

# Population genetic structure of the Silver Pomfret, *Pampus argenteus* (Euphrasén, 1788), in the Persian Gulf and the Sea of Oman as revealed by microsatellite variation

(Osteichthyes: Stromateidae)

Nazli Golestani, Sohrab Rezvani Gilkolaei, Roghieh Safari, Sara Reyhani

**Abstract.** Microsatellite markers were applied to identify genetically distinct populations of the Silver Pomfret, *Pampus argenteus* (Euphrasén, 1788), in the Persian Gulf and the Sea of Oman. Biological data suggested that Iran, Iraq and Kuwait have one shared stock unit. Genomic DNAs from 125 specimens from five different geographic areas in Iran and Kuwait were extracted and PCR amplification performed. Seven loci with reasonable polymorphism were amplified. The results show that the average of observed heterozygosity was 0.53 while expected heterozygosity was 0.67. After applying the Hardy-Weinberg Equilibrium (HWE) test, some loci were found to deviate significantly from HWE in some populations in which deficiency of heterozygotes was apparent. The highest population differentiation was found between the Kuwait and Bushehr (population differentiation value  $F_{st} = 0.087$ ,  $P \leq 0.01$ ), while it was lowest between Chabahar and Bushehr ( $F_{st} = 0.021$ ,  $P \leq 0.01$ ). The highest genetic distance was found between Khuzestan and Chabahar (Genetic distance value: 0.269), and the lowest (0.075) between Bushehr and Chabahar. These data provide some new information on the genetic variation and differentiation within the Gulf population of *Pampus argenteus* and enhance our understanding of the ecology of this commercially important species.

**Key words.** Population structure, Zobaidy, population decline, microsatellite markers, genetic distance, genetic variability, differentiation.

## Introduction

The Silver Pomfret, *Pampus argenteus* (Euphrasén, 1788), also known as Zobaidy, is a commercially high-value species that lives in coastal waters at depths between 5 and 80 m, throughout the Indo-Western Pacific region, the eastern part of China, the western and southwestern Korean Peninsula and western Asia including the Gulf (HAEDRICH 1984). There are two spawning peaks for this species, the first in May and the other in August (DADZIE et al. 2008), which are, however, not exactly fixed for different geographic regions. Silver Pomfrets feed mainly on crustaceans with copepods as the dominant group, tunicates, medusae, jellyfish, and fish larvae, eggs and scales (MOHAMED & ALI 1994). The desired market size of this species is >300 g. Age estimation for the desired size of over 300 g indicates that they would be at least 2.86 years old (AL-HOSSANI et al. 1998).

The main operating sector inshore and offshore for Zobaidy in both Kuwait and Iran is the artisanal fleet consisting of dhow boats and speedboats using drift gillnets. The mesh size of