



REPORT

BY A THOUSAND CUTS: HOW POWERFUL COMPANIES' WOOD SOURCING IS DEGRADING CANADA'S BOREAL FOREST

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Overview

Canada's boreal forest is the world's largest remaining intact forest, making it a vital resource for local communities, threatened species, and international efforts to stabilize the global climate.¹ However, this forest is being steadily eroded by widespread industrial operations that turn trees into wood-based products. Between 1996 and 2015, forestry activities logged an area the size of Ohio in Canada's boreal forest.² In recent years, Canada has ranked globally behind only Russia and Brazil in its rate of intact forest landscape loss.³ Much of the harvested wood ends up being processed at mills owned by powerful companies, where it is manufactured into lumber, pulp, and other wood products. Mills sell these materials to multinational corporations like Procter & Gamble (P&G). These multinational corporations, in turn, make toilet paper, tissue, and a range of other products that they sell to consumers around the world. This analysis exposes the role of large mill-owning companies in undermining the rights of Indigenous Peoples, harming threatened species, and contributing to the climate crisis.

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Mills source wood from Canada's boreal forest to make pulp and other products.

The logging activities feeding these mills disturb and release carbon stored in trees and soils.⁴ Canada's boreal forest is a crucial carbon storehouse; it holds approximately twice as much carbon as is contained in the world's remaining oil reserves.⁵ Widespread forest loss makes it significantly harder to rapidly reduce global climate emissions over the next decade, which scientists say will be critical to ward off the worst effects of climate change.⁶ Industrial logging in high-carbon, species-rich areas, and the accompanying damage it causes to communities, ecosystems, and the climate, is particularly egregious when one considers that much of the harvested wood is used to make single-use, throwaway products—including toilet paper and tissue.⁷

Top U.S. toilet paper and tissue producers claim that their supply chains drawing from Canada's boreal forest are sustainable. Our analysis tested that claim by examining the supply chains of three companies with mills in Ontario and Quebec that provide U.S. corporations with Northern Bleached Softwood Kraft (NBSK), a form of pulp that is widely used in tissue and toilet paper production.⁸ We focused on Ontario and Quebec due to the high volume of boreal forest products that these provinces export to the United States.⁹ The companies profiled in this report—Aditya Birla Group, Domtar, and Resolute Forest Products—harvest wood in addition to owning mills.¹⁰

To gain insights into each company's sourcing impact on the boreal forest, we reviewed all mills owned by the three companies across Ontario and Quebec. This means that while this analysis includes NBSK mill sourcing, it estimates *overall* wood sourcing for each company from public lands in these two provinces. For Aditya Birla Group, this included one NBSK mill in Ontario.¹¹ For Domtar, it included three mills—two in Ontario and one in Quebec—that collectively produce pulp and paper.¹² In the case of Resolute Forest Products, our analysis included 16 mills across the two provinces that create a range of materials including pulp, newsprint, and lumber.¹³ (The public data we reviewed did not specify wood sourcing volumes for Resolute Forest Product facilities at 10 additional locations within the two provinces.) As detailed below, all three companies have additional facilities outside Ontario and Quebec, which were outside the scope of this analysis.

Our research assessed the companies on a number of key social and environmental indicators, based on the supply chains feeding their Ontario and Quebec mills. These included whether the mills require wood to have been obtained with free, prior, and informed consent from Indigenous Peoples; whether they rely on weak forest certification schemes; and to what extent their operations threaten the habitat of boreal caribou, a species that the Canadian government has highlighted as threatened by widespread industrial activities.¹⁴ Boreal

caribou are an indicator species, meaning a decline in the caribou population signals the deterioration of the larger ecosystem, to the extent that Indigenous experts and Western scientists refer to this species as a “canary in a coal mine” for the health of the boreal forest.¹⁵ Boreal caribou are also considered to be a cultural keystone species for many Indigenous Peoples, meaning this species has been, and continues to be, particularly central in Indigenous belief systems and customs.¹⁶

At the global scale, boreal caribou habitat is critical in the fight against climate change. Much of this habitat overlaps with some of the world's richest terrestrial carbon stores.¹⁷ Protecting and expanding these forests could help the world ward off the worst effects of climate change.¹⁸ But when companies source from intact boreal caribou habitat, they contribute to the degradation of carbon-storing forests at the exact moment when climate scientists say the global community needs to be rapidly lowering greenhouse gas emissions.¹⁹

Provincial public forest areas are divided into smaller units for management purposes; these are referred to as “forest units” throughout this paper.²⁰ This analysis is limited to each company's sourcing from public forest units, due to the availability of government reporting on public forests. (We use the term “public forest” for consistency with government terminology, but we flag that this government term is problematic for failing to acknowledge the various historical and ongoing claims by Indigenous Peoples to many of these lands.)²¹ Because this analysis focuses on public forests, it does not capture to what extent the companies may be further impacting the boreal forest by sourcing from private forests. These combined volumes are likely significant. Nevertheless, the companies' sourcing from public areas alone is concerning.

Our analysis reveals the following trends about Aditya Birla Group, Domtar, and Resolute Forest Products based on their mill sourcing in Ontario and Quebec:

1. The companies' mills do not require wood to have been obtained with the free, prior, and informed consent of Indigenous Peoples potentially impacted by forestry operations.²²
2. Rather than requiring wood to have come from forests units certified under the Forest Stewardship Council (FSC), the companies have been sourcing high volumes of wood from non-FSC-certified forest units with significantly weaker sustainability standards.²³
3. Much of the wood supplying these companies' mills comes from forest units that encompass threatened boreal caribou habitat. Industrial disturbances in boreal caribou habitat are already endangering the species' long-term survival.²⁴

As large, international players, the wood and pulp suppliers reviewed in this paper have the resources to implement high sustainability standards.

4. The three companies are sourcing extensively from forest units that both contain boreal caribou habitat *and* lack FSC certification. These areas are particularly threatened by unsustainable logging practices.
5. When companies source large volumes of wood from boreal caribou habitat, these activities disturb natural carbon stores and contribute to the climate crisis.
6. The companies are members of the Forest Products Association of Canada (FPAC), a trade group that obscures the connection between industrial forestry operations and boreal caribou decline.²⁵

As large, international players, the wood and pulp suppliers reviewed in this paper have the resources to implement high sustainability standards. These companies have all made public commitments to ensuring that their operations are sustainable.²⁶ Collectively, if they took robust steps to truly improve the sustainability of their policies, they could have considerable impact.

For example, Domtar is one of the world's largest manufacturers of pulp, and its chief executive was recently estimated to be the highest-paid CEO in South Carolina.²⁷ Domtar's website highlights that it has "23 manufacturing facilities located around the world," demonstrating the considerable scale of its operations.²⁸ Aditya Birla Group, which owns the AV Terrace Bay mill in Ontario, is a \$48 billion multinational corporation based in Mumbai. Aditya Birla is the world's largest producer of viscose staple fiber, a material typically made of wood pulp that is used by many companies in the apparel industry.²⁹ Resolute Forest Products is a leading producer of newsprint and lumber and owns around 40 facilities as well as power-generating assets across North America.³⁰ Resolute Forest Products has launched—and lost—expensive lawsuits against environmental groups and individuals expressing concern about its practices.³¹ The company could perhaps redirect some of its financial resources away from litigation against environmental groups and toward earnestly improving the sustainability of its supply chains, if it chose to do so.

Moreover, despite having significant resources that they could leverage toward becoming sustainability leaders, powerful forestry companies have declined to have a science-based discussion about the impacts of their operations. For example, in September 2020 in an email to NRDC, Resolute Forest Products claimed that the concept of forest degradation is an "artificial term" that is "generally rejected by people who work in this field." This is a troubling position for a company with such a large industrial footprint.

The concept of forest degradation is well defined, and the world's largest international environmental efforts treat it as a grave threat.³² According to expert guidance informing the Convention on Biological Diversity, a degraded forest is one that has been logged and has recovered naturally or artificially but "has lost, through human activities, the structure, function, species composition, or productivity normally associated with a natural forest type expected on that site."³³ Degradation can harm forest ecosystems in many ways, including by threatening biodiversity and contributing to climate change.³⁴ For example, even when forests are replanted, industrial logging can irreversibly erode belowground carbon, drive animal species loss by removing food sources and shelter from predators, and reduce tree species' genetic diversity in ways that make it harder for them to adapt to stressors like climate change.³⁵ Forest degradation differs from deforestation, which is the conversion of forest to non-forest land such as by roadbuilding or urban development, but both are clear and significant threats. In fact, the International Union for Conservation of Nature states, "Deforestation and forest degradation are the biggest threats to forests worldwide."³⁶

Resolute Forest Products also claims that "Canada's deforestation rate is virtually zero." This claim both ignores the impacts of degradation and does not align with evidence indicating that significant percentages of forest landscapes across Ontario are not growing back decades after logging, and have essentially become non-forest land.³⁷

This analysis highlights the ways that these three companies are contributing to the degradation of Canada's boreal forest, based on their Ontario and Quebec mills' wood sourcing from public forest units. These companies' mills accept wood that was harvested either by the companies themselves or by third parties. Operations of other large mills owned by different forestry companies were outside the scope of this analysis. But extrapolating the operations supplying these three companies' mills outward to other major operations across Canada paints a sobering picture, especially considering that the vast majority of logging operations in Canada are not FSC certified.³⁸ At the same time, this research also implicates international and U.S. corporations that purchase wood and pulp from these mills and are failing to set adequate environmental requirements for their supply chains.³⁹ These corporations include giants like P&G, one of the wealthiest companies in the U.S., which has immense resources it could use to both implement strong forest-sourcing policies and to change its current business model



Canada's boreal forest: a crucial carbon storehouse

of turning pulp from the world's last intact forests into single-use products.⁴⁰ Finally, this analysis illustrates that Canadian federal and provincial policies alone are currently not effectively resulting in sustainable forestry, or guaranteeing the ability of Indigenous Peoples to make decisions about development in their traditional territories.

Stronger social and sustainability policies from companies that both sell and purchase Canadian wood and pulp will be vital in safeguarding the rights of communities, threatened species, and the global climate.

NOTE ABOUT SCOPE AND METHODOLOGY:

The three companies profiled in this report were assessed on the basis of their mills' sourcing from public forest units in Ontario and Quebec. We did not assess the companies' sourcing from private lands, nor did we assess any wood that companies might source from outside of Ontario and Quebec. We also did not assess the companies' *global* impacts. Therefore, we urge caution against drawing conclusions, on the basis of this assessment alone, about which of these companies has a "larger" cumulative

negative environmental impact. For example, Resolute Forest Products has 16 mills across Ontario and Quebec that were included in this analysis. Aditya Birla Group, by contrast, owns only three mills in Canada, and two of those are in New Brunswick and therefore were beyond the scope of this report. In our focused analysis, Resolute Forest Products has a much higher environmental impact than Aditya Birla Group. However, environmental watchdogs have criticized Aditya Birla Group—one of India's largest conglomerates—for environmental abuses including releasing pollution from factories across Asia.⁴¹ This report, therefore, should be read as a case study across two Canadian provinces rather than a global company critique.

This paper relies upon publicly available information. However, because companies and provinces do not, to our knowledge, report specific key details on ways individual mills are impacting the rights of Indigenous Peoples and boreal caribou habitat, we made estimates and calculations based on publicly available provincial data. These estimates, as well as the dates of the public reports relied upon for this analysis, are detailed in the methodology in this report's Appendix.

Finding 1

Mills owned by Aditya Birla Group, Domtar, and Resolute Forest Products do not require wood to have been obtained with the free, prior, and informed consent of Indigenous Peoples potentially impacted by forestry operations.

In 2007, 144 countries supported the United Nations’ adoption of the Declaration on the Rights of Indigenous Peoples (UNDRIP).⁴² In 2016, despite original opposition, Canada announced that it would be a full supporter, without qualification, of the Declaration.⁴³ UNDRIP requires states to obtain the “free and informed consent [of Indigenous Peoples] prior to the approval of any project affecting their lands or territories and other resources, particularly in connection with the development, utilization or exploitation of mineral, water or other resources.”⁴⁴ This description of relevant projects clearly includes logging. In recent years, British Columbia has passed precedent-setting legislation on UNDRIP, and Canada has proposed

legislation that would establish a framework seeking to bring Canada’s laws in line with UNDRIP.⁴⁵ However, that federal legislation has not yet passed, and some provinces including Ontario and Quebec have indicated they might not support it.⁴⁶ At the same time, some Indigenous leaders have stressed that the currently proposed legislation does not go nearly far enough in enshrining—among other rights—the rights of Indigenous Peoples to determine how their traditional territories will be managed.⁴⁷ Thus, broadly speaking, Canada’s federal and provincial governments have not yet demonstrated how the principle of free, prior, and informed consent will be required and implemented.



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The boreal forest includes the traditional territories of many Indigenous Peoples.

