



# Record heat could bring drought, disease by 2050

## Experts predict effect of climate change

BY DUSTIN WALKER, DAILY NEWS JUNE 27, 2009

Vancouver Island's frailest residents struggle during long periods of baking heat, once-rare diseases drain hospital resources and the Gulf Islands suffer as fresh water becomes scarce.

This grim prognosis could become reality by 2050 if measures aren't taken to prepare for the health effects of climate change, said Tim Takaro, a public health specialist at Simon Fraser University.

Health authorities in B.C. will face specific challenges as temperatures rise an estimated 2-2.5C by 2050, according to a report co-authored by Takaro. How to best deal with the health challenges brought on by rising temperatures in small cities and isolated areas was the focus of a forum at SFU yesterday, moderated by Takaro.

He already has a rough idea of what we might expect on Vancouver Island.

The somewhat secluded Gulf Islands and other snow-pack-reliant communities would struggle the most with dwindling water supplies in the summer due to evaporation, over-use and a declining water table. This will also exacerbate new diseases that could creep north along the coast and take root in a now-warmer, rainforest environment.

Plus, years of basking in Vancouver Island's normally mild climate could leave residents, especially seniors, less able to adapt to the kind of prolonged heat waves 2050 might see.

Like other parts of the province -- and the world -- increased forest fires, landslides and other extreme weather events will also become more commonplace putting more pressure on medical resources. But some populations could face unique health challenges.

"There are a lot of vulnerable communities on Vancouver Island," said Takaro.

Despite torrential downpours during parts of the year, the water supplies of Island communities could be easily assailable as the mercury rises in the decades ahead.

That was made clear in 2006, said Takaro, when Tofino shut down its tourism industry before the busy Labour Day long weekend, fearing there wasn't enough water for emergencies such as firefighting.

"So we have storage issues and the reason we have to plan for these now is it takes a long time to build a new reservoir," said Takaro.

Tofino recently completed upgrades to its water system to prevent a future dry spell. Most Gulf Islands, however, don't have much of a water system to upgrade. Gabriola Island, with a population of more than 4,000, has no reservoir and residents rely instead on wells and rainwater captured in large

containers.

Gabriola resident and Islands Trust chairwoman Shiela Malcolmson said that sea-water infiltrating wells is already a problem that she expects to get worse as ocean levels rise.

"We certainly talk about it a lot and we certainly hear about it a lot," she said.

Fortunately, Malcolmson thinks more residents are capturing and using rainwater rather than drilling wells into a water table expected to decline substantially in the future.

"It's hard to forecast how much more storage people are going to need," she added.

Communities that rely on snowpack for water could also struggle unless they plan for climate change, said Takaro. The snowpack feeding Nanaimo's reservoirs was down 50% last March.

City of Nanaimo water resources manager Bill Sims said the city has planned for climate change, moving up the construction of a new dam by a couple of years to about 2020. He's confident that even if snowpack levels are drastically reduced by 2050, the city would have enough capacity to serve the population due to a consistent level of rain.

Meanwhile, scorching weather, little rain and sea-water creeping into crops could also affect food production and create health issues, said Lorna Medd, medical health officer for the Vancouver Island Health Authority.

Scientists also say that extended warm periods would also lead to more blooms of harmful algae, potentially boosting the amount of tainted shellfish people consume.

Decades from now, new diseases could flourish in a much warmer Vancouver Island while some current ones could become more widespread, climate-change science suggests.

The deadly fungus *Cryptococcus gattii* is often cited as a prime example. Researchers suspect it was dormant on the eastern shores of Vancouver Island until a warming climate allowed it to reproduce. Now, the Island's infection rate is higher than anywhere else at about 25 people per year. Last year, a Cowichan Bay woman died due to the fungus.

The Vancouver Island and Vancouver Coastal Health Authorities will be the first in B.C. to be affected by the introduction of new warm-weather diseases carried by insects or vermin, according to the Climate Change and Health in British Columbia report.

"We don't know what the temperatures are going to be up to 2050, but it's conceivable things like malaria could anchor itself again," said Medd. "Certainly the acute-care section of VIHA will be taxed to address those new diseases that we see."

If there's also less potable water available, that will make the problem worse, said Takaro.

"We can dilute out the effect of a number of these pathogens, but as your supply diminishes, the concentration of these pathogens goes up," he said.

But these changing disease patterns does not mean pestilence will immediately spread across the Island. A strong health-care system with adequate monitoring will likely address the affects of these diseases in 2050, he said.

"Yes, we will have a shifting in disease patterns, how important they will be from a human health standpoint is really going way out on the projection limb."

Warm winters and mild summers have helped make Vancouver Island a hotspot for retirees. But that trend could also make residents here among the most vulnerable to prolonged heat waves, expected to be common by 2050.

Other places will be dealing with much higher temperatures, said Takaro, but Vancouver Island doesn't have the infrastructure to cope with prolonged excessive heat. Few people have air conditioning or access to it, while many buildings are not designed to keep people cool.

"So you are, in a way, worse off than Atlanta, Georgia or Mobile, Alabama, because there people have adapted and everybody, or just about, has air conditioning or access to it," said Takaro.

Research suggests that by 2050 heat stroke will replace freezing as the biggest extreme-weather killer in B.C., with the elderly and urban poor most at risk.

But Takaro doesn't advocate everyone buying air conditioners. Instead, "safe havens" from the heat should be created in air-conditioned public buildings. Other cities, such as Chicago and Philadelphia, already have similar programs in place, he said.

Parksville Mayor Ed Mayne thinks it wouldn't be difficult for the community to open up its public venues so people vulnerable to the effects of heat could cool down in an emergency.

"Sure it's feasible, and it may become something we have to look at," said Mayne, whose community has Canada's second-largest population of seniors.

Although the health authority has a communications system to alert people using the media in the event of a prolonged heat wave -- or other extreme weather event -- Takaro said more formal methods are needed that involve feedback to the health authority to ensure the city's most vulnerable people get the message.

Medd said that work on planning for the health effects of climate change is "ramping up" at VIHA, but the problems require a major co-operative effort to solve.

"One of the difficulties is that it's huge. It's something that goes well beyond the health sector and it's something that requires co-ordinated planning not just on Vancouver Island but Canada-wide and globally," she said.

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