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## Distribution of the alien freshwater fishes in the Ryukyu Archipelago

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Distribution of alien freshwater fishes in the Ryukyu Archipelago (19 islands; 330 rivers and 45 reservoirs) was surveyed from May 1996 to December 2007. Alien fishes were found on 17 islands except in Yaku-shima I. and Kakeroma-jima I. A total of 30 species in 13 families including Osteoglossidae (1 species), Cyprinidae (6), Characidae (1), Cobitidae (1), Claridae (2), Loricariidae (1), Poeciliidae (4), Ambassidae (1), Centrarchidae (2), Sciaenidae (1), Cichlidae (7), Osphronemidae (1), Channidae (2) were recognized. Of these 24 species were thought to be established in the water bodies on the Ryukyu Archipelago. Eighteen species were introduced as aquarium trade fish, and the rest were introduced via aquaculture (5 species), recreational angling target (3), biological control (1) or other reasons (3). *Oreochromis mossambicus* and *Poecilia reticulata* had the widest distribution in the Ryukyu Archipelago, occurring in 36% and 22% of the total number of rivers, respectively. The high salinity tolerant species (such as *Oreochromis*) were thought to be dispersed via the sea from river to river. On the other hand, seven species (*Osteoglossum bicirrosom*, *Parambassis ranga*, etc.) were only found in urban reservoirs. Twenty seven species were found on Okinawa-jima I. It is suggested that the number of alien species is rapidly increasing on this island over the last 10 years. *Gambusia affinis* had the widest distribution pattern (12 islands), and followed by *P. reticulata* (9), *Oreochromis mossambicus* and *O. niloticus* (8), *Tilapia zillii* (5), *Xiphophorus macuratus*, *Micropterus salmoides* and *Lepomis machrochirus* (2). It is important that stricter rules regarding release of tropical aquarium fishes for aquarists as well as educational programs are established to stop the trend of increasing numbers and distributions of alien freshwater fishes.