

Comparison of salmonid nursery habitat in the Sandvik watercourse – master thesis, NMBU

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The Sandvik watercourse is in the south-eastern part of Viken county and an important sea trout *Salmo trutta* and atlantic salmon *Salmo salar* carrying watercourse in the inner Oslofjord. The watercourse is used by naturally migrating salmonids, but the constant high contribution of salmonids to the Oslofjord is possible due to continuous activity in the Hamang hatchery since 1857. For this master thesis the spawning and nursery habitat of salmonids was compared between the rivers Lomma and Isielva and the different river stretches. Due to damming parts of the Sandvik watercourse aren't accessible for migrating salmonid. The river stretches upstream the dams (upper) in the watercourse are therefore used as nursery habitat for young salmonids from the Hamang hatchery. Every year thousands of young salmonids are released into the river stretches in the Sandvik watercourse, which are no longer accessible for the naturally migrating and spawning salmonids ².

The fieldwork for this study was conducted from October 6th, 2019 to November 8th, 2019. To compare the habitat of the young salmonids in the upper and lower (downstream the dams)

located river stretches, 10 sample station in the watercourse were chosen, six stations in the upper stretches and four in the lower river stretches. At each station, habitat variables were logged, electrofishing was conducted, and three macroinvertebrate samples were taken by using the “kick-sampling method”. Since macroinvertebrates are the main food source for young salmonids and the composition and number of macroinvertebrates can have a significant effect on salmonids, the macroinvertebrate community was mapped out for the sampled stations ¹.

The macroinvertebrates in the samples were classified at the laboratory at NMBU. The collected macroinvertebrate data will be used to compare the macroinvertebrate composition between the stations in the upper and lower stretches and to look



Figure 2: Stonefly larvae
Protonemura meyeri



Figure 1: Young sea trout



Figure 3: A sample station in Sandvik watercourse

for possible effects of the logged habitat variables and the total density of salmonids. The total abundance of macroinvertebrates will also be used as a predictor for total salmonid density.

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References

¹. Elliott, J. M. (1994). Quantitative Ecology and the Brown Trout: Oxford University Press.

². Lamberg, A., Strand R. (2019). Videoovervåking av sjørret og laks i Sandvikselva i Bærum kommune i 2011 - 2018. SNA-rapport, 03/2019: 36.