

REPORT

THE ISSUE WITH TISSUE FIFTH EDITION



AUTHOR:

Ashley Jordan

ACKNOWLEDGMENTS

The author of this report would like to express her deep gratitude to all the people who made its publication possible. In particular, Shelley Vinyard, Jennifer Skene, Katherine Huff, and Margie Kelly each played critical roles in the research and communication of the report's findings. Leah Stecher, Laurie Geller, and Lauren Gruber's diligence and expert edits elevated and refined this report. Furthermore, the author would like to thank the many people who reviewed the report and gave valuable feedback: Courtenay Lewis, Julee Boan, Elizabeth Barratt-Brown, Josh Axelrod, Kyler Sumter, Neva Murtha, Kim Porter, and Joshua Martin. Thank you also to Tyler Weingart and Jen Ng for your help creating visuals and communications.

About NRDC

NRDC (Natural Resources Defense Council) is an international nonprofit environmental organization with more than 3 million members and online activists. Established in 1970, NRDC uses science, policy, law, and people power to confront the climate crisis, protect public health, and safeguard nature. NRDC has offices in New York City, Washington, D.C., Los Angeles, San Francisco, Chicago, Bozeman, MT, Beijing and Delhi (an office of NRDC India Pvt. Ltd). Visit us at www.nrdc.org and follow us on Twitter @NRDC.

NRDC Chief Communications Officer: Kristin Wilson-Palmer
NRDC Managing Directors of Communications: Lisa Goffredi, Jenny Powers, Rosa Del Angel
NRDC Senior Policy Publications Editor: Leah Stecher
NRDC Director of Peer Review, Science Office: Laurie Geller

TABLE OF CONTENTS

Introduction	4
What Has Changed with the U.S. Tissue Sector Since the Issue with Tissue First Edition?	6
Investors are Waking Up to Tissue's Impact on Forest Degradation	11
Key Recommendations	12
Conclusion	15
Appendix: The Issue with Tissue Grading Methodology	16
Endnotes 2	25

Page 3 THE ISSUE WITH TISSUE FIFTH EDITION

INTRODUCTION

In 2019 NRDC's *The Issue with Tissue* report and sustainability scorecard exposed the link between some of the most popular U.S. tissue brands and the ongoing degradation of one of the most climate-critical and ecologically important forests in the world, the boreal forest in Canada.¹

This year's scorecard is the fifth edition covering consumer products such as toilet paper, paper towels, and facial tissue. It incorporates the latest scientific information and changes in the tissue market and further underscores the need for urgent action by the powerful companies behind the tissue sector's biggest brands, like Procter & Gamble, Kimberly-Clark, and Georgia-Pacific. Now, more than ever, it is clear that the impacts of manufacturing single-use tissue products from forest fiber are not only severe but also avoidable. There are sustainable alternatives to turning trees into toilet paper, and the refusal of many major U.S. tissue companies to embrace these alternatives is an egregious failure in corporate environmental responsibility, as well as a missed opportunity in a marketplace that increasingly demands forest-friendly and climate-safe products.



Page 4 THE ISSUE WITH TISSUE FIFTH EDITION NRDC

Unsustainable Tissue's Impact: From Trees to Toilet Paper

Boreal forest: Hundreds of thousands of tons of the wood pulp used to make the most unsustainable U.S. tissue brands come from the Canadian boreal, the world's largest remaining intact forest.^a This forest is home to more than 600 Indigenous communities. It also provides refuge to a wide variety of wildlife and stores more carbon per acre than any other forest biome on earth.^b





Pulp mills: High-polluting mills process the trees to create wood pulp, which is bleached white. The elemental chlorine-free process that is now most commonly used for bleaching wood pulp still emits chlorinated compounds into the environment of nearby communities. This chlorine can react with carbon-based compounds to produce dioxins, highly toxic chemicals linked to cancer and other health risks.°



Logging: The vast majority of Canada's industrial logging in the boreal is done by clearcutting, which removes nearly all trees from an area, devastating the ecosystem and releasing vast stores of carbon.^c In many cases, major pulp suppliers fail to ensure that these logging operations do not come at the expense of fundamental Indigenous rights.^d



Tissue products: Forest fiber tissue and toilet paper products are manufactured from this pulp and then shipped globally, where they end up on retailer shelves and ultimately in our homes.



Disposal: Once used and then flushed or thrown away, the disposal and decomposition of these products emits additional carbon.

- $a \quad \text{``People of the Boreal,''} International Boreal Conservation Campaign, Pew Charitable Trusts, May 31, 2016, https://www.pewtrusts.org/en/research-and-analysis/articles/2016/05/people-of-the-boreal.}$
- b Robert T. Watson et al., Special Report on Land Use, Land Use Change, and Forestry, Intergovernmental Panel on Climate Change, 2000, https://archive.ipcc.ch/ipccreports/sres/land_use/index. php?idp=0; 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.
- c Skene, Cutting It Close.
- d Courtenay Lewis and Ashley Jordan, Pulp Fiction: Canada's Largest Pulp Producers' Actions Do Not Match Their Sustainability Claims, NRDC, October 2021, https://www.nrdc.org/sites/default/files/pulp-fiction-canada-forests-report.pdf; Courtenay Lewis and Ashley Jordan, By a Thousand Cuts: How Powerful Companies' Wood Sourcing Is Degrading Canada's Boreal Forest, NRDC, April 2021, https://www.nrdc.org/sites/default/files/thousand-cuts-wood-sourcing-canadas-boreal-report.pdf.
- "Chlorine Free Processing," Conservatree, http://www.conservatree.org/paper/Paper/Types/CFDisc.shtml (accessed June 16, 2022); Pratima Bajpai, "Environmental Issues of the Pulp and PaperIndustry," Environmentally Benign Pulping (Cham, Switzerland: Springer Nature Switzerland AG, 2023), 23–27, https://doi.org/10.1007/978-3-031-23693-8_3.

Page 5 | THE ISSUE WITH TISSUE FIFTH EDITION NRDC

WHAT HAS CHANGED WITH THE U.S. TISSUE SECTOR SINCE THE ISSUE WITH TISSUE FIRST EDITION?

U.S. tissue consumption continues to have a direct and widespread impact on the fate of the boreal forest and its inhabitants in Canada. The United States is a major driver of pulp and paper production in Canada, and its hold on the market has grown in recent years. In 2022, the United States accounted for 65 percent of all of Canada's pulp and paper exports—an increase of 9 percentage points from four years prior.² For provinces containing boreal forest, that share was even greater, with about 76 percent of pulp and paper exports from Alberta, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick, and Newfoundland going to the United States in 2022.³ In the coming years, the U.S. tissue market is expected to continue growing, as is demand from other sectors that use wood products.⁴

At the same time, however, the popularity of sustainable toilet paper brands and tissue-saving options like bidets has increased. Propelled by concerns about supply chain risks and consumer demand for products that do not come at such a high cost to the climate and biodiversity, new tissue companies offering sustainable alternatives have entered the market, and some long-standing tissue producers have expanded their product offerings to include forest-friendlier options.



Stacked logs in a boreal forest clearing in Canada.

CONSUMER BEHAVIOR TRENDS FAVOR SUSTAINABILITY

Countless consumer surveys have now highlighted the growing role that product sustainability plays in influencing purchasing decisions and ultimately shifting the market toward more responsible practices. In one global consumer survey from 2020, 80 percent of respondents indicated that sustainability is important to them, and around 60 percent said they are willing to change their shopping habits to reduce environmental impact. Moreover, these shoppers reported seeking out information on corporate sustainability policies and wanting brands to take action to demonstrate social responsibility.

Furthermore, the public is willing to back up these sentiments with action. Procter & Gamble (P&G), maker of the tissue brands Charmin, Bounty, and Puffs, has received nearly 500,000 petition signatures from consumers calling on the company to address its supply chain impacts on climate-critical forests. As consumers continue to demand urgent climate action from laggard companies, their related changes in purchasing decisions can disrupt the hold that these brands have on the market and make room for new, often more sustainable, entrants.

REGULATORY SHIFTS ARE POISED TO TRANSFORM FOREST SUPPLY CHAINS

Groundbreaking new regulatory standards for commodities that put forests at risk, including wood pulp, also herald significant marketplace changes. In May 2022, the governor of Colorado signed an executive order encouraging state agencies and departments to purchase goods and raw materials from vendors that do not contribute to boreal forest degradation or deforestation and that guarantee the protection of the rights of Indigenous Peoples who live there.10 While the executive order falls short of being an explicit requirement, it marked the first time that protections against boreal forest degradation had been enshrined in U.S. policy.¹¹ A few months later, the European Union (EU) passed a new Deforestation Regulation, banning imports of products causing deforestation and forest degradation. 12 The EU's new trade standard, which defines "forest degradation" to include certain types of industrial logging in primary forests (areas that have never before been industrially disturbed), creates unprecedented accountability for unsustainable forest sourcing, particularly from the boreal. At present, major forest fiber tissue companies like P&G have sourcing practices that will fail to meet this new standard when it takes effect next year.

NEW SUSTAINABILITY LEADERS SHAKE UP THE MARKET

Of the toilet paper brands surveyed in the tissue scorecard's fifth edition, half of the brands that received A and B grades were launched within only the past five years. This includes several store brands from major retailers, including Target's Everspring and Field & Future by H-E-B, which each earned A grades for their toilet paper being made from 100 percent recycled content.

