



**FUNGI
PERFECTI** LLC

Makers of Host Defense Mushrooms

IMPACT REPORT 2021 & 2022

WE'RE CLIMATE POSITIVE!

**IT'S IMPORTANT TO
STEP UP TO THE PLATE.
WE CAN DEMONSTRATE
WITH OUR ACTIONS A
BETTER PATH FOR PEOPLE
TO FOLLOW.
GO FORWARD
WITH COURAGE
AND KINDNESS.**

—PAUL STAMETS



2021

OFFSETTERS
CLIMATE POSITIVE
COMPANY



2022

OFFSETTERS
CLIMATE POSITIVE
COMPANY



**I HEAR THE EARTH CALLING
OUT TO ME SAYING, 'WAKE
UP. WE NEED YOUR HELP.'**

**THE ECOSYSTEM HAS A
CONSCIOUSNESS, AND
EVERY MEMBER OF THE
ECOSYSTEM HAS A VOICE
AND A RIGHT TO EXIST.
WE'RE SHEPHERDS OF
THAT COMMUNITY NOW.
IF WE VIOLATE THE SACRED
TRUST OF THE COMMUNITY
OF ORGANISMS, WE'LL BE
VOTED OFF THIS PLANET.**

**WE CAN BE PEACEFUL
ECOLOGICAL WARRIORS,
MYCOWARRIORS,
MOVING FORWARD
WITH COURAGE,
KINDNESS, WISDOM,
AND STRENGTH.**

—PAUL STAMETS



FUNGI PERFECTI[®] LLC

Makers of Host Defense[®] Mushrooms[™]

- WE'RE 110% CLIMATE POSITIVE 2
- THE IMPACT OF SCOPE 3 4
- OFFSET PROJECTS 6
- THE MATERIALS MATTER 8
- SUSTAINABILITY AT THE DISTRIBUTION CENTER 10
- COMMITMENT TO DIVERSITY, EQUITY & INCLUSION 12
- 3RD PARTY DESIGNATIONS 13

INTRODUCING OUR IMPACT REPORT

For more than 40 years, the team at Fungi Perfecti[®] has been committed to exploring, studying, preserving, and spreading knowledge about the use of fungi to help people and planet. Our eco-conscious and people-first business efforts are a natural extension of that mission.

This year at Fungi Perfecti, we're combining our 2021 and 2022 reports into one. And, in an exciting shift, we're also changing the way we refer to this report. The term "Sustainability Report" no longer encompasses the range of initiatives we're undertaking across our organization. In order to share a more complete overview of our exciting journey, we're proud to introduce our very first IMPACT REPORT!

In the last two years, we've made exciting new strides on our journey towards greater sustainability and corporate responsibility. As part of our commitment to Diversity, Equity, and Inclusion we formed an internal DEI committee in 2022. Our sustainability initiatives have ranged from innovative, custom-crafted packaging to high impact carbon offset projects. And, because of our efforts, we've received the highly regarded third-party designation as Climate Positive! We are proud to share the following overview of how we're working towards a more equitable and sustainable future.



FUNGI PERFECTI, LLC—MAKERS OF HOST DEFENSE[®] MUSHROOMS—WAS FOUNDED BY RENOWNED MYCOLOGIST PAUL STAMETS WITH THE GOAL OF BUILDING A BRIDGE BETWEEN PEOPLE AND FUNGI.

Always at the cutting-edge of mycological research, we strive to find new and innovative mycological solutions in everything from water filtration (*mycofiltration*) and ecological rehabilitation (*mycoremediation*), to using beneficial mushrooms to combat Colony Collapse Disorder in bee populations, and supporting human health through the Host Defense Mushrooms supplements line. A strong commitment to research and education is among the fundamental building blocks of Fungi Perfecti and is what continues to set us apart in the industry.*

* THESE STATEMENTS HAVE NOT BEEN EVALUATED BY THE FOOD AND DRUG ADMINISTRATION. THESE PRODUCTS ARE NOT INTENDED TO DIAGNOSE, TREAT, CURE OR PREVENT ANY DISEASE.

WE'RE 110% CLIMATE POSITIVE

OUR CLIMATE POSITIVE COMMITMENT

While we've always considered our environmental footprint and worked to limit the overall impact of our business, we're increasingly focused on how to move forward in a way that also creates a more positive impact for both people and planet. Working with Ostrom Climate, a leading carbon management solutions provider, we have taken an important step in our sustainability journey by including scope 3 emissions in our carbon footprint.

As of 2021 we now calculate our impact using the combined totals of all three Greenhouse Gas (GHG) Emissions scopes.

