



University of Oxford Environmental Sustainability

Annual Report 2022-23



Image by Luis Cartaxo,
Sustainability Photographer
of the Year Awards 2023.



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Introduction

Foreword by Harriet Waters

It has been a busy year in Environmental Sustainability at Oxford University.

We started this academic year facing a surge in energy prices. Something that affects us all at home and at work. So, in autumn 2022 we launched the **Be Energy Friendly campaign** asking everyone to take a few essential steps to reduce energy consumption. Running the first ever University and colleges coordinated energy saving campaign in conjunction with implementing new energy policies proved that together we can deliver positive change.

This year we also introduced the **travel policy** with reduction goals for aviation and a flight levy. We can now account for the carbon emissions from University business flights and work together to reduce them. For our biodiversity commitment, we have collated the different data which exists across our estate – this gives us the ability to work out how best to produce a comprehensive baseline. Many of our staff and students contributed to our local biodiversity by participating in the **Good Gardener campaign** creating wildflower patches across the University estates and colleges to support pollinators.

In February we celebrated our first ever **Green Action Week** delivered by the University community. Over 50 events reflected the diverse ways in which environmental sustainability can be communicated and delivered. From academic research on how the world around us functions to enjoying the outdoors, improving our wellbeing, inspiring our arts and even having a good laugh on a climate change comedy night. The power and creativity of our community went beyond our expectation.



All of these, and more, would not be achievable without the involvement and support from the University community, for which we are very grateful. We have such a dedicated and talented network of people in the University who are contributing to improve our environmental impact, be that in research, education, operations or leadership.

Thank you all for taking part in this incredible work! We are so proud to be part of this journey.

Harriet Waters
Head of Environmental Sustainability

About this report

This report reviews the environmental sustainability work of the University of Oxford between August 2022 and July 2023.

It focuses on the University's functional estate – the buildings that are used for its day-to-day activities. It includes all the buildings and facilities that either support or directly deliver research or education, such as specialist research buildings, teaching laboratories, lecture halls, sports facilities, libraries, museums, offices, and ceremonial buildings, but excludes graduate accommodation.

The carbon emission figures are based on invoiced consumption or value. The carbon emissions have been calculated in line with the University of Oxford Emissions Report methodology. The report does not cover the operations or buildings of the colleges or of Oxford University Press, which are independent entities. The biodiversity impact of the University's supply chain is calculated using the methodology detailed in Bull et al., 2022. Previous biodiversity impact assessments have indicated that the University's supply chain contribute to the most significant biodiversity impacts. The total

biodiversity impact of the University will be calculated once the data becomes available.

We trust that you will find the information useful. We would welcome feedback from our readers to help us continue to improve the way we communicate our environmental sustainability performance.

For more information, contact the Environmental Sustainability team.

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Image by Ian Curtis
Sustainability Photographer of
the Year Awards 2023.

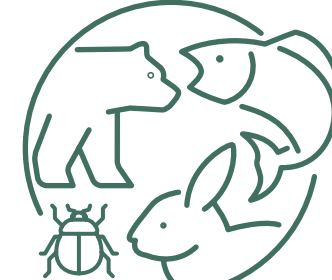
The year at a glance



310 staff and students have completed cycle training, representing an **increase of 45%** from the previous year.



The first ever **Oxford Green Action Week** took place with **over 50 environmental events** initiated by partners across the University, colleges and wider Oxfordshire.



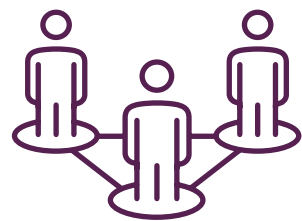
A comprehensive review of nearly **300 ecological studies** conducted across the University estate was completed, mapping our collective biodiversity data.



The Good Gardener campaign planted **24 patches of British wildflowers** across the collegiate University to support Oxford's pollinators.



The 2023 Travel Survey found that **74% of University staff** and **97% of students** commute sustainably.



190 teams took part in the LEAF (Laboratory Efficiency Assessment Framework) and Green Impact engagement programmes. Representing a growing network of staff and students **committed to implementing sustainable practices** across the University and colleges.



Projects funded by the **Oxford Sustainability Fund** for energy efficient equipment and building management systems have **averted 363 tCO₂e** and **saved £394,852**.

The University reported over **13,000 business trips** by aviation, emitting an estimated **18,000 tCO₂e**. A flight levy of **£30/tCO₂e** was placed on these flights **dedicated to improving sustainability** at the University through the Oxford Sustainability Fund.



Image by Jack Frowde.
Sustainability Photographer of
the Year Awards 2022.

Data reported on the University Financial Statement 2022-23

Carbon emissions

Emissions of carbon linked to electricity use and our supply chain in the last year have increased; largely due to inflation and the carbon intensity of the UK grid. Emissions from gas consumption have been reduced. The table below offers a categorised summary of emissions from the University. The emissions data, representing the 2022/23 academic year, is calculated (where possible) using physical measurements and the widely used UK government conversion factors for company reporting of greenhouse gas emissions (2023 dataset).

Between 2021/22 and 2022/23, Scope 1 carbon emissions (emissions directly emitted by the University) fell by 5%, with gas consumption dropping from 105,593,001 kWh in 21/22 to 98,549,712 kWh in 22/23. This reflects the efforts to reduce heating

demand including the Be Energy Friendly Campaign and implementation of the internal temperature policy.

Scope 2 carbon emissions (emissions emitted by the production and use of electricity) increased by 17% over the same period. This was primarily due to changes in the carbon intensity of the U.K. grid, due to the import/export ratio of energy within Europe but there was also an increase in electricity use by the University from 113,132,680 kWh in 21/22 to 117,900,820 kWh in 22/23.

Scope 3 (indirect emissions e.g., those produced by the supply chain) emissions also increased between 2021/22 and 2022/23. This was primarily due to an increase in the price of purchased goods and services because of inflationary pressure.

University of Oxford Carbon Emissions (tCO ₂ e)	2022/23	2021/22	2020/21	2019/20
Scope 1 Emissions	18,860	19,854	25,009	18,097
Scope 1 Removals	- 4,534	- 4,534	- 4,534	- 4,534
Scope 2 Emissions	24,414	20,737	21,487	22,883
Scope 2 Offsets	- 24,414	- 20,737	- 21,487	- 22,883
Scope 3 Emissions	305,442	230,823	158,406	229,356

Assessing Oxford's supply chain impacts on biodiversity

The impact on biodiversity dropped slightly in 2021/22 when compared to 2019/20, this is primarily as a result of the reduced water use by the University's suppliers. Previous assessments have shown that the University's biggest impact on biodiversity is driven by the impacts of its supply chain. Five types of impact were assessed, including air pollution, greenhouse gases (GHG), land use, water use and water pollution.

The change in the biodiversity impact of the University's supply chain across three financial years is shown in Figure 1. The biodiversity impact has increased since 2018/19, however the impact in 2021/22 has decreased slightly compared to 2019/20.

The University can further reduce its supply chain impacts on biodiversity by scrutinising the sustainability commitments and environmental management of suppliers. The University will work with suppliers to investigate what can be done to reduce these impacts.

This assessment has allowed the University to better understand the local and global locations where biodiversity is impacted by its supply chain, making it possible to prioritise areas for compensation and restoration projects. In the coming year, the University will continue to quantify the impact of all aspects of its activities, and to develop and share the methods with others in the sector.

Change in biodiversity impact of the University supply chain

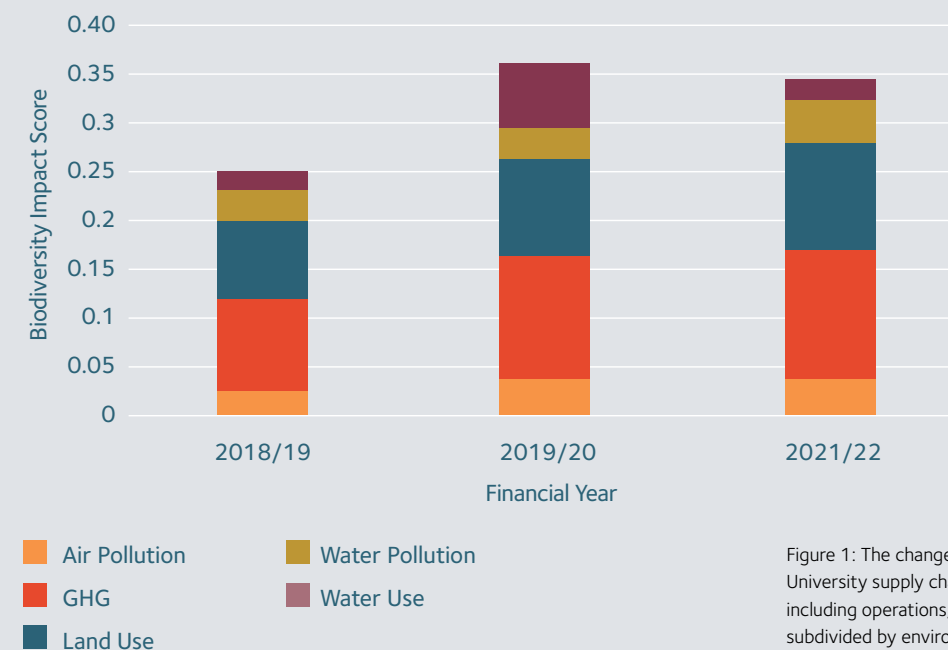


Figure 1: The change in biodiversity impact of the University supply chain, across three financial years including operations, research and construction subdivided by environmental pressures.

Our Strategic Commitments

Research

Objective: Increase research and engagement in environmental sustainability.

Progress:

- The team continued to coordinate and attend the Environmental Sustainability Subcommittee (ESSC) Research Subgroup. Bringing together a multi-disciplinary group from both professional services and academic departments on a termly basis to progress our strategic goals.
- Started a collaboration with Research Services to establish the number of published works aligned with the Oxford Networks for the Environment (ONE) research priorities.
- Began assessing the impact of environmental research, particularly where it is being used to inform public policy.

Next steps:

The Research Subgroup will produce a paper outlining a summary of the research baselining work, which will highlight the research areas where Oxford is producing high impact research. This paper will open a discussion on how we support diverse areas of environmental sustainability research.

Curriculum

Objective: Offer all students the opportunity to study environmental sustainability, either within or outside the examined curriculum.

Progress:

- In February 2023, the Curriculum Project Lead joined the Environmental Sustainability team to lead the baseline research for the curriculum priority.
- During Hilary and Trinity terms, plans for the curriculum work advanced through the governance process of the Curriculum Subgroup, ESSC and Education Committee.
- A consultation process on the curriculum commitments has involved divisional education leadership, Educational Policy Support, Centre for Teaching and Learning, Oxford SU, Oxford Climate Society, and other stakeholders.

- In summer 2023, three Crankstart student interns supported the curriculum mapping, contributing to data collection, analysis, and the writing of case studies.
- The Curriculum Subgroup of the ESSC, which has representation from the four academic divisions, Centre for Teaching and Learning, and Continuing Education, has also developed a definitional framework for interdisciplinary sustainability education which will be used in the curriculum mapping.

Next steps:

The baseline study to map opportunities to study environmental sustainability in the curriculum is expected to continue. The report on sustainability in the curriculum is due to be released in early 2024. In addition, Oxford has joined the SOS-UK Responsible Futures programme as part of the 23/24 cohort. This will provide a foundation for the Student Union and Environmental Sustainability team to collaborate on improving sustainability education at Oxford, while learning from the experiences of other universities across the UK and benefiting from the support of the SOS-UK team.

During the 2023–24 academic year, a pilot, cross-curricular, interdisciplinary programme, initiated by the Vice-Chancellor, will focus on climate change. The programme, focusing on skills development for undergraduate students, will support the curriculum priority of the University's Environmental Sustainability Strategy.

Carbon emissions from University buildings

Objective: Reduce carbon emissions related to our energy consumption to a minimal level.

Progress:

- Carried out improvements to building fabric and air tightness across 17 estate buildings, resulting in an average energy savings of 10–12% and greater heat retention during winter months.
- Implemented a datacentre cooling project through

- optimisation and replacement of fan units in the Physics department with an estimated energy saving of 122,640kWh/year. At current energy prices this saves the department £24,528 per year with a payback period for capital invested within six years.
- Optimisations made to the Building Management System (BMS) at Saïd Business School delivered energy savings of 45 tCO₂e over a 12-month period, equating to ~£25,000 in utility bill savings. This project required no capital change to equipment, using instead the data to spot inefficiencies and make necessary adjustments.
- Extension of the solar PV installation at Statistics Laboratory increasing the capacity by 108%.

Next steps:

- Expanding solar PV installations across the University and increasing the capacity of existing systems.
- Conducting a case study to investigate the potential energy savings associated with solar film for windows.
- Prioritising mechanical upgrades (e.g., changing belt driven pumps to direct drive) across the ten estate buildings with the highest emissions.

- Supporting Estates Services' Repair & Maintenance and Capital Projects teams to improve the sustainability of ongoing projects with cost uplifts.
- Fume cupboard optimisation and energy savings for laboratories. Introducing new technology across MPLS (Mathematical, Physical and Life Sciences), proven to reduce the airflow necessary to meet the required safety face velocity.

Biodiversity

Objective: Identify and address the University's principal biodiversity impacts through its operations and supply chain and enhance biodiversity on the University's estate.

Progress:

- In February 2023, the Biodiversity Manager joined the Environmental Sustainability team to facilitate the University's efforts to address biodiversity.
- Quantified the 2021–22 biodiversity impact of the University's supply chain.
- Conducted a comprehensive review of nearly 300 ecological studies examining the University estate. Mapping the collective data to inform future biodiversity enhancement.



Image by Diarmid Xu, Sustainability Photographer of the Year Awards 2021.

Our Strategic Commitments



Image by Jake Dudderidge
Sustainability Photographer
of the Year Awards 2023.

- Initiated the Good Gardener campaign to support pollinators and stimulate greater interest in biodiversity among the University community. Over 50 teams of staff and students participated in planting 24 patches of native wildflowers across the collegiate University.
- The Environmental Sustainability team became a member of the newly formed Green Estate Group. An initiative within Estates Services to provide greater coordination and strategic alignment for the management of Oxford's landholdings. The project will promote sustainable practice in land management and access to green space for teaching and research.

Next steps:

- The University will continue to quantify the impact of all aspects of its operations. Expanding our

understanding of the biodiversity impacts from travel, food, waste, the built environment and resource use.

- The University will work with suppliers to investigate what can be done to reduce the impact of our supply chain on biodiversity. Implementing strong purchasing standards and monitoring mechanisms that take into account the environmental management of suppliers.
- Quantify and reduce the impact of the University's activities on the biodiversity within our estate and provide opportunities for enhancement.
- The University will develop a policy for off-site biodiversity restoration programs to reduce its wider supply chain biodiversity impacts.

Sustainable food

Objective: Reduce the carbon emissions and biodiversity impact of our food.

Progress:

- Developed an Environmentally Sustainable Hospitality guidance in collaboration with Oxford academics, pending review and approval from ESSC.
- Developed a sustainable food document providing guidance on the reduction of food waste and menu adaptation to increase sustainable offerings throughout the collegiate University. Covering the full process from placing orders and organising large events to kitchen preparation. This document is under revision and will be presented to ESSC.

Next steps:

Upon approval, the Environmentally Sustainable Hospitality guiding document will be disseminated throughout the University along with an engagement initiatives.

Sustainable resource use

Objective: Reduce the environmental impacts of our consumption and supply chain.

Progress:

- Developed an indirect impacts presentation which outlines the impacts of the different components of the University's supply chain.
- Delivered a pilot project for waste management in St Cross/Manor Rd buildings, in cooperation with Estates Services FM. The lessons learned from this initiative were shared with FM teams across the University.
- Introduced new recycling streams for Expanded Polystyrene (EPS) and Polypropylene targeting laboratory waste reduction.

Next steps:

Looking into extending designated waste streams for lab equipment. An enquiry has been made about recycling lead vial pigs and aluminium centrifuges.

International travel

Objective: Reduce aviation emissions from University staff and student travel and offset the balance of emissions.

Progress:

- Following approval of the Travel Policy in the previous year, 2022-23 is the first year of implementation for the policy and flight levy.
- Established a system for the processing and recharging of flight levies across the University, incorporating several unique data sources.
- Processing the flight levies has provided a complete picture of flights made on University business across all departments.
- A levy of £30/tCO₂e was placed on over 13,000 trips emitting an estimated 18,000 tCO₂e.
- The flight levy charge, in the sum of £500,000 was allocated to the Oxford Sustainability Fund for implementation of the Environmental Sustainability strategy.

Next steps:

- Providing divisions and departments with analysis of their flights. Including flights taken, destinations and compliance with the Travel Policy. Enabling them to track flight data, understand their environmental impact and consider how to reduce emissions.
- Monitor flights taken on University business and compliance with the Travel Policy overall. Identifying any changes necessary to meet our flight reduction targets.
- Provide departments with comprehensive data and tools to identify, understand and take steps to reduce their impact.

Our Strategic Commitments

Investments

Objective: Ensure that the University, as an investor, is part of the solution to climate change and biodiversity loss.

Progress:

- A member of the University's Investment Committee was assigned a specific focus on the sustainability of investments.
- ESG and sustainability assessments are fully integrated into the investment process of Oxford University Endowment Management (OUem), the investment manager established by the University.
- Specifically, OUem has made a commitment to engage with its portfolio on net zero planning.
- The Oxford Endowment Fund has substantial investments focused on sustainability solutions, resource efficiency and the climate transition
- The University has a specific ban on direct investing in fossil fuels.

Next steps:

- OUem will deepen its engagement with its investment portfolio on net zero and continue to review and adopt best practice on biodiversity net gain.
- OUem is reviewing its reporting against the Taskforce for Climate-Related Financial Disclosures.
- Full details on the work carried out by OUem can be found at www.ouem.co.uk.

Local travel

Objective: Limit transport emissions by reducing the need to travel, encouraging walking, cycling and the use of public transport and managing the demand to travel by car.

Progress:

- According to the 2023 Travel Survey, 74% of staff members and 97% of students commute sustainably. Indicating that their primary mode of transport is walking, cycling, public transport or car sharing.
- The University's partnership with Broken Spoke Bike Co-op has enabled 310 staff and students to receive

free cycle training this year.

- The Green Travel Fund spent £315,000 on sustainable travel initiatives such as the Science Transit Shuttle, cycle parking upgrade, bike mechanic service and Vision Zero events.
- The University supported 350 members of staff with cycling through bike purchasing loans and the Salary Sacrifice Scheme.
- Took part in Vision Zero - Oxfordshire county initiative to tackle road safety with an emphasis on cyclists, pedestrians and scooters. The travel team offers guidance, safety gear (free or subsidized)

- and cycle confidence training for students and staff. Vision Zero events included the opportunity to 'trade places' with an HGV driver to experience the blind-spots first hand and learn how to stay safe.
- Launched a revised car parking permit application process with new permit types to support staff with disabilities, caring responsibilities and flexible working arrangements.
- Registered as a Construction Logistics and Community Safety (CLOCS) Champion. Implementing CLOCS national standards on construction sites to reduce the risk of collision between construction vehicles and the community.

Next steps:

- Complete the implementation of an ultra-low emission vehicle (ULEV) salary sacrifice scheme for staff.
- Further expand and grow the Science Transit Shuttle towards commercial viability.
- Increase the provision of electric vehicle charge points on the estate.
- Extend Vision Zero engagement activities to include motorists.

Image by Saadiyah Mayet, Sustainability Photographer of the Year Awards 2023.

Biodiversity

Oxford University has set the strategic ambition to achieve a net gain in biodiversity by 2035. Committing to a two-fold approach of both reducing negative biodiversity impacts through our operations and supply chain while increasing positive impacts through enhancements of our estate biodiversity.



Image by Daniel Bowe,
Sustainability Photographer
of the Year Awards 2023.

Placing greater emphasis on the former, in line with prioritisation of the Mitigation and Conservation Hierarchy:



Refrain

Refrain from actions that damage biodiversity



Reduce

Reduce the damage our remaining actions create



Restore

Restore biodiversity that has been damaged



RENEW

Renew and enhance nature

Biodiversity

Our Green Estate

In April 2022, the Oxford Department of Zoology, the Environmental Sustainability team, and the University of Kent published an assessment of the University of Oxford's biodiversity impact in the leading scientific journal, Nature.

The study is ground-breaking for being the first of its kind to provide a methodology to assess the biodiversity footprint of large organisations.

Working closely with the University's Estates team, researchers conducted a comprehensive assessment of

the broader environmental impact and biodiversity losses associated with day-to-day running of the University, including factors such as purchasing data, travel bookings and utility bills, from the 2018-19 and 2019-20 academic years.

The research sets a baseline for the University's biodiversity impact and modelled options for the University to pursue actions to address the impact.



Image by Paula Dhiman, Sustainability Photographer of the Year Awards 2023.

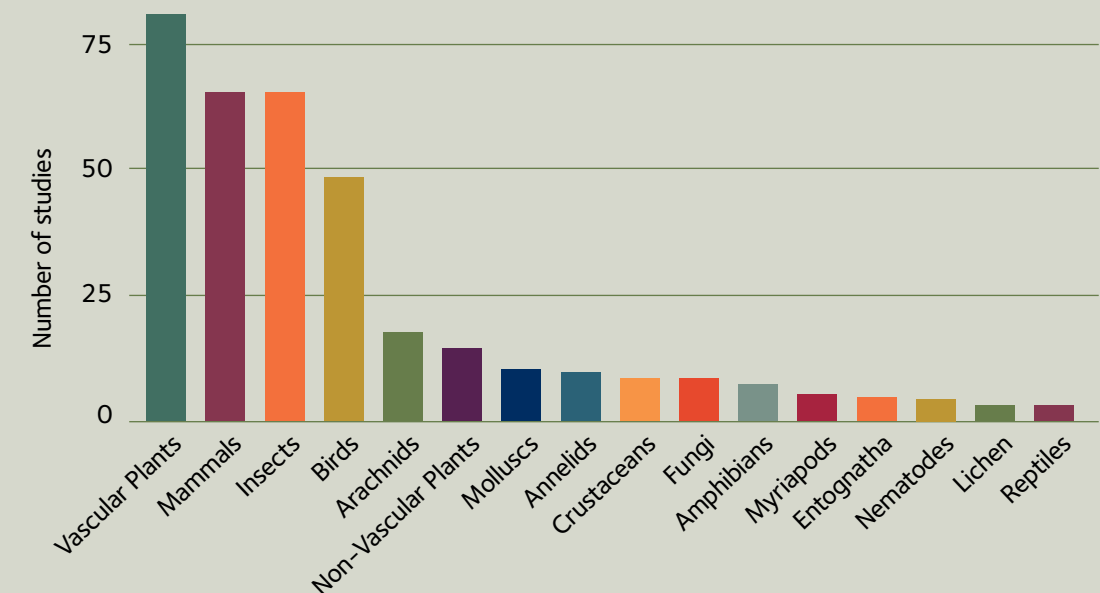
Ecological data collection on the Estate

Researchers have conducted a great deal of biodiversity-related studies on the different species and habitats across the University estate. We collated nearly 300 ecological research records of reports, grey literature, papers and databases.

The findings indicate that the majority of studies (90%) were conducted in Wytham Woods (including University Farm), with fewer studies recorded in other locations: Harcourt Arboretum, Marston Meadows, Oxford Botanic Garden, Radcliffe Observatory Quarter and University Parks.

More than 2442 unique taxa were documented across the studies, with vascular plants being the most reported taxonomic class, followed by reptiles, mammals, insects and birds. Academics who have contributed significantly to this database include David MacDonald, Christopher Perrins, Keith Kirby and Susannah Rennie.

