



**Tiberti Rocco, Achaz von Hardenberg and Giuseppe Bogliani. 2014. Ecological impact of introduced fish in high altitude lakes: a case of study from the European Alps. *Hydrobiologia* 724:1-19.**

Fish introduction is a major threat to alpine lake biota leading to the loss of native species and to the degeneration of natural food-webs. This study provides an extensive investigation on the impact of the introduced fish *Salvelinus fontinalis* on the native communities of alpine lakes in the Gran Paradiso National Park. We compared the macroinvertebrate and zooplankton communities of six stocked and nine fishless lakes with a repeated sampling approach during the summers 2006–2009. The impact of fish presence on alpine lake fauna is often mediated by the strong seasonality governing these ecosystems, and it dramatically affects the faunal assemblage of littoral macroinvertebrates and the size, structure, and composition of the pelagic zooplankton community with a strong selective predation of the more visible taxa. Direct ecological impacts include a decrease or extinction of non-burrower macroinvertebrates and of large zooplankton species, while small zooplankton species and burrower macroinvertebrates were indirectly advantaged by fish presence. Due to the existence of a compensation between rotifers and crustaceans, fish presence does not affect total zooplankton biomass and diversity even if fish are a factor of ecological exclusion for large crustaceans. These compensatory mechanisms are a key process surrounding the impact of introduced fish in alpine lakes.