

# Characterizing Brown Trout (*Salmo trutta*) Movement in the Margaree River, Cape Breton Using Radio Telemetry

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## Introduction

Atlantic salmon (*Salmo salar*) native to Atlantic Canada<sup>[1]</sup>, with declining populations<sup>[2-4]</sup>

Brown trout (*Salmo trutta*) stocked in Nova Scotia, and later colonized Margaree River<sup>[1]</sup>

Mechanisms to minimize interference present where both species native<sup>[5-10]</sup>, but may not be in Margaree salmon<sup>[11]</sup>

Little knowledge of interspecific interactions or trout adaptations in Margaree, could complicate Atlantic salmon conservation<sup>[12]</sup>

**Objective:** characterize brown trout movement during spawning migration to assess potential interference with Atlantic salmon

## Methods



1. Fly fishing in lower river

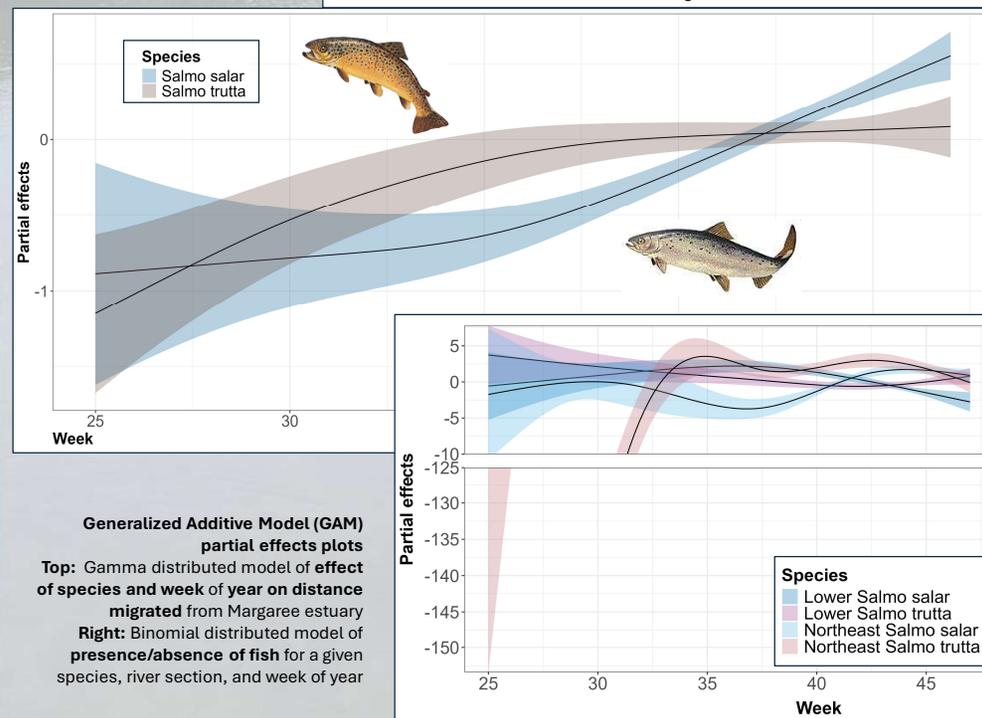
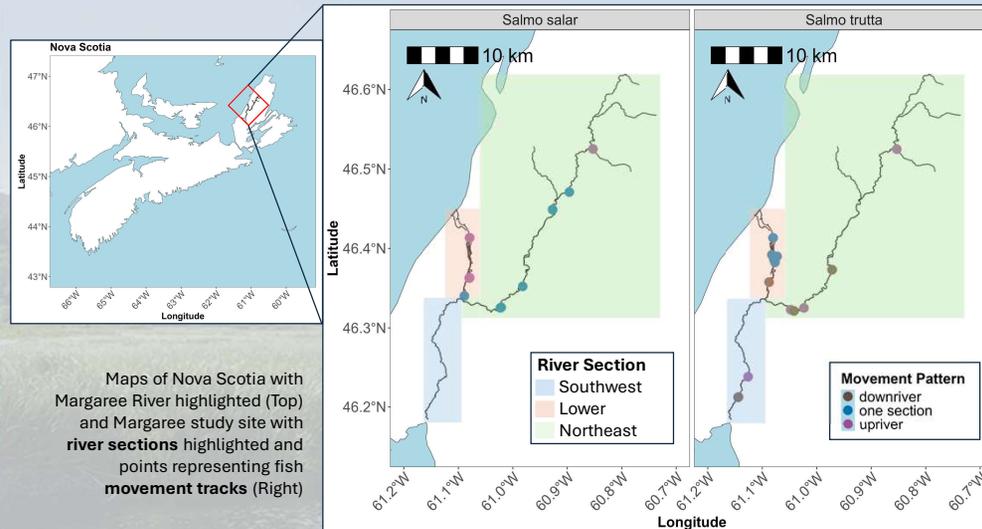


2. Radio tag attachment<sup>[13]</sup>



3. Radio tracking by vehicle and on foot

## Results



## Discussion

**3 movement patterns identified:**  
 Contained within one river section (~78.9% of brown trout/  
 ~46.4% of Atlantic salmon)  
 Downriver migration (~16.7%/~10.7%)  
 Upriver migration (~5.3%/~42.3%)

Majority of brown trout within Lower Margaree and in lower reaches of Northeast Margaree

Atlantic salmon mostly hold in Lower Margaree until spawning period, later migrating further upriver in Northeast Margaree than trout

Potential for distinct spawning grounds for Atlantic salmon in upper Margaree and sanctuary

Potential interference in Lower river and lower reaches of Northeast Margaree, particularly towards beginning of spawning migration

Brown trout do not exhibit typical upstream spawning migration<sup>[14-16]</sup> - distinct ecotype? Result of stocked individuals being hatchery-reared from a landlocked population<sup>[11]</sup>?

Data are coarse - further tracking efforts will strengthen investigations of brown trout adaptations to Margaree

## Conclusions

Brown trout movement in Margaree differs from Atlantic salmon and from typical migrations in European rivers<sup>[14-16]</sup>

Identified Lower Margaree as a potential source of brown trout interference with Atlantic salmon

Gained baseline understanding of brown trout movement in Margaree, the first telemetry effort to understand non-native brown trout movement in NS

Can inform targeted spawning and habitat assessments for management and conservation efforts, as well as further efforts to understand brown trout ecotype(s) in NS

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## References:

