Leverhulme Centre for
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BIODIVERSITY

UNIVERSITY of York

ECOLOGICAL MANAGEMENT PLAN 2026-2035



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Cover image: students from the Department of Biology carrying out research on lake water quality and invertebrates.

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EXECUTIVE SUMMARY

The University of York is privileged to have access to large areas of green space and open water, providing habitat for wildlife as well as enhancing the experience of campus users. Outdoor spaces on campus provide opportunities for education and research, as well as uplifting the wellbeing of students, staff and neighbouring communities.

Our aim is to provide inclusive, sustainable and actionable recommendations to enhance biodiversity, sustainability and wellbeing at the University. The recommendations are based on expert advice from a broad range of campus users, Directorate of Estates, and the responses of over 500 people who completed a campus users survey.

Within our three overarching themes of biodiversity monitoring and management, education and research, and wellbeing, we aim to:

Enhance biodiversity:

- Focus on increasing native flora, creating, maintaining and enhancing diverse habitats (e.g., wetlands, wildflower meadows, wooded areas), and supporting wildlife through sensitive management and improvement of water quality.

- Improve ecological function by encouraging species flow across landscapes through improved habitat connectivity and selected reintroduction of regionally important species.

Monitor and curate data:

- Systematic monitoring of key species groups with accessible data curation enabling us to assess the effectiveness of management interventions and deliver on our commitments to biodiversity enhancement.

Educate and research:

- Develop programmes that help campus users to interact with, understand, and benefit from the natural environment for study, work and wellbeing.

- Communication strategies that inform the campus and wider community about ecological initiatives, and how to engage with biodiversity.

Improve accessibility and usability:

- Invest in more diverse and user-friendly outdoor spaces including sheltered and shaded options, with clearer signage to make visible and explain paths, wildlife and points of interest.

- Guided routes for trees, art, and interactive installations.

- Safe green routes through both campuses for pedestrians, wheeling, cycling and nature.

Create a culture of outdoor working and learning:

- Explore ways to integrate outdoor experiences into daily routines and work culture, such as ‘walking meetings’ and using readily available outdoor workspaces.

Focus on outdoor space to enhance wellbeing:

- Bring people together outdoors, on campus, in enhanced greenspaces.
- Promote and provide opportunities for outdoor teaching, study, socialising, exercise, art engagement and events.
- Create more opportunities for volunteering and campus engagement.
- Networking across biodiversity-related initiatives at the University.

Integrate sustainability with biodiversity:

- Continue to develop the campus as a model for sustainable living and climate adaptation, including water-wise planting, reduced use of chemicals, onsite composting, energy efficiency, recycling facilities and opportunities to grow food for use on campus.
- Foster a more integrated approach to campus planning that considers built, green and blue spaces together.

STRATEGIC THEMES AND GOALS

Goals are grouped into three themes: 1) Biodiversity management monitoring, 2) Education and research, and 3) Wellbeing. Within these themes, we have identified actionable goals that are further unpacked in an accompanying action plan available to relevant University of York committees.

		Themes		
	Strategic goals	**Management and monitoring**	**Education and research**	**Wellbeing**
1	Improve biodiversity of key habitats including woodland, grassland and wetland areas	■		
2	Improve water quality in lakes including nutrient loads and oxygenation	■		
3	Focused (re)introduction and habitat management for flagship species of regional importance	■		
4	Programme of regular monitoring of key taxa and habitat quality	■	■	
5	Ensure sustainable and accessible curation of monitoring data	■	■	
6	Enhance connectivity for nature and people between the two campuses via green routes	■	■	■
7	Integrate built and green infrastructure, strengthening the identity of Campus West as a cultural/amenity landscape and Campus East as a haven for nature	■		
8	Embed ecological monitoring into undergraduate, postgraduate and CPD courses where possible	■	■	
9	Expand opportunities for engagement with nature for staff, students, local communities and the public	■	■	■

	Strategic goals	Themes		
		Management and monitoring	Education and research	Wellbeing
10	Design teaching and learning that enhances the monitoring and management programme			
11	Develop outdoor teaching and learning spaces			
12	Integrate outdoor learning into education and research across disciplines			
13	Cultivate a campus culture of outdoor working and learning			
14	Build nature-connected community through shared outdoor activities			
15	Enhance diversity, usability and accessibility of outdoor space on campus			

1. INTRODUCTION

The Ecological Management Plan (EMP) aims to bring together initiatives on campus that have an impact on biodiversity and its interaction with campus life. It provides an opportunity to enhance the University of York's potential as a model of a nature-positive campus, and establish our unique selling point as a wildlife-friendly and sustainable university with connections to the wider landscape.

