When faced with fire: How climate change could affect Canada's wildfire risk

Ritch Seeley:

The 2023 wildfire season has been record-breaking in a number of ways. On June 27th, 2023, Canada exceeded its known historical record for total area burned by wildfire in a single season, shattering a statistic that has stood for 34 years. With months left to go in the 2023 season, Canada has already also surpassed the 10-year average for number of fires, as well as set a record for forced evacuations. As fires continue to rage across the country and smoke continues to affect air quality worldwide, many people are wondering how much worse this year's wildfire season will get and how climate change may affect the severity of wildfire season in the years to come. Is the 2023 season an outlier or is this the new normal?

Hello, I'm Ritch Seeley, Western Canada practice lead for Marsh Advisory Consulting Solutions. Welcome to the second podcast of our three-part series from Marsh Advisory Canada on wildfire. The series focuses on helping you identify wildfire risks to your operations, discusses tools and resources to help mitigate the risks, and explains how to make your operations more resilient.

Today, I'm joined again by George Fan, who is Marsh Advisory Canada's lead consultant on catastrophe and climate risk. Welcome, George.

George Fan:

Thanks, Ritch. Glad to be here again. It's my pleasure.

Ritch Seeley:

We're also joined by Mirsada Jakupovic, one of Marsh's senior insurance placement leaders in Western Canada. Welcome, Mirsada.

Mirsada Jakupovic:

Thank you, Ritch. Great to be here.

Ritch Seeley:

Last episode, we covered the basic science of wildfire and discuss mitigation strategies that can help protect your business. In this episode, we'll talk about the impact we expect climate change to have on wildfire risk and potential insurance implications. As we know, things can change in the blink of an eye, much like what has happened in the last few weeks between recording part one and part two of this series. Since we've recorded our last episode, we've seen a significant wildfires occurring in Alberta, Nova Scotia, Quebec, Ontario, and British Columbia (BC). In fact, BC has its largest ever wildfire currently burning, the Donnie Creek fire, measuring over half a million hectares in size as of July of this year, which may keep burning until winter. To put it into perspective, that's larger than the entire area of Prince Edward Island.

The effects of these fires have been felt across Canada and beyond, with smoke reaching as far away as Europe. Our hearts go out to the people affected by these fires. We know people have lost their homes, their businesses, and it has also directly affected some Marsh colleagues along the way as well. We're also extremely grateful for the courageous firefighters and emergency responders on the front lines who continue to battle fires across the country. No doubt it's been a tough year this year.

I'll start with a question for George. From a scientific perspective, what are the effects of climate change on wildfires?

George Fan:

Yeah. That's a great question, Ritch. I'll take a step back and explain the current landscape of climate change in Canada. Canada's average temperatures have already risen by roughly 1.9 degrees Celsius from 1948 to 2021, and due to our higher latitudes, warming across Canada is about twice the global average with even faster warming rates in the northern regions of our country. Wildfire risk is closely correlated with temperatures, so the higher the air temperature and also the dryer it is, the more likely wildfires are to occur and rapidly spread. Speaking of temperatures, in the first week of July 2023, we broke the world average temperature record three times.

The warming is actually distributed quite unevenly across the year as a result of climate change. We get much more warming in the winter than any other season, so this has a pretty significant effect on the timing of wildfires, which means if you're coming out of the winter earlier, the wildfire season can start earlier as well, which is exactly what we saw in Alberta earlier this year.

Ritch Seeley:

Yeah, we certainly saw this coming too from our perspective out West where we saw the Alberta temperatures. Even in March, people were talking about the nice warm dry weather and were smiling and celebrating, but that usually leads to warmer seasons leading in.

George Fan:

Exactly. Yeah. Some stats from May 2023: Alberta actually had a string of record-breaking temperatures, and some of the records are over a hundred years old, and given the dry and windy conditions, and for example, the dried organic material that's accumulated over the winter, these were prime conditions for disruptive wildfires, as we've seen. Also, continuing on the path of climate change, the total area burned by wildfires is expected to increase by somewhere in the range of 74% to 118% by the end of the century. That's double. Just like you mentioned, [the] Donnie Creek wildfire, it might not be put out until wintertime, so I think the moral of the story is, climate change is causing the wildfire season to start earlier, potentially end later, and also increasing the frequency and intensity of the fires.