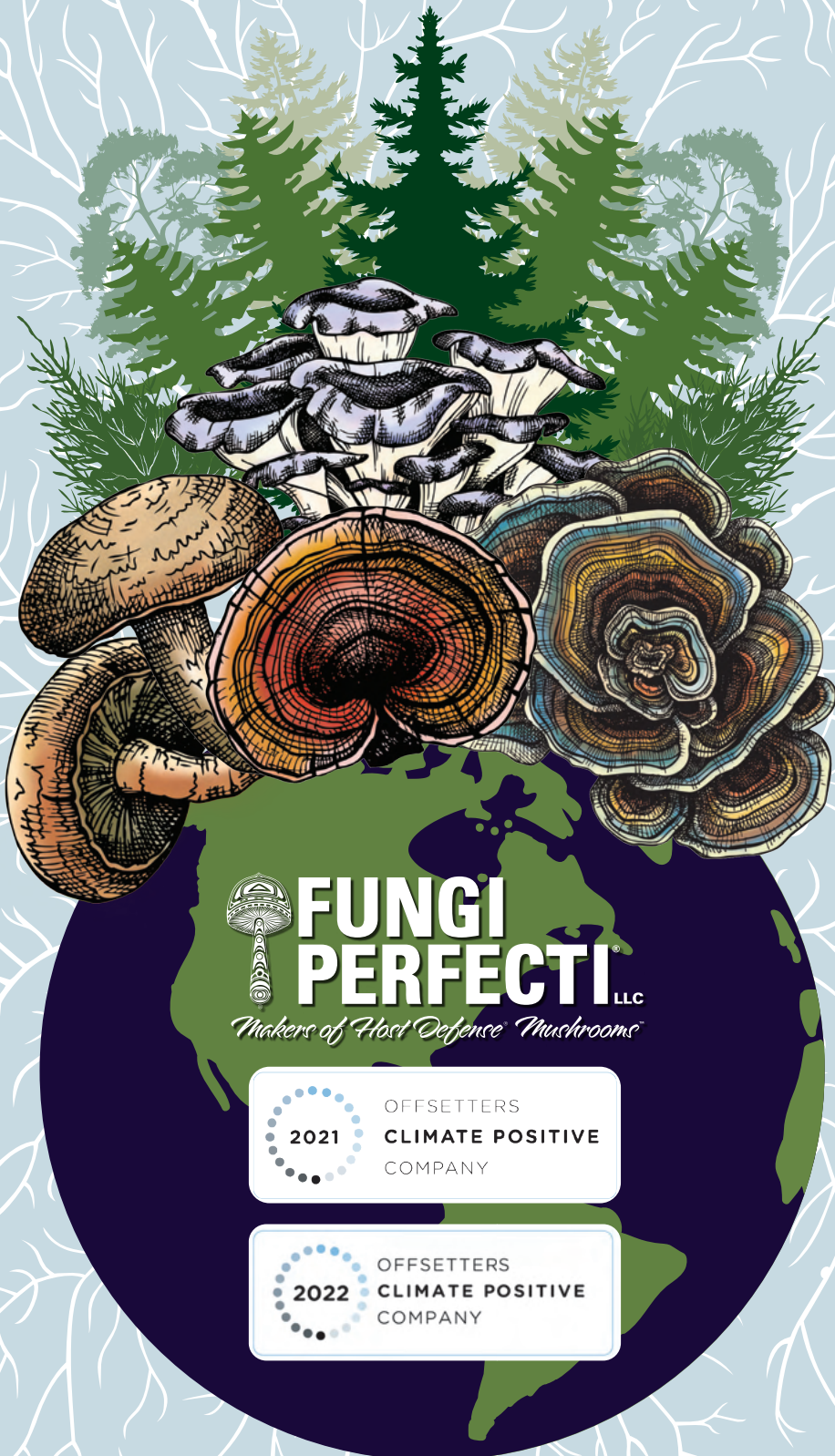


OUR CARBON FOOTPRINT

TONS of CO₂ EQUIVALENT (TCO₂E)

2020	4,600.6 TCO ₂ E
2021	4,305.6 TCO ₂ E
2022	4,278.7 TCO ₂ E

In addition to offsetting 100% of the combined totals of our scopes 1, 2 & 3 emissions, we've gone even further and offset an additional 10%—that's 10% MORE emissions than we produce. This makes us **110% CLIMATE POSITIVE**, earning us the Ostrom Climate Offsetters designation as a Climate Positive Company!



