



**News Digest of the Canadian Association of Geographers
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U Saskatchewan's John Pomeroy warns Western Canada's risk of water shortages rising due to warming climate melting mountain snowpack faster and earlier: Canadian scientists are warning that some western Canadian communities could face a water crisis in the not-so-distant future. John Pomeroy and a team of researchers use equipment placed 2,000 metres above sea level in Alberta's Rockies to measure the snowfall and the weather here. Precipitation patterns have been changing along with the general climate in this mountain range, he says. "We have been getting rain events even in the winter." Pomeroy has been studying the snowpack in this area for nearly 15 years in an attempt to predict both floods and droughts before they happen. He points out that the snow in the Rockies provides everything from drinking water to irrigation for tens of millions of people across North America. "The water from this mountain range flow into the Arctic Ocean and the Pacific and the Atlantic, so what happens here matters for the whole continent." It is a stark reality that in a country known for its abundance of fresh water, climate scientists are seeing changes in the ways our water flows. And it's a problem, in terms of providing people with water throughout the year. Last year there was a record amount of snowfall in the Fortress Mountain region, but Pomeroy says he and his research team were surprised when all that snow wasn't enough to prevent a drought on the southern part of the prairies. Pomeroy says a warming climate means the mountain snowpack is melting faster and earlier. As a result, the water is moving through river basins more quickly than in the past and leaving them parched by the end of summer. It's a situation that, if prolonged, could lead to the kind of water shortages being seen in Cape Town and parts of California in recent years. [CBCNews | Calgary](#)

U Victoria's Rosaline Canessa receives support to study impact of noise on B.C. killer whales: UVic geographer [Rosaline Canessa](#) is part of a team awarded federal funding to study the impact of underwater noise on endangered southern resident killer whales and the chinook salmon they depend on for almost 80 per cent of their diet. Only 76 whales remain in the southern resident population, which forages for chinook salmon in its core range off southern Vancouver Island. The primary cause of their decline and inability to recover is chronically low chinook numbers, although pollution and noise disturbance from vessels are contributing factors. The UVic researchers will study three aspects of underwater noise: how it impacts the ability of the southern residents to use echolocation for detecting prey and communicating with each other; how it affects the behaviour and physiology of chinook salmon; and how to improve current methods of measuring disturbances from marine vessel traffic and its impact on the whales. Coastal geographer Rosaline Canessa will lead the vessel disturbance study. [UVic News](#) | [Listen @CFAX1070](#) |

U Waterloo's Christine Dow on how glaciers can warn us about the looming dangers of climate change: [Christine Dow](#), from the Department of Geography and Environmental Management and Canada Research Chair in Glacier Hydrology and Ice Dynamics, travels all over the world, or at least all over its coldest parts, to study the dynamics of glaciers and the water flowing through and underneath them. "The appeal of glaciology for me comes from the opportunity to discover the unknown. Trying to understand how water flows under glaciers requires a combination of physics and imagination," says Dow. "We have so little data from the base of ice sheets that to accurately reproduce glacial hydrology systems in models, for example, requires envisioning the journey of a parcel of water through some of the least accessible regions of the world." The phrase, "least accessible regions of the world," is a kind of rorschach test. To some, visiting these regions sounds like a hassle. But for Dow, it's an undeniable perk of being one of the brightest minds in a field growing in importance with each degree the earth warms. "Alarm bells for climate change have been ringing for several decades now. This is particularly clear when measuring the rapid retreat of Alpine glaciers," she says. "An area of increasingly great concern is the West Antarctic Ice Sheet, which has the potential to add more than three metres to sea level if it were to entirely collapse." What that collapse means for the planet is difficult to grasp. Partly because the potential for devastation and disruption isn't something most people want to consider. It's also difficult because the scale by which Dow is talking is hard to put into context for people. However, as a new voice in the field she'll have the opportunity to change the conversation on climate change with first-hand, on the ground stories conveying the size and scope of both her subjects and the problem she's trying to solve. [UWaterloo Environment](#)

