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**Adaptation or extirpation: will small populations persist in the face of
environmental change?**

LE JEUDI 2 DECEMBRE 2021 À 12 H 30

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The study of adaptive potential in small populations is paramount to understanding the limits of species' responses to environmental change, and to providing remedies to endangered species challenges. And yet we are only just beginning to learn about adaptive potential in wild populations of many species. Here, I synthesize my lab's ongoing research program relating population size, genetic variation and responses to environmental change among a series of isolated populations of brook trout from Cape Race, Newfoundland, a fish of socio-economic interest. These populations share a common ancestor, inhabit a small area, exhibit tremendous trait differentiation, and cover a range of effective population sizes (< 50 to > 500) relevant to key questions in conservation genetics. Our work suggests that small, low-diversity populations of some species can be important sources of variation and may be capable of maintaining long-term fitness in, and ultimately persisting and adapting to, changing natural environments. Several explanations may explain why small populations of some species might overcome some of the maladaptive effects of small population size. If we can determine which taxonomic groups, species (and populations) this applies to, conservation initiatives might significantly improve how they prioritize their efforts and limited resources. I will finish the talk by touching on other research avenues where my lab is applying genetic and evolutionary principles to fish and wildlife conservation.

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