**FUNGI
PERFECTI** LLC

Makers of Host Defense Mushrooms



OFFSETTERS
2021
CLIMATE POSITIVE
COMPANY



OFFSETTERS
2022
CLIMATE POSITIVE
COMPANY

HERE ARE THE STEPS WE'RE TAKING TO ACHIEVE 3RD PARTY CLIMATE POSITIVE DESIGNATION:

1. ESTABLISH OUR BASELINE

Calculating the combined totals of scopes 1, 2 AND 3, we established our baseline emissions. Although many companies report scope 1 and 2 emissions, few include scope 3 in their reporting. Scope 3 is the most robust of the three and includes 'peripheral' emissions, not only what the company is directly emitting on their own. Here is a breakdown of what each scope entails:

SCOPE 1: DIRECT

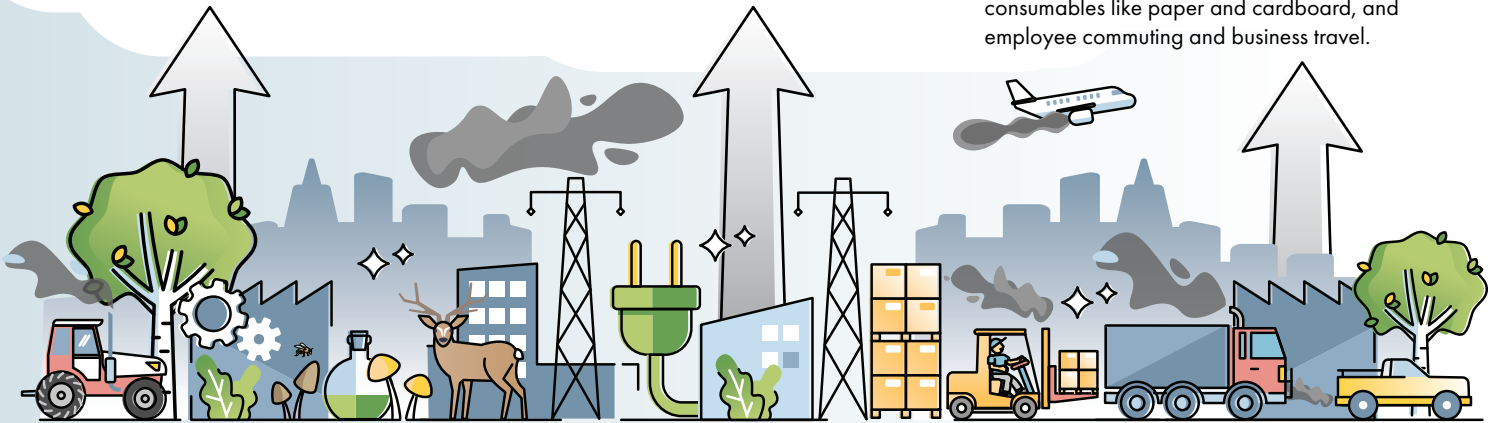
This scope encompasses direct emissions from fossil fuel combustion at all company-owned facilities. For us, that primarily includes our farm in Washington state where we grow all of our own mushroom mycelium and fruit bodies.

SCOPE 2: INDIRECT

This scope calculates indirect emissions in the form of energy purchased from a third-party. For us, that means assessing our use of heating & cooling and electricity at our main office, our warehouse, and our farm.

SCOPE 3: UPSTREAM & DOWNSTREAM

This scope is very complex and difficult to estimate. Also known as *value chain emissions*, it includes emissions that appear both 'upstream' and 'downstream' from an organizations direct activities. For us, this category includes shipping, consumables like paper and cardboard, and employee commuting and business travel.



Because of the complexity of scope 3, it's not always possible to confirm how much of the emissions have already been calculated as scope 1 or 2 by the organization or individuals generating the output. This means that in some instances, emissions are being offset twice—which is a win-win!

2. MINIMIZE OUR IMPACT

After establishing our baseline, we began identifying areas where we could minimize our impact through reduction, recycling, and improved efficiencies.

STEPS WE'VE TAKEN TO MINIMIZE OUR IMPACT INCLUDE:

- Implementing solar power at our farm.
- Recycling more than 3 tons of e-waste.
- Reducing single-use plastic.
- Improving efficiency of lighting and HVAC equipment.
- Moving to a new warehouse with increased efficiency and smaller footprint.
- Using a cardboard perforator to reuse old cardboard for shipping purposes.
- Using eco-conscious packaging materials for our Host Defense supplements.

EMISSIONS FROM ELECTRICITY	
TONS of CO ₂ EQUIVALENT (TCO ₂ E)	
2020	76.3 TCO ₂ E
2021	68.5 TCO ₂ E
2022	64.9 TCO ₂ E
PERCENT CHANGE 2020-2021	PERCENT CHANGE 2021-2022
-10.2%↓	-5.3%↓

3. SUPPORT OFFSET PROJECTS

Beyond decreasing our overall impact, we go one step further and invest in high-impact, Gold Standard carbon offset programs that increase our positive impact. These programs are a way for individuals and businesses to not only balance their footprint, but also have a positive impact on people and communities and promote long term sustainable development worldwide.

