**Mighty mussels: how invasive bivalves re-engineered nutrient and energy cycling in a large lake, turning it inside-out.**

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Biological invasions can have dramatic effects on many ecosystem characteristics, including the distribution of nutrients, energy and productivity in a system. The establishment of dreissenid mussels in North American lakes has been associated with large ecological changes, including reductions of biological productivity in offshore waters and increased productivity in littoral areas. Working in Lake Simcoe, a large lake in Ontario, my collaborators and I performed a series of studies designed to understand the mechanisms that enable dreissenids to redirect productivity from the pelagic realm to the nearshore. We show how, by changing nutrient cycling patterns, resource availability, benthic community structure and energy flow, dreissenids stimulate littoral productivity at the expense of the offshore, turning invaded lake ecosystems “inside-out”.