This lack of comprehensive government implementation of UNDRIP's principles makes it all the more critical that companies operating in the traditional territories of Indigenous Peoples establish strong protections for the rights of potentially impacted communities. Securing free, prior, and informed consent requires governments and companies to move beyond project-level consultation, and to achieve consent in ways that reinforce Indigenous Peoples' ability to realize their wishes for their traditional territories at the landscape level. Indigenous Peoples have deep connections to and knowledge of forests after millennia stewarding them. They have often used this expertise to design land management models that balance the multifaceted ways in which Indigenous Peoples rely on their land. Indigenous Peoples have led the way in proposing and securing Indigenous Protected and Conserved Areas—places where Indigenous governments have the leading role in safeguarding ecosystems.⁴⁸ Indigenous Peoples have also proposed modifying industrial projects in ways that make them more sustainable than those that provinces and multinational corporations have advanced.⁴⁹ Where forestry projects have not adhered to sustainability or justice principles, Indigenous Peoples have fought these projects to protect their rights, safeguard vital forest areas, and preserve species in their traditional territories.⁵⁰ Company policies should reinforce Indigenous

Peoples' rights to determine how their traditional territories are used, and as part of this, a bare *minimum* requirement for any industrial operation should be obtaining free, prior, and informed consent.

Yet Resolute Forest Products, Domtar, and Aditya Birla Group have not publicly committed to requiring that the forestry operations supplying wood to these companies' mills obtain free, prior, and informed consent by Indigenous Peoples potentially impacted by these operations.

This means these companies are not guaranteeing the right of Indigenous Peoples to reject, modify, or approve operations that could impact them and their lands. Furthermore, this means that U.S. companies purchasing wood-based materials from these mills to make products cannot claim that their materials have been obtained with Indigenous consent, a cornerstone of Indigenous rights.

Ultimately, UNDRIP is supposed to represent a floor for Indigenous rights, and Canada has said that it is committed to ensuring that Indigenous Peoples' rights as nations and governments are respected.⁵¹ Thus the fact that companies are currently not even guaranteeing free, prior, and informed consent at the wood-sourcing level is deeply concerning, and suggests a disregard for even meeting bare minimum UNDRIP principles around Indigenous rights.

Finding 2

Rather than requiring wood to have come from FSC-certified forest units, Aditya Birla Group, Domtar, and Resolute Forest Products have been sourcing high volumes of wood from non-FSC-certified forest units with significantly weaker sustainability standards.

The Forest Stewardship Council (FSC), which was formed by environmental groups, human rights organizations, and forestry companies in the 1990s, is the only forest certification system that is widely supported by environmental experts.⁵² Its key competitor in Canada, the industry-created Sustainable Forestry Initiative (SFI), is widely criticized by environmental experts for not prohibiting destructive logging practices.⁵³ Environmental watchdogs also stress that SFI does little more than require companies to meet legal requirements of regions where they operate.⁵⁴ Dozens of companies have distanced themselves from SFI, whether due to concerns over reputational risks or apprehensions around its lack of meaningful sustainability requirements.⁵⁵ While FSC certification is not a panacea for the various threats of industrial logging (see text box “How to Keep Strengthening FSC), its newest Canadian standard requires companies to meet specific enhanced metrics around respecting Indigenous rights and limiting pressures on boreal caribou habitat. These go beyond forestry requirements set by provinces including Ontario and Quebec.⁵⁶ FSC also requires companies to recommend candidate areas for long-term protection and has committed to requiring that certified areas safeguard significant amounts of intact forest landscape within those forest units. Ultimately, the success of these policies will come down to strong

implementation, but these updates are an improvement on what was already considered by environmental experts to be the strongest forest certification system in Canada.

But in complete contrast to FSC, SFI’s requirements for companies regarding intact forest protection; free, prior, and informed consent; and safeguarding the habitat of threatened species are either extremely weak or nonbinding.⁵⁷ SFI’s guidance for companies broadly relies on vague suggestions rather than concrete requirements, and even its proposed “new” standards would fail to require meaningful safeguards for forest landscapes and the communities and species that depend on them.⁵⁸ Despite the two certification bodies’ stark differences, government and industry communications often characterize them both as being robust in their environmental protections, and SFI is currently the most widely used forest certification body in Canada.⁵⁹

Concerningly, the three companies profiled in this report characterize SFI-certified forest units as sustainable sources of wood.⁶⁰ Even more troubling, our research indicates that these companies source substantial amounts of wood from non-FSC-certified forest units, as illustrated in Table 1. Farther along the supply chain, this also means that companies purchasing wood-based materials from these suppliers are continuing to source from forest areas without the safeguards provided by FSC.

Combined, the three companies alone sourced more than five million cubic meters of wood from non-FSC public areas in a single year period. If converted into “2x4” board, this would translate into more than five billion board feet. Laid end to end, that is enough board to stretch from the earth to the moon and back again, twice.

TABLE 1: ANNUAL ESTIMATES OF COMPANY-LEVEL WOOD SOURCING FROM PUBLIC FOREST UNITS IN ONTARIO AND QUEBEC⁶¹

Company	Total volume of wood (m ³)	Estimated volume of wood from non-FSC-certified areas (m ³)
Resolute Forest Products	7,157,304	4,472,100
Domtar	1,599,031	684,600
Aditya Birla Group	616,886	490,100
Total	9,373,221	5,646,800

Combined, the three companies alone sourced more than five million cubic meters of wood from non-FSC public areas in a single year period. If converted into “2x4” board, this would translate into more than five billion board feet.⁶² Laid end to end, that is enough board to stretch from the earth to the moon and back again, twice.⁶³

When comparing the companies, we estimate that by a significant margin, Resolute Forest Products’ mills source the most wood from the boreal forest, and the largest volume of wood from non-FSC-certified forest units, across Ontario and Quebec. Additionally, Resolute Forest Products has taken significant steps away from FSC commitments in the forest areas that it directly manages. In 2015 the company signaled that it would not be interested in pursuing new FSC certification if FSC were to strengthen its requirements around safeguarding intact forest landscapes.⁶⁴ And across Canada, since 2012, Resolute Forest Products has approximately halved the total area of FSC-certified land that it manages, from 15.8 million hectares in 2012 to 7.5 million hectares in 2019.⁶⁵ In contrast, the company managed 20.8 million hectares of SFI-certified lands across Canada in 2019.⁶⁶

Significant amounts of the wood that Domtar and Aditya Birla Group’s mills source from the boreal forest are also from non-FSC-certified areas. Domtar claims to have a “preference for FSC certification,” yet the company sources large volumes from areas that are not FSC-certified.⁶⁷ However, Domtar and Aditya Birla Group have fewer mills across the two provinces than Resolute Forest Products and source much smaller *overall* volumes from the boreal forest—particularly Aditya Birla Group.

All three companies are helping to legitimize much weaker certification schemes while undermining the strongest certification in Canada. In turn, U.S. companies that purchase this wood and pulp are supporting weak certification, even while many of them publicly claim to support FSC.

HOW TO KEEP STRENGTHENING FSC

As a voluntary forest certification system that companies can choose to ignore or abandon, FSC alone is not a conservation solution. At the landscape level, it is most effective when paired with long-lasting solutions such as Indigenous Protected and Conserved Areas. Even though FSC Canada requires companies to recommend protected areas, provincial governments ultimately have the authority to accept or reject these candidate conservation sites.⁶⁸ Moreover, FSC aims to equally balance the interests of different stakeholders, and some of its policies are evolving. For example, some companies are urging FSC to abandon its commitment to FSC’s Motion 65, which requires companies to protect the majority of intact forest landscapes within a forest unit.⁶⁹ For these reasons, it is important for participants both within and outside the FSC system to advocate for FSC requirements that respect the rights of Indigenous Peoples, and protect threatened species habitat and intact forests. And in order for FSC-certified forests to be sustainably managed, FSC and FSC-forest auditors will need to ensure that companies implement these safeguards meaningfully, including being consistent with UNDRIP and the Canadian government’s boreal caribou recovery strategy. At the same time, governments, companies, and other actors should support long-lasting conservation solutions that complement FSC’s social and environmental efforts.

Finding 3

Much of the wood supplying the companies' mills comes from forest units that encompass threatened boreal caribou habitat. Industrial disturbances in boreal caribou habitat are already endangering the species' long-term survival.

According to the government of Canada, Indigenous wildlife experts, and caribou scientists, large tracts of undisturbed forest are critical for the long-term survival of boreal caribou.⁷⁰ In light of this, the government of Canada's 2012 Recovery Strategy for boreal caribou (later updated as the 2019 Amended Recovery Strategy) stated that 65 percent of each boreal caribou range needs to be undisturbed in order to give boreal caribou in that range a 60 percent likelihood of long-term survival.⁷¹ The federal government tasked provinces with developing and implementing boreal caribou recovery plans that would ensure that, at a minimum, 65 percent of each range would remain undisturbed (i.e.,

that no more than 35 percent would be disturbed).⁷² Yet to date, neither Ontario nor Quebec has implemented these recovery plans. The absence of these provincial protections makes it particularly vital that companies' operations and sourcing policies meet the thresholds outlined by the federal government and peer-reviewed science.

Industrial activity that disturbs boreal caribou habitat is the primary driver of this species' population decline, and logging is a key disturbance activity.⁷³ As previously described, boreal caribou are an indicator species, meaning that trouble in their populations signals broader ecological instability in the boreal forest.⁷⁴ Moreover, boreal



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Boreal caribou require undisturbed forest landscapes for their survival.

caribou are critical to the culture and livelihoods of many Indigenous Peoples, who have been disproportionately impacted by the loss of this species.⁷⁵

Rather than using the thresholds outlined by the federal government to guide their wood sourcing policies, the three companies' mills are sourcing wood from forest units overlapping with boreal caribou ranges that are already beyond the maximum disturbance threshold.

Table 2 illustrates which boreal caribou ranges are likely being impacted by individual companies' wood sourcing in public forests (i.e., which ranges overlap with forest units from which the companies source wood).⁷⁶ It also shows which of these boreal caribou ranges are approaching, or beyond, the 35 percent disturbance threshold in Ontario and Quebec. The table lists names of boreal caribou ranges as well as their range identification code as listed by the

federal government. The table shows separate disturbance estimates reported by the federal government and the government of Ontario for each of these boreal caribou ranges.

The forest units supplying these mills only partially overlap with specific ranges, and forestry operations are not solely responsible for these disturbances. The three companies assessed in this report are also not the only companies sourcing wood from these forest units. Nevertheless, the three pulp suppliers are likely contributing to this degradation by sourcing from these areas.

To help describe the impacts discussed above, the map of Figure 1 illustrates the specific boreal caribou ranges that overlap with the three companies' wood sourcing across Ontario and Quebec, as described in Table 2.

TABLE 2: BOREAL CARIBOU RANGES LIKELY IMPACTED BY COMPANIES' WOOD SOURCING FROM PUBLIC FORESTS IN ONTARIO AND QUEBEC⁷⁷

Boreal caribou range	Percentage of caribou range disturbed by fire and human activity (Government of Canada estimates)	Percentage of caribou range disturbed by fire and human activity (Government of Ontario estimates)	Companies that source from forest units overlapping with range
Sydney (ON1)	49%	64%	Domtar
Berens (ON2)	37%	31%	Domtar
Churchill (ON3)	34%	45%	Domtar, Resolute Forest Products
Brightsand (ON4)	41%	44%	Aditya Birla Group, Resolute Forest Products
Nipigon (ON5)	30%	40%	Aditya Birla Group, Resolute Forest Products
Pagwachuan (ON7)	27%	33%	Aditya Birla Group, Resolute Forest Products
Pipmuacan (QC3)	68%	(not applicable)	Resolute Forest Products
Manouane (QC4)	41%	(not applicable)	Resolute Forest Products
Manicouagan (QC5)	37%	(not applicable)	Resolute Forest Products
Quebec (QC6)	32%	(not applicable)	Resolute Forest Products

