

## Postdoctoral Research Position – Modelling Ice Jam Risk in a Changing Climate in Southern Québec



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### Project Background

Rivers in southern Québec are frequently affected by ice jams during the spring thaw, causing sudden floods and significant damage. The frequency, severity, and seasonality of these events are expected to evolve in a warmer climate, but prediction remains limited due to the scarcity and spatial bias of observations. This project, funded by the Ouranos QClim'eau initiative, aims to develop and validate robust predictive models of ice jam occurrence using both direct observations and dendrochronological indicators, and to apply these models to future climate scenarios in order to inform adaptation strategies for water resource management and flood risk reduction.

### Host Institution & Supervision

Watershed and Aquatic Ecosystem Research Centre (RIVE), Université du Québec à Trois-Rivières (UQTR). Supervisors: Prof. Christophe Kinnard (UQTR), Prof. Étienne Boucher (UQAM), Dr. Martin Leduc (Ouranos).

### Position Description

The successful candidate will be responsible for the development, calibration, and application of predictive models (random forests, machine learning) for ice jam risk at the basin scale. Tasks include assembling and analysing hydrometeorological, geomorphological, and dendrochronological datasets, evaluating model transferability, and simulating future risk using climate projections. The postdoctoral researcher will be expected to produce scientific publications, contribute to stakeholder engagement, and present results at meetings and conferences.

### Candidate Profile

- PhD in hydrology, geomatics, environmental science, or a related field
- Demonstrated experience in statistical modelling/machine learning (preferably R or Python)
- Knowledge of hydroclimatology, river ice processes, or remote sensing is an asset
- Proficiency in French or willingness to learn (working language is French; English accepted for publications)
- Scientific rigour, autonomy, and ability to work in a team

### Conditions

- Two-year fixed-term contract, desired start September 2025 (flexible)
- Salary: \$60,000 CAD/year
- Research travel and conference participation covered

### Application

Send a cover letter, CV, list of publications, and contact details for two referees as a single PDF to: [christophe.kinnard@uqtr.ca](mailto:christophe.kinnard@uqtr.ca)

Application deadline: 15 August 2025 (position open until filled)