

Out of the woods



Protecting tropical forests



Out of the woods: Protecting tropical forests

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Introduction

Vast jungles of trees, vines and flowers proliferate around our planet's equator, forming tropical rainforests. Vivid colors and deep shadows camouflage large predators, such as jaguars and leopards. The air is thick with humidity and vibrates with buzzing insects. Tropical rainforests have long been bastions of biodiversity, home to Indigenous and traditional communities and essential to Earth's climate. Now, the production of seven products threatens their existence. Despite living far north of these important forests, consumers and policy-makers in the United States can, and must, act to mitigate tropical deforestation.

Tropical Forests

Biodiversity: Tropical rainforests are the original skyscrapers: multi-level ecosystems with a different composition of plants and animals on each story.¹ The dark and shady forest floor is rife with leafcutter ants and poison dart frogs. The understory, a maze of large leafy plants, hosts boa constrictors and Bengal tigers.² The canopy, the layer of branches and leaves 30-45 feet off the ground, is home to the majority of rainforest species, including bonobos, sloths, epiphytic orchids, toucans, iguanas and more.³ Far fewer species, such as blue morpho butterflies and crowned eagles, can survive in the emergent layer, which is brutally exposed above the canopy.⁴ All

told, these rainforests, which only cover 10% of Earth's land surface, contain at least two-thirds of the world's biodiversity.⁵ Innumerable undiscovered species live in tropical rainforests – some of which may provide compounds that cure diseases much like the Madagascar periwinkle, the discovery of which led to treatments for various cancers.⁶ Tropical deforestation, among other human factors, is driving an unprecedented rate of extinction.⁷ Estimates vary, but tropical deforestation may cause anywhere from 20,000 – 83,000 species extinctions per year.⁸



Climate: Rainforests may also possess part of the cure for climate change. Trees absorb carbon dioxide from the atmosphere and store it in their trunks and leaves. When tropical forests are cut or burned down, carbon is released into the atmosphere and the potential for future carbon dioxide capture is lost.⁹ The carbon dioxide released from tropical deforestation has accelerated so drastically that if tropical deforestation was a country, it would have the third largest carbon footprint in the world – only behind China and the U.S.¹⁰

People: The livelihoods of communities around the world depend upon the health of forests. Communities in or near forests often rely on the food (fruit, nuts, game) and the ecosystem services provided by rainforests, including pollination, erosion prevention, flood control and water filtration.¹¹ Millions of Indigenous people live in tropical rainforests.¹² When deforestation displaces these people, they lose ancestral lands that provide life-sustaining resources.

For some cultures, forests provide more than sustenance. Many forests are held sacred by and intertwined with the cultures of the people that live in and near them, some of whom have been tied to the forest for millennia. Perhaps for this reason, forests that are owned legally or customarily by Indigenous communities are deforested half as much as other forests.¹³ A growing body of evidence suggests that ensuring Indigenous communities' free, prior and informed consent (FPIC), which is the internationally enshrined right of Indigenous Peoples to withhold consent from any operations in their territories, is a smart and ethical conservation strategy.¹⁴

United States: importing goods, externalizing impacts

Despite the threat to biodiversity, the climate and people, tropical deforestation is increasing rapidly.¹⁵ Of the ten million hectares of deforestation that occurs each

year, 95% is in tropical forests.¹⁶ The primary driver of deforestation is the clearing of forests to make land available for producing goods known as forest risk commodities. Seven forest risk commodities caused 57% of the world's agricultural deforestation between 2001 and 2015: **beef, soy, palm oil, cocoa, coffee, rubber and wood products**, such as timber and paper.¹⁷ So many of these commodities are exported to the world's richest countries that 14% of global deforestation is driven by consumers in wealthy countries, including the U.S.¹⁸ The U.S. is, essentially, outsourcing deforestation.¹⁹

Even worse, much of this deforestation – 69% – is illegal.²⁰ Illegal supply chains avoid even the weakest government regulations, resulting in environmental damage, social conflict, economic injustice and inequality.²¹

Many consumers in the U.S. opt for sustainable commodities when possible.²² However, opaque supply chains and rampant greenwashing makes conscious consumerism challenging.²³ **Companies must take responsibility for the negative impacts of their supply chains and implement stronger sustainable, ethical and transparent procurement policies.** But until then, it is up to consumers to navigate the market and purchase items that are verified as deforestation-free; and up to governments to implement policies, laws and regulations that require companies to provide consumers with deforestation-free products.