Recycled content has a smaller carbon footprint than wood pulp; however, not all recycled content is created equal in terms of the environment. Postconsumer recycled content comes from the paper and fibers people throw into the recycling bin—materials that have been used

Page 6 THE ISSUE WITH TISSUE FIFTH EDITION NRDC



A bamboo forest.

and would otherwise end up in a landfill.¹³ Pre-consumer content, often otherwise known as manufacturing waste, is made up of trimmings and scraps recovered in-house by manufacturing operations and previously manufactured but unsold paper products, such as printers' overruns or obsolete stocks.¹⁴ While both types of recycled material are far more sustainable than forest fiber, products that use a high percentage of postconsumer recycled content help to create a market for the recycling industry, fostering a circular economy that provides a sustainable alternative to sending waste to landfills and helps generate jobs.¹⁵

Nowhere has the tissue industry's changing outlook been more apparent than in the rapid rise of companies making bamboo toilet paper. This year, Amazon joined the ranks of businesses like Caboo and Who Gives A Crap in creating tissue products made from bamboo, a fast-growing plant that can provide a more sustainable alternative to wood fiber. While it is less environmentally friendly than recycled material, bamboo has a much smaller land use and carbon footprint than does northern bleached softwood kraft (NBSK) fiber, a form of wood pulp that overwhelmingly comes from the Canadian boreal forest. ¹⁶

Importantly, bamboo products' sustainability varies; one of the most important factors is whether or not the bamboo was sourced from a plantation established through the clearing and conversion of a natural forest. The Forest Stewardship Council (FSC) logo on bamboo products indicates the fiber was grown and sourced in a way that limits this negative forest impact.¹⁷ All FSC-certified bamboo brands earn B grades in our scorecard, falling just behind the A scores of recycled fiber products. Not only do the companies producing these FSC-certified bamboo brands provide more sustainable alternatives to turning trees into toilet paper, but many are also vocal critics of other companies' continued reliance on wood fiber. Through their branding and online resources, several bamboo companies highlight the importance of protecting forests like the Canadian boreal from being turned into toilet paper.¹⁸

THE LAGGARDS STICK WITH THE STATUS QUO

Despite progress by the many sustainability leaders featured in our scorecard, there is still a long way to go. All five editions of *The Issue with Tissue* have now found that the "Big Three" U.S. tissue producers—Procter & Gamble, Kimberly-Clark, and Georgia-Pacific—make their flagship household tissue brands almost exclusively from forest fiber, consistently earning them failing scores.

In addition, Asia Pulp & Paper (APP), a company with a long track record of environmental and human rights violations in Indonesia, has faced further scrutiny over the past year for its tissue products given the increased marketing of its Fiora toilet paper brand in the United States. 19 As a result, several major retailers, including Ahold Delhaize (owner of Stop & Shop and Giant Food) and Office Depot, have taken action to remove this brand and other APP-affiliated tissue products from store shelves.²⁰ Moreover, Paper Excellence (currently the largest pulp producer in Canada) has been the subject of recent scrutiny for its close ties to APP.²¹ This comes following Paper Excellence's acquisition of Domtar and Resolute Forest Products, two other major tissue industry pulp suppliers with their own troubling records of forest management in Canada. 22 Similar to the biggest U.S. tissue brands, Fiora toilet paper is made with 100 percent forest fiber, earning it an F grade in our scorecard.

OPTIONS TO REDUCE TISSUE USE

While *The Issue with Tissue* scorecard grades the sustainability of tissue brands, other product options can help consumers limit their overall use of disposable tissue products. Bidets and bidet toilet seat attachments are quite common in many parts of the world, and their more recent rising popularity in the United States has led to cultural references such as *South Park*'s "Japanese Toilets" episode, which first aired in March 2023.²³ Bidets not only help cut down on the use of toilet paper but also require less water per use than the tissue-making process does.²⁴ In other areas of the home, using reusable cloth napkins and cloth towels in place of paper towels is another effective way to reduce the use of disposable products.

Page 7 THE ISSUE WITH TISSUE FIFTH EDITION NRDC



THE ISSUE WITH TISSUE 2023 SCORECARD

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

TOILET PAPER Brand Grade (Score) 365 by Whole Foods Market, 100% Recycled A+ (585) A+ (580) **Green Forest Natural Value** A+ (580) Trader Joe's A+ (580) Field & Future by H-E-B A (560) Marcal 100% Recycled A (560) Simple Truth A (560) Seventh Generation Extra Soft & Strong A (551) Who Gives A Crap, 100% Recycled A (551) A (550) Everspring GreenWise A (550) Nature's Promise A (550) Rosey by Thrive Market A (550) Pacific Blue Basic B+ (525) Scott Professional Standard Roll B+ (520) **PlantPaper** B+ (500) **Amazon Aware** B (400) Bambooloo B (400) Betterway B (400) Bim Bam Boo B (400) Caboo B (400) Cheeky Panda B (400) B (400) **Cloud Paper** B (400) Grove Co. Paper B (400) NatureZway No.2 B (400) Reel Paper B (400) Silk'n Soft, Oh' Natural Unbleached B (400) Who Gives A Crap, Premium 100% Bamboo B (400) Silk'n Soft, White C (300) TUSHY C (300)

Cottonelle Professional

TOILET PAPER	
Brand	Grade (Score)
Great Value Soft & Strong (24 and 30 roll)	D (190)
Great Value Soft & Strong (6, I2, and I8 roll)	D (170.4)
Charmin	F (115)
Quilted Northern Ultra Plush	F (103)
Quilted Northern Ultra Soft & Strong	F (103)
Amazon Basics	F (100)
Cottonelle Ultra	F (100)
Great Value 1000	F (100)
HDX	F (100)
Kirkland	F (100)
Kroger Soft & Strong	F (100)
Presto!, Ultra-Strong	F (100)
Scott 1000	F (100)
Scott ComfortPlus	F (100)
Trader Joe's Super Soft	F (100)
365 by Whole Foods Market, Sustainably Soft	F (100)
Great Value Ultra Strong	F (33)
Angel Soft	F (4)
Aria	F (4)
Fiora	F (0)
H-E-B Our Finest	F (0)
Moxie	F (0)
Paperbird Soft & Strong	F (0)
Presto!, Regular	F (0)
Publix Super Soft	F (0)
Publix Ultra Strong	F (0)
Softly	F (0)
Stop & Shop and Giant Food	F (0)
Up & Up	F (0)
Wegmans	F (0)
Willow Thick & Soft	F (0)

Page 8 THE ISSUE WITH TISSUE FIFTH EDITION NRDC

D (200)



Brand	Grade (Score)
NatureZway	B (400)
Great Value Everyday Strong	D (190)
Bounty Advanced	F (130)
Amazon Basics	F (100)
HDX	F (100)
Kroger	F (100)
Paperbird Ultra Strong	F (100)
Viva	F (100)
Bounty	F (40)
Stop & Shop and Giant Food	F (20)
Brawny	F (4)
Sparkle	F (4)
Boulder	F (0)
Brightly	F (0)
Fiora	F (0)
Great Value Ultra Strong	F (0)
H-E-B Our Finest	F (0)
Kirkland	F (0)
Moxie	F (0)
Presto!	F (0)
Publix	F (0)
Up & Up	F (0)
Wegmans	F (0)

Marcal Small Steps A (560) Simple Truth A (560) Seventh Generation, White A (551) GreenWise A (550) Nature's Promise A (550) Rosey by Thrive Market A (550) B (400) **Amazon Aware** Bambooloo B (400) Bim Bam Boo B (400) Caboo B (400) Cheeky Panda B (400) B (400) **Cloud Paper** Grove Co. Paper B (400)

Page 9 THE ISSUE WITH TISSUE FIFTH EDITION NRDC



B (400)

B (400)

F (115)

NatureZway

Puffs

Who Gives A Crap, Forest Friendly Tissues



Page 10 THE ISSUE WITH TISSUE FIFTH EDITION NRDC

INVESTORS ARE WAKING UP TO TISSUE'S IMPACT ON FOREST DEGRADATION

Since the release of our initial *The Issue with Tissue* report in 2019, mounting reputational and regulatory risks for tissue companies turning forests into single-use products have led investors to increasingly call for more sustainable tissue production practices.

P&G was among the first major tissue companies to experience this investor backlash. In the midst of a slew of negative media attention that the company received for its unsustainable forest sourcing practices, P&G investors, including giant asset managers such as State Street, Vanguard, and BlackRock, passed a landmark 2020 shareholder resolution directing the company to report on whether and how it can eliminate deforestation and forest degradation from its supply chains. ²⁵ Rather than responding with meaningful policy changes, P&G doubled down on its existing operating model while also making new misleading claims.²⁶ With P&G's failure to adopt timebound commitments to address the company's role in driving primary forest degradation and its failure to adequately enforce its existing deforestation and human rights policies, members of P&G's board of directors have faced increased investor opposition during subsequent annual elections.²⁷

P&G's misleading claims in the wake of the 2020 shareholder vote warrant further scrutiny by the company's investors. In 2021 P&G published an updated sourcing policy stating that the company prohibits forest degradation, echoing

language from the 2020 shareholder resolution.²⁸ However, P&G went on to disclose that it was continuing to source from threatened boreal caribou habitat and intact forests, which clearly contradicted this claim.29 The refusal of P&G representatives to address this misleading policy language ultimately led NRDC to file a complaint in November 2022 with the Securities and Exchange Commission (SEC). The complaint cites evidence from P&G's own investor communications to establish the implausibility of the company's assertion that it prohibits degradation.³⁰ NRDC recommended that the SEC, at a minimum, require the company to make corrective disclosures regarding these statements. In May 2023 the company released an updated forest commodities policy that quietly removed the "no degradation" claim. 32 Without P&G's explicit acknowledgment of the hollowness of this claim, however, it is unclear to what extent concerned shareholders will be aware that the company has not, in fact, aligned with the 2020 shareholder resolution.³³ In addition, the company's failure to clarify the implications of this policy change creates new vagueness and uncertainty regarding its sourcing practices.

