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Abstract book

"Shaping aquatic science for the future we envision"

Population structure and dynamics of two co-occurring invasive alien crayfish species in a small subalpine lake in Trentino: implications for invasive alien species management

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The dataset from two eradication campaigns of two invasive crayfish species, *Procambarus clarkii* and *Faxonius limosus*, co-occurring from 2023 in the ZSP "Lago Costa", a small subalpine lake in Trentino, was analysed to estimate relevant life parameters, the population structure and growth dynamics, to assess the efficiency of the eradication and the effect of interspecific interactions. Trapping was conducted in 2023 and 2024; captures of *P. clarkii* increased in 2024, while those of *F. limosus* decreased, likely due to competitive interactions with *P. clarkii*. The 2023 campaign showed the spatial expansion of *P. clarkii* from its likely introduction point; from 2023 to 2024 the great competitive ability of this species forced *F. limosus* towards refuge areas. The population of *P. clarkii* had a complex population structure, with 4-5 size classes, suggesting effective reproduction and annual recruitment of new generations. Captured males of *F. limosus* were distributed mainly in 2-3 size classes, females in 4-5 five classes. Longevity reached a maximum of 9.4 years for male *P. clarkii* (2023), and 8.6 for female *F. limosus* (2024); values were always higher than those recorded in the literature. The low Natural Mortality values suggest a substantial role of the mortality caused by the eradication campaigns: the NM was 14% for *P. clarkii* and 10% for *F. limosus*, the remaining 86% and 90% of the total mortality was due to trapping.