NPU STUDENT AMBASSADOR

TOOLKIT 4: SUSTAINABLE FOOD

Credit: Familial Forestry

NATURE POSITIVE BY 2030

NATURE POSITIVE UNIVERSITIES

UNIVERSITY OF OXFORD

UN environment programme

UNITED NATIONS DECADE ON ECOSYSTEM RESTORATION 2021-2030

March 2026

Introduction to Toolkit 4

This Toolkit is intended to accompany the information provided in Workshop 4, focusing on sustainable food, and aims to share examples of actions taken by Nature Positive Universities (NPU) network members and suggest related actions you could carry out. These could be actions you could carry out individually, as part of a student group and/or in collaboration with staff at your institution.

We'd love to include your examples within the Toolkits and also on the NPU website. If you'd like your examples to be featured, please send us a photo and approx. 150 words of text (or a URL) and we'll look to include it in the Toolkit/ on the NPU website.

If you have any questions, we would suggest reaching out to other NPU Student Ambassadors through the WhatsApp Community groups or alternatively, you can email us at: emily.stott@biology.ox.ac.uk, hollie.thompson@biology.ox.ac.uk, naturepositiveuniversities@gmail.com

Thank you,

Emily, Hollie, Favour and Avani
March 2026

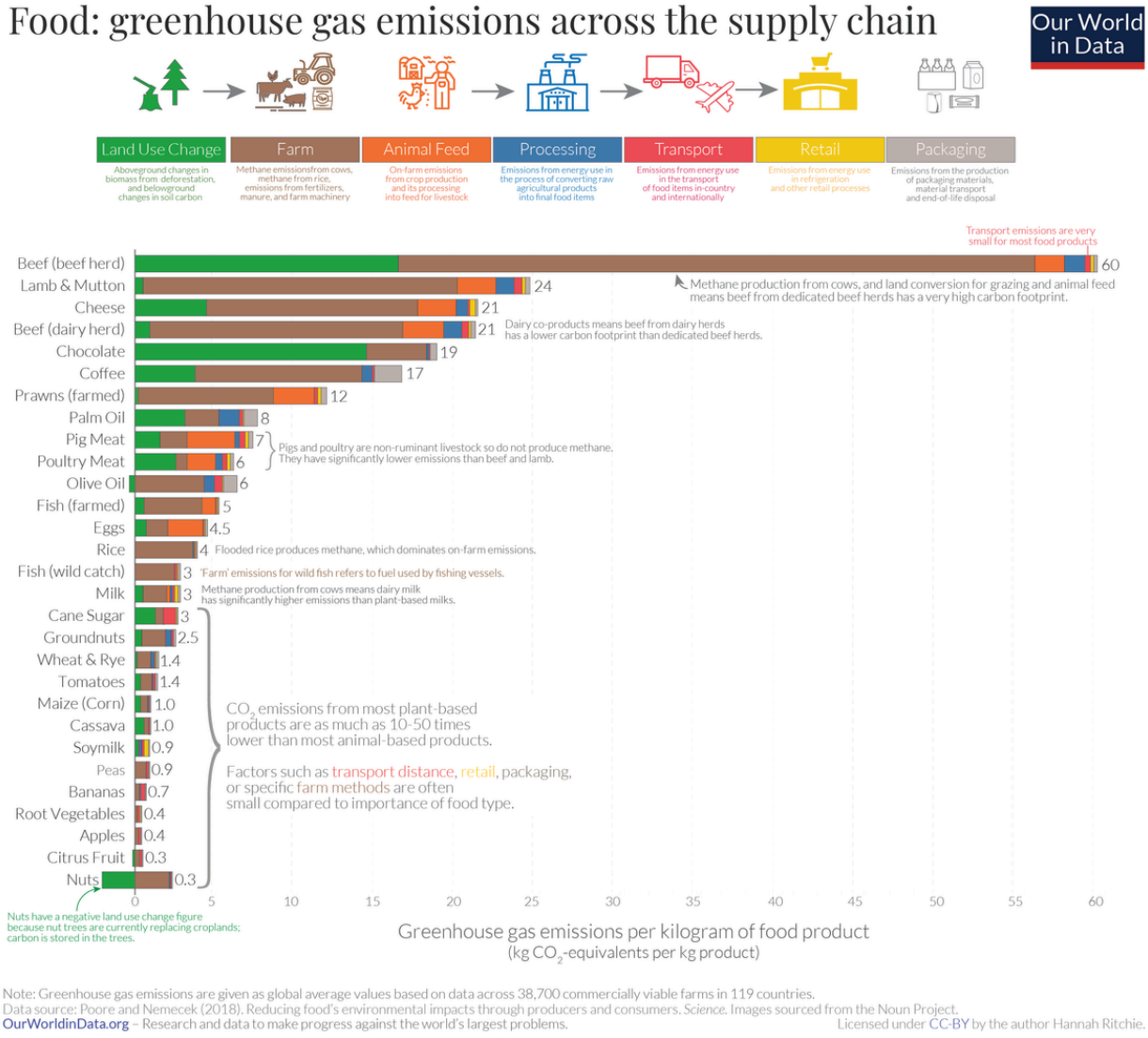
Sustainable food

Biodiversity is critical for safeguarding global food security, underpinning healthy and nutritious diets, improving rural livelihoods, and enhancing the resilience of people and communities. We need to use biodiversity in a sustainable way, so that we can better respond to rising climate change challenges and produce food in a way that doesn't harm our environment.

