

Sustainable wood comes from forest management projects that are verified to preserve wildlife, minimize deforestation, protect the global climate, benefit water systems, and purify air. Sustainable wood can also be naturally fallen and collected. Sustainable forest management practices ensure the long-term vitality of our precious forests. Unfortunately, supporting these practices is not the norm.

THE CATASTROPHE OF DEFORESTATION VIA CONVENTIONAL FOREST MANAGEMENT

Forests are incredibly valuable for humanity. They cool the earth's climate, regulate and filter water, prevent flooding, and purify our air. They are also home to most of the land-dwelling animals and plants of the earth, and are a source of a nearly endless supply of materials, such as wood for building, plants for medicinal purposes, and much more.

Yet our forests are disappearing from the planet, and fast.

- **Forests have shrunk by half:** Just 400 years ago, our planet's land mass was two-thirds forest. Today the planet is only one-third forest.ⁱ
- **An area the size of NY State:** Every year, an area the size of New York State – roughly 36 million acres – of natural forest is lost to deforestation.ⁱⁱ

This kind of ecosystem decimation has dire consequences for humanity.

HOW HUMANITY DEPENDS ON FORESTS FOR SURVIVAL

Forests hold incredible social value for humanity, yet in many countries, tenure and land use rights for forested areas are not clearly defined or documented. Indigenous peoples are not afforded legal and customary rights to own, use, and manage the lands on which they have lived for centuries. Workers' rights are also a problem in many regions where laborers are not given living wages or safe working conditions. Some are even tricked into clearing their forests to make way for cash crops, only to find their land degraded and useless within a few years.

- **Forest dependent people:** Forests provide ecosystem services to 1.6 billion humans, including food, clothing, traditional medicines, and shelter.ⁱⁱⁱ
- **Forests and water quantity:** Managing the quantity of water – making sure there's not too much or too little – is another vital role played by forests. Tree cover prevents floods in rain seasons and drought in dry seasons by contributing to the complex hydrological cycle.^{iv}
- **Forests and water quality:** Forests maintain high water quality within the hydrological cycle, which is vital for providing clean drinking water to humanity. They do this by minimizing soil erosion, reducing sediment in water bodies, and filtering water pollutants.^v They clean all kinds of pollution out of water, including solvents, explosives, and organic waste.
- **Forests and ocean health!** Yes, believe it or not, our oceans depend on forests for their vitality, too. Decomposing tree leaves leach acids into the ocean that fertilize plankton – the lifeblood of all sea life.^{vi}

- **Human psychological wellbeing:** Study after study indicates that nature – and trees in particular – are crucial for the emotional wellbeing of humanity!^{vii}
- **Disease prevention through physical contact:** One study found that “natural killer (NK) activity” cells – those things that fight cancer and other disease in the human body - increase during and after contact with nature. It’s called forest bathing!^{viii}
- **Medical advances:** Forest plants provide thousands of compounds used in modern medicine. The yew tree that grows near the Pacific Ocean exhales taxane, a substance that is being used to treat cancer.^{ix}
- **Air filtration:** Trees release all kinds of aerosols (the good kind!) that are anti-bacterial, anti-viral, and anti-fungal. Our air is much cleaner because of these hard working plants! ^x
- **Regulate urban heat:** Greenery in cities – trees, grass, bushes – help to lessen the heat during summer weather. They do this by providing shade and screening out UV rays. In fact, cities with good tree cover are 10 or more degrees cooler than those without. ^{xi}

If you can believe it, this is just a small handful of ways forests directly benefit human lives. We are utterly dependent on them for our survival, our day to day wellbeing, and our long term vitality.

THE INCREDIBLE ECOLOGICAL VALUE OF TREES: FORESTS AND BIODIVERSITY

But humans aren’t the only living creatures that depend on forests for their health and happiness. It should come as no surprise that forests are also incredibly ecologically valuable. The most important role forests play in terms of natural life is in providing habitat for an incredibly diverse web of life, as you’ll see with these statistics:

- **Greatest concentration of biodiversity:** Forests are home to 80% of the world’s plant and animal species.^{xii}
- **Mass extinction:** Past mass extinction events (there are 5 in our earth’s history) happened very slowly over long periods of time. Yet within the last 100 years, about 10,000 species have gone extinct. We may be in the midst of the fastest mass extinction event ever. Currently, 32% of amphibians, 42% of turtles and tortoises, 12% of birds, and 23% of mammals are threatened with extinction.^{xiii}

Humanity is the cause of this mass extinction trend. A variety of factors, including deforestation, controlled fires, climate change, and more are all contributing to forest loss.