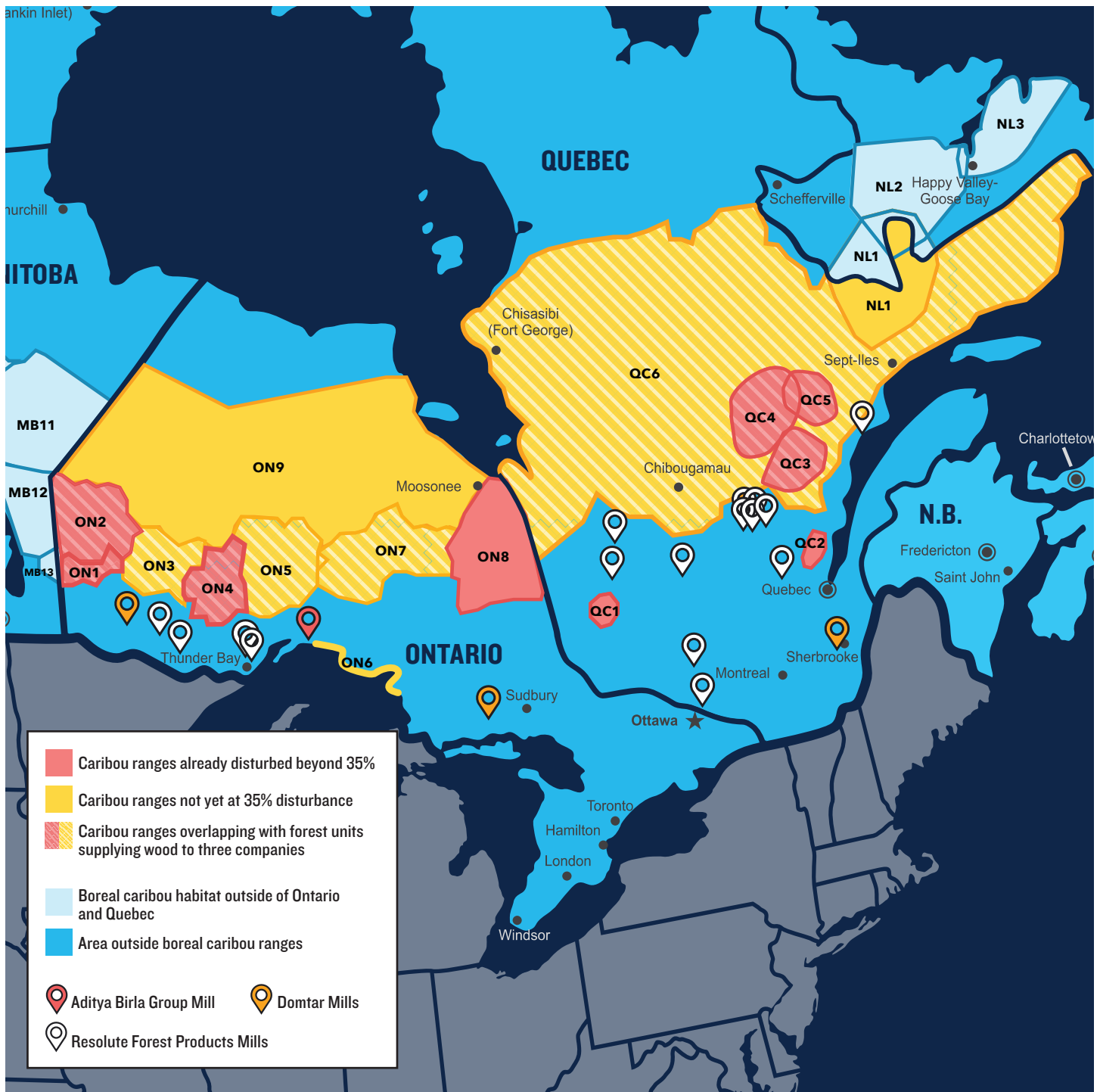


Figure 1: This map shows the existing boreal caribou ranges across Ontario and Quebec (indicated in red and yellow), as well as federal government disturbance estimates for those ranges.⁷⁸ The map also shows the locations of the company mills assessed in this report.⁷⁹ Areas with horizontal lines represent boreal caribou ranges that overlap with public forest units from which the three companies source in the two provinces (listed in Table 2). All of the overlapping boreal caribou ranges are either approaching, or beyond, the 35 percent disturbance threshold at which boreal caribou in those ranges become particularly imperiled.⁸⁰ As detailed in Table 2, disturbances may be even higher than indicated on this map.⁸¹ This map might exclude boreal caribou ranges that overlapped with company sourcing prior to the years assessed for this analysis.⁸²

Finding 4

The three companies are sourcing extensively from forest units that both contain boreal caribou habitat and lack FSC certification. These areas are particularly threatened by unsustainable logging practices.

Across Ontario and Quebec, the three companies source large amounts of wood from forest units that both overlap with boreal caribou habitat and are not FSC-certified. Whereas FSC's new standard contains requirements for companies to limit disturbances in boreal caribou habitat beyond provincial requirements, SFI—FSC's key competitor—allows companies to follow the same business-as-usual logging practices that have already degraded large areas of boreal caribou habitat.⁸³ This means that, despite industrial logging's well-documented threats to

boreal caribou, many of the forestry operations supplying the companies' mills do not even have a robust forest certification system in place to mitigate their impacts.

Table 3 illustrates the total amount of wood volume that each company is allocated from individual forest units that have a majority (greater than 50 percent) overlap with boreal caribou habitat in Ontario and Quebec. The table shows estimates on whether the wood volume is from FSC- or non-FSC-certified areas.

TABLE 3: ANNUAL ESTIMATES OF COMPANY-LEVEL WOOD SOURCING FROM PUBLIC FOREST UNITS THAT ARE MAJORITY BOREAL CARIBOU HABITAT IN ONTARIO AND QUEBEC⁸⁴

Company	Estimated wood volumes from FSC-certified forest units that are majority (>50%) caribou habitat (m ³)	Estimated wood volumes from non-FSC-certified forest units that are majority (>50%) caribou habitat (m ³)
Resolute Forest Products	425,700	3,018,600
Aditya Birla Group	0	450,700
Domtar	0	450,300
Total	425,700	3,919,600



Roads and clearcuts across the boreal forest

Alarminglly, in forest units with a majority boreal caribou habitat overlap, we estimate the three companies combined source over nine times more wood volume from public areas that are non-FSC-certified than they source from public areas that have FSC certification.

Alarminglly, in forest units with a majority boreal caribou habitat overlap, we estimate the three companies combined source over nine times more wood volume from public areas that are non-FSC-certified than they source from public areas that have FSC certification. Without the minimum standards that FSC requires for caribou habitat management, these areas are especially at risk of unsustainable logging practices.

We also estimate that *none* of the majority-caribou-habitat forest units supplying Domtar and Aditya Birla’s mills are FSC certified. Resolute Forest Products, on the other hand, sources the highest overall *volume* of wood from non-FSC, majority-caribou-habitat forest units, by a significant margin. These sourcing practices do not bode well for companies’ espoused commitment to FSC or to the protection of threatened species.

DEGRADING CARIBOU HABITAT IN THE DOMTAR-MANAGED TROUT LAKE FOREST

Domtar, like Resolute Forest Products, directly manages forest areas. These include the Trout Lake Forest, which is a key supplier to Domtar’s Dryden mill.⁸⁵ The Trout Lake Forest Management Unit overlaps almost completely with boreal caribou habitat; it covers sections of the Churchill, Berens, and Sydney ranges, all of which are already near or beyond dangerous disturbance thresholds for boreal caribou (see Table 2).⁸⁶ For almost a decade, Domtar has made promises to certify the Trout Lake Forest under FSC.⁸⁷ This certification—along with a commitment to keep disturbances below a threshold consistent with peer-reviewed science and Canada’s boreal caribou recovery strategy—would allow Domtar to improve the sustainability of its operations.

Instead, during the time Domtar has managed this forest, these ranges have become more disturbed, and the likelihood of boreal caribou surviving long-term in these ranges has declined.⁸⁸ In fact, between 2013 and 2019—the same years that Domtar was signaling its intent to eventually certify the forest under FSC—the area under harvest increased by 431 percent. This is detailed in Table 4.

TABLE 4: ANNUAL HARVESTING IN TROUT LAKE FOREST BY AREA (HECTARES)⁸⁹

2013–2014	2014–2015	2015–2016	2016–2017	2017–2018	2018–2019	Percentage Change in Harvest Area, 2013 to 2019
1,200	867.3	4,713.9	5,498.6	6,221.4	6,370.3	431%

Domtar has not committed to ensuring that its forest management meets the 35 percent boreal caribou habitat disturbance threshold proposed by the federal government. Domtar has also not acknowledged that widespread industrial forestry operations pose long-term threats to boreal caribou in Ontario, even though the federal government’s recovery strategy explicitly states that disturbances in these ranges threaten boreal caribou.⁹⁰ These concerning positions could negatively influence the way Domtar proposes managing Trout Lake Forest in the years ahead.

If Domtar finally secures FSC certification for Trout Lake Forest, environmental groups and other stakeholders expect the company to commit to safeguarding large areas of undisturbed habitat from industrial logging, in ways consistent with peer-reviewed evidence and the federal government’s boreal caribou recovery strategy.

Finding 5

When companies source large volumes of wood from boreal caribou habitat, these activities disturb natural carbon stores and contribute to the climate crisis.

In addition to threatening local species, degrading boreal caribou habitat has global implications. Across Canada, boreal caribou habitat overlaps with some of the country's most important terrestrial carbon stores.⁹¹ By chipping away at these forest areas, widespread industrial logging disturbs and releases carbon previously locked up in these forests and their soils.⁹² This is undermining some of the world's largest natural defenses against the rising greenhouse gas emissions that are fueling the climate crisis.⁹³

Moreover, these climate impacts are exacerbated by gaps in forest regeneration—gaps that industry and government actors have broadly ignored. The government of Canada claims that there has been “virtually no detectable deforestation” in Canada's boreal forest over the past three decades.⁹⁴ This claim is based on the optimistic assertion that “forest land that temporarily has no trees is still considered to be forest when the disturbance's impact is known to be temporary, and trees are expected to grow back.”⁹⁵ This is a narrative commonly used by forestry companies, including Resolute Forest Products, whose spokespeople maintain that Canada's deforestation rate is “virtually zero.”

However, an in-depth study by Wildlands League, a Canadian nongovernmental organization, examined 27 areas that were clearcut in Ontario decades ago.⁹⁶ The study found that a worrying amount of forestland is failing to regain its tree cover, particularly in areas where there were roads and roadside footprints associated with the harvesting. On average, 14 percent of the clearcut areas have remained essentially barren decades after logging. Wildlands League concluded, “The reality that roads and landings remain barren decades after logging—that is, de facto deforested—appears to have been largely ignored in forest management planning and reporting.” The group estimates that by 2030, barren areas in Ontario alone may reduce the forest's climate mitigation potential by 41 million metric tons of CO₂, the approximate annual emissions of all of Canada's passenger vehicles.

While similar analyses have not yet been done in other parts of Canada, harvesting practices similar to those that created these “logging scars” are common across

the country.⁹⁷ Even though understanding the extent of this deforestation should be critical to Canada's climate emissions reporting, government and industry communications instead fall back on claims about virtually perfect forest regrowth. These omissions are one of the key reasons that Canada is currently undercounting the climate emissions associated with widespread industrial logging.⁹⁸

The pro-logging rationale that Canada's logged forest areas grow back is also deceptive because of the urgent timeline by which the global community needs to rapidly reduce greenhouse gas emissions within the next few years. Even if companies *can* demonstrate that forests are beginning to regain cover after logging, it takes decades for boreal forest areas to reach maturity, and scientists say it can take up to centuries for the “carbon debt” from logging these forests to be repaid, depending on the end-use of those wood-based products.⁹⁹ Using biomass to replace fossil fuels in large-scale power production and using pulp for single-use products like tissue that end in a landfill are particularly wasteful uses of carbon-storing trees, because they rapidly release carbon back into the atmosphere.¹⁰⁰ Yet the world's leading climate experts have stressed that we have *less than one decade* to dramatically reduce global emissions in order to stay below the dangerous threshold of 1.5 degrees Celsius warming.¹⁰¹ It is irresponsible to allow widespread commercial logging that degrades some of the world's last intact forests stores, at a time when the world's natural carbon stores require urgent protection in order for the global community to maintain a habitable planet.

Key U.S. companies that purchase wood and pulp for use in their products have not committed to avoiding sourcing from areas that are particularly carbon rich—such as large areas of undisturbed boreal caribou habitat. Environmental groups have called on companies that purchase wood and pulp from these areas to report and reduce their “scope 3” emissions, or the indirect emissions that come from their full supply chains. In the absence of suppliers' commitments to reduce logging in carbon-rich forest areas, many of these corporate purchasers are fueling, and profiting from, the degradation of one of the world's most important carbon storehouses.

Finding 6

Aditya Birla Group, Domtar, and Resolute Forest Products are members of FPAC, a trade group that obscures the connection between industrial forestry operations and boreal caribou decline.

Rather than accepting and advocating for science-based solutions, some companies directly or indirectly (via trade groups) disseminate misinformation that obscures the negative environmental impacts of industrial logging. The three companies assessed in this report are all members of FPAC, a trade organization that publicly obscures the threats of industrial logging to boreal caribou. In 2017 FPAC's statements downplaying logging's impacts on boreal caribou alarmed top Canadian caribou scientists so greatly that they sent a letter to the federal government refuting FPAC's claims.¹⁰² One scientist who signed the letter subsequently told DeSmog Canada that FPAC was "trying to create a sense of uncertainty . . . Just like the anti-climate science lobbyists do: they want to say it's too uncertain, we can't do anything."¹⁰³

Resolute Forest Products is also a member of the Ontario Forest Industries Association, a trade group that has gone to such lengths to deny the connection between forestry and boreal caribou decline that a peer-reviewed paper compared its efforts to fossil fuel industries denying climate change.¹⁰⁴

Trade groups that represent forestry companies claim to have considerable influence in policy conversations. FPAC, for example, touts its ability to influence government

policy, stating that FPAC membership allows members to network with "top Ottawa decision makers" and that FPAC "has the ear of the federal government."¹⁰⁵ Trade groups could use their platform to support government plans that both allow sustainable harvesting and protect large, intact forest areas. Instead, with the implicit support of their members, they are muddying public understanding about the impacts of forestry on wildlife and calling for delays in government action to protect boreal caribou habitat.¹⁰⁶

Unfortunately, the lobbying efforts of powerful trade groups may indeed be influencing government policies. Ontario has exempted the forestry industry from the province's own endangered species protections and is facing legal challenges in response to the erosion of its environmental assessment processes.¹⁰⁷ Ontario also announced, in a highly controversial move, a goal to double the logging area available to forestry companies by 2030.¹⁰⁸ Quebec has claimed that ramping up harvesting in intact forest areas will help *reduce* the province's greenhouse gas emissions, mischaracterizing the best available science on forests' role in keeping carbon dioxide out of the atmosphere.¹⁰⁹ And neither province has implemented the boreal caribou habitat protections called for by Canada's federal government.¹¹⁰

Resolute Forest Products is also a member of the Ontario Forest Industries Association, a trade group that has gone to such lengths to deny the connection between forestry and boreal caribou decline that a peer-reviewed paper compared its efforts to fossil fuel industries denying climate change.