OFFSET PROGRAMS WE'VE PARTNERED WITH AROUND THE WORLD ARE:

- Promoting sustainable economic development.
- Improving air quality and clean water access.
- Reducing deforestation and increasing carbon sequestering.
- Reducing methane & carbon dioxide emissions.
- Protecting and restoring ecosystems.

THE IMPACT OF SCOPE 3

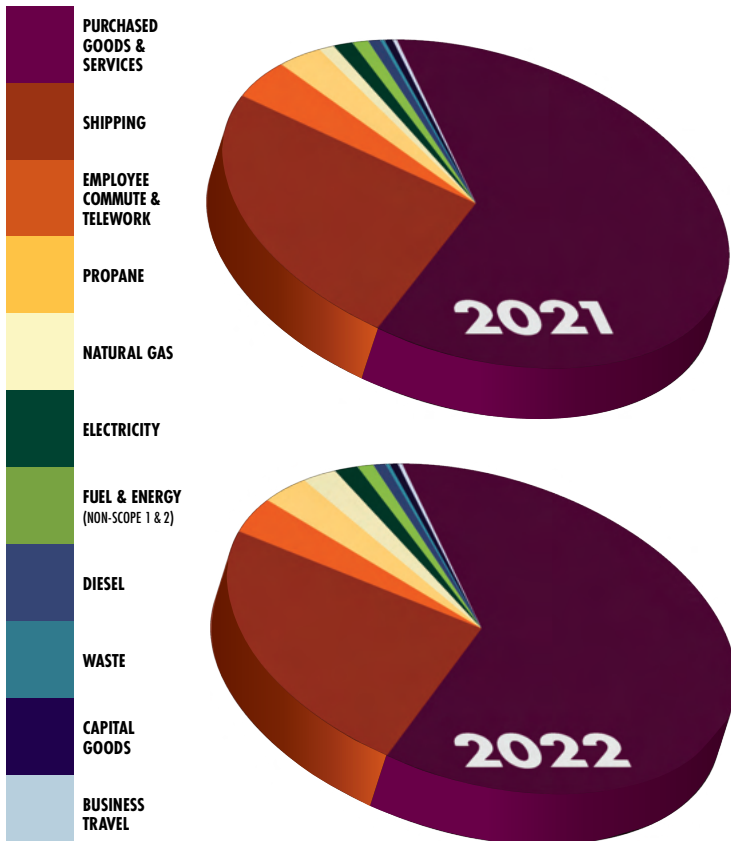
Assessing and offsetting our scope 3 emissions has had an enormous impact. While scopes 1 and 2 include direct emissions from fossil fuel combustion and purchased electricity, scope 3 is a much broader category and, among other things, includes:

- Paper and packaging, including the material we use to both package and ship our products.
- Transportation of goods, including everything upstream and downstream, from shipping raw material to delivering finished products to retailers and consumers.
- Employee travel, including daily commuting and travel for business.

Scope 3 is by far the biggest source of emissions for any organization. Many organizations choose not to address this scope due to data collection and accounting challenges, potential duplication of efforts, and the fact that these emissions fall outside the direct control of the organization.

However, not being able to track the extent to which these efforts are being taken by those outside our organization, we have chosen to take accountability for any emissions that we are contributing to. We are quite proud of our decision to assess, quantify, and offset scope 3, and will continue making impactful improvements in our efforts towards a more sustainable future.

EMISSIONS BY SOURCE



EMISSIONS SOURCE	2021 % OF TOTAL	2022 % OF TOTAL
SCOPE 1	6.0%	7.1%
Propane	3.4%	3.7%
Natural Gas	1.9%	2.7%
Diesel	0.7%	0.7%
SCOPE 2	1.6%	1.5%
Electricity	1.6%	1.5%
SCOPE 3	92.4%	91.4%
Purchased Goods & Services (Includes Paper, see chart on pg 11)	61.0%	61.2%
Shipping	24.7%	24.0%
Employee Commute & Telework	4.6%	4.0%
Fuel & Energy (Non-Scope 1 & 2)	1.0%	1.2%
Waste (Generated in Operations)	0.3%	0.3%
Capital Goods	0.7%	0.6%
Business Travel	0.1%	0.2%

Note: Figures may not add due to rounding.

LIVING IN HARMONY WITH OUR NATURAL ENVIRONMENT IS KEY TO OUR HEALTH AS INDIVIDUALS AND AS A SPECIES.

—PAUL STAMETS

SCOPE 1, 2 & 3 EMISSIONS

By measuring and offsetting scope 3 emissions, we're taking accountability for our total emissions.

