

## Tourism Threatens Water Security in Okanagan

Remy Scalza | Image: Chris Mason Stearn | Published: August 04, 2010



Poor liquidity: The Okanagan has Canada's lowest per-capita supply of water, and yet consumes it at twice the average rate.

### Are wine-fuelled tourism and migration threatening water security in the South Okanagan?

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In the bone-dry southern tip of the Okanagan Valley, just outside the town of Osoyoos, a network of footpaths winds through thickets of sage and antelope brush. Braving the midday sun, a few hardy hikers – red-faced and sweating – push down the trail, leaving faint footprints in the sand and keeping an eye out for the rattlesnakes that make their home here, in Canada's only desert.

What awaits around the final turn in the trail must first seem illusion, a trick played on the eyes by the shimmering South Okanagan heat. Abruptly, brush gives way. Neat rows of vines rise from the desert floor, leaves interlacing into a vast and improbable tapestry of green.

Here the path dead ends, sparse foot traffic giving way to the steady pulse of people and cars in the parking lot of Spirit Ridge Vineyard and Resort, one of a wave of new wineries and resorts to open in the South Okanagan in the last five years. In shorts and visors, visitors by the mini-busload spill into the wine shop, restaurant and wellness spa. Out back small children throng an oasis of pools, while duffers hack away on the Technicolor greens of a nine-hole course edged by sand and sagebrush just beyond. Surrounding it all, running right up to the 226 desert suites and vineyard villas at the sprawling resort, are grape vines: Pinot Blanc and Pinot Noir, Chardonnay and Merlot, ripening in the summer sun.

These are heady times for the wine industry in the South Okanagan. Over the last decade, vineyard acreage has more than doubled in the region, with some 1,940 hectares of vineyards and more than 30 wineries now stretching from Osoyoos Lake in the south to the imposing bulk of McIntyre Bluff in the north. The South Okanagan now accounts for more than 50 per cent of the wine grapes grown in B.C. and produces some of the country's very best wines, drawing wine tourists and amenity-driven homebuyers in increasing numbers each year.

But all this bounty comes from what is, in fact, the northernmost tip of the transcontinental Great Basin Desert, a region where annual rainfall averages a miserly 25 centimetres a year, less than a quarter of Vancouver's total. An unusually wet spring has only masked deeper water woes in the region; years of drought and shrinking winter snowpacks on the mountains have left the South Okanagan dangerously dry. And while grape vines are hardly water guzzlers – they consume less water than the orchards they replaced, for instance – the magnetic pull that vineyards exert on travellers, retirees and homebuyers has led to a tourism and recreational real estate boom, putting additional strain on already taxed water resources. With the climate edging ever hotter and the population projected to continue growing, water management and wine tourism in the South Okanagan are proving a difficult pairing.

Among the most spectacularly parched spots in the region is the Black Sage Bench, a swath of rocky desert along the valley's southeastern edge where Tinhorn Creek Vineyards has one of its two properties. "The worst soils in the world make the best grape growing areas," explains Andrew Moon, Tinhorn's 37-year-old vineyard manager. A recent émigré from Australia, Moon grew grapes for some of the largest vineyards in his home country, until a seven-year drought that started in 2003 devastated the industry. "The desert climate is ideal for winemaking," he says. "But you've got to have irrigation."

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WITH ALL OF THESE NEW HOMES, set along the leafy edges of vineyards and next door to golf courses, comes water usage. And Okanagan residents, eager to maintain green lawns in the brutal desert heat, are generally extravagant with their water. The daily water consumption of an Okanagan home user is a whopping 675 litres – more than twice the Canadian average, in a region that scrapes by on the lowest per-person water supply in Canada.

