

Landscape and ecological influences on Arctic Charr migrations in Nunavut

Sarah Arnold¹, Ross Tallman^{1,2}

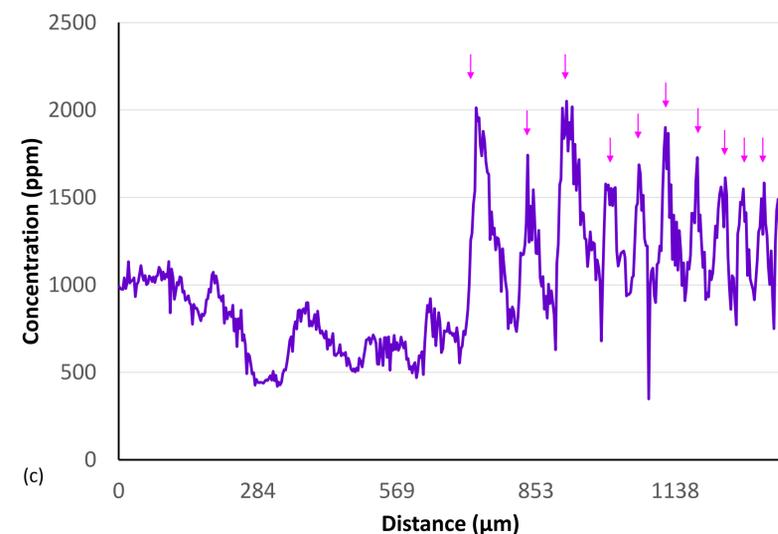
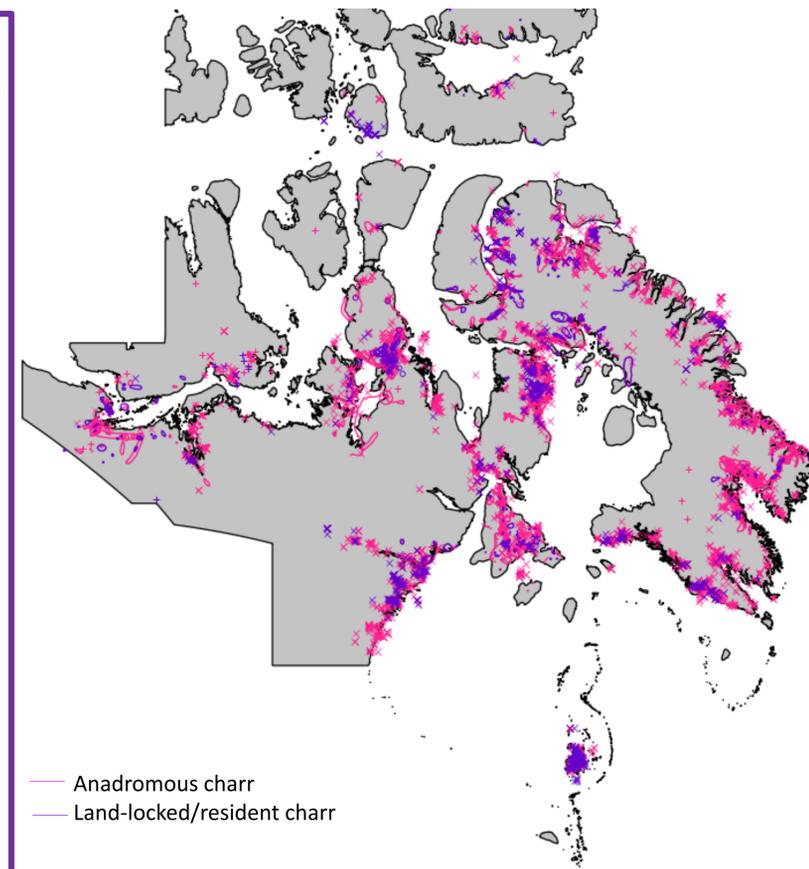
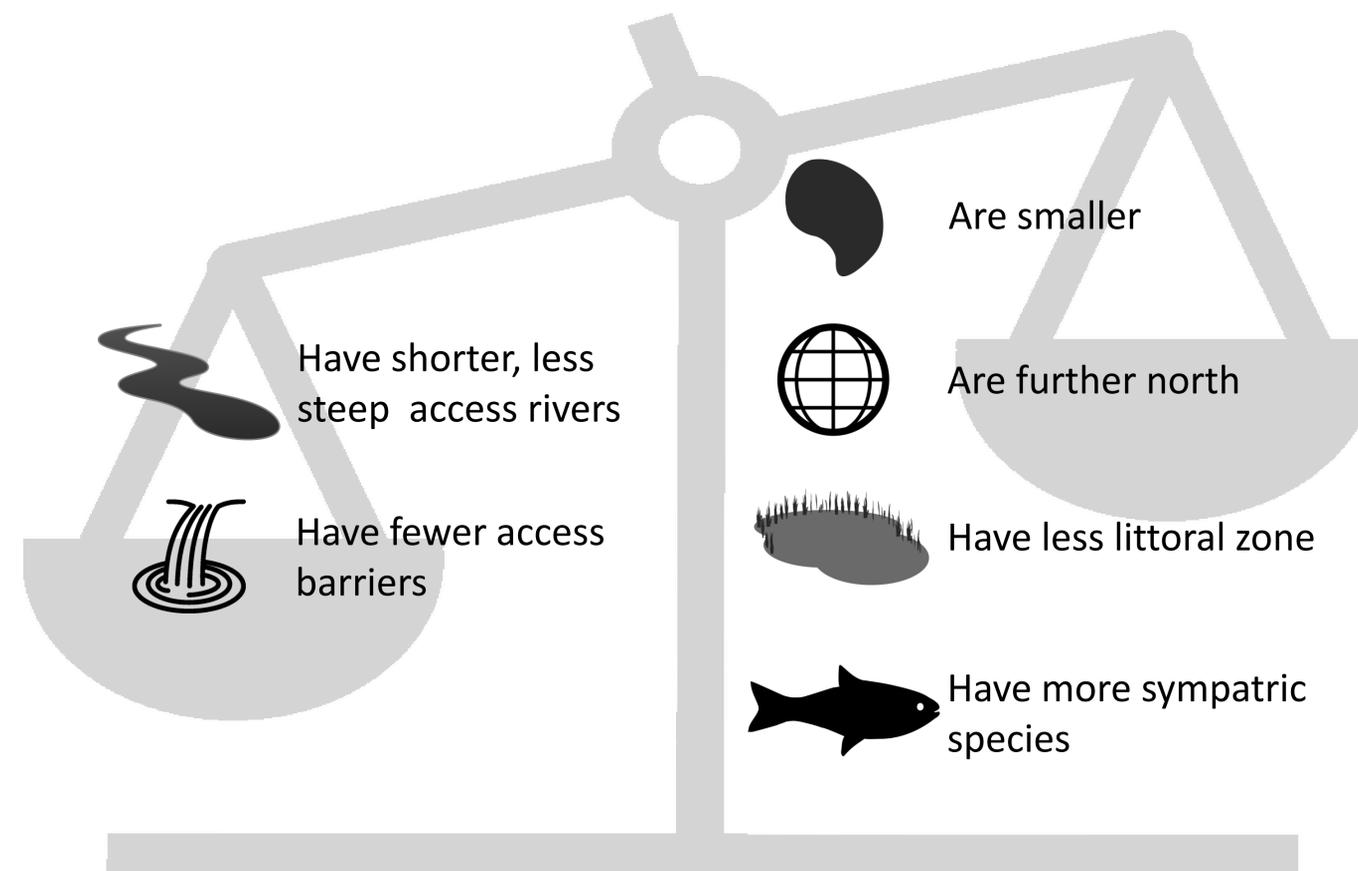
arnolds4@myumanitoba.ca; ¹University of Manitoba ²Fisheries and Oceans Canada

Background

- Fish maximise fitness by balancing the benefits of moving to more suitable habitat with the costs and risks of migrating¹. Landscape and ecological factors affect these costs and benefits by influencing habitat availability, suitability, and connectivity.
- Arctic Charr (*Salvelinus alpinus*) exhibits diverse migratory life histories across Nunavut. Previous studies have investigated charr migratory choices in specific areas^{2,3,4}, but not at a landscape scale.

Methods

- Determine anadromous and resident charr distributions from Inuit knowledge⁵
- Calculate age-at-first-migration from otolith Sr profiles for 9 populations^{6,7}
- Compare to landscape and ecological variables^{3,8,9}. Anadromy is expected to be more common in lakes that:



Sample from Pangnirtung study lake: (a) extracted otoliths
(b) sectioned otolith, post-laser ablation
(c) strontium profile showing 10 marine migrations (arrows)

Outcomes

- Understanding Arctic Charr migration patterns and environmental drivers provides insight on potential population reactions to climate changes or anthropogenic impacts
- Results will inform the management of a widespread, culturally and economically important fishery, as well as coastal planning and impact assessment

References:

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