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

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Accreditation	
Abstract	Humpback grouper is one of the most popular fish group in the international live trade in Asia-Pacific regions. The price for one kilogramlive of humpback grouper, especially in Spermonde Archipelago South of Sulawesi, is range from 350.000-400.000 IDR, whereas in theretail 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 potentialadaptive, population resistance, and productivity. Therefore, it is important to do some efforts to avoid adverse effect of overexploitationon humpback grouper population in Indonesia. One of the valuable efforts is providing genetic information such as phylogeography andgenetic diversity of humpback grouper Cromileptes altivelis. Analysis was based on 618 base pairs fragment of cytochrome c oxidase I genefrom 36 individuals (sequences) of Cromileptes altivelis collected at four different sites (e.g. Pulau Seribu, Jepara, Situbondo and SpermondeArchipelago). The results showed that humpback grouper population has a high haplotype and nucleotide diversity. However, high geneticdiversity and polymorphisms could not reveal population fragmentation (ÃŽÂ¦ stt = 0.000). It is suggested that high gene flow rather thanpopulation sub structuring was occurred. High level genetic diversity and polymorphisms are vital related to adaptive potential toenvironmental alteration.
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