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The prospect of simply running out of water in this context isn't fiction. In fact, it's already happened. Pacific Agri-Food Research Centre scientist Neilsen recounts what took place in Summerland in the summer of 2003 when forest fires ravaged the region. As Summerland's upland water reservoir dipped dangerously low, the municipality decided to simply stop sending water down Trout Creek, a key waterway that feeds into Okanagan Lake. The trout that give the creek its name were killed and kokanee were prevented from swimming upstream to spawn. Ultimately, Fisheries and Oceans Canada stepped in, ordering the release of enough water to maintain fish habitats. But the myth of a bottomless well in the Okanagan was shattered.

Increasing competition between agricultural and urban water uses means that acute water shortages like this are becoming more commonplace. In recent years, dry conditions have prompted water suppliers to cut back on water allocated to growers by up to 20 per cent, potentially compromising yields of grapes and tree fruits. "So far we've been able to avoid crop losses," Nielsen says. "But the feeling is that we're on the verge of not having enough water to meet the demand for crops." Water shortages also directly impact home users: in many municipalities, progressively stringent restrictions have been imposed as reservoir levels dip lower and lower, with outdoor watering limited to alternate days, one day a week or – in extreme instances – banned outright.

But the costs extend beyond just brown lawns and dry shrubs. Levels of water in Okanagan Lake and the network of smaller lakes in the valley are maintained by regional water managers within an exceedingly narrow range. Under severe drought conditions, lake levels will drop below normal operating windows, turning lakefront real estate into parched mud flats and leaving piers and boats high and dry – consequences that would directly impact both the tourism and real estate markets.

Then there's the perennial loser in the Okanagan's water power struggle: the environment. In the face of growing agricultural and domestic demand for water, maintaining flows in the Okanagan's streams and rivers is – as it has been in the past – a low priority. "Back when water licences were first given out, planners weren't thinking about whether or not streams would have enough water and be able to support life," Neilsen says. At the same time, increasing water use has progressively sapped the region's groundwater supplies and drawn down aquifers. Wells in parts of the South Okanagan have already begun to run dry.

All of which does not bode well for the region's fragile and diverse ecosystems, which range from alpine tundra in the mountains to ponderosa pine and grasslands lower down and, of course, desert at the valley bottom. All told, some 250 species are at risk in the South Okanagan and neighbouring Similkameen valleys, from Western bluebirds and California sheep to pallid bats and spadefoot toads. Their fate is intimately tied to the management of the region's dwindling water resources.

High above the South Okanagan, not far from the bustle of downtown Osoyoos and its lakeside resorts, the Golden Mile hiking trail climbs through wiry grasses and ponderosa pines, working its way along a desolate mountain ridge and past a gold-mining ghost town. At a break in the trees, the valley below comes into view, a patchwork quilt of green vineyards spreading south to the silver glint of Osoyoos Lake. Even in the midst of this idyll, however, are warning signs.

Marlowe Sam, a member of the Wenatchi Indian Band who lives on the nearby Pentiction Reserve, knows the mountains of the Okanagan well. And he's concerned. "There have been lots of changes in the mountains, especially when you go up and look at plants," he says. "The springs have been drying out. It's just so dry out there."

After working on ranches all his life, Sam decided to go to college at age 51, when a back injury left him hobbled. For the past seven years, he has studied the intimate connections between First Nations peoples and water in the Okanagan and is now nearing completion of his doctorate. "People aren't going to stop coming to the Okanagan," he says. "The question is, Where are we going to get the water?"

The answer isn't easy to find. Options being weighed for expanding existing supply include everything from constructing costly new upland reservoirs to diverting water from the neighbouring Fraser and Shuswap watersheds. But for environmental consultant Brian Guy, who managed the Okanagan Basin Water Board's recent study, a key part of the solution is conservation.

"There's plenty of low-hanging fruit, starting with things like domestic use for lawns and landscaping," says Guy. The implementation of water-saving by-laws during drought periods, the use of reclaimed waste water on golf courses and the conversion to more efficient drip irrigation are all steps in the right direction. Educating homeowners about lawn alternatives such as xeriscaping, using

drought-tolerant native plants, is also crucial, Guy says.