OUR CARBON FOOTPRINT

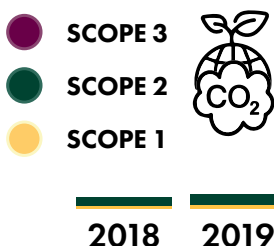
TONS of CO₂ EQUIVALENT (TCO₂E)

2018*	148.0 TCO ₂ E
2019*	188.0 TCO ₂ E
2020	4,600.6 TCO ₂ E
2021	4,305.6 TCO ₂ E
2022	4,278.7 TCO ₂ E

* In 2018 & 2019 we only calculated Scopes 1 & 2 emissions internally. Starting in 2020, Ostrom Climate collected detailed data about our total combined footprint of Scopes 1, 2 & 3 GHG emissions.

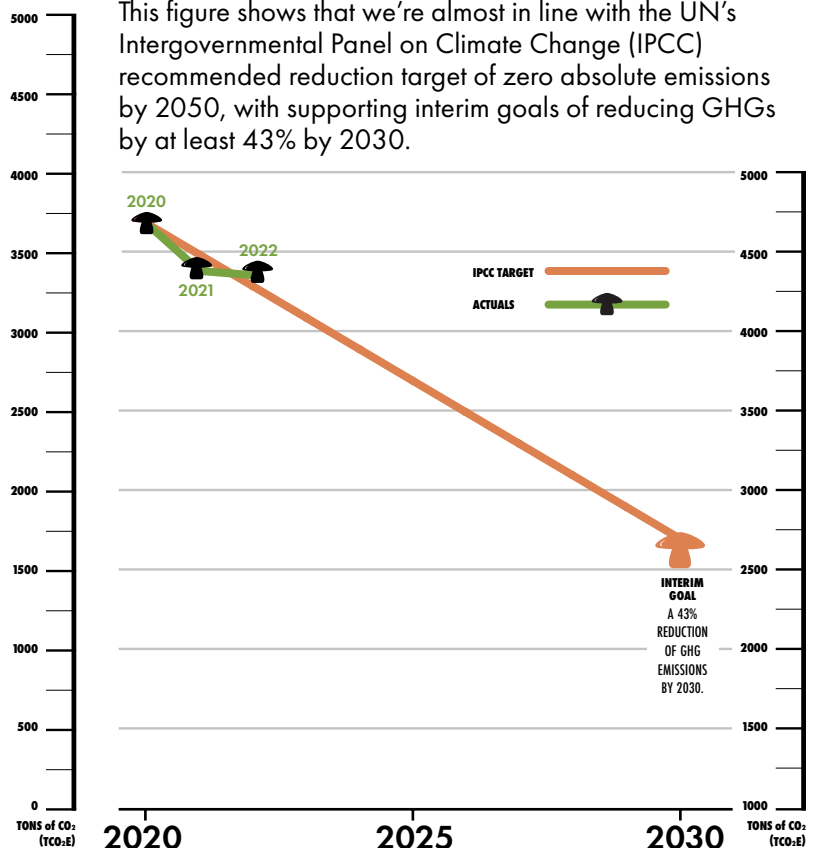
PERCENT CHANGE 2020-2022

-7% ↓



TARGETING ABSOLUTE ZERO

This figure shows that we're almost in line with the UN's Intergovernmental Panel on Climate Change (IPCC) recommended reduction target of zero absolute emissions by 2050, with supporting interim goals of reducing GHGs by at least 43% by 2030.



OFFSET PROJECTS

Beyond decreasing our overall impact, we go one step further and invest in high-impact carbon offset programs that increase our positive impact. Because not all offset projects are equally impactful, we do significant research to ensure the integrity of the ones we support. We support high-impact offset projects that are Gold Standard Certified.

Designed to positively impact both planet and people, Gold Standard offsets involve the community stakeholders directly impacted by the projects, and each project is rigorously evaluated by third parties to ensure a meaningful reduction in emissions. Each project facilitates sustainable economic development around the globe while protecting human rights and supporting the United Nation's Sustainable Development Goals.

These programs are a way for individuals and businesses to not only balance their footprint, but also have a positive impact on affected people and communities, promoting long-term sustainable development worldwide.

