

Genetic integrity takes stock: the impacts of stocking on sport fish populations

Sport fishing is an important activity associated with significant economic development in several rural Canadian communities. Stocking lakes and rivers with fish is thought to help with the management and sustainability of sport fisheries by reducing the burden on native fish populations. While this practice is used frequently across Canada, we have little information on the ecological and evolutionary consequences of stocking. Now new research, led by professors Dany Garant (University of Sherbrooke) and Louis Bernatchez (Laval University) and supported by NSERC discovery, is investigating the impacts of stocking on native fish populations and what this means for the management of sport fisheries in Canada.



Researchers recently analyzed DNA fingerprints from over 2000 brook trout (*Salvelinus fontinalis*) in 24 lakes and rivers from popular Quebec parks, Portneuf and Mastigouche. Their results showed that in heavily stocked lakes, hybridization between stocked and wild trout is significantly higher, contributing to what researchers referred to, 'compromised genetic integrity' of native trout. The concern, says Garant, is that in these instances of high levels of stocking and interbreeding between wild and domestic fish may cause the rapid loss of local adaptations in future generations, adaptations that were typically associated with the long term survival or « evolutionary potential » of wild fish in lake and river environments. Their results provide important insight for managers looking for guidance with respect to protecting these valuable resources and providing sportfishing opportunities possible in Canada.

To learn more:

Marie A.D., L. Bernatchez, and D. Garant. 2010. Loss of genetic integrity correlates with stocking intensity in brook charr (*Salvelinus fontinalis*). *Molecular Ecology*. 19 (10): 2025-2037.

And :

<http://pages.usherbrooke.ca/dgarant/>

<http://www2.bio.ulaval.ca/louisbernatchez/>