Forest Risk Commodities

The production and harvesting of seven forest-risk commodities drive a disproportionate amount of tropical deforestation; harming biodiversity, the climate and people.

Beef

Beef production is the number one driver of tropical deforestation.²⁴ About 60% of the world's agricultural land is used for beef production, even though it accounts for only 2% of calories consumed worldwide.²⁵ The beef industry currently causes 25% of global land-use emissions.²⁶ A portion of these emissions are produced before the cattle even begin grazing, when ranchers burn down tropical forests to make room for pastures.²⁷

The United States stokes the flames turning tropical forests into pasturelands; the U.S. is the largest consumer of beef in

the world.²⁸ In 2019, Americans consumed 27.3 billion pounds of beef - that's nearly one-fourth the weight of the Great Wall of China.²⁹ With a growing global population and a rising standard of living, beef consumption is likely to increase.

Sustainably managed beef production, not taking place on deforested land, can provide conservation benefits by sequestering carbon, maintaining grassland habitats, and improving soil quality.³⁰ Several certifications can also ensure that beef has been raised sustainably, including Grassfed by A Greener World and the National Audubon Society's Bird Friendly Conservation Ranching.³¹ Another good alternative is to purchase domestic beef from small and/or local ranchers. Often, small and/or local ranches will have information on their websites about how and where their cattle are raised, so consumers can verify claims of sustainability. Even better, many Americans choose to reduce their beef or red meat consumption, opting for meat with a lower carbon footprint or vegetarian alternatives.³²

A Closer Look: The Brazilian Amazon rainforest

More than half of the Amazon Rainforest is located within Brazil, where every year deforestation and degradation chip away at this priceless habitat.³³ The Amazon is not only home to 10% of all known species on Earth, but is also a major carbon sink.³⁴ This is especially true in Brazil, which was the largest global exporter of beef in 2020.³⁵ In Brazil, poor regulations and enforcement have led to the highest rates of deforestation in 15 years.³⁶ Cattle ranching has been linked to around 70% of the deforestation in the Amazon.³⁷ In 2020, the U.S. imported \$420 million worth of beef from Brazil.³⁸

Soy

The production of soy, which is derived from soybeans, is the second greatest driver of tropical deforestation globally.³⁹ Soy has many applications, including cooking, biofuel, industrial products and food.⁴⁰ However, only 7% of soy products (tofu, soy milk, etc.) are directly consumed.⁴¹ More than three-quarters of the world's soy is used to produce livestock feed.⁴²

Brazil produces about one-third of the world's soy.⁴³ Demand for soy since 1961 has increased dramatically, and as a result, the amount of land dedicated to soy production has quadrupled globally.⁴⁴ One attempt to limit deforestation, Brazil's Soy Moratorium, prevents farmers from selling soy products from recently deforested land.⁴⁵ However, this doesn't prevent soy plantations from replacing other native ecosystems, such as the

biodiverse and ecologically important Brazilian Cerrado.⁴⁶ Brazil's Soy Moratorium has been accused of indirectly contributing to tropical deforestation because the conversion of former pasturelands to soybean crops pushes cattle production farther into the Amazon rainforest.⁴⁷

Although sustainable soy production methods exist, the supply chains for soy often lack transparency.⁴⁸ Because the majority of soy is used as livestock and poultry feed, consumers that would like to lessen their impact on tropical forests should reduce their meat consumption. Alternatively, consumers can purchase meat products that are certified as grass-fed by the American Grassfed Association, Grassfed by A Greener World or Global Animal Partnership Steps 4-5+.⁴⁹