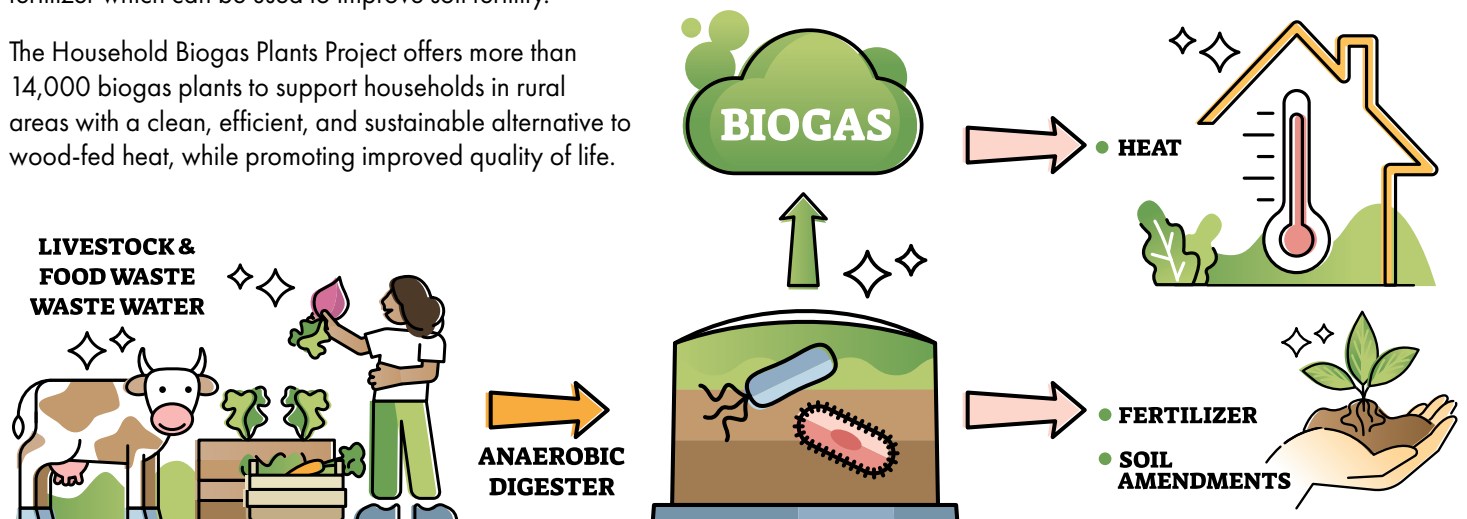
THE GOLD STANDARD OFFSET PROJECTS WE SUPPORTED IN 2021 AND 2022 INCLUDE:

HOUSEHOLD BIOGAS PLANTS PROJECT—INDIA

This Gold Standard Certified project builds biogas plants in rural Madhya Pradesh, India. Many families in this region rely on wood—a nonrenewable resource—to heat their homes. Along with the environmental impact of deforestation, burning wood emits both greenhouse gasses and particulate matter, resulting in poor indoor air quality.

In addition to these ecological and health costs, burning wood is also expensive. Biogas plants provide communities with fuel that is cleaner and more affordable, while reducing carbon emissions and protecting local forests. It also transforms waste into organic fertilizer which can be used to improve soil fertility.

The Household Biogas Plants Project offers more than 14,000 biogas plants to support households in rural areas with a clean, efficient, and sustainable alternative to wood-fed heat, while promoting improved quality of life.



**WE MUST TREAD SOFTLY
ON THE WEB OF LIFE, OR
ELSE IT WILL UNRAVEL
BENEATH US.**

—PAUL STAMETS

PARADIGM HEALTHY COOKSTOVES & WATER TREATMENT PROJECT—KENYA

Many families in rural Kenya spend a significant amount of time gathering wood—which is often locally depleted—to fuel cookstoves. This Gold Standard Certified project helps target communities throughout Kenya access healthy, energy-saving cookstoves and water treatment systems. This reduces fuel consumption, which preserves resources, limits emissions, and results in improved indoor air quality.

These efficient stoves help improve indoor air quality and reduce the amount of daily wood fuel needed, creating a safer, healthier, and more sustainable environment. Additionally, because the time-intensive travel to gather firewood is often assigned to girls, this project helps free up their time so that they may attend school.

The Paradigm Healthy Cookstoves and Water Treatment Project invests in manufacturing more than 100,000 stoves each year to provide households, health clinics, and schools in Kenya access to energy-saving cookstoves and water treatment systems.



MEvalyn, CC BY-SA 4.0 via Wikimedia Commons

Examples of energy-saving cookstoves that replace traditional open or three rock fires.

