

REPORT

THE ISSUE WITH TISSUE 2.0: HOW THE TREE-TO-TOILET PIPELINE FUELS OUR CLIMATE CRISIS



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This report is dedicated to Indigenous Peoples everywhere whose fight for self-determination on their lands and whose guardianship of those lands is creating a more just and sustainable future.

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Introduction

NRDC’s 2019 report *The Issue With Tissue: How Americans Are Flushing Forests Down the Toilet*, shined a spotlight on the link between major manufacturers of tissue products and the destruction of one of the most ecologically important forests in the world, Canada’s boreal forest.¹ The largest U.S. tissue product manufacturers continue to make toilet paper from Canadian boreal forest fiber, feeding a devastating “tree-to-toilet pipeline.” They are complicit in exacerbating forest degradation and loss, climate change, and the biodiversity crisis, and they have misled the American public about the impacts of their products.²

This year has shown us that the world can change in the blink of an eye. The COVID-19 pandemic upended our daily lives in drastic ways, including leaving American consumers scrambling to find tissue products on store shelves. While the toilet paper shortage was an unexpected side effect of the pandemic, COVID-19 has brought to the forefront the urgency of crafting more sustainable, resilient means of building a healthy global economy. Indeed, choices of toilet paper and other tissue products are an environmental issue that implicate the health of our climate and of future generations.

Toilet paper and other tissue products have become a climate issue for the American consumer. One year after the release of NRDC and Stand.earth’s 2019 scorecard ranking tissue manufacturers on their sustainability, there are initial signs that the industry is starting to shift to climate-friendlier products because of heightened attention and increased consumer demand.³ Several new entrants in the sector, like Target’s Everspring line, have joined companies like Who Gives A Crap and Seventh Generation to offer more climate-friendly products made of recycled and alternative fibers rather than old-growth forests. Still, the so-called Big Three in the U.S. tissue market—Procter & Gamble (P&G), Kimberly-Clark, and Georgia-Pacific—continue to make their household tissue products from 100 percent virgin forest fiber, despite the dire consequences that practice has for our planet’s future. Other brands, including Asia Pulp & Paper’s Fiora line and many store brands like Costco’s Kirkland tissue products, are equally unsustainable.

The Issue With Tissue 2.0 updates the 2019 report to incorporate new scientific information and changes in the tissue market. It includes breakthrough findings regarding climate, biodiversity, and the health of Canada’s boreal forest, all of which further underscore the need for tissue companies to act with urgency. The reissued scorecard also integrates new brands, new data, and an updated methodology that reflects new dynamics in the tissue supply chain.



© Wetlands League

Clearcut areas left by logging roads and landings leave scars in the boreal forest that last for decades, like the pockmarked landscape pictured above, which was logged 20 years before the photo was taken.

HOW CLEARCUTTING THE BOREAL RELEASES CARBON INTO THE ATMOSPHERE

1. An intact boreal forest has vast stores of carbon locked away—more than 80 percent of which is found in its soil.ⁱ Even older trees continue to sequester carbon as they age.ⁱⁱ When a tree dies, it slowly releases some of this carbon over time, but much of the carbon—up to 90% even after a fire—ends up back in the ecosystem.ⁱⁱⁱ

2. Logging leaves woody debris and disturbs the carbon-rich soil, emitting carbon into the atmosphere.^{iv} Clearcutting also dramatically reduces the landscape's capacity to sequester carbon, resulting in a carbon debt.^v

3. The clearcut forest continues to emit carbon from the soils and logging debris even as new trees start to regrow. As trees regrow, they begin absorbing carbon, but the forest remains at a significant carbon deficit from where it was before.^{vi} Furthermore, recent studies have shown that significant areas of clearcut stands remain barren even decades later, further exacerbating climate impacts.^{vii}

High Carbon Storage

4. After the wood is cut and manufactured into a long-lived Harvested Wood Product (HWP), it retains only a fraction of its original carbon—as little as 15 percent.^{viii} However, much of the wood from Canada is instead turned into paper or throwaway tissue products, which are even less effective at retaining carbon. When the wood is burned for biofuel, all its carbon is emitted.^{ix} As an HWP ages, it continues to emit its remaining carbon.^x When it is discarded in a landfill, it often begins emitting both carbon and methane.^{xi}

Low Carbon Storage

ⁱ Pan, Y., Birdsey, R.A., Fang, J., Houghton, R., Kauppi, P.E., Kurz, W.A., Phillips, D.L., Shvidenko, A., et al. (2011). A large and persistent carbon sink in the world's forests. *Science* 333, 988–993.

ⁱⁱ Sebastiaan Luysaert, et al., "Old-Growth Forests as Global Carbon Sinks," *Nature* 455, no. 7210 (2008). N. L. Stephenson, et al., "Rate of Tree Carbon Accumulation Increases Continuously With Tree Size," *Nature* 507 (7490) (March 6, 2014).

ⁱⁱⁱ Statement from Dr. Mark E. Harmon, Professor Emeritus to the United States House Natural Resources Committee Subcommittee on National Parks, Forests, and Public Lands Concerning the hearing on Climate Change and Public Lands: Examining Impacts and Considering Adaptation Opportunities, Committee Hearing Date: February 13, 2019 Testimony Date: February 21, 2019.

^{iv} Joshua Axelrod, *Pandora's Box: Clearcutting in the Canadian Boreal Unleashes Millions of Tons of Previously Uncounted Carbon Dioxide Emissions*, NRDC, updated March 2018, <https://www.nrdc.org/sites/default/files/pandoras-box-clearcutting-boreal-carbon-dioxide-emissions-ip.pdf>.

^v Ibid.

^{vi} Ibid. Jay Malcolm, Bjart Holtsmark, and Paul W. Plascik, "Forest Harvesting and the Carbon Debt in Boreal-Eastern Canada," *Climatic Change* (2020), <https://www.ecologyandsociety.org/vol19/iss2/art20/>.

^{vii} Trevor Hesselink, *Boreal Logging Scars: An Extensive and Persistent Logging Footprint in Typical Clearcuts of Northwestern Ontario, Canada*, Wildlands League, December 2019, <https://loggingscars.wpengine.com/wp-content/uploads/MvUploads/LOGGING-SCARS-PROJECT-REPORT-FINAL-Dec2019-Summary-LR.pdf>.

^{viii} Seton Stiebert et al., *Emission Omissions: Carbon Accounting Gaps in the Built Environment*, IISD (2019) <https://www.iisd.org/sites/default/files/publications/emission-omissions-en.pdf>.

^{ix} Malcolm, *Forest Harvesting and the Carbon Debt in Boreal-Eastern Canada*.

^x Ann Ingerson, *Carbon Storage Potential of Harvested Wood: Summary and Policy Implications, Mitigation and Adaptation Strategies for Global Change*, 16(3): 307-323 (2011).

^{xi} Seton Stiebert et al., *Emission Omissions*.

The state of the boreal forest and our planet in 2020

Stretching across a billion acres from Canada's Atlantic coast to its western border with Alaska, the Canadian boreal forest is the largest intact forest left in the world.⁴ An ecologically rich landscape of conifers and birches, the boreal is the most carbon-dense forest ecosystem on the planet. It is home to more than 600 Indigenous communities and treasured wildlife including the boreal caribou and billions of migratory birds.⁵

Over the past year, protecting the Canadian boreal has become increasingly urgent. As the world edges closer to a climate tipping point, intact forests continue to disappear globally, and as species dwindle, the Canadian boreal forest is ever more critical to forestalling truly catastrophic climate and biodiversity outcomes. Yet, against this sobering backdrop, Canada's provinces have failed to slow the rate of logging and have even eroded the limited environmental safeguards that were previously in place.⁶

CANADA'S "SUSTAINABLE FOREST MANAGEMENT" CONTRIBUTES TO CLIMATE CHANGE AND BIODIVERSITY LOSS

Canada claims to be a leader in sustainable management of its forests.⁷ But the logging practices Canada allows are contributing to climate change and biodiversity loss and are far more destructive than the government will admit.

