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Spawning conditions of Japanese anchovy *Engraulis japonicus* (Engraulidae) in the southeastern part of Sakhalin Gulf (the Sea of Okhotsk)

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Abstract. This paper presents the results of studies of the spawning conditions of Japanese anchovy *Engraulis japonicus* in the southeastern part of Sakhalin Gulf at the end of August 2011. The development of eggs and larvae occurred over a wide range of temperature and salinity. Nevertheless, during spawning, anchovy avoided the areas of the intrusion of cold waters of the Sea of Okhotsk, strongly desalinated Amur waters and the areas of coastal runoff with turbidity greater than 7 FTU and salinity less than 10 ‰. Mass spawning occurred within a limited depth range of 13–15 m with an average temperature of 9.9 °C throughout the whole layer and 15.3 °C at the surface, salinity of 22.1 and 19.3 ‰ and water turbidity of 1.9 and 2.3 FTU, respectively. High abundance of eggs – up to 657 eggs/m^3 in the water column and up to 223 eggs/m^3 in the surface layer – were formed in local areas with high productivity of planktonic and benthic communities. The area of maximum concentration of eggs coincided with the deepening of waters with temperatures of 8–10 ºC and higher up to the 10 m layer. In this layer, stable oxygen content of 8–10 mg/l and low turbidity of up to 2 FTU were observed. The proportion of non-viable eggs was low, from 0.7 % in the surface layer to 4.4 % in the water column. The total duration of spawning in Sakhalin Gulf was assumed to be 1.5 months.

Keywords:
Sakhalin Gulf, Japanese anchovy, eggs, larvae, abundance, distribution, environmental factors

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