The global food system is the primary driver of biodiversity loss on the planet. With over 8 billion mouths to feed, more and more land is being given over to food production, causing habitat loss around the world and stripping vast swathes of land of its biodiversity. While the rise in biodiversity-friendly practices is encouraging, more needs to be done to stop the loss of biodiversity for food and agriculture.

The actions in this toolkit show how you can address the core drivers of biodiversity loss through changing diets, supply chains, and understanding around food.

Greenhouse gas emissions



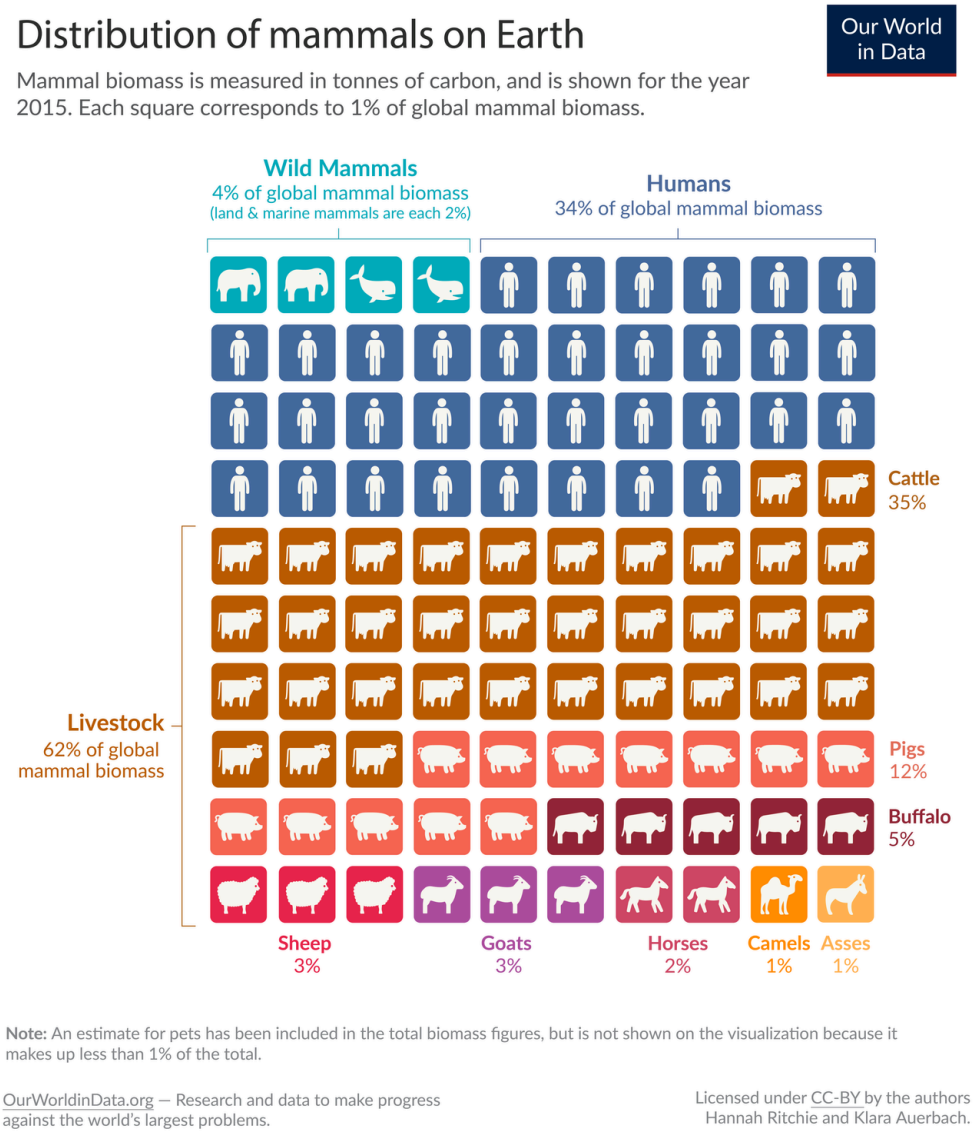
Note: Greenhouse gas emissions are given as global average values based on data across 38,700 commercially viable farms in 119 countries.
Data source: Poore and Nemecek (2018). Reducing food's environmental impacts through producers and consumers. *Science*. Images sourced from the Noun Project.
OurWorldinData.org – Research and data to make progress against the world's largest problems.

Methane production from cows and land conversion for grazing and animal feed means beef from dedicated beef herds has a high carbon footprint

CO2 emissions from most plant based products are 10-50 times lower than most animal-based products

Factors such as transport distance, retail, packaging or specific farm methods are often small compared to importance of food type