Recommendations

This new analysis finds that three key companies supplying NBSK pulp and other wood-based materials from Ontario and Quebec to the U.S. marketplace are failing both to safeguard valuable and threatened forests, and to guarantee the rights of Indigenous Peoples to say how their traditional lands are managed. Their activities are concerning, both in and of themselves and as a snapshot of how boreal sourcing currently is fueling large-scale logging practices that are degrading boreal forest landscapes across Canada. By purchasing this wood and pulp without key environmental and social safeguards, major corporations, including large tissue and toilet paper producers, are profiting from and enabling ongoing forest degradation.

Many powerful forestry companies, and corporations that purchase wood products from them, claim that their supply chains are sustainable, yet evidence on the ground reveals practices that are harmful to communities' rights, species protections, and the global climate. There are important steps that companies must take to truly demonstrate that they are mitigating the environmental impacts of their actions. Manufacturers of products like tissue and toilet paper should, first and foremost, begin replacing virgin forest pulp with more sustainable alternatives—including recycled content—to reduce overall pressures on threatened forests, including Canada's boreal forest.¹¹¹ Companies considering buying wood and pulp should additionally make robust policy requirements of their suppliers.

We urge companies harvesting and selling wood and pulp to the international marketplace, and corporations using this material to make their products, to take the following actions:

- Across their supply chains, require free, prior, and informed consent of Indigenous Peoples potentially impacted by logging and other operations.
- Support the implementation of Indigenous-led conservation initiatives, including Indigenous Protected and Conserved Areas, and support community-driven Indigenous-led management of forest areas.¹¹²

- Support land managers' and forestry-dependent communities' efforts to move toward FSC-certification of forest areas, and toward sustainable economies that incentivize the protection of intact forests.
- Commit to 100 percent sourcing from FSC-certified forest areas, and to the robust implementation and auditing of FSC requirements.
- Publicly report on the climate impacts associated with industrial logging, including the threat of harvested areas that are not regaining tree cover and the impacts of degrading forests over the next decade—a period during which, climate scientists say, the world needs to rapidly reduce greenhouse gas emissions.
- Commit to protecting, and preventing degradation in, forests that are critical carbon stores.
- Support efforts to protect undisturbed forest areas and intact forest landscapes.
- Support efforts to restore already-disturbed forest areas.
- Ensure that forestry operations meet the habitat requirements outlined in Canada's boreal caribou recovery strategy and do not degrade ranges beyond 35 percent.
- Publicly acknowledge the scientific evidence that widespread industrial logging is threatening boreal caribou habitat across Canada, and demand that suppliers and their trade groups stop disseminating misinformation about these impacts.
- Report publicly on mills' sourcing impacts on boreal caribou habitat and carbon-rich areas, including annual volumes of wood from these specific areas, to make it easier for the public to review and assess these impacts.

Appendix: Company Review and Methodology for Original Analyses

COMPANY REVIEW

This paper relies upon publicly available information. However, because companies and provinces do not, to our knowledge, report specific key details on ways individual mills are impacting the rights of Indigenous Peoples and boreal caribou habitat, we made estimates and calculations based on publicly available provincial data. These estimates, as well as the dates of the public data that this report assessed, are detailed in the methodology in this report's Appendix.

NRDC made good-faith efforts to make the estimates about the three companies' activities as accurate as possible. To that end, we provided opportunities for the companies to provide feedback on these estimates on two separate occasions. Our outreach to the companies included context about the report we were drafting, specific estimates for them to review, and citations to the public annual reports that we relied upon to generate the estimates needed for our analyses.

The three companies each responded in very different ways to our request for feedback. The responses that we received from Domtar, in particular, helped further confirm that our choice of public data and subsequent methodology for creating these estimates was sound, clear, and replicable.

Below, we detail the process of our outreach to the companies, and their respective responses.

We sent each of the three companies initial estimates about their respective company harvesting and mill sourcing activities on September 18, 2020. Specifically, we asked the companies to review our findings on: 1) whether their harvesting and mill sourcing required free, prior, and informed consent from Indigenous Peoples, 2) estimates of company-level harvest volume, including non-FSC fiber, 3) specific mills' sourcing overlap with boreal caribou ranges, and 4) company-level harvesting volume estimates from boreal caribou habitat in non-FSC certified areas in Ontario and Quebec.

Companies had 13 full days to review and respond to these estimates.

During this first round of correspondence, we also invited Resolute Forest Products to review our finding that the company approximately halved the total area of FSC land that it managed across Canada between 2012 and 2020. Resolute Forest Products did not directly respond to this estimate, instead broadly stating that NRDC's advocacy in Canada is based on "unsubstantiated claims" (see more on Resolute Forest Products' response below). However, we subsequently learned that information corroborating these

FSC estimates is publicly reported by FPAC (see Finding 2). We updated the date to 2019 in our report to be consistent with these published documents, even though our own research on this subject was conducted in 2020, based on the understanding that FPAC would accurately report the forest certifications of its members.

As detailed below, only one of the companies, Domtar, responded in a way that provided us with specific additional information in ways that could helpfully inform our estimates. Domtar provided us with information about their sourcing activities at the mill level. This information, in addition to new data we gathered between October 2020 and February 2021, helped us to make updated estimates and modify the draft report accordingly.

The companies' responses to our first round of correspondence, along with additional research we conducted during this period, revealed to us that we could make the estimates in our report even more clear and replicable, specifically by focusing our research on mills' sourcing from public forest units. We hoped that companies and other readers reviewing the report could easily understand the data underlying these estimates and replicate them.

After we updated our data, we sent the companies a second round of correspondence with updated estimates for review on January 31, 2021. This correspondence included detailed footnotes with citations for the public data on which we relied, as well as explanations of our methodology processes. We invited the companies to review: 1) whether the companies' mills required wood to have been obtained with the free, prior, and informed consent of Indigenous Peoples potentially impacted by operations, 2) annual estimates of their mills' wood sourcing from public forest units in Ontario and Quebec (including sourcing from non-FSC certified areas), 3) annual estimates of company-level wood sourcing from public forest units that are majority boreal caribou habitat in Ontario and Quebec (volumes from FSC-certified and non-FSC certified forest units), and 4) the boreal caribou ranges that overlap with the forest units from which the companies' mills source.

Companies had 10 full days to review and respond to these estimates. (Although Domtar's response came after this deadline passed, we reviewed that company's response for the report.)

The January 2021 estimates we shared with companies, and the input provided by company representatives (detailed below), informed the final estimates we made in Table 1, Table 2, and Table 3 in this report, as well as Finding 1: whether mills owned by Aditya Birla Group,

Domtar, and Resolute Forest Products require wood to have been obtained with the free, prior, and informed consent of Indigenous Peoples potentially impacted by forestry operations.

Below are details specific to the responses we received from the three companies.

ADITYA BIRLA GROUP

Aditya Birla representatives confirmed receipt of our fall 2020 outreach, confirming that the appropriate company representative was cc'ed on our emails. However, the company did not follow up afterward with responses to our estimates, nor did it respond to our January 2021 email inviting it to review our updated estimates.

DOMTAR

Representatives from Domtar responded to both invitations to review the data that we provided and provided substantive comments.

In response to our September 18, 2020 email, Paige Goff, Vice President of Sustainability at Domtar, initially responded to say Domtar appreciated the opportunity to review our estimates, and subsequently provided specific feedback on our estimates on October 2, 2020.

Ms. Goff's email indicated that Domtar's wood sourcing from the Whiskey Jack FMU comes from non-caribou habitat areas, so we excluded that FMU in our estimates for FMU-caribou overlap.

FMU data and Domtar's response indicate that the Lac-Seul FMU, from which Domtar sources, overlaps with the Brightsand boreal caribou range. However, there is such a small geographic overlap between this range and the FMU that we have not listed it as likely being impacted in Table 2, in an attempt to be conservative. Nevertheless, Domtar's sourcing may be impacting caribou in this range.

Ms. Goff's email indicated that unlike the Dryden mill, the Espanola and Windsor mills do not source from caribou habitat. Therefore, we did not include Quebec's Charlevoix caribou range (QC2) in Table 2, even though this caribou range has some overlap with an RGA supplying the Windsor mill (according to GIS overlay estimates, as detailed in the methodology) based on Domtar's indication that the mill's wood sourcing comes from areas outside of caribou habitat.

Ms. Goff also provided us with overall estimates of company-level delivered wood volume for their three mills in Ontario and Quebec, which appeared to include combined total volume from both public and private forest areas (whereas the final estimates in our report have only focused on volumes from public forest units, meaning we could not use the data they initially provided to ascertain volumes from public forest units).

On February 12, Kevin Belanger, Wood Procurement Vice President at Domtar, responded to our second invitation to review company estimates.

Mr. Belanger noted that the figures he provided for the two Ontario mills were based on 2018-2019 annual reports from the government of Ontario, and relied on 2020 (calendar year) information for the Quebec mill. Mr. Belanger also noted that the volumes he provided "do not include fiber from sawmill co-products, private lands, or out-of-province sources."

The volumes that Mr. Belanger provided on total wood volumes from public forest units in Ontario and Quebec, including volumes from non-FSC-certified forest units, were higher than our estimates in Table 1 of the report. This may be because Domtar has access to more precise information on delivery volumes than we were able to ascertain based on publicly available supply guarantee volumes, and/or it may be because Domtar relied on even more recent (2020) data than the 2019 supply guarantee volumes that we used for our analysis.

The estimated volumes Mr. Belanger provided for wood from majority boreal caribou habitat (FSC-certified and non-FSC certified) forest units in Ontario and Quebec were the same volumes as the volumes we estimated in Table 3, before we rounded them down to the hundreds.

Ms. Goff did provide some details on the process of the company's "journey to obtain FPIC on the two forests managed by Domtar in Dryden, the Wabigoon and Trout Lake Forests," but she did not refute our finding that Domtar's mills' sourcing from Ontario and Quebec do not require wood to have been obtained with the free, prior and informed consent from potentially impacted Indigenous Peoples (Finding 1 of this report).

While this report focused on mill-level sourcing, Ms. Goff's email response on Indigenous consent focused on forest areas that Domtar manages. We note with concern that—as detailed under Finding 4—harvesting operations have dramatically increased in the Trout Lake Forest unit in recent years. This is despite the fact that Ms. Goff's email characterized Domtar's attempts to secure free, prior and informed consent as incomplete.

RESOLUTE FOREST PRODUCTS

Resolute Forest Products responded to both of our emails in a series of emails and letters that the company sent between September 2020 and February 2021.

In the first email dated September 30, 2020, Seth Kursman, Vice President of Corporate Communications, Sustainability and Government Affairs at Resolute Forest Products, commented negatively about NRDC's history of Canadian advocacy work in a manner that was largely not directly responsive to the invitation to review the estimates prepared for this paper. However, he did raise some issues relevant to the paper which are listed below.

Mr. Kursman shared the view that NRDC’s invitation for Resolute Forest Products to review these estimates appeared “both condescending and tone deaf” in light of NRDC’s past advocacy work expressing concerns with unsustainable forestry practices in Canada. Those are not substantive comments that we could use to evaluate or update our estimates. Had Mr. Kursman instead taken the opportunity to provide specific information in response to our estimates about his companies’ operations, as did his counterpart at Domtar, his company’s input would have been reviewed for prospective inclusion in the final paper.

Mr. Kursman indicated that there appeared to be “gross errors” in the paper’s estimates. However, whereas Domtar’s emails had provided some useful information about their sourcing which informed the final version of this report, Mr. Kursman’s response did not specify what these alleged errors were, nor did it provide evidence or suggestions about ways these estimates could be modified.

Mr. Kursman stated that “Canada’s deforestation rate is virtually zero,” and maintained that “NRDC has switched to using the artificial term ‘forest degradation,’ which is generally rejected by people who work in this field.” We detail why these claims are misleading in this report’s Overview.

In Mr. Kursman’s February correspondence, he suggested the new analyses and estimates made for this report were “guesswork and cherry-picked data,” but again he failed to provide any clarifications on how the specific estimates should be modified or could be improved. This is in spite of the fact that our second email to the companies listed the public datasets that informed our research, and detailed step-by-step how we made the estimates that we provided to the companies.

