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Magic mountain, melting snow: Climate uncertainty in the Comox Valley

Wacky and unpredictable weather is inevitable, but ski-loving towns persist with creativity and resilience.

BY MADELINE DUNNETT • COMOX VALLEY • JANUARY 3, 2024

My dad, far left, and students in a ski retail and repair class he taught at Forbidden Plateau in the early 90s. **Submitted photo**

When I was a kid, I used to play with the pile of toys at Ski Tak Hut in Courtenay while my dad closed up shop.

Ski Tak Hut has been selling skis and snowboards in Courtenay since 1976. My dad has worked there since before I was born, and when I was a baby he would divide his time seasonally — working as a fishing guide in the summer and at the ski shop in the winter. He became a store partner in 1993 up until his recent retirement, and in a way it became part of the family.

I got used to going in there with my mom after school, and we would chat to everyone and wait for my dad to finish up work. I remember hiding under the clothing rack when I was really young, pretending to play hide and seek.

The winter ski season at Mount Washington was just a part of life, as dependable as a rising sun. My family would huddle around the television, watching the weather channel, hoping for a forecast of rain and 7 degrees Celsuis or colder in the Comox Valley — that usually meant snow up in the mountains.

We watched the weather as if it was the 1940s and we were listening to a radio show. It was a family bonding thing.

So was skiing. My parents put me in cross country ski lessons from the age of eight and I stuck around with the sport until twelve.

I switched to downhill skiing in high school because I was a teenager and I liked the adrenaline rush. As a kid, I also didn't realize how lucky I was to have the opportunity to have access to ski gear and the mountain. As I got older and couldn't afford to do it anymore at certain points, I learned to appreciate it.

As an adult, I've fallen back in love with all types of skiing. I recently moved back to the Comox Valley, in part to be close to the mountains of my childhood.

But the ski seasons here aren't what they used to be, as warmer temperatures squeeze them into possible oblivion. It's early January, and only a small fraction of Mount Washington's runs have opened, due to a lack of snow.

Climate scientists predict that, even with aggressive action to reduce global greenhouse gas emissions, average winter temperatures on Mount Washington will approach zero degrees by

the last decades of this century.

The year the weather got weird

The mountain barely opened in 2005. In "Canada's top ten weather stories for 2005," Environment Canada shared that "never in recent years had snow conditions been so pathetic, leading to huge economic write-offs and major disappointment among snow enthusiasts."

The mountain measured 12 per cent of its average snow pack during the ski season that year.

"Ironically, in April, the resort received a whopping 360 cm of snow — the biggest April snow dump in 25 years, making for the best end-of-season skiing in memory."

These weird weather patterns were my first glimpse of the Vancouver Island ski industry's uncertain future.

I was ten in 2005, and I was in a junior cross country ski program where we were starting to train for racing. I remember there was a lot of dry land training in the fall, and then the season just ended up tapering off. We just… didn't really go up the mountain that year after December.

And I remember my dad being really down that year. It was one of the first years where I started to notice a clear relationship between an absence of snow and stress.

Lots of snow meant more financial security, and my ten-year-old brain was beginning to make sense of those connections.

"We live and die by the snow from a business standpoint, much like a farmer lives and dies by the weather," said Al Dunnett, better known to me as my dad.

I recently interviewed him about the changes he's seen over his lifetime of working in the ski industry.

My dad was obsessed with skiing when he was a kid, and well into my young childhood as well.

"I was a dedicated skier, passionate skier, I absolutely loved skiing… And it probably did affect my schoolwork a little bit, but I did make it through Grade 12," he laughed.

My dad and I skiing in 2000 at Mount Washington. **Photo by Jane Dunnett**

My dad became very emotionally connected to the weather patterns and systems throughout his life. When I asked him about some of the harder parts of watching the climate change in his line of work, he said that it's the uncertainty and variability that climate change brings, as well as watching the snow line recede before his eyes.

With climate change causing more extreme weather patterns and longer warm-ups and dry spells interspersed with random snow dumps, it makes planning and operating ski resorts challenging.

Coastal ski communities need resilience

Snow conditions can vary much from year to year and within seasons, and the Vancouver Island ski community is no stranger to unpredictability.

As a kid, my dad said he remembers days when the mountain would see rain. There were plenty of winter days where he would go up the mountain and be unhappy to see the rain wasn't turning to snow when he got up to higher elevations.

"Although we did seem to have a heavier and deeper snow pack," he said.

He grew up skiing Forbidden Plateau, which closed in 1999 after years of financial struggle, some of which was due to unpredictable weather and unreliable snow.

