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River Ascending Mechanism Of Juvenile Seabass

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Recent surveys have revealed that juvenile temperate seabass Lateolabrax japonicus migrates into upper estuarine areas in early spring. However, the river ascending mechanism is insufficiently understood. In order to clarify the mechanism, hydrographic conditions and distribution of the juveniles were observed in early spring from 2009 to 2012 in the Yura River estuary, which is highly stratified due to the small tides. Freshwater occupies the estuary during winter, while seawater starts to intrude into the bottom layer of the river as a saltwedge in spring. Timings of river ascending were affected by temperature. There was a significant negative relationship between the mean ages of cohorts at their river ascending and mean temperature before ascending. Most of cohorts ascended the river around the effective cumulative temperature of ca. 500 ˚C. This implies that juveniles need a certain amount of cumulative temperature to start ascending. High temperature would lead to short preparation period for river ascending. It is considered that high temperature would lead to short period for metamorphosis, which makes juveniles possible to adjust different salinity environments. Distributions of juveniles in the river corresponded to the extents of the saltwedge intrusion in all four years, indicating that the saltwedge plays an important role for ascending of seabass juveniles.