Wood products (timber, paper, pulp)

Harvesting wood products, including lumber, paper, pulp and wood pellets, is the third greatest driver of global deforestation.⁵⁰ Much of the timber and wood pulp in the U.S. comes from boreal forests in countries including Canada, Russia and China.⁵¹ Boreal forests are important carbon reservoirs and ecosystems, which are in need of protection from forest degradation.⁵² However, wood products are also extracted from tropical forests, especially in Indonesia, where natural forests are harvested and replaced with tree plantations.⁵³

Even when entire forests are not cut down, and instead high-quality, large trees are selectively logged for timber, the entire forest suffers.⁵⁴ Selective logging requires roads that fragment forest

ecosystems and machinery that can erode topsoil.

The best way for American consumers to reduce deforestation and forest degradation caused by logging for wood products is to use recycled wood products or sustainable alternatives. For example, toilet paper and paper towels made of recycled paper or sustainably-sourced bamboo are available and some building projects can make use of reclaimed or salvaged wood.⁵⁵ When it is necessary to purchase virgin wood products, such as fresh lumber or plywood, consumers should opt for products certified by the Forest Stewardship Council (FSC). Like all certification systems, FSC is not without faults, but it does provide the most extensive protections for forests.⁵⁶



Palm Oil

Palm oil is derived from the fruit of oil palm trees. Often used to give products a longer shelf life, palm oil can be found in chocolate, soap, pizza, lipstick, shampoo, biodiesel, instant noodles, and much more.⁵⁷ Even though palm oil is found in products all over the world, 87% of the world's palm oil is produced in Indonesia and Malaysia.⁵⁸

The pervasiveness of palm oil comes at a high cost. Between 2008 and 2010, palm oil plantations were responsible for 60% of global deforestation.⁵⁹ That number has decreased to about 25%, which is still too much.⁶⁰ However, using alternative vegetable oils, such as canola or sunflower, could result in even more deforestation because they require more land to produce the same amount of oil. Oil palm trees are highly efficient crops that grow year round, supplying more than 40% of the world's vegetable oil on only 6% of the land used for vegetable oil production.⁶¹

Consumers that want to reduce demand for palm oil and other vegetable oils should reduce their consumption of processed

and packaged foods. Alternatively, there are several third-party certification systems which aim to identify sustainably and ethically produced palm oil products. Palm Done Right, which ensures palm oil is deforestation-free, organic, fully-traceable, and fair trade, is the best certification available.⁶² The Roundtable on Sustainable Palm Oil (RSPO) is the largest palm oil certification and is comparatively effective.⁶³ As of 2020, 20% of palm oil in the world was certified by RSPO and studies have found less deforestation on RSPO certified palm plantations, some by as much as 33%.⁶⁴ However, RSPO is criticized for not adequately auditing companies, for being too slow to respond to complaints and for not enforcing conditions strict enough to meet international sustainability goals.⁶⁵ Consumers should opt for Palm Done Right certified palm oil. If Palm Done Right palm oil is not an option, consumers should purchase RSPO certified palm oil because it is better than common alternative certifications or uncertified palm oil.⁶⁶

A closer look: orangutans

The islands of Borneo and Sumatra in Malaysia and Indonesia are home to the last remaining wild population of orangutans. Each year, 2,000-3,000 orangutans are killed on average.⁶⁷ A century ago there were over 230,000 orangutans.⁶⁸ Today it's estimated that fewer than 70,000 survive.⁶⁹ Rampant illegal deforestation to create new palm plantations is a driving factor in orangutan habitat loss.⁷⁰ In the past twenty years, 80% of the orangutan's habitat has been destroyed.⁷¹ The situation is so dire that scientists predict orangutans will be extinct in the next fifty years if no decisive action is taken.⁷²

