

Comparison of invertebrate fauna above and below hydroelectric dams

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Abstract:

Invertebrates are fundamental for ecosystems and the impacts of humans on them are immense, especially in freshwater systems. Exactly how immense the effects are, is often unclear. This study has two goals, a) investigating whether hydroelectric dams in Laxárdalur affect the macro-invertebrate fauna in the river Laxá, in Þingeyjarsýsla and b) examining the changes of invertebrates with regards to abundance and species composition over a time period of one year. Invertebrates were collected in a driftnet once a month for a year, above and below the dams in river Laxá and stored in 70% ethanol. The invertebrates were categorized and counted in our laboratory under a stereomicroscope. Current velocity was measured at three different locations at the inflow of the driftnet, allowing estimation of the volume of water flowing through. Previous studies have not provided clear data on how hydroelectric dams affect invertebrates and despite 70% of all produced electricity in Iceland comes from dams, no studies have been performed on this topic in Iceland. The macro-invertebrate fauna is not expected to differ much below and above the dam, but due to annual changes in temperature and light exposure more biodiversity and animal abundance is expected over the summer months.