Distribution of mammals on earth



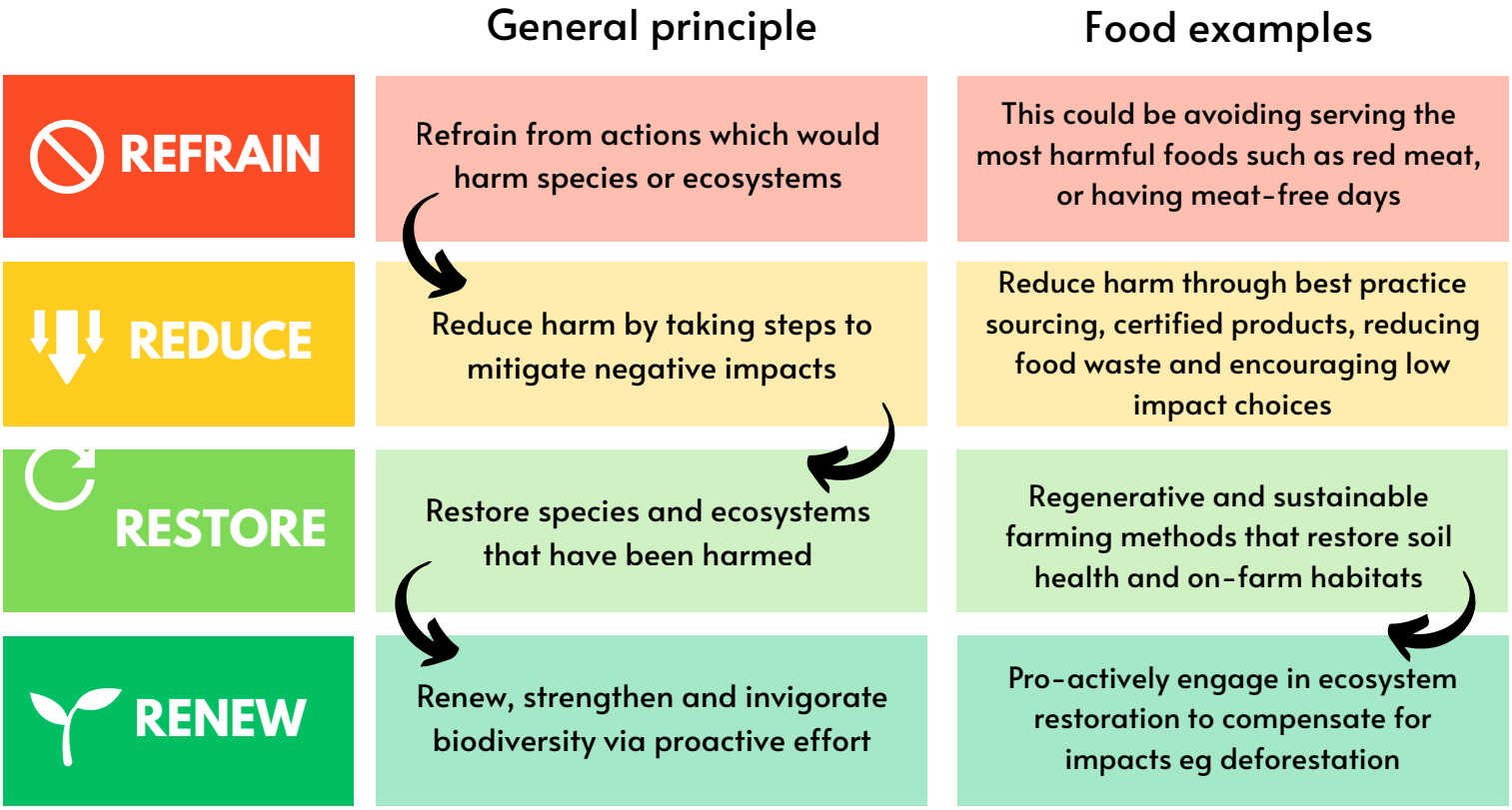
With the arrival of humans, wild land mammal biomass has declined by an estimated 85% and humans are now the dominant species. We see this when we look at the distribution of mammals across the world today.

Each icon in the above graphic is equivalent to around one million tonnes of carbon. This includes both land and marine wild mammals. Wild mammals make up just 4% of the mammal kingdom. The dominance of humans is clear. Alone, we account for around one-third of mammal biomass. Almost ten times greater than wild mammals. Our livestock then accounts for almost two-thirds. Cattle weigh almost ten times as much as all wild mammals combined. The biomass of all of the world's wild mammals is about a third of our pigs alone. https://ourworldindata.org/wild-mammals-birds-biomass

Conservation Hierarchy

A great framework to help planning actions and to work towards achieving conservation goals is the Conservation Hierarchy, which we promote throughout the NPU programme and was included in our previous toolkit. For more information about this hierarchy of principles, read through pages 7 and 8 in Toolkit 3: Biodiversity Actions on campus.

If you are interested to see how this can be applied in practice, please see the studies later in this toolkit which refer to two Oxford colleges that explored actions under each level: Refrain, Reduce, Restore and Renew.

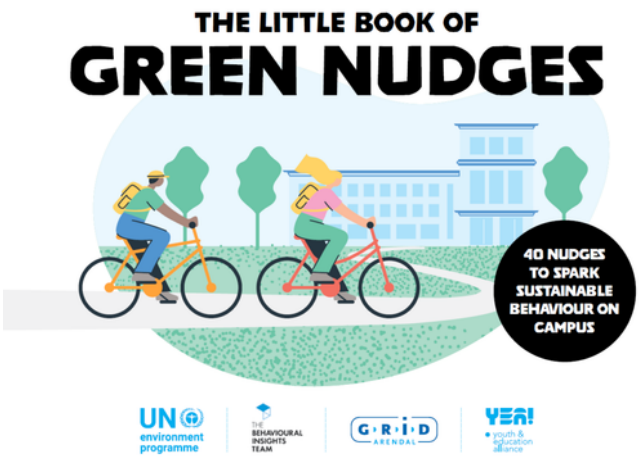


Run a 'food nudges' campaign in your university canteen

Changing the food staff and students at your university eat doesn't have to involve banning certain high-impact items. It can be a as simple as 'nudging' people to make more environmentally friendly decisions.

What does 'nudging' involve? Consider this: when a university provides easy bicycle parking and repair stations, it nudges students to bike to campus. When a university makes plant-based food the default dish, it nudges students towards environmentally-friendly diets. These "green nudges" are positive and gentle persuasions to influence behaviours on campus and to instil environmental values that can last a lifetime.

