The influence of alien fish species on native fish community structure in Malaysian waters

ABSTRACT

Introduction of alien fish species has resulted in major global change, harming native species and communities throughout the world. The main objectives of this review were to examine the species composition, ecology, and distribution of alien fish species in natural water bodies and evaluate the role and contribution of alien fish species through aquaculture to socio-economic development in Malaysia. The rate of introduction and the number of alien fish species introduced into local habitats have greatly increased since the early twentieth century. A statistical analysis of habitat differences among native fish species in Malaysia indicated that differences in fish assemblage structure in various sites was associated with differences in physical habitat. However, the occurrence of alien species has not only changed the structure of native ichthyo-fauna groups but has also caused ecological damage and economic harm to local fishermen. At present, alien fish species inhabit diverse environments including highland and isolated streams, rivers, rice fields, swamps, drainage areas, dams and reservoirs, lakes created from former mining areas, and estuaries in Malaysia. The examination of species composition, distribution and movement of alien fish in natural habitats revealed that these species have seriously spread and are now distributed in diverse aquatic habitats of Malaysia. This in turn provided evidence that there are no restrictions or limitations to the spreading of alien fish species in the natural habitats of Malaysia.

Keyword: Alien fish species; Malaysia; Native fish fauna