Ritch Seeley:

What about the changes in precipitation with climate change? I've heard there's going to be more rain coming, but can we count on that rain to put out the fires?

George Fan:

It is true that precipitation is going to increase with climate change, but we have to keep in mind that the effect of precipitation is going to be uneven. We're more likely to get extreme weather, whether it be extreme heat, drought, or sudden downbursts of rain. So, even though there might be more precipitation in total, the wildfire risk is still expected to increase since the average temperatures are expected to rise.

The other interesting thing with precipitation is the increased risk for flooding after wildfires. After a fire burns through an area, it leaves the ground charred and barren, which means it is unable to absorb any water. So any rain, especially extreme rainfall that happens subsequently is much more likely to result in, for example, mud flow and flash flooding and could result in more damage, and the risk lasts roughly around five years after the wildfire.

Ritch Seeley:

That's interesting. So, I guess what you're saying is the rain helps, but it needs to be in the right place at the right time, which is not always easy to do. The secondary problem is, when you get a lot of rain, you destabilize the soil. I know we certainly saw that out West, here with the November 2021 atmospheric rivers, that it really affected the Coquihalla and Fraser Valley where we had these massive rains and it destabilized the soil. Yes, the river is flooded with water, but there was a lot of debris, wood, and mud that came down and plugged those rivers, and they're still recovering. They're still cleaning those rivers out. In fact, last year, they were concerned about different types of flooding because of the blockages in the river, so we see it.

So, it sounds like though the charred ground is not going to help that in any way. It's going to make it worse.

Changing the topic briefly, there's been a lot of buzz around El Niño, and I just wanted to better understand how this is going to affect the wildfires.

George Fan:

Yeah. El Niño is a naturally occurring pattern. It is part of the El Niño-Southern Oscillation, ENSO for short, which has to do with changing temperatures and precipitation patterns in the Pacific Ocean. The other extreme, is La Niña, and there's no regular recurrence frequency, although, the cycle does swing back and forth roughly every two to seven years.

In Canada, El Niño typically leads to warmer and drier winters, especially in the Western and Central regions. El Niño is correlated with large fires in Canada, so for example, the one in 2014 to 2016 contributed to the Fort McMurray wildfire in 2016, and the next El Niño in 2018 to 2019 was one of the worst years in terms of BC's wildfire burn area on record.

Currently, El Niño conditions are present and are expected to strengthen into the 2023–2024 winter, and coming out the next winter, I would be concerned for the next season as we could have a pretty warm winter, which means potentially [an] earlier start to the wildfire season.

Ritch Seeley:

From a business perspective, El Niño certainly changes the risk, as well, and it brings an increase to the likelihood of direct wildfire exposures to property and infrastructure, as well as indirect exposures to the supply chain, creating some business continuity concerns. In certain industries, they're going to be a major issue. Certainly, with the forestry industry, we've seen it there, the mining sector, tourism, ski hills, resorts, places like that, and the energy industry as well. Also, companies that rely on linear assets — and I had mentioned this already about power lines, pipelines, and rail — are going to have challenges. This affects the economy in many different ways and we're going to see more and more of this.

But aside from these sort of direct risks, there's a strong point to be made about health and people risk associated with wildfires as well. Wildfires generate a lot of particulate matter — very small, two and a half microns or smaller — which can travel deeply into the lungs and affect the heart and lung function. We saw the impacts of air quality in areas of New York and Toronto from the Quebec fires in June 2023, with news showing orange skies. Businesses need to have strategies to help employees manage these risks. There's also an emotional reaction and loss of engagement. Wildfires create fear, and people are afraid, and it's a major distraction. We saw this happen, and it's very similar, I should say, to COVID and how people reacted in the COVID-19 pandemic, but employees need to have a strategy to keep their staff engaged, keep them safe, keep them motivated, and keep them informed.

Certainly, in Western Canada, we're becoming more comfortable with the concept of a wildfire season every year. It's a common practice, and some people are starting to plan their vacations around it now. In fact, I've done that this year myself.