Mr. Kursman accused NRDC of omitting certain information in the estimates we invited companies to review. In the spirit of transparency, we share his statement on this information below. Mr. Kursman stated:

“The documents you sent us to review make no mention that our practices are 100-percent forest management certified, or that these certifications are verified through rigorous third-party audits. Resolute is also among the largest holders of FSC certificates in North America, and all of our wood supply is certified under FSC Controlled Wood standards. Why were these central facts omitted?”

As detailed in this report, forest certifications differ greatly from each other in their rigor and requirements, and FSC is a significantly more robust and respected forest certification body than SFI. Yet in Canada, Resolute Forest Products has approximately halved the area of FSC-certified forestland that it directly manages, from 15.8 million hectares in 2012 to 7.5 million hectares in 2019. In contrast, in 2019, the company managed 20.8 million hectares of SFI lands. Some of these areas contain both SFI- and FSC-certification (see Finding 2).

This paper’s endnotes also clarify that this paper specifically highlights the superior sustainability of wood and pulp that comes from forest units that are FSC-certified. This is different from the way “chain of custody certification,” in contrast, allows companies to mix “controlled wood” from non-FSC-certified forest units with wood from FSC-certified forest units.

Mr. Kursman’s email suggested that species are protected under “the stringent provincial and federal regulations that govern forest operations in Canada,” and indicated that the data NRDC provided “obscures Quebec’s and other provincial governments’ own long-established regulations protecting habitat—strictly-enforced rules with which we are in compliance.”

As detailed and referenced throughout this report, Indigenous Peoples, boreal caribou scientists, Canadian non-governmental organizations, and Canada’s own federal government have indicated that current provincial governments’ policies are not adequately protecting caribou habitat, insofar that this animals’ populations are continuing to decline (see Overview and Findings 1, 3, and 6, for example). Environmental watchdogs have also highlighted that SFI-certification, on which Resolute Forest Products relies heavily, does little more than require companies to meet legal requirements of regions where they operate (see Finding 2).

Neither of Mr. Kursman’s emails stated that Resolute Forest Products’ mills require wood to have been obtained with the free, prior and informed consent of Indigenous Peoples, even though we invited the company to review this finding on the two separate occasions. Rather than refuting our finding, Mr. Kursman referred to his company’s engagement with “a range of diverse stakeholders and First Nations partners in the forestry community,” and stated, “We dialogue with them” and “incorporate their feedback in our management practices,” but those claims did not address our question of Indigenous consent—a critical cornerstone of human rights—nor do they speak to the distinct rights of Indigenous Peoples whose lands could be directly impacted by industrial activities.

METHODOLOGY FOR ORIGINAL ANALYSIS

Although large U.S. tissue companies source pulp from several Canadian provinces including Ontario, Quebec, British Columbia, and Alberta, we focused on the provinces of Ontario and Quebec for our limited analysis due to the high volume of wood product exports from these two provinces to the United States.¹¹³ Each province reports its harvesting and mill allocations differently, with varying levels of transparency.

This paper focused, as a case study, on three companies that own NBSK mills in Ontario and Quebec and export NBSK pulp to the United States. These companies are Resolute Forest Products, Domtar, and Aditya Birla Group.

NBSK pulp is a key ingredient in the manufacturing of many tissue and toilet paper products. To gain insights into each company’s overall sourcing impact on the boreal forest, we reviewed mill allocation volumes for *all* mills owned by the three companies across Ontario and Quebec—not just NBSK mills—where these data were publicly available. We recommend that future research assess other large companies operating across Canada that both harvest wood and sell pulp and other wood products to the international marketplace.

To inform this paper, we relied on available information about public forest units and made estimates where data were not publicly available. Specifically, as detailed below, we estimated each company’s overall sourcing levels, and sourcing specifically from FSC- and non-FSC-certified forest units. We additionally estimated sourcing from forest units that overlap with specific boreal caribou ranges.

These estimates were prepared in good faith based on information available at the time of this research. However, as detailed in this methodology, there were limitations to these estimates because of the lack of comprehensive, publicly available data around mills’ individual sourcing from specific areas and the impacts of this sourcing on specific boreal caribou ranges. Ideally, the Ontario and

Quebec governments, as well as companies operating on public lands in Canada, would analyze and disclose this information publicly.

As detailed in the company review section, the three companies were given the opportunity to review our estimates about their activities prior to publication so that any input and clarifications could be considered for inclusion in this paper.

COMPANY MILL SOURCING FROM PUBLIC FOREST UNITS

To estimate companies’ mill sourcing in Ontario, we obtained wood utilization volumes from Table AR-2 in individual annual reports for each Forest Management Unit (FMU), which are published by Ontario’s Ministry of Natural Resources and Forestry.¹¹⁴ Volume figures (in cubic meters) refer to wood utilization by mill. According to the Ontario government, Table AR-2 “summarizes actual volume (i.e., harvest and salvage combined) utilized by mills that received wood from the management unit, by product type and species.”¹¹⁵

We extracted data from the latest available annual report for each FMU at the time of the research, reviewing the annual reports listed below.

ONTARIO ANNUAL REPORTS USED FOR ANALYSES					
FMU #	FMU Name	Annual Report Date	FMU #	FMU Name	Annual Report Date
110	Abitibi River Forest	April 1, 2018, to March 31, 2019	509	Martel Forest	April 1, 2018, to March 31, 2019
615	Algoma Forest	April 1, 2018, to March 31, 2019	140	Mazinaw-Lanark Forest	April 1, 2018, to March 31, 2019
451	Algonquin Park Forest	April 1, 2018, to March 31, 2019	390	Nagagami Forest	April 1, 2018, to March 31, 2019
444	Armstrong Forest	April 1, 2018, to March 31, 2019	754	Nipissing Forest	April 1, 2017, to March 31, 2018
220	Bancroft-Minden Forest	April 1, 2018, to March 31, 2019	680	Northshore Forest	April 1, 2018, to March 31, 2019
067	Big Pic Forest	April 1, 2018, to March 31, 2019	415	Ogoki Forest	April 1, 2017, to March 31, 2018
035	Black Spruce Forest	April 1, 2018, to March 31, 2019	780	Ottawa Valley Forest	April 1, 2018, to March 31, 2019
175	Caribou Forest	April 1, 2018, to March 31, 2019	965	Pic River Forest	April 1, 2018, to March 31, 2019
405	Crossroute Forest	April 1, 2018, to March 31, 2019	421	Pineland Forest	April 1, 2018, to March 31, 2019
177	Dog River-Matawin Forest	April 1, 2018, to March 31, 2019	840	Red Lake Forest	April 1, 2018, to March 31, 2019
535	Dryden Forest	April 1, 2018, to March 31, 2019	930	Romeo Malette Forest	April 1, 2018, to March 31, 2019
230	English River Forest	April 1, 2018, to March 31, 2019	853	Sapawe Forest	April 1, 2018, to March 31, 2019
360	French-Severn Forest	April 1, 2018, to March 31, 2019	210	Spanish Forest	April 1, 2018, to March 31, 2019
438	Gordon Cosens Forest	April 1, 2018, to March 31, 2019	889	Sudbury Forest	April 1, 2017, to March 31, 2018
601	Hearst Forest	April 1, 2018, to March 31, 2019	898	Temagami	April 1, 2017, to March 31, 2018
350	Kenogami Forest	April 1, 2017, to March 31, 2018	280	Timiskaming Forest	April 1, 2018, to March 31, 2019
644	Kenora Forest	April 1, 2017, to March 31, 2018	120	Trout Lake Forest	April 1, 2018, to March 31, 2019
702	Lac Seul Forest	April 1, 2018, to March 31, 2019	130	Wabigoon Forest	April 1, 2018, to March 31, 2019
815	Lake Nipigon Forest	April 1, 2018, to March 31, 2019	490	Whiskey Jack Forest	April 1, 2017, to March 31, 2018
796	Lakehead Forest	April 1, 2018, to March 31, 2019	060	White River Forest	April 1, 2018, to March 31, 2019
565	Magpie Forest	April 1, 2018, to March 31, 2019	994	Whitefeather Forest	April 1, 2016, to March 31, 2017

For Quebec, we have not included a table listing the different dates of reports, since the annual allocations are all relevant to 2019. For Quebec, we referenced *Les droits forestiers consentis* of the Ministry of Forests, Wildlife and Parks and extracted data from *Droits forestiers par région d'application des garanties d'approvisionnement* and *Répertoire des bénéficiaires de droits forestiers sur les terres du domaine de l'État*, dated June 30, 2019 (volumes are in the table labeled “*Liste des bénéficiaires de GA et PRAU par ordre alphabétique*”).¹¹⁶ In Quebec, the volume figures (in cubic meters) refer to 2018 annual net trading volumes (“*Volumes marchands nets annuels des droits forestiers*”).

ESTIMATED COMPANY WOOD VOLUME SOURCING FROM NON-FSC-CERTIFIED AREAS

In Ontario, we estimated company wood sourcing volumes from non-FSC areas by summing the allocation volumes (from Table AR-2 referenced above) from FMUs that FSC Canada does not list as having active FSC certificates.¹¹⁷

Quebec's reporting on sourcing is somewhat more opaque, as the government reports areas from which mills source at the large-scale level of *régions d'application des garanties d'approvisionnement* (RGAs). However, certification occurs at the smaller *unité d'aménagement* (UA) level, with multiple contiguous UAs making up a larger RGA. Given the lack of publicly available information on companies' sourcing levels from specific UAs within each RGA, our Quebec sourcing figures are more approximate.

To estimate each company's sourcing from non-FSC areas, we first referenced the FSC Canada database to determine which UAs in Quebec have active FSC certificates, meaning that some or all of those areas are FSC certified.¹¹⁸ For Quebec, we estimated annual attributable wood volume (“*volume attribuable net*”) that individual mills are eligible to be guaranteed from specific RGAs. These details are reported by the Ministry of Forests, Wildlife and Parks in the document titled *Volume attribuable en volume net par unité d'aménagement*.¹¹⁹

For each RGA, we took the following steps to estimate companies' non-FSC wood allocations: We divided each RGA into individual UAs. We found the wood guarantee volumes for each of these UAs.¹²⁰ We summed all wood guarantee volumes from non-FSC UAs. We divided that number by the total wood guarantee volume allocated to the sum of all UAs in each RGA to estimate the non-FSC percentage from each RGA. We then applied that percentage to each RGA's *volumes marchands nets* supplying the company.¹²¹

Quebec's public reporting does not illustrate specifically where companies' mills source from (at the UA level) within an RGA. Therefore, this process estimated these mill allocations' reliance on FSC wood at the RGA level. In an attempt to be conservative, we rounded these numbers down (to the hundreds).

In addition, because Quebec's reported volumes are supply guarantee volumes, they do not necessarily reveal the final volumes ultimately received by mills from public forest units each year. We invited companies to review these volumes and provide feedback.

ESTIMATED BOREAL CARIBOU RANGE OVERLAP

The public information reviewed for this report did not specify where, specifically, the companies' mills sourced wood *within* forest units that overlap with boreal caribou habitat. Therefore, we identified to what extent forest units overlap with boreal caribou habitat using GIS mapping and public reports, and then made estimates about companies' sourcing impacts on caribou habitat based on publicly available data. These volumes do not indicate the precise volumes that companies source from boreal caribou habitat, but instead indicate to what extent they source from forest units that are majority boreal caribou habitat.

The estimates of each company's wood volume sourcing from FMUs and RGAs that are majority caribou habitat were made by starting with a map of the FMUs and RGAs where the companies operate, geographically overlaying it with boreal caribou range boundaries, and then calculating which areas had more than 50 percent boreal caribou habitat overlap.¹²² We summed all wood volumes relevant to each company's sourcing where forest units had greater than 50 percent boreal caribou habitat overlap, then distinguished whether these volumes came from non-FSC or FSC-certified areas. Again, for companies sourcing from Quebec, estimates of FSC and non-FSC wood volumes relate to the percentage of each RGA's annual attributable wood volume allocations that are from either FSC-certified or non-FSC-certified areas.

Due to the lack of publicly available information on precisely how mills' sourcing directly impacts boreal caribou habitat *within* forest units, these figures are estimates. They exclude forest units where less than 50 percent of the area covers boreal caribou habitat, even though forestry activities may be impacting caribou habitat within these units. Table 3 is not intended to be representative of each company's total impact on boreal caribou range habitat in Ontario and Quebec.

In addition, we used our geographic analysis, as well as Integrated Range Assessment reports from the Ontario government and boreal caribou maps from the federal government, to identify which specific boreal caribou ranges overlapped with each FMU from which the three companies source.¹²³

For Quebec, we used our geographic analysis, the boreal caribou maps from the federal government, and Quebec's RGA maps to identify which boreal caribou ranges overlapped with each RGA from which the three companies source. Because company wood allocations in Quebec are reported on a regional (RGA) level rather than the smaller

management unit (UA) level, boreal caribou range overlap information for Quebec is more approximate than for Ontario.

According to the Quebec public data relied on for this report, Resolute Forest Products additionally sources from the Abitibi-Témiscamingue RGA, which is partially covered by the Val d'Or (QCI) range. However, in Table 2 we did not include this range as likely impacted by the company because the range covers only a very small portion of the RGA.

