

River levels bottom out

Researcher says difficult decisions ahead

Jonathan Charlton, 11 July 2015

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John Pomeroy, a University of Saskatchewan scientist and Canada Research Chair in Water Resources and Climate Change, says Saskatchewan could be in for a prolonged dry spell, as seen in the low water levels in the South Saskatchewan River.

River levels are at an historically low level and a prominent water researcher says California-style water restrictions could be in the province's near future.

"Frankly, it's quite shocking right now," said John Pomeroy, the Canada Research Chair in Water Resources and Climate Change, and the director of the Centre for Hydrology at the University of Saskatchewan.

"We've gone in 10 months from the wettest conditions in summer in Saskatchewan's history to, in some places, the driest conditions in our history. That's not only unprecedented - it's something almost anyone would have said is highly unlikely until it has occurred."

A regular amount of precipitation fell on the Rocky Mountains this winter, but temperatures were much warmer than normal - it rained in January and February.

The snow packs were half what Pomeroy's team of water researchers would normally measure and they melted a month and a half early. That meant stream flows peaked early this year, a phenomenon accompanied by drought in the irrigation belt.

The result is that during the past few days, the mouth of the Bow River has been flowing at just 10 per cent of its normal rate, Pomeroy said. That means less water coming to Lake Diefenbaker, where lake levels haven't risen in more than two weeks.

Eastern Saskatchewan had 200 millimetres of rain around this time last year, while this year some places have seen less than 20 mm since April, Pomeroy noted.

Drought is already searing Saskatchewan's crops and farmers fear this year's harvest could be the worst in recent memory.

The province is at the mercy of a continent-wide weather system - which stretches from the Mexico border to the Arctic Circle and from the British Columbia coast to Manitoba - that's also responsible for the worst drought in California's history, Pomeroy said. That drought is in turn tied to climate change, he said.

"It's probably reasonable, then, to start to associate what we're seeing here with changing climate - greater extremes because of greater concentration of greenhouse gases in the atmosphere."

That's not the scary part, however. Pomeroy worries about what happens next year.

The world is in the early stages of an El Nino weather system - a Super El Nino, in fact - which typically means more dry weather in Western Canada.

Saskatchewan came into this drought from a record wet period, with ample moisture reserves for crops at the start. Sloughs and lakes were full.

"If this carries on to the winter and next spring, they won't be. And then we'll have much more serious water problems," Pomeroy said.

Environment Canada senior climatologist David Phillips shares the concern.

"The worst thing is the back-to-back situation," he said.

"Even if next year is not as dry, it would be worse."

Contrary to popular belief, this year's drought isn't caused by El Nino, he said. The real culprit is a stubborn, warm mass of water known as the Pacific Blob. So, really, we've just seen the opening act.

"What I think is worrisome is if the blob stays on and then you've got El Nino, well, gee, what does that do? I don't think we can go back in history and compute what that could be. It could, in fact, exacerbate the situation or it could compensate it, you know. It could work both ways."

For the immediate future, precision water management would be the best way to handle a drought crisis next year, Pomeroy said.

"We have to look at water use over the Saskatchewan River Basin as a whole instead of three separate provinces and with federal interest in the headwaters, and say, 'With limited water, what's the best use of that water?' " he said.

"These are very difficult decisions. We can see them being made in California right now, for instance. I think if we had water management systems in place that were very, very strong, science-based and resilient, then we could avoid some of the conflict and distress Americans are seeing in their West."

In the long term, Canada needs a national climate strategy to start reducing our greenhouse-gas emissions, Pomeroy said.

"We're paying the price with these events by not doing that."

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