Toilet paper is releasing carbon with every flush

The Canadian boreal forest holds invisible, but global, value for the climate. The forest's vegetation and slow-decaying soils lock away nearly twice as much carbon as is contained in all the world's recoverable oil reserves.⁸ That's more carbon than any other forest on the planet. Per acre, it holds nearly twice as much carbon as the Amazon.⁹ However, when the forest is logged, much of that locked-away carbon escapes into the atmosphere, making it that much more difficult for the world to reduce its carbon emissions.¹⁰ When the boreal is intact, it plays a critical role in regulating the global climate—but if logging continues, it could quickly become a climate liability.

Unfortunately, logging in the boreal is occurring at a rapid rate to create products like toilet paper, and the impacts are far more severe than the logging industry and Canada's federal and provincial governments claim.¹¹ In recent years, Canada has ranked third in its intact forest loss, behind only Russia and Brazil.¹² Logging drives much of this loss, with the industry clearcutting one million acres of the Canadian boreal each year.¹³ To put this in perspective, that means that *each second*, the boreal loses roughly 1,400

square feet from clearcutting, an area the size of a small house. Every minute, the clearcut area grows to the size of a small city block.

By releasing carbon stores that had been locked up in the boreal and undermining the forest's carbon sequestration capacity, logging in Canada's boreal emits, by conservative estimates, 26 million metric tons of carbon every year. That's equivalent to the emissions of 5.5 million passenger vehicles, or 12 percent of the emissions Canada needs to cut under its commitment to the Paris Agreement.¹⁴

A recent report released by the Canadian NGO Wildlands League shows that logging's climate impact may be even more dramatic. That report shows that clearcut areas left by logging roads and landings create scars in the landscape that remain bare for decades after a clearcut logging operation.¹⁵ In Ontario, these logging scars make up an average of 14 percent of the logged areas, but provinces do not account for them in their surveys. If logging scars were included in official deforestation calculations, Ontario's deforestation rates would be nearly 50 times higher than the rates the province reports. By 2030, assuming this rate of deforestation continues, logging scars in Ontario will have reduced the forest's ability to sequester carbon by 41 MtCO₂, equivalent to more than a year of emissions from all of Canada's passenger vehicles.¹⁶ The type of logging done in Ontario isn't unique to the province, either. Similar logging methods are used throughout the Canadian boreal, meaning the actual deforestation rate from logging operations across Canada, and thus the climate impact as well, is likely orders of magnitude higher than the country estimates.¹⁷

Indigenous communities are most impacted

Indigenous communities are disproportionately impacted by the logging industry. Many communities' ways of life have been inextricably tied to the forest for millennia and are threatened by the encroachment of industry into their territories' remaining intact forests. When intact forests are lost, it can dramatically impact the way Indigenous Peoples are able to use their land. Mandy Gull, the Deputy Grand Chief of the Cree Nation Government, stated that when it comes to the impacts of logging on Indigenous communities, "We cannot replant and recapture the original landscape. Even to think you can do so on any scale is foolish thinking."¹⁸ And while some communities have a voice in resource development, in many cases Indigenous Peoples are not given meaningful opportunity for input into how their land is used.



The Canada warbler is one of many migratory birds that rely on intact boreal forest for their breeding grounds.

Logging is eviscerating threatened boreal species' habitat

Logging has also taken a significant toll on the wildlife of the boreal. As one of the last great forests on earth, the Canadian boreal is a refuge for species and primordial ecosystems that now face unprecedented and growing threats. According to a 2019 United Nations report on the state of global biodiversity, between 1990 and 2015 alone, humans cleared or harvested 716 million acres of forests globally, an area seven times the size of California.¹⁹ The impact on species worldwide has been devastating. Up to a million plants and animals now face possible extinction, due in largest part to this habitat loss.²⁰

From the ghostlike lynx to the diminutive pine marten, species across Canada are losing their intact forest habitat as logging's footprint continues to expand. Boreal caribou, which act as a barometer for the health of the forest more broadly, have been especially heavily impacted given their extreme sensitivity to habitat disturbances.²¹ Today, primarily because of this habitat loss and the resulting changes to predator populations, only 15 of the 51 boreal caribou herds in Canada are deemed to be self-sustaining in the long term.²² Scientists suggest that, if the current rates of habitat disturbance continue, boreal caribou will decline by 30 percent in the next 18 years.²³ Since the release of the first *Issue With Tissue* report, Ontario has continued rolling back protections for boreal caribou, and Quebec has again delayed recovery planning.²⁴ With these added loopholes and delays, the provinces remain out of compliance with Canada's federal species protection law and have made the future of boreal caribou even more tenuous.

Songbirds across North and South America are also impacted by logging in the boreal, where intact forests are critical nurseries for migratory birds. Recent studies have shown that bird populations in the United States and Canada have declined by 29 percent in the past 50 years.²⁵ This loss of nearly three billion birds, leading to our increasingly silent springs, illustrates the implications of continued habitat degradation.²⁶ Birds that breed in the boreal are the second hardest hit out of any breeding



The plight of Canada's boreal caribou is an alarming indication of the scale of Canada's intact forest loss.

habitat, with numbers that have plummeted more than 30 percent since 1970.²⁷

Canada's "sustainable forest management" is anything but

Canada often touts its forest management as highly sustainable, pointing to its low deforestation rates and claiming that replanting new trees in logged areas fully mitigates any harm done by cutting down existing ones.²⁸ However, studies show that forests that have been previously logged look substantially different from unlogged forests. Not only can forests take centuries to regain their complexity and biodiversity, but, with the revelation in studied tenures in Ontario that an average of 14 percent of a clearcut area remains barren decades after logging, Canada's claims about logging's sustainability are even less credible.²⁹

Even assuming the forest eventually grows back after harvest, clearcut logging in the boreal releases massive amounts of CO₂ from the forest's soil. NRDC developed a model that calculated these uncounted carbon emissions and found that annual harvest rates led to 25.3 million metric tons of CO₂ emissions per year.³⁰ If, as seen in Ontario, the forest does not regrow, the climate impact of clearcutting is even more significant than NRDC's model estimates.³¹

Provinces' overly lenient logging regulations enable unsustainable logging. Many provincial policies, in fact, employ distorted science to justify accelerated logging. For example, Quebec announced that it plans to increase harvesting rates in order to *reduce* greenhouse gas emissions, despite the realities of logging's climate impact in Canada.³² Meanwhile, provinces like Ontario are denying accepted science around caribou habitat requirements and are eroding species protections even in the face of declining populations.³³ No province or territory has enacted a boreal caribou recovery plan in alignment with federal science, nor do any hold industry accountable for the climate impacts of its logging operations.

Some progress has been made in Canada—but not nearly enough

In the past year, the Forest Stewardship Council (FSC) took the important step of updating its forestry certification standard in Canada. The new standard brought FSC in line with scientific consensus around boreal caribou habitat requirements; further, it requires all companies to undertake the process of obtaining free, prior and informed consent (FPIC) from



Indigenous Peoples before operating on their lands.³⁴ FSC is the only voluntary forest certification system to have independent audits and robust protections for intact forests and Indigenous rights, and these amendments created an even wider gulf between FSC certification and

other industry-regulated standards, such as the Sustainable Forestry Initiative (SFI).³⁵ While the efficacy of the new standard will come down to its implementation, FSC Canada has made significant strides toward ensuring that logging areas under its certification operate sustainably and in accordance with internationally recognized Indigenous rights.

