

THE GROWTH AND SURVIVAL OF SIGNAL CRAYFISH (*PACIFASTACUS LENIUSCULUS* DANA) JUVENILES IN COLD NORTHERN CONDITIONS

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ABSTRACT

The signal crayfish (*Pacifastacus leniusculus*), an introduced species in Europe, inhabit the northernmost limit of its distribution in Finland. Although the distribution of the signal crayfish is until present limited to Southern Finland, we can expect it to expand further north, thus increasing the pressure on the native noble crayfish (*Astacus astacus*). It is not known how far in the north the signal crayfish can form exploitable populations. Earlier studies show that temperature is the key factor in the reproduction of the signal crayfish. We compared the effects of temperature changes on the growth and survival of the stage 2 signal juveniles in their first summer in Southern (Lake Saimaa 61°04N, 28°16E) and Northern Finland (River Kemijoki 66°22N, 26°41E) in laboratory conditions. The mean length of the growing season in the two test groups of Saimaa was 107 days (1 789 day degrees) and in the group of Kemijoki, 67 days (1 005 day degrees).. After 16 weeks' test period the juveniles of the Saimaa groups weighed on average twice what those of the Kemijoki group. The survival rates of the groups were 55% and 62% respectively. Even though the differences in growth were significant and thus indicative, future studies are required on how small juveniles in the North can survive the following, long winter season.

KEYWORDS: Pacifastacus, signal crayfish, growth, survival, temperature, northern distribution