To give you an idea of how incredible these ecosystems are, take a tour of two amazing forested areas near to home.

American and Canadian Boreal Forest

The Boreal Forest of Canada and the US, which is approximately 1.4 million acres in size, accounts for one-quarter of all intact, original forest land remaining on earth.^{xiv} Here are some statistics about this amazing forested area:

- The Boreal Forest is home to billions of migratory songbirds as well as ducks, geese, and cranes; a wide range of fragile plants such as spruce, pine, aspen, polar, larch, sphagnum

moss, salmonberries, huckleberries, cranberries, and flowers; and large animals such as grizzly bears, wolves, wolverine, lynx and of course the iconic herds of caribou.

- Only 10% of Canada's Boreal Forest is currently protected (6% permanently).^{xv}
- The Canadian Boreal Forest is responsible for storing close to 186 billion tons of carbon in the form of soil organic matter and peatlands, ^{xvi} absorbing 11% of the world's carbon; only the ocean has a bigger impact on climate change.^{xvii}
- More than 4 million people (about 14% of Canada's population) live in the Boreal Forest, most of whom reside in Canadian First Nations communities that have been there for millennia.^{xviii}
- Canada's Boreal Forest makes up only one-third of the larger Circumpolar Boreal Forest which covers portions of Russia, Sweden, Finland, and Norway as well. That said, that one-third covers close to 60% of all land area in Canada (the only provinces it does not touch are PEI, Nova Scotia, and New Brunswick).^{xix}
- 80% of the world's unfrozen freshwater resources reside in Canada's Boreal Forest yet only 10% of it is protected.^{xx}

Amazon Rainforest

The Amazon rainforest is also an extremely important forested region, spanning several countries including Brazil, Peru, Colombia, Venezuela, Ecuador, Bolivia, Guyana, Suriname, and French Guiana. Here are some stats about the Amazon:

- It is home to 1 in 10 species on earth, and covers 1.4 billion acres of land.^{xxi}
- The Amazon covers 40% of South America, and contains 90 to 140 billion metric tons of carbon, so it's very important for protecting the global climate.^{xxii}
- More than 30 million people in 350 indigenous communities live in and depend on the Amazon.^{xxiii}
- The Amazon Rain Forest is two-thirds the size of the entire US.^{xxiv}

These are big numbers, but we need big forests. Especially when you consider the issue of climate change – a problem to which we will now turn.

FORESTS AND CLIMATE CHANGE

Climate change occurs when humans deposit an unnatural amount of greenhouse gas emissions into the atmosphere. Too many emissions of carbon dioxide, methane, nitrous oxides, and greenhouse gases upset the delicate balance in our atmosphere. When that happens, the solar energy that enters our atmosphere gets trapped. The greenhouse gases we've put into the atmosphere reflect solar heat back down toward the earth. That's why climate change is often referred to as global warming.

So how do these extra greenhouse gases end up in our atmosphere? Primarily through the burning of fossil fuels. You see, energy sources like natural gas, coal, and oil are actually concentrated forms of carbon – fossil fuels are stored carbon. When we burn them, they produce energy, and in the process they release the carbon that they stored. That's one of the biggest ways humans contribute to global climate change.

To reverse the trend of having too many global warming gases in our atmosphere, climate scientists have been researching a concept known as carbon sequestration, though it is also referred to as carbon capture and storage (CCS). Essentially it involves taking the excess greenhouse gas emissions and finding ways to lock it up (i.e. sequester it) so that it cannot warm up our planet. There are many techniques being explored:

- Removing carbon from fossil fuels before they are burned so that they produce energy without contributing to climate change.^{xxv}
- Putting rocks through chemical reactions to store carbon in porous openings.
- Using thick mud to absorb carbon and then sinking the mud deep below ground (a “carbon sink” if you will).