The following chart represents the number of studies of each taxonomic class. The chart presents a greater research focus on plants, mammals, insects and birds.



In case you missed it

Be Energy Friendly

Oxford launched the 'Be Energy Friendly' campaign across the collegiate University. The campaign highlights the daily choices that all staff and students can make to reduce energy use adapted for both the winter and summer months. From switching off appliances at the wall to dressing for the weather. While these individual actions may seem small, the 'Be Energy Friendly' campaign, along with supporting heating and cooling policy, resulted in a 17% reduction in the University's gas, and 2% of its electricity use decreasing our carbon footprint by over 3,400tCO₂e and saving £1.1M (during the winter months). Together with our continued work to improve energy-efficient infrastructure, our everyday choices can make a significant change.



Be Energy Friendly campaign

Flight Levy

The Travel policy and the flight levy in particular, have put a carbon equivalent price on flights, drawing attention to their environmental impact. The flight levy mechanism recorded over 13,000 trips emitting an estimated of 18,000 tCO₂e. The levy has raised over £500k for the Oxford Sustainability Fund to be spent on measures to reduce our own impact. Processing the flight levies provide a complete picture of flights made on University business and will provide departments with the data necessary to identify, understand and take steps to reduce their impact. The data that has been extracted from the centralised processing mechanism of the flight levy includes:

- Heat map of most used destinations;
- University flights broken down by division and departments; and
- Related carbon emissions associated with business travel.

In coming years we expect to see reduction against this baseline as more departments make adjustment to comply with the flight reduction targets.



Vision Zero road safety event



travel.admin.ox.ac.uk

Vision Zero Campaign

The University is in full support of Oxfordshire County Council's Vision Zero campaign – a commitment to zero road deaths and serious injuries by 2050. Organising a network of resources to ensure a safe and sustainable journey for all Oxford staff and students. Adding to our available supports of free cycle training through local bike groups, the cycle to work scheme and discounts on a variety of safety equipment. While launching new resources such as, a map of accident hotspots. The campaign is a collaborative effort across the central University, colleges and Student Union with representatives meeting termly as a part of the newly formed Vision Zero Working Group. Events have been held throughout the year, providing hundreds of staff and students with information and practical supports for sustainable travel.

The Museum of Climate Hope

This unique museum trail and digital learning experience brings together a collection of real artifacts and stories designed to highlight resilience, innovation and transformation in the face of environmental change throughout time. Created by researchers and curators from the Environmental Change Institute, School for Geography and the Environment, and GLAM (Gardens, Libraries and Museums). Unlock the stories behind six fascinating artifacts and explore all of Oxford's GLAM institutions with The Museum of Climate Hope.

Green Action Week

The first ever Oxford Green Action Week took place in February with over 50 events, hosted by partners from across the University, colleges and wider community. Demonstrating the diversity of environmental work and how it intersects with so many areas of our lives. With unique events on everything from culture clashes in conservation to poetry workshops. Green Action Week reached approximately 1000 staff and students, empowering them with the knowledge that there is no single way to take environmental action and that there is a thriving community of people committed to making real change.

Images from Green Action Week (left to right): "Hot Mess" Dr Matt Winning presenting climate change comedy night, Behind the scenes of carbon reduction tour, Great Green Reads in Bodleian and college libraries, "Balance" travelling exhibition, Sustainability Soirée with George Monbiot.



Conclusion

As we move forward with implementing the University's strategic goals for environmental sustainability, we untangle the complexity and internal challenges rising from this process.

The progress done in the 2022-23 academic year on laying down the infrastructure for mapping curriculum and research baseline will allow further advancement towards addressing the commitments as set in the strategy.

Additional progress expected in future years, will allow the University to better address the environmental impact from its supply chain.

The coming year is expected to offer plenty of opportunities for staff and students to engage with environmental sustainability through Green Impact, LEAF, and Sustainable Students Oxford network.





Image by Carla Pacifico,
Sustainability Photographer
of the Year Awards 2023.

Get in touch

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