

Stock Assessment of Zobaiddy, *Pampus argenteus*, in the North of Persian Gulf

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Abstract

The project "Stock Assessment of Zobaiddy, *Pampus argenteus*, in the North of Persian Gulf" started in April 2003 and completed by the end of April 2006 as a cooperative research project to assess the valuable stock of zobaiddy shared between Kuwait and Iran in the North of Persian Gulf. The main objectives were to investigate and determine the basic biological parameters, the standing biomass, seasonal abundance, and the impact of regional fishery activities. These studies are necessary to recommend practical management policies and measures for long-term sustainability of the zobaiddy stock. The sampling of fisheries data (catch, effort, fish length distributions, and biological data) was started in May 2003 and ended December 2006. Monthly length frequencies data were collected from both the drift gill net and shrimp trawl fisheries. Age determination was based on otolith sectioning, polishing, etching, and staining method. The age groups ranged from 0 to 10 yrs. but the dominant age groups were 1-3 years and the estimated parameters for both sexes were $L_{\infty} = 32.0-36.0$ cm FL and $K = 0.26-0.30$ yr⁻¹, females grow faster than males. Sea survey on board of two dhow boats was carried out using swept area method. Higher abundance was always obtained in Kuwait Bay rather than the other areas surveyed in Kuwait and Khuzestan waters. The total estimated stock biomass in the surveyed areas varied from 42 t in January 2004 to 2,633 t in November 2004, while the Iranian biomass varied from as low as 19 t in October 2005 to 295 t in November 2003. The data indicated that Ras Al-Gaid, Bubiyan Island is the main nursery area in Kuwait waters, while Lifah, Busaif, and Bahraikan are important nursery areas in the Khuzestan waters. Kuwait Bay and Khor Musa are considered important spawning grounds and should be protected. Yield per recruit analysis showed that higher yield could be gained with increasing fish effort, which is not recommended under the present status of high exploitation rate. In contrast, virtual population analysis indicated that future catches will reduce if the fishery continues with present level fishing effort. A reduction of 50% would be required to maintain the present level of catches as well as to enhance the stock biomass. Formulation of a joint advisory management committee would be advisable approach to manage and monitor the zobaiddy stock in the region. This will need commitment from the three countries in the region for data collection on regular basis on length frequency, statistics, and biological data. Copepods with high occurrence of 64% - 88% is considered as the main item in the Pomfret fish, while jelly fish and other decapods crustaceans are considered as minor items. Observation of pre-flexion stage larvae of pampus genus among the specimens collected from Khuzestan coast water could be considered as an evidence for the spawning of this fish in this region. The occurrence of pampus larvae in Khuzestan coast during the months of June to October has been reported for several times. Examination of 101 specimens (38 from Kuwait, 63 from Iran) for molecular survey does not show any significant differences between Kuwait and

Iran water stocks for this fish, so it is possible to hypothesize a unit population for zobidy stock in Persian Gulf and Oman Sea as whole.

Key words: *Pampus argenteus*, Zobaidy, stock assessment, growth, Food, molecular study, Iran, Kuwait, Persian Gulf.