Researcher strives for watershed moment

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According to the World Health Organization, water scarcity affects four out of every 10 people around the world and population growth, urbanization and increased domestic and industrial water use are making the problem worse. By examining the relationship between global warming and pollution, a researcher at The University of Western Ontario hopes to help protect future water resources.

Western geography professor Katrina Moser studies the physical, chemical and biological characteristics of water and sediment to better understand the complex dynamics that exist between climate change, nutrient enrichment and lake systems. Nutrient enrichment refers to the presence of increased nutrients – including nitrogen and phosphorous – in lakes, which often results from human activities like increased or changed agricultural practices.

It can lead to toxic algal blooms, decreased oxygen in the water, fish deaths and other problems. Fossils and geochemical signals preserved in lake and river sediment provide valuable clues about historical changes to the environment and can demonstrate human impact going back thousands of years.

“Where there is now strong evidence that the rapid rise in global temperatures over the last century is due to the unprecedented increase in greenhouse gases related to human activities, it is less certain how these global changes will affect regional temperature, hydroclimates and aquatic ecosystems,” Moser says. She was awarded $20,000 from the Natural Sciences and Engineering Research Council (NSERC) this

morning to conduct her studies.

While the synergy between warming temperatures and nutrient enrichment from human activities is not well understood, Moser has found that the human footprint extends into remote areas generally unoccupied by humans, including in so-called 'pristine' mountain and Arctic lakes. Understanding this dynamic is important as it may have a marked impact on future water quality and quantity.

Moser leads the Lake and Reservoir System Research Facility at Western and is also conducting studies related to changes in water quality and quantity in the Canadian Rockies, southwestern Ontario and in the drought-prone western United States.

In all at Western, 98 researchers received $12,057,898 in grants and 205 students and post-doctoral fellows received $3,924,300 in scholarships from NSERC today.

"This work is a prime example of how research in the social sciences can help address some of the most complex challenges currently facing our planet," says Ted Hewitt, Western's Vice-President (Research & International Relations). "We are grateful for NSERC's recognition of the importance of these studies and for continuing to support researchers engaged in diverse projects across campus."

Source: University of Western Ontario