So, is 2023 an anomaly? All signs point to the fact that it's probably going to be the new normal.

I guess, with this in mind, I wanted to ask Mirsada a question about how she thinks the impacts of the recent fires will be, or what they will be on insurance.

Mirsada Jakupovic:

Hi, gentlemen, great to be here with you today. Thank you for having me.

The current insurance landscape is a challenging one. Allow me to just take a step back in terms of how we got here. All industries experience cycles of expansion and contraction, and this is particularly true of the insurance industry. We tend to categorize the insurance industry cycles as either soft or hard, and what we mean by that, as an example, soft means lots of competition, lower premiums, broader coverage, and relaxed underwriting criteria. Whereas a hard market is defined as one that has high demand, reduced supply, increased pricing, strict underwriting standards, and of course, sadly, reduced capacity.

We've been experiencing a challenging market for the better part of [the] last three years, and there are several factors that actually led us to this market shift. They include economic downturn, increase in reinsurance costs, low interest rates, low investment returns, a lengthy period of increased claims and claims costs, huge increase in catastrophic losses, natural disasters, and of course all further aggravated by the global pandemic and the war in Ukraine.

Although, no two cycles are ever exactly the same, they typically do last anywhere from two to 10 years from what we've seen. The last soft market stretch was the longest by far, definitely, since my time in the industry about or just over 16 years, hence why the current challenging market is taking longer to work its way through. As an example, Q1 of this year marked the 22nd straight quarter of price increases on our property portfolio.

So, why am I mentioning all of this? It's to provide a bit of a background as to how we got here and where [we go] from here, and how all of this really relates back to the wildfire situations we're seeing across the country and how the markets are responding to it.

For all the reasons just mentioned, insurers are now extremely cautious in terms of how and where they deploy their capacity. They're particularly sensitive around catastrophe — or CAT, as we call it for short — events associated with natural catastrophes and man-made disasters, as they can cause profound impacts on the insurance industry.

For instance, average annual cost of claims due to severe weather has more than quadrupled, sadly, over the past decade. The climate crisis, as both of you have mentioned, is fueling more frequent, but also more severe weather events, and insurers are reacting to it. Renewals with predominant natural catastrophe exposure are proving to be some of the most difficult renewals Marsh has seen in the last 30 years. And really as for wildfires, currently in Canada, the cover is still available. However, we're seeing a turn in how insurers now approach wildfire season. During wildfire season, most insurers won't bind insurance policies and properties within a certain radius. Typically, this is about 50 kilometres, but we've seen them range in terms of distance of an active and uncontained wildfire. So, what they've been doing is imposing moratoriums, and what this means is they'll refuse or reject to accept new business submissions, any increase in limits or addition of new locations and existing business, or any changes in existing cover and deductibles in areas directly impacted by the wildfires.

We have just seen one of our major insurers advise in June that going forward, they'll look to impose a wildfire deductible across the board as a part of the go forward renewal negotiations. So, while I have yet to see a more collective and consistent approach by all of the insurers as far as wildfires are concerned, I do expect that most will follow the lead of the few. Wildfires can and have impacted a lot of different industries and in a variety of different ways, including utilities, forestry, communications, Ritch, as you mentioned, tourism, hospitality, municipalities, and so on and so forth.

Ritch, just to go back to what you mentioned earlier, using a tangible example of the forest industry, forest fires can destroy timber supply and damage logging infrastructure. As we all know, this has residual effects on sectors like pulp, paper, and construction. For example, British Columbia saw the closure of sawmills in 2017 after fires burned 1.2 million hectares. This then led to an international surge in timber prices that I think we all felt across the board. So, I'm afraid to say that wildfires are unfortunately here to stay and they'll have a big impact on our clients, their businesses, those around them, and ultimately how the insurer market responds to it going forward, as we can expect that they definitely will want to minimize their exposure.

Ritch Seeley:

That's really interesting. Thank you, Mirsada. I guess the next question is, if you could look into your crystal ball, how do you think climate change will affect insurance markets and their ability to place insurance for wildfire risk?