He said he'd often look up from the day lodge at the snowier peaks higher up and wish that the resort was up a little higher so the snow was a little closer.

Ski Tak Hut in 1994. **Submitted photo**

Shrinking, shifting, changing

Comox Valley residents are getting used to watching a landmark change before us. My dad said out of all this, the biggest change he's seen is watching the Comox Glacier disappear.

"It's almost gone," he said. " I mean, it's going to be there for a little while longer, probably, I don't know how long, they say 20 more years… But it's definitely melting away."

J.B MacKinnon outlined the shrinking of the Comox Glacier in his piece for Hakai Magazine in 2016. He shared photos from 2013 to 2015, displaying a huge decrease in snow atop the glacier.

MacKinnon reports that the Pacific coastal temperate rainforest zone, which stretches from northern California to Alaska, is "losing glacial ice faster than almost any place on Earth."

Brian Menounos, professor of Earth sciences at the University of Northern B.C., estimates that the Comox Glacier, alongside all of Vancouver Island's glacial ice, will be gone by mid-century.

My dad's side of the family has been in the Comox Valley region for just three generations, but the roots of this story are so much deeper.

We've briefly watched a shrinking glacier that is an integral part of K'ómoks First Nation's history and connection to this land. The Legend of Queneesh (from the K'ómoks word xqʷənɛs, meaning whale) tells a story of a great white whale who emerged from the glacier to save the people from a terrible flood.

The mountains that my dad remembers as a kid are different from the ones I remember as a kid. Both of our perspectives are limited by what we each assume to be normal — a phenomenon also known as shifting baseline syndrome.

Shifting baseline syndrome was coined by marine biologist Daniel Pauly. It refers to a "long-term pattern of amnesia" that takes place over generations.

There is a photo of my dad, from his fishing guide days, with a huge smile on his face, holding a very very big fish.

Research has shown that the biggest fish are getting smaller. I accept that as a fact, and know that I've never seen a fish as big as the one in that photo. But I can't feel that loss in the same way my dad, who caught that fish and proudly held it.

The stories we tell — of enormous fish, of giant whales made of ice, of winters rich with snow — are profoundly important in an era of environmental change. None of us alone can get a clear enough view.

Whiskey jacks and mountain heather

I still haven't hiked the Comox Glacier. I almost did, the last two summers, but the access gates were closed. Climate change has also increased the forest fire risk on Vancouver Island, and summers more often see locked gates on private forest roads, in an effort to prevent motorized vehicles from sparking fires.

My mom hiked the glacier in 1985.

"I was not in very good shape," she told me over the phone, chuckling. "It was the most gruesome hike I'd ever done."

My mom, in the hat and bikini top, celebrating her summit of the Comox Glacier in 1985. **Submitted photo**

I asked her what she remembered from it. She went up with a group of friends, and she told me that her friend made her wake up early to watch the sunrise on the first morning, before they summited.