Unfortunately, human-made carbon sequestration systems have not yet proven to be effective in capturing and storing carbon safely (without secondary consequences) at a reasonable cost.^{xxvi} In fact, some carbon sinking methodologies that involve storing carbon dioxide underground have been linked to increased earthquake activity, making the cure worse than the disease.^{xxvii} But nature has an answer.

HOW FORESTS CAPTURE AND STORE GREENHOUSE GAS EMISSIONS

Our forest ecosystems are incredibly efficient at sinking carbon in the very fibers of their “bodies.” In other words, forests are the world’s most effective carbon sinks or carbon sequestration systems.

- **Terrestrial sequestration:** Soil, plants, and animals will breathe in carbon dioxide during their normal lives. In the case of trees, they then convert that carbon dioxide into carbon-based plant matter known as biomass, including roots, trunks, branches, and leaves. In healthy forests, rotting leaves, debris, and other organisms also work together to store carbon in soil. In northern forests, twice as much carbon is stored in soil than above ground.^{xxviii}
- **Durable products:** When we make products out of wood, the finished products still contain the carbon the tree absorbed as it grew. As long as that wood product remains intact (and not decomposing in a landfill), the carbon remains sequestered.

If you need an idea of just how powerful forests are in terms of storing carbon, check out these statistics:

- **Trees and carbon sequestration in the US:** The US Forest Service estimates that forests make up 90% of the US carbon sink.^{xxix} According to the Climate Change Resource Center, forests in the US offset 310 million metric tons of fossil fuel emissions of carbon, which is 20% of all American carbon dioxide emissions.^{xxx}
- **Trees and carbon storage in Canada:** Canadian Boreal Forest ecozones currently store 26 years’ worth of *worldwide* greenhouse gas emissions.^{xxxi}
- **Forests versus the atmosphere:** In aggregate, there is more carbon stored in rainforests than in our atmosphere.^{xxxii}

Why deforestation increases greenhouse gas emissions in the atmosphere

Here's the problem: We're cutting down our forests, and that means they're not able to do the work of storing carbon. Deforestation releases more greenhouse gas emissions into our atmosphere than the transport sector. Worldwide deforestation emissions are also larger than both America's and China's annual emissions!^{xxxiii} Need more proof?

- **Greenhouse gas emission equivalents:** Deforestation and forest degradation are responsible for anywhere between 6% and 20% of the world's climate emissions.^{xxxiv xxxv}
- **One day of tropical deforestation activity:** This is equivalent to 12.5 million people flying from New York to London in terms of greenhouse gas emissions released.^{xxxvi}
- **Amplification effect:** When forests are lost, not only is the carbon stored in trees released, we also lose the carbon sinking activity of a living, breathing forest. This is called the amplification effect, and it's a double whammy with very serious consequences.

Scientists warn that we may have already pumped more carbon into the atmosphere than our planet can absorb. That means climate change may already be out of our control. But if we want to stop the absolute worst case scenarios from developing, protecting our forests is a requirement.^{xxxvii}

CONSEQUENCES OF DEFORESTATION VIA INDUSTRY AROUND THE WORLD

Nearly every industry in the world has an impact on forests. Many use forestry materials directly, either to make their finished products or as fuel for energy to run their machines. Still other industries simply clear forests to make room for other activities.

Deforestation is the clearing of forests on a large scale, which often results in significant damage to local ecosystems. Deforestation often takes place legally, but up to 80% of the timber harvested in some countries is taken illegally.^{xxxviii}

These statistics will demonstrate how serious deforestation is on our own continent:

- **Oil and gas exploration:** The oil and gas industry must clear forests in order to access the oil, natural gas, and coal we use to power our lives. Every year, we lose 1% of the Boreal Forest.^{xxxix} Tar sands oil development in Canada will result in clearing of 300,000 hectares of Boreal Forest and fragmenting the habitat by constructing 30,000 km of roads.^{xl}
- **Logging:** Wood is a huge part of our modern culture – we use it in our buildings, our offices (paper), and our homes. All of this wood comes from forests that are logged for the tree resources. Large portions of southern Boreal Forest areas have been licensed to logging companies that clear-cut close to one million hectares of Canada's public forests annually. Since 1975, 65 million acres have been cut down.^{xli}
- **Mining:** Mining operations – especially strip mining – must also clear cut forests to make room for roads and for extracting the minerals they're after. Mining exploration and claim staking is permitted in 90% of the Boreal region, leading to more roadway expansion and development of seismic lines.^{xlii}
- **Raising animals:** Huge tracts of land are cleared all over the world to feed the growing demand for meat and leather. Cattle ranching is the leading cause of Brazilian Amazon deforestation, accounting for 60% to 70%.^{xliii} Close to 55% of the Amazon could be clear-cut by 2030, largely for ranch land use.^{xliv}

Clear-cutting is one of the most devastating forms of environmental damage humanity can make on the planet. To clear cut a forest, industry will bring in giant machines that essentially level all trees and vegetation. Often times what is left is burned and then sprayed with chemicals to prevent any more vegetation from growing. When they're done, there's nothing left but barren, brown wasteland devoid of life. It's ugly and incredibly tragic.

But these aren't the only industries that negatively impact forests. What you wear does make a difference for our forests, making the fashion industry involved in the deforestation crisis, too. You'll find forest products in many fashion pieces today. This list of wood-based products will illustrate what we mean:

- **Rubber:** Many fashion items are made with natural rubber which is tapped from rubber trees. This is used to make shoe soles and components for handbags.
- **Wood jewelry:** Forest products are often used to make jewelry and accessories.
- **Wood in textiles:** Wood is in our fabric, too. Rayon fabric for instance, is a human-made textile created using wood pulp. Rayon is more sustainable than petroleum-based synthetic fabrics because it originates from renewable resources and is more biodegradable, but it has an impact on forests nonetheless.
- **Leather:** Forests are cleared to make way for ranchlands to raise cows, sheep, and pigs whose skins are used for leather.
- **Energy and plastics:** Oil and gas are used to energize the machines used in the textile industry, and to fuel the planes, trains, and automobiles that are used to transport fast fashion around the world. And of course, any plastics – including synthetic fibers like polyester – are made from crude oil, too.

Thankfully there is strong support in the scientific community for finding ways to protect forests. The sustainable management movement is the most important one we have for ensuring our forests thrive for generations to come.

SUSTAINABLY MANAGING FORESTS FOR THE SAKE OF HUMANITY, BIODIVERSITY, AND A STABLE CLIMATE

Sustainable forest management is that which requires forests to be cared for in such a way as to ensure the long-term vitality of these precious places on our planet. But forests are not managed sustainably on their own. Generally forest management happens only when governments, international organizations, and ethical businesses take responsibility to ensure forests are protected.

WHAT A SUSTAINABLY MANAGED FORESTS LOOKS LIKE

There are many needs that must be balanced with considering how to manage a forest sustainably. Indigenous peoples need access to forest products to survive day to day. Medical researchers need products for finding cures for common diseases. Paper and furniture makers need trees for producing their products, and the list goes on. Bringing all of these needs to the table and finding ways to ensure forest use is sustainable, is the challenge of responsible forest management.

According to the Food and Agriculture Organization (FAO) of the United Nations, the following are the twelve principles of the Ecosystem Approach to Forestry Management:^{xlv}

1. **Society chooses:** The objectives of management of land, water, and living creatures are a matter decided by society.
2. **Decentralized management:** Management should be decentralized so the lowest level appropriate.
3. **Adjacent ecosystems:** Ecosystem managers should take the impacts of their activities on adjacent and other ecosystems into consideration when deciding appropriate actions.
4. **Economic considerations in context:** Each ecosystem should be managed so that market distortions that adversely affect biological diversity are reduced; there are incentives to promote biodiversity conservation and sustainable use; and costs and benefits are internalized in the ecosystem.
5. **Ecosystem conservation priority:** The structure and function of the ecosystem should be the priority in order to maintain ecosystem services.
6. **Limits of functioning:** Each ecosystem should be managed within its own limits of functioning.
7. **Appropriate scale:** The appropriate spatial and temporal scales should be considered when applying the ecosystem approach.
8. **Long term objectives:** Recognizing that varying temporal scales and the lag effect will impact goals, the long term approach should always be taken.
9. **Change is inevitable:** As a result, management should be prepared for this.
10. **Balance:** The management approach should balance and integrate both conservation and use of biological diversity.
11. **Consider all knowledge:** The ecosystem approach stresses the importance of taking all relevant information into consideration, including scientific information, indigenous knowledge, local wisdom, technological innovations, and common practices.
12. **Inclusivity:** All sectors of society should be included in the ecosystem approach.