Cocoa

Americans consume 58 million pounds of chocolate just during the week of Valentine's Day.⁷³ Although some of the world's largest chocolate producers are in the U.S., 70% of the world's cocoa beans are grown in West Africa, specifically Côte d'Ivoire and Ghana.⁷⁴ The rising demand for chocolate and history of poverty in the region has led farmers to engage in unsustainable farming practices and inhumane labor practices, including child labor.⁷⁵

It is estimated that 70% of illegal deforestation in the West African nation of Côte d'Ivoire is related to cocoa farming.⁷⁶ Almost all of the protected regions in Côte d'Ivoire have been illegally converted into cocoa growing operations. The neighboring nation of Ghana lost 10% of its tree cover from 2001-2014, an area more than twice the size of Yosemite National Park.⁷⁷ As a result, endangered and threatened animals, including pangolins and leopards are rapidly losing their remaining habitat.⁷⁸ Cocoa production in tropical forests also contributes to the climate crisis: a single dark chocolate bar from deforested land releases nearly the same number of carbon emissions as driving a car for 5 miles.⁷⁹

Monocultures of cocoa degrade the soil by reducing plant diversity, increasing sun exposure and using more fertilizers and

pesticides.⁸⁰ As a result, more tropical forest is cleared for the next harvest.⁸¹ There are various sustainable farming techniques, such as growing cocoa in the shade among native rainforest plants, that can reduce the need to cut down tropical forests.⁸²



Several certification systems can help consumers purchase sustainable and ethical chocolate. As is the case for any commodity, no chocolate certification system is perfect. However, the largest cocoa certification, Rainforest Alliance/UTZ prohibits deforestation and has been found to increase crop yield for cocoa farmers in Ghana.⁸³ Consumers can also check the Easter Scorecard when purchasing chocolate products. The Easter Scorecard, which is updated each year by several NGOs, grades chocolate brands based on several factors, including their impact on deforestation, supply chain traceability and the use of child labor.⁸⁴

Coffee

In the United States, about 513 million cups of coffee are consumed every day.⁸⁵ The coffee comes from beans grown in tropical regions around the world, especially from Brazil and Vietnam.⁸⁶

The majority of today's coffee beans are sun-grown, which requires clearing tropical forests to grow the plants in direct sunlight.⁸⁷ One study estimated that 100,000 hectares of forest are lost each year to expand coffee plantations, which is an area almost the size of Hong Kong.⁸⁸ These practices produce over 45 million tons of CO₂ per year.⁸⁹ Sun-grown coffee also contributes to soil erosion, biodiversity loss and requires intensive pesticides.⁹⁰ Long-term coffee monocropping taxes the soil so much that it leads to decreased agricultural yields and ultimately a loss in profits.⁹¹

Alternatively, the traditional method of growing coffee, shade-grown, allows coffee trees to grow in tropical forests among mature trees. Although it yields less coffee than sun-grown plantations, the shade-grown method allows farmers to grow a valuable cash crop while reducing negative environmental impacts.⁹² Shade-grown farms are beneficial to biodiversity; in Guatemala, they've been found to have 30% more birds than sun-grown plantations.⁹³ Shade-grown plants also

provide farmers with a variety of vital ecosystem functions such as natural pest control, water filtration and soil conservation.⁹⁴

Consumers interested in purchasing sustainably produced shade-grown coffee should search for The Smithsonian Migratory Bird Center's Bird Friendly coffee certification, which guarantees shade-grown coffee and more ethical growing practices.⁹⁵ Rainforest Alliance/UTZ assists and certifies shade-grown and sun-grown coffee producers that are working towards forest conservation and fair wages for workers.⁹⁶ Fairtrade and Organic certified coffee may be beneficial by ensuring ethical conditions for workers and reduced pesticide and fertilizer use, respectively.⁹⁷ But alone, neither guarantees sufficient protections for forests. Many other coffee companies make efforts to source coffee ethically and sustainably without the oversight of a large third-party certifying organization; coffee roasters that are members of Cooperative Coffees have been generally considered successful in doing so.⁹⁸ A general rule of thumb for consumers that want to reduce their impact on forests is to seek out coffee companies that have a legitimate certification and/or very transparent sourcing practices.