With compounding regulatory shifts and growing reputational pressure surrounding corporate impacts on climate-critical forests, investors are becoming more sophisticated and vigilant in their asks to companies. Footdragging now from companies like P&G will likely make them less attractive to investors in the long term.



At P&G's 2019 shareholder meeting, nearly 100 concerned citizens mobilized to protest the company's sourcing from climate-critical forests for products like Charmin toilet paper.



Roads and clearcuts across the boreal forest in Canada.

Page 11 THE ISSUE WITH TISSUE FIFTH EDITION NRDC

© River Jordan for NRI

KEY RECOMMENDATIONS

Tissue companies, investors, retailers, policymakers, and consumers can all help to address unsustainable forest supply chains. Below are key recommendations for each.

TISSUE COMPANIES MUST ACT RESPONSIBLY

Manufacturers should take the following actions to minimize the impact their products have on forests and forest inhabitants:

- Decrease reliance on forest fiber by 50 percent while increasing investments in recycled and sustainable alternative fiber development. This recommendation remains consistent with the guidance first published by NRDC in 2019. Since then, the urgency of the situation has only increased while the solution remains clear: The most direct and effective way for the tissue industry to reduce its impact on the boreal and other forests is to lower its consumption of wood pulp.34 Experts, including the environmental NGO Canopy, have laid out a clear path for the global pulp and paper industry to reduce its use of forest fiber by half by 2030.35 The most climate-friendly way for tissue companies to achieve this is by transitioning to recycled fibers, including the highest feasible percentage of postconsumer recycled content. By cutting their use of forest fiber by half (which amounts to approximately 1.6 million tons of pulp in the United States per year) and investing in key infrastructure for alternative feedstocks to wood, tissue manufacturers can encourage innovation in the recycling sector, foster the development of sustainable alternative fibers (like wheat straw waste and other agricultural residues left over after food production), create a more circular economy, and drastically reduce their carbon footprints.³⁶ In fact, if the tissue industry used recycled content instead of forest fiber for those 1.6 million tons of pulp, it would reduce overall carbon dioxide-equivalent emissions by 13.1 million tons a yearthe equivalent of taking 2.6 million gasoline-powered passenger vehicles off the road per year.³⁷
- Prohibit sourcing from suppliers contributing to deforestation and forest degradation (including of primary forests and the critical habitat of threatened or endangered species), and support and advocate for policies to permanently protect these areas. Industrial logging in primary forests is incompatible with achieving the preservation of a safe climate and stable biodiversity.³⁸
- Require that all tissue pulp suppliers operating in the territories of Indigenous Peoples secure the free, prior, and informed consent of those Nations and communities, and respect and support Indigenousled management and protection initiatives. Indigenous Peoples have unique rights and knowledge systems tied to the lands and waters of their traditional territories. This includes the right to free, prior, and informed consent, which is enshrined in the United Nations Declaration

- on the Rights of Indigenous Peoples.³⁹ Unfortunately, in many cases, logging companies do not require this practice, making it essential for tissue manufacturers to require this of their suppliers. 40 The protection of these rights and lifeways is not just an issue of respect and justice; studies show that when Indigenous Peoples control the management of their lands, the outcomes are usually better for biodiversity and the planet. 41 Indigenous leadership in Canada is providing strong models for sustainable economic development, but many of these initiatives—like the establishment of Indigenous Protected and Conserved Areas (IPCAs)—remain underfunded, limited by insufficient or antithetical federal and provincial legislation, and potentially in conflict with corporate or government priorities around resource extraction in their territories. 42 Tissue companies should support IPCAs and other Indigenous-led conservation or management efforts, to respect and uplift Indigenous rights and knowledge and foster nation-building and self-determination.
- Achieve 100 percent FSC certification for forest fiber and bamboo products. As tissue manufacturers work to transition to more sustainable materials, they should ensure that any forest fiber they continue to use is sourced as responsibly as possible. FSC certification, while insufficient on its own to achieve important environmental and social goals, is the only forest management certification system that has advanced meaningful measures to reduce logging's impacts on species and the climate and safeguard Indigenous rights. 43 Full FSC certification, therefore, provides a baseline for forest fiber sourcing that companies should meet or exceed. For bamboo fiber products, FSC certification is essential to demonstrating that the bamboo was grown and sourced in a way that avoided the clearing and conversion of a natural forest.44



Boreal caribou are an iconic Canadian species that require large areas of undisturbed forest for their survival.

- 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 the generation of energy that they purchase; and Scope 3 emissions, which are all the indirect emissions associated with a company's full value chain. 45 Many tissue manufacturers do not have targets for reducing their Scope 3 emissions, nor do they adequately account for the emissions associated with logging forest fiber for their products. 46 NRDC has estimated that tissue manufacturers' Scope 3 emissions from tissue pulp are often greater than their Scope 1 and 2 emissions combined. 47 Accurately and transparently accounting for and reducing these emissions would help to mitigate this significant hidden externality.
- Publicly support policies that set standards for responsible sourcing across the sector. Through public communications, engagement with policymakers, or other means, companies should support policy proposals that would advance regulatory standards, land-use changes, incentives, investments, disclosures, or other initiatives that support more sustainable supply chains across the sector. Similarly, companies should not engage in lobbying or other efforts, either directly or through trade industry associations, that would undermine these priorities.
- Engage proactively and substantively with civil society stakeholders (including environmental NGOs) to inform company policy development and implementation and align with accepted best practices.

INVESTORS MUST SET CLEAR REQUIREMENTS FOR TISSUE COMPANIES

Weak sustainability policies make companies, and therefore investors, vulnerable to marketplace, regulatory, and reputational risks. The following is a list of steps institutional investors and banks should take to mitigate exposure when investing in tissue companies:⁴⁸

- Require that all sustainability policies apply to the entire supply chain of any given company, specifically at the corporate group level.⁴⁹
- Require that the companies they invest in have a "no deforestation and no forest degradation" policy. Such a policy should include time-bound, results-based engagement with company management.
- Require companies to ensure free, prior, and informed consent as standard practice across the supply chain when operations could potentially impact Indigenous Peoples and other traditional communities, and ensure that their supply chains do not negatively impact the creation and ongoing viability of IPCAs and other Indigenous-led management and conservation activities.

- Require companies to adopt time-bound commitments to reduce their Scope 3 greenhouse gas emissions, including carbon emissions directly associated with logging to supply forest fiber for their products.
- Require that companies avoid sourcing from the critical habitat of threatened or endangered species.
- Require companies to regularly issue public reports to demonstrate compliance with their policies and to have noncompliance protocols for their suppliers. Companies should have clear grievance mechanisms, including what actions they will take when violations of their policies occur.
- Support legislative and regulatory reforms that facilitate forest impact disclosures and advance the elimination of deforestation and forest degradation in corporate supply chains.
- Engage proactively and substantively with civil society stakeholders (including environmental NGOs) to inform financial engagement with tissue companies and align with accepted best practices.



Unsustainable tissue brands often dominate retailer shelf space, making it difficult for some consumers to find forest-friendly options in person.

RETAILERS MUST SCRUTINIZE THEIR PRODUCT OFFERINGS

Retailers with private-label tissue products should follow the same set of recommendations outlined above for tissue companies. In addition, they have a responsibility to scrutinize the products they offer to ensure that their customers are not unwittingly supporting deforestation, forest degradation, and Indigenous rights abuses. Retailers should take the following actions:

■ Devote at least 50 percent of in-store tissue product shelf space to brands made from recycled content or sustainable alternative fibers (bamboo products should be FSC certified and carry an FSC on-product claim). To enable consumers to use their purchasing power to support these brands, it is essential that stores make them more widely available.

Page 13 THE ISSUE WITH TISSUE FIFTH EDITION NRDC

- Indicate both online and in store which tissue product offerings are the most sustainable choice. Programs like Target's "Target Zero" highlight for consumers which product offerings contain recycled content, among other sustainability metrics. ⁵⁰ By specifically noting tissue products made from 100 percent recycled content as the most sustainable choice, retailers can help consumers make more informed purchasing decisions.
- Establish a greenhouse gas reduction commitment that covers the company's full value chain, including the Scope 3 emissions associated with the products on their store shelves.⁵¹
- Create and implement paper recycling programs at store locations to help support a more circular economy.

