Population Structure and Evaluation of Amphidromous Gobus in Central Pacific: What We Know about it today

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In Indo-Pacific, insular river systems are colonized by Gobiidae with a life cycle adapted to the conditions in these distinctive habitats which are young oligotrophic rivers and subject to extreme climatic and hydrological seasonal variation. These species spawn in fresh waters, the free embryos drift downstream to the sea where they undergo a planktonic phase before returning to the rivers to grow and reproduce, hence they are termed amphidromous. Their biological cycle and the parameters leading to such extreme evolution in amphidromous gobies are poorly known, despite the fact that these gobies contribute most to the diversity of fish communities in Indo-Pacific insular systems and have the highest levels of endemism. In Indo Pacific, A. gobies belong to the genus Lentipes, Sicyopterus, Stiphodon, Stegnogobius, Schismatogobius, and Rhinogobius. They comprise nearly 170 species.

One species of gobies fish is Amphidromous gobus. As unique species, A. gobus need to study more, in particular about biological systematic to answer the question who, what, where, when, and why. This species can be classified into genus Stenogobius. It has life cycle in stream, estuary and ocean (to release eggs and larvae). The advantage of A. gobus adaptation can colorization of new bio-tic area and survival in unstable environment. There are 31 species which distribute in Indo Pacific to Southeast Asia.

Several step is need to study more about A. gobus, First step, it is needed to learn about biological systematic by using phylogenetic or DNA. To know the structure, many scholars use DNA method. Second step, behavior of this species need to observe. Third step, to observe marine larvae of A. gobus how it disperse inside freshwater of the island during single life cycle or why it stayed near Natal Stream.

As a conclusion, based on the population structure of A. gobus, this research recommended to revise taxonomy status and conservation strategies.