Connectivity of the skunk clownfish, *Amphiprion akallopisos*, along the coast of East Africa

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Tropical coral reefs are well known as being biodiversity hotspots. They provide food, income, numerous ecosystem services, and are a popular tourist attraction. These systems are however strongly impacted by overexploitation of small and large scale fisheries, destructive fishing practices, pollution and many other anthropogenic and environmental threats. As a result, coral reefs are rapidly declining with the loss of large areas of coral reefs every year. To mediate, appropriate measures need to be taken to address this decline. A possible protective measure is by establishing marine protected areas (MPAs). But for the MPAs to be effective, the spacing of the areas is crucial. In most instances, these areas are designated based on economical and aesthetic factors. However, when determining areas that will serve as MPAs, supporting data of diversity and connectivity should also be considered. In this study, the connectivity of populations of the skunk clownfish, *Amphiprion akallopisos*, will be determined using genetic markers. Information about the connectivity will reveal the genetic population structure and the degree of gene flow among populations within evolutionary timescales. Small pieces of fin tissue from populations of *A. akallopisos* were collected from several reefs along the coast of East Africa. Sampling was done under water using scuba gear. After collecting the tissue samples, the individuals were immediately released. Genetic analysis of all the samples will be conducted, with a multiplex PCR method, using two sets of 8 microsatellite markers. Mutations in microsatellite DNA happen frequently, and are generally non-coding, making microsatellite markers very suited for population genetic studies. Microsatellites can be highly polymorphic, with a range of length polymorphisms, providing genetic information with very high resolution. They are fast evolving and are therefore better suited to reveal recent barriers to gene flow among populations, which can possibly lead to genetic differentiations. The genetic connectivity of *A. akallopisos* will be determined at two different scales. First at large scale to look at the connectivity along the East African coast, with samples from Kenya, Tanzania, Mozambique, and Madagascar. And secondly at a smaller scale, to look at the connectivity of the populations around the Zanzibar archipelago. The results will eventually contribute to the conservation and management of coral reefs.