If you'd like to do this on your campus, check out the 'Little Book of Green Nudges' by UNEP which includes tips and tricks for a more sustainable diet amongst other things. You can find it here: https://www.unep.org/resources/publication/little-book-green-nudges



Half-Plate and Full Plate concept at Indraprastha Women's College, India

Students at Indraprastha Women's College can select a half-plate or full-plate from university facilities, depending on their need, reducing food wastage.

Sign your campus cafes up to Too Good To Go (Europe, North America & Australia)

Too Good To Go is a service that connects customers to restaurants and shops which have surplus unsold food, allowing them to purchase the food for a highly reduced price. At present it only operates in Europe, North America and Australia, but the more companies that sign up and more people that use the app, the more it will spread!

If your university has a campus cafe, restaurant, or grocery store, you can encourage them to join the programme. Write a letter, make a petition, or send an email explaining what Too Good To Go is and why you'd like them to sign up. They'll make more money by selling their excess food, and the planet will be helped by reducing food waste!

Too Good To Go

Check out the Too Good To Go website and app here.

If you are in a different location, there are likely other services which make use of and redistribute surplus food - do some research, and we'd love to hear about similar initiatives in your area.

Support a study of the impact of food on biodiversity at your university

The food our colleges and universities serve can have a huge impact on biodiversity depending on the range of foods offered and where it is supplied from. It can be difficult to get an idea of where the impacts are in your university canteen, so a great start is by supporting your university to conduct a study on the impact of food on biodiversity.

You don't have to do this alone - it could be a group research project in collaboration with staff, or something you campaign for your university to carry out.

It is possible to consider food impacts at various levels - you might just address the food served in one canteen, cafe or site, or you could attempt to look at all food purchasing across your institution, depending on your time, resources, and access to data.

If your university has made a Nature Positive Pledge, this work could also contribute towards your university's biodiversity baseline as a starting point to reducing impacts measurably in the future.

The following page shows an outline of the methods that researchers at University of Oxford have used in a number of recent research studies quantifying the biodiversity impacts of food consumption as well as case studies from two Oxford colleges and University of British Colombia, Canada which used the same approach.

Please get in touch with the NPU team if you are keen to take forward a study of biodiversity impacts of food at your institution and we will try to support you!

Determining biodiversity footprints: A how-to guide for food impacts

1. Choose the scope

Which parts of your operations will you look at? For example, food purchased at student halls of residence, canteens, externally run cafes.

2. Collect the data

Data relating to the activities (food purchasing) within the scope. This may be a list of raw ingredients (kg), composite items (no. kg/item) or just spend per category.
Consider which activities are under direct or indirect influence, for example a university run canteen versus a private cafe operating on campus.

3. Calculate environmental impacts

Quantitative measures of the negative life cycle impacts of activity data. If you are interested to help carry out a study for your institution using the methods that Oxford used, please get in touch.

Life Cycle Impacts typically consider:

- Greenhouse gas emissions (kg CO2e)
- Water use (litres)
- Land use (m2)
- Eutrophication (kg PO4e)
- Acidification (kg SO2e)

4. Calculate biodiversity impact

Life cycle impacts are converted into a proxy biodiversity measure. Oxford used the ReCiPe conversion factors based on local risk of species extinction. (species.year)

Some data and methods you may want to use include:

open FOOD facts

exiobase

ReCiPe

ReCiPe conversion factors

LCA Meta-analysis of food products Poore & Nemecek (2018) database

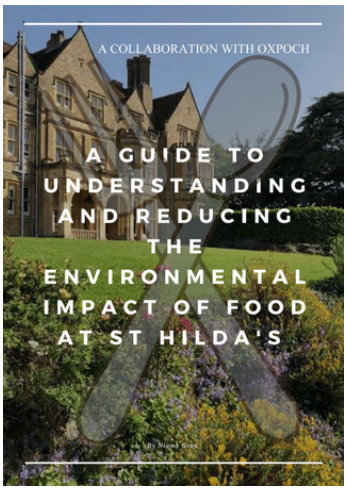
Clark, M. & al. (2022) Estimating the environmental impacts of 57,000 food products

A student-led study into the environmental impacts of food at St Hilda's College, University of Oxford:

An undergraduate biology student at University of Oxford produced a guide for understanding and reducing the impacts of food at her Oxford college. You can download this here.

The purpose of this handbook was to:

- Inform St Hilda's College of their current impacts attributed to meals from the Dining Hall.
- Given these impacts, suggest how St Hilda's could improve based on the Conservation Hierarchy.