Rubber



Michelin rubber plantation in Vietnam (1970)

Although natural rubber is used to make more than 40,000 products, the vast majority –70%– is purchased by tire manufacturers.⁹⁹ Natural rubber is derived from latex, a liquid found in many plants, including *Hevea brasiliensis*: the rubber tree.¹⁰⁰ Despite originating in South America, 90% of the world's rubber is grown in Southeast Asia.¹⁰¹

The expansion of rubber plantations across Southeast Asia is likely to continue as the global demand for natural rubber increases.¹⁰² Natural rubber agriculture, particularly in the Indonesian region of Sumatra, has also led to violent conflicts that harm Indigenous and local communities.¹⁰³

Sustainable natural rubber production would replace monocultures of rubber trees with forests of rubber trees interspersed with native trees and other crops.¹⁰⁴ Efforts have been made to hold tire manufacturers accountable for the deforestation caused by rubber production. Leading tire manufacturers, including Michelin and Goodyear, are voluntary members of the Global Platform for Sustainable Natural Rubber, an organization dedicated to creating and implementing sustainable standards for rubber production.¹⁰⁵ However, lack of supply chain transparency compromises the effectiveness of these corporations' sustainability commitments.¹⁰⁶ Instead of relying on companies' claims, consumers should purchase rubber products certified by the Forest Stewardship Council.¹⁰⁷

Consumer Recommendations

No third-party certification system is without faults, and most fluctuate in their efficacy and reliability. However, the following certifications have some demonstrable level of positive impact and are more sustainable than uncertified commodities.

Beef

Reduce consumption of beef. Buy beef from small and/or local ranches, consulting their websites to verify sustainability.

Certifications: Grassfed by AGW, National Audubon Society's Bird Friendly Conservation



Soy

Reduce consumption of meat.

Eat grass-fed meat products, certified by: American Grassfed Association, Grassfed by AGW, Global Animal Partnership Steps 4-5+.



Palm

Reduce consumption of processed and packaged foods to avoid vegetable oil additives.

Certifications: Palm Done Right, RSPO.



Wood Products

Buy recycled wood products or products made of sustainable alternatives.

For at-home paper products, refer to NRDC's The Issue with Tissue Scorecard.

Certifications: Forest Stewardship Council.



Cocoa

Buy chocolate brands recommended by the Easter Scorecard.

Certification: Rainforest Alliance/UTZ.



Coffee

Buy coffee from Cooperative Coffees members or coffee brands with transparent sourcing information.

Certifications: The Smithsonian Migratory Bird Center's Bird Friendly Coffee, Rainforest Alliance/UTZ.



Rubber Certification: Forest Stewardship Council.



Look into your retirement fund or investment portfolio:

An often overlooked way to advocate for environmental sustainability is to look at what may be hidden in a retirement fund, 401k, or other personal investments. Most companies that produce and sell forest-risk products are listed on public stock exchanges – which means that anyone with a retirement fund may be invested in them. DeforestationFreeFunds is a tool that allows individuals to see what forest-risk companies they may be invested in, and to take action by sending a petition to a fund manager or finding greener investment portfolios.

Policy Guide

Whether at the federal, state, county, municipal or even institutional level, policy-makers can have an outsized impact on the consumption of forest-risk commodities.

Although third-party certifications can be helpful for individual consumers, policy-makers should steer clear of relying upon certifications, which often fluctuate in their efficacy and reliability. It is the role of government to protect the public and to regulate the harmful impacts of corporations, and mandatory government policies will always be stronger than voluntary industry certification standards. Instead, policy-makers should develop independent, stringent and customized policies to protect forests. In circumstances in which prevailing third-party certifications are truly effective at reducing deforestation, it is still essential for policy-makers to regulate industry and to create a level playing field so that all companies are required to adhere to robust standards.