British Columbia also took an important step toward recognizing Indigenous rights by unanimously voting to introduce a bill that would enshrine FPIC within provincial law.³⁶ Bill 41 would require the provincial government to take “all measures necessary” to ensure its laws are in alignment with FPIC and the United Nations Declaration on the Rights of Indigenous Peoples.³⁷ While the rest of Canada has yet to follow suit, Bill 41, if passed, would be a positive step toward broader recognition of Indigenous Peoples’ right to decide the future of their lands.



What has changed in the U.S. marketplace?

In our last report, we highlighted the impact of U.S. tissue consumption on Canada's boreal forest and its role in the tree-to-toilet pipeline. The United States is a major driver of pulp and paper production in Canada, accounting for 56 percent of all Canada's pulp and paper exports in 2018.³⁸ For provinces containing boreal forest, that share was even greater: 70.6 percent of pulp and paper exports from Alberta, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick, and Newfoundland went to the United States that year.³⁹ Furthermore, roughly one-third—and for some products as much as 75 percent—of the pulp used to make tissue products in the United States is Northern Bleached Softwood Kraft (NBSK) pulp from Canada's boreal forest region.⁴⁰ Tissue also continues to be the fastest-growing sector in the paper industry, which means we are likely to see even more investment in turning Canadian boreal forest fiber into throwaway tissue products in the coming years.⁴¹ In the last year, new pulp mills have opened in Canada, driven by that increased demand.⁴²

On a more positive note, while the largest tissue producers have continued to rely on materials sourced from the boreal forest, the market for sustainable toilet paper has grown over the past year. Propelled by the public's demand for products that do not come at such a high cost to the climate and biodiversity, companies have expanded the range of brands that offer a sustainable alternative.

The laggards stick to the status quo

The Issue With Tissue's first edition found that the largest tissue producers in the United States—P&G, Kimberly-Clark, and Georgia-Pacific—make their household tissue products from 100 percent virgin forest fiber, in part from Canada's boreal forest.⁴³ Despite the market's progress in the past year, there is still a long way to go.



Companies like P&G, whose toilet paper, paper towels, and facial tissue all received F grades last year, have not made significant progress when it comes to

their at-home tissue brands. P&G, Kimberly-Clark, and Georgia-Pacific all continue to make their household tissue products from 100 percent virgin forest fiber and have not incorporated any recycled or sustainable alternative fibers into these products, while Georgia-Pacific introduced Quilted Northern EcoComfort, a brand that has zero

recycled content and is not certified by FSC. In addition, Asia Pulp & Paper, which has a years-long track record of environmental and human rights violations for its operations in Indonesia, has increased the marketing of its tissue brand, Fiora, in the United States.⁴⁴ Like the biggest U.S. producers, Fiora products are made with 100 percent virgin forest fiber, earning them Fs as well.

Of the Big Three tissue companies, only Kimberly-Clark has a commitment to reduce its overall use of natural forest fiber, specifically naming boreal fiber as a priority for reduction.⁴⁵ While Kimberly-Clark has invested significantly in the research and development of sustainable alternative fibers, its efforts so far have not resulted in less use of virgin forest fiber in the company's household tissue products.⁴⁶

All of the at-home tissue products made by these companies earn Fs again in this year's scorecard.

New leadership in the field

The good news is that many other companies have launched or seen significant growth in products they make from recycled content or sustainable alternative fibers. For example, Target introduced a new store brand called "Everspring," which includes toilet paper and paper towels, all made with 100 percent recycled content.⁴⁷ Target explicitly pointed to increased consumer demand for sustainably-made products as one of the reasons for this new product line in their stores.⁴⁸

Meanwhile, the company Who Gives A Crap, another addition to this year's tissue scorecard, sells toilet paper made with 100 percent recycled content, including 95 percent postconsumer recycled material.⁴⁹ The company ships large boxes of the product to doorsteps worldwide and uses a portion of the profits to build toilets for people who need them.⁵⁰ Who Gives A Crap's marketing highlights it as alternative to U.S. toilet paper brands made from virgin tree fiber that drive forest loss and exacerbate climate change.



Who Gives A Crap toilet paper is made without relying on virgin forest fiber. The company offers toilet paper made from 100 percent recycled content and 95 percent postconsumer recycled material.

WHY IS POSTCONSUMER RECYCLED CONTENT IMPORTANT?

Using recycled content instead of virgin fiber has enormous benefits for forests and the global climate. Recycled content has one-third the carbon emissions of tissue fiber made from virgin wood, according to the Environmental Paper Network's Paper Calculator 4.0.⁵¹ But not all recycled content is created equal. Postconsumer recycled content comes from the paper and fibers people throw into the recycling bin—materials that have been used and would otherwise end up in a landfill.⁵² Pre-consumer content is often otherwise known as manufacturing waste, cast off during the paper and pulp manufacturing process but never actually used.⁵³ While both types of recycled material are far more sustainable than virgin forest fiber, consumers should look for products that use a high percentage of postconsumer recycled content because these fibers reduce waste and help to create a market for the recycling industry—enabling the circular economy to create jobs and provide a sustainable alternative to sending waste to landfills.⁵⁴

Many brands now also offer tissue products made from more sustainable alternative fibers like wheat straw and bamboo. As discussed in the first *Issue With Tissue*, wheat straw is one of the best alternative fibers available because it is an agricultural residue; it is made from leftover wheat after harvesting and is a by-product that would otherwise be incinerated.⁵⁵

In the past year, the Columbia Pulp mill in Washington state opened as the first wheat straw pulp mill in the United States.⁵⁶ In addition, Swedish tissue manufacturer Essity announced its plans to build a test mill in Germany

to develop pulp from wheat straw and other agricultural residues.⁵⁷ Interestingly, Essity cited concerns around the escalating cost of wood-based fiber as one of its main justifications for this new investment in alternative fibers.⁵⁸

Who Gives A Crap, Seedling by Grove, and Caboo are among many companies that offer tissue products made from bamboo, which is a fast-growing crop that requires less land than traditional wood fiber. Bamboo tissue products produce 30 percent fewer greenhouse gas emissions than tissue products made from 100 percent virgin forest fiber.⁵⁹ However, bamboo is grown as a crop intended for sale and is not a residue material or by-product like wheat straw. Growing bamboo can create its own negative environmental impacts, especially if it is grown on cleared forestland. To ensure sustainability, producers must scrutinize the supply chain of the bamboo they use for tissue products. Consumers should look for products certified by FSC to ensure that the bamboo fibers used were not grown in recently deforested areas.⁶⁰

A groundswell of public support for more sustainable tissue options

While the Big Three U.S. tissue manufacturers have not yet reduced virgin forest fiber in their household products, they have faced substantial scrutiny over the past year, due in part to NRDC and Stand.earth's 2019 edition of *The Issue With Tissue*. P&G, the largest purchaser of boreal tissue pulp in the United States, has faced especially vehement public backlash after it received F grades across all its tissue brands—Charmin toilet paper, Bounty paper towels, and Puffs facial tissues. Charmin and Bounty are the most popular brands of toilet paper and paper towels in the United States.⁶¹

© Columbia Pulp



The Columbia Pulp mill in Washington state opened last year as the first mill in the United States to process wheat straw into pulp.



At P&G's 2019 annual shareholder meeting, nearly 100 concerned citizens mobilized to protest the company's sourcing practices.

A large and growing coalition of major national organizations, local groups, scientists, academics, and concerned citizens have called on P&G to stop making its tissue products from 100 percent virgin forest fiber. These stakeholders are also concerned that P&G sources some of its pulp directly from boreal caribou habitat. Furthermore, the company lacks clear policies ensuring that its tissue fiber does not fuel deforestation.⁶²

Nearly a quarter million people have signed various petitions to the company about the environmental impacts of their tissue products.⁶³ In October 2019, 120 organizations, including NRDC, Stand.earth, 350.org, the Sierra Club, Greenpeace Canada, and more, sent a letter to P&G's leaders urging them to change their tissue sourcing practices.⁶⁴ That number has now grown to nearly 140 organizations, including many local groups in P&G's hometown of Cincinnati.