But the key may lie in tapping users' wallets. "One problem is that water is relatively underpriced," Guy says. "People barely notice what they use." In the town of Osoyoos, where water usage is unmetered, homeowners pay a flat rate of \$267 per year for water. "With a flat rate there is no financial incentive to conserve water," he says. "It's like paying \$100 in advance and then being allowed to go into the liquor store every day and take whatever you want."

For Marlowe Sam, however – who now sits on a UN working group for indigenous water rights – the solution to the South Okanagan's water dilemmas goes deeper than dollars and cents. As part of his dissertation, he's poring over First Nations' oral narratives to uncover customs and traditional laws surrounding water. His research keeps turning up the same conclusion. "It's really straightforward. In the oral narratives, water is a sacred gift," he says, explaining that water needs to be respected and conserved, rather than treated as an expendable commodity. "Everything around us needs water. All life is dependent on water. We have to first of all recognize that."

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IRRIGATION HAS LONG BEEN the lifeline of the Okanagan Valley. Scant rainfall leaves the region dependent for its water needs on winter snow, which accumulates in the higher elevations, then melts in the spring and is stored in reservoirs. For much of the last 100 years, progressively ingenious irrigation techniques have allowed planners to harness these modest water resources and sustain successive waves of transformation in the valley, first from ranchland to orchards and now to vineyards.

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Today an ambitious project is underway at Tinhorn to replace overhead sprinklers with more efficient drip systems. Computer-controlled pumps now deliver precise doses of water directly to individual vines on four of the winery's 53 hectares. The remaining acreage is scheduled to be converted within the next four years. "The scary thing is that once you convert overhead irrigation to drip, you're looking at 60 to 70 per cent water reduction. It's absolutely massive," says Moon.

The need for wineries to conserve has never been more acute. On the heels of a drought last year, the South Okanagan is anticipating another dry summer. For the second consecutive year and the sixth time in the last decade, dry conditions have prompted a drought declaration on Osoyoos Lake. Even outside the dry South Okanagan, water woes are evident. In April, before the last snowflakes had fallen in the mountains, the North Okanagan community of Vernon took the unprecedented step of declaring a Stage 3 water restriction, banning the filling of pools and limiting lawn watering to one day a week. Although a wet May and June temporarily eased water worries, the prospect of future shortages has not diminished.

"Water is absolutely something we have to be concerned about," says Denise Neilsen, a research scientist at the Pacific Agri-Food Research Centre in Summerland who studies the relationship between climate change and water demand. "Higher temperatures lead to a longer growing season and a longer period of time for irrigation. We've already had several instances of water purveyors getting into trouble because they didn't have enough water to supply the licensed demand."

Neilsen sits on the stewardship committee at the Okanagan Basin Water Board, the group entrusted with making sure the valley doesn't run dry. Made up of representatives from the region's various water districts, as well as stakeholders from First Nations communities and independent experts, the board was responsible for commissioning a \$3.2-million water assessment of the region back in 2004. Now, after years of research, results are finally trickling in. And they're not good: climate change, a growing population and profligate water use have conspired to create a perfect storm in the Okanagan Valley, and the threat to water security in the years ahead is both real and growing.

"Because of the potential climate warming, we'll have more precipitation falling as rain rather than as snow," says Neilsen. "Less snowpack and earlier melt means we'll have to begin taking water out of reservoirs earlier." These predictions are, in fact, already proving accurate: this year snowpacks in the Okanagan were at record lows, on average only 65 to 85 per cent of their normal size.

Coupled with this diminishing supply is a rapidly accelerating demand for water. Agriculture is currently the biggest user in the Okanagan, consuming 55 per cent of all water, or a total of 120 billion litres every year (by contrast, Metro Vancouver required about 400 billion litres of water for agricultural, residential and commercial uses combined in 2008). Vineyards soak up roughly 13 per cent of the agricultural water used in the Okanagan. Far more water is lavished on pasture land and orchards. But with vines have come the real sponges: resorts and housing developments.

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