POLICYMAKERS MUST ENACT CHANGE

Policymakers are uniquely placed to pass more stringent regulations on forest supply chains and establish permanent protections for those areas most critical to ensuring a livable planet for current and future generations. We recommend policymakers take the following actions:

- Establish protections for remaining primary forests and the critical habitat of threatened or endangered species.
- Require that all industrial logging operations respect Indigenous rights.
- Advance policies that, through land use designations, financing, and other means, support the creation of IPCAs and other Indigenous-led stewardship.
- Establish procurement and trade regulations that prohibit products that drive deforestation and forest degradation or that fail to ensure Indigenous rights to free, prior, and informed consent.
- Avoid or eliminate subsidies that promote single-use wood products and products driving deforestation and forest degradation. Instead, through legislation, policymakers should facilitate investments in recycling and other infrastructure that promote a circular economy for paper products or that support the expanded use of sustainable alternative fibers.
- Enact policies requiring corporations to disclose their impacts on forests and Indigenous rights.
- Establish and enforce consumer protection standards against misleading corporate sustainability messaging.

CONSUMERS CAN ASSERT THEIR INFLUENCE

Consumers have enormous power in helping steer the market toward greater sustainability. In addition to following this scorecard, here are four simple actions consumers can take to minimize their own forest footprint from tissue use and to drive systemic change:

- Buy tissue products made with recycled content. As the scorecard reflects, tissue made with recycled content, particularly postconsumer recycled content, has a much smaller environmental footprint than tissue made with forest 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, seek tissue with alternative fibers like wheat straw waste, or look for the FSC logo to indicate greater rigor of responsible forestry practices.
- Urge corporations that make unsustainable tissue products to eliminate those products from their lineup. 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. Often posting on social media, signing a petition, or undertaking some other form of public communication with a company can create more accountability, inform it of market demand, and increase the likelihood that the company will change.
- alternatives. If a local grocery store or other retailer does not offer any tissue products made with recycled content, consumers can 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 potentially sends a message up the chain to retailer corporate headquarters about consumer preferences.
- Reduce consumption. The best way to shrink one's individual impact is to reduce consumption. This can include using a bidet, which drastically decreases tissue use and the associated environmental impacts.⁵² Switching to reusable cloths and towels in the kitchen and to handkerchiefs instead of facial tissue also reduces consumption. These lifestyle changes not only help the planet but, in most cases, are cheaper in the long run.

Page 14 THE ISSUE WITH TISSUE FIFTH EDITION NRDC

CONCLUSION

Companies know that there are more responsible ways to create tissue products than using forest fiber—namely, using recycled materials and responsibly sourced alternative fibers—and many have already embraced these solutions in their product lines. Yet the largest, most powerful tissue companies have failed to adopt these more sustainable sourcing practices. Instead they remain entrenched in a destructive "tree-to-toilet pipeline" model that continues to come at an extreme cost to Indigenous communities, the climate, threatened species, and forests like the boreal in Canada.

Tissue companies have an essential role and a social obligation to help lead a marketplace shift away from unnecessary, unsustainable forest sourcing practices. Embracing transformative innovation is a vital step toward creating a more forest-friendly and climate-safe economy while aligning with an increasingly sustainability-focused marketplace.



Page 15 THE ISSUE WITH TISSUE FIFTH EDITION NRDC

APPENDIX: THE ISSUE WITH TISSUE GRADING METHODOLOGY

This year's scorecard includes toilet paper, paper towel, and facial tissue brands on the U.S. market in June 2023 and is based on data from product websites, product packaging, and company communications.

The scorecard includes the flagship brands from the three tissue companies with the largest market shares in the United States: Procter & Gamble, Kimberly-Clark, and Georgia-Pacific. Given that private-label products (store brands) cumulatively constitute another substantial portion of the marketplace, the scorecard includes a wide selection of these products as well. To provide a representative cross-section of recycled and alternative fiber tissue products available to U.S. consumers, we also include tissue brands made primarily from recycled material and from bamboo.

There are many brands not included in the scorecard. This scorecard is not intended to capture the full range of brands made from bamboo fiber nor the full extent of private-label brands available to U.S. consumers. It also does not score brands made from other alternative fibers such as sugar cane bagasse or wheat straw, as they have not become widely available in the United States. We urge consumers to evaluate recycled content, bamboo, and forest fiber products not included here according to the same criteria used in this scorecard.

SCORING CONSIDERATIONS

This year's scorecard methodology remains the same as last year's and gives the highest overall point value to brands made from recycled content. As described in this report, using recycled content instead of forest fiber has enormous benefits for forests and the global climate, with postconsumer recycled content providing additional advantages like helping to divert waste from landfills and foster a more circular economy.

This scorecard methodology awards some credit to forest fiber brands that receive FSC certification, with higher points awarded for FSC 100% certification than for FSC Mix. ⁵⁴ It remains the case that FSC, while imperfect, is the only forest management certification system that is widely supported by environmental experts for helping to minimize logging's impacts on species and the climate; FSC's safeguards around Indigenous Peoples' rights are also far superior to those of competing certifications. ⁵⁵ In contrast, certification by the Sustainable Forestry Initiative (SFI) is widely criticized by environmental experts for failing to prohibit damaging logging practices. ⁵⁶ For these reasons, forest fiber brands with SFI or other, similarly weak certifications do not receive any additional points within this scorecard methodology.

As highlighted in the previous iteration of this scorecard, there is growing scientific consensus on the need to protect primary forests, given the irreplaceable climate value and critical habitat these areas provide for species found nowhere else. ⁵⁷ For this reason, this scorecard methodology awards points for forest fiber products that avoid sourcing from primary forests.

Given the growing popularity of tissue products made with bamboo fiber, this scorecard captures a wide selection of bamboo fiber brands. According to peer-reviewed life cycle analyses, bamboo has a smaller environmental footprint than forest fiber but a larger footprint than recycled fiber and some agricultural residues like wheat straw, another alternative tissue material. However, bamboo's sustainability varies, with one of the most significant factors being whether it was sourced from a bamboo plantation established through the clearing and conversion of a natural forest. 59

FSC certification for bamboo has requirements that seek to ensure that this fiber is sourced in a way that respects human rights and works to minimize negative forest impacts. ⁶⁰ Like the methodology for scoring forest fiber tissue products, the methodology for bamboo products awards more points to those with full FSC certification than to those without this certification. For non-FSC-certified bamboo products specifically, a brand can still earn points for avoiding forest conversion by showing that its fiber comes from FSC-certified suppliers. For a brand to receive full credit for this criterion, its supplier's FSC certificate must note that it is chain-of-custody certified to sell products as FSC 100%. If the certificate notes only FSC Mix or a combination of FSC Mix and FSC 100%, the brand receives half credit.

The final scoring consideration in our methodology is the bleaching method used to create the product. Recycled paper products primarily use far less toxic bleaching methods, such as processed chlorine free (PCF), than the elemental chlorine free (ECF) methods employed most commonly for bleaching wood pulp. PCF totally avoids chlorine, instead using oxygen, ozone, and hydrogen peroxide. Where forest or bamboo fiber has been bleached without the use of any type of chlorine, it is labeled totally chlorine free (TCF). Both TCF and PCF bleaching processes, as well as unbleached products, earn brands additional points.

This year our tissue scorecard grades products under five additional brands: Rosey by Thrive Market toilet paper, paper towels, and facial tissue, PlantPaper toilet paper, Great Value Soft & Strong toilet paper, Great Value Soothing Lotion facial

Page 16 THE ISSUE WITH TISSUE FIFTH EDITION NRDC

tissue, and Great Value Ultra Soft facial tissue. The updated scorecard also removes several brands that have been discontinued (Bum Boosa Bamboo toilet paper, Aria paper towels, 365 Everyday Value 100% recycled-content facial tissue, and Quilted Northern facial tissue). The resulting total number of products scored is 145. This year 20 products received A grades, and 15 received A+ because their products are manufactured using at least 80 percent postconsumer recycled content. In addition, 35 products received B or B+ grades. The remaining 75 products received C, D, or F grades.

GRADING SYSTEM

As discussed above, the grading system for forest fiber products evaluates brands based on whether they are fully FSC certified or FSC Mix certified, whether the company avoids sourcing from primary forests, and the bleaching method used in the manufacturing process. For recycled-content products, the system evaluates the brands on the basis of their pre-consumer and postconsumer recycled content and the type of bleaching process used. For bamboo products, it evaluates whether the product has FSC certification, the type of bleaching process used, and, if not FSC certified, whether the company can demonstrate that it avoids sourcing fiber from bamboo plantations that were converted from natural forests after 1994.⁶³

Baseline quantitative measures were created for each brand according to the percentage of each fiber type used and its relevance to the various grading criteria. Each criterion was assigned a weighting factor, depending on its estimated relative sustainability value. The weighting factors were as follows:

- Postconsumer recycled content: 5 x baseline quantitative measure
- Pre-consumer recycled content: 4 x baseline quantitative measure
- Bamboo fiber with FSC 100% certification: 4 x baseline quantitative measure
- Bamboo fiber without FSC certification: 2 x baseline quantitative measure
- Forest fiber with FSC 100% certification: 2 x baseline quantitative measure
- Forest fiber with FSC Mix certification: 1 x baseline quantitative measure
- Forest fiber (regardless of certification) or non-FSC-certified bamboo product that the manufacturer can demonstrate, using best available data and mapping, is not sourced from primary forests or plantations on land converted from natural forests after 1994: 2 x baseline quantitative measure
- Unbleached fiber or fiber processed with non-chlorine bleaching methods (i.e., PCF or TCF): 1 x baseline quantitative measure

Each brand's baseline quantitative measures for each type of fiber were then multiplied by the corresponding weighting factors and added together. The formula was as follows:

Raw score = 5 x [% of postconsumer recycled content] + 4 x [% of pre-consumer recycled content] + 4 x [% of bamboo fiber with FSC 100% certification] + 2 x [% of bamboo fiber without FSC certification] + 2 x [% of forest fiber with FSC 100% certification] + 1 x [% of forest fiber with FSC Mix certification] + 2 x [% of forest fiber or non-FSC-certified bamboo not sourced from primary forests or plantations on land converted from forests after 1994] + 1 x [% of fiber that uses non-chlorine bleaching processes]

Example 1

In this example, a brand has 20 percent postconsumer recycled content, 40 percent pre-consumer recycled content, and 40 percent forest fiber content with FSC 100% certification. Also in this example, the manufacturer uses an ECF bleaching process for its forest fiber but can verify that it does not source from primary forests. In this case, the score would be calculated as follows:

 $[5 \times 20] + [4 \times 40] + [2 \times 40] + [2 \times 40] + [1 \times 60] = 480$ out of 600 possible points.