In response to this pressure, P&G announced a new commitment in October 2019 to increase its percentage of

FSC-certified tissue fiber over the next five years, going from 40 percent to 75 percent by 2025.⁶⁵ While this is a step in the right direction, it doesn't go nearly far enough, quickly enough, to change the role P&G's products play in driving intact forest loss and climate change.

Even retailers that sell P&G tissue products are facing pressure for their role in driving the tree-to-toilet pipeline. In early 2020, NRDC, Stand.earth, and other advocacy organizations brought their concerns to the annual shareholder meeting of Costco, the fourth-largest retailer in the United States (behind Walmart, Kroger, and Amazon).⁶⁶ Costco sells its own Kirkland-branded tissue products, as well as Charmin and other tissue products made by the Big Three. Costco's Kirkland-branded tissue products—like the other tissue products it sells in its stores—received Fs on our 2019 scorecard. While Costco has yet to act in response to this advocacy, concerns with its sourcing are now on the radar of the company's CEO and other senior leadership.⁶⁷



P&G’s path to sustainability is clear—and clearly being ignored

The environmental group Canopy, in its *Pulp Thriller* report, laid out a clear path for the global pulp and paper industry to reduce its use of virgin forest fiber by half by 2030 through smart investment.⁶⁸ P&G, a company that has long prided itself on its innovation, could play a pivotal role in building sustainable supply chains by investing in technology to reduce its own use of virgin forest fiber. The company’s budget is massive. P&G spent \$96 million on marketing for Charmin in 2018 alone; in fact, it has the largest marketing budget in the world.⁶⁹ Unfortunately, the company continues to spend a minuscule amount on scaling up the markets for recycled and alternative fibers and has not made specific, time-bound commitments to reduce its use of virgin forest fiber.⁷⁰

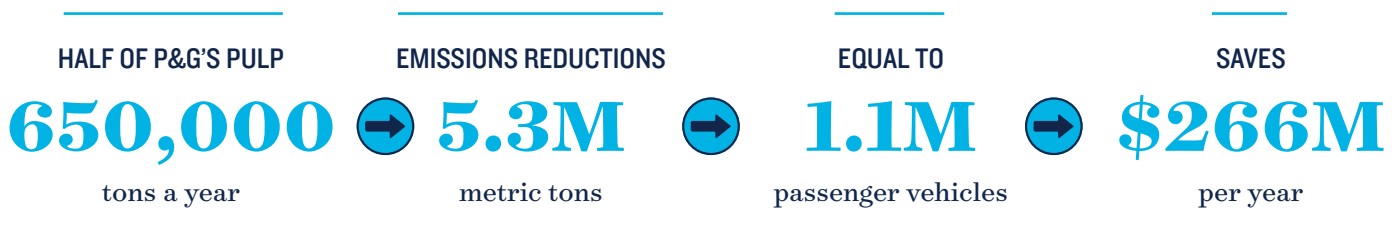
If P&G halved the amount of virgin fiber it uses for tissue manufacturing, it would save 650,000 metric tons of pulp per year from being turned into throwaway tissue products.⁷¹ According to the Environmental Paper Network’s Paper Calculator 4.0, using recycled content

in place of this virgin fiber would reduce P&G’s carbon emissions by 5.3 million metric tons a year, which is equivalent to taking 1.1 million passenger vehicles off the road.⁷²

We can put a dollar value on the harm P&G causes to the climate. Government estimates put the long-term marginal economic cost of carbon emitted into the atmosphere at \$50 per metric ton.⁷³ P&G currently causes \$532 million worth of emissions harm by using virgin forest fiber for its tissue. However, the company does not fully account for or pay that price. Instead, people around the world shoulder the cost, with marginalized communities facing the greatest impacts.

P&G has instead chosen to invest in selling enormous rolls of toilet paper made from virgin forest fiber and a robot that can deliver toilet paper to you.⁷⁴ These gimmicky products underscore that P&G has not yet prioritized using its research budget to shift its supply chain from virgin forest fiber to more sustainable alternatives.

GLOBAL CARBON SAVINGS FROM REDUCING P&G’S VIRGIN FOREST FIBER



PROCTER & GAMBLE'S "GREENFLUSHING"

© River Jordan for NRDC



The difference between clearcut and intact boreal forest is stark, as seen in this aerial photo of the boreal in Ontario taken last year.

P&G continues to make dubious claims about the sustainability of its tissue manufacturing, from the benefits of its commitment to replanting trees to the idea that its sourcing does not contribute to deforestation. Below are a few of P&G's most egregious greenwashing claims.

"For every tree we use, at least one is regrown."⁷⁵

This statement has been a focal point of P&G's sustainability commitments for Charmin for many years.

In fact, many companies—alongside many of Canada's own provincial governments—have long used tree replanting to justify logging in intact forests. It perpetuates the idea that because trees can regrow, there is no ecological harm in cutting them down.

But there are vast differences between areas that have been replanted after clearcutting and intact, old-growth forests. While intact forests are healthy and biodiverse, the most common replanting method in Canada replaces old-growth forests with fast-growing, even-aged monocultures that bear more resemblance to tree farms than to natural forests.⁷⁶

In the boreal, the difference between intact forests and replanted ones is particularly stark because the boreal forest regrows very slowly, taking decades or centuries to reach the same biodiversity and structural diversity of an intact forest, if it ever does.⁷⁷ In fact, studies show that threatened boreal caribou populations have not returned to forest areas that have been clearcut, even decades later.⁷⁸ Claims around regrowth are now even more dubious given the Wildlands League's recent findings that an average of 14 percent of logged stands in their study area remain barren decades after clearcutting.⁷⁹

"Our toilet tissue products are not contributing to deforestation."⁸⁰

The Canadian government proudly claims that only 0.02 percent of its forests are deforested every year, a statistic that P&G has pointed to as evidence that sourcing from Canada is sustainable.⁸¹ However, this statistic is deeply misleading. In common parlance, an area that has been clearcut—that is, an area where nearly all the trees have been removed—would be considered deforested. However, the Canadian government uses an extremely narrow definition of deforestation, referring only to the conversion of a forest to an entirely different use, such as a housing development or agricultural production.⁸² If a forest is logged but left to regrow, this is officially called "forest degradation" and excluded from deforestation metrics.⁸³ But even in the best of scenarios, it can take a human lifetime or more for a clearcut forest to recover its same biodiversity.⁸⁴ Clearcutting, even if characterized as degradation, leaves few to no trees standing and has long-lasting impacts, including intact forest loss; massive amounts of carbon released into the atmosphere from the boreal's soil; and plummeting numbers of birds, boreal caribou, and other species that rely on healthy, intact boreal forest.⁸⁵

In addition, Wildlands League's *Logging Scars* report shows that, even using Canada's narrow definition of deforestation, deforestation rates may be as much as fifty times higher throughout the boreal forest than what the government claims.⁸⁶ It is also worth noting that the areas examined by Wildlands League lie near tissue mills in Ontario that provide tissue pulp to P&G and other U.S. tissue manufacturers.⁸⁷

Given this, P&G cannot say with confidence that their own sourcing does not contribute to this type of forest loss. The truth is that by relying on clearcut forests for its tissue pulp, P&G is at best driving species declines and climate impacts, and at worst contributing to untracked deforestation in Canada's remaining intact boreal forests.

Cutting the forest down is better for the climate than leaving it standing.⁸⁸

One of P&G's most egregious sustainability claims is that it is better to cut old trees before they die and begin to release carbon and methane.⁸⁹ Parroting a flawed argument made by the logging industry and many provincial governments, the company claims that harvesting old trees and turning them into wood products that store carbon is a win-win for the environment and economy.