Those are some fairly technical explanations for how forest management should be approached, but here is a more layman's approach to what it means to sustainably manage a forest:

- Protect wildlife
- Never clear cut
- Selectively remove trees
- Never use genetically modified organisms
- Respect the rights of indigenous peoples
- Ensure a healthy mix of plant species remain
- Leave as much intact forest in place as possible
- Avoid the use of chemical pesticides, herbicides, and the like
- Take care to avoid damaging any vegetation that is not removed
- Wait up to 30 years before returning to take more trees in order to let the forest regenerate

So what does it look like to see sustainably management wood products in ethical fashion?

ECO WOOD THROUGH THIRD PARTY VERIFIED SUSTAINABLE FOREST MANAGEMENT: FSC-CERTIFIED WOOD

One of the most effective ways to know if a forest is being managed sustainably is to look for a third-party verification for responsible management. The preeminent forestry management system in the world is the Forest Stewardship Council (FSC). This is a nonprofit organization that has set up strict standards that forestry managers must meet in order for their land to qualify. An independent, third party verifier then makes regular inspections to ensure the entire ecosystem is being managed with the principles enforced, which might include the following:

- Harvesting rates and clearing sizes cannot exceed regeneration capacity
- Rare, threatened, and endangered forest types are protected
- No natural forests can be replaced by plantations
- Chemical use is minimized
- Streams and rivers are protected from soil erosion.^{xlvi}

The FSC system incentivizes forest managers to use the highest social and environmental management practices in exchange for access to the eco-conscious consumer market. Every product sold with an FSC logo is given a tracking number to verify its journey from the forest floor to the retail shelf. When trees are harvested from FSC-Certified forests, their journey from manufacturing plant to distribution chain to retail store is tracked using a sophisticated system. This ensures there is no way for companies to fake credentials when it comes to FSC Certification.

Your choice to support the FSC program also ensures you support their Social Policy standards, which gives preference to small and low intensity managed forests (SLIMFs) and community-based forestry programs. FSC certified managers must honor long-term land tenure and use rights, especially of indigenous peoples. They are also required to provide workers with access to safety equipment, health care, housing, and education for their children.^{xlvii}

Here are some statistics on the FSC program:

- **Worldwide certifications:** FSC forests are found in the following regions: 40% in Europe, 40% in North America, 9% in Latin and South America, 6% in Asia and Oceania, and 5% in Africa.^{xlviii} There are more than 81 countries with FSC-certified forests.^{xlix}
- **Size of certified forests:** More than 1.4 million square kilometers (870,000 square miles) of forest are protected by FSC, an area twice the size of France.¹
- **Tracking individual trees:** Individual trees in FSC-managed forests marked with a “W” are preserved for use by wildlife.
- **You can verify:** You can verify the authenticity of an FSC logo using the FSC Certificate Database: <http://info.fsc.org/>.

OTHER SUSTAINABLE FOREST MANAGEMENT PRODUCT ALTERNATIVES

Sustainable Forestry Products

While it is always preferable to obtain wood-based products that are certified to have originated from sustainable forest management, this isn't always possible. Sometimes FSC-certified products are not available, and this is often true in the fashion world. In this case, you need to trust your retail supplier to have done research into the origins of your wood products.

If you want to know whether your eco fashion supplier has developed their wood-based products on sustainable forest management, ask them about their credentials. Ask them if the forests of origin were managed using the FAO's 12 Principles for the Ecosystem Approach to Forestry Management (above). If their answers are vague, unwritten, and unsubstantiated, then you may want to pass and look for another supplier for your wood products.

