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Full Papers

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Spawning ecology of Honmoroko, *Gnathopogon caerulescens*, in inlets of the Nishinoko lagoon, Lake Biwa

Takeshi Kikko, Haruo Okamoto, Muneji Ujiie, Daisuke Ishizaki, Takahiro Usuki,

Morihito Nemoto, Jin Saegusa,Yoshiaki Kai and Yasuhiro Fujioka

Abstract To clarify the reproductive ecology of the endangered cyprinid Honmoroko, *Gnathopogon caerulescens*, endemic to Lake Biwa, the occurrence of eggs in inlets, sex ratio and monthly changes in gonad somatic indices (GSI) were investigated in the Nishinoko lagoon, adjacent to Lake Biwa, from March to May, 2012. Eggs of Honmoroko were found on gravel and vegetation in two inlets, suggesting that not only the reed zone of Lake Biwa and its lagoons but also inlets of the lagoons are important spawning habitats of that species. The sex ratios of individuals collected in the two inlets were more male-biased (11.2–32.1:1) than that in the reed zone of the lagoon (1.5–2.7:1). The GSI of males gradually decreased as the breeding season progressed, those of females not showing any significant statistical changes, except for individuals collected around the reed zone and inlet in April. It was concluded that males remain in inlets and the reed zone during spawning, whereas females migrate to the inlets only for spawning, subsequently returning to the reed zone until the next spawning session.

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Viable periods of fertilizability of eggs and sperm of Japanese medaka, *Oryzias latipes*

Yukari Koike and Yasunori Koya

Abstract In order to clarify the period during which eggs and sperm of *Oryzias latipes* remained viable following release into fresh water, the fertilization rate of eggs over time following immersion in fresh water, was investigated, in addition to sperm motility. Fertilizability of the eggs persisted for more than 6 minutes after immersion, but was lost

after more than 10 minutes in some cases. Sperm retained motility for about 2–3 minutes in fresh water, being affected by osmolality; motility was high in 100–300 mOsm/kg, but absent in 700 mOsm/kg. These results suggested that *O. latipes* eggs can be fertilized for up to 6 minutes following spawning in fresh water, whereas sperm remain viable for only 2–3 minutes following released.

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Reproductive population dynamics of the Far Eastern Catfish, *Silurus asotus* estimated from mark and recapture and Bayesian modeling

Toshinori Funao, Koh-ichi Takakura, Takayoshi Nishida and Hiroichi Sawada

Abstract Owing to growing concerns for the conservation of the Far Eastern Catfish, *Silurus asotus*, due to declining numbers of the species resulting from a recent reduction in spawning sites, the dynamics of a reproductive population were investigated in Imagawa creek on the east shore of Lake Biwa Hikone City, Shiga Prefecture, central Japan. The frequency of ascent into the creek for reproduction was determined from a mark-release-recapture method and construction of a Bayesian model. Field observations and the model analysis revealed the sex ratio of the population to be clearly female-biased. Although the more frequent upstream migration of males compared with females was not statistically significant, it was suggestive of more frequent reproductive activity in males. These findings differed from those of a previous study on the west shore of Lake Biwa, in which large, site-related variations in the reproductive ecology *S. asotus* had been suggested. The frequent migration of males observed in the present study may be ascribed to the presence of spawning females even in the late reproductive season.

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Short Reports

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First Japanese record of the eyelight fish *Photoblepharon palpebratum* from Okinawa Island

Keita Koeda, Takuma Fujii and Tetsuo Yoshino

Abstract A single specimen of *Photoblepharon palpebratum* (Boddaert, 1781), formerly limited to the tropical western Pacific, was collected from Okinawa Island, Japan at a depth of 1 m. The specimen was characterized by the following combination of characters: single dorsal fin with 3 spines; a black shutter lifting to cover the subocular organ; a large white spot on the dorsal corner of the opercle; pelvic-fin rays I, 6. The tiny first dorsal-fin spine was identified from a radiograph. The specimen represents the first record of *P. palpebratum* from Japan and is the northernmost record of the species. The specimen produced a total of 273 eggs, but those were probably postmaturity.

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