While it's true that wood products do store some carbon, the first problem with P&G's argument is that toilet paper is not a long-lived, carbon-storing wood product. Second, this argument relies on a woefully incomplete understanding of logging's carbon emissions. Most of the carbon in the boreal is locked in the boreal's acidic soils rather than its trees and vegetation.⁹⁰ When logging occurs in intact boreal forest, this soil

© Wildlands League



The landing area pictured here was logged ten years before the photo was taken, showing that many areas in the boreal that have been logged do not grow back as the industry claims.

carbon does not end up in wood products. Instead, much of it is released directly into the atmosphere, exacerbating climate change.⁹¹ In addition, older trees do continue to absorb carbon, and in fact store more carbon per year than younger trees because of their mass.⁹² Because of that lost sequestration capacity as the forest regrows and the differences between degraded and intact forests, logging creates a permanent carbon debt.⁹³

When the impacts of higher-than-reported levels of deforestation, the replanting of monocultures, and other poor regrowth outcomes are considered, the climate footprint of harvested wood products, according to some analyses, is even greater than that of concrete.⁹⁴ It defies accepted science to suggest that creating toilet paper from intact forests presents a climate solution.

Lumber is the main driver of logging in the boreal.

To minimize its responsibility, P&G claims that lumber is really the driver of the logging in the boreal, not tissue products.⁹⁵ However, selling wood chips for pulp is so lucrative that even the logging industry refers to it as a “co-product” and not a “by-product.”⁹⁶ Furthermore, in Ontario—one of P&G’s biggest tissue pulp suppliers—44 percent of wood pulp is made from whole trees—not from “lumber scraps.”⁹⁷ Arguing that tissue production is not a driver of logging is patently false.

“You can use up to 4X less with Charmin.”⁹⁸

P&G often claims that with Charmin, one can use up to “4X less” than the “leading value brand.”⁹⁹ In conversations, company representatives have insisted that this is possible because the company relies exclusively on 100 percent virgin forest fiber.¹⁰⁰ The company has claimed that if

it were to change its formula for toilet paper to include recycled or alternative fiber, people would then use more, increasing its environmental footprint and negating any positive benefit. But P&G’s claims about Charmin’s efficiency seem to rely on testing a triple-ply toilet paper brand against a single-ply toilet paper brand, a straw-man argument that has less to do with the material used than the number of layers the product has.¹⁰¹

There are plenty of two- or three-ply toilet paper options made with recycled content and/or alternative fibers that are significantly more absorbent than single-ply brands. It is possible Charmin sees marginal gains in absorbency and strength due to using 100 percent virgin forest fiber, but the distance between the quality of leading recycled brands and Charmin is toilet paper-thin.



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2020 TISSUE SCORECARD: NEW WINNERS, SAME LOSERS

Since the release of *The Issue With Tissue* in 2019, it has become clear that consumers have enormous power to shift corporate policy and supply chains. Armed with information, the U.S. public can demand a menu of sustainable toilet paper options to select from so they don’t have to choose only among products that fuel the climate crisis via forest destruction.

Many of these options are already available, giving customers today the ability to make a more sustainable choice. The field of sustainable tissue options has broadened, and new technological advances indicate that if people continue to voice their demands for forest-friendly tissue products, more change could be on the horizon.

This scorecard arms consumers with the information they need to opt for more sustainable products. The scoring is based on percentages of post- and pre-consumer recycled content used in each product, the amount of

virgin fiber, whether the virgin fiber is FSC-certified, and the bleaching process used.¹⁰² These criteria correlate most directly with the overall environmental impact and carbon footprint of each product scored. FSC Canada’s new Forest Management Standard puts it further ahead of other certification systems in Canada, so this year we adjusted the ratio of points for full FSC certification for virgin fiber tissue products. We did not allot further points for FSC certification for recycled fiber tissue products, as our scoring for recycled content already captures the full environmental benefit of that material.

In the past year, many new tissue products made from bamboo have entered the market. These show promise, but bamboo fiber, too, must be sourced responsibly and must use chlorine-free bleaching practices. This tissue scorecard does not assign grades to these products because none has yet obtained FSC certification, which helps to ensure the bamboo fiber used is sourced responsibly. In communications with the makers of these products, many have noted their intention to attain FSC certification soon, at which point scoring will be possible.

A BUYER'S GUIDE TO THE SUSTAINABILITY OF AT-HOME TISSUE PRODUCTS

TOILET PAPER

BRAND	SCORE/GRADE
Who Gives A Crap 100% Recycled	495/A+
Green Forest	490/A+
365 Everyday Value, 100% recycled	480/A
Natural Value	480/A
Seventh Generation Unbleached Recycled Bath Tissue	480/A
Trader Joe's Bath Tissue	480/A
Marcal 1000 1-ply	460/A
Marcal 100% Recycled 2-ply	460/A
Everspring	450/A
Seventh Generation Extra Soft & Strong	450/A
GreenWise	450/A
365 Everyday Value, Sustainably Soft	300/C
Trader Joe's Super Soft Bath tissue	200/D
Cottonelle Ultra	100/F
Scott 1000	100/F
Scott ComfortPlus	100/F
Charmin Ultra	100/F
Kirkland	100/F
Angel Soft	0/F
Quilted Northern	0/F
Up & Up Soft & Strong	0/F
Presto	0/F
Solimo	0/F
Aria	0/F
Quilted Northern EcoComfort	0/F
Fiora	0/F
Who Gives A Crap Premium 100% Bamboo*	Not scored
Tushy Premium Bamboo TP*	Not scored
Thrive Market*	Not scored
Caboo Tree-Free Bath Tissue*	Not scored
Seedling by Grove, 3-ply Jumbo Roll Tree Free Toilet Paper*	Not scored



PAPER TOWELS

BRAND	SCORE/GRADE
Everspring	500/A+
Thrive Market	500/A+
Green Forest	490/A+
365 Everyday Value	480/A
Natural Value	480/A
Seventh Generation 100% Recycled Paper Towels - Unbleached	480/A
Trader Joe's	480/A
Marcal	460/A
Marcal Small Steps	460/A
GreenWise	450/A
Seventh Generation 100% Recycled Paper Towels - White	450/A
Viva	100/F
Bounty	0/F
Brawny	0/F
Sparkle	0/F
Up & Up	0/F
Kirkland	0/F
Presto	0/F
Solimo	0/F
Aria	0/F
Fiora	0/F
Caboo Tree-Free Kitchen Towel Roll*	Not scored
Who Gives A Crap Forest friendly paper towels*	Not scored
Seedling by Grove, Jumbo Roll Tree-Free Paper Towels*	Not scored



FACIAL TISSUE

BRAND	SCORE/GRADE
Green Forest	490/A+
Natural Value	480/A
Trader Joe's	480/A
Marcal Fluff Out	460/A
Marcal Small Steps	460/A
Seventh Generation	450/A
GreenWise	450/A
365 Everyday Value, Sustainably Soft	300/C
Kleenex Everyday	200/D
Kirkland	200/D
Puffs Ultra Soft	100/F
Up & Up Soft	100/F
Solimo	0/F
Presto	0/F
Fiora	0/F
Quilted Northern Ultra	0/F
Thrive Market*	Not scored
Caboo Tree-Free Facial Tissue*	Not scored
Seedling by Grove, Tree-Free Facial Tissue*	Not scored
Who Gives A Crap Forest Friendly Tissues*	Not scored

*Bamboo tissue fiber is responsible for 30% fewer greenhouse gas emissions than virgin wood tissue fiber. This tissue scorecard does not assign grades to these products because none yet has obtained FSC certification, which helps to ensure the bamboo fiber used is sourced responsibly. In communications with these companies, many have noted their intention to attain FSC certification soon, after which scoring will be available.