Our approach has been to embed the goal of biodiversity enhancement in the wider context of improving campus experience for all, no matter their species. To this end, we have emphasised synergies that not only benefit biodiversity but also provide social, educational, research, engagement and wellbeing opportunities.

While the ecological focus of this plan is biodiversity – what we have on campus now, and how each habitat could be managed to enhance nature – the campus is a space for all. In drawing together the plan, we have been mindful of the role of the campus in conserving biodiversity, but also its essential role in supporting our teaching, learning and research, honouring the heritage of the area, and enhancing the wellbeing of all who use it. We acknowledge that there will inevitably be some tensions between the practicalities of user needs, the management capacity of the grounds staff and our aspirations for nature. Nevertheless, we see multiple opportunities for win-win scenarios that benefit both human and non-human campus users.

The EMP presented here is founded on sound overarching principles established by Gordon Eastham and colleagues in previous ecological management plans. As the previous management plan has reached its end, and Campus East matures, it is timely to think about how our ambitions for the campus have evolved over the past 10 years, and how they may continue to develop into the future. When the last ecological management plan was written, Campus East was still new and there was a focus on creating and establishing new habitats. Some of these have now matured, and the time is right to look at a more integrated approach to campus management. We want to retain the distinctive characteristics of each of our two campuses, while looking for ways to enhance connectivity, in terms of habitat management but also user experience and interactions between green, blue and built environments.

In developing the EMP, we have drawn on a wide range of expertise including the Directorate of Estates and various academic departments including Biology, Environment and Geography, Archaeology, as well as expertise from the Office of Philanthropic Partnerships and Alumni (OPPA), FixOurFood, Campus Safety and others. We have paid careful attention to the comments and suggestions of over 500 campus users who took part in a survey, conducted over the summer of 2025. Mindful of the current financial climate, we have prioritised quick wins with low or no cost and have identified opportunities where changes in management can bring biodiversity benefits at little or no extra cost. We have also identified some medium-term investment and longer-term ambitions. We have developed a set of more aspirational flagship projects that can synergise with existing plans to maximise biodiversity and wellbeing benefits. We hope that this makes the plan both pragmatic and aspirational and will contribute to York's mission as a University for Public Good.

Vision, mission and strategic alignment

Vision: A nature-positive campus that supports all members of the University community, whatever their role, background or species, to achieve their full potential.

Mission: to develop and implement an ecological management plan in partnership with campus users and managers, that provides inclusive, sustainable, and actionable recommendations to enhance biodiversity, sustainability and wellbeing at the University.

The new Ecological Management Plan is aligned to the University Strategy (Figure 1), Research Strategy and Sustainability Plan, and is linked to a broader culture of sustainability. The EMP will have benefits for cross-cutting themes such as culture and community, transforming learning, inclusion and environmental sustainability.

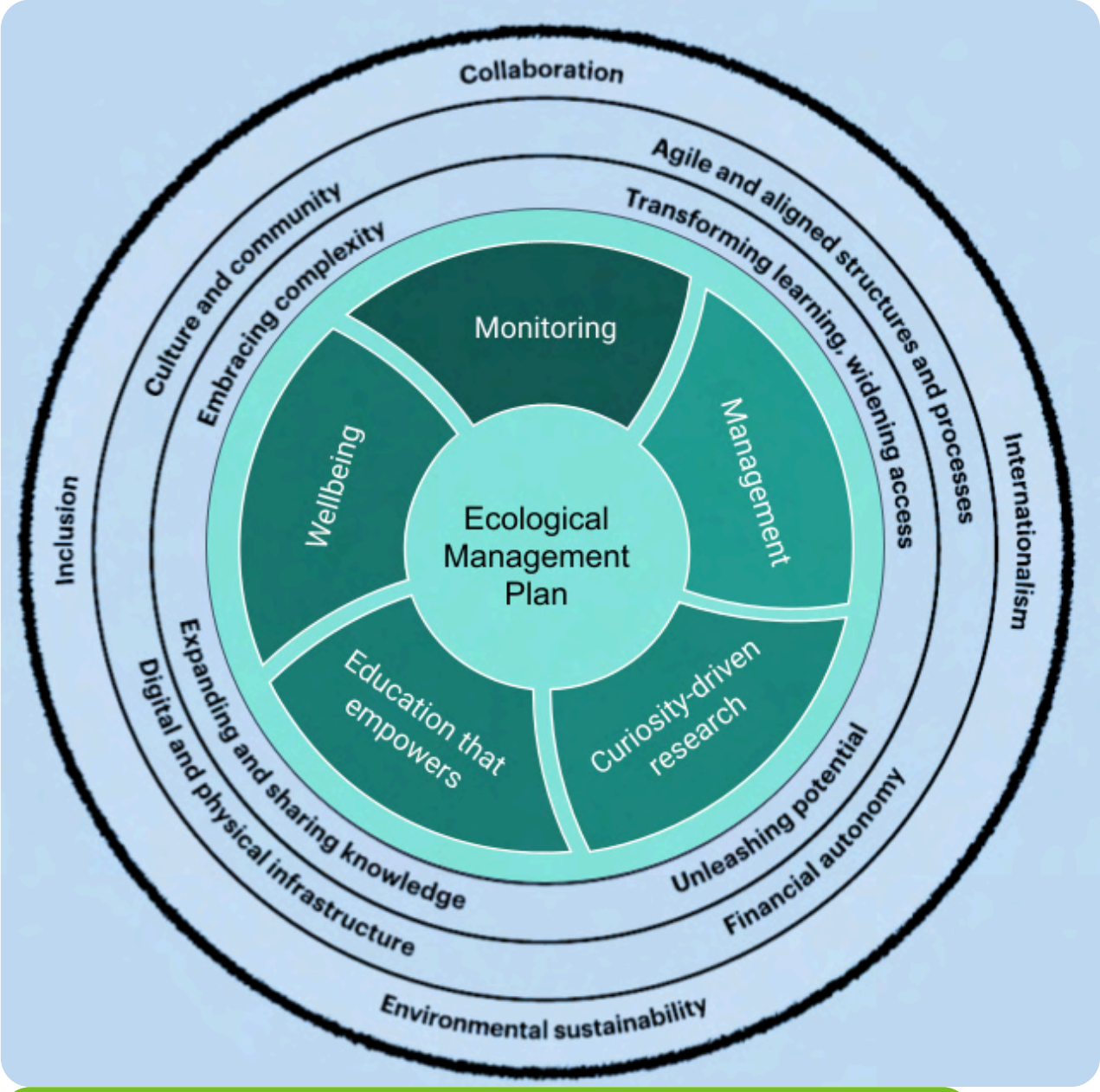


Figure 1: alignment of the Ecological Management Plan with the University Strategy.

The EMP leverages internal expertise and provides preemptive data for efficiently feeding into the future Estates Campus Plan, planning permission requirements, or Environmental Impact Assessments. The monitoring programme put in place in 2025 provides the basis for education and research opportunities as well as quantifying the effects of changes in management practices. It complements and strengthens previous work that focussed on qualitative measures of habitat condition, in accordance with Biodiversity Net Gain planning requirements, for example a baseline survey conducted in 2023.

The EMP will help us deliver on our pledge to be Nature Positive and retain our campus Green Flag status. Our exceptional greenspaces, campus and surrounding area provide training and research opportunities that embody York's USP. We are uniquely positioned to deliver education and research that is forward-thinking and responsive to local and national priorities for the public good, in a campus that is grounded in a sustainability ethos.

2. BIODIVERSITY MANAGEMENT AND MONITORING

Management and monitoring goals

	Strategic goals	Management and monitoring	Education and research	Wellbeing
1	Improve biodiversity of key habitats including woodland, grassland and wetland areas	■		
2	Improve water quality in lakes including nutrient loads and oxygenation	■		
3	Focussed (re) introduction and habitat management for flagship species of regional importance	■		
4	Program of regular monitoring of key species groups and habitat quality	■	■	
5	Ensure efficient, long-term and accessible curation of monitoring data	■	■	
6	Enhance connectivity for nature and people between the two campuses via green routes	■	■	■
7	Integrate built and green infrastructure to enhance the nature of our campus, strengthening the identity of Campus West as a cultural/amenity landscape and Campus East as a haven for nature	■		
8	Embed ecological monitoring into undergraduate, postgraduate and CPD courses where possible	■	■	
9	Expand opportunities for engagement with nature for staff, students, local communities and the public	■	■	■
10	Design teaching and learning that enhances the monitoring and management programme	■	■	

Campus biodiversity management

Managing our extensive and varied natural habitats across campus requires developing the linkages between ecology, landscape, built environment as well as teaching and research. Wildlife-friendly management will not only improve biodiversity but also reduce the time requirements of ongoing grounds maintenance, as well as reducing physical infrastructure costs where natural climate change adaptation measures are implemented that reduce risks caused by flooding, heatwaves and windstorms. This Ecological Management Plan provides the unique opportunity to enable resource efficiencies and maximise positives, through collaboration between estates, teaching and research. Good biodiversity management will also uplift wellbeing and enhance accessibility of the campus and its wildlife.

Building on previous work aimed at reducing interventions and pesticide use, our future plans include improving ground flora in maturing woodlands, further developing species-rich hay meadows, broadening wildflower diversity, and considering opportunities for more bug hotels, green walls and living roofs. Looking ahead, improving wetland habitat and water quality of the lake on Campus West will remain a major challenge. Expansion of reedbeds and installation of floating wetlands will help. Green routes through campus with enhanced biodiversity will increase opportunities for nature engagement and enhance connectivity. We will also explore the establishment of community orchards on both campuses which will provide spring flowers, summer shade and autumn fruit.

Campus estate

Campus West has a built footprint of around 40%, meaning 60% is currently green space. Although biodiversity was not a primary concern during its development in the 1960s-70s, the Heslington West campus provides a haven for wildlife including numerous waterbirds, Peregrine Falcons, Oystercatchers, bats, invertebrates, fungi, and wildflowers such as Cowslips and Bee Orchids. The campus contains numerous areas of grassland and lawn as well as Yew hedges that provide important cultural, heritage and social spaces, as well as less managed areas including woodland and hedgerows. Management has been altered to reduce interventions and encourage biodiversity. Measures include reduced mowing, mulching beds with woodchip, using organic fertilisers, composting green waste, careful plant selection for pollen/nectar, using diverse species for continuous food sources, and introducing artificial habitats such as bug hotels. There is also a living wall on the Environment and Geography building, as well as several green roofs. The lake is a prominent feature of the campus, but water quality is currently in need of improvement.

The Campus East development, approximately 120 hectares, was initiated over a decade ago with a mandate to increase biodiversity on what was previously intensively farmed arable land. Almost half of this area is peripheral landscape, providing significant opportunities for habitat creation through low intervention management. A baseline ecological survey was undertaken in 2011 to assess habitat creation success and existing biodiversity. While campus users appreciate the lake habitat, abundance of wildlife and flower-rich meadows, there is room to make parts of the campus space more amenable to recreational and educational activities, for example through added seating and planting of shade trees (e.g. a heritage orchard) in areas that are currently perceived as uninviting. Addition of an outdoor amphitheatre would enhance the amenity value of the campus. These initiatives need to be carefully balanced with the nature potential of the site, requiring careful zoning to maximise campus enjoyment while retaining the wilder areas for wildlife and tranquility.

Management of key habitat types

Key habitat types across both campuses include woodland, hedgerows, scrub, semi-natural grassland, lakes and wetland. Amenity areas include lawns and seasonal bedding. Built and brownfield areas also provide wildlife value.

Woodlands, hedgerows and scrub

Deciduous woodland is a priority habitat in the national UK Biodiversity Action Plan and of vital importance for climate and biodiversity targets. On Campus West, existing mature woodlands are managed for safety and to create diverse habitats. Proactive measures include leaving as much wood as possible after tree work, including standing deadwood where possible, broadening the range of native species planted, planting varying sizes for a multi-layered canopy, introducing nest boxes, and introducing native ground flora. Standing deadwood should always be left where this does not cause a safety issue, and other logs and deadwood should be retained.

Nutrient enrichment is currently a major challenge for the woodlands on Campus West, exacerbated by the spreading of leaf litter in the woodlands. Leaf litter dumping and composting should be restricted to a few specific areas. This will help in the development of a rich ground flora which will significantly enhance the biodiversity and aesthetic potential of these woodlands.

On Campus East, around 70,000 trees and shrubs have been planted in 15 blocks and provide habitat for priority bird species, foraging bats, and hedgehogs. Primary species are Pedunculate Oak and Ash, with a broad mix of native species, many sourced locally. Trees are protected by biodegradable mulch mats and shelters that are removed as necessary. Most blocks have established well and are beginning to mature, though trees on Kimberlow Hill have struggled due to poor soils. Management for ground flora including thinning and coppicing will become necessary as the canopy closes. Target species include native Bluebell, Wood-sorrel, Ground-ivy, Foxglove, Red Campion, Wood Avens and the native subspecies of Yellow Archangel, amongst others. Future plans involve sowing ground flora seed mixes. Ash dieback and other tree diseases are a long-term concern, but its effects can be mitigated by maintaining species-rich woodlands.

Hedges define boundaries and provide important nesting, roosting and hibernation sites, as well as providing connectivity and enhancing the University of York estate's role as a wildlife corridor. Hedgerows are integrated into infrastructure planning. Early hedgerow management includes early removal of tree guards, while maintenance includes hedge-laying and gapping up with a variety of native shrubs. To enhance habitat, hedges are allowed to broaden and an adjacent area is left unmanaged. Use of chemical sprays is restricted and hedges are only cut in alternate years and outside of the nesting season.

On Campus East, the Low Lane hedge has been identified as a hedge of importance due to its high biodiversity and structural complexity. Owl and Kestrel nest boxes have been introduced into the mature trees along the Low Lane boundary hedge. Further habitat enhancement could include planting additional native species, and adding more nest and bat roosting boxes. Areas of scrub expand wildlife habitat and enhance connectivity.

Lakes and wetlands

This broad habitat includes the 5-hectare Serpentine Lake on Campus West and a 10-hectare lake on Campus East, as well as reedbeds, associated wetland pools, and a detention basin.

The Serpentine Lake on Campus West (Figure 2) has poor water quality due to extreme nutrient-enrichment (hypereutrophication). There is an overabundance of small fish (Bream) and depleted zooplankton, leading to turbid water and poor light penetration for higher plants. Management focuses on rebalancing the ecosystem by manipulating fish populations (e.g. introducing a predator and encouraging piscivorous birds), as well as improving conditions for marginal and emergent aquatics (e.g. physical barriers, and encouraging zooplankton). On Campus West, transplanting emergent aquatic plants is a possibility, though sites are limited due to the hard edges and proximity of buildings around this lake. Marginal plants can be supplemented by installation of floating wetlands, which are also aesthetically appealing. An improved water circulation system that extends across the whole of the lake would improve oxygenation of the water. Future redevelopment including planned demolition of CLASP buildings might give greater accessibility to the lake for heavy machinery, offering opportunities for reprofiling the lake, dredging, and replacing the artificial liner with puddled clay.



Figure 2: Campus West Lake.

The main lake on Campus East is an integral part of the surface water drainage, and also serves as a significant wildlife habitat. The reedbeds provide shelter and act partially as a biofilter by extracting nutrients from the water and reducing their flow directly into the lake. Aquatic macrophyte cover and marginal vegetation must be maintained and enhanced. Reeds are harvested annually to remove nutrients. Harvested seeds and rhizomes provide a source of further reeds for propagation, though establishing new reedbeds is challenging due to the presence of geese. Additional fish stocking must also be prevented while encouraging fish-eating birds. Surrounding phosphate-rich soils should have their vegetation cut on an annual basis with cut grass removed (this also encourages more species-rich meadows and deters excessive usage by waterfowl). A long-term decision may be needed to replace the underlying blast furnace slag layer due to its finite phosphate absorption capacity.

The wetland area and detention basin on Campus East (Figure 3) are managed with minimal intervention, allowing natural colonisation by species such as Bulrush, Common Reed, willow species, and orchids, with long-term removal of over-dominant vegetation, complemented by the introduction of desirable marginal and emergent aquatic species. Rock/log piles enhance suitability for wildlife. Long-term thinning of dominating vegetation such as Bulrush is also planned.



Figure 3: Detention basin fringed by reedbeds and maturing woodland, Campus East.

Swales and ditches harvest water for the lake, and act as naturalistic landscaping elements. They provide links to the peripheral landscape and microhabitats for moisture-loving plants and invertebrates including Marsh Marigold, Purple Loosestrife, Meadowsweet, Cowslips and a wide range of invertebrates. They also provide connectivity for small mammals such as water voles. Maintenance of swales and ditches includes 1) regular litter removal, cutting and composting vegetation in autumn, while leaving patches of dead stems and foliage for overwintering invertebrates and 2) monitoring of species within the swale and ditch channels, with replanting if necessary to maintain a desirable species mix. Periodic management for drainage should consider timing of operations to minimise impact, especially for species such as water voles and Water Shrews, in accordance with guidance issued by Natural England and the Association of Drainage Authorities.

Semi-natural grassland

Species-rich neutral grasslands on Campus East provide colourful displays, support diverse invertebrates, particularly butterflies, moths, grasshoppers, crickets, bees and hoverflies, and are crucial breeding habitat for Skylarks and good foraging habitat for Song Thrushes, Linnets and Yellowhammers. Hemi-parasitic Yellow-rattle is included in seed mixes to control coarse grasses. Long-term management involves annual cutting in late August after the plants have set seed and removal of arisings, though some areas of taller vegetation should be left for overwintering invertebrates. This can be supplemented by bug hotels and other structurally complex assets. Any desired species needing to be reintroduced can be done so either by plug planting, over-sowing, or cutting in and laying wildflower turf. Species-poor hay meadows are cut annually, with arisings used as hay, to eventually reduce nutrients and create conditions favourable for species-rich meadows. Natural colonisation can be complemented by transplanting from established areas. All dogs near these areas should be controlled on leads as they present a serious risk to ground nesting birds.

The area of peripheral landscape on Campus East contains sparse vegetation and rough grassland with wildflowers such as knapweed, Oxeye Daisy and Common Bird’s-foot Trefoil. There is evidence that orchid species are beginning to colonise. It is expected that over time a mix of Alder, birches and willows will establish. The aim is for this to be a good habitat for small mammals, which in turn would provide a food source for birds of prey. The relative isolation of the area has also lent itself to several habitat creation measures, such as the introduction of Sand Martin nest boxes along the lake edge. An ongoing issue is the usage of this area for fishing and dog-walking amongst other forms of disturbance. A more comprehensive system of fencing, hedging and improved signage will likely be needed to ensure this area remains relatively undisturbed.



Figure 4: Acid grassland on Siward's Howe on Campus West.

The acidic grass banks (Figure 4) along University Road and by Siward's Howe (Campus West) have limited mowing but it is difficult to remove the arisings, which returns nutrients to the soil and limits opportunities for colonisation by wildflowers. The Siward's Howe grassland may nonetheless be of conservation interest, and features a large population of Pignut.

Amenity grasslands, shrub beds and seasonal bedding

Amenity grasslands (lawns and sports fields) are an important part of the campus and its heritage and social life. Mown grass areas benefit some birds (e.g. Starlings, thrushes and Pied Wagtails) that prefer to forage in short grass. Short grass areas are important for recreation, and amenity value could be increased with additional seating in clusters, and shade trees. Reduced grass-cutting and less frequent mowing regimes are adopted in selected areas to encourage biodiversity, including wildflowers (Figure 5) and invertebrates. Cowslips and Bee Orchids benefit from these reduced mowing regimes. Wildflowers are introduced into the sward, particularly in waterside locations. For sports fields, opportunities exist to leave uncut aprons of grass, enhance surrounding hedgerows and introduce nest boxes to create links to the wider countryside. Managing light pollution from floodlit sports fields would benefit biodiversity, especially moths and bats, and could reduce running costs.

Shrubs provide important shelter and food. Management includes using insect-friendly plants, a broad selection of native berry-producing species, and substituting seasonal bedding with annual wildflower plantings to provide both colour and food for pollinators. Native plants tend to support a wider suite of associated species, including leaf-miners, gall-causers, aphids and other bugs, and microfungi, as well as pollinators. The use of non-native landscaping plants should be prevented unless they are known to provide specific benefits (e.g. RHS plants for pollinators).



Figure 5: Wildflower meadows (such as this example on Campus West) are attractive and provide valuable resources for pollinators.

Biodiversity monitoring

Consistent monitoring is essential to ecological management. Many species and habitats require specific conditions, take time to establish, and are difficult to reintroduce or replace when lost. Without a comprehensive knowledge of which species are using the site and their changing fortunes, it is impossible to implement tailored actions and assess the effectiveness of changes in management interventions. It will also allow us to understand connectivity and species' habitat usage across the site. Such detail will also allow us to identify additional species for reintroduction. A regular monitoring programme will therefore underpin the delivery of management that benefits all campus users. Monitoring and analyses of data can be integrated into Undergraduate and Postgraduate teaching and research (Chapter 3), as well as outreach events and to enhance wellbeing on campus through greater connectivity with nature (Chapter 4).

Past coordinated and standardised assessment has been conducted at the habitat level (e.g. woodland, grassland) through the Biodiversity Net Gain framework. Habitat-based measures reflect broad changes in habitat quality, however, and do not always capture changes in species. Until now, species monitoring has been carried out by individuals and as part of student projects and teaching, or as personal interest projects by individuals from our community. Efforts have been made to coordinate individual recording by the creation of a project on the citizen science platform iNaturalist where observations can be uploaded. The University of York Campus Biodiversity project on iNaturalist now contains records of over 2,500 species, with many additional taxa only currently resolved to higher taxonomic levels (e.g. genus or family). The recorded species represent 499 families and 150 orders. More than 70,000 records (predominantly of birds) are also available from the National Biodiversity Network Atlas and the Global Biodiversity Information Facility. These have the advantage of covering older records collected as part of national schemes.

