

Title : Application of the geometric morphometric to identify populations of the tinfoil barb
(*Barbonymus schwanenfeldii*) from different localities

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ABSTRACT

This study aims to analyze the morphological differences of the tinfoil barb (*Barbonymus schwanenfeldii*) between two populations in Chiang Mai and Lamphun provinces using TpsUtil, TpsDig2, and MorphoJ for data processing and analysis. A total of 60 fish samples were collected from water bodies in both provinces, and photographs were taken in lateral view using a digital camera. After photography, each fish was tagged for identification before proceeding to the next step. TpsDig2 was used to digitize 18 landmark points for each specimen, and the data were processed using TpsUtil and analyzed in MorphoJ to perform Procrustes Superimposition and Principal Component Analysis (PCA). The results revealed significant morphological differences between the two populations. Specimens from Chiang Mai exhibited broader bodies and longer dorsal fins compared to those from Lamphun. These differences may reflect adaptations to various environmental conditions in each area. The findings of this study enhance the

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understanding of the morphological diversity of the tinfoil barb in Northern Thailand and can be effectively applied in the management and conservation of fisheries resources in this region.