

Warming climate spells future drought trouble for Metro Vancouver

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Kim Stephens, longtime water engineer, talks about water and drought by the Capilano Reservoir's Cleveland Dam.

Photograph by: Steve Bosch, PROVINCE

Despite the current deluge of rain and snow, Vancouverites could well be facing another drought crisis this summer.

Prof. Engineer Kim Stephens, of the Partnership for Water Sustainability in B.C., said that Metro Vancouver's two "comparatively small" reservoirs were designed for repeated rainfalls and heavy snow in the mountains. Those conditions are not expected to apply over the next nine months and the population has grown to about 2.5 million people.

"We dodged a bullet (last summer)," said Stephens.

"In the 1970s, when I was a student at UBC, we did an exercise looking at a hypothetical five-month drought. We didn't think there would ever be one. This year, we came very close to a six-month drought. The only thing that saved us were some storms in August."

"There is a warming trend, less snow is falling and the summer dry season has extended on both ends," he said. "We need to change our attitude to water."

Stephens studied drought for the GVRD after two severe shortages in 1987 and 1992.

“We had a five-month drought in 1987. Metro Vancouver was within two weeks of running out of water,” he said.

Stephens said water shortfalls occur because Metro’s wholly-owned reservoirs, the Capilano and Seymour, are “puddles”. “They are in small, V-shaped river valleys,” he said.

Building additional reservoirs would be difficult because the local terrain is mountainous and new ground would have to be flooded.

“The best sites have long been developed,” Stephens said.

The region’s biggest water reserve is the Coquitlam Reservoir, which is roughly 15 times the size of its sisters, but controlled by BC Hydro.

Fortunately for locals, Hydro shares its water with the region. If there was ever a dispute about who needed the water most, the province’s water commissioner would be expected to come down on the side of people rather than Hydro’s power generating operation.

Stephens adds that curious Metro Vancouver residents will want to check out the Capilano Reservoir’s Cleveland dam on July 1 to find out the amount of water they will receive during the summer doldrums.

He said a rule of thumb holds that if the spillway is splashing liquids on Canada Day, taps will flow. A dry spillway spells trouble.

Ken Ashley, director of the Rivers Institute at BCIT, agrees 2016 is likely to be the same as 2015, when wholesale water restrictions were implemented throughout the region.

Ashley said the old rules of thumb don’t apply anymore.

“It always used to rain when the PNE started. We’re in a different climatic regime now,” he said.

On the Gulf Islands, which are worse-off than most, preparation has already begun to cope with another possible drought.

The problem is acute because 25,000 full time residents live on mounds of bare rock surrounded by salt water.

“The ponds aren’t filling up as quickly as I would like,” said Peter Luckham, elected chair of the trust which governs 450 islands. “A neighbour’s well went dry in October.”

New rainwater catchments and cisterns are being hooked up to sewer systems, saving treated water for drinking purposes.

New homes are outfitted with catchment systems for about \$10,000 and wells are being drilled “all

the time.”

“We are in a wait and see period to see what comes. We don’t control it,” said Luckham.

Ross Davies, educator at the Bell-Irving fish hatchery, had a close call at the Kanaka Creek facility in Maple Ridge during the height of last summer’s heat wave.

About 20,000 salmon fry came within a degree or two of being fried during a low-flow period in July.

Davies sees “exactly” the same weather as one year ago.

“There was cold weather in November and big storms in December,” he said. “I’ve seen a lot more instances of the hottest ever, the driest ever and the biggest ever. Things aren’t like they were.

“All we can do is make sure we are as prepared as we can be,” he said.

On a positive note, Stephens said the water issue is gaining a prominence in the public’s mind which it has never had. Also, rainfall so far this month has been higher than the same period over the past five years, pushing the year-to-date total slightly above normal levels.

“Those of us who have a water background have never had any respect. It has always been taken for granted,” said Stephens.

“People in general have not appreciated how vulnerable we’ve always been. They’re beginning to see how essential it is,” he said.

At his home on Bowen Island, a rooftop harvesting system supplies 18,000 litres for toilets. It survived the drought.

“Our tanks made it through. There was still two feet of water in the bottom when the rains came,” he said.

Finally, Stephens advises the public to stay positive and not succumb to a negative state of mind.

“Drought is not the end of the world. Australia survived a seven-year drought. People get through it,” he said.

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