Example 2

In this example, a brand uses 100 percent bamboo fiber with FSC 100% certification and employs ECF bleaching. The score would be calculated as follows:

 $[4 \times 100] = 400$ out of 600 possible points.

The grading scale is as follows:

580-600 points: A+

550-579 points: A

500-549 points: B+

400-499 points: B

350-399 points: C+

250-349 points: C

150-249 points: D

0-149 points: F

Page 17 THE ISSUE WITH TISSUE FIFTH EDITION NRDC

TOILET PAPER

Brand	Company	Total % Recycled Content	% Post- Consumer	% Forest or Bamboo Fiber	FSC Certification	Forest and Non-FSC Bamboo Fiber Avoid Primary Forest Degradation and Conversion?	Bleaching Process	Score	Grade
365 by Whole Foods Market, 100% Recycled	Whole Foods Market	100	85	0	N/A	N/A	PCF	585	A+
Green Forest	Green Forest	100	80	0	N/A	N/A	PCF	580	A+
Natural Value	Natural Value	100	80	0	N/A	N/A	PCF	580	A +
Trader Joe's	Trader Joe's	100	80	0	N/A	N/A	PCF	580	A+
Field & Future by H-E-B	Н-Е-В	100	60	0	N/A	N/A	PCF	560	Α
Marcal IOO% Recycled	Marcal	100	≥60	0	N/A	N/A	PCF	560	Α
Simple Truth	Kroger	100	60	0	N/A	N/A	PCF	560	Α
Seventh Generation Extra Soft & Strong	Seventh Generation	100	≥51	0	N/A	N/A	PCF	551	A
Who Gives A Crap, 100% Recycled	Who Gives A Crap	100	51	0	N/A	N/A	PCF	551	A
Everspring	Target	100	50	0	N/A	N/A	PCF	550	Α
GreenWise	Publix	100	50	0	N/A	N/A	PCF	550	A
Nature's Promise	Stop & Shop and Giant Food	100	50	0	N/A	N/A	PCF	550	A
Rosey by Thrive Market	Thrive Market	100	≥50	0	N/A	N/A	TCF	550	A
Pacific Blue Basic	Georgia-Pacific	100	25	0	N/A	N/A	PCF	525	B+
Scott Professional Standard Roll	Kimberly-Clark	100	20	0	N/A	N/A	PCF	520	В+
PlantPaper	PlantPaper	0	0	100% bamboo	FSC 100%	N/A	None	500	B+
Amazon Aware	Amazon	0	0	100% bamboo	FSC 100%	N/A	ECF	400	В
Bambooloo	The Nuturing Co	0	0	100% bamboo	FSC 100%	N/A	ECF	400	В
Betterway	Betterway	0	0	100% bamboo	FSC 100%	N/A	ECF	400	В
Bim Bam Boo	Bim Bam Boo	0	0	100% bamboo	FSC 100%	N/A	ECF	400	В
Caboo	Caboo	0	0	100% bamboo	FSC 100%	N/A	ECF	400	В
Cheeky Panda	Cheeky Panda	0	0	100% bamboo	FSC 100%	N/A	ECF	400	В
Cloud Paper	Cloud Paper	0	0	100% bamboo	FSC 100%	N/A	ECF	400	В
Grove Co. Paper	Grove Collaborative	0	0	100% bamboo	FSC 100%	N/A	ECF	400	В
NatureZway	NatureZway	0	0	100% bamboo	FSC 100%	N/A	ECF	400	В
No.2	Rizzi Home	0	0	100% bamboo	No	Full credit	ECF	400	В
Reel Paper	Reel Paper	0	0	100% bamboo	FSC 100%	N/A	ECF	400	В
Silk'n Soft, Oh' Natural Unbleached	True Earth Paper Corp	0	0	100% bamboo	No	Half credit	None	400	В

Page 18 THE ISSUE WITH TISSUE FIFTH EDITION NRDC

TOILET PAPER

Brand	Company	Total % Recycled Content	% Post- Consumer	% Forest or Bamboo Fiber	FSC Certification	Forest and Non-FSC Bamboo Fiber Avoid Primary Forest Degradation and Conversion?	Bleaching Process	Score	Grade
Who Gives A Crap, Premium 100% Bamboo	Who Gives A Crap	0	0	100% bamboo	FSC 100%	N/A	ECF	400	В
Silk'n Soft, White	True Earth Paper Corp	0	0	100% bamboo	No	Half credit	ECF	300	С
TUSHY	TUSHY	0	0	100% bamboo	No	Half credit	ECF	300	С
Cottonelle Professional	Kimberly-Clark	≥20	≥20	≤80% forest fiber	FSC Mix	No	ECF/PFC	200	D
Great Value Soft & Strong (24 and 30 roll)	Walmart	30	0	70% forest fiber	FSC Mix	No	ECF	190	D
Great Value Soft & Strong (6, 12, and 18 roll)	Walmart	30	0	70% forest fiber	72% FSC Mix ^a	No	ECF	170.4	D
Charmin	Procter & Gamble	5	0	95% forest fiber	FSC Mix	No	ECF	115	F
Quilted Northern Ultra Plush	Georgia-Pacific	≥lb	0	≤99% forest fiber	FSC Mix	No	ECF	103	F
Quilted Northern Ultra Soft & Strong	Georgia-Pacific	≥ĺb	0	≤99% forest fiber	FSC Mix	No	ECF	103	F
Amazon Basics	Amazon	0	0	100% forest fiber	FSC Mix	No	ECF	100	F
Cottonelle Ultra	Kimberly-Clark	0	0	100% forest fiber	FSC Mix	No	ECF	100	F
Great Value 1000	Walmart	0	0	100% forest fiber	FSC Mix	No	ECF	100	F
HDX	Home Depot	0	0	100% forest fiber	FSC Mix	No	ECF	100	F
Kirkland	Costco	0	0	100% forest fiber	FSC Mix	No	ECF	100	F
Kroger Soft & Strong	Kroger	0	0	100% forest fiber	FSC Mix	No	ECF	100	F
Presto!, Ultra-Strong	Amazon	0	0	100% forest fiber	FSC Mix	No	ECF	100	F
Scott 1000	Kimberly-Clark	0	0	100% forest fiber	FSC Mix	No	ECF	100	F
Scott ComfortPlus	Kimberly-Clark	0	0	100% forest fiber	FSC Mix	No	ECF	100	F
Trader Joe's Super Soft	Trader Joe's	0	0	100% forest fiber	FSC Mix	No	ECF	100	F
365 by Whole Foods Market, Sustainably Soft	Whole Foods Market	0	0	100% forest fiber	FSC Mix	No	ECF	100	F
Great Value Ultra Strong	Walmart	0	0	100% forest fiber	33% FSC Mix ^a	No	ECF	33	F
Angel Soft	Georgia-Pacific	≥lb	0	≤99% forest fiber	No	No	ECF	4	F
Aria	Georgia-Pacific	≥l ^b	0	≤99% forest fiber	No	No	ECF	4	F
Fiora	Solaris Paper	0	0	100% forest fiber	No	No	ECF	0	F
H-E-B Our Finest	H-E-B	0	0	100% forest fiber	No	No	ECF	0	F
Moxie	Lowe's	0	0	100% forest fiber	No	No	ECF	0	F
Paperbird Soft & Strong	ShopRite	0	0	100% forest fiber	No	No	ECF	0	F
Presto!, Regular	Amazon	0	0	100% forest fiber	None	No	ECF	0	F

Page 19 THE ISSUE WITH TISSUE FIFTH EDITION NRDC

TOILET PAPER

Brand	Company	Total % Recycled Content	% Post- Consumer	% Forest or Bamboo Fiber	FSC Certification	Forest and Non-FSC Bamboo Fiber Avoid Primary Forest Degradation and Conversion?	Bleaching Process	Score	Grade
Publix Super Soft	Publix	0	0	100% forest fiber	No	No	ECF	0	F
Publix Ultra Strong	Publix	0	0	100% forest fiber	No	No	ECF	0	F
Softly	Albertsons (including Safeway)	0	0	100% forest fiber	No	No	ECF	0	F
Stop & Shop and Giant Food	Ahold Delhaize	0-15	0	85-100% forest fiber ^c	No ^d	No	ECF	0	F
Up & Up	Target	0	0	100% forest fiber	No	No	ECF	0	F
Wegmans	Wegmans	0	0	100% forest fiber	No	No	ECF	0	F
Willow Thick & Soft	ALDI	0	0	100% forest fiber	Noe	No	ECF	0	F

- a A Walmart representative noted that this product is sometimes FSC Mix certified and sometimes not, depending on the supplier. Because they provided an approximate percentage of the product that carries the FSC Mix logo, its grade reflects partial credit for this criterion.
- b A Georgia-Pacific representative noted that its tissue products do not have a specified level of forest fiber or recycled content, stating that, "We run to spec (e.g. softness, strength, absorbency, thickness) and not to recipe and our recipes can and do vary widely across facilities and across time. It would not be accurate to say that they're 100% virgin forest fiber." We asked that the representative provide us with each product's minimum or approximate average level of recycled content, but did not receive a response. For this reason, we have set the minimum recycled content for these products at 1%.
- c An Ahold Delhaize representative noted that this product contains 85-100% virgin forest fiber with the remainder being pre-consumer recycled content. Because of this variance, the product's grade was calculated using its lowest occurrence of recycled content.
- d An Ahold Delhaize representative noted that this product is sometimes FSC certified and sometimes not, depending on the supplier. Because they did not provide an approximate percentage of the product that carries an FSC logo, it does not receive credit for this criterion.
- e An ALDI representative noted that this product is sometimes FSC certified and sometimes not, depending on the supplier. Because they did not provide an approximate percentage of the product that carries an FSC logo, it does not receive credit for this criterion.

