

Unionid mussels – our subtly beautiful largest invertebrate animals!

Before European settlement, long-lived native Unionid Mussels were the dominant filter-feeding organisms in Ontario waters, often covering the bottom at densities of hundreds per square metre, with surprising numbers of species in a single bed. Their filtering kept the water clear, and the digging action of their feet kept sediments oxygenated. They have long been declining, due to impoundments, sedimentation, & pollution. Introduced European Zebra Mussels are eliminating entire species & faunas by smothering & starvation. While several species are officially (and many more actually) “at risk,” Unionids tend to be ignored in environmental assessments where officially *At Risk* species aren't already known.



Because of their constant filtering, Unionids are the heavy-duty in-stream providers of "water quality," and unlike fish, they can't get out of the way and then quickly swim back to recolonize a site. Stream projects should avoid disturbing the streambed where they're abundant, since the mussels mature slowly, and mature individuals can keep providing improved water quality for several decades. Water level fluctuations in impoundments can make vast areas of the bottom behind dams uninhabitable.

To become the local unionid expert, search shores & bottoms of streams, and shores & shallows of lakes, concentrating on clear-water habitats and on riffles, and especially on streams right below lake outlets, where phytoplanktonic food from the still water flows like a perpetual buffet. Some species are wedged into the mucky banks of streams. Muskrats accumulate shell piles beside stumps and rocks on the bank, which you'll find easily once you begin to think like a Muskrat. Flood waters concentrate shells at the foot of bars, or in eddies. It's important to examine lots of animals and collect lots of shells, because many species are superficially hard to tell apart and many are rare. Since you can collect dead shells without harming the populations, it's possible to gather material documentation of the occurrence of species, and their variation.

We've prepared a datasheet - <http://pinicola.ca/unio/uniosheet.pdf> - that observers can use to describe the detailed circumstances in which they find shells, but date and latitude & longitude, or a verbal description from which lat/long can be retrieved from google maps, suffice to document distribution. Gather a common plastic grocery bag full of shells and send them to us. We'll identify the shells, see them into a museum collection, and send an account of the sample to you (while we don't charge of this service, we're not externally funded, and donations are appreciated). You can also download our identification manual at http://pinicola.ca/invert_Tay.pdf

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Bishops Mills Natural History Centre - <http://pinicola.ca/bmnhc.htm>

Thirty Years Later Expedition - <http://fragileinheritance.org/projects/thirty/thirtyintro.htm>

Longterm ecological monitoring - <http://fragileinheritance.org/>

Daily Paintings - <http://karstaddailypaintings.blogspot.com/> - Unionid page <http://pinicola.ca/unio/>
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