



Population Genetic Analysis of the Dusky Grouper *Epinephelus marginatus* Using Sequence Analysis of mtDNA D-loop and Cyt b Regions

Deniz Erguden*, Mevlut Gurlek, Ali Uyan, Servet Dogdu, Cemal Turan

¹ Iskenderun Technical University, Faculty of Marine Sciences and Technology, Molecular Ecology and Fisheries Genetics Laboratory, Iskenderun, Turkey

*derguden@yahoo.com

Abstract

The Dusky grouper *Epinephelus marginatus* is one of the most vulnerable and threatened species of fish of the genus *Epinephelus*. Slow to develop and mature, dependent on special habitats for breeding, also suffers intense harvesting, which has reduced their regional populations drastically in numbers in many areas. Therefore, phylogeographic and population-level analyses of the Dusky grouper *Epinephelus marginatus* were conducted using the samples from 3 localities (Iskenderun Bay, Mersin Bay, Antalya Bay) in the Mediterranean and 2 localities (Mugla and Izmir) in the Aegean Coasts of Turkey. MtDNA ND5/6, 16S rRNA, COI, control and Cytochrome b regions were monitored to find the polymorphic regions of mtDNA. Genetic diversity and pattern of genetic differentiation among phylogeographic populations, bottleneck effect, haplotype diversity and structure, measure of genetic isolation by distance were examined throughout the sampled populations in Turkish marine waters. The present study could be used for the implementation of conservation and management measures in order to protect and consolidate these populations. This study was supported by TUBITAK (214O575).

Keywords:

Population Genetic, Dusky Grouper, *Epinephelus marginatus*, Sequencing, mtDNA
