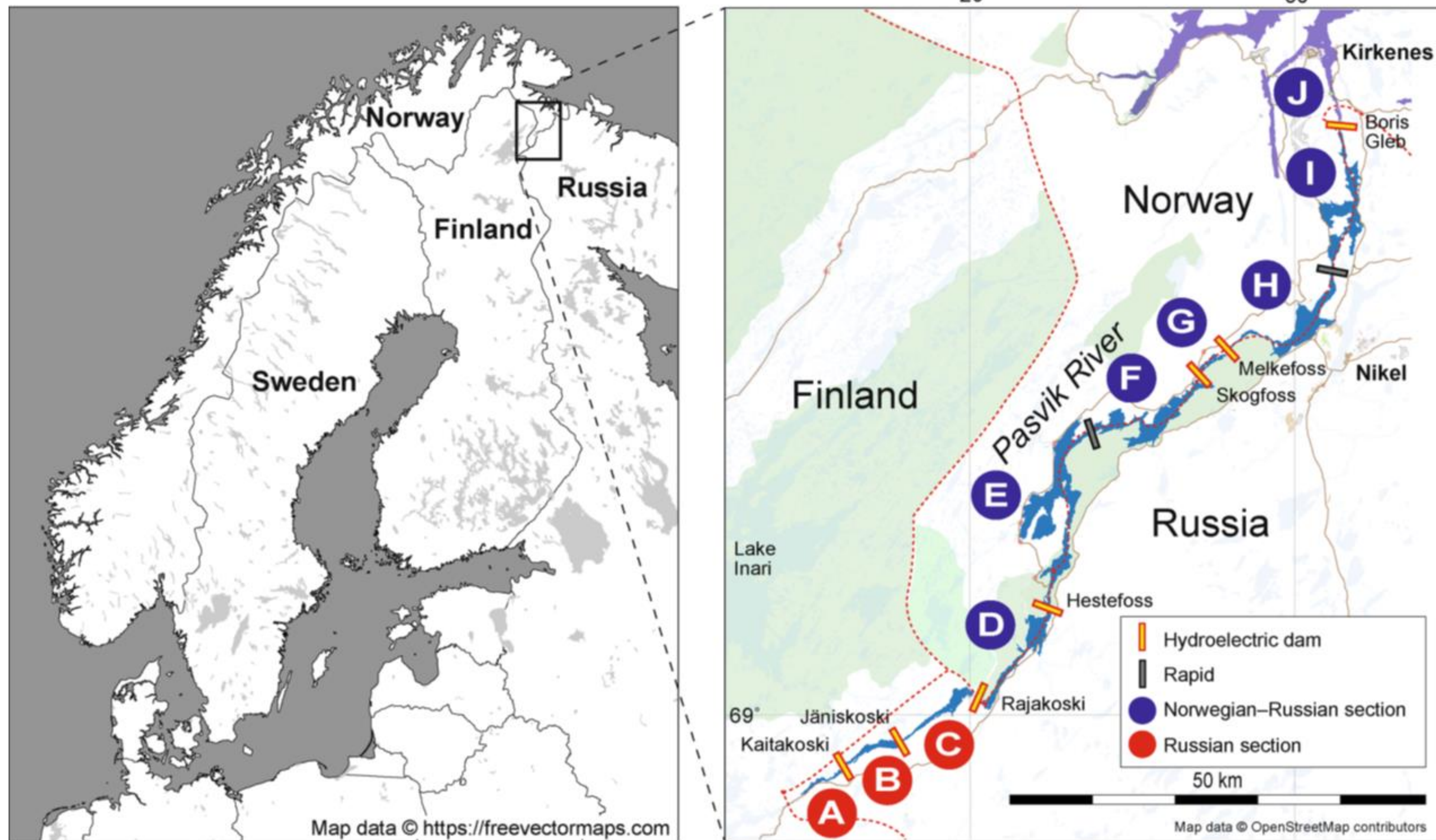


Keeping up the evolvability in fisheries management

Developing a genetic monitoring program for transboundary fisheries management of migratory fish

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Introduction

- Inarijärvi has the most genetically diverse populations of **brown trout**
- Pasvikelva and its tributaries' **genetic diversity has been decreased** due to **lack of natural reproduction** and **prevented migrations** within the river
- **Genetic diversity buffers the fish** under changing environmental conditions
- Stocking, hydropower dams, habitat destruction, and climate change result in **loss of populations and diversity**

**How to mitigate issues for the fish but also for the local community?
How to manage migratory fish transboundary?**

An Ideal Model System: Cross-boundary management on migratory, and socioeconomically important fish



Novel genetic library that can further be developed to detect **genetic changes** in brown trout



The **assessment of management actions** that can be carried out **cooperatively** in stocking programs to **maintain genetic diversity and functional traits** of migratory brown trout



A guideline for the application of **genetic methods** in **cross-border fisheries management and conservation** of migratory fish



REALVAL



Microsatellites were used to recognize genetic differentiation

Using SNPs, we can recognize

- **how** populations differ
- **why** does it matter
- **candidate genes** behind **functional traits**

Alleles of candidate genes can be selected in breeding design using **RealVal**

We work across borders in the project
Our Precious Transboundary Waters



CONSERVING BIODIVERSITY AND IMPROVING QUALITY OF LIFE BY JOINT WATER MANAGEMENT

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