Simon Fraser U's Kirsten Zickfeld on why when it comes to climate change, the ocean never forgets: If climate change were just a flirtation with disaster—that is, the world acted decisively and cut emissions, and the amount of atmospheric carbon dioxide fell tomorrow to preindustrial levels—the planet would respond quickly. Within decades, land temperatures would return to normal. The ocean, however, would bounce back more slowly. Much more slowly. If greenhouse gas emission plummeted, the surface ocean—the top few hundred meters—would exchange heat with the atmosphere and recover relatively quickly, taking a few decades to improve.* But the deep ocean is like a roast in the oven, remaining hot long after the heat's been turned off. "The ocean doesn't forget," says [Kirsten Zickfeld](#), a climate scientist in the Department of Geography at Simon Fraser University in Burnaby, British Columbia. "If we don't cut emissions now, there's a huge legacy in the marine environment." According to Zickfeld's research, the deep ocean will hold on to its heat for centuries, if not millennia. The world's oceans already face a gauntlet of changes—warming, dwindling oxygen concentrations, and increasing acidification—that affect marine wildlife. Food webs are unraveling and some species, most notably corals and shellfish, are struggling to adapt to new environmental conditions. The more countries fall short of their goals to mitigate climate change, and the longer it takes to reduce emissions, the more likely these effects are to become irreversible, says Zickfeld. But there is another cause of sea level rise, one that has an even longer lasting impact: as water warms, it expands. This thermal expansion will force a rise of at least 30 or 40 centimeters by the end of the century, says Ehlert. This effect is not reversible on human timescales. In fact, her research shows that it could take at least hundreds of years for this expansion to subside. The chemical effects of climate change on the ocean—including acidification and deoxygenation—would take a similar time to reverse, according to Zickfeld. Unfortunately, Zickfeld says, it's too late to avert part of this fate. She and her team have been studying the possibility of using so-called "negative emission technologies," such as carbon capture and storage plants or bioenergy plantations, to reduce atmospheric carbon dioxide by sucking it out of the atmosphere or injecting it into the ground. But even if these schemes work and quickly reduce carbon dioxide concentrations and surface temperatures to less dangerous levels, it's not enough to undo the damage, Zickfeld says. According to her calculations, sea level rise will still be locked in for several centuries. [Hakai Magazine](#)

York U's Steven Tufts on why increasing the minimum wage is a positive thing for the economy:

With the Ontario minimum wage increase in full force, some students are ecstatic about being able to fill their carts with more than just KD and frozen pizza. Meanwhile, cuts in hours have left other students deeper in debt than ever before. This year, the Ontario Liberal government increased the minimum wage in the province from \$11.60 per hour to \$14 per hour. This dramatic change in the minimum wage has resulted in a lot of discussion among economists and workers about the impacts. On the one hand, some argue that the increase has been a good thing for workers and more money equals greater spending ability. Others argue that increasing the minimum wage has hurt the people it is supposed to help by creating less availability in the job market. According to [Steven Tufts](#), an associate professor of geography at York University who studies labour geography, populism, and labour market adjustment and integration, increasing the minimum wage is a positive thing for the economy, because it helps low-wage workers. "The first thing it does is that it really puts the money into the pockets of people who've been working for low wages," he said. "The second thing is that it benefits everybody eventually in the labour force, because as people at the bottom get raises, people who are already making \$14 an hour will get bumped to \$15 and \$16 and so forth, even though that takes a little bit of time." He added that an important part of the increase is that it takes money from corporations and puts it in the hands of workers. [The Charlatan](#)

Hot Papers by Canadian Geographers

Renxi Chen, Xinhui Li and Jonathan Li. 2018. [Object-Based features for house detection from RGB high-resolution images](#). Remote Sensing 10:451. DOI:10.3390/rs10030451

Ryan Connon, Élise Devoie, Masaki Hayashi, Tyler Veness and William Quinton. 2018. [The influence of shallow taliks on permafrost thaw and active layer dynamics in Subarctic Canada](#). Journal of Geophysical Research. Earth Surface. DOI:10.1002/2017JF004469

Sophie S. Duncan and Timothy J.S. Whitfield. 2018. [Biomass of invasive earthworms and plant diversity in a southern New England forest](#). Rhodora. doi.org/10.3119/16-28

James D. Ford, Mya Sherman, Lea Berrang-Ford, Alejandro Llanos, Cesar Carcamo, Sherilee Harper, Shuaib Lwasa, Didacus Namanya, Thomas Marcello, Michelle Maillet and Victoria Edge. 2018. [Preparing for the health impacts of climate change in Indigenous communities: The role of community-based adaptation](#). Global Environmental Change 49:129–139.

R.V. Herron and M.A. Wrathall. 2018. [Putting responsive behaviours in place: Examining how formal and informal carers understand the actions of people with dementia](#). Social Science & Medicine 204:9–15.