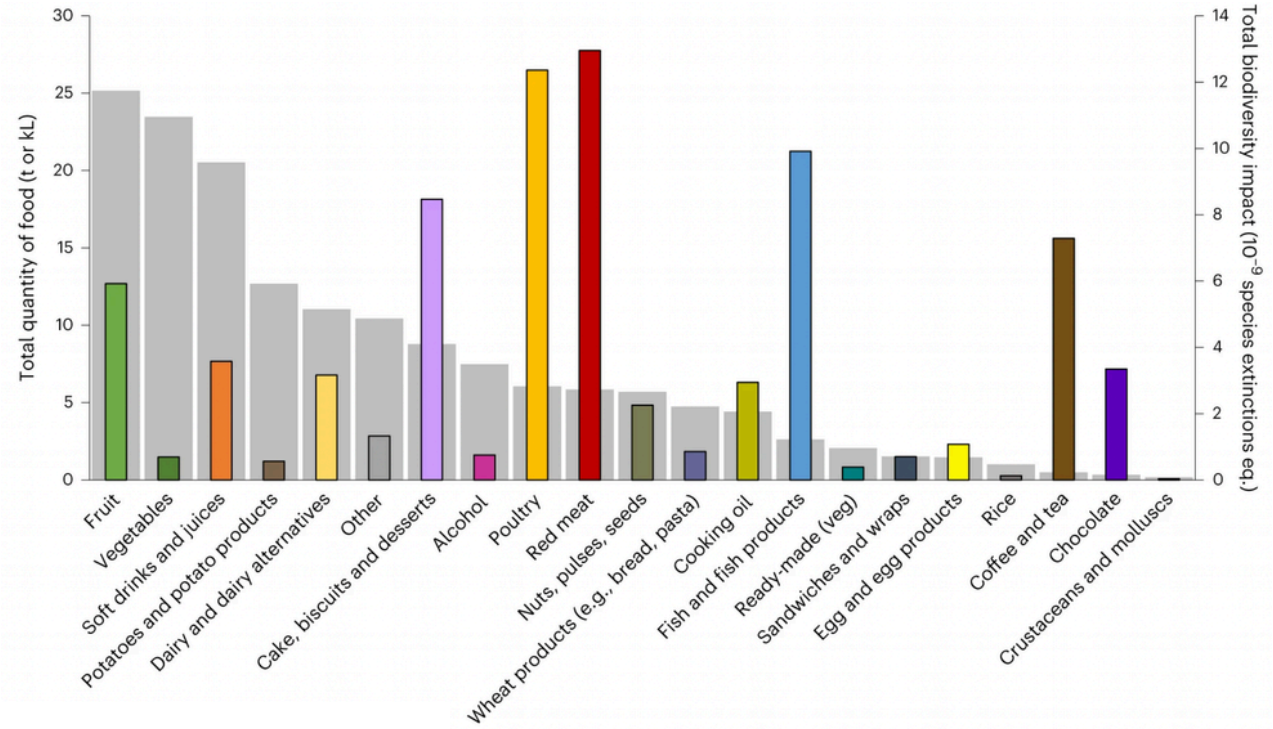


Example handbook pages:

An Oxford study into the environmental impacts of food at Lady Margaret Hall, University of Oxford:

Another study at Oxford was conducted by researchers, students and staff at another Oxford college, Lady Margaret Hall (LMH). This applies the Conservation Hierarchy framework to guide LMH towards reducing its impacts from food and considers setting ambitious targets and actions for biodiversity in ways that are practical and acceptable for the College. Read the full paper here.

The below graph represents the quantities (tonnes or kilolitres) and categories of food consumed at the college over a 3 month period, combined with the relative biodiversity impacts of each category. It is clear to see particularly high impact items such as red meat, poultry, fish, coffee and chocolate.



nature food

Analysis

https://doi.org/10.1038/s43016-022-00660-2

Nature-positive goals for an organization's food consumption

Received: 16 February 2022
Accepted: 4 November 2022

I. Taylor, J. W. Bull, B. Ashton, E. Biggs, M. Clark, N. Gray, H. M. J. Grub, C. Stewart & E. J. Milner-Gulland

An Oxford study into the environmental impacts of food at Lady Margaret Hall, University of Oxford:

The below table represents a range of actions that can be taken at a university at each step of the Conservation Hierarchy. These were taken from a study at LMH, University of Oxford as mentioned on the previous page, however many of the actions would be relevant at any institution.

REFRAIN

- Avoid serving high impact items that contribute towards biodiversity loss, such as most damaging red meats (eg beef, lamb).
- Offer substitutions or a meat-free day.
- Refrain from serving coffee or chocolate bars, or in certain locations / settings.

REDUCE

- Best practice sourcing to reduce biodiversity impacts, such as certified products, local seasonal fruit / vegetables.
- Order and produce appropriate amounts of food to avoid waste.
- Alter food to reduce relative amounts of high impact food.
- Offer financial incentives to encourage consumers to choose low impact foods.
- Provide staff with tools and knowledge to encourage low impact choices.

RESTORE

COMPENSATORY ACTIONS

- Invest in habitat restoration of farms that food is purchased from.
- Reach out to suppliers and identify farms that could be targeted for investment in habitat restoration.

PRO-ACTIVE ACTIONS

- Improve monitoring of food purchasing and waste.
- Promote education into sustainable diets and food systems.
- Organise volunteer gardening opportunities.
- Engage with other colleges / schools to share practices tools guidance on delivering sustainable food.
- Invest in supporting key food suppliers to improve their sustainability practices.

