



Where have all the females gone? Male biased sex-ratio in *Arctodiaptomus alpinus* (Imhof, 1885) in alpine lakes

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In populations with both males and females sex-ratio is one of the driving forces of population dynamics. It influences fecundity, inbreeding and social interactions. Sex-ratio is affected by several biotic and abiotic factors, either by selective killing of one sex or by inducing migrations. In alpine lakes of Triglav National Park, Slovenia, an extremely male biased sex-ratio in *Arctodiaptomus alpinus* (Imhof, 1885) was regularly observed since 1992. We analysed population dynamics and sex-ratio of *A. alpinus* in three alpine lakes (Jezero v Ledvicah, Rjavo jezero and Zgornje Kriško jezero) from Triglav National Park in Slovenia. In addition to seasonal dynamics we also researched long-term changes in sex-ratio (in a period of 11 years from autumn samples) as a result of increased air-temperature, and zooplankton diurnal vertical migrations. Adults of both sexes were found to appear at the same time in the water column with males prevailing throughout the season. A similar trend was found in copepodites CV. The percent of adult females began increasing in late summer, when there were no more copepodites and recruitment from copepodites CV to adults stopped, while male mortality increased. All cohorts of *A. alpinus* were found to perform diurnal vertical migrations. Both adult and CV females remained close to the bottom during the day and migrated vertically during the night. Results of the long-term study show no changes in sex-ratio in autumn.