

Abstract

The purposes of this study were to survey and collect data on fish species from ornamental fish shops in Amphur Muang, Chiang Mai province, and to gather the essential information of each species. The survey was conducted from July to August 2024. Total of 352 fishes from the 3 selected stores in Amphur Muang, Chiang Mai province were examined, sampled and identified into species by using the reliable fish identification manuals, including common trade names, and other distinctive morphological characteristics. Two hundred and twenty-two species of fish from 61 families and 17 orders were recorded in this study. The results showed that the three orders with the highest numbers of fish species were Cypriniformes (66 species), Perciformes (51 species) and Characiformes (33 species), respectively. In addition, cross-bred hybrid fishes were also found, including the blood parrot cichlid, flowerhorn cichlid, and redtail tiger catfish. According to the result of this study, it provides the update species checklist of ornamental fishes from the aquarium shops in Chiang Mai as the reference for the further studies about aquarium fishes in the future.

Introduction and objective

The ornamental fish industry is currently experiencing widespread popularity, leading to a high-value ornamental fish breeding business. Thailand ranked as the of fifth the world for ornamental fish exports, holding a 7.38% share of the global market with export values reaching hundreds of millions of baht annually. Although several surveys of imported-exported fish species by government agencies and studies of fish populations in Thai rivers were reported, there has been a lacked of researches focusing on fish species available in commercial pet stores. Therefore, this research aims to record the fish species that are available as ornamental fishes. In addition to identify into species, this study also tends to raise awareness about the conservation of certain fish species that may be rare or threatened in their natural habitats, providing a foundation for future conservation.

Materials and methods

Part 1 surveys

1 Selected 3 stores to survey

2 Collected fish data in the store

3 Bought fish to collect as specimens

Part 2 sampling

1 Set the right posture of fish on the foam sheet

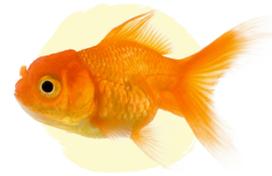
3 Took a photography

2 Applied formalin to maintain the fish solution posture.

4 Preserved fish with formalin solution

Results

1st Order Cypriniformes



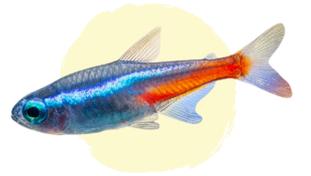
Gold fish (*Carassius auratus*)

2nd Order Perciformes



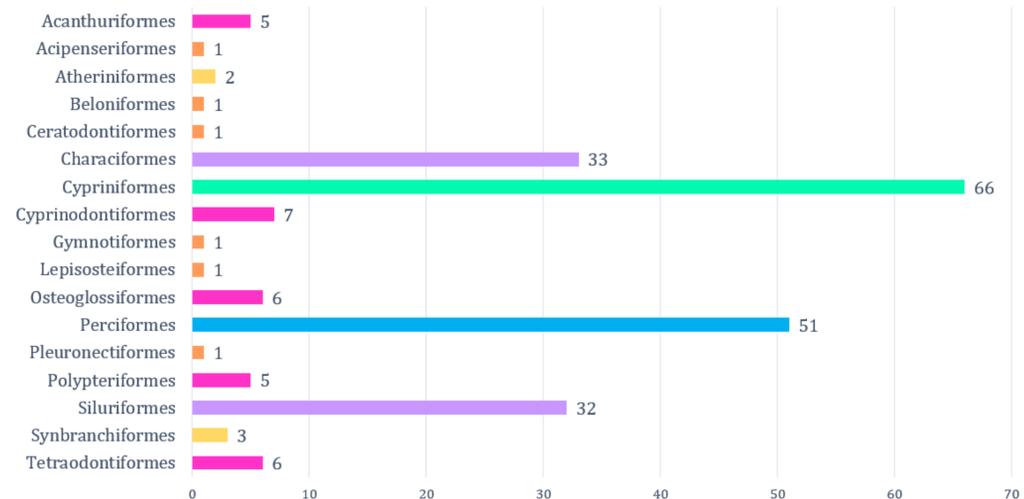
Siamese fighting fish (*Betta splendens*)

3rd Order Characiformes

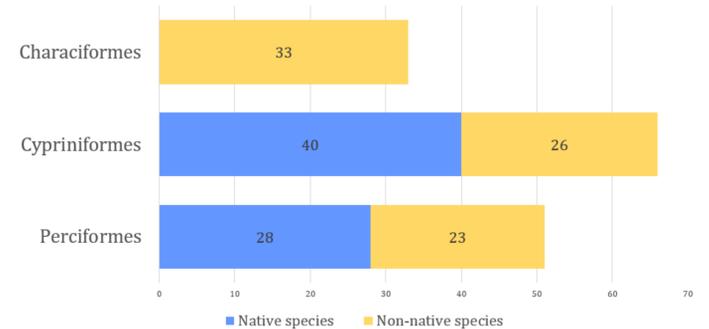


Neon tetra (*Paracheirodon innesi*)

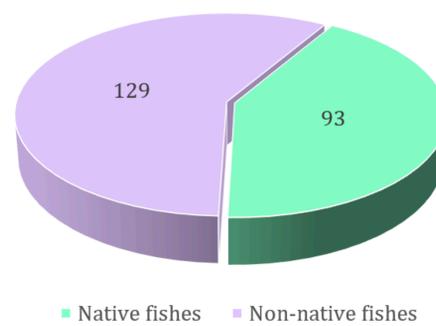
Number of species of fish in each order



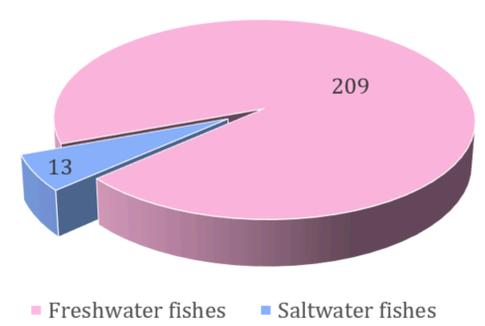
Proportion of native and non-native species in 3 orders with the highest numbers of species



Native & non-native fishes



Freshwater & saltwater fishes



Discussion and conclusion

This survey found a total of 222 species, 61 families, and 17 orders of fish. Among these, 210 species are freshwater fishes, and 12 species are saltwater fishes. Additionally, 92 species were found to be native Thai fish (41% of total fish species). The most common order with the highest species found in the stores were Order Cypriniformes (66 species), which includes goldfish, carp, barb, minnow, and loach. Among these, 40 species are native Thai species. Following, fishes in Order Perciformes (51 species) and Order Characiformes (33 species) were recognized. The top exported fishes from Thailand are from Order Perciformes, while the imported fish are from Orders Cypriniformes and Characiformes. In addition, 3 hybrid fishes were found, with 2 out of 3 being from the Family Cichlidae and the other from the Family Pimelodidae. Some species of fish available in aquarium fish shop should be concerned of being threatened in nature habitats due to their popularity in the pet trade.

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