Regarding boreal caribou habit disturbance for individual ranges: the federal government's 2019 boreal caribou recovery strategy gives the disturbance estimate for each of those boreal caribou ranges.¹²⁴ The government of Ontario also periodically reports estimates for Ontario boreal caribou ranges.¹²⁵

As detailed in the final section of this Appendix, the companies were given the opportunity to review these figures and propose corrections or modifications.

HARVESTING INCREASES IN TROUT LAKE FOREST

We referenced the “actual harvest” area reported in each of the Trout Lake Forest annual reports from 2013 to 2019. These reports are publicly available on the “Find a Forest Management Plan” web page maintained by the Ontario Ministry of Natural Resources and Forestry.¹²⁶

RESOLUTE FOREST PRODUCTS' MILLS AND FSC CERTIFICATIONS

Although Resolute Forest Products lists on its website 28 mill facilities located in Ontario and Quebec, only 16 locations were listed in provincial reporting as receiving wood volume allocations from public forests units. Of these, the Thunder Bay (two locations), Atikokan, and Ignace mills are in Ontario. The remaining 12 sites are located in Quebec. They are: Gatineau, Maniwaki, Saint-Félicien, Mistassini, Girardville, La Doré, Saint-Thomas, Outardes, Senneterre, Comtois, Mauricie Forest Products, and Société en commandite Scierie Opitciwan.¹²⁷ Both Mauricie and Scierie Opitciwan are joint ventures in which Resolute Forest Products reports a 93.2 percent and 45 percent interest, respectively.¹²⁸ When calculating the sum of the company's wood volume allocations, we incorporated only the percentage of each mill's allocation corresponding to Resolute Forest Products' percentage interest.

To identify the FSC-certified areas managed by Resolute Forest Products, we conducted a public certificate search on the FSC database.¹²⁹ This search also included certificates listed as suspended or terminated/expired. These numbers matched the number of FSC-certified lands managed by Resolute Forest Products that FPAC reported in 2020.¹³⁰

In 2012, Resolute Forest Products reported managing 15.8 million hectares of FSC-certified lands.¹³¹

LIMITATIONS

As detailed above, the public information reviewed for this report did not indicate where, specifically, the companies' mills sourced wood *within* forest units that overlap with boreal caribou habitat. Therefore we identified to what extent forest units overlap with boreal caribou habitat using GIS mapping and public reports, and then made estimates about companies' sourcing impacts on caribou habitat based on public data.

When estimating which FMUs/RGAs have greater than 50 percent overlap with boreal caribou ranges, GIS calculations relied on boundary data. This means the analysis did not factor in (i.e., remove) non-forest land and protected areas (although commercial logging is not banned in all provincial parks).¹³²

In Quebec, where mills did not appear to have direct allocations at the UA level, our FSC analysis assumed each company received, on average, the corresponding percentage of FSC-certified wood volume available to be allocated to companies from each broader RGA. This may over- or underestimate how much each company's sourcing is from an FSC-certified area, given that a company may receive a disproportionate amount of an RGA's available wood volume from one UA relative to another, with potentially differing FSC-certification statuses. Moreover, because Quebec's reported volumes are supply guarantee volumes, they may not reveal the final volumes that mills have ultimately received from public forest units each year.

References to the specific boreal caribou herds that overlap with the Quebec mills' sourcing are also based on RGAs rather than UAs and therefore are also estimates. If Quebec and/or the companies operating there publicly disclosed information on companies' sourcing at the UA rather than RGA level, these estimates would be more precise.

Estimates about companies' sourcing are not meant to represent all of the wood that they process at their mills. For example, these figures may not include all of the fiber that these companies' mills purchase from third-party providers in the form of logs or wood chips. Our analysis does not capture sourcing from private lands.

As detailed in the company review section, we provided companies with the opportunity to review these estimates and propose corrections or modifications.

ENDNOTES

- 1 Jennifer Skene, *Cutting It Close: How Unsustainable Logging in Canada's Boreal Forest Threatens Indigenous Rights, Wildlife, and the Global Climate*, NRDC, July 2018, <https://www.nrdc.org/sites/default/files/cutting-it-close-logging-canadas-boreal-report.pdf>.
- 2 Jennifer Skene, *The Issue with Tissue: How Americans are Flushing Forests Down the Toilet*, February 2019, <https://www.nrdc.org/resources/issue-tissue-how-americans-are-flushing-forests-down-toilet>.
- 3 Peter Potapov et al., "The Last Frontiers of Wilderness: Tracking Loss of Intact Forest Landscapes From 2000 to 2013," *Science Advances* 3, no. 1 (January 2017): 1-13, <http://dx.doi.org/10.1126/sciadv.1600821>.
- 4 Jay Malcolm, Bjart Holtmark, and Paul Piascik, "Forest Harvesting and the Carbon Debt in Boreal East-Central Canada," *Climatic Change* 161 (August 2020): 433-49, <https://doi.org/10.1007/s10584-020-02711-8>.
- 5 Jennifer Skene, *The Logging Loophole: How the Logging Industry's Unregulated Carbon Emissions Undermine Canada's Climate Goals*, NRDC, July 16, 2020, <https://www.nrdc.org/sites/default/files/logging-loophole-boreal-report.pdf>.
- 6 Intergovernmental Panel on Climate Change (hereinafter IPCC), "Summary for Policymakers," in: *Global Warming of 1.5 °C. An IPCC Special Report on the Impacts of Global Warming of 1.5 °C Above Pre-Industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Threat of Climate Change, Sustainable Development, and Efforts to Eradicate Poverty*, 2018, <https://www.ipcc.ch/sr15/>.
- 7 Susan Bell, "Quebec Cree Hold Protest, Ramping Up Pressure to Protect Untouched Forest," CBC News, September 11, 2018, <https://www.cbc.ca/news/canada/north/quebec-cree-broadback-forest-1.4819252>. John M. Fryxell et al., "Anthropogenic Disturbance and Population Viability of Woodland Caribou in Ontario," *Journal of Wildlife Management* 84, no. 4 (May 2020): 636-50, <https://wildlife.onlinelibrary.wiley.com/doi/full/10.1002/jwmg.21829>. Shelley Vinyard and Jennifer Skene, *The Issue With Tissue 2.0: How the Tree-to-Toilet Pipeline Fuels Our Climate Crisis*, NRDC, June 2020, <https://www.nrdc.org/sites/default/files/issue-with-tissue-2-report.pdf>.
- 8 This analysis did not include the company Chantiers Chibougamau, which owns the Nordic Kraft Chantiers Chibougamau mill in Quebec, which was idled for around a decade. However, the mill has recently begun the process of reopening and may be another supplier to companies producing tissue and toilet paper.
- 9 Skene, *Cutting It Close*.
- 10 Ontario Ministry of Natural Resources and Forestry, "Find a Forestry Management Plan," <https://www.efmp.lrc.gov.on.ca/eFMP/home.do> (accessed January 8, 2020). Please note that as of January 2020, the government of Ontario indicated that it was in the process of moving its FMU reports to this new webpage: Ontario Ministry of Natural Resources and Forestry, "Forest Management Plans Online," https://nrp.mnr.gov.on.ca/s/fmp-online?language=en_US.
- 11 This analysis reviewed Aditya Birla Group's Terrace Bay Mill. Aditya Birla Group, "AV Terrace Bay," <http://avterracebay.com/> (accessed January 5, 2021).
- 12 Domtar, "Our Locations," <https://www.domtar.com/en/who-we-are/all-locations> (accessed January 5, 2021). Domtar's mills assessed in this report are the Dryden, Espanola, and Windsor mills.
- 13 Please see the Appendix for the names of the 16 mills included in this analysis. Resolute Forest Products, "Operations," <https://www.resolutefp.com/operations/> (accessed January 5, 2021).
- 14 Environment and Climate Change Canada (hereinafter ECCC), *Amended Recovery Strategy for the Woodland Caribou* (Rangifer tarandus caribou), *Boreal Population, in Canada 2019*, Species at Risk Act Recovery Strategy Series, 2019, <https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/recovery-strategies/woodland-caribou-boreal-2019.html>.
- 15 Assembly of First Nations, David Suzuki Foundation, and Centre for Indigenous Environmental Resources, Cultural and Ecological Value of Boreal Woodland Caribou Habitat, June 2013, <https://www.afn.ca/uploads/files/report-caribou.pdf>; Steve Ganey, Sustaining Caribou Means Conserving Canada's Boreal Forest: Indigenous Management Emerging as Best Hope for Dwindling Herds and Their Habitat, January 8, 2019, <https://www.pewtrusts.org/en/research-and-analysis/articles/2019/01/08/sustaining-caribou-means-conserving-canadas-boreal-forest>; John Fryxell, "Habitat, Food Web Changes From Logging Threatening Endangered Caribou, Study Reveals," University of Guelph, April 15, 2020, <https://news.uoguelph.ca/2020/04/habitat-food-web-changes-from-logging-threatening-caribou-study-reveals/>.
- 16 Indigenous Circle of Experts, "We Rise Together: Achieving Pathway to Canada Target 1 Through the Creation of Indigenous Protected and Conserved Areas in the Spirit and Practice of Reconciliation," March 2018, <https://www.conservation2020canada.ca/resources>.
- 17 Matt Carlson, Jeff Wells, and Dina Roberts, *The Carbon the World Forgot: Conserving the Capacity of Canada's Boreal Forest Region to Mitigate and Adapt to Climate Change*, Boreal Songbird Initiative and Canadian Boreal Initiative, 2009, <https://www.borealbirds.org/sites/default/files/pubs/report-full.pdf>.
- 18 Skene, *Cutting It Close*.
- 19 IPCC, "Summary for Policymakers."
- 20 "Forest units" refers to forest management units in Ontario and *régions d'application des garanties d'approvisionnement* and *unités d'aménagement* in Quebec.
- 21 Provincial and federal terminology refers to "public lands," "crown forests," and "*territoire forestier public*." Natural Resources Canada, "Forest Land Ownership," <https://www.nrcan.gc.ca/our-natural-resources/forests-forestry/sustainable-forest-management/forest-land-ownership/17495> (accessed January 15, 2021).
- 22 In assessing the three companies, we reviewed their websites and public materials. A bare-minimum requirement for industrial forestry operations should be obtaining the free, prior and informed consent of Indigenous Peoples who could be impacted by forestry operations. Even though forest management includes decision makers external to companies (such as government actors), companies have significant scope to require that free, prior, and informed consent be obtained in order for those companies to operate in specific areas. For example, see Pamela Perreault, *Free, Prior and Informed Consent Guidance*, Forest Stewardship Council Canada, August 13, 2019, <https://ca.fsc.org/preview.free-prior-and-informed-consent-guidance.a-2502.pdf>.
- 23 This paper specifically highlights the superior sustainability of wood and pulp that comes from forest units that are FSC-certified. This is different from the way "chain of custody certification," in contrast, allows companies to mix "controlled wood" from non-FSC-certified forest units with wood from FSC-certified forest units. Forest Stewardship Council, "Chain of Custody Certification," <https://fsc.org/en/chain-of-custody-certification> (accessed October 4, 2020).
- 24 The government of Canada defines disturbed boreal caribou habitat as "habitat showing: i) anthropogenic disturbance visible on Landsat at a scale of 1:50,000, including habitat within a 500 m buffer of the anthropogenic disturbance; and/or ii) fire disturbance in the last 40 years, as identified in data from each provincial and territorial jurisdiction (without buffer)." ECCC, *Amended Recovery Strategy*.
- 25 FPAC lists Domtar, Resolute Forest Products, and Aditya Birla's AV Group New Brunswick as members. Aditya Birla also lists FPAC as one of the industry bodies and associations to which it belongs. Forest Products Association of Canada (hereinafter FPAC), "Our Members," <https://www.fpac.ca/about-forest-products/companies/> (accessed October 7, 2020); Aditya Birla Group, *Sustainability Report 2019: Pulp & Fibre Business*, 2019, <https://www.adityabirla.com/upload/pdf/Birla-Cellulose-SDR-2018-19.pdf>.

