

# Postdoctoral Position: Hydroclimate Scientist

*PCIC is seeking to hire a postdoctoral Hydroclimate Scientist.*

## **Pacific Climate Impacts Consortium (PCIC)**

The Pacific Climate Impacts Consortium (PCIC) was created to assess climate impacts in the Pacific and Yukon Region of Canada. The goals of the Consortium are to foster collaborative research, to strengthen the capacity to address regional climate change and variability, and to provide the scientific basis for policy development. PCIC is a regional climate service centre at the University of Victoria that provides practical information on the physical impacts of climate variability and change. Through collaboration with climate researchers and regional stakeholders, PCIC produces knowledge and tools in support of long-term planning. <http://www.PacificClimate.org>

## **Challenge**

The Hydroclimate Scientist works as part of a multi-disciplinary team to study the impacts of climate variability and change on hydrology and water quality in western Canada. This postdoctoral position is part of the pan-Canadian Global Water Futures (GWF) research program (<https://gwf.usask.ca>), led by the University of Saskatchewan, which aims to place Canada as a global leader in water science for the world's cold regions and to address the strategic needs of the Canadian economy in adapting to change and managing risks of uncertain water futures. Under the theme of 'Climate and Diagnostic Hydrological and Water Quality Modelling', the GWF proposes the development of a unified pan-Canadian modular hydrology/water quality multi-model system for assessment of hydrologic sensitivity under historical and future climates. In this context, this position is responsible for the enhancement and application of PCIC's version of the Variable Infiltration Capacity hydrology model (VIC-GL), which includes coupled glacier mass balance and dynamics components, for select Canadian basins.

## **Nature of Work**

The Hydroclimate Scientist undertakes basic and applied research to quantify the impact of climate variability and change on the hydro-climatology of select Canadian basins. He/she works under the supervision of the Lead for PCIC's Hydrologic Impacts theme and collaborates with members of the Hydrologic Impacts theme and GWF's pan-Canadian modelling team. PCIC offers a positive, supportive and collegial work environment that promotes collaboration and excellence. As a user and stakeholder driven organization, PCIC requires that candidates be able to flexibly adapt their research objectives to changing organizational and stakeholder priorities and needs.

## **Objectives**

The objectives of the position are to conduct research that seeks to address some or all of the following:

- Contribute to the further development and enhancement of VIC-GL, which may include the addition of the ability to explicitly represent continuous permafrost, large lakes and reservoirs, flow abstraction and regulation, vegetation dynamics, and land use change
- Evaluate the extent to which hydrology and water quality in select Canadian watersheds has responded to observed climate variability and change and evaluate potential hydrologic impacts under projected future climates
- Understand and describe the climatic mechanisms that generate hydrologic extremes of flood and drought and quantify changes in hydrologic extremes under future climates
- Work closely with stakeholders to communicate and inform adaptation of water resources operations, management and planning, and with the GWF program to support the use of VIC-GL and the development of a multi-model framework

## **Knowledge, Skills & Abilities**

### **Knowledge and Experience**

- PhD in the physical sciences, preferably in the Hydrologic, Atmospheric or Climate sciences
- Experience in the development and application of hydrologic or land surface models (such as the Variable Infiltration Capacity model)
- Experience studying climate variability and change, and its hydroclimatic implications
- Experience working on interdisciplinary projects and with interdisciplinary teams
- A high level of productivity for peer-reviewed publications is expected.

### **Skill**

- Excellent data analysis and data visualization skills
- Excellent statistical analysis skills
- Excellent communications skills
- Excellent programming skills in several languages (C++ and python being particularly useful)
- The applicant must have excellent multi-tasking skills

### **Ability**

- Work in a self-directed manner and within a team environment
- Re-evaluate and adjust priorities and objectives in light of research findings and evolving requirements
- Ability to acquire, manipulate and analyze large spatiotemporal data sets.
- Ability to find creative solutions to complex, open-ended problems.
- Operate with a professional demeanor while representing PCIC and GWF at professional meetings and other venues.

### **Employment period**

3.5-year term commitment.

#### **Weekly working hours**

Full time (37.5 hours per week)

#### **Pay rate**

Commensurate with education and experience.

**Additional information:** Address enquiries to Markus Schnorbus at [climate@uvic.ca](mailto:climate@uvic.ca).

**Application:** Please send your application including a cover letter, CV, and three professional references to Markus Schnorbus, [climate@uvic.ca](mailto:climate@uvic.ca), with “**ATTN: Hydroclimate Scientist**” in the subject line. Please indicate whether you are legally able to work in Canada.

Review of applicants will start **immediately** and continue until suitable candidates are found.