCHING AND SAMARAHAN DIVISIONS, SARAWAK



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Understanding of carrying capacity of different habitats in supporting species richness of aquatic organisms is crucial for the success of biodiversity conservation programme. Study on habitat carrying capacity and species-habitat specialization is particularly important in Sarawak because many aquatic habitats (streams, rivers, lakes and swamps) had been degraded by land use activities. Habitat fragmentation is a common phenomenon, but assessment of carrying capacity of the habitat complex in supporting aquatic species richness has not been well studied. The questions rise would be (i) does the streams within fragmented forest of different soil type supports unique species of aquatic fauna?, (ii) how well does the fragmented forest represent (in term of aquatic biodiversity) the overall habitat within the plantation?, and (iii) what size should the forest patches be in order to meet the ecological needs of unique species? This project aims to (i) assess species richness of fish and macroinvertebrates in streams associated with mineral soil and peatland, (ii) assess the carrying capacity of the two habitats in supporting species richness of fish and macroinvertebrates (especially rare/endemic species), and (iii) determine environmental parameters that significantly influent community structure of the fauna. Thirteen physico-chemical parameters are measured in 18 streams. The 18 streams are habitats to more than 120 species of aquatic fauna include fish, crustaceans, mollusks and aquatic insects. The significant findings include discovery of a new semiterrestrial vampire crab, *Geosesarma larsi* (Image 1) and a blind gudgeon fish, *Pogoneleotris heterolepis* (Image 2).

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Image 1: A new species of semiterrestrial vampire crab, *Geosesarma larsi* from high elevation habitat (see Ng & Grinang, 2018). A-D = male; E-F = ovigerous female

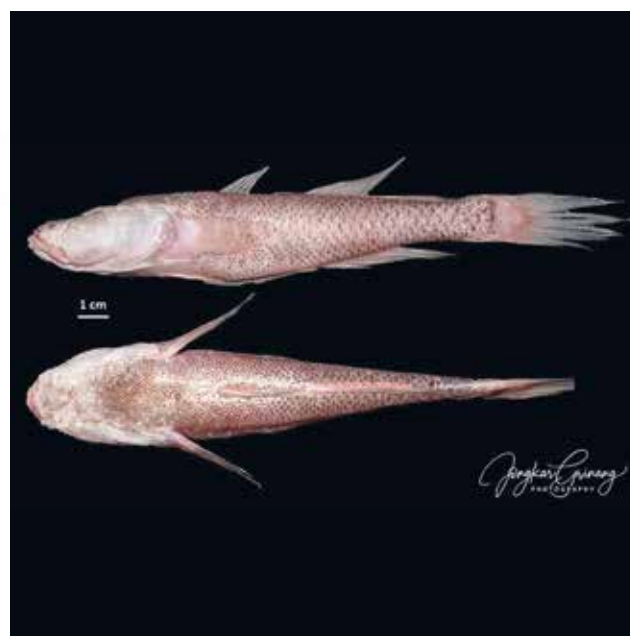


Image 2: A male blind gudgeon fish, *Pogoneleotris heterolepis* was first recorded from Borneo in 1863. It is a rare fish, being inhabit mud substrates in tidal influence of Batang Sadong. This is the second documented record, and the first descriptions of ecology of the fish (see Tan & Grinang, 2018). Top – lateral view; Bottom – dorsal view