

# A RECORD OF PINK SALMON, *ONCORHYNCHUS GORBUSCHA* (ACTINOPTERYGII, SALMONIFORMES, SALMONIDAE), IN THE REVELVA RIVER, HORNSUND AREA (SW SPITSBERGEN)

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**Abstract.** In 2007–2008 the pink salmon, *Oncorhynchus gorbuscha*, was observed to attempt spawning migration up the Revelva River. The possibility of natural spawning of this alien species in rivers and lakes of Spitsbergen, as well as the risk of its natural hybridization with the native Arctic charr, *Salvelinus alpinus*, are discussed.

**Keywords:** Spitsbergen, introduction, pink salmon, alien fish, non-indigenous fish

Fish diversity of the seas surrounding the Svalbard Archipelago (Spitsbergen) is small; this pertains especially to the coastal waters and fjords (Hofstein 1919, Hognestadt 1963, Andriâšev 1954, Matišev 1986). Węśławski and Kuliński (1989) report only 14 fish species from the Hornsund Fjord.

The native salmonids (Salmonidae) in the region are represented only by the Arctic charr, *Salvelinus alpinus*, (see: Radziun 1993, Hansen and Overrein 2000). According to Gullestad (1971) and Węśławski et al. (1990) the pink salmon (*Oncorhynchus gorbuscha*) is also sporadically encountered in the coastal waters of the West Spitsbergen.

This species is native to the northern Pacific basin in Russia, Japan, North China, and North America. During the period between 1956 and 1978, over 200 million eggs were shipped from the Sakhalin Islands to the Kola Peninsula (Murmansk region) and the White Sea. Adults are known to return regularly to the Tenojoki and Näättämojoki Rivers (Finland, Norway) (Kottelat and Freyhof 2007). The pink salmon is also occasionally found in the North Sea and north-western Atlantic as a result of introduction to the American Great Lakes, Labrador, Newfoundland and Nova Scotia (Scott and Crossman 1973), or as strayers from the White Sea.

In 2007 and 2008 a few individuals of the species were observed in the mouth section (ca. 100 m) of the Revelva River (lat 77°00'N, long 15°38'E; Hornsund region, SW Spitsbergen). Together with the Arctic charr, they were attempting to migrate upstream from the sea. Two specimens

were caught, with total lengths of 533 mm (16 Aug. 2007) and 561 mm (3 Sept. 2008).

The first one was male (Fig.1), with well developed secondary sexual characters, such as clearly marked hump, enlarged head, and jaws with large teeth. The testes were well developed. Coloration was still marine—the dorsal surface steel blue, the sides silver with a faint pink hue. The back, adipose fin and both lobes of the caudal fin had black spots. The second fish was a female (Fig. 2), of pale pink colour with numerous brown streaks running dorsoventrally. This indicates that the fish had already spent some time in freshwater. The specimen has been deposited at the Museum of Natural History, Wrocław University (MNHU-FC 082 993).

The state of the gonads and the changes in body proportions and coloration (into spawning mode) of the individuals migrating upstream indicate a spawning attempt. Probably the numbers of the pink salmon in the waters surrounding Spitsbergen are too small to form spawning schools and reproduce naturally. This may be the reason why no juvenile stages of the species were ever noted among the fry of Arctic charr in the Revelva River and Lake Revvatnet (Witkowski et al. 2008). However, spawning might be expected in some western regions of the Svalbard Archipelago. Because of the small numbers of pink salmon, the presence of its hybrids with the autochthonous Arctic charr is likely, since species of the genera *Salvelinus* and *Oncorhynchus* are capable of hybridization (Berst et al. 1980, Dobosz and Goryczko 1988). The hybridization may be favoured by the fact that the two

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**Figs. 1–2.** Pink salmon, *Oncorhynchus gorbuscha*, from the Revelva River; **Fig. 1.** Male (photo Piotr Głowacki); **Fig. 2.** Female (photo Witold Kaszkin)

species spawn at similar times and in similar habitats (Scott and Crossman 1973, Smirnov 1975).

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