Background

- Fish maximise fitness by balancing the benefits of moving to more suitable habitat with the costs and risks of migrating\(^1\). 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 knowledge\(^5\)
- 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:
  - Have shorter, less steep access rivers
  - Have fewer access barriers
  - Are further north
  - Have less littoral zone
  - Have more sympatric species
  - Are smaller

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: