

PERSPECTIVE

2023 Wildfires: Now That the Initial Economic Shock Is Over, It's Time to Rebuild the Forest

By Florence Jean-Jacobs, Principal Economist

Although Canada's wildfires have mostly died down and left the headlines, their repercussions on the lumber supply may be felt for many months and even years to come. This note looks at this year's unprecedented wildfire season and how it's affected the economies of Quebec and Canada as a whole. So far, the overall impact has been limited and fleeting, even though the wildfires took a heavier toll on some regions and sectors (such as sawmills and mining) than others. We'll also discuss the medium- and long-term effects on lumber inventories and the forest industry, which was facing economic uncertainty even before the fires broke out.

Record-Breaking Wildfires

Between May 1 and October 1, 17.9 million hectares of land went up in flames in Canada, including 4.7 million hectares in Quebec (graph 1). That's the largest area burned since this data started being collected in 1980. The previous Canadian record (7.6 million hectares in 1989) was less than half of this year's total. Some 220,000 Canadians were forced to flee their homes to escape the flames. (See appendix 1 on page 8 for a timeline.)

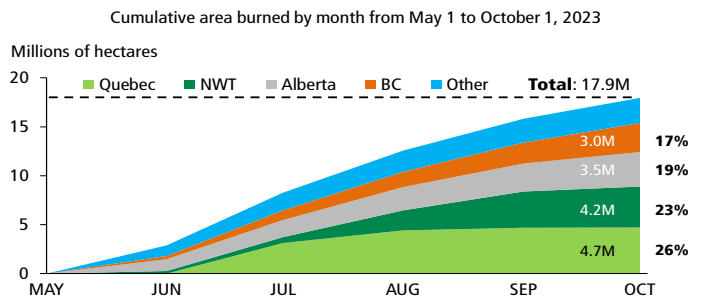
Immediate Impact on Economic Activity in Affected Regions

Forestry was the first sector to be impacted. The timber harvest had to be suspended while the wildfires burned. Companies also had to hold off on transporting timber, which had knock-on effects on the supply chain. Timber that had already been harvested and was waiting for pickup alongside forest roads couldn't be collected. The disruption of forestry operations led to work stoppages lasting up to 7 weeks. This may be why average hours worked in Quebec's forestry sector fell in June 2023 compared to June 2022 (graph 2).

In Quebec, some sawmills had to stop operating due to a lack of saw logs (especially in Saguenay-Lac-Saint-Jean) or because wildfires surrounded the towns they were in (such as Senneterre in Abitibi-Témiscamingue and Lebel-sur-Quévillon in Nord-du-Québec). Nordic Kraft, a major pulp mill in Lebel-sur-Quévillon, had to shut down for a month after flames crept too close to the building.

GRAPH 1

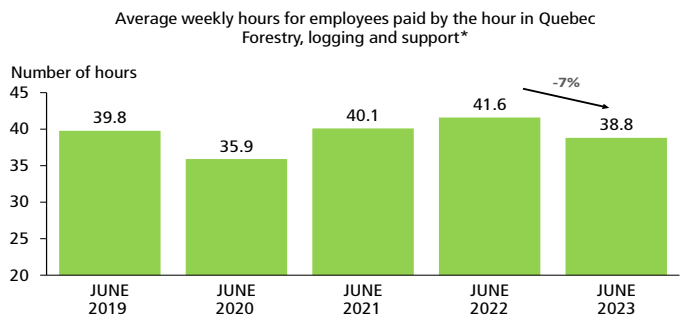
Quebec Was Hit Hardest, Followed by the Northwest Territories



Sources: Natural Resources Canada and Desjardins Economic Studies

GRAPH 2

Quebec: Forestry Sector Hours Worked Fell Year-on-Year in June 2023



*Note: NAICS codes 113 and 1153.

Sources: Statistics Canada and Desjardins Economic Studies

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NOTE TO READERS: The letters k, M and B are used in texts and tables to refer to thousands, millions and billions respectively.

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Meanwhile Resolute Forest Products shut down four sawmills due to a ban on travel in forested areas and on timber harvesting. Two sawmills owned by Rémabec also stopped operating for several weeks. But the sawmill in Ascension (Lac-Saint-Jean), the biggest in Quebec and a major source of wood chips, had already shut down on May 5, before the wildfires even started, due to the excessively high price of logs and an uncertain supply of fibre.

Once the wildfires died down, the government required forestry companies to harvest burned timber, which was extremely costly for these businesses (and, indirectly, for sawmills, which had already had trouble turning a profit in recent years). Furthermore, this kind of timber is often of poorer quality due to insect infestations or overly rapid drying. The wood that can be recovered and sold may look different, which could make it less attractive to consumers.

In Quebec, the five major administrative regions affected by the wildfires were Abitibi-Témiscamingue, Saguenay-Lac-Saint-Jean, Nord-du-Québec, Mauricie and Côte-Nord. Together they represent 10% of Quebec’s total GDP and 52% of its forestry GDP (graph 3). They also supply 66% of the softwood lumber harvested in Quebec (table 1). In addition, the wildfires had a significant human impact in these regions: people had to be evacuated from their homes and some developed smoke-induced respiratory conditions. Factories and stores in evacuated communities also had to shut down.

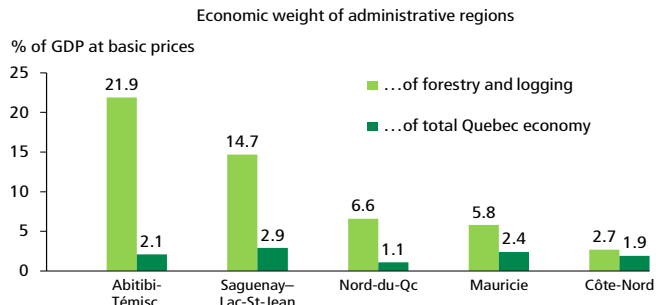
Mining is one of the major industries in most of these resource-based regions (table 2). The closing of forest roads forced some mines to temporarily shut down, including the Casa Berardi gold mine in Abitibi-Témiscamingue. Other mines had to cease operations for some time due to poor air quality.

We also expect financial losses in these regions due to a reduction in tourism (accommodations, camping and outfitting). In its report on summer 2023, Tourisme Abitibi-Témiscamingue noted multiple cancellations (conferences, school group visits and group travel). In Quebec, 350 of the province’s 550 outfitters were forbidden access to the areas where they operate, right in the middle of high season. Each outfitter lost tens of thousands of dollars every week according to the Québec Outfitters Federation.

In July, the Quebec government announced \$50 million in aid for businesses affected by the wildfires, including logging companies, sawmills, paper mills, tourism companies, outfitters and local retailers.

As for the rest of Canada, the winegrowing industry and related tourism was also heavily affected in British Columbia, especially the town of Kelowna. In Alberta, oil and gas extraction was disrupted, as discussed below.

GRAPH 3
The Main Regions Affected by Wildfires Account for 10% of Quebec’s GDP, but 52% of the Forestry and Logging Sector’s GDP



Note: Forestry and logging correspond to NAICS code 113.
Sources: Institut de la statistique du Québec and Desjardins Economic Studies

TABLE 1
Softwood Harvest Volume by Administrative Region, 2021

	% of softwood harvest volume in Quebec
Regions Hardest Hit by Wildfires	
Saguenay-Lac-Saint-Jean	24%
Abitibi-Témiscamingue	9%
Côte-Nord	5%
Nord-du-Québec	15%
Mauricie	13%
Other regions	
Bas-Saint-Laurent	9%
Capitale-Nationale	2%
Estrie	3%
Outaouais	3%
Gaspésie-Îles-de-la-Madeleine	6%
Chaudière-Appalaches	6%
Lanaudière	2%
Laurentides	3%
Montérégie	0%
Centre-du-Québec	1%
Total	100%

Sources: Ministère des Ressources naturelles et des Forêts du Québec and Desjardins Economic Studies

TABLE 2
Main Industries of Affected Regions by GDP (Private Sector)

SAGUENAY-LAC-ST-JEAN	ABITIBI-TÉMISC.	CÔTE-NORD	NORD-DU-QUÉBEC	MAURICIE
Manufacturing	Mining, quarrying and oil and gas extraction	Mining, quarrying and oil and gas extraction	Mining, quarrying and oil and gas extraction	Finance, insurance and real estate
Finance, insurance and real estate	Manufacturing	Construction	Construction	Manufacturing
Construction	Construction	Manufacturing	Manufacturing	Construction
Retail trade	Finance, insurance and real estate	Transportation and warehousing	Retail trade	Retail trade
Wholesale trade	Retail trade	Finance, insurance and real estate	Agriculture, forestry, fishing and hunting	Wholesale trade

Note: 2021 data. Top 5 excluding public sector (NAICS 22, 61, 62, 91). Some confidential data isn’t available (such as mining, Saguenay-Lac-Saint-Jean).
Sources: Institut de la statistique du Québec and Desjardins Economic Studies

Meanwhile smoke spread outside the regions under flame, with multiple North American cities impacted by smog. Certain outdoor events and recreational activities were cancelled due to poor air quality. Even air travel around New York City was disrupted for a few days due to the smog from Canadian wildfires.

According to Statistics Canada, the June wildfires also took a bite out of the freight rail industry (GDP -6.3%), mainly by forcing the shutdown of a rail line used to transport iron ore in Labrador West. But the sector recovered in July (+1.1%).

The consequences could have been much worse. The country’s main strategic transport routes weren’t affected, and despite the smog, major construction projects didn’t have to shut down for an extended period of time. Negative externalities like these would have been a bigger drain on Canada’s GDP.

Furthermore, Hydro-Québec’s power plants weren’t damaged, even though 200 workers had to be pre-emptively evacuated from its LG-3 and LG-4 sites due to wildfires blocking the road between the two Nord-du-Québec power plants. However, the wildfires did cause some blackouts on the Hydro-Québec grid.

Overall, although there was a major impact on some industries in affected regions, the economy as a whole didn’t suffer any dramatic declines.

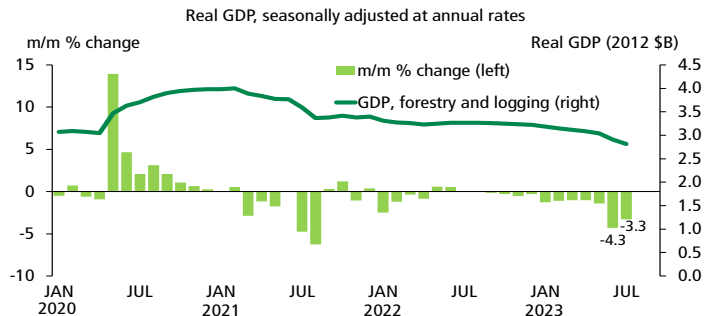
Some Shocks in Canada and a Modest Impact on Quebec’s Economic Data for Now

Canada’s GDP was hit by a few wildfire-related shocks, but luckily they seem short-lived. Statistics Canada reported declines caused by wildfires in its monthly GDP reports for May and June, followed by a rebound in most affected sectors in July (especially in mining and oil and gas extraction).

Forestry

But the forestry and logging subsector had no such luck. (See box 1 for definitions.) Its GDP fell by 4.3% and 3.3% for Canada as a whole in June and July, respectively, reaching its lowest point since 2009 (graph 4). Even though the industry had been on a downtrend since fall 2022, the wildfires clearly hastened the

GRAPH 4
Canada: Forestry and Logging GDP Fell in June and July, Hitting Its Lowest Level since 2009



Sources: Statistics Canada and Desjardins Economic Studies

decline. Despite limited provincial data, we can assume British Columbia, which is the biggest player in this subsector of the Canadian economy, contributed to the slump. The same is true for Quebec.

In Quebec, total GDP held up in June (+0.02%), when the wildfires and transportation restrictions in the province’s northern regions were at their worst.¹ This means wildfires weren’t responsible for the contraction in GDP for the second quarter (graph 5).

GRAPH 5
Quebec’s GDP Shrank in Q2, but Not Because of the Wildfires, Which Raged Hardest in June



Sources: Institut de la statistique du Québec and Desjardins Economic Studies

Surprisingly, Quebec’s agriculture and forestry GDP didn’t drop in June despite interruptions in the timber harvest in a number of resource-based regions (graph 6 on page 4). But unfortunately we can’t separate forestry data from agriculture, which makes it hard to interpret these figures. However, the numbers for agriculture were probably weighted more heavily than forestry. In 2022, forestry (and its support activities) represented just 16% of the agriculture and forestry sector.

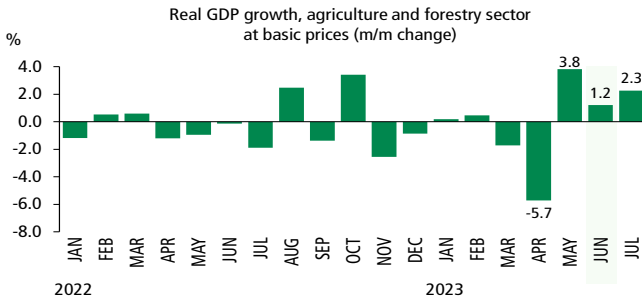
¹ According to the Institut de la statistique du Québec (ISQ), October 24. ISQ data may be revised when monthly numbers for GDP by industry are released.

BOX 1
Forest Industry Subsectors

In this note, the forest sector (also known as the forest industry) is defined as the combination of four subsectors: forestry and logging [NAICS 113], forestry support activities [NAICS 1153], wood product manufacturing (which includes sawmills and veneer, plywood and other wood product manufacturing) [NAICS 321] and paper manufacturing (including pulp, paper and paperboard) [NAICS 322].

See appendix 2 on page 8 for each subsector’s contribution to GDP.

GRAPH 6
Quebec: Agriculture and Forestry GDP Plunged in April but Recovered from May to July

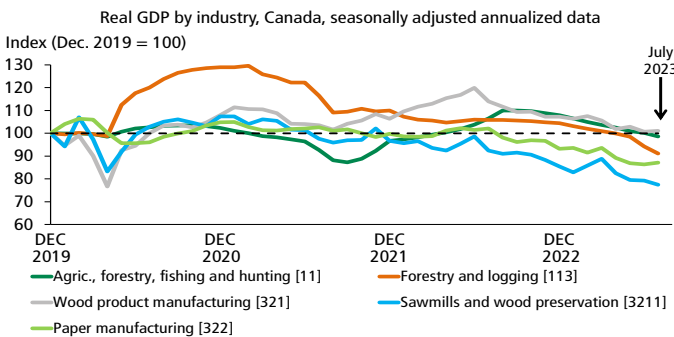


Sources: Institut de la statistique du Québec and Desjardins Economic Studies

Wood Product and Paper Manufacturing

As for Canada’s wood product manufacturing sector (including sawmills), the trend was negative from May to July 2023, but the sector had already been on a downtrend for several quarters (graph 7). The GDPs for both forestry and sawmills hit their lowest since 2009.

GRAPH 7
Canada: Sawmills and Forestry Both Hit their Lowest GDPs since 2009



Sources: Statistics Canada and Desjardins Economic Studies

In Quebec, wood product manufacturing fell by 5.4% in June. However, these changes are in line with a trend that predates the wildfires (graph 8) and therefore can’t be attributed to the wildfires with any certainty.

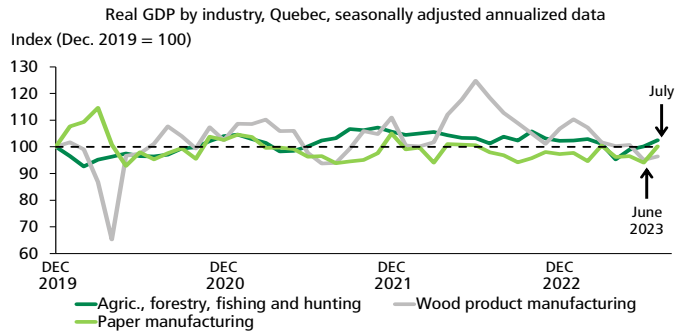
But aside from the sectors directly related to wood, we have to consider how the wildfires affected other forms of production in affected regions.

Mining and Oil and Gas Extraction

In Canada, oil and gas extraction activity contracted in May (-3.4%) as wildfires raged in Alberta. The sector’s GDP then bounced back in June (+2.4%) and July (+1.5%).

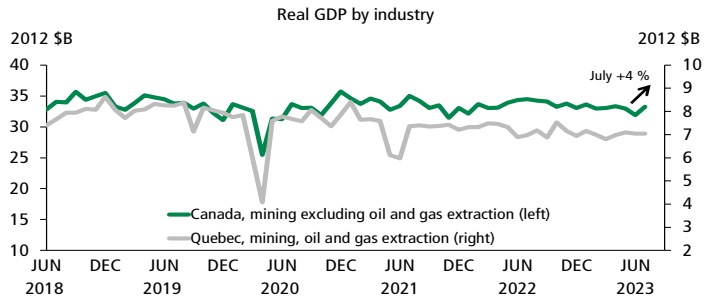
The July rebound in the mining sector (+4.2%) more than offset the June downturn (-3.2%) in Canada (graph 9).

GRAPH 8
Quebec: Wood Product Manufacturing Fell in June, but This Trend Predates the Wildfires



Sources: Institut de la statistique du Québec and Desjardins Economic Studies

GRAPH 9
In June, Mining GDP Dropped in Both Quebec (-0.8%) and Canada as a Whole (-3.2%)



Note: Mining data excluding oil and gas extraction isn’t available on a monthly basis for Quebec. Sources: Statistics Canada, Institut de la statistique du Québec and Desjardins Economic Studies

In Quebec, mining and oil and gas extraction also edged down in June (-0.8%), probably because of a slowdown in activity in certain mines. But the slump seems temporary. GDP stayed put in July, and figures for metal ore mining, production and shipment for June, July and August didn’t fluctuate much more than usual.

What Conclusions Should We Draw about the Impact on GDP?

Whenever there’s a natural disaster, its impact on GDP depends on its proximity to production activities and any spillover effects on other sectors, via blockages of major transportation routes or externalities that affect major population and business centres.

Luckily, the impact of the 2023 wildfires on Canada’s GDP was both modest and short-lived. Given the extent of the wildfires, we could have expected much bigger economic losses.

Historically, there hasn’t been a direct link between how much land was destroyed by wildfires in a given year and contractions in GDP. For example, the Fort McMurray wildfires in 2016 caused major economic losses since they were concentrated in an oil-producing area. In fact, May 2016 showed one of the biggest monthly declines in GDP outside of a financial crisis or pandemic. But the total forest area burned in Canada that year wasn’t very big (1.4 million hectares, less than the six preceding years).

With previous wildfires, the economic impact has generally been short-lived. In 2016, it took only two months for oil production to recover from the pullback in May.

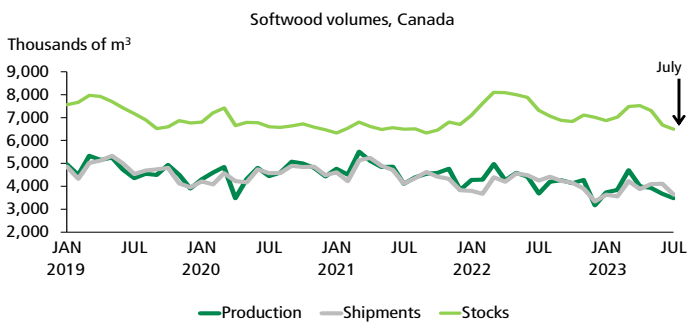
As for Quebec, the affected regions were reasonably far from major business and population centres. And although the forest and mining sectors were affected, their relative weight in Quebec's economy (1.5% and 1.7%, respectively) is less than that of oil and gas extraction in Alberta (25%) and Canada (5%). In addition, the affected regions in Quebec represent a relatively small percentage of total GDP (10%), which also lightened their overall impact.

What Are the Repercussions on Economic Indicators Other Than GDP?

It's worth looking at the wildfires' impact on indicators other than GDP.

Canadian softwood lumber production and inventories both slid in June and July. In particular, inventories shrank 11% from May to July. Shipments held steady in June but plummeted in July (graph 10). Although these month-on-month contractions are notable, they aren't unusual given their historical volatility. Meanwhile, manufacturing shipments of wood products (including sawmill output) didn't post a sharp drop. You could even say they remained reasonably stable on a seasonally adjusted basis (graph 11).

GRAPH 10
Canada: Recent Month-over-Month Changes in Softwood Lumber Production Are Normal for Now



Sources: Statistics Canada and Desjardins Economic Studies

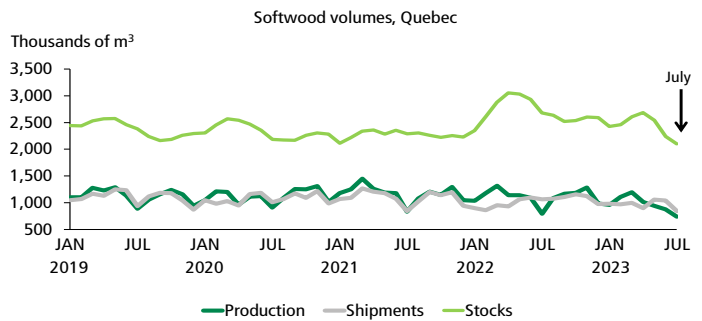
In Quebec, the decline in softwood lumber volumes was much steeper. Production, shipments and inventories plummeted by 21%, 20% and 17% respectively from May to July (graph 12). Although inventories often dwindle in June and July, they're currently at their lowest since October 2017. If this inventory drawdown persists, manufacturing and construction companies would face shortages that could push up prices, as we'll explain below.

GRAPH 11
Canada: Wood Product Manufacturing Shipments Are Steady for Now



Note: Seasonally adjusted data isn't available for sawmills.
Sources: Statistics Canada and Desjardins Economic Studies

GRAPH 12
Quebec: Even Though Inventories Are Already Down, the Worst Is Probably Yet to Come for Sawmills



Sources: Statistics Canada and Desjardins Economic Studies

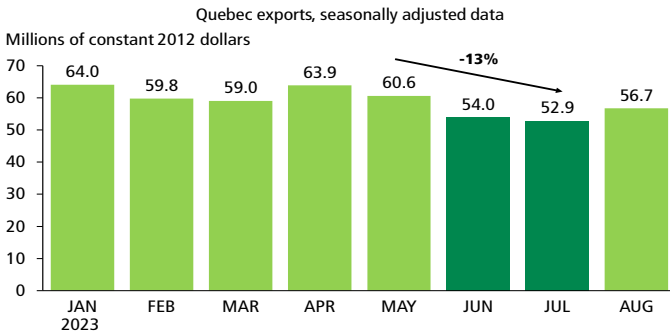
Fluctuations in Quebec manufacturing shipments aren't particularly unusual. And the downtrend seems to predate the wildfires (graph 13). Meanwhile softwood lumber export volumes fell 13% from May to July (graph 14 on page 6). But it's too early to tell whether this was primarily due to the wildfires, or whether the trend will continue or start moving in the opposite direction in the next few months. For now, the August print reveals a 7% rebound.

GRAPH 13
The Full Impact of the Wildfires Still Hasn't Hit Wood Product Manufacturing Shipments



Note: Seasonally adjusted data isn't available for sawmills.
Sources: Statistics Canada and Desjardins Economic Studies

GRAPH 14
Quebec: Softwood Export Volumes Fell in June and July Then Climbed Back Up 7% in August



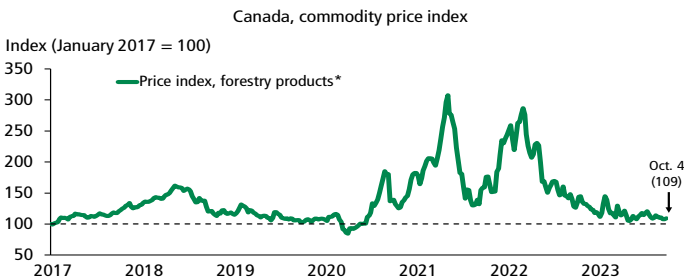
Sources: Institut de la statistique du Québec and Desjardins Economic Studies

Basically, recent changes in month-on-month figures should be interpreted with caution. That doesn't mean these indicators won't end up slipping even further due to decreased inventories.

No Surge in the Price of Wood and Wood Products

That said, wood product pricing remains relatively low in Canada (graph 15) despite the disruptions from the wildfires and the anticipated decline in supply.