Mirsada Jakupovic:

Well, Ritch, I certainly wish I had a crystal ball for a lot of decisions in my life, but my prediction in terms of this particular topic is, as much as I don't like to say this out loud, that things will get more challenging as the wildfire seasons intensify. Canada's on track to have its most destructive wildfire season in history. Going forward, I expect to see even more scrutiny from insurers. What does that mean? I expect to see tighter, more restrictive underwriting. I expect to see [an] increase in pricing, moratoriums in place for new expanded business during wildfire seasons, which now in Canada, at least for us, goes from March until [the] end of October. Mandatory across the board deductibles outside of the moratoriums as well, regardless if you're deemed to be in an exposed area or not, and, of course, outright potential refusal to provide cover. Many insurers have paid significant losses surrounding wildfires, right? And I expect that they'll be taking all the necessary steps to mitigate this exposure going forward.

Do I anticipate that things could get as bad as the situation in California? What I mean by that is, there's an insurer that will no longer provide home insurance to new California customers because of wildfire risk and an increase in construction costs. This is, of course, the worst-case scenario for sure, and one I hope we never have to face. But the reality is that the trend where certain risks become less or completely uninsurable because of climate change is happening around the world, and we see it on the daily, right? Insurers in Canada face the same problems as those in California, including higher, more frequent CAT events and therefore claims, and higher costs for rebuilding and higher reinsurance costs.

Now, the federal government has published research showing Canada is warming twice as fast as global average and three times faster in the north. Is it possible that wildfires in Canada will one day become uninsurable? Again, the sad reality in my opinion is yes, it is possible. When a segment does become uninsurable, it's often when you see the government stepping in, which they did with the flooding, for example. So, I don't expect that home and business owners will necessarily be left high and dry, however, they certainly stand to inherit a lot more of the exposure going forward, right?

With that in mind, I think that it's absolutely crucial that we work together with our clients and alongside Marsh Advisory to be more proactive than reactive, whether that means putting our best practices pre-wildfire season or looking at different building designs or developing a wildfire plan. And as far as I'm concerned, one thing that I would love to be ready and armed with as a broker is some type of wildfire mapping, during my negotiations with the insurers. And with in mind, I'm actually curious if this is something that Marsh Advisory is currently exploring and what the timeline of that, if so, looks like.

George Fan:

Yeah. You brought up a great point, Mirsada. In fact, we recently partnered with a third-party vendor that provides us with a very high definition of wildfire layers across the entire country. And as far as we know, this is not available anywhere else on the market. We were able to secure 20-metre resolution wildfire data, and our vendor was able to use, for example, layers such as conifer percentage, canopy height, fuel hazard, and slope to come up with a risk and exposure layer all across the country. So, this would be a great tool to be able to help brokerage and our clients determine the extent of their wildfire risk.

Ritch Seeley:

It's going to be really interesting, George, isn't it to see how this works with brokerage. I think we know that we need to work together with brokerage, and these insights will hopefully improve the underwriting quality of information. Certainly, there are things that we can do as well on a site-by-site basis to help with this, but I think we all need to work together and be proactive and work with our clients.

Certainly, there's quite a bit that our clients can do, and we talked about this in our first podcast about implementing plans, looking at the FireSmart Canada, gathering information, making sure your cutbacks and your setbacks are right at your sites, that you're picking the right material to build your buildings with, and making your sites resilient. Those are all things that our clients can do on their own. Certainly, we can help them with that, but a good proactive client and organization can do a lot of these things on their own. Certainly work with the local wildfire management resources so you understand what's being done in your area and any emergency response teams as well. So, all great things that clients and organizations can do, and we can certainly help in many different ways, and it's all going to lead to more resilient business with the best insurance terms that we can find for them in the marketplace.

Well, thank you, George and Mirsada for your insights today. It was all quite informative. I really appreciate it.

That's all for our second episode of *When faced with fire*. We hope you enjoyed our discussion, and thank you for listening.

For information on the resources mentioned in today's episode, please refer to the podcast page.

Stay tuned for our final episode in the series where we will discuss ways to improve your business resilience and minimize wildfire-associated disruptions. In the meantime, you can find more insights from Marsh on our website, marsh.ca.

Until next time, thanks again for listening.

FMD-2307028SA-ENG.docx 2023-07-25