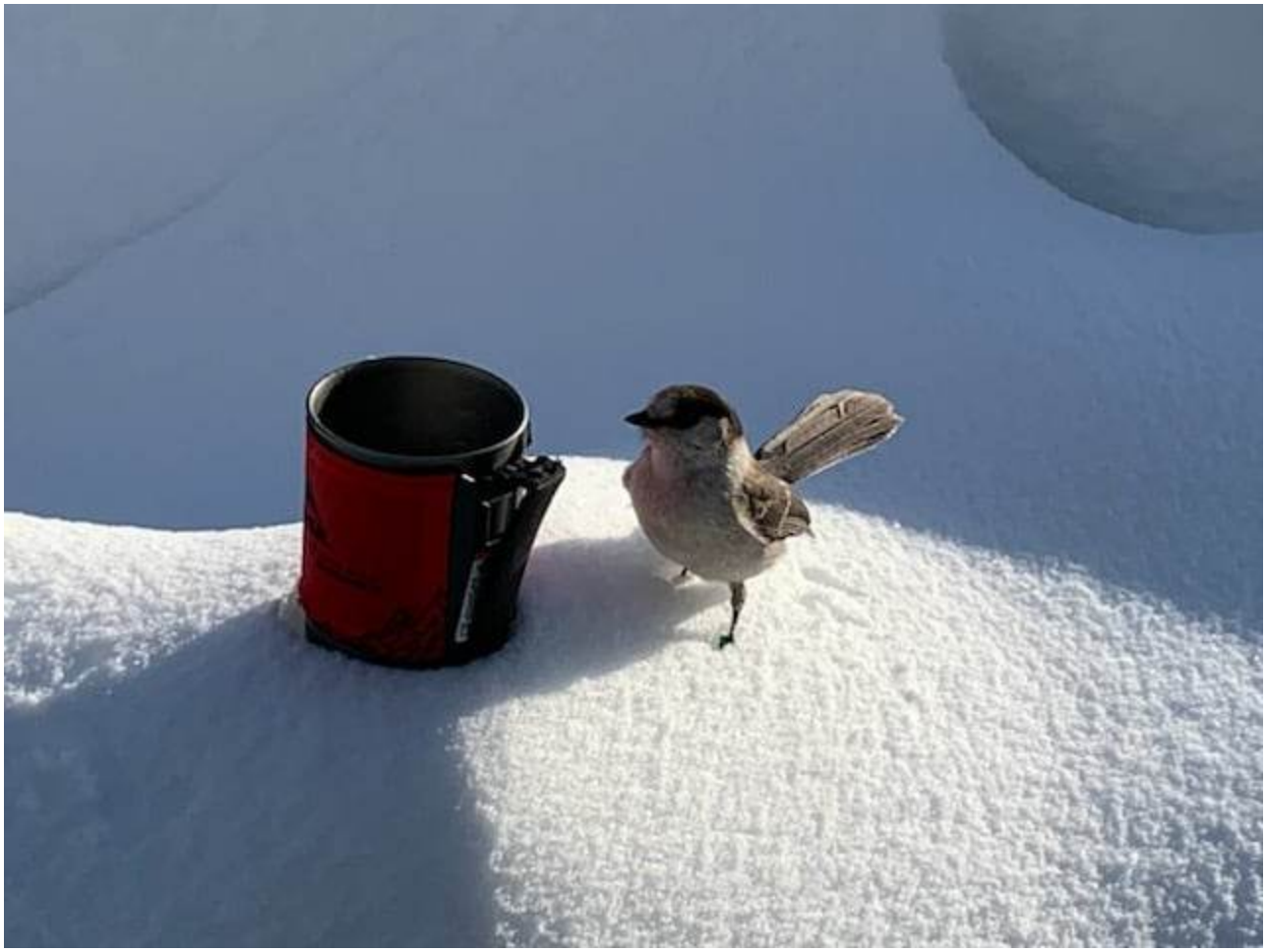
They had camped on a ridge overnight, and although (like me) my mom hates mornings, she told me she was glad her friend made her wake up early. I laughed — I've been in this situation so many times, being out in nature with a friend, being forced to wake up in the morning, but never regretting seeing the sunrise.

She told me she felt like she was on top of the world, watching the sunrise across the Salish Sea. After her early morning, she and her friends continued their journey to the summit. The glacier hike satisfied my mom's immense love of birds.

“The thing I really remember were the whiskey jacks,” she said.

Whiskey jacks, also known as gray jays, are little birds that will eat right out of your hand. They live all across Canada and parts of the United States.

I have many memories of them. When I was a kid, we used to hike through Strathcona Park and bring seeds for them to munch on. I have a strong memory of my cousin Geordie putting seeds on his head and watching the little birds eat the seeds off of it. I was certainly too scared to try his trick.



This whiskey jack will most definitely steal your soup. **Photo by Jane Dunnett**

The name whiskey jack has nothing to do with hard liquor. It derives from a word from the Algonquian family of languages: Wisakedjak is a trickster character who in some stories is known as being among the creators of the world.

My mom also told me about all the mountain heather and wild plants that grow in the subalpine and alpine environment. There are little subalpine huckleberries that are blue,

instead of the red ones that live at lower elevations on the coast, and blueberries, and when a hiker gets up higher, there are little tiny trees that are much older than they look.

“Back then I didn’t really know the name of all that vegetation, so it’s interesting to look back, because it was so beautiful,” my mom said.

The fact that my mom didn’t just always have knowledge about the biodiversity around her came as a surprise to me. Growing up, my mom always knew the names of the flora and fauna around us.

I have a very distinct memory of going on a hike with her in Strathcona Park as a kid, and her saying, “We are now entering a different biogeoclimatic zone! These trees don’t grow at lower elevations, Madeline.”

But of course she didn’t always have this knowledge of Vancouver Island; she was born on Prince Edward Island!

I wonder if her glacier hike was one of the major tipping points in her learning and becoming interested in the alpine and the plants that grow there and the animals that live there. When I hear her recount her memory of the glacier, I think maybe so.

A big crevasse on top of the Comox Glacier in 1985. **Submitted photo**

When my mom got to the top of the hike, they walked right across the glacier. She remembers walking past a huge crevasse that seemed to go forever. She told me they found a jar up there, at the very northern tip of the glacier on a little peak. And she said there were names of all of the people who had climbed up there.