Although these ad-hoc records are very useful in documenting and understanding which species we have on site and can inform conservation goals, understanding changes over time requires a more structured approach with regulated sampling effort. We have therefore developed and piloted a structured monitoring programme encompassing a wide range of taxa (see Table 1).

Survey	Frequency	Jan/Feb	Mar/Apr	May/June	July/Aug	Sept/Oct	Nov/Dec
Bats	Monthly						
Bees	Monthly						
Birds	Monthly						
Butterflies	Monthly						
Dragonflies	Monthly						
Freshwater macro-invertebrates	Yearly						
Small mammals	Yearly						
Other mammals	Continuous						
Moths	Monthly						
Freshwater and terrestrial plants	Yearly						
Pollinators	Monthly						
Other taxa	Ad-hoc						

Table 1: Timetable of annual surveys of biodiversity on campus. Shading indicates when these surveys take place throughout the year.

Baseline surveys in 2025

In 2025 we piloted the biodiversity monitoring programme outlined in Table 1.

Pollinators (Figure 6) provide essential ecosystem services but are in decline. Pollinators were monitored monthly between April to September (inclusive) following methods developed based on the UK Butterfly Monitoring Scheme and the Bumblebee Conservation Trust's bee walk protocol, which specifies the appropriate timing and environmental conditions. The University can help to make York more pollinator-friendly by providing food, shelter and nesting sites.



Figure 6: Bumblebees and butterflies on campus. Clockwise from top left: Vestal Cuckoo Bumblebee (Bombus vestalis), Red-tailed Bumblebee (Bombus lapidarius), Common Carder Bumblebee (Bombus pascuorum), Red Admiral (Vanessa atalanta), Comma (Polygonia c-album).

Dragonflies and damselflies (Odonata) (Figure 7) need aquatic and emergent plants that provide shelter for their nymphs as well as habitat for adults to emerge and lay their eggs. Odonata counts were surveyed monthly from May to September, using a protocol based on published guidance from the British Dragonfly Society.

Moths (Figure 7) are pollinators, decomposers, and a crucial food source for various predators, as well as being sensitive environmental indicators. Moths were recorded at two sites conducted from April to September and follow a schedule of one survey per site per month. 122 species of moths have been recorded on campus to date, including ten identified as priority species for conservation in the UK Biodiversity Action Plan.



Figure 7: Dragonflies, damselflies and moths on campus. Top from left to right: Ruddy Darter (Sympetrum sanguineum), Common Blue Damselfly (Enallagma cyathigerum), Migrant Hawker (Aeshna mixta), Knot Grass Moth (Acronicta rumicis), Mottled Rustic (Caradrina morpheus), The Crescent (Helotropha leucostigma), Rosy Rustic (Hydraecia micacea), White Ermine (Spilosoma lubricipeda).

Bats are top predators of terrestrial insects and are important pollinators. They are threatened by loss of habitat and declining insect populations. Monthly dusk surveys were conducted along set transect routes from May to September inclusive, in line with the bat survey season based on the Bat Conservation Trust's Good Survey Guidelines. Five of the eleven bat species known in Yorkshire were found on campus, including Common Pipistrelle, Soprano Pipistrelle and Daubenton's Bat.

Mammals were surveyed using trail cameras, with the addition of specially constructed tunnels for **small mammals**. Pilot work has so far recorded Rabbits, Red Foxes (Figure 8), Hedgehogs, Grey Squirrels and Roe Deer. There have been occasional sightings of Otters, Badgers, Moles, Brown Rats, Wood Mice, Bank Voles, Field Voles and Water Shrews on campus.

Freshwater macroinvertebrates (animals without a backbone that are large enough to see with the naked eye) play an important role in the aquatic food web, feeding on algae, plankton and plants, and providing a food source for other animals. They have different tolerance to pollution which makes them excellent indicators of water quality. Freshwater macroinvertebrate surveys were conducted at 16 locations across campus in July. Some particularly exciting finds included Water Stick Insect (*Ranatra linearis*) (Figure 8) and Water Scorpion (*Nepa cinerea*).

Freshwater plants: Common freshwater plants included Common Reed (*Phragmites australis*), bulrushes (*Cyperaceae sp.*), Water Mint (*Mentha aquatica*), Great Willowherb (*Epilobium hirsutum*) and duckweeds (*Araceae sp.*) including Ivy-leaved Duckweed (*Lemna trisulca*), the latter two provide food for the waterfowl on campus. There was a lack of emergent and floating aquatic plants, particularly across sampling sites on Campus West, which may limit oxygen levels in these areas.



