

A new *Decapterus* species record: *Decapterus maruadsi* from Sri Lankan waters

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Decapterus species locally known as “Linna” belonging to family Carangidae (jack family), consists of mackerel scads, round scads and horse mackerel. The species belonging to this genus shows a wide distribution in the Indo-Pacific Ocean. The most common *Decapterus* species found in the Indian Ocean are *Decapterus macarellus*, *D. macrosoma*, *D. russelli*, *D. tabl* and *D. kurroides*. However, only three species, *D. macarellus*, *D. macrosoma* and *D. russelli* have been recorded in Sri Lanka so far. Due to similarities in morphological characters, the species level identification of *Decapterus* species is sometimes misleading and the species that inhabit Sri Lankan waters is still debatable. Therefore, the present study was carried out to examine the *Decapterus* species that inhabit Sri Lankan coastal waters using DNA based methods. The Dr. Fridtjof Nanson ecosystem survey was carried out to study the marine biodiversity in Sri Lankan waters. From the pelagic and bottom trawl catch of the survey, 65 samples representing all areas around the country were used for the genetic analysis. Muscle samples were preserved in 100% ethanol and DNA was extracted by the Qiagen’s DNeasy Blood and Tissue Kit. Mitochondrial Cytochrome c oxidase I (cox1) gene with 630 bp was amplified by Polymerase Chain Reaction (PCR) by using Fish-F1 and Fish-R1 primers. PCR products were sequenced using Sanger sequencing method. Sequence similarities were checked by using NCBI BLAST service. All the sequences were aligned with more than 98% sequence identities with the existing sequences in the NCBI database. The study revealed the presence of four species *D. russelli*, *D. macarellus*, *D. macrosoma* and *D. maruadsi*. Importantly, *D. maruadsi*, mostly recorded from the East Indian and West Pacific Oceans, was found as a first record in Sri Lankan waters. The new species record may be due to the migration of the species as a result of the marine environmental climatic changes or sometimes the newly recorded species may not have been identified due to morphological features not being very clear. Phylogenetic relationships among species were assessed using Neighbour Joining method in MEGA 10 software with 1000 bootstrap value by using *Selar crumenophthalmus* as an out group species. This analysis revealed that *D. russelli* and *D. maruadsi* also share a close phylogenetic relationship while *D. macrosoma* and *D. macarellus* share a close phylogenetic relationship. This preliminary study showed that there is more species diversity in Sri Lankan marine waters beyond the existing known range and emphasizes the need for broad range exploration of species using genetic methods with morphological identifications in the future.

Keywords: *Decapterus* spp., *D. maruadsi*, CoxI gene, Dr. Fridtjof Nanson survey

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