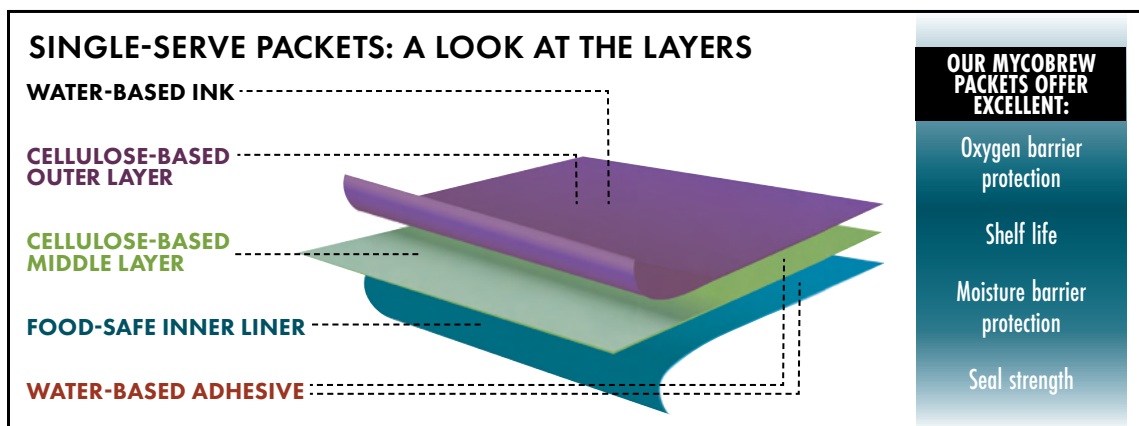
THE MATERIALS MATTER

There are many factors that go into our packaging decisions, from function, quality, and convenience, to composition and impact. We use ecologically responsible packaging materials designed to minimize our overall footprint. As part of our climate commitment, we continue to seek out materials that are effective, safe, and sustainable.



MYCOBREW PACKETS

Despite being ready to launch our drink mixes years prior, we waited until 2021, spending the preceding time in the development stage creating packaging material that aligned with our high standards for sustainability. Wanting to offer a single-use packet option for the sake of convenience, but not wanting to contribute to the production of conventional plastic or adding more waste to landfills, our team pioneered a brand-new type of material.



After years of pioneering work, we're proud to say that our MycoBrew® beverage packets are made from cutting-edge, custom-crafted material and are in alignment with our sustainability goals and standards!



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100% PCR PLASTIC

We use 100% post-consumer recycled (PCR) plastic containers for our capsules, powders, and MycoBrew® bulk canisters. They are light-weight, durable, and recyclable. Using recycled plastic gives new life to materials that would otherwise be destined for the landfill.

RECYCLED PAPER & CARDBOARD

Our capsules, extracts, MycoShield® sprays, and MycoBrew® drink mixes all come in cardboard cartons that are printed with vegetable-based ink. As a material, cardboard is lightweight, biodegradable, and can be easily recycled. The paper and cardboard materials we use are environmentally conscious, comprised of 85% recycled content.

AMBER GLASS

For both our mushroom mycelium extracts and our MycoShield® sprays, we use inert amber glass bottles. Glass containers are the ideal choice for these alcohol solution products because glass won't react chemically with alcohol. Besides being inert, the glass bottles we use also offer the advantage of being nonporous and recyclable, and maintain the quality of our products.

SUSTAINABILITY AT THE DISTRIBUTION CENTER

We continually seek out ecologically responsible materials to package and ship our products. While we continue to identify areas to improve the sustainability of our packaging, we are implementing innovative and sustainable changes at our shipping warehouse.



ELIMINATING POLYSTYRENE FOAM

Expanded Polystyrene Foam (*aka Styrofoam*) is a petroleum-based, non-biodegradable foam that is often used to keep delicate or fragile items from breaking during shipping. In 2021, we eliminated expanded polystyrene from the packaging and shipping of our marketing materials, filters, and flow hoods. As a replacement, we are using biodegradable foam corners and Falconboard, a recyclable material made primarily of renewable forest resources.

We've also implemented the use of Falconboard to build shipping crates. As a lighter and more sustainable alternative to traditional OSB plywood, Falconboard shipping crates reduce the weight of freight shipments, which has a positive impact on our transportation footprint.

Left: Biodegradable foam replaces styrofoam in our shipments.

Top: Packing material made from used cardboard reduces our need for packing paper and bubble wrap. **Opposite Page:** Shreddy Krueger in action.

EMISSIONS FROM PAPER (SCOPE 3)

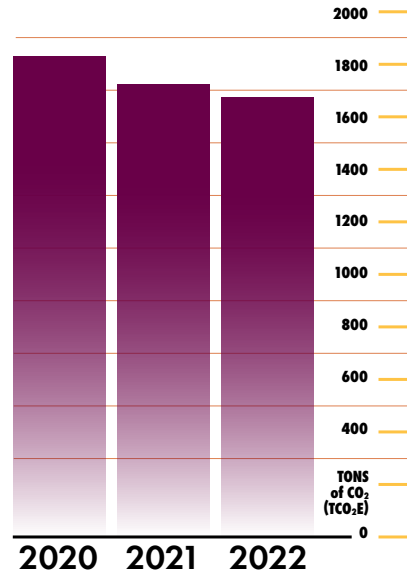
Paper products are Fungi Perfecti's largest source of scope 3 GHGs. We've reduced emissions embedded in paper by significant amounts.

