

Are the effects of an invasive crayfish on lake littoral macroinvertebrate communities consistent over time?



Management of invasive species requires assessment of their effects on recipient ecosystems. However, impact assessment of invasive species commonly lacks a long-term perspective which can potentially lead to false conclusions. We examined the effects of the invasive signal crayfish (*Pacifastacus leniusculus* Dana) on the stony littoral macroinvertebrate communities of a large boreal lake and assessed the extent to which the patterns observed in previous short-term studies were stable over time. We used temporal macroinvertebrate data collected in five consecutive years from a site with a well-established crayfish population, a site with no crayfish and a site where crayfish had been recently introduced. Our results revealed that signal crayfish had temporally rather consistent negative effects on the benthic macroinvertebrate assemblages but that the effects might be limited to certain taxa, in particular Gastropoda and Coleoptera. We also observed increases in Gastropoda density and taxa richness following a decline in crayfish density, indicating that the recovery of invertebrate assemblages might be fast. Hence, negative

effects on benthic macroinvertebrates can likely be minimized by effective control of the signal crayfish population.

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