Page 20 THE ISSUE WITH TISSUE FIFTH EDITION NRDC

PAPER TOWELS

Brand	Company	Total % Recycled Content	% Post- Consumer	% Forest or Bamboo Fiber	FSC Certification	Forest and Non-FSC Bamboo Fiber Avoid Primary Forest Degradation and Conversion?	Bleaching Process	Score	Grade
Everspring	Target	100	100	0	N/A	N/A	PCF	600	A+
365 by Whole Foods Market, 100% Recycled	Whole Foods Market	100	85	0	N/A	N/A	PCF	585	A+
Green Forest	Green Forest	100	80	0	N/A	N/A	PCF	580	A+
Natural Value	Natural Value	100	80	0	N/A	N/A	PCF	580	A+
Natural Value, Naturally Unbleached	Natural Value	100	80	0	N/A	N/A	None	580	A+
Reel Paper, Premium Recycled	Reel Paper	100	80	0	N/A	N/A	PCF	580	A+
Seventh Generation, Unbleached	Seventh Generation	100	≥80	0	N/A	N/A	None	580	A+
Trader Joe's	Trader Joe's	100	80	0	N/A	N/A	PCF	580	A+
Field & Future by H-E-B	H-E-B	100	60	0	N/A	N/A	PCF	560	Α
Marcal	Marcal	100	≥60	0	N/A	N/A	PCF	560	Α
Marcal Small Steps	Marcal	100	≥60	0	N/A	N/A	PCF	560	Α
Simple Truth	Kroger	100	60	0	N/A	N/A	PCF	560	Α
Seventh Generation, White	Seventh Generation	100	≥51	0	N/A	N/A	PCF	551	Α
GreenWise	Publix	100	50	0	N/A	N/A	PCF	550	Α
Nature's Promise	Stop & Shop and Giant Food	100	50	0	N/A	N/A	PCF	550	A
Rosey by Thrive Market	Thrive Market	100	≥50	0	N/A	N/A	TCF	550	Α
Amazon Aware	Amazon	0	0	100% bamboo	FSC 100%	N/A	ECF	400	В
Bambooloo	The Nuturing Co	0	0	100% bamboo	FSC 100%	N/A	ECF	400	В
Bim Bam Boo	Bim Bam Boo	0	0	100% bamboo	FSC 100%	N/A	ECF	400	В
Caboo	Caboo	0	0	100% bamboo	FSC 100%	N/A	ECF	400	В
Cheeky Panda	Cheeky Panda	0	0	100% bamboo	FSC 100%	N/A	ECF	400	В
Cloud Paper	Cloud Paper	0	0	100% bamboo	FSC 100%	N/A	ECF	400	В
Grove Co. Paper	Grove Collaborative	0	0	100% bamboo	FSC 100%	N/A	ECF	400	В
NatureZway	NatureZway	0	0	100% bamboo	FSC 100%	N/A	ECF	400	В
Great Value Everyday Strong	Walmart	30	0	70% forest fiber	FSC Mix	No	ECF	190	D
Bounty Advanced	Procter & Gamble	10	0	90% forest fiber	FSC Mix	No	ECF	130	F
Amazon Basics	Amazon	0	0	100% forest fiber	FSC Mix	No	ECF	100	F
HDX	Home Depot	0	0	100% forest fiber	FSC Mix	No	ECF	100	F
Kroger	Kroger	0	0	100% forest fiber	FSC Mix	No	ECF	100	F

Page 21 THE ISSUE WITH TISSUE FIFTH EDITION NRDC

PAPER TOWELS

Brand	Company	Total % Recycled Content	% Post- Consumer	% Forest or Bamboo Fiber	FSC Certification	Forest and Non-FSC Bamboo Fiber Avoid Primary Forest Degradation and Conversion?	Bleaching Process	Score	Grade
Paperbird Ultra Strong	ShopRite	0	0	100% forest fiber	FSC Mix	No	ECF	100	F
Viva	Kimberly-Clark	0	0	100% forest fiber	FSC Mix	No	ECF	100	F
Bounty	Procter & Gamble	10	0	90% forest fiber	No	No	ECF	40	F
Stop & Shop and Giant Food	Ahold Delhaize	5-10	0	90-95% forest fiber ^f	No	No	ECF	20	F
Brawny	Georgia-Pacific	≥ ^g	0	≤99% forest fiber	No	No	ECF	4	F
Sparkle	Georgia-Pacific	≥lg	0	≤99% forest fiber	No	No	ECF	4	F
Boulder	ALDI	0	0	100% forest fiber	Noh	No	ECF	0	F
Brightly	Albertsons (including Safeway)	0	0	100% forest fiber	No	No	ECF	0	F
Fiora	Solaris Paper	0	0	100% forest fiber	No	No	ECF	0	F
Great Value Ultra Strong	Walmart	0	0	100% forest fiber	No	No	ECF	0	F
H-E-B Our Finest	H-E-B	0	0	100% forest fiber	No	No	ECF	0	F
Kirkland	Costco	0	0	100% forest fiber	No	No	ECF	0	F
Moxie	Lowe's	0	0	100% forest fiber	No	No	ECF	0	F
Presto!	Amazon	0	0	100% forest fiber	No	No	ECF	0	F
Publix	Publix	0	0	100% forest fiber	No	No	ECF	0	F
Up & Up	Target	0	0	100% forest fiber	No	No	ECF	0	F
Wegmans	Wegmans	0	0	100% forest fiber	No	No	ECF	0	F

Page 22 THE ISSUE WITH TISSUE FIFTH EDITION NRDC

f An Ahold Delhaize representative noted that this product contains 90-95% virgin forest fiber with the remainder being pre-consumer recycled content. Because of this variance, the product's grade was calculated using its lowest occurrence of recycled content.

g A Georgia-Pacific representative noted that its tissue products do not have a specified level of forest fiber or recycled content, stating that, "We run to spec (e.g. softness, strength, absorbency, thickness) and not to recipe and our recipes can and do vary widely across facilities and across time. It would not be accurate to say that they're 100% virgin forest fiber." We asked that the representative provide us with each product's minimum or approximate average level of recycled content, but did not receive a response. For this reason, we have set the minimum recycled content for these products at 1%.

h An ALDI representative noted that this product is sometimes FSC certified and sometimes not, depending on the supplier. Because they did not provide an approximate percentage of the product that carries an FSC logo, it does not receive credit for this criterion.

& FACIAL TISSUE

Brand	Company	Total % Recycled Content	% Post- Consumer	% Forest or Bamboo Fiber	FSC Certification	Forest and Non-FSC Bamboo Fiber Avoid Primary Forest Degradation and Conversion?	Bleaching Process	Score	Grade
Green Forest	Green Forest	100	80	0	N/A	N/A	PCF	580	A+
Natural Value	Natural Value	100	80	0	N/A	N/A	PCF	580	A+
Trader Joe's	Trader Joe's	100	80	0	N/A	N/A	PCF	580	A+
Fluff Out	Marcal	100	≥60	0	N/A	N/A	PCF	560	Α
Simple Truth	Kroger	100	60	0	N/A	N/A	PCF	560	Α
Seventh Generation	Seventh Generation	100	≥51	0	N/A	N/A	PCF	551	Α
Rosey by Thrive Market	Thrive Market	100	≥50	0	N/A	N/A	TCF	550	Α
Surpass	Kimberly-Clark	100	≥30	0	N/A	N/A	PCF	530	B+
Amazon Aware	Amazon	0	0	100% bamboo	FSC 100%	N/A	ECF	400	В
Bambooloo	The Nuturing Co	0	0	100% bamboo	FSC 100%	N/A	ECF	400	В
Bim Bam Boo	Bim Bam Boo	0	0	100% bamboo	FSC 100%	N/A	ECF	400	В
Caboo	Caboo	0	0	100% bamboo	FSC 100%	N/A	ECF	400	В
Cheeky Panda	Cheeky Panda	0	0	100% bamboo	FSC 100%	N/A	ECF	400	В
Cloud Paper	Cloud Paper	0	0	100% bamboo	FSC 100%	N/A	ECF	400	В
Grove Co. Paper	Grove Collaborative	0	0	100% bamboo	FSC 100%	N/A	ECF	400	В
NatureZway	NatureZway	0	0	100% bamboo	FSC 100%	N/A	ECF	400	В
Who Gives A Crap, Forest Friendly Tissues	Who Gives A Crap	0	0	100% bamboo	FSC 100%	N/A	ECF	400	В
Puffs	Procter & Gamble	5	0	95% forest fiber	FSC Mix	No	ECF	115	F
365 by Whole Foods Market, Sustainably Soft	Whole Foods Market	0	0	100% forest fiber	FSC Mix	No	ECF	100	F
Great Value Everyday Soft	Walmart	0	0	100% forest fiber	FSC Mix	No	ECF	100	F
Great Value Soothing Lotion	Walmart	0	0	100% forest fiber	FSC Mix	No	ECF	100	F
Great Value Ultra Soft	Walmart	0-2 ⁱ	0	98-100% forest fiber	FSC Mix	No	ECF	100	F
Kirkland	Costco	0	0	100% forest fiber	FSC Mix	No	ECF	100	F
Kleenex Everyday	Kimberly-Clark	0	0	100% forest fiber	FSC Mix	No	ECF	100	F
Kroger	Kroger	0	0	100% forest fiber	FSC Mix	No	ECF	100	F
Paperbird Soft & Strong	ShopRite	0	0	100% forest fiber	FSC Mix	No	ECF	100	F
Up & Up Soft	Target	0	0	100% forest fiber	FSC Mix	No	ECF	100	F
Stop & Shop and Giant Food	Ahold Delhaize	10	0	90% forest fiber	No	No	ECF	40	F
Amazon Basics	Amazon	0	0	100% forest fiber	No	No	ECF	0	F