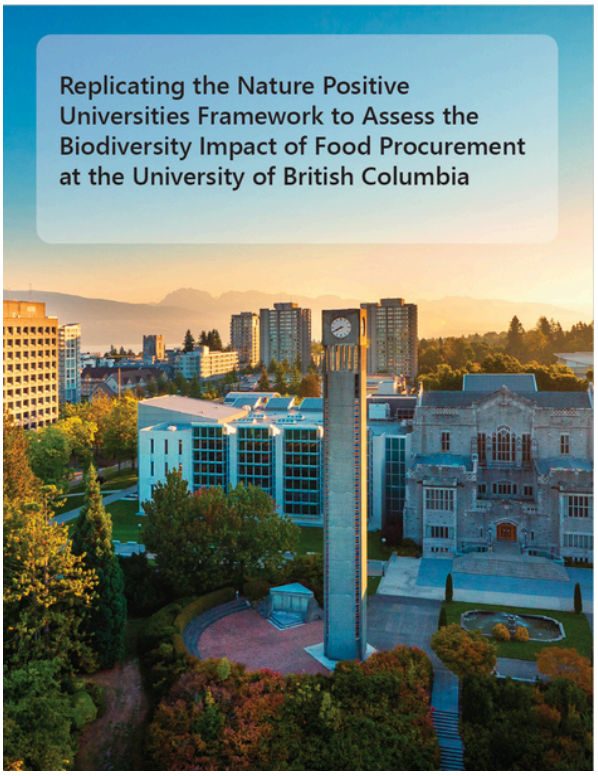
RENEW

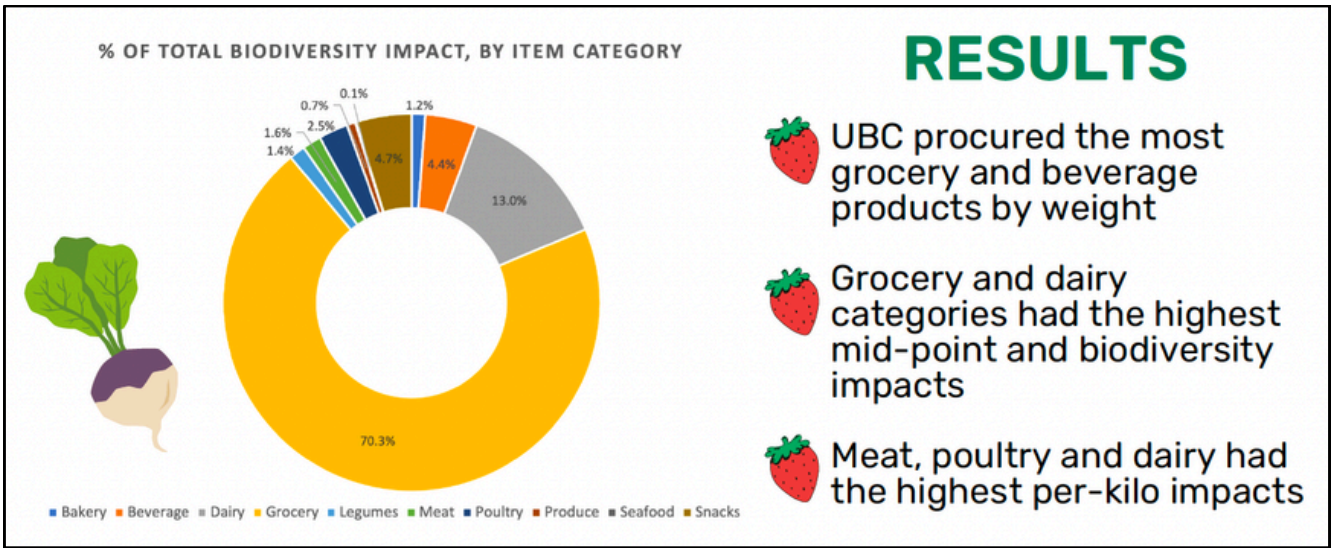
- Purchase or engage in biodiversity offsets to mitigate residual biodiversity impacts of food.

Assessing the biodiversity impacts of food at University of British Columbia, Canada:

Case Study: University of British Columbia, Canada

Research students at University of British Columbia (UBC) assessed the environmental impacts of their food procurement using Oxford's conceptual framework, looking specifically at the GHG emissions, land and water use, air and water pollution of food procured by UBC Food Services (UBCFS) outlets (including dining halls, restaurants, retail and catering) between January and December 2022. They used the impacts to estimate the extent of biodiversity loss associated with food procurement and identify areas for reduction of negative impacts.





Final report available here:
https://www.naturepositiveuniversities.net/wpcontent/uploads/2024/04/NPU_UBC_FinalReport.pdf

Institutional catering practices at St Hilda's College, Oxford

St Hilda's College Oxford outline a range of food practices on their college website, including that they are aiming to move the menus for all of their catering for students, staff and visitors in line with the seasons and provide local and British produce. A popular annual "Green Feast" has showcased sustainably produced food since 2008. Below are a range of their policies:

Two of the three options on the daily Dining Hall menu are vegetarian or vegan while Mondays are entirely meat free as are guest nights.

Food suppliers assessed for ethical and sustainable practices

Food waste is used for energy production

Gas cookers all replaced with electric

Reduced single use plastic

Encouraging keep cups and reusable water bottles
Recycle packaging where possible

Cooking oil is recycled off site

Limiting use of tablecloths to minimise washing

View St Hilda's website

Grow your own food on campus

One great way you can promote sustainable consumption and highlight the importance of how food is produced is by growing your own food on campus. This helps you to consider what can potentially harm nature in food growing – converting land from nature to agricultural land, using chemicals to prevent pests and weeds, and removing plants from the soil to interrupt nutrient cycles. If you'd like to start a campus food garden, check out some inspiration from the universities below!


Credit: McGill University


Credit: McGill University

Student-run gardens and urban agriculture at McGill

McGill University's main campus may be in the centre of Canada's second largest city, but its students, faculty, and staff still find ways to connect with nature and promote biodiversity through a variety of garden initiatives.

In addition to cultivating pollinator gardens on both campuses, McGill is home to the Macdonald Student-Run Ecological Gardens and the Campus Crops initiative. This student-led organisation provides local and sustainable produce for the University and the broader community.

Examples from our network:

Student sustainability bungalow food growing

Keele University, UK has a student sustainability bungalow where some students can opt to live to engage with sustainability projects, which has a garden outside used for growing food!


