

Special Report: City of Desert Plants?

Even in Victoria, City of Gardens, people are trimming water use

BY STEPHEN HUME, VANCOUVER SUN SEPTEMBER 20, 2015



Loys Maingon, a biologist with a special interest in water ecology, installed diversion valves and a 1,500-litre water tank at his home.

Photograph by: Stephen Hume

Sprawling across the south end of Vancouver Island, adorned with a splendid array of flower beds large and small, Greater Victoria markets itself as the City of Gardens.

Two of them — Beacon Hill Park is a spectacular public example of elegant Victorian landscaping, while Butchart Gardens is a renowned commercial operation — are important draws for a billion-dollar-a-year tourism sector that sustains 22,000 jobs in a region of 375,000 people.

For the last 39 years, residents have competed each spring in a flower count to crown one of the district's 13 communities for most blossoms. For 2015, the count topped 17 billion — impressive but well shy of the record 21 billion tallied in 2010.

This year, as residents let once-lush lawns brown out in the grip of the same withering drought that's punishing much of the remaining province, some scientists are advising regional planners to start

thinking desert rather than dahlias and delphiniums.

In Greater Victoria, where the foresight of regional planning means there's sufficient water in municipal reservoirs that the draconian water restrictions imposed elsewhere were held in abeyance, the brown lawns are evidence of a major success story. Growing numbers of citizens are buying into the region's message that conservation must be the future paradigm.

Since 70 per cent of urban water consumption in the capital region goes to outdoor use — watering lawns and gardens, filling ornamental and swimming pools, washing decks, cars, driveways and sidewalks — citizens comprehend the need to cultivate an esthetic of drought gardens and an ethic of less is better for water use.

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Loys Maingon, a Comox Valley habitat biologist with a special interest in water ecology, says he's increasingly convinced that the long, dry summer of 2015 is part of a trend. Coupled with other environmental issues, it brings profound implications for urban planners and politicians concerned with Vancouver Island and the Gulf Islands.

Oliver Brandes, a water sustainability specialist with the University of Victoria's Polis Project on Ecological Governance, agrees: "This is the new normal, so stop calling it a drought."

"I don't think the public fully gets how serious this is. ... This is not about not watering lawns. This is far more serious. We have got to understand how precious water is. This is not a temporary change," Vicky Husband, a renowned environmentalist and former Sierra Club leader, says of the larger issue of global warming.

Maingon points to dwindling winter snowpacks, which normally serve as precipitation banks, releasing water into streams and lakes over the summer when rainfall drops sharply.

From 2011 to 2012, the snowpack shrank by 25 per cent. From 2012 to 2013 it was down 33 per cent over the previous year. Then in 2014, it declined another 20 per cent. This year it fell by a shocking 80 per cent. Many watersheds were at zero per cent of normal snow cover.

"Some people are thinking as though they bought property in Redding, Calif., about 20 years ago.... But the model for where we are going is Yemen — and Yemen drills 2.5 kilometres to find water, with all the social disorders that foments," Maingon says.

Deborah Curran, a legal scholar who teaches water rights law at the University of Victoria, volunteers corroboration without having heard Maingon's analogy.

"We're groundwater mining," she says. "The Gulf Islands — on Saturna you have to drill a thousand

feet.”

Some Saturna residents now have sea water seeping into aquifers and contaminating well water. On Bowen Island, the government has begun to get reports of wells running dry. On Galiano, there's now a water conservation zone. Authorities won't approve new development because there isn't enough water.

Meanwhile, Laurie Gourlay of the Vancouver Island and Coast Conservation Society — he's a farmer in Cedar, just south of Nanaimo — has been pushing, so far without much apparent success, for both the province and various Vancouver Island economic associations to discuss the need for cross-jurisdictional management of watersheds.

“Droughts could become the norm here as climate change brings hotter, drier summers and leave less and less snowpack over the winter months,” Gourlay says. “We need to look at new governance models that extend water plans and protect water supplies and watersheds across local jurisdictional boundaries.”

Ask Maingon if he thinks his Yemen comparison isn't exaggerating things and he shrugs. Take a walk anywhere on the east coast of Vancouver Island and look at the tops of cedar trees, he says. How many are dying back? Look for Sitka spruce by the side of the road. How many dead ones do you count while driving the Island highway?

In one recent article for a science bulletin, Maingon says research shows Canada is experiencing a generalized tree-growth decline between the 45th and the 51st parallel due to a prolonged and unusually intense water deficit. “The entire West Coast is also experiencing increased tree mortality.”

What that means, he argues, is that variables assumed as constants by mainstream economists are shifting radically. Forestry, for example, is assumed to be renewable source. But he says research shows tree growth is declining fast.

“There's a kind of hopefulness that shouldn't be there,” he says. “Let's keep people happy and not deal with reality.”

