



Low snowpack could lead to summer water shortages

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An early snowmelt could lead to water rationing this summer, but both the province and an expert say it's too early to predict whether there will be droughts — or even floods — across Alberta.

During this month's survey by Alberta Environment and Sustainable Resource Development, each of the four river basins monitored by the province had a below average snowpack.

"It's ranging from 60 per cent to 122 per cent of average," said department spokeswoman Carolyn Stuparyk. "Generally it's showing below average."

As an example, the survey shows the snowpack in Bow River basin ranges between 52 per cent of average at the Bow River station and 100 per cent of average at the Wilkinson Summit Open station. It's generally higher than similar surveys in 2001 — the lowest snowpack on record for most stations in the Bow River Basin.

There was a drought in southern Alberta in 2001 and 2002.

Officials noted, however, that snowpack is only one of the factors used to determine whether there will be droughts or floods. In the 2013 flood, for example, heavy rainfall fell on top of a high snowpack in the mountains.

"There's still a lot of weather to happen," said Stuparyk. "We all know the lovely April and May snowstorms that we get."

Experts such as John Pomeroy, who studies snowpack in the Rockies, said the melt is coming about a month earlier than normal at the lower elevations.

"The low elevation snowpacks are below normal," he said, adding that higher elevations still have up to a metre and a half of snow in some areas.

As a result, he said it's difficult to predict what it will mean — particularly because there have been years when more than half of the alpine snowpack has come in April.

"I don't think that's going to happen this year, because what we're seeing is a really long-term weather pattern that is associated with warmer than normal conditions," said Pomeroy, a [hydrologist at the University of Saskatchewan](#). "That's why we don't have the lower elevation snowpack. A lot of it came as rain or melted very quickly."

"The weather system is a northward extension of the California drought so it's not a drought itself, but it's part of that whole system that's producing the drought in California."

A four-year drought in California has led to mandatory statewide water restrictions on April 1 after surveyors found the lowest Sierra Nevada snowpack in 65 years of record-keeping.

Back in Alberta, Pomeroy said the weather system has been holding steady so it's likely the early melt will continue.

"The one implication for that is that we don't have a lot of water storage across Alberta," he said, explaining an early melt means the runoff comes earlier so it could have implications for the province's irrigation system in mid-June or July. "It could create some water storage problems."

Pomeroy noted that's precisely what the climate change models are predicting for the area.

"This year maybe looks a lot like what we can expect to see more of in the future," he said.

The Western Irrigation District, which provides water to more than 400 farms and 96,000 acres of land, as well as four different communities, keeps a close eye on the timing of the melt each year.

"The snowpack is our reservoir," said general manager Erwin Braun, noting the soil moisture usually needs replenishing by early July. "So we try to be as efficient as we can with every drop of water that we divert."

He added, however, that there's still about six weeks of potential snowfall in the mountains.

"We're going to be watching it," he said, noting there could be a period of water rationing required this summer if the snowpack remains below normal.