2020 1834.6 TCO₂E
2021 1730.4 TCO₂E
2022 1679.2 TCO₂E

PERCENT CHANGE

2020-2021
-5.7% ↓

2021-2022
-3.0% ↓



REUSING CARDBOARD FOR PACKING MATERIAL

Another way we are increasing the efficiency and sustainability of shipping materials is with a cardboard perforator, affectionately named Shreddy Krueger. This machine converts previously used cardboard into a mesh-like packing material that is strong, flexible, recycled, and recyclable. With the cardboard perforator we are able to reduce waste and replace rolls of packing paper and bubble wrap with recycled perforated material that can be recycled again by the end user!

REDUCING PLASTIC FOR SHIPPING

When it comes to packaging, we strive to use materials that are in alignment with our sustainability goals. In our efforts to reduce plastic packaging, we have implemented the use of Danco Eco Clear bags for select products. As an alternative to standard plastic bags, Eco Clear bags are made from 100% compostable materials and will decompose over time.



COMMITMENT TO DIVERSITY, EQUITY & INCLUSION

In 2022, we took an important next step in advancing our values by establishing a Diversity, Equity, and Inclusion (DEI) Committee. The DEI Committee is made up of representatives from various departments and is working to create a nurturing, inclusive, supportive company culture as we grow by empowering and educating staff, and by advocating for policies and practices that align with DEI principles.

With a long-term view, the DEI Committee has collaboratively identified key goals while working to provide resources and educational opportunities that are immediately relevant and useful to our employees across the organization. Among other initiatives, they launched a quarterly training program for all employees on topics identified through an anonymous company-wide survey.

Shaping the future direction of the DEI efforts at Fungi Perfecti, the Committee is committed to building a deeper understanding of what it means to be culturally competent. The Committee seeks to partner with employees at every level of the company and the communities in which we live and work.

**IT'S IMPERATIVE
THAT WE RECOGNIZE
& CELEBRATE DIVERSITY
AMONG PEOPLE & CULTURES.
WE MUST PRIORITIZE KINDNESS,
UNDERSTANDING & RESPECT.
TOGETHER, WE CAN IMAGINE
& ACTUALIZE A
BETTER FUTURE
FOR US ALL.**

—PAUL STAMETS

3RD PARTY DESIGNATIONS

When it comes to the quality of our products and production practices, we work with a number of distinguished agencies to verify that our products are certified organic and our facilities uphold good manufacturing practices.



USDA & WSDA ORGANIC

Host Defense® Mushrooms™ products are USDA and/or WSDA Certified Organic and produced in accordance with organic regulations without the use of prohibited substances or excluded methods such as irradiation or genetic engineering.



As a result, Host Defense products and ingredients are inherently non-GMO. Fungi Perfecti® is Certified Organic by the Washington State Department of Agriculture as both a mushroom producer and processor.



NSF, FDA & CGMP

Fungi Perfecti facilities and manufacturing practices are held to the high level of quality dictated by NSF and FDA regulations. Our facilities are GMP certified through NSF, verifying that Good Manufacturing Practices are followed in the production of our Host Defense products.

GMP Registered



THANK YOU!

Your choice to purchase directly from Fungi Perfecti® helps support impactful sustainability efforts and climate positive action. As part of our commitment to offset 110% of our combined scopes 1, 2 & 3 emissions, we offset the carbon footprint of shipping packages to you!



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FOLLOW US TO FIND OUT MORE!



HUMAN HEALTH & ENVIRONMENTAL HEALTH ARE INEXTRICABLY LINKED.

The entire Fungi Perfecti family is united in our efforts to support both PEOPLE & PLANET. By improving operational efficiency, increasing our use of renewable energy, and supporting high-impact offset projects, we are continuing on our journey for a more sustainable future.*

Your choice to purchase beneficial mycelium-based supplements from Host Defense® Mushrooms™ helps support our sustainability efforts. We appreciate your partnership, value your loyalty, and look forward to being your source for high quality, consciously-produced products for years to come.*

JOIN US ON OUR CLIMATE POSITIVE JOURNEY!



**WE SHARE THIS PLANET
AS ONE PEOPLE.
WE MUST WORK
TOGETHER TO PROTECT
THE BIODIVERSITY &
THE BIOSPHERE FOR
OUR CHILDREN & FOR
GENERATIONS TO COME.**
—PAUL STAMETS

♻️ PRINTED ON 100% RECYCLED PAPER

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