Maingon prefers to deal with reality, he says, so he is installing water capture systems everywhere he can on the property to which he retired above the Tsolum River, itself a shallow trickle among the dried-up and drying streams that line the eastern shore of Vancouver Island from Victoria to Port Hardy.

“People need to realize that water's not an infinite resource. Even if I'm wrong and the trend is to California, not Yemen, we still have to manage the environment much more intensely to prepare,” he says. “We have to change the economy — and to change that, we have to change how we think of

nature. We have to be a lot more conservative...

“The solutions are quite simple — as long as you want to face them. The days of large swimming pools and big green golf courses are over. We have to start thinking like people in the Kalahari ... and Yemen.”

Is he suggesting that British Columbians will wake up one morning and find themselves in the Sahara? No. But he says climate change is clearly advancing and water conservation needs to be factored into all urban planning.

Both Curran and Brandes echo that thinking.

“We could cut back virtually 50 per cent of our water use with virtually no effort,” Curran says. How? Ban watering, introduce volume-based pricing above some human rights baseline, improve building codes to require reduced use and capture waste water.

“We need conservation on overdrive,” Brandes says. He advises pricing water to its real value, monitoring, and harvesting and storing water surpluses generated in winter.

Maingon is preparing for a worst-case in which droughts like this summer’s continue, as California’s has for 15 years, or at best recur more frequently.

So he’s already installed diversion valves on the downspouts from gutters on his house and all his outbuildings, clad his buildings with steel roofing so the stored water is clean, and doesn’t pick up chemicals leaching from asphalt tiles or treated shakes.

“It is marvellous how little surface you need to collect a lot of water,” Maingon says, pointing to a 1,500-litre tank beside a small garden shed. “Two good rain events in the winter will fill that tank.” He’s since invested in an additional 6,800-litre storage tank and is now designing a building for water harvesting.

“Time to think we live on the Mediterranean,” he says.

Brandes is quick to point out that the Capital Regional District, which is responsible for Greater Victoria’s drinking water is at the forefront of this kind of thinking.

The regional government owns an extensive and well managed watershed. It meters and prices water, which has resulted in lower per capita use than in Metro Vancouver and other parts of B.C. It aggressively teaches and preaches conservation.

It also dramatically improved inventory two decades ago by raising a storage dam, which should provide supplies adequate to service growth for 50 years in a highly desirable place to live (between

1986 and 2006, the capital region's population grew by 40 per cent). But even this far-sighted regional government acknowledges the potential of climate change on winter run-off and summer drought hasn't been factored in to its forecasts.

Success has its own pitfalls, though, Brandes points out. Successful conservation of water means less consumption and when people buy less water there's less revenue available to invest in the next round of conservation, education and infrastructure renewal.

As for business, flat rates have yielded to volume-based pricing, which is an incentive for finding greater efficiencies. "The smart ones are getting it," Brandes says. "Having water access security is a big factor going forward in corporate strategy. Short term thinkers are going to get screwed in this whole arrangement."

Indeed, although regional breakouts are hard to come by, the pulp and paper industry reports that by investing in water-efficient technologies, water-use intensity has dropped by nearly 20 per cent since 1999.

And the federal Environment Department, which has been monitoring closely, says industry compliance with federal standards for waste water — a typical mill discharges the equivalent of five Olympic-size swimming pools of effluent every day — has improved dramatically. In 1985, it says, 25 per cent of effluent samples passed toxicity tests for fish. By 2012, the pass rate exceeded 98 per cent.

Brandes says that government, industry and the public still have the time and the resources to deal with future water scarcity — if they get their act together and make water much more central to planning.

"We're well position to respond to this in B.C.," he says. "I wouldn't want to be in Texas or California right now."

Curran is hopeful but more skeptical. "Water is going to be the big equalizer in coming decades," she says. "Water is going to drive all kinds of decisions in the future that have nothing to do with water. Land use, business locations and so on.

"We put virtually nothing into water management. There is not a single farmer who knows how much water they use ... Nobody who has a water licence has the infrastructure for monitoring. We need to put hundreds of millions into monitoring so we know what we're doing."

Husband is even more critical.

"We're not seeing leadership from government and industry," she says. "That means leadership is going to have to come from the people. We have no choice. We have to change our course. We're

living on the cusp – the future is going to be very, very different. I think it is incredibly scary.”

Fisheries biologist Bob Hooton, who spent more than 30 years as a steelhead specialist with the provincial government, sounds equally pessimistic.

“It is bad. We’re basically in unprecedented territory now. It’s not an unlimited resource, which is how it’s been perceived. We can’t keep going the way we are and not reap the consequences,” he says. “We refuse to learn from our own history. It gets pretty depressing once you start scratching below the surface.”

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