

DETERMINATION OF THE RATE OF GROWTH OF PACIFASTACUS LENIUSCULUS IN LAKE POBŁĘDZIE, USING POLYMODAL LENGTH FREQUENCY DISTRIBUTION ANALYSIS



This study estimated the rate of growth of *Pacifastacus leniusculus* using the size-frequency data analysis in Lake Pobłędzie NE Poland. A sample of 1,342 individuals (645 males and 697 females) was collected with baited traps in late September 2002. The age composition of the crayfish population was determined by the Macdonald-Pitcher mixture analysis (computer program MIX. 3.11a) for both sexes separately. Six age groups of males and five of females were identified. The rate of growth was described with a polynomial growth model. The results showed relatively fast increases of both length and weight of *Pacifastacus leniusculus* in Lake Pobłędzie and no difference in growth rates between males and females. It is concluded from this study that polymodal length-frequency distribution analysis can be successfully applied to data on crayfish catches even if juveniles were not completely covered by the sampling method applied. The sampling size needs, however, to be large enough. Further, advantages of applying this analysis are the easy data collected and processing making the method suitable for large data sets already existing, while a disadvantage is the problem of separating the early age classes. Comparison of growth rates among signal crayfish

populations suggested a relative fast growth of *Pacifastacus leniusculus* in Lake Pobłędzie. This population had a faster apparent growth rate than those reported for other crayfish populations from Poland.

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