Although this paper focuses on tropical forests, policy-makers should also incorporate language that protects boreal forests. Boreal forests are primarily logged for wood products, and in North America, the boreal forest, which is the largest intact ecosystem left on Earth, is being cut down at a rate of one million acres per year.¹⁰⁸ This is devastating for global climate goals, because the boreal forest is a major carbon reservoir. Clear-cutting boreal forests and leaving them barren is not considered deforestation, but instead is referred to as forest degradation.¹⁰⁹ Deforestation only technically occurs when a forest is cut down and the land converted to other uses. Therefore, policy-makers interested in preserving global forests should avoid the phrase “tropical deforestation,” which is narrow and invites loopholes, and instead, opt for the following language: “tropical or boreal forest degradation or deforestation.”

Passing legislation or executive orders that regulate the procurement of forest-risk commodities.

Recommendations

Incentivizing the procurement of only those forest-risk commodities that have a transparent origin and that are produced sustainably, without having contributed to tropical or boreal forest degradation or deforestation.

Banning or disincentivizing the procurement of forest-risk commodities without a transparent origin, especially when deforestation and forest degradation commonly occur in the general region of origin (i.e. beef from Brazil).

Banning or disincentivizing the procurement of forest-risk commodities that originate on deforested or degraded land, especially in intact forests (intact forest definition: “a forest that has never been industrially logged and has developed following natural disturbances and under natural processes, regardless of its age. Intact forests include forests that have experience non-industrial-scale human impacts, including tradition or subsistence activities carried out by Indigenous communities.”)¹¹⁰

Examples

Proposed Deforestation-Free Procurement Acts in [New York](#) and [California](#) would require state contractors to “know and show” the origin of forest-risk commodities that they supply to the states. Only those commodities that demonstrably do not contribute to deforestation or forest degradation may be purchased.

Executive Order [D-2022-016](#) in Colorado encourages state contractors to source forest-risk commodities with known origins and to avoid procuring commodities that contributed to deforestation or forest degradation.

Banning forest-risk commodities

Recommendation

Some policy-makers have opted for policies that outright ban forest-risk commodities that demonstrably originate on deforested or degraded forest land.

Example

The proposed [FOREST Act](#) would prohibit the importation of forest-risk commodities produced on **illegally** deforested land into the U.S.

Providing funding for forest conservation to countries and entities that would otherwise profit from deforestation and forest degradation.

Recommendation

Many people in tropical regions are driven to deforest land for the production of forest-risk commodities because there are few other economic opportunities. Providing funding to these regions may create opportunities for local communities to make a living by conserving and restoring forests, rather than burning and cutting them down.

Examples

The Tropical Forest Conservation Act allows eligible foreign countries to fund local forest conservation efforts with money that would otherwise be used to pay back debts to the U.S government.

The AMAZON21 Act, introduced by Rep. Steny Hoyer, would create a \$9 billion results-based fund for governments and entities in tropical regions to use to conserve and restore tropical forests.

Ensuring the Free, Prior and Informed Consent (FPIC) of Indigenous and local communities that traditionally live in, or currently rely upon forests.

Recommendation

Free, prior and informed consent on the part of local and Indigenous communities that have ties to forests and the areas surrounding them is important for several reasons, one of which is that overlooking the free, prior and informed consent of a group that lives closely with the environment is often an indicator that environmental degradation will ensue. When forests are owned legally or customarily by Indigenous communities, they are deforested half as much as other forests.¹¹¹ FPIC is a policy that should be implemented alongside any and all other policies for tropical deforestation.

Example

FPIC policies are incorporated into the proposed Deforestation-Free Procurement Acts in New York and California and Executive Order D-2022-016 in Colorado.

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