GRAPH 15
Prices Haven't Spiked despite the Expected Decrease in Supply, While Economic Conditions Are Curtailing Demand



* Includes prices for lumber, wood pulp and newsprint.
 Sources: Bank of Canada and Desjardins Economic Studies

It's worth keeping in mind that both Quebec and Canada are price-takers for softwood lumber, meaning they can't dictate prices. Canadian output is just one factor influencing prices in that market. A gloomy economic outlook and the expected slowdown in construction seem to be dragging down prices for wood products.

If we look at softwood lumber prices specifically, they stayed flat in June, according to [Statistics Canada](#). Even though they spiked in July (+15.5%), they quickly ticked back down in August (-6.0%) to the average price for the first quarter of 2023. That said, they're still higher than they were prior to the pandemic. A combination of factors drove the month-on-month price gain in July: wildfires in the Pacific Northwest and a dockworkers' strike

in British Columbia both triggered concern over future supply and added to market uncertainty ([Statistics Canada](#)).

What's Next for Prices?

We expect the wildfires' impact to be split into two stages: price stability or even a slight dip in prices over the short term, followed by recovery over the medium and long term.

In the short term, some experts have suggested that the massive amount of charred wood dumped in sawmills could drive down prices. Logging companies were forced to harvest huge volumes of the stuff, even though consumers may find it less visually appealing. This dump of damaged wood, combined with a drop in construction and renovation demand due to the economic environment, could keep prices relatively low over the short term.

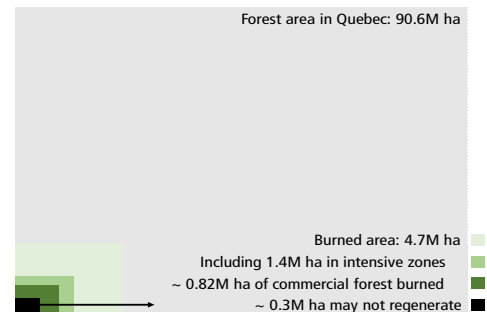
But since only a small percentage of burned timber can be reclaimed by the industry for commercial purposes (around 17% [according to one expert](#) – in French only), and a large volume of timber cut before the wildfires but left uncollected due to transportation bans is no longer in good enough condition to be sold, we can nevertheless expect the supply of wood to fall short in 2023–2024.

Consequently, looking ahead to summer 2024, pricing conditions could very well change, as we expect economic growth to be less subdued in North America, driven by looser economic policy in Canada and the United States. By then, inventories of timber harvested in 2023 may have bottomed out, especially high-quality wood whose harvest was limited by road closures and logging disruptions in the summer of 2023. Cut timber left in the forest for too long is prone to insect infestations that leave it unfit for use as lumber. Softwood lumber inventories could therefore continue the downward trend that started in June and July 2023.

Supply Issues over the Medium and Long Terms

Furthermore, supply issues may last for several quarters or even years as some of the forests that burned may not regenerate (figure 1).

FIGURE 1
Quebec: More than a Third of Burned Commercial Forests May Not Regenerate



Sources: SOPFEU, Natural Resources Canada, Ministère des Ressources naturelles et des Forêts du Québec, UQAC, Radio-Canada and Desjardins Economic Studies

[Researchers](#) (in French only) at Université du Québec à Chicoutimi (UQAC) believe that around 300,000 hectares of burned forest in Quebec's intensive zone may not be able to regenerate. This is around 37% of the 820,000 hectares of commercial forest that went up in flames. Regeneration becomes a problem when wildfires raze forests with coniferous trees under 60 years old. These trees aren't sufficiently mature to produce enough seeds for new trees to sprout after a fire. Given the current pace of tree planting, researchers believe it will take at least six years to reforest burned-out regions in the intensive zone.

We'll need to significantly ramp up reforestation to prevent a longer-term loss of supply, but labour shortages may hold back any progress.

Unless major reforestation efforts are quickly rolled out, we can expect lagging impacts to reduce the quantity of lumber available for commercial use.

Climate Change Is Fuelling More Wildfires

Plans for the future must include reforestation efforts, since the average area burned each year will continue to expand due to climate change.

According to a study by [Natural Resources Canada](#), the annual area burned and the number of large fires will keep growing due to warmer, drier conditions. Wildfire season will also last longer than before. The annual area burned is expected to double in most regions. In Quebec's boreal forest, the area burned will likely increase fourfold by the end of the 21st century, assuming greenhouse gas emissions keep rising. Even if emissions are rapidly cut, the area burned is still expected to double, triple or even quadruple.

