UNBC appoints two Research Chairs in partnership with Rio Tinto

15.01.2025 | Business Wire

The University of Northern British Columbia and Rio Tinto have expanded a partnership to advance vital research into the impacts of climate change on water security and freshwater fishes in the Nechako Watershed.

This press release features multimedia. View the full release here: https://www.businesswire.com/news/home/20250115183770/en/

The $1.75 million in research funding from Rio Tinto will support two Research Chairs at UNBC for the next five years, generating regional knowledge critical to the long-term sustainability of the watershed while informing global water management and climate resilience efforts.

Environmental Science Professor Dr. Stephen Déry has been named Rio Tinto Research Chair in Climate Change and Water Security. The position is a renewal of an initial Industrial Research Chair (IRC) appointment jointly supported by Rio Tinto and the Natural Sciences and Engineering Research Council of Canada in 2019. The next phase of Déry's research will include expanding the hydrometeorological monitoring and numerical modeling efforts developed through the IRC, as well as the development of forecasting systems to predict river water temperatures along the main stem Nechako River.

"Through the IRC program of research that began in 2019, our team has worked in collaboration with multiple partners including Rio Tinto to greatly expand our monitoring and understanding of climate change and meteorological phenomena such as atmospheric rivers. This led us to assess their impacts on water security across the Nechako Watershed in the context of past and potential future climate change," says Déry. "Over the next five years we will continue to closely monitor and investigate climate, atmospheric and hydrological conditions, processes and phenomena across the Nechako Watershed as the climate crisis continues to unfold. This will assist communities, stewardship societies and industries to better prepare, adapt to and mitigate the impacts of climate change to ensure future water security across the Nechako Watershed and beyond."

Ecosystem Science and Management Associate Professor Dr. Eduardo Martins has been appointed Rio Tinto Research Chair in Climate Change and Freshwater Fish Ecology. His research will address knowledge gaps in how water temperature variability caused by both natural processes and river regulation influence fish behaviour and survival.

"The Nechako Watershed is home to numerous fish species - sockeye salmon, Chinook salmon, rainbow trout, burbot and Nechako white sturgeon - that are important to the ecosystems as well as the First Nations and diverse cultures across the region," says Martins. "Given their vulnerability to warmer water temperatures, the observed warming trends and recent extreme temperature events raise concerns about the long-term sustainability of many species."

Working in collaboration with Déry, Martins will develop models exploring how changes in water temperature and future extreme events will impact freshwater fish populations in the watershed, informing critical fisheries management on keystone (salmon) and endangered (Nechako white sturgeon) aquatic species, as well as conservation policies and practices in the region.

Findings from these research projects will help to support Rio Tinto's operations in the watershed while providing guidance on the release of ecological flows at the Skins Lake Spillway.

"Climate change is having a significant impact on the Nechako Watershed, which plays a vital role in our

hydroelectric operations, First Nations cultural practices and the quality of life of local communities," says Andrew Czornohalan, Director - Energy & Watershed Partnerships at Rio Tinto BC Works. "The research work conducted by Dr. Déry and his local team enhances our collective understanding of meteorological phenomena and their consequences on the environment. The expanded scope of our partnership with UNBC will provide additional scientific data to inform our collaborative approach to reservoir management and improving the river."

This renewed partnership will sustain active outreach and engagement across the region as the UNBC Research Chairs and members of their teams work with local First Nations and a range of partners and community groups.

"This partnership illustrates the transformative power of collaboration as we work together to find local solutions for global issues," says UNBC Vice-President, Research and Innovation Dr. Paula Wood-Adams. "Grand challenges such as climate change cannot be addressed in isolation. Diverse teams and partnerships are essential, including community members who live and work in the region and private enterprise along with our academic researchers."

In addition to the funding from Rio Tinto, UNBC will provide cash and in-kind contributions totalling approximately $1.3 million over the course of the five-year program, helping to support a team of 11 researchers, including master's students, PhD candidates and post-doctoral fellows.

Backgrounder

Rio Tinto Research Chair in Climate Change and Water Security

The overarching objective of this research program is to better understand and quantify the roles of climate change and hydrometeorological extremes on long term water security of the Nechako Watershed.

Three main themes:

- Hydrometeorological extremes including droughts and atmospheric rivers
- Microclimates and climate change in the Vanderhoof agricultural belt
- Variability and predictability of water temperatures

Research on these themes will span from the headwaters of the Nechako Watershed to the Nechako River's confluence with the Fraser River in Prince George.

Rio Tinto Research Chair in Climate Change and Freshwater Fish Ecology

The overarching objective of this research program is to focus on how spatial and temporal variability in water temperature - caused by natural processes, land use, wildfires and river regulation - influence fish behaviour and survival.

Two main themes:

- Thermal preference and behavioural thermoregulation
- Thermal tolerance

The research program will be developed by collecting data using telemetry, data logging, thermal imagery and lab-based experiments on thermal preference and tolerance.

An overview of Dr. Stephen Déry's IRC research is available here:
https://www.youtube.com/watch?v=2D__otHvfeg

About Rio Tinto in British Columbia

Rio Tinto celebrated the 70th anniversary of its operations in British Columbia in June 2024. With industry leading technology and four generations of employee expertise, as well as a clean hydropower facility at Kemano and the Nechako Reservoir, the Kitimat smelter produces aluminium with one of the lowest carbon footprints worldwide.

View source version on businesswire.com: https://www.businesswire.com/news/home/20250115183770/en/

Contact

Rio Tinto Media Relations

Malika Cherry
M +1 418 592 7293
malika.cherry@riotinto.com

UNBC Communications Officer

Michelle Cyr-Whiting
M +1 250-960-5402
michelle.cyr-whiting@unbc.ca

Category: BC Works