Amina H. Khan, Elisabeth Levac Lou Van Guelphen Gerhard Pohle and Gail L. Chmura. 2018. [The effect of global climate change on the future distribution of economically important macroalgae \(seaweeds\) in the northwest Atlantic](#). Facets. doi.org/10.1139/facets-2017-0091

Heather Reid and Joel Finnis. 2018. [Summarizing metocean operating conditions as a climatology of marine hazards](#). Theoretical and Applied Climatology. doi.org/10.1007/s00704-018-2444-2

Lara A. Roman, Hamil Pearsall, Theodore S. Eisenman, Tenley M. Conway, Robert T. Fahey, Shawn Landry, Jess M. Vogt, Natalie S. van Doorn, J. Morgan Grove, Dexter H. Locke, Adrina C. Bardekjian, John J. Battles, Mary L. Cadenasso, Cecil C. Konijnendijk van den Bosch and Meghan Avolio. 2018.

[Human and biophysical legacies shape contemporary urban forests: A literature synthesis](https://doi.org/10.1016/j.ufug.2018.03.004). Urban Forestry & Urban Greening. doi.org/10.1016/j.ufug.2018.03.004

Yuji Sano, Roger Antabe, Kilian Nasung Atuoye, Joseph A. Braimah, Sylvester Z. Galaa and Isaac Luginaah. 2018. [Married women's autonomy and post-delivery modern contraceptive use in the Democratic Republic of Congo](https://doi.org/10.1186/s12905-018-0540-1). BMC Women's Health. doi.org/10.1186/s12905-018-0540-1

Robert G. Way and Antoni G. Lewkowicz. 2018. [Environmental controls on ground temperature and permafrost in Labrador, northeast Canada](https://doi.org/10.1002/ppp.1972). Permafrost and Periglacial Processes. DOI:10.1002/ppp.1972

Chengming Ye, Yifei Chen and Jonathan Li. 2018. [Investigating the influences of tree coverage and road density on property crime](https://doi.org/10.3390/ijgi7030101). ISPRS International Journal of Geo-Information 7:101. DOI:10.3390/ijgi7030101

Other “Geographical” News

National Geographic magazine owns up to 'racist' past: As part of a special issue on race, National Geographic magazine decided to examine its own coverage. The results show the iconic, 130-year-old publication has a history of racist storytelling. Editor-in-chief Susan Goldberg wrote about those findings in a letter from the editor titled "For Decades, Our Coverage Was Racist. To Rise Above Our Past, We Must Acknowledge It." Goldberg wrote that the magazine enlisted John Edwin Mason, a University of Virginia professor who has expertise in African history and photography, to examine its archives. Since 1888 the magazine has been showcasing history, science, geography, and cultures around the world through vivid photography and unique storytelling. "What Mason found in short was that until the 1970s National Geographic all but ignored people of color who lived in the United States, rarely acknowledging them beyond laborers or domestic workers," Goldberg wrote. "Meanwhile it pictured 'natives' elsewhere as exotics, famously and frequently unclothed, happy hunters, noble savages—every type of cliché." [CNN](https://www.cnn.com/2018/07/27/entertainment/nat-geo-racist-past/index.html) |

Climate change and construction a recipe for future Calgary floods: Climate change and urban development along Calgary's Elbow River may be a recipe for frequent flooding disasters in the future, says the lead author of a study focused on the impact of precipitation, thaw and development on the city's second-largest river basin. The study concluded that changing precipitation patterns, warmer springs and reduced natural absorption in riverside communities means Calgary's risk of flooding will increase greatly over the next 50 years. "This should serve as a warning. The results can help decision-makers in both mitigation and adaptation strategies". [Calgary UToday](https://www.calgarytoday.com/news/local-news/climate-change-and-construction-a-recipe-for-future-calgary-floods-1.1111111)

What do students want most? To be treated with respect: I recently led a survey of students across my university at all levels of study. We wanted to discover what students felt we did well so we could encourage more of the same and celebrate our successes, hoping to improve our scores in the National Student Survey and the teaching excellence framework. But the findings took us all by surprise. The feedback from the 1,000 responses was pleasingly positive in some areas. We felt smug that our students largely appreciated our efforts. But there was an unsettling, underlying narrative in the responses which felt shocking. Students were essentially asking: why don't academics have more humanity? The responses made me wonder what has gone wrong. Students identified kindness, integrity and understanding as the most important things that would improve or change their student experience. These things are fundamental. Was I wrong to have assumed that all academic staff would simply be kind and treat students with respect? Then the penny dropped. Maybe some academics have little appreciation of how their behaviour impacts on and influences students. [The Guardian](https://www.theguardian.com/education/2018/07/27/what-do-students-want-most-to-be-treated-with-respect)

Some Not So “Geographical” News



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