“I looked up at the glacier ever since I was a teenager and [when] I climbed up there… it wasn’t until I got to the top that I even thought about what’s on the other side. Which is so important. Because I saw this incredible vast spine of Vancouver Island… and all the little alpine lakes and little glacial pockets in behind. And it was sheer magic.”

As she explained this to me, I couldn’t help but think about “what is on the other side” when it comes to climate change and our local environments.

We're peering out to the future from above. We can catch a glimpse but so much is still uncertain. We know that so much will change, and that we'll have to fight to preserve what can still be saved.

The Comox Glacier is expected to be gone by mid-century. **Submitted photo**

Less predictable, more extreme

Natalie Knowles, research coordinator at Protect Our Winters (POW) Canada, said that these changes my parents and I observed over the last twenty years or so are consistent with her models.

Weather trends are deviating from the historic norm more frequently, she said.

"Those patterns that we have historically relied on are changing," she said, sharing that things are also getting more extreme. Canada's southwest coast is tricky, because the mountains here already ride close to that freezing level.

So we were already bouncing back and forth, with temperatures hovering near zero degrees Celsius, which is already risky. With climate change, that bounce between melting and freezing also changes. This makes things not only difficult to plan, but it also causes a much more risky and volatile snowback and increases avalanche risk.

This year, we're experiencing what's known as an El Niño weather pattern. El Niño is the warmer part of a broader weather pattern within the eastern tropical pacific ocean known as El Niño-Southern Oscillation (ENSO). The cooler phase of ENSO is known as La Niña.

These patterns can sometimes be helpful in predicting a successful ski season or lack thereof, but they are just one piece of the puzzle of snow.

"A good season at Cain is not what's going on with ENSO but what's going on with the jet stream," said David Mazzucchi, a board member at Mount Cain who also holds a PhD in Earth and ocean sciences.

"Not to say that the jet stream isn't affected by ENSO but the position of the jet stream relative to Vancouver Island is an important factor in whether Cain gets rain or snow."

The Arctic is warming faster than the rest of the planet, which has weakened the jet stream that contains the mass of cold air over the Far North, known as the polar vortex. That creates weather conditions that can fluctuate more dramatically.

"You also have that wacky polar vortex [where] it is minus-forty degrees and then ten degrees the next week," said Knowles. "Unprecedented events are just happening more, and we know they are going to happen more, but we just can't predict when they're going to happen."

This might mean that the West Coast can get random huge dumps of snow, followed by rain and warm temperatures.

Resilient people, resilient planet

I asked Knowles what she thought about the overall impact of the ski community on climate change. That is the irony of the whole thing. People find their love of the environment on ski hills, but ski hills have an impact too.

“The biggest emissions from skiing come from the transportation to get to the ski hill,” she said.

She emphasized the importance of community ski hills — ones that don’t cost an arm and a leg and put a huge carbon footprint down just to get to them. Things such as offering better waste solutions for food on the mountains, offering more carpooling and sustainable transportation options can help.

“If we can promote more local skiing and less travel, and create some better transportation networks so that people can get to the hill in a more sustainable way. I think that’s huge,” she said.

She also highlighted how ski areas can provide an opportunity for land stewardship if done in the correct way. She said that if the land is prioritized in the right way, it can be a great opportunity for carbon sequestration and biodiversity.

She said that ski hills are not a monolith — there are some that support sustainability and provide a lot of economic benefits to a small community, while others create more negative impacts.

