Monitoring on the Rhine with the NEDAP system, fish tagging.

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Abstract

Downstream migration of 2+ salmon smolts (Salmo salar) was studied in the rivers Rhine and Meuse, for several years by using the NEDAP Trail system. Results of the studies will be presented. Special attention will be paid on the results of the experiments in the river Meuse where in the period 2009-2013. Smolts (n =897) with implanted NEDAP transponders, were released at different locations in the lower part of the Meuse in Belgium (Berwijn, Moelingen) and the upper part of the Meuse in the Netherlands (Stevensweert, Linne), and tracked by NEDAP Trail stations at 41 fixed locations distributed along the Meuse and the Berwijn to the North sea (distance more than 300 km). Over the period2009-2013 70% (n = 628) of the smolts were detected. Numbers of smolts reaching the North sea varied per year, with a minimum of 0% and a maximum of 15% of the detected fish. The route prevailingly used to migrated to sea by way of the Haringvliet. Duration of smolt migration was mostly less than one month, with average migration speeds always below 1.2 m/s. The influence of the hydro power station (HPS) Linne on the migration was examined. Yearly mortality per km of smolts, over the river stretch Linne – Lith (130 km) turned out to be higher especially in a short distance downstream of the HPS, indicating a vulnerability of the species which is higher for passing the hydropower station than for passing the weir. Also attention was paid on losses by predation of Cormorants.