Credit: Keele University


Credit: University of Ottawa

Pollinator garden and food growing in Ottawa

Former NPU Student Ambassador Victoria Rose King at University of Ottawa, Canada created a pollinator garden which also included blueberry bushes.

Victoria's project aimed to create an opportunity and space for students and faculty members to focus on habitat restoration, community engagement, mindfulness, and potential research. "I wanted to build a pollinator garden in a central campus area to allow students to be mindful and reflect on nature while reflecting on their responsibility to the Earth."

Examples from our network:

Familial Forestry nutri-gardens, Bikaner

Student Ambassador Avani Jyani at Dungar Government College Bikaner, India has been involved with creation of nutri-gardens to offer healthy fresh food to schools and colleges in her region.


Credit: Familial Forestry

To find out more, visit Familial Forestry project website, which also features their sapling nurseries and ecological restoration projects.


Credit: Avery Morin, Laurentian University

Community garden creation at Laurentian University

Student Ambassadors at Laurentian University, Canada created a student community garden, which they hope will increase food security and educate students on sustainable and respectful harvest of fruits, vegetables and herbs.

There are many online resources helping you begin a campus food garden, or if you'd like some tips you can ask your fellow Ambassadors on our WhatsApp Community group.

Promote more plant-based options in your canteen

Especially in wealthy countries, animal products can have an extremely large environmental impact. Much more land, resources, and carbon emissions can go into producing meat and dairy compared to vegetarian protein sources, so promoting plant-based options can be a great way to reduce the biodiversity footprint of your university's food.

With this Action, you can get creative in how you achieve it! Would it be best to create a petition, to speak directly to your catering staff, to raise awareness amongst students?

Plant-based universities

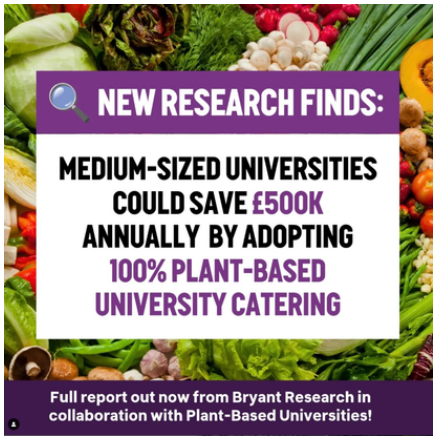
One example of promoting plant-based options is the Plant Based Universities campaign by students across Europe who are demanding a transition to 100% sustainable plant-based catering to tackle the climate and nature crises. Since starting in 2021 at 3 universities in the UK (King's College London, University College London, and the University of Warwick), Plant Based Universities now currently has active campaigns in over 70 universities all across Europe, run by student teams on their campuses, and expect to continue growing.

Promote more plant-based options in your canteen

The campaign aims to reframe the mainstream environmental debate so that a fully plant-based food system can be celebrated as a key solution to the climate and nature emergencies. They are not demanding a ban on animal products from campuses, but rather that universities divest from these industries at their outlets just as they have fossil fuels.

Students from several universities are part of this, and have held stalls, dropped banners, raised motions, organised media articles and held debates in their student unions to raise awareness and attract support of plant-based menus.

Example social media posts:



Want to find out more? Visit the Plant-Based Universities Initiative website here as well as their social media channels, including Instagram and Facebook.

Celebrate World Pulses Day on February 10th

Pulses are critical when it comes to facing the challenges arising from poverty, food security, human health and nutrition, soil health, and the environment. The United Nations General Assembly nominated February 10 as World Pulses Day to raise awareness and highlight the nutritional benefits of pulses and their contribution to sustainable food systems and world hunger.

You could work with your university canteen to promote pulse-based dishes on this day, or arrange an event on campus to promote all the benefits to fellow students.

Host a screening of a documentary about food and the planet

There is so much information on how food affects the environment. One way to raise awareness of the issue is to host a screening of a documentary about food and the planet.

Top tips for planning your film showing:

- Plan a location with appropriate capacity.
- Ensure the room is dark!
- Bring snacks!
- Suggest a discussion after the screening, and always use this as a springboard to tell your audience how they can get involved in Nature Positive activities.

Host a screening of a documentary about food and the planet


Credit: Ahmadu Bello University students

Ambassador Case Study:

Student Ambassadors at Ahmadu Bello University, Nigeria hosted a screening of a documentary about food and the planet, to raise awareness about the impact that our food choices have on the environment.

Some food documentaries you could choose:

Some of our favourite documentaries can be found on Waterbear (free), YouTube, and Netflix. Have you watched any of these?

- Just Eat It
- Kiss the Ground
- Cowspiracy
- Meat the Future
- Seaspiricy

Ambassador Case Study

Haleema Raza Khan - Vice Chancellor's Colloquium on Climate Change at University of Oxford, UK:

"Participating in the Vice Chancellor's Colloquium involved multidisciplinary discussions on climate change, drawing on scientific, legal, humanities, and economic perspectives. A key focus was turning these insights into practical action. Working in a group of three, we developed a locally grounded response to food insecurity in Oxford.

We began by engaging directly with the community, conducting interviews with homeless individuals and college catering staff to understand both needs and existing food waste streams. We also considered the legal and logistical challenges of redistributing prepared food, including safety and liability. Based on this, we designed a strategy to redistribute surplus hot meals from college kitchens to the local homeless community.

Our proposal was awarded £500 in university funding and has since entered a beta stage, now being developed further by younger students. A central aim was to create a simple, transferable framework that could be sustained beyond our involvement, ensuring the project's long-term impact and continuity".

