FINAL REPORT

POPULATION GENETICS STRUCTURE OF *Plectropomus leopardus* IN THE PRIORITY CONSERVATION AREAS IN THE SULU-SULAWESI MARIN ECO-REGION-A PRIORITY SEASCAPE IN THE CORAL TRIANGLE

PROJECT CODE
GL0115

PROJECT LEADER

PROF. MADYA. DR. JULIAN RANSANGAN

BORNEO MARINE RESEARCH INSTITUTE,
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Executive Summary

Genetic information on the populations of leopard coral grouper (*Plectropomus leopardus*) is vitally important for conservation, recruitment and sustainable management of the population of this species. This study seeks to fill the vacuum in the knowledge on this aspect of leopard coral grouper in the Sulu-Sulawesi Marine Eco-region. The data which this study generated shows a clear pattern of gene flow in the eco-region from population units of Kudat and Semporna (Malaysia), and Palawan (Philippines). A low level of gene flow increases the genetic variation while promoting differentiation. While low level of adult migration implies limited gene flow but the whole process of gene flow is determined by dispersal of larvae and habitat connectivity among other factors. It should not be lost sight of the fact that leopard coral grouper is protogynous hermaphrodite. The sex ratio in such species is naturally skewed towards the females and the sex ratio varies with size as females change over to the male. Fishing that preferably targets larger sizes and more aggressive behaviour of males makes their already smaller proportion particularly vulnerable. The sequential sex change could be a factor that would influence spatially structured populations by reducing the effective population size and hence increasing genetic drift. Gaps in knowledge on this and other aspects including environmental factors, biological connectivity must be understood. Barriers to migration of spawners and the dispersal abilities of larvae have strong effects on genetic variance and structuring in the fish population.

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