- 26 For example, see Aditya Birla Group, “Wood Fiber Sourcing Policy,” October 31, 2016, <https://sustainability.adityabirla.com/images/Wood%20Fibre%20Sourcing%20Policy.pdf>; Domtar, “Sustainability Policies,” July 2009, <https://www.domtar.com/en/resources/sustainability/sustainability-policies>; Resolute Forest Products, “2017 Annual and Sustainability Report,” 2017, https://www.resolutefp.com/uploadedFiles/Media/Publications/RFP_2017-Annual-Report.pdf.
- 27 Associated Press, “The Highest-Paid CEOs by State,” May 27, 2020, <https://apnews.com/article/6c4598ee47c3f970ca4a99b58ac82eel>.
- 28 Domtar, “Our Company,” <https://www.domtar.com/en/who-we-are/about-domtar/our-company> (accessed March 15, 2021). Domtar, “Our Locations.”
- 29 Aditya Birla Group, “In Perspective,” November 2019, <https://www.adityabirla.com/about-us/downloads/Group-presentation-Nov-2019.pdf>.
- 30 Resolute Forest Products, “About Us,” https://www.resolutefp.com/about_us/ (accessed March 15, 2021).
- 31 Valentina Stackl, “Judge Orders Resolute Forest Products to Pay Almost 1 Million Dollars to Greenpeace,” Greenpeace, April 23, 2020, <https://www.greenpeace.org/usa/news/resolute-to-pay-almost-1-million-dollars-to-greenpeace/>.
- 32 Secretariat of the Convention on Biological Diversity, *REDD-plus and Biodiversity: CBD Technical Series No. 59*, United Nations Environment Programme, 2011, <https://www.cbd.int/doc/publications/cbd-ts-59-en.pdf>; United Nations Framework Convention on Climate Change, “UNFCCC Negotiations,” REDD+ web platform, <https://redd.unfccc.int/fact-sheets/unfccc-negotiations.html> (accessed October 4, 2020); Convention on Biological Diversity, “Forest Biodiversity Definitions,” November 30, 2006, <https://www.cbd.int/forest/definitions.shtml>.
- 33 Convention on Biological Diversity, “Forest Biodiversity Definitions.”
- 34 Secretariat of the Convention on Biological Diversity, *REDD-plus and Biodiversity*; United Nations Framework Convention on Climate Change, “UNFCCC Negotiations.”
- 35 James Watson et al., “The Exceptional Value of Intact Forest Ecosystems,” *Nature Ecology and Evolution* 2 (February 2018): 599-610, https://www.researchgate.net/publication/323399911_The_exceptional_value_of_intact_forest_ecosystems; Jeff Bowman et al., “Roads, Logging, and the Large-Mammal Community of an Eastern Canadian Boreal Forest,” *Canadian Journal of Zoology* 88, no. 5 (April 10, 2010), <https://cdsciencepub.com/doi/abs/10.1139/Z10-019>; Florian Alberto et al., “Potential for Evolutionary Responses to Climate Change: Evidence From Tree Populations,” *Global Change Biology* 19, no. 6 (June, 2013): 1645-61, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3664019/>.
- 36 International Union for Conservation of Nature, “Deforestation and Forest Degradation,” 2020, <https://www.iucn.org/resources/issues-briefs/deforestation-and-forest-degradation>.
- 37 Trevor Hesselink, *Boreal Logging Scars: An Extensive and Persistent Logging Footprint in Typical Clearcuts of Northwestern Ontario, Canada*, Wildlands League, 2019, <https://loggingscars.ca/report/>.
- 38 FPAC, “Statistics,” Certification Canada, <https://certificationcanada.org/en/statistics/canadian-statistics/> (accessed November 12, 2020).
- 39 Vinyard and Skene, *The Issue With Tissue 2.0*.
- 40 Fortune, “Fortune 500,” <https://fortune.com/fortune500/> (accessed January 15, 2021).
- 41 Urska Trunk, “World’s Largest Viscose Supplier ABG Still in Denial Over Rampant Water Pollution,” *Reuters Events*, March 20, 2018, <https://www.reutersevents.com/sustainability/worlds-largest-viscose-supplier-abg-still-denial-over-rampant-water-pollution>.
- 42 United Nations, “United Nations Declaration on the Rights of Indigenous Peoples,” September 13, 2007, <https://www.un.org/development/desa/indigenouspeoples/declaration-on-the-rights-of-indigenous-peoples.html>.
- 43 Government of Canada, “Canada Becomes a Full Supporter of the United Nations Declaration on the Rights of Indigenous Peoples,” May 10, 2016, <https://www.canada.ca/en/indigenous-northern-affairs/news/2016/05/canada-becomes-a-full-supporter-of-the-united-nations-declaration-on-the-rights-of-indigenous-peoples.html>.
- 44 United Nations, “United Nations Declaration on the Rights of Indigenous Peoples.”
- 45 In 2019 British Columbia passed the Declaration on the Rights of Indigenous Peoples Act, making it the first Canadian jurisdiction to pass legislation committed to implementing UNDRIP at the provincial level. Government of British Columbia, “First Annual Report on Declaration on the Rights of Indigenous Peoples Act Released,” June 30, 2020, <https://news.gov.bc.ca/releases/2020IRR0012-001198>.
- 46 Bryan Eneas, “Sask. Among 6 Provinces Asking Federal Government to Delay Bill C-15 Implementation,” CBC News, December 19, 2020, <https://www.cbc.ca/news/canada/saskatchewan/province-asks-federal-government-delay-bill-c-15-implementation-1.5848228>; Keith Borkowsky, “Conservative Governments Voice Concerns Over Bill C-15,” *Toronto Star*, January 18, 2021, <https://www.thestar.com/news/canada/2021/01/18/conservative-governments-voice-concerns-over-bill-c-15.html>.
- 47 Logan Turner, “Kitchenuhmaykoosib Inninuwug Opposes Federal Government’s Proposal to Implement UNDRIP,” CBC News, January 26, 2021, <https://www.cbc.ca/news/canada/thunder-bay/ki-rejects-federal-undrip-bill-1.5887344>.
- 48 Indigenous Circle of Experts, “We Rise Together.”
- 49 Ibid.
- 50 Susan Bell, “Quebec Cree Hold Protest, Ramping Up Pressure to Protect Untouched Forest.”
- 51 Government of Canada, “Principles Respecting the Government of Canada’s Relationship with Indigenous Peoples, February 2018, <https://www.justice.gc.ca/eng/cs/j-sjc/principles-principes.html>.
- 52 David Suzuki Foundation, “The Boreal Forest,” <https://david Suzuki.org/project/boreal-forest/> (accessed January 12, 2021); Ontario Nature, *How Can We Protect Critical Caribou Habitat and Support Forestry Jobs in Ontario*, June 2019, <https://david Suzuki.org/wp-content/uploads/2019/06/how-can-we-protect-critical-caribou-habitat-and-support-forestry-jobs-in-ontario-2.pdf>; Wildlands League, “Wildlands League Welcomes New FSC Rules for Forest Certification, June 2021, <https://wildlandsleague.org/news/new-fsc-rules/>; Sierra Club, “Climate-Friendlier Forestry,” <https://www.sierraclub.org/forests/climate-friendlier-forestry> (accessed January 12, 2021); “Want to Help Save the World’s Forests? Look for the FSC label when you shop,” World Wildlife Fund, April 2018, <https://www.worldwildlife.org/stories/want-to-help-save-the-world-s-forests-look-for-the-fsc-label-when-you-shop>; Greenpeace Canada, “Statement: Greenpeace Canada Remains a Member of the Forest Stewardship Council,” March 27, 2018, <https://www.greenpeace.org/canada/en/press-release/283/statement-greenpeace-canada-remains-a-member-of-the-forest-stewardship-council/>.
- 53 Graeme Auld, Lars Gulbrandsen, and Constance McDermott, “Certification Schemes and the Impacts on Forests and Forestry,” *Annual Review of Environment and Resources* 33, no. 1 (November 2008): 187-211, <https://www.annualreviews.org/doi/full/10.1146/annurev.environ.33.013007.103754>; Stand.earth, “Environmental Leaders Critique SFI,” <https://www.stand.earth/page/forest-conservation/primary-and-intact-forests/environmental-leaders-critique-sfi> (accessed June 30, 2020); Sierra Club, *Forest Stewardship Council (FSC) Handbook for State Forests*, December 2014, <https://www.sierraclub.org/sites/www.sierraclub.org/files/program/documents/FSC%20HANDBOOK%20State%20forests.pdf>; Tyson Miller, “US Green Building Council Needs to Maintain the Gold Standard in Forest Certification,” Dogwood Alliance, May 2017, <https://www.dogwoodalliance.org/2016/05/us-green-building-council-needs-to-maintain-the-gold-standard-in-forest-certification/>.

- 54 Ibid.
- 55 Stand.earth, “We Applaud the Following Companies for Choosing a More Environmentally Responsible Way Forward,” <https://www.stand.earth/page/past-achievements/great-bear-rainforest/these-businesses-made-right-decision-forests-they%E2%80%99ve> (accessed September 23, 2020).
- 56 Perreault, *Free, Prior and Informed Consent Guidance*; Forest Stewardship Council Canada, “Forest Management Standards and Policies,” <https://ca.fsc.org/en-ca/standards/forest-management-standards>, (accessed February 4, 2021); Courtenay Lewis, “FSC Canada Pulls Even Further Ahead of the Pack,” NRDC, June 3, 2019, <https://www.nrdc.org/experts/courtenay-lewis/fsc-canada-pulls-even-further-ahead-pack>.
- 57 Stand.earth, “Environmental Leaders Critique SFI;” Peggy Smith and Pamela Perreault, *Are All Forest Certification Systems Equal? An Opinion on Indigenous Engagement in the Forest Stewardship Council and the Sustainable Forestry Initiative*, August 2017, <https://ca.fsc.org/preview.are-all-forest-certification-systems-equal-an-opinion-on-indigenous-engagement-in-the-fsc-and-sfi.a-1874.pdf>.
- 58 Courtenay Lewis, “SFI’s Proposed Updates Offer Greenwashing, Not Solutions,” NRDC, July 1, 2020, <https://www.nrdc.org/experts/courtenay-lewis/sfis-proposed-updates-offer-greenwashing-not-solutions>.
- 59 Natural Resources Canada, “Forest Certification in Canada,” June 29, 2020, <https://www.nrcan.gc.ca/our-natural-resources/forests-forestry/sustainable-forest-management/forest-certification-canada/17474>. FPAC, “Statistics.”
- 60 Domtar, “Our Certifications,” 2020, <https://www.domtar.com/en/resources/sustainability/our-certifications>; AV Terrace Bay, “Sustainability,” <http://avterracebay.com/sustainability/> (accessed March 15, 2021); Resolute Forest Products, “Forest Certification,” https://www.resolutefp.com/Sustainability/Forestry_and_Fiber_Sourcing/Forest_Certification/ (accessed March 15, 2021).
- 61 For all three companies, annual estimates are based on the most recent publicly available provincial data at the time of research. Please see the Appendix for a list of the dates of the Quebec and Ontario reports. In this table, “forest units” refers to forest management units in Ontario, and *régions d’application des garanties d’approvisionnement* in Quebec. Volumes are measured as allocations to company mills. Non-FSC wood estimates are rounded down to the hundreds. For more details, see the Appendix.
- 62 We calculated this envisioning that each board is 1 foot long. A “2x4” piece of wood is 1.5 x 3.5 inches, so this calculation assumes each board is 1.5 x 3.5 x 12 inches. “Fast Fact: How Big Is a 2x4?” International Association of Certified Home Inspectors, <https://www.nachi.org/2x4-hhnews.htm> (accessed October 5, 2020). The conversion factor of m³ to in³ is approximately 61,023.74.
- 63 The moon is an average of 238,855 miles away from Earth. National Aeronautics and Space Administration, “How Far Away Is the Moon?” <https://spaceplace.nasa.gov/moon-distance/en/>. (accessed October 5, 2020).
- 64 The Canadian Press, “Resolute Forest Products Says It Won’t Pursue New FSC Certifications,” *Financial Post*, November 25, 2015, <https://financialpost.com/commodities/agriculture/resolute-forest-says-fsc-certificate-reinstated-for-northern-ontario-forest>.
- 65 Forest Products Association of Canada, “Forest Management Certification in Canada,” February 2020, <https://certificationcanada.org/wp-content/uploads/2020/02/2019-Yearend-SFM-Certification-Detailed-Report-QB.pdf>; <https://certificationcanada.org/wp-content/uploads/2020/02/2019-Yearend-SFM-Certification-Detailed-Report-ON.pdf>. Also please see the methodology detailed in the Appendix to this report. Canada Newswire, “Resolute Increases Certified Lands,” Canadian Forest Industries, November 16, 2012, <https://www.woodbusiness.ca/resolute-increases-certified-lands-698/>.
- 66 Some of these areas contain both SFI- and FSC-certification; Forest Products Association of Canada, *Forest Management Certification in Canada*.
- 67 Domtar, “Our Certifications.”
- 68 Ontario Nature and Birds Canada, *Unfinished Business: Candidate Protected Areas in Ontario; An Assessment of the Potential Contribution Forest Stewardship Council (FSC) Certification Can Make Toward Protection Targets*, January 2021, <https://view.publitas.com/on-nature/candidate-protected-areas/page/1>.
- 69 Forest Stewardship Council, “Debate on FSC Intact Forest Landscape Protection Continues,” May 12, 2020, <https://fsc.org/en/newsfeed/debate-on-fsc-intact-forest-landscape-protection-continues>.
- 70 ECCC, *Amended Recovery Strategy*.
- 71 Ibid.
- 72 The federal government proposed an alternative threshold in Saskatchewan’s Boreal Shield range. Provinces can provide an alternative to the 65 percent range protection threshold. However, according to the government of Canada, in order to do this, “there must be strong evidence, validated by Environment and Climate Change Canada, from population data collected over an extended period of time to support the management decision to establish a lower range-specific threshold (i.e., the lag effects of disturbance on a local population have been considered and accounted for),” ECCC, *Amended Recovery Strategy*.
- 73 Ibid; Fryxell et al., “Anthropogenic Disturbance and Population Viability.”
- 74 Assembly of First Nations, David Suzuki Foundation, and Centre for Indigenous Environmental Resources, *Cultural and Ecological Value*.
- 75 Ganey, *Sustaining Caribou Means Conserving Canada’s Boreal Forest*.
- 76 Estimates of company sourcing overlap with Quebec’s herds are more approximate than estimates of overlap with Ontario’s herds. We have incorporated feedback from companies that responded to our request to review our estimates. For more details, including dates of public reports relied on for our analysis, please see methodology in this report’s Appendix.
- 77 For Government of Canada disturbance estimates, see ECCC, *Amended Recovery Strategy*. For Government of Ontario disturbance estimates, see Phil Elkie et al., *Science and Information in Support of Policies That Address the Conservation of Woodland Caribou in Ontario: Occupancy, Habitat and Disturbance Models, Estimates of Natural Variation and Range Level Summaries*, Ontario Ministry of Natural Resources, Forests Branch, 2018, <https://www.sdc.gov.on.ca/sites/mnrf-olt/en/Shared%20Documents/Science%20and%20Information%20-%20Package%20Caribou.pdf>. This report links to a map of 2018 range disturbance estimates. The report needs to be downloaded for this hyperlink to work; click on “2016” on page 20 to access a separate PDF document with maps show disturbance estimates (accessed January 20, 2021). In this table, “Forest units” refers to forest management units in Ontario, and *régions d’application des garanties d’approvisionnement* in Quebec. Volumes are measured as allocations to company mills. Information on how boreal caribou ranges overlap with forest management units are estimates based on publicly available information. The public information reviewed for this report did not indicate where, exactly, companies’ mills’ wood came from within specific forest units. Therefore, we could determine which boreal caribou ranges overlapped with specific forest units, but we could not ascertain where precisely wood destined for the companies’ specific mills was harvested within those forest units. As detailed in the methodology, wood allocations happen at the RGA level rather than UA level, meaning our estimates around Quebec forest units’ overlap with boreal caribou habitat are more approximate in Quebec. The list of companies that source from overlapping forest units is specific to the three companies in this report, not *all* companies that source from these forest units. Please see the methodology section for additional details.
- 78 ECCC, *Amended Recovery Strategy*.
- 79 Domtar, “Our Locations;” Resolute Forest Products, “Operations;” AV Terrace Bay, “Company,” <http://avterracebay.com/company/> (accessed January 10, 2021).