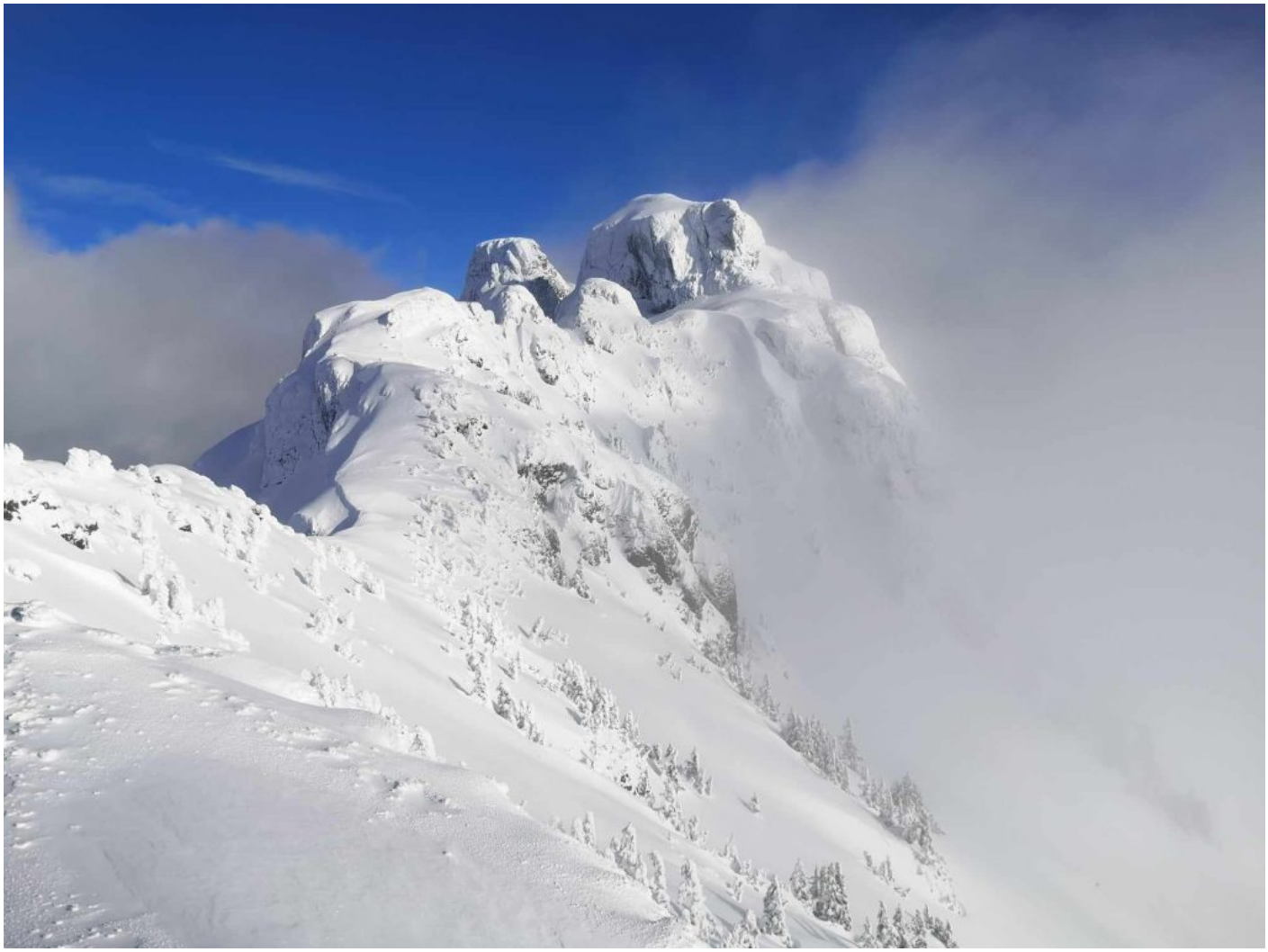
Knowles grew up ski racing, and she said she became interested in more climate advocacy while watching the glaciers recede. She saw similar changes in the environment growing up that I did. While training in Colorado during her undergraduate degree, she noticed the seasons were starting later and later.

“I was studying environment and conservation. And I was just kind of like, okay, where can I make a big difference?” The answer, she said, is “in our own communities and my communities, like the ski world.”

Her interview made me wonder — how is it possible to measure the impact of being in the mountains on our wellbeing?

I don’t think it’s possible to measure my mom’s love of the whiskey jacks that she met on her glacier hike, or my dad’s obsession with skiing as a teenager that led him to become more of an environmental advocate the older he got.

Being in the mountains was a big part of my career path as well. My journalism has often focused on climate change, and it's because I was lucky enough to grow up in a place I felt connected to and got to experience.



Mount Cain's East Bowl in 2021. **Photo by Madeline Dunnett/The Discourse**

Both Mazzucchi and my dad really underlined how resilient the coastal mountain communities are.

Mount Washington has done a lot of stump and slash clearing to clear the slopes so skiers are able to ski even without a huge snow pack. For Mount Cain, it's the flexibility of offering half-price tickets if the lower lift isn't open, for those who are willing to make the trek up to the upper lift. For Ski Tak Hut, it's the introduction of more backcountry ski gear to sell for those who want to commit to heading out and finding the snow for themselves.

Mazzucchi said he thinks it is the local community that really keeps Mount Cain going.

“It’s a special place,” he said. “People want to be here.”

For my dad, he thinks that humans will keep wanting to spend time outside in ways that we can, even if it’s different. He said the ski industry has been responding and reacting to climate change impacts for a while, possibly without even realizing it.

I asked him if he feels grief, and he didn’t feel that word fit for him, though there are emotions there.

“I feel that Earth is resilient. It’ll respond back with what humanity does to it.”

We have a choice, he said, in how to respond to what the Earth brings to us, from what we have done to it.

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