Photo credit: Haleema Raza Khan, University of Oxford, UK

Ambassador actions:

As part of this fourth Toolkit on the theme of "Sustainable food" we've included a range of suggested actions below:

Workshop 4 Actions:

1. Share with us a picture of a plant based meal from your culture or institution.
2. Explore the impacts of food through a calculator: https://www.earthday.org/foodprints-calculators/

3. Explore any sustainable food initiatives at your institution and submit as a case study on the NPU website.
4. Think through practical steps towards planning a food action and share through an Activity Form (Google Form or offline PDF version). Actions might include:
    - Exploring food-growing on campus, especially fruit and nut trees
    - Tackling food waste, eg portion sizes, pre-ordering meals, composting
    - Campaigning for more plant based food options or defaults.

1 Share a picture of a plant based meal

As part of the quiz for this month, we've included a space for you to share a picture of a plant based meal from your culture or that is served on campus, and asked for you to describe what this meal is and any cultural significance it may have.

Light seasonal rice bowl - combining egusi, plantain, legumes

Begun Bharta - roasted eggplants, mustard oil, chopped onions, green chillies and salt

Rice, Dal made from lentils, a dish made from ridge gourds and the other is spiny gourd fry.

Curry (tofu based) with potato and vegetables

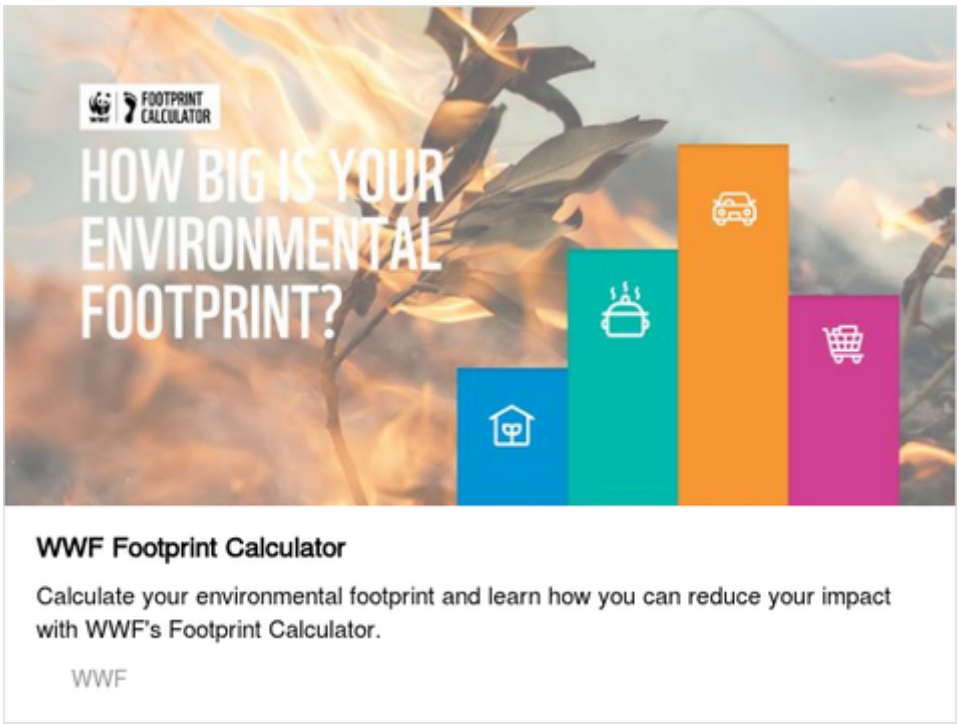
A vegan taco - made with mushrooms, peppers or tofu

We are hoping to use these for a future NPU social media post celebrating healthy low-impact meals from across the NPU network. If you are willing, we'd love to feature you holding the dish you choose!

2 Explore impacts through a calculator

There are many ways to calculate the impacts of food and a number of different online calculators that can be used, some of which can be accessed through the Earthday.org website: https://www.earthday.org/foodprints-calculators/ .

We encourage you to explore the impacts of food and you could share some of your findings or thoughts with us as part of this month's quiz.



WWF Footprint Calculator

Calculate your environmental footprint and learn how you can reduce your impact with WWF's Footprint Calculator.

WWF

3 Explore sustainable food initiatives

Explore any sustainable food initiatives that are taking place at your institution. These could involve food waste, portion sizes, promotion of plant based or vegetarian options, food labelling and awareness campaigns around food.

We would love to feature these initiatives on the NPU website - you can share these with us through the case study form on our website: https://www.naturepositiveuniversities.net/submit-a-case-study/.

4 Plan food actions

You might want to think through the below practical steps towards planning food actions on your campus and then complete an activity form to share your ideas with us (Google Form or offline PDF).

What you want to do or work towards?

Who you might need to work with or get permission from?

When is a reasonable timeframe to achieve this action?

How you will carry this out and which resources you would need?

Further guidance and information:

- Explore Case Studies on the NPU website, several of which involve food projects

- Watch Webinar 5 in the NPU series from 2024, which features speakers from the University of Oxford and Indraprastha College for Women, University of Delhi on the topic of "University food consumption"

- Watch back a presentation given by Laura Astudillo Mesías and Başak Şendoğan from the Sustainable Lifestyles and Education Team at the United Nations Environment Programme (UNEP) at a Student Ambassador workshop in 2024

- Watch back presentations given by Charlotte Maddinson, Luca Pollozek and Tomoya Akiyama at a Student Ambassador workshop in 2024