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Evaluation of the Necessity of Fishway Structures in the Design of Mared Dam and Shipping Locks (Abadan) on the Reproductive Migration Path of *Tenualosa ilisha*

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Abstract

The estuarine rivers are of great commercial and ecological importance in completing the reproductive cycle and the survival of migratory marine fish stocks. This study was conducted to investigate the presence and passage of marine upstream fish in the up-water of Karun River in order to investigate the necessity of constructing a fish passage in the Mard dam structure (30° 29′ 11.1″ N - 48° 17′ 20.3″ E). River fish monthly sampling was done using gill net and local fisher man. Among different reported fish, from physiological point of view, only *T. ilisha* needs to presence along the Bahmanshir, Arvandrud and Karun rivers from the estuary to upstream. Studies were conducted in the form of a questionnaire for 30 fishermen and river field operations. The results showed that during the study period, Sobur was the most abundant species in the region, accounting for 69% of the catch composition. In addition, the frequency of this fish shows an increasing trend from March (18 ± 1.2 numbers per cubic meter) to June (129 ± 4.1 numbers per cubic meter). CPUE index (166.7 ± 8.6 kg of fish per 100 meters of net per day) and tonnage of Sobur fish (18.337 ± 0.63 tons) caught in May has the maximum value. Based on the selling price of fishing for this fish during the study period, the income of local fishermen only from the catch of sobur migrant fish amounted to 6.54 billion tomans. Therefore, the construction of a fishway is absolutely necessary for the construction of the dam and the shipping lock of Mard Abadan. Based on the design prepared for the dam and Shipping Lock of the Mard structure, it appears that the dam structure itself have some parts that can be used as fish paths. Under normal conditions of water regime, during the year, side valves in the shipping lock with open water sea level could provide enough volume and velocity of water to stimulate swimming in *T. ilisha* as fishing path in Mared dam structure. Therefore, in order to protect this valuable fishery species and the local livelihood associated with it, it was suggested to the dam designers that fishway be installed and built in the structure of the Mard dam.

Keywords: Karun River, Reproductive migration, Shad fish, Shipping lock, survival

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