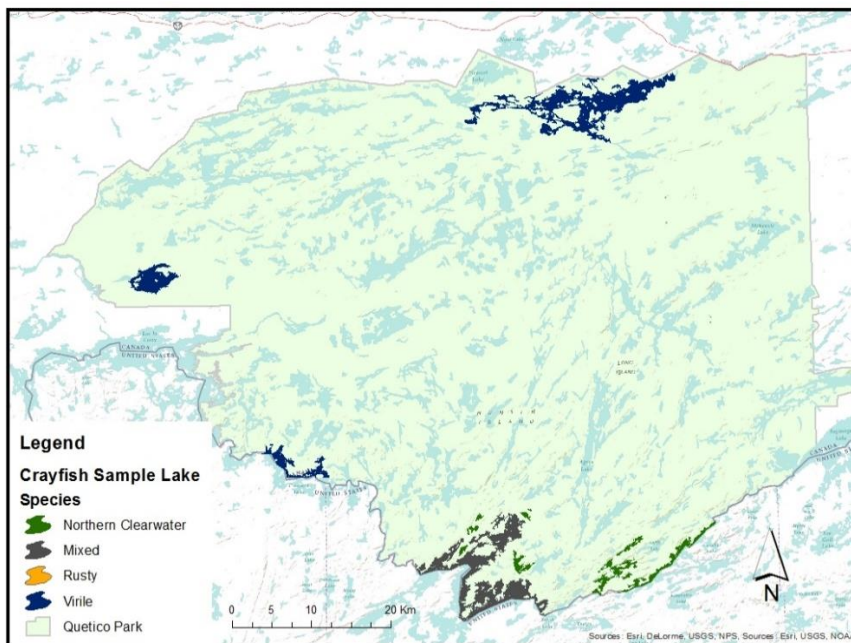


2014-2017: Crayfish Monitoring Summary

Quetico's native crayfish are getting new neighbours. Historically, Quetico Provincial Park has been home to only the Virile Crayfish. These crustaceans are around 6 cm long and eat everything from aquatic vegetation and algae to fish eggs, while also being an important food source for fish including bass and sunfish. However, Northern Clearwater Crayfish and Rusty Crayfish, non-native species that were first found in the southern Park lakes in the early nineties, have the potential to completely replace populations of native crayfish and impact habitat and food sources for other species.

Between 2014 and 2017 the Quetico Foundation Summer Student Research Crews and Ontario Park Staff conducted a multi-lake survey of crayfish populations in an effort to understand more about the populations of native and non-native crayfish; where Northern Clearwater and Rusty Crayfish are going, and what their arrival might mean for Quetico's lakes and rivers. Over four summers, they captured 3,173 crayfish in 17 lakes using baited modified minnow traps.



Trapping Crayfish

What did they find?

1) Crayfish are on the move.

Even without human assistance, crayfish populations can expand 2 km/year. Invasive crayfish were found to move up streams to new lakes, regardless of water flow and length or barriers such as waterfalls! While Northern Clearwater Crayfish were found in all of the lakes surveyed along the southern border of the Park, Rusty Crayfish were only caught in Sucker and Basswood Lake, the same lakes that they had been observed in the early nineties.

2) Crayfish have to keep an eye out for predators.

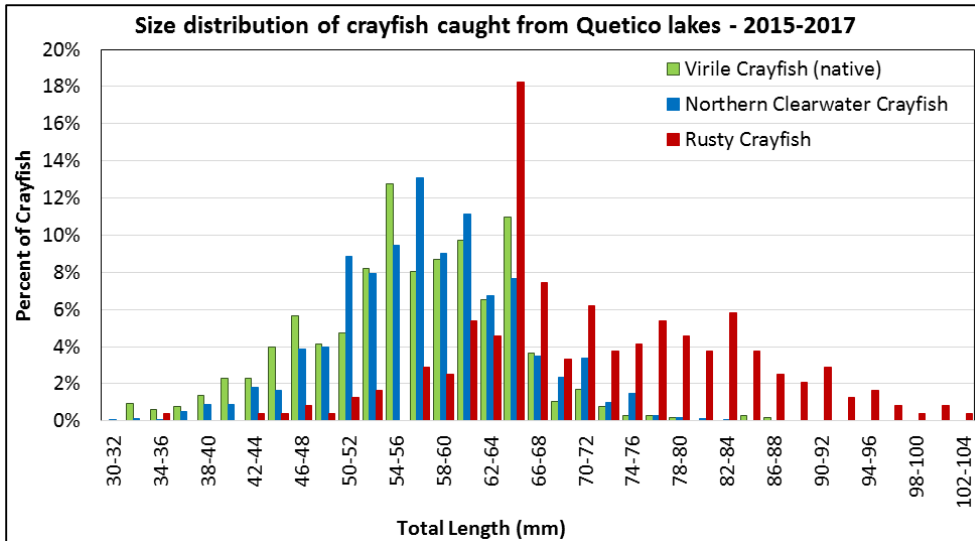
Hungry smallmouth and rock bass appear to be keeping crayfish populations in check, especially for native Virile Crayfish and Northern Clearwater Crayfish. In lakes without crayfish specialist predators, traps caught 8 crayfish on average while lakes containing bass had an average of only 3 crayfish per trap.

3) Geology may influence crayfish populations.

Crayfish don't have an internal skeletal system, but they do need calcium to maintain and replace their hard outer shell (exoskeleton) when growing. Rusty crayfish have been found to require fairly high levels of calcium which in Quetico, are only found in lakes lying above or immediately downstream from calcium-rich volcanic bedrock found in the southeast area of the park. It is not known why Rusty Crayfish have not migrated into these lakes. However, if calcium is limiting their movement, it could act as an excellent predictor of their future range.

4) Lake communities are changing.

Northern Clearwater Crayfish are replacing Virile Crayfish in Quetico's lakes. However, these species are similar in size and population densities. Rusty Crayfish on the other hand, are larger and were found in very high densities in the southern portion of Basswood Lake. If they do expand their range, it might be harder for predators to eat them and they might over-eat aquatic vegetation cover affecting habitat for fish and other species.



Northern Clearwater Crayfish



Rusty Crayfish



Virile Crayfish

For more information, see the full report "Status of Native and Invasive Crayfish: Quetico Provincial Park (Adair and Jackson 2017)" available from Quetico Park Biologist, Brian Jackson at brian.w.jackson@ontario.ca