Figure 8: Left to right: Red Fox (Vulpes vulpes); Water Stick Insect (Ranatra linearis)

Terrestrial plants were surveyed in 25 plant plots between June and July with all vascular plant species being recorded, consistent with the guidance of the National Plant Monitoring Scheme. We identified 176 different species, with several of these being of conservation concern. One protected species present on campus is Bee Orchid (*Ophrys apifera*), (Figure 9), which is protected under the Wildlife and Countryside Act 1981. Water Whorl-grass (*Catabrosa aquatica*) is listed as Vulnerable on the England Red List, as is Lesser Spearwort (*Ranunculus flammula*) (Figure 10).

We also highlighted some invasive species that need to be addressed in ongoing campus management, including Himalayan Balsam (*Impatiens glandulifera*), New Zealand Pigmyweed (*Crassula helmsii*) and American Willowherb (*Epilobium ciliatum*). Clearing Himalayan Balsam could provide volunteering opportunities.



Figure 9: Bee Orchids (Ophrys apifera) can be found on campus in the spring and are being encouraged by focusing mowing only after the plants have seeded.



Figure 10: Lesser Spearwort (Ranunculus flammula) on campus.

Commitments to biodiversity

Effective monitoring and curation of data can inform development decisions, as well as meeting biodiversity commitments, planning and other compliance requirements. The University of York made a Nature Positive Pledge to restore “species and ecosystems … and enhanc[e] the University’s positive impacts on nature”. At the same time, our estates face biodiversity obligations under planning and legislation, including requirements for Biodiversity Net Gain and Ecological/Environmental Impact Assessments for new developments. To honour this pledge and meet planning obligations, regular monitoring of biodiversity is needed to assess the effectiveness of measures aimed at improving habitats for wildlife and mitigating the effects of new developments.

The campus has annually been presented with the Green Flag Award since 2015, which is the benchmark international standard for publicly accessible parks and greenspaces in the UK and around the world. A significant section of Campus West is a Registered Park and Garden and also has various listed buildings, which provides both unique opportunities and challenges that will require a harmonised approach. We have ISO14001 certified Environmental Management Systems, with measures in place to prevent pollution and continually improve our environmental performance.

The University achieved Hedgehog Friendly Campus status in 2019/2020 by providing food, water, hibernation opportunities, and a large foraging range, limiting pesticides, and ensuring water access. We are one of only six universities in the UK with Platinum accreditation.

We also hold a Bees’ Needs Champion Award, due to our implementation of various measures to help pollinators, such as creating species-rich meadows, bee-friendly plantings, substituting seasonal bedding with wildflowers, and reducing grass cutting.

There is a need for environment, sustainability and biodiversity to be woven through all aspects of University business. The University of York is ranked within the top 2% worldwide for its work on environmental and social issues. The Living Labs, Green Impact, and Sustainability Clinic all provide opportunities for engagement and innovation within the environmental space. Participation in the Responsible Futures programme, Green Impact Lab Accreditation, Deep Geothermal Energy Project and the Institute for Safe Autonomy Net Zero Project all demonstrate the university’s engagement with sustainability and commitment to the SDGs.

An integrated approach to biodiversity management, monitoring and estates planning

Our campus infrastructure is designed to deliver our core teaching, research, accommodation, support services and community activities. This Ecological Management Plan will help build towards closer integration of built, green and blue infrastructure to provide complementary outcomes for all campus users.

Having a green route for easy access through the campus will allow us to enhance campus experience through greater engagement with biodiversity, while minimising disturbance to biodiversity elsewhere. Having dedicated cycle routes will reduce potential conflict between pedestrians and cyclists.

Such routes could allow lighting to be focused on areas that are most useful for connectivity and safety. A review of outdoor lighting is needed for biodiversity, sustainability and financial reasons, while using appropriate technology can reduce light pollution in keeping with efforts to work towards York as a ‘dark skies city’. Using motion sensors, rationalising lighting on Campus East during quiet times of year, and increasing energy efficiency will benefit the University in terms of cost-saving, cut carbon emissions, and benefit wildlife by reducing light pollution.

Buildings already provide roosting and nesting habitat for some species, and bespoke nest boxes (e.g. Swift boxes) are used to encourage others. The Environment and Geography Department building with its 'living wall' is cited as an excellent blueprint for utilising buildings to increase biodiversity (Figure 11). Green roofs