Page 23 THE ISSUE WITH TISSUE FIFTH EDITION NRDC

& FACIAL TISSUE

Brand	Company	Total % Recycled Content	% Post- Consumer	% Forest or Bamboo Fiber	FSC Certification	Forest and Non-FSC Bamboo Fiber Avoid Primary Forest Degradation and Conversion?	Bleaching Process	Score	Grade
Fiora	Solaris Paper	0	0	100% forest fiber	No	No	ECF	0	F
Presto!	Amazon	0	0	100% forest fiber	No	No	ECF	0	F
Publix	Publix	0	0	100% forest fiber	No	No	ECF	0	F
Softly	Albertsons (including Safeway)	0	0	100% forest fiber	No	No	ECF	0	F
Wegmans	Wegmans	0	0	100% forest fiber	No	No	ECF	0	F
Willow	ALDI	0	0	100% forest fiber	No ^j	No	ECF	0	F

i A Walmart representative noted that, depending on the supplier, this product contains 0-2% recycled content with the remainder being virgin forest fiber. Because of this variance, the product's grade was calculated using its lowest occurrence of recycled content.

Page 24 THE ISSUE WITH TISSUE FIFTH EDITION NRDC

j An ALDI representative noted that this product is sometimes FSC certified and sometimes not, depending on the supplier. Because they did not provide an approximate percentage of the product that carries an FSC logo, it does not receive credit for this criterion.

ENDNOTES

- 1 Jennifer Skene and Shelley Vinyard, The Issue with Tissue: How Americans Are Flushing Forests Down the Toilet, NRDC, February 2019, https://www.nrdc.org/sites/default/files/issue-tissue-how-americans-are-flushing-forests-down-toilet-report.pdf.
- 2 British Columbia Central Statistics Agency, "Annual Exports by Province," May 4, 2023, p. 5, https://www2.gov.bc.ca/assets/gov/data/statistics/business-industry-trade/trade/exp_annual_exp_prov.pdf; British Columbia Central Statistics Agency, "Annual Exports by Province," November 5, 2019, p. 5, https://www2.gov.bc.ca/assets/gov/data/statistics/business-industry-trade/trade/exp_exports_by_prov_annual_data.pdf.
- 3 British Columbia Central Statistics Agency, "Annual Exports," May 4, 2023. British Columbia is excluded from this figure as only a minority of the province's forests are boreal
- 4 Peter Berg and Oskar Lingqvist, "Pulp, Paper, and Packaging in the Next Decade: Transformational Change," McKinsey & Company, August 7, 2019, https://www.mckinsey.com/industries/paper-forest-products-and-packaging/our-insights/pulp-paper-and-packaging-in-the-next-decade-transformational-change; David Feber et al., "Perspectives on Paper and Forest Products in 2022: How Can CEOs Navigate Today's Era of Transformational Change?," McKinsey & Company, April 4, 2022, https://www.mckinsey.com/industries/paper-forest-products-and-packaging/our-insights/perspectives-on-paper-and-forest-products-in-2022-how-can-ceos-navigate-todays-era-of-transformational-change.
- 5 Michael J. Coren, "You Need a Bidet, But Not for the Reason You Think," Washington Post, April 4, 2023, https://www.washingtonpost.com/climate-environment/2023/04/04/bidets-benefits-history-environmental-impact/; Statista, "Tissue & Hygiene Paper—United States," https://www.statista.com/outlook/cmo/tissue-hygiene-paper/united-states (accessed July 3, 2023).
- 6 Sherry Frey et al., "Consumers Care About Sustainability—and Back It Up with Their Wallets," McKinsey & Company, February 6, 2023, https://www.mckinsey.com/industries/consumer-packaged-goods/our-insights/consumers-care-about-sustainability-and-back-it-up-with-their-wallets.
- 7 IBM Institute for Business Value, "Meet the 2020 Consumers Driving Change," June 2020, p. 1, https://www.ibm.com/downloads/cas/EXK4XKX8.
- 8 IBM Institute for Business Value, "Meet the 2020 Consumers," 7.
- 9 Ashley Jordan, "For Earth Day, a Growing Chorus Calls on P&G to Take Action," NRDC, April 20, 2022, https://www.nrdc.org/bio/ashley-jordan/earth-day-growing-chorus-calls-pg-take-action.
- 10 State of Colorado, Office of the Governor, Executive Order D 2022 016 Amending and Restating Executive Order D 2019 016 Concerning the Greening of State Government, April 22, 2022, https://spl.cde.state.co.us/artemis/goserials/go4312internet/go43122022016internet.pdf.
- 11 Jennifer Skene, "Colorado Governor Ushers In a New Era of Boreal Protection," NRDC, May 2, 2022, https://www.nrdc.org/bio/jennifer-skene/colorado-governor-ushers-new-era-boreal-protection.
- 12 European Commission, "Deforestation-Free Products," https://environment.ec.europa.eu/topics/forests/deforestation/regulation-deforestation-free-products_en (accessed August 8, 2023).
- U.S. Environmental Protection Agency (hereinafter EPA), "Definitions, Specifications, and Other Guidance About the Comprehensive Procurement Guideline Program," https://www.epa.gov/smm/definitions-specifications-and-other-guidance-about-comprehensive-procurement-guideline-program (accessed July 1, 2023); Aiken County [South Carolina] Government, "Solid Waste Definitions," https://www.aikencountysc.gov/Reference/PWESolidWasteDefinitions.pdf.
- 14 EPA, "Definitions, Specifications"; Aiken County Government, "Solid Waste Definitions."
- 15 EPA, "Recycling Economic Information (REI) Report," last updated August 4, 2023, https://www.epa.gov/smm/recycling-economic-information-rei-report.
- Kirsten Korosec, "Kimberly-Clark Study Pinpoints Bamboo as Possible Alternative Fiber," *Environment & Energy Leader*, February 5, 2014, https://www.environmentalleader.com/2014/02/kimberly-clark-study-pinpoints-bamboo-as-possible-alternative-fiber/; Natural Resources Canada, "Forest Products and Applications," https://www.nrcan.gc.ca/forests/industry/products-applications/13317 (accessed August 17, 2023).
- 17 Forest Stewardship Council (hereinafter FSC), "FSC National Forest Stewardship Standard of the People's Republic of China," December 1, 2021, https://fsc.org/en/document-centre/documents/resource/185.
- 18 For examples from company websites, see Caboo, "Zero Cut. One Planted.," https://cabooproducts.com/pages/sustainability (accessed July 31, 2023); PlantPaper, "Why We Developed PlantPaper," https://plantpaper.us/pages/why-plant (accessed July 31, 2023); Reel Paper, "Reel Change," https://reelpaper.com/pages/sustainability (accessed July 31, 2023).
- Eyes on the Forest, *The Truth Behind APP's Greenwash*, December 2011, http://www.eyesontheforest.or.id/uploads/default/report/Eyes-on-the-Forest-Investigative-Report-The-truth-behind-APPs-greenwash.pdf; Environmental Paper Network (hereinafter EPN), *Conflict Plantations*, October 2019, https://environmentalpaper.org/wp-content/uploads/2020/03/APP-social-conflicts-mapping.pdf; Joshua Martin, "Flushing the Climate 2023: A Follow Up Scorecard on Which U.S. Stores Are Still Selling the World's Most Destructive Toilet Paper," EPN, April 19, 2023, https://environmentalpaper.org/2023/04/flushing-the-climate-2023-a-follow-up-scorecard-on-which-u-s-stores-are-still-selling-the-worlds-most-destructive-toilet-paper/.
- 20 Martin, "Flushing the Climate 2023."
- 21 Stefan Labbé, "Deforestation Inc.: Is Canada's Biggest Forestry Company Living Up to Its Green Promises?," Glacier Media Group, March 13, 2023, https://www.vancouverisawesome.com/resources-agriculture/deforestation-inc-is-canadas-biggest-forestry-company-living-up-to-its-green-promises-6690421.
- 22 Courtenay Lewis, "Paper Excellence Expands Control into Canada's Logging," NRDC, February 17, 2023, https://www.nrdc.org/bio/courtenay-lewis/paper-excellence-expands-control-canadas-logging; Lewis and Jordan, Pulp Fiction; Lewis and Jordan, By a Thousand Cuts.
- 23 Arielle Samuelson and Emily Atkin, "The Climate Case for Getting a Bidet," Heated, March 17, 2023, https://heated.world/p/the-truth-about-big-toilet-paper.
- 24 EarthTalk, "Wipe or Wash? Do Bidets Save Forest and Water Resources?", Scientific American, December 16, 2009, https://www.scientificamerican.com/article/earth-talks-bidets/.
- 25 Shelley Vinyard, "Investors' Directive to P&G: Stop Driving Deforestation," NRDC, October 14, 2020, https://www.nrdc.org/bio/shelley-vinyard/investors-directive-pg-stop-driving-deforestation.
- 26 Shelley Vinyard, "Deflect, Distract, & Ignore: P&G's Greenwashing Continues," NRDC, March 30, 2021, https://www.nrdc.org/bio/shelley-vinyard/deflect-distract-ignore-pgs-greenwashing-continues.
- 27 NRDC, "P&G Board Members Face Shareholder Vote Over Forest Destruction in Supply Chain," September 20, 2022, https://www.nrdc.org/press-releases/pg-board-members-face-shareholder-vote-over-forest-destruction-supply-chain.
- $\label{eq:solution} 28 \quad \text{Procter \& Gamble (hereinafter P\&G)}, P\&G's \textit{Forest Positive Sourcing Policy}, \text{October 2021, p. 2, https://assets.ctfassets.net/oggad6svuzkv/5L714uBWKouPrlwEuPTtsc/5d30eb9db759ced337fae13ab3alb71e/8958_P-G_WoodPulp_Policy_A-3.pdf.$
- 29 P&G, "Forestry Practices Update," July 2022, pp. 2-3, https://sl.q4cdn.com/695946674/files/doc_downloads/2022/07/Forestry-Practices-Update-July-2022.pdf.

