

Site of historic landslide shifting

Monitoring of Turtle Mountain being stepped up

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Roaring like thunder and moving like a freight train, a giant wall of rock rushed down Turtle Mountain and struck the southwest Alberta community of Frank with fury, wiping away dozens of lives in an instant.

It's been 105 years since that deadly rock slide shook the Crowsnest Pass, but the disaster isn't merely a history lesson for the residents who still live in the shadow of the mountain.

With a future slide considered to be ultimately inevitable, the Energy Resources Conservation Board is expanding its high-tech network of monitoring tools to better understand how the mountain is gradually shifting.

By the end of this summer, the number of monitoring stations on Turtle Mountain will have doubled to 80.

"If you use the analogy that you're looking at the mountain as a hand, you're monitoring a thumbnail," explained Corey Froese, an expert on Turtle Mountain with the ERCB's Alberta Geological Survey.

"We're now monitoring the whole front of the hand -- the whole face of the mountain -- and areas that, based on some of the mapping and our different studies, we think either are moving or could move in the future." The program builds on the provincial government's \$1-million investment in 2003 to implement a state-of-the-art predictive monitoring system, which dotted the peak with devices -- like tiltmeters and crackmeters -- that keep tabs on the mountain.

The efforts have been welcomed by many of the 6,000 residents of Crowsnest Pass, which is now considering a bylaw to restrict development in an area near the mountain where there's a tiny cluster of homes.

"It's world-class," Mayor John Irwin said of the monitoring system that keeps tabs on Turtle Mountain. "It (a rock slide) is not likely to be in my lifetime, but it could be next year. We don't know. But we do know that in all likelihood, it will happen." Fortunately, the community stands a much a better chance of knowing in advance of when the next rock slide will occur, thanks to the monitoring system that's been implemented.

Barring an unexpected earthquake, "we do expect that we would have days to weeks of lead-up to provide notice to the residents," Froese said.



CREDIT: Photos, Grant Black, Calgary Herald

Corey Froese and a team from the Energy Resources Conservation Board have installed monitors on Turtle Mountain to keep tabs on its movements.

That wasn't the case April 29, 1903.

At 4:10 a.m., 30 million cubic metres of limestone and shale roared broke from the face of Turtle Mountain and crashed across a three-kilometre span of the valley, touching the sleeping coal-mining town of Frank.

While the slide missed most of the community of 600 residents, it crashed over miners' cottages, temporary dwellings, a farm and a railway camp. More than 70 people died.

"Nobody had any warning except for the men in the mine -- who noticed some strange movements, but they never thought it was going to be a rock slide," said Monica Field, who manages the Frank Slide Interpretive Centre overlooking the awesome debris field the slide created.

A century later, the Energy Resources Conservation Board is using some of the best technology in the world to reduce the risk of future surprises. If there's significant activity, officials like Froese will get instant notification any time of day.

That happened once last year.

"One day at three in the afternoon, I get a phone call from a colleague that's also on this system, saying something is moving," Froese said.

"We both got in front of our computers and quickly looked at it. We said, 'This appears to be real.' " They immediately checked other sensors and found nothing troubling, but they kept watching for a week.

"It never made it out of our office because it wasn't a concern for a global failure," Froese explained.

"But . . . it's nice to actually have things like that to give you confidence" about the system.

The monitoring is also helping scientists gather valuable insights into how the mountain is moving. It's shown the peak is creeping slowly by a couple of millimetres a year.

But that work, as well as cutting-edge mapping, led the board to expand its monitoring network beginning last summer.

"We realized that we needed to step back and really be comfortable that we were monitoring everything that should be monitored," Froese said. "There were potentially larger issues that we hadn't appreciated before and so in order to really understand those issues, we've expanded our network." Darin Barter, a spokesman for the conservation board, said it all boils down to public safety.

"This project really is all about protecting the people at the base of this mountain," Barter said. "There's a number of families, there's a number of individuals, who live at the bottom. We need to make sure that their location isn't putting them at risk." In the interest of safety, the local municipal council is also considering a bylaw that would restrict development in an area that's thought could be in the path of a future slide. There are about 10 homes in the area. The proposed bylaw would, among other things, prevent any further subdivision of existing certificates of title in the area. It would allow residents to rebuild their homes should they be damaged in some way, like fire.

The bylaw has gone through first reading, but is scheduled to return before council later this month.

The community's mayor explained that with all of the information available now, there is a

responsibility to keep citizens out of harm's way.

"We can't reach and retroactively change what's happened in the past, but we can set out systems to minimize potential threat and danger in the future," Irwin added.

"We don't want to interfere with the enjoyment of life and property of the people living in the area. We want to make sure we can get them out of there before it comes down -- if and when that happens." But the bylaw doesn't make much sense to some of the residents who live in the potentially affected area.

Roy Lazzarotto, 76, chuckles when asked whether he's nervous about where he lives. The longtime resident, who proudly mined in the region for decades, has been up and around the mountain over the years.

While Lazzarotto believes that there will be a rock slide someday, he's certain the home he's lived for the past 16 years is "as safe as a church." And he notes that there have been restrictions in the area before. If the bylaw proceeds, he thinks it will someday be changed again.

"There's no way that mountain comes down here," he said.

"Don't you be scared." tseskus@theherald.canwest.com

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