Aside from the economic repercussions, wildfires also entail major costs to the public (especially in terms of health) and environmental impacts. Natural Resources Canada estimates that the 2023 wildfires emitted more than a billion tons of CO₂ in Canada, or more than the total annual emissions in 2021 (670 million tons).

Conclusion

It's still too soon to assess the wildfires' total economic impact, especially on the forest industry. In fact, burned wood is still being harvested and the amount of available wood destroyed is still being estimated.

The Quebec Forest Industry Council (QFIC) has nevertheless come up with a [preliminary estimate](#) (in French only) that puts net losses from the wildfires at between \$10.5 billion and \$13.5 billion. The QFIC includes the following in the costs that must be considered (not all of which can be measured just yet):

- ▶ Loss of sawmill income
- ▶ The value of mature trees that should have been harvested but burned down instead
- ▶ The value of immature trees that would have been harvested in future years and eventually have produced seeds for new trees
- ▶ The cost of fighting the wildfires
- ▶ The loss of logging equipment destroyed by the wildfires
- ▶ The cost of reclaiming burned wood
- ▶ The impact of a decrease in allowable cuts (which will depend on reforestation efforts)
- ▶ Less government income from the sale of timber to sawmills

One thing is for sure: the wood manufacturing industry in Canada, including Quebec, was already facing significant challenges before the record-breaking wildfires started. These challenges included the softwood lumber dispute with the United States (countervailing duties to be paid), lower sawmill profit margins due to high raw materials prices (which led to recent shutdowns in British Columbia and Quebec), unpredictable market forces (access to wood, prices), labour shortages, and investments needed to upgrade equipment.

The industry will have to be both resilient and plan ahead in partnership with government authorities responsible for public forests to ensure its sustained growth in the future.

APPENDIX 1
Wildfire Timeline

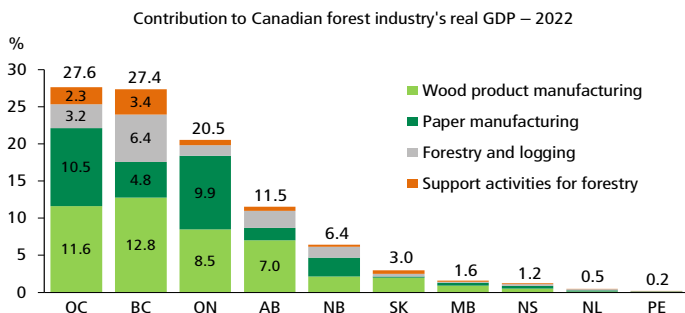
In Quebec, most of the wildfires occurred from early June to mid-July, with 3.1 million hectares burned in June alone. The wildfires hit the boreal forest, whose coniferous trees (spruce, fir and pine) are used by sawmills to produce softwood lumber, a key material for the construction industry. Certain communities and municipalities had to be fully or partially evacuated (including Lebel-sur-Quévillon, Chapais, Chibougamau, Senneterre and Sept-Îles).

In Alberta, as usual, the fire season began in May and continued through the summer, while in British Columbia the wildfires ran from June to September, with multiple evacuations in August.

Meanwhile in the Northwest Territories, the wildfires peaked from early July to around mid-August, and Yellowknife's 20,000 residents had to be evacuated.

APPENDIX 2
Forest Industry Figures

GRAPH 16
Quebec Contributes the Most to Canada's Forest Industry GDP



Sources: Statistics Canada and Desjardins Economic Studies

TABLE 3
The Forest Sector Represents 1.5% of Quebec's GDP

QUEBEC GDP BY INDUSTRY IN 2022	2022 \$M	% OF FOREST SECTOR
Forestry and logging [113]	676	11%
Support activities for forestry [1153]	493	8%
Wood product manufacturing [321]	2,471	42%
Paper manufacturing [322]	2,240	38%
Total (forest industry)	5,880	100%
% of Quebec GDP	1.5%	---

*Due to rounding, adding up these items may not give you the same total.
**NAICS codes in brackets.

Sources: Statistics Canada and Desjardins Economic Studies