Recommendations

The issues discussed in this report provide opportunities for action at the corporate and investor level, the retailer level, and the individual level. Below are key recommendations for each.

Corporations must act

Because the United States is such a large importer of Canadian boreal wood products, Canada pays close attention to the demands and actions of the American companies that purchase these products. Therefore it is essential that U.S. tissue makers set a stringent standard for their boreal procurement practices. Here are four key actions tissue manufacturers should take to minimize the impact their products have on the planet:

- **Source half of all pulp from postconsumer recycled content.** Postconsumer recycled content is ideal because it not only minimizes carbon emissions but also helps prevent waste from ending up in landfills. If U.S. tissue makers cut their use of virgin fiber by half, it would save 1.6 million tons of virgin wood from being turned into

throwaway tissue products every year, which would in turn reduce the pressure on intact forests and drastically cut carbon emissions.¹⁰³

- **Invest in recycled and sustainable alternative fiber development.** Canopy's *Pulp Thriller* report laid out a clear path for the global pulp and paper industry to reduce its use of virgin forest fiber by half.¹⁰⁴ U.S. tissue makers, which rank among the largest companies in the world, must lead on this front by investing in key infrastructure to make that shift possible.¹⁰⁵ By cutting their use of virgin fiber by half, tissue manufacturers can encourage innovation in the recycling sector, foster the development of sustainable alternative fibers, create a more circular economy, and drastically reduce their carbon footprints. In fact, according to the Environmental Paper Network's Paper Calculator 4.0, if the tissue industry used recycled content instead of virgin fiber for that 1.6 million tons of pulp, it would reduce overall carbon emissions by 11.9 million metric tons a year, the equivalent of taking 2.5 million passenger vehicles off the road.¹⁰⁶



- **Do not use tissue pulp from critical habitat of threatened or endangered species.** Even when governments fail to enact recommended protections for at-risk species, it is incumbent on corporations to ensure they do not source from habitat necessary for those species' survival. Boreal caribou are just one example of a threatened species suffering population loss due to industrial logging. Unfortunately, P&G and others in the tissue industry continue to source from logging areas containing critical boreal caribou habitat and have failed to establish policies requiring that their suppliers meet Canada's federal recommendation that at least 65 percent of critical caribou habitat remain undisturbed in the areas where they operate.¹⁰⁷ Were they to do so, they could demonstrate to the provincial governments that the protection of at-risk species is not just ecologically necessary but economically required.
- **Obtain Forest Stewardship Council certification for virgin forest fiber and bamboo.** Tissue manufacturers must reduce their use of virgin forest fiber. However, where virgin fiber is used, it must still be sourced as sustainably as possible. There is only one third-party certification system that has the rigor and strength necessary to ensure forest fiber is sourced responsibly, and that is the Forest Stewardship Council. We recommend that all fiber sourced from virgin forests meet or exceed the standards laid out by the FSC, including ensuring that FSC's new Canada standard is implemented in alignment with the federal government's recommendation that at least 65 percent of critical caribou habitat remain off-limits to logging.¹⁰⁸
- **Require that all tissue pulp suppliers secure free, prior and informed consent when operating in the traditional lands of Indigenous Peoples.** Indigenous Peoples know the land far better than anyone else, and when their communities control the management of their lands, the outcomes are better for biodiversity and the planet.¹⁰⁹ Furthermore, the need to seek the free, prior and informed consent of Indigenous communities when operating on their lands is enshrined in the United Nations Declaration on the Rights of Indigenous Peoples.¹¹⁰ Unfortunately, in many cases logging companies do not adhere to this practice, which means it is incumbent on tissue manufacturers to require this of their suppliers.
- **Make specific, time-bound commitments to accurately track and reduce scope 3 greenhouse gas emissions, including forest carbon emissions, and report regularly on progress.** Companies track their greenhouse gas emissions in three categories: scope 1 emissions, which include any emissions from sources they own; scope 2 emissions, which include any emissions from energy generation they purchase; and scope 3 emissions, which are all the indirect

emissions that come from the supply chains of individual companies.¹¹¹ Many tissue manufacturers do not have targets for reducing their scope 3 emissions, nor do they adequately account for the emissions associated with their tissue pulp sourcing. NRDC has found that tissue manufacturers' scope 3 emissions from tissue pulp is often greater than their scope 1 and 2 emissions combined.¹¹² Accounting for and reducing these emissions would mitigate this significant hidden externality.

Investors must make climate-friendly choices

In the past decade, many investors, banks, and companies have adopted "zero deforestation" policies, which mean that they will not invest in companies that fuel deforestation. Unfortunately, many of these policies apply solely to tropical deforestation or to specific commodities, not to entire supply chains and all forests. For example, P&G is a common investment in many funds, and the company's deforestation policy only applies to its palm oil sourcing. Yet P&G isn't even meeting this narrow commitment, announcing it would not meet its self-imposed deadline of having no deforestation in its palm oil supply chain by 2020.¹¹³

Weak company policies make investors vulnerable to the financial and reputational risks that those policies create. The following is a list of steps investors and banks should take to mitigate their risk, based on recommendations from the Environmental Paper Network and Friends of the Earth:¹¹⁴

- **Require a "no deforestation or no intact forest degradation" policy** of the companies they invest in, applying across the entire supply chain. By naming both deforestation and degradation as problems, investors can ensure that companies do not overlook the impacts of their sourcing on our planet's remaining intact forests. Such a policy should include time-bound, results-based engagement with company management, and companies that fail to mitigate risks should be excluded from investor portfolios.
- **Require that free, prior and informed consent be implemented as standard practice** across the supply chain when companies operate in the traditional lands of Indigenous Peoples and other traditional communities.
- **Require companies to adopt time-bound commitments to reduce scope 3 emissions**, including carbon emissions associated with logging forest fiber for their products. Emissions from drying peat and from fires, two commonly overlooked scope 3 emissions categories in pulp and paper manufacturing supply chains, should also be included.

- **Demand that companies avoid sourcing from endangered or threatened species' habitat.**
- **Require that all sustainability policies apply to the entire supply chain of any given company.**¹¹⁵
- **Engage proactively and substantively with civil society stakeholders (including environmental NGOs)** to inform policy implementation and ensure accountability on the part of corporate management.
- **Support legislative and regulatory reforms** oriented toward disclosing and eliminating deforestation and degradation in corporate supply chains.

Retailers must do their part

Most American consumers buy their toilet paper in grocery and other retail stores. These retailers have a responsibility to scrutinize the products they offer and to ensure that their customers are not unwittingly funding forest destruction and climate change. Retailers should take the following actions:

- **Offer only tissue products made from at least 50 percent recycled content** or sustainable alternative fiber.
- **Offer only those tissue products that source all their virgin wood fiber from FSC-certified forests.** Bamboo products should also be FSC certified.
- **Establish a greenhouse gas reduction commitment** that covers the company's full supply chain—including its scope 3 emissions.

Consumers must assert their influence

Consumers have enormous power to steer corporations toward sustainability. With this in mind, here are four simple actions consumers can take to minimize their own carbon footprint from tissue use, and to deliver more systemic change:

- **Buy tissue made with recycled content.** As noted above, tissue made with recycled content, particularly postconsumer recycled content, has a much smaller environmental footprint than tissue made with virgin fiber. Therefore, consumers should buy tissue products made with the highest possible percentage of postconsumer recycled content available. Where no recycled-content options are available, look for the FSC logo to indicate sustainable forestry practices.