80 ECCC, *Amended Recovery Strategy*.

81 To compare specifically where FMUs and RGAs overlap with boreal caribou habitat, please see: ECCC, *Amended Recovery Strategy*; Ontario Ministry of Natural Resources and Forestry, “Forest Management Plans Online,” https://nrp.mnr.gov.on.ca/s/fmp-online?language=en_US (accessed January 10, 2021); Quebec Ministry of Forests, Wildlife, and Parks, “Cartes des régions d’application des garanties d’approvisionnement (GA),” <https://mffp.gouv.qc.ca/les-forets/amenagement-durable-forets/les-droits-consentis/la-garantie-dapprovisionnement-ga/cartes-regions/> (accessed January 10, 2021).

82 For the dates of the public data relied on for these estimates, and a description of the methodology, please see Appendix.

83 Sustainable Forestry Initiative, “SFI Standard 2015-2019; Extended Through December 2021,” <https://www.forests.org/sfistandards/> (accessed February 1, 2021); Lewis, “SFI’s Proposed Updates Offer Greenwashing”.

84 “Majority” means that more than 50 percent of the forest unit covers boreal caribou habitat, according to geographic information system mapping. In this table, “forest units” refers to forest management units in Ontario, and *régions d’application des garanties d’approvisionnement* in Quebec. Volumes are measured as allocations to company mills. Annual estimates are based on the most recent data available at the time of research. Estimates are rounded down to the hundreds. As with Table 2, the public information reviewed for this report did not indicate specifically where companies sourced wood from within forest units that overlap with caribou habitat; therefore these figures are estimates. For more details, please see methodology details in the Appendix to this report.

85 Ontario Ministry of Natural Resources and Forestry, “Find a Forestry Management Plan.”

86 Also see Appendix.

87 Catherine Grant, Nicolas Mainville, and Freya Putt, *Boreal Alarm: A Wake Up Call for Action in Canada’s Endangered Forests*, Greenpeace, December 2012, <https://www.greenpeace.org/usa/wp-content/uploads/2019/10/Boreal-Alarm-Canadas-Endangered-Forests-Report.pdf>.

88 Elkie et al., *Science and Information*.

89 See Appendix.

90 Correspondence from Domtar representatives, 2019–2021.

91 Carlson, Wells, and Roberts, “The Carbon the World Forgot.”

92 Watson et al., “The Exceptional Value of Intact Forest Ecosystems;” Jay Malcolm et al., “Forest Harvesting and the Carbon Debt in Boreal East-Central Canada.”

93 Skene, *The Logging Loophole*.

94 Natural Resources Canada, *The State of Canada’s Forests: Annual Report 2019, 2020*, <https://dlied5g1xfpx8.cloudfront.net/pdfs/40084.pdf>.

95 Ibid.

96 Hesselink, *Boreal Logging Scars*.

97 Ibid.

98 Skene, *The Logging Loophole*.

99 Jay Malcolm et al., “Forest Harvesting and the Carbon Debt in Boreal East-Central Canada.”

100 Skene, *The Logging Loophole*.

101 IPCC, “Summary for Policymakers,”

102 Shawn McCarthy and Ivan Semeniuk, “Provinces Haven’t Stopped Boreal Caribou’s Decline, and Ottawa May Have to Intervene, Report Says,” *The Globe and Mail*, October 31, 2017, <https://www.theglobeandmail.com/news/national/caribou/article36776410/>; Vince Crichton et al., “Re: Response From Scientists to Claims Made by the Forest Products Association of Canada Regarding the Scientific Underpinnings of the Federal Boreal Caribou Recovery Strategy,” September 22, 2017, https://albertawilderness.ca/wp-content/uploads/2017/11/20170922_It_scientists_to_ecceminister_car_strong_science.pdf.

103 Carol Linnitt, “‘Disingenuous’ Forest Industry Campaign Tries to Undermine Protection of Endangered Caribou,” *The Narwhal*, October 23, 2017, <https://thenarwhal.ca/disingenuous-forest-industry-campaign-tries-undermine-protection-endangered-caribou/>.

104 Julee J. Boan et al., “From Climate to Caribou: How Manufactured Uncertainty Is Affecting Wildlife Management,” *Wildlife Society Bulletin* 42, no. 2 (June 2018), <https://wildlife.onlinelibrary.wiley.com/doi/full/10.1002/wsb.391>.

105 Forest Products Association of Canada, “Membership Has Its Privileges,” <https://www.fpac.ca/forest-products-industry-association/> (accessed March 15, 2021).

106 Crichton et al., “Re: Response From Scientists.”

107 Emma McIntosh, “Ontario Extends Logging Industry Exemption From Endangered Species Law,” *Canada’s National Observer*, June 30, 2020, <https://www.nationalobserver.com/2020/06/30/news/ontario-extends-logging-industry-exemption-endangered-species-law>; Emma McIntosh, “Doug Ford Facing Second Lawsuit Over Environmental Assessment Changes,” *Canada’s National Observer*, August 31, 2020, <https://www.nationalobserver.com/2020/08/31/news/doug-ford-facing-second-lawsuit-over-environmental-assessment-changes>.

108 Shawn Jeffords, “Environmental Groups Critical of Ontario Government Forestry Plan,” *The Canadian Press*, February 5, 2020, <https://nationalpost.com/pmn/news-pmn/canada-news-pmn/environmental-groups-critical-of-ontario-government-forestry-plan-2>.

109 Vinyard and Skene, *The Issue With Tissue 2.0*; Martin Croteau, “Québec Permettra Plus de Coupes Forestières Pour Réduire les GES,” *La Presse*, September 30, 2019, <https://www.lapresse.ca/actualites/environnement/2019-09-30/quebec-permettra-plus-de-coupes-forestieres-pour-reduire-les-ges>.

110 ECCC, *Amended Recovery Strategy*.

111 Vinyard and Skene, *The Issue With Tissue 2.0*.

112 Indigenous Circle of Experts, “We Rise Together.”

113 Skene, *Cutting It Close*.

114 Ontario Ministry of Natural Resources and Forestry, “Find a Forest Management Plan.”

115 Ontario Ministry of Natural Resources and Forestry, *Forest Management Planning Manual*, March 2017, <https://files.ontario.ca/forest-management-planning-manual.pdf>.

- 116 Quebec Ministry of Forests, Wildlife, and Parks, “Droits forestiers par région d’application des garanties d’approvisionnement (GA),” <https://mffp.gouv.qc.ca/les-forets/amenagement-durable-forets/les-droits-consentis/la-garantie-dapprovisionnement-ga/droits-forestiers-application-garanties-dapprovisionnement-ga/> (accessed January 15, 2021). Quebec Ministry of Forests, Wildlife, and Parks, “Répertoire des bénéficiaires de droits forestiers sur les terres du domaine de l’État,” <https://mffp.gouv.qc.ca/les-forets/amenagement-durable-forets/les-droits-consentis/repertoire/> (accessed January 15, 2021).
- 117 FSC, “Public Certificate Search,” <https://info.fsc.org/certificate.php> (accessed January 15, 2021).
- 118 Ibid.
- 119 Quebec Ministry of Forests, Wildlife, and Parks, “Droits forestiers par région d’application,”
- 120 Ibid. We referred to the table “Volume attribuable en volume net par unité d’aménagement” for net attributable wood guarantee volumes by UA.
- 121 Quebec Ministry of Forests, Wildlife, and Parks, “Plan d’aménagement forestier intégré tactique 2018–2023 applicable à l’unité d’aménagement 064-71 de la région des Laurentides,” 2018, https://mffp.gouv.qc.ca/wp-content/uploads/PAFIT_UA064-71-Laurentides.pdf. We found that one FSC certificate in Quebec is based on the boundaries of a former UA: 61-52 in the Laurentides administrative region. For our analysis, we referred to page 18 of this plan to determine how much FSC-certified area from UA 61-52 has now been incorporated into UA 61-51 and UA 64-71.
- 122 For Ontario’s FMU boundary data, see Ontario GeoHub, “Forest Management Unit,” <https://geohub.lio.gov.on.ca/datasets/forest-management-unit> (accessed January 15, 2021); for Quebec’s UA boundary data, see Partenariat Données Québec, “Certification forestière,” <https://www.donneesquebec.ca/recherche/dataset/certification-forestiere> (accessed January 15, 2021); for boreal caribou range boundary data, see ECCC, “Boreal Caribou Ranges—Canada,” <http://data.ec.gc.ca/data/species/protectstore/boreal-caribou-ranges-canada/> (accessed January 15, 2021).
- 123 Ontario Ministry of the Environment, Conservation and Parks, “Caribou (Boreal Population),” www.ontario.ca/page/caribou-boreal-population (assessed October 5, 2020).
- 124 ECCC, *Amended Recovery Strategy*.
- 125 Elkie et al., *Science and Information*.
- 126 Ontario Ministry of Natural Resources and Forestry, “Find a Forest Management Plan.”
- 127 The Resolute Forest Products website lists the La Doré location, and the second Thunder Bay location (at 156 Darrel Avenue) as each having two facilities. Additionally, while Resolute Forest Products’ website lists two separate facility locations in Saint-Félicien, the Quebec government reporting used for this analysis lists only one Saint-Félicien address for the company’s supply guarantee. Resolute Forest Products, “Operations;” please see Appendix for methodology on Quebec mill allocations estimates.
- 128 Resolute Forest Products, “Mauricie Forest Products,” https://www.pfresolu.com/installation_site.aspx?langtype=3084&siteid=64 (accessed January 15, 2021); Resolute Forest Products, “Opitciwan,” https://www.resolutefp.com/installation_site.aspx?siteid=118 (accessed January 15, 2021).
- 129 FSC, “Public Certificate Search;” Resolute Forest Products, “Woodlands,” www.resolutefp.com/operations/woodlands/ (accessed October 5, 2020).
- 130 Forest Products Association of Canada, *Forest Management Certification in Canada*.
- 131 Canada Newswire, “Resolute Increases Certified Lands.”
- 132 Mike Crawley, “Algonquin Park Commercial Logging Plan up for Renewal in 2021,” *CBC News*, December 22, 2020, <https://www.cbc.ca/news/canada/toronto/algonquin-park-logging-2021-1.5849770>.
- 133 “Majority” means that more than 50 percent of the forest unit covers boreal caribou habitat, according to geographic information system mapping. In this table, “forest units” refers to forest management units in Ontario, and *régions d’application des garanties d’approvisionnement* in Quebec. Volumes are measured as allocations to company mills. Annual estimates are based on the most recent data available at the time of research. Estimates are rounded down to the hundreds. As with Table 2, the public information reviewed for this report did not indicate specifically where companies’ mills sourced wood from within forest units that overlap with caribou habitat; therefore these figures are estimates. For more details, please see methodology details in the Appendix to this report.