Page 25 THE ISSUE WITH TISSUE FIFTH EDITION NRDC

- 30 Jennifer Skene and Shelley Vinyard, "P&G's Forest Degradation Claim Warrants SEC Scrutiny," NRDC, November 30, 2022, https://www.nrdc.org/bio/jennifer-skene/pgs-forest-degradation-claim-warrants-sec-scrutiny.
- 31 Ibid
- 32 P&G, P&G's Forest Commodities Policy, May 2023, https://sl.q4cdn.com/695946674/files/doc_downloads/esg/2023/P-G-Forest-Commodities-Policy-May-2023. pdf.
- $33 \quad \text{Shelley Vinyard, "P\&G's Vanished Forest Degradation Commitment," NRDC, June 29, 2023, https://www.nrdc.org/bio/shelley-vinyard/pgs-vanished-forest-degradation-commitment.} \\$
- 34 Skene and Vinyard, The Issue with Tissue, p. 21.
- 35 Canopy, Survival: A Plan for Saving Forests and Climate, A Pulp Thriller, January 2020, https://canopyplanet.org/wp-content/uploads/2020/01/SURVIVAL-Next-Gen-Pathway.pdf.
- For an example of a tissue company developing products from sustainable alternative fibers, see Essity, "Essity Begins Tissue Production from Alternative Fibers," September 30, 2021, https://www.essity.com/media/press-release/essity-begins-tissue-production-from-alternative-fibers/281bcb2a616bfa8d/.
- Here is how we derived this figure: Using EPN's "Paper Calculator," we selected "Start an Individual Calculation." From there, we selected "Tissue (bathroom/kitchen tissue)" for the paper grade and input a quantity of 1.6 million U.S. short tons and "0" for the percentage of recycled content. Then we added a comparison paper of the same paper grade and quantity but with 100 percent recycled content. After selecting the "Calculate Impacts" button, we found that the 100% recycled content tissue option results in 26.2 billion pounds less CO₂ equivalent emissions than the tissue with no recycled content. Using the EPA's "Greenhouse Gas Equivalencies Calculator," we could then see those emissions are equivalent to the emissions of 2.6 million gasoline-powered passenger vehicles in one year. EPN, "Paper Calculator," https://c.environmentalpaper.org/ (accessed July 12, 2023); EPA, "Greenhouse Gas Equivalencies Calculator," https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator (accessed July 13, 2023).
- 38 Jennifer Skene, "Scientists: Logging in Primary Forests Drives Degradation," NRDC, November 16, 2022, https://www.nrdc.org/bio/jennifer-skene/scientists-logging-primary-forests-drives-degradation.
- 39 Food and Agriculture Organization of the United Nations, Free Prior and Informed Consent: An Indigenous Peoples' Right and a Good Practice for Local Communities, 2016, http://www.fao.org/3/a-i6190e.pdf.
- 40 Lewis and Jordan, Pulp Fiction.
- 41 Richard Schuster et al., "Vertebrate Biodiversity on Indigenous-Managed Lands in Australia, Brazil, and Canada Equals That in Protected Areas," Environmental Science & Policy 101 (November 2019): 1–6, https://www.rcinet.ca/en/wp-content/uploads/sites/3/2019/07/Schuster-et-al-Indigenous-lands.pdf.
- 42 Tanya C. Tran, Natalie C. Ban, and Jonaki Bhattacharyya., "A Review of Successes, Challenges, and Lessons from Indigenous Protected and Conserved Areas," Biological Conservation 241 (January 2020), https://doi.org/10.1016/j.biocon.2019.108271.
- 43 Skene and Vinyard, The Issue with Tissue.
- 44 FSC, "FSC National Forest Stewardship Standard."
- 45 World Resources Institute, Greenhouse Gas Protocol, "FAQ," https://ghgprotocol.org/sites/default/files/standards_supporting/FAQ.pdf (accessed July 11, 2023).
- 46 Joshua Axelrod, "Corporate Honesty and Climate Change: Time to Own Up and Act," NRDC, February 26, 2019, https://www.nrdc.org/bio/josh-axelrod/corporate-honesty-and-climate-change-time-own-and-act.
- 47 Ibid.
- 48 This is by no means an exhaustive list. For more recommendations for banks and investors, see EPN and BankTrack, "Green Paper, Red Lines," June 2016, https://environmentalpaper.org/wp-content/uploads/2016/11/Green-Paper-Red-Lines.pdf. Also see Jeff Conant, "BlackRock's Big Deforestation Problem," Friends of the Earth, Amazon Watch, and Profundo, August 2019, https://amazonwatch.org/assets/files/2019-blackrocks-big-deforestation-problem.pdf.
- 49 EPN and BankTrack "Green Paper, Red Lines."
- 50 Target, "Target Zero," https://www.target.com/c/target-zero/-/N-hnosx (accessed July 31, 2023).
- 51 Ben Unglesbee, "'We Have To Do Something': Can Retail Close the Gap on Supply Chain Emissions?," Industry Dive, July 18, 2022, https://www.retaildive.com/news/retail-scope-3-supply-chain-carbon-emissions/626973/.
- 52 Chris Baskind, "Which Is Greener: Toilet Paper or a Bidet?," Treehugger, last updated May 31, 2020, https://www.treehugger.com/which-is-greener-toilet-paper-or-a-bidet-4863723; EarthTalk, "Wipe or Wash? Do Bidets Save Forest and Water Resources?" Scientific American, December 16, 2009, https://www.scientificamerican.com/article/earth-talks-bidets/.
- 53 Statista, "Most Used Brands of Toilet Paper in the U.S. 2020," https://www.statista.com/statistics/275967/us-households-most-used-brands-of-toilet-paper/(accessed July 3, 2023).
- 54 FSC, "Forest Stewardship Council," https://ca.fsc.org/en-ca (accessed June 20, 2023).
- 55 Skene and Vinyard, The Issue with Tissue.
- 56 Lewis and Jordan, By a Thousand Cuts, 10.
- 57 NRDC, "Letter from Scientists to the Signatories of the Glasgow Leaders' Declaration on Forests and Land Use," November 16, 2022, https://www.nrdc.org/sites/default/files/media-uploads/scientists_letter_to_glasgow_declaration_signatories_nov_2022_final.pdf.
- 58 Tobias Schultz and Aditi Suresh, *Life Cycle Assessment Comparing Ten Sources of Manmade Cellulose Fiber*, SCS Global Services, October 10, 2017, https://cdn.scsglobalservices.com/files/resources/SCS-Stella-LCA-MainReport-101017.pdf; Korosec, "Kimberly-Clark Study Pinpoints Bamboo."
- 59 Canopy, "Canopy's Bamboo Position," https://canopyplanet.org/solutions/next-generation-solutions/canopys-bamboo-position/ (accessed August 1, 2023).
- 60~ FSC, "FSC National Forest Stewardship Standard."
- 61 Conservatree, "Chlorine Free Processing."
- 62 Ibid
- 63 Because 1994 is the year after which any bamboo plantations created by clearing natural forests cannot qualify for FSC certification (except in select circumstances), it is the adopted cutoff date here. FSC, "FSC National Forest Stewardship Standard."

Page 26 THE ISSUE WITH TISSUE FIFTH EDITION NRDC