- **Ask store managers to stock sustainable alternatives.** If a local grocery store or other retailer does not offer any tissue products made with recycled content, consumers should request them from the store manager. Consumers should also ask that their local stores stock only those bamboo tissue products that are FSC certified. This informs managers of the demand for more sustainable products and sends a message up the chain to retailer corporate headquarters about consumer preferences.
- **Urge corporations to change.** Individual purchasing shifts are important and have an impact, but consumers can make their calls for sustainability even louder by pairing their individual purchasing decisions with communications directly to companies that make unsustainable tissue products. Do not underestimate the power of social media. Often a tweet or some other form of public communication with a company can create more accountability, inform them of market demand, and increase the likelihood that the company will change.
- **Reduce consumption.** The best way to shrink one's individual footprint from tissue products is to reduce consumption. For some, this means using a bidet, which drastically decreases tissue use and the associated environmental impacts. For others, this could mean switching to reusable cloths and towels in the kitchen and to handkerchiefs instead of facial tissue. These switches not only help the planet but are also cheaper in the long run.

WHAT ABOUT BIDETS?¹¹⁶

Bidets are a great alternative to using tissue products. In fact, bidets require less water per use than the tissue-making process does.¹¹⁷ Doctors have also noted the hygienic benefits of bidets.¹¹⁸ In many parts of the world, like Japan, bidets are quite popular.¹¹⁹ While bidets have grown in popularity following the COVID-19 related toilet paper shortages, many people in the United States remain reluctant to stop using tissue products. For those who don't want to make the switch, the best thing to do is follow the scorecard in this report and buy only tissue products made from recycled materials.

Conclusion



© Bruno Kelly/Reuters via Newscom

The fires in the Amazon are a startling reminder of the fragility of the planet's remaining forests.

We live in a rapidly shifting world, and the COVID-19 pandemic has revealed that our daily lives can change both dramatically and unexpectedly almost overnight. One of the key lessons learned from the global response to COVID-19 is that we must take urgent climate action now to prevent endangering our lives in the future. That includes an urgent need to build more resilient and sustainable supply chains that rely on the planet's finite and invaluable forest resources.

In the last few years, fires have raged in huge swaths of Australia, Brazil, Indonesia, Alberta, and California, and climate scientists say these fires are likely to worsen if our current climate trajectory continues.¹²⁰ Birds and other wildlife are disappearing at an alarming rate due to human-caused impacts.¹²¹ In the boreal forest of Canada, clearcut logging and other industrial activity continues without adequate protections for Indigenous Peoples' rights or for threatened species' habitat, and forests are not returning with the success that industry and government claim.¹²² This is having a devastating impact on our climate. For the boreal forest and for our climate, the global stakes have never been higher.

It's true that individuals can use their purchasing power to help move us away from these dire scenarios. But corporations should be doing the most. The companies that make products exacerbating climate change, and the companies that finance those manufacturers and put their products on shelves, can and must take the most significant actions to avert the catastrophic consequences of climate change and biodiversity loss.

Tissue manufacturers need to acknowledge the facts and take full responsibility for the role they play in fueling climate change and forest destruction. Our planet has no time for the largest companies in the world to take half-measures or deflect blame. The companies that fuel the tree-to-toilet pipeline must stop marketing their unsustainable products as sustainable and must instead start making real change.

As millions of people worldwide demand a zero-carbon future, we call on tissue manufacturers to act. While making big changes is hard, the consequences of not doing so will be even more difficult for our planet, for its creatures and communities, and for future generations. It is time for these companies to end the tree-to-toilet pipeline. Flushing away our forests means flushing away our future.

Appendix: The Issue with Tissue Grading

The following is the methodology used in this report for grading the toilet paper, paper towel, and facial tissue brands. The evaluations include brands on the market in late 2019 and early 2020 and are based on data taken from product websites, packaging, and company communications.

The scorecard includes the flagship brands from the three tissue companies with the largest market shares: Procter & Gamble, Kimberly-Clark, and Georgia-Pacific. Given that private-label products (store brands) cumulatively also constitute a substantial portion of the marketplace, the scorecard includes a selection of these products. To provide a representative cross-section of recycled tissue products, we have also rated a selection of tissue brands made primarily from recycled material.

This year's tissue scorecard includes 31 new products—13 new toilet paper brands, 9 new paper towel brands, and 9 new facial tissue products. This brings the total number of products scored to 73. Last year 16 products out of 42 scored received A grades. This year 23 products received A grades, and 6 received an A+ because their products are manufactured using at least 90 percent postconsumer recycled content.

There are many brands not on the scorecard. However, we urge consumers to evaluate products not included here according to the same criteria used in this scorecard.

The grading system evaluates the brands on the basis of their pre-consumer and postconsumer recycled content, whether the virgin fiber used is fully FSC certified or FSC-Mix certified, and their bleaching practices.¹²³ These are the criteria NRDC deemed the best indicators of how the brands impact virgin forests and the environment more broadly.

Brands that are made from alternative fibers are listed in the scorecard but remain ungraded because they are not certified by FSC or other reputable certification bodies.

First, we created baseline quantitative measures for each brand according to the percentage of each fiber type used. For example, if a brand was composed of 60 percent virgin fiber and 40 percent postconsumer recycled fiber, virgin fiber would have a baseline quantitative measure of 60 and postconsumer recycled fiber would have a baseline quantitative measure of 40.

Each criterion was assigned a different point multiplier factor, depending on its estimated relative sustainability value. The point multiplier factors were as follows:

Postconsumer recycled content: 4 x baseline quantitative measure

Pre-consumer recycled content: 3 x baseline quantitative measure

Virgin fiber with full FSC certification: 2 x baseline quantitative measure

Virgin fiber with FSC-Mix certification: 1 x baseline quantitative measure

Fiber that uses non-chlorine bleaching methods: 1 x baseline quantitative measure

Each brand's baseline quantitative measures for each type of fiber were multiplied by the corresponding weighting factors and added together to produce a raw score. For example, if the baseline quantitative measure of postconsumer recycled content was 40, this number would be multiplied by 4, the weighting factor for postconsumer recycled content. While the weighting factors for recycled materials were static, the weighting factors applied to the quantitative measures for virgin fiber content depended on whether that fiber was FSC certified and what kind of bleaching process was used.

The formula is as follows:

$$\text{Raw score} = 4 \times [\% \text{ of postconsumer recycled content}] + 3 \times [\% \text{ of pre-consumer recycled content}] + 2 \times [\% \text{ of virgin fiber that has full FSC certification}] + 1 \times [\% \text{ of virgin fiber that has FSC-Mix certification}] + 1 \times [\% \text{ of fiber that uses non-chlorine bleaching processes}]$$

For example, if a brand had 20 percent postconsumer recycled content, 40 percent pre-consumer recycled content, and 40 percent virgin fiber content with full FSC certification, but the company used an ECF bleaching process, the score would be calculated as follows:

$$[4 \times 20] + [3 \times 40] + [2 \times 40] + [1 \times 0] + [1 \times 60] = 340 \text{ out of } 500 \text{ possible points.}$$

The grading scale was as follows:

490–500 = A+

450–489 = A

400–449 = B

300–399 = C

200–299 = D

0–199 = F

A BUYER'S GUIDE TO THE SUSTAINABILITY OF AT-HOME TISSUE PRODUCTS



TOILET PAPER

BRAND	COMPANY	TOTAL % RECYCLED	% POST-CONSUMER RECYCLED	% VIRGIN FIBER	BLEACHING PROCESS	VIRGIN FIBER IS FSC CERTIFIED?*	SCORE/GRADE
100% Recycled	Who Gives A Crap	100	95	0	PCF	N/A	495/A+
Green Forest	Green Forest	100	90	0	PCF	N/A	490/A+
365 Everyday Value, 100% recycled	Whole Foods Market	100	80	0	PCF	N/A	480/A
Natural Value	Natural Value	100	80	0	PCF	N/A	480/A
Seventh Generation Unbleached Recycled Bath Tissue	Seventh Generation	100	80	0	PCF	N/A	480/A
Trader Joe's Bath Tissue	Trader Joe's	100	80	0	PCF	N/A	480/A
Marcal 1000 1-ply	Marcal	100	60	0	PCF	N/A	460/A
Marcal 100% Recycled 2-ply	Marcal	100	60	0	PCF	N/A	460/A
Everspring	Target	100	>50	0	PCF	N/A	450/A
Seventh Generation Extra Soft & Strong	Seventh Generation	100	50	0	PCF	N/A	450/A
GreenWise	Publix	100	50	0	PCF	N/A	450/A
365 Everyday Value, Sustainably Soft	Whole Foods Market	0	0	100	TCF	Yes	300/C
Trader Joe's Super Soft Bath tissue	Trader Joe's	0	0	100	PCF	Mix	200/D
Cottonelle Ultra	Kimberly-Clark	0	0	100	ECF	Mix	100/F
Scott 1000	Kimberly-Clark	0	0	100	ECF	Mix	100/F
Scott ComfortPlus	Kimberly-Clark	0	0	100	ECF	Mix	100/F
Charmin Ultra	Procter & Gamble	0	0	100	ECF	Mix	100/F
Kirkland	Costco	0	0	100	ECF	Mix	100/F
Angel Soft	Georgia-Pacific	0	0	100	ECF	No	0/F
Quilted Northern	Georgia-Pacific	0	0	100	ECF	No	0/F
Up & Up Soft & Strong	Target	0	0	100	ECF	No	0/F
Presto	Amazon	0	0	100	ECF	No	0/F
Solimo	Amazon	0	0	100	ECF	No	0/F
Aria	Georgia-Pacific	0	0	100	ECF	No	0/F
Quilted Northern EcoComfort	Georgia-Pacific	0	0	100	ECF	No	0/F
Fiora	Asia Pulp and Paper (APP)	0	0	100	ECF	No	0/F
Premium 100% Bamboo*	Who Gives A Crap	0	0	100% bamboo	ECF	No	Not scored
Premium Bamboo TP*	Tushy	0	0	100% bamboo	TCF	No	Not scored
Thrive Market*	Thrive Market	50	50	50% bamboo	PCF	No	Not scored
Caboo Tree-Free Bath Tissue*	Caboo	0	0	100% bamboo and sugarcane	ECF	No	Not scored
Seedling 3-ply Jumbo Roll Tree Free Toilet Paper*	Grove Collaborative	0	0	100% bamboo	ECF	No	Not scored

*Bamboo tissue fiber is responsible for 30% fewer greenhouse gas emissions than virgin wood tissue fiber. This tissue scorecard does not assign grades to these products because none yet has obtained FSC certification, which helps to ensure the bamboo fiber used is sourced responsibly. In communications with these companies, many have noted their intention to attain FSC certification soon, after which scoring will be available.



PAPER TOWELS

BRAND	COMPANY	TOTAL % RECYCLED	% POST-CONSUMER RECYCLED	% VIRGIN FIBER	BLEACHING PROCESS	VIRGIN FIBER IS FSC CERTIFIED?	SCORE/GRADE
Everspring	Target	100	100	0	PCF	N/A	500/A+
Thrive Market	Thrive Market	100	100	0	PCF	N/A	500/A+
Green Forest	Green Forest	100	90	0	PCF	N/A	490/A+
365 Everyday Value	Whole Foods Market	100	80	0	PCF	N/A	480/A
Natural Value	Natural Value	100	80	0	PCF	N/A	480/A
Seventh Generation 100% Recycled Paper Towels - Unbleached	Seventh Generation	100	80	0	TCF	N/A	480/A
Trader Joe's	Trader Joe's	100	80	0	PCF	N/A	480/A
Marcal	Marcal	100	60	0	PCF	N/A	460/A
Marcal Small Steps	Marcal	100	60	0	PCF	N/A	460/A
GreenWise	Publix	100	50	0	PCF	N/A	450/A
Seventh Generation 100% Recycled Paper Towels - White	Seventh Generation	100	50	0	PCF	N/A	450/A
Viva	Kimberly-Clark	0	0	100	ECF	Mix	100/F
Bounty	Procter & Gamble	0	0	100	ECF	No	0/F
Brawny	Georgia-Pacific	0	0	100	ECF	No	0/F
Sparkle	Georgia-Pacific	0	0	100	ECF	No	0/F
Up & Up	Target	0	0	100	ECF	No	0/F
Kirkland	Costco	0	0	100	ECF	No	0/F
Presto	Amazon	0	0	100	ECF	No	0/F
Solimo	Amazon	0	0	100	ECF	No	0/F
Aria	Georgia-Pacific	0	0	100	ECF	No	0/F
Fiora	Asia Pulp and Paper (APP)	0	0	100	ECF	No	0/F
Caboo Tree-Free Kitchen Towel Roll*	Caboo	0	0	100% bamboo and sugarcane	ECF	No	Not scored
Forest friendly paper towels*	Who Gives A Crap	0	0	100% bamboo and sugarcane	ECF	No	Not scored
Seedling Jumbo Roll Tree-Free Paper Towels*	Grove Collaborative	0	0	100% bamboo	ECF	No	Not scored

*Bamboo tissue fiber is responsible for 30% fewer greenhouse gas emissions than virgin wood tissue fiber. This tissue scorecard does not assign grades to these products because none yet has obtained FSC certification, which helps to ensure the bamboo fiber used is sourced responsibly. In communications with these companies, many have noted their intention to attain FSC certification soon, after which scoring will be available.



FACIAL TISSUE

BRAND	COMPANY	TOTAL % RECYCLED	% POST-CONSUMER RECYCLED	% VIRGIN FIBER	BLEACHING PROCESS	VIRGIN FIBER IS FSC CERTIFIED?	SCORE/GRADE
Green Forest	Green Forest	100	90	0	PCF	N/A	490/A+
Natural Value	Natural Value	100	80	0	PCF	N/A	480/A
Trader Joe's	Trader Joe's	100	80	0	PCF	N/A	480/A
Fluff Out	Marcal	100	60	0	PCF	N/A	460/A
Marcal Small Steps	Marcal	100	60	0	PCF	N/A	460/A
Seventh Generation	Seventh Generation	100	50	0	PCF	N/A	450/A
GreenWise	Publix	100	50	0	PCF	N/A	450/A
365 Everyday Value, Sustainably Soft	Whole Foods Market	0	0	100	TCF	Yes	300/C
Kleenex Everyday	Kimberly-Clark	0	0	100	ECF	Mix	200/D
Kirkland	Costco	0	0	100	ECF	Yes	200/D
Puffs Ultra Soft	Procter & Gamble	0	0	100	ECF	Mix	100/F
Up & Up Soft	Target	0	0	100	ECF	Mix	100/F
Solimo	Amazon	0	0	100	ECF	No	0/F
Presto	Amazon	0	0	100	ECF	No	0/F
Fiora	Asia Pulp and Paper (APP)	0	0	100	ECF	No	0/F
Quilted Northern Ultra	Georgia-Pacific	0	0	100	ECF	No	0/F
Thrive Market*	Thrive Market	50	50	50% bamboo	PCF	No	Not scored
Caboo Tree-Free Facial Tissue*	Caboo	0	0	100% bamboo and sugarcane	ECF	No	Not scored
Seedling Tree-Free Facial Tissue*	Grove Collaborative	0	0	100% bamboo and sugarcane	ECF	No	Not scored
Forest Friendly Tissues*	Who Gives A Crap	0	0	100% bamboo	ECF	No	Not scored

*Bamboo tissue fiber is responsible for 30% fewer greenhouse gas emissions than virgin wood tissue fiber. This tissue scorecard does not assign grades to these products because none yet has obtained FSC certification, which helps to ensure the bamboo fiber used is sourced responsibly. In communications with these companies, many have noted their intention to attain FSC certification soon, after which scoring will be available.

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ENDORSED BY:

