



Morphometric Comparison of *Dascyllus trimaculatus* Populations from Bohol Sea, Philippines

Louey Mari Ilustre², Patricia Roa¹, Hilly Ann Roa-Quiaoit¹ and Maria Carmen Ablan-Lagman^{2,*}

¹ Department of Biology, Xavier University

² Biology Department, De La Salle University-Manila

*ma.carmen.lagman@dlsu.edu.ph

Abstract: Reef organisms are sporadically distributed in the marine environment. The survival of these populations depends on their connectivity. In the Bohol Sea, establishing connectivity among reef populations, particularly those in marine protected areas, is an important input to managers and environment planners. The most common approach to study connectivity in populations uses individual characters that may distinguish one population from another. These include morphological, morphometric and genetic markers. In this study, 16 morphometric characters of the ubiquitous damsel fish, *Dascyllus trimaculatus*, were measured using TPSDIG v.1 and compared among 199 samples in 7 sites to test for their sensitivity in detecting populations across sites and to determine patterns of connectivity in the Bohol Sea based on these characters. PCA and DCA implemented in STATISTICA v.12 indicate variability in shape among fish collected from Macajalar Bay on different parts of the bay, even though these populations are geographically closer to each other than the rest of the groups. With 89.22% variability explained by two principal components, 4 distinct clusters can be detected suggesting the Bohol Sea samples are not connected with the three Macajalar samples. Clusters are more likely to share and exchange resources demanding more integrated management schemes within them. It is interesting to note that the 2013 samples collected from 3 sites within the Macajalar Bay showed 93.44% likelihood of assigning individuals to their cluster, suggesting isolation among these sites and the need for local management for these sites within the Macajalar Bay and closer integration with each other.

Key Words: Bohol Sea; *Dascyllus trimaculatus*; Morphometrics