You can also support fair trade, and companies who follow fair trade practices. Fair Trade certified artisan groups, are upheld to abide by regulations that are stringent for the use in sustainable practices, including that of wood based products. While not all companies obtain a fair trade certification, many will comply by the guidelines set in place and will also only use practices that are sustainable. Hearts also works with many cultures where respect for the land upon which they live is vital. Artisans with respect to the land that provides for them will only use wood from fallen branches the can be collected by hand. There are many ways to obtain stylish fashions that do not endanger our forests. The important thing is to ask the questions, and make the demands for more answers.

Sustainably Harvested Rubber

Though much of fast fashion today is made with petroleum-based rubbers, there is a natural alternative: natural latex rubber. This is actually a product of trees, but it too can be irresponsibly harvested in forests that are not managed sustainably.

What is natural latex rubber? Natural latex rubber is exuded by the rubber tree, known as the Para rubber tree or *Hevea brasiliensis*, which grows in parts of the Amazon Basin and Matto Grosso in Brazil, as well as in the Guianas. They also grow in Venezuela, Columbia, Peru, and Bolivia, as well as Malaysia, Indonesia, Thailand, Vietnam, Sri Lanka, China, India, Papua New Guinea, Nigeria, Cote d'Ivoire, Cameroon, Liberia, and Gabon. ^{li}

These trees may grow as high as 40 meters and live for up to 100 years. ^{lii} The natural latex can be sustainably tapped from the tree, much like maple syrup is tapped from the maple tree, without harming the individual plant. The rubber collected from these trees has many benefits, including natural durability, water-resistance, and high elasticity. It also does not conduct electricity. On its own credentials, natural rubber is more eco-friendly than petro-based rubber, but since it is a forestry product, you'll also want to do your homework to ensure it, too has been harvested sustainably.

HOW TO BUY SUSTAINABLE WOOD PRODUCTS

When you buy apparel and jewelry made with forestry components, you may be inadvertently supporting unsustainable timber companies. Choosing fashion made with sustainably harvested wood speaks volumes about your value for our trees.

You can choose responsibly harvested wood products in all areas of your life. These eco shopping tips on how to spot products made from sustainably harvested wood will help:

- **Look for FSC, not SFI:** When given a choice, opt for FSC over products made with the Sustainable Forestry Initiative (SFI) logo. SFI is a forest-industry managed certification system that is not third-party verified. There are therefore some serious conflicts of interest in their logo practices and few environmental groups trust them to sustainably manage their forest resources.^{liii}
- **Other eco wood certifications:** There are other organizations that certify wood products as sustainable. The Rainforest Alliance has a trustworthy [SmartWood](#) label, the Scientific Certification Systems has their own [SCS label](#), and [Green Seal](#) has a label as well.
- **Stay away from leather products that demand the production of more leather:** Leather clothing and accessories also contribute to deforestation. That's because many forests are cleared in order to make room for grazing land for cattle. Choosing sustainably-sourced alternatives like natural fibers, or fashion items made from up-cycled leather remnants is much more beneficial for forests.^{liv}
- **Support sustainable ranching practices:** Since so much forest is cleared every year to make room for cattle pasture in the meat industry, you'll be doing our forests a huge favour by supporting sustainable farming practices. Brasil is currently the world's largest exporter and producer of beef. Due to the large demand, 60% -70% of cleared rainforest land is excavated to serve as pasture for cattle. Organizations like Alianca Da Terra seek to create a demand in the market place for sustainable practices of cattle ranching in the Amazon. This demand by consumers provides incentive for ranchers to apply sustainable practices. When we the consumers make the demands, the producers will supply.
- **Avoid tropical woods:** Unless certified as sustainable, salvaged, or upcycled/recycled, these woods are likely taken from irreplaceable old growth forests. Stay away from mahogany, teak, Douglas fir, and western cedars in particular.
- **Choose upcycled wood:** Trees and wood products can be salvaged from lake bottoms, old buildings, and construction sites. This wood is then upcycled into new products, which is much more sustainable than trees taken from intact forests.

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