

## **Preliminary genetic evidence on the presence of two stocks of *Lethrinus nebulosus* (Forsskål, 1775) in Sri Lankan waters**

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*Lethrinus nebulosus* (spangled emperor) is a demersal non-migratory reef-associated fish which is having a high global demand as a food fish. Population reduction of *L. nebulosus* has been observed in the recent past due to overfishing. Hence, management plans are needed for immediate action. Mitochondrial COI sequence data provides a preliminary idea about the existing genetic stock structure of a fish population. Samples were collected from around the country during RV Dr. Fridtjof Nansen Ecosystem Survey in 2018. Total DNA was extracted by using Qiagen's DNeasy Tissue Kit following the manufacturer's protocol. PCR was carried out with FishF1 and FishR1 primers. Sequences were analyzed by using MEGA, Bio edit and DnaSP software. Two phylogenetic groups were clearly separated. Individuals from South East and South West regions were clustered in group I and individuals from North and Central East regions were clustered in group II. Among two groups high nucleotide divergence was observed with 116 single nucleotide polymorphic sites and four haplotypes. Average number of nucleotide differences between the groups is 84.182, in group I it is 5.727 and in group II it is 0.000. The results revealed the preliminary evidence of presence of two stocks of *L. nebulosus* inhabit in Sri Lanka; one stock in North and Central East regions and the other stock in other coastal regions. This study has provided foundation for future genetic studies. In conclusion, the *L. nebulosus* population in Sri Lanka consist of two genetically variable groups, may be two cryptic species, however, to confirm it morphological data should be analysed in parallel with genetic analysis.

Keywords: *Lethrinus nebulosus*, haplotypes, fishery management, genetic stock, RV Dr. Fridtjof Nansen Ecosystem Survey

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