

Phylogeography and Genetic Diversity of Humpback Grouper *Cromileptes altivelis* based on Cytochrome C Oxidase I

Title	Phylogeography and Genetic Diversity of Humpback Grouper <i>Cromileptes altivelis</i> based on Cytochrome C Oxidase I
Author Order	1 of 3
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Abstract	<p>Humpback grouper is one of the most popular fish group in the international live trade in Asia-Pacific regions. The price for one kilogram live of humpback grouper, especially in Spermonde Archipelago South of Sulawesi, is range from 350.000-400.000 IDR, whereas in the retail level in Hong Kong the price was about 92 US\$. This condition leads to the reduction of nature population due to overexploitation. Population decreasing due to overexploitation may cause loss of genetic diversity within population and lead to reduce of potential adaptive, population resistance, and productivity. Therefore, it is important to do some efforts to avoid adverse effect of overexploitation on humpback grouper population in Indonesia. One of the valuable efforts is providing genetic information such as phylogeography and genetic diversity of humpback grouper <i>Cromileptes altivelis</i>. Analysis was based on 618 base pairs fragment of cytochrome c oxidase I gene from 36 individuals (sequences) of <i>Cromileptes altivelis</i> collected at four different sites (e.g. Pulau Seribu, Jepara, Situbondo and Spermonde Archipelago). The results showed that humpback grouper population has a high haplotype and nucleotide diversity. However, high genetic diversity and polymorphisms could not reveal population fragmentation ($F_{ST} = 0.000$). It is suggested that high gene flow rather than population sub structuring was occurred. High level genetic diversity and polymorphisms are vital related to adaptive potential to environmental alteration.</p>
Publisher Name	Lembaga Penelitian dan Pengabdian kepada Masyarakat Universitas Riau
Publish Date	2012-11-21
Publish Year	2011
Doi	DOI: 10.31258/jnat.14.1.47-51
Citation	
Source	Jurnal Natur Indonesia
Source Issue	Vol 14, No 1 (2011)
Source Page	47-51
Url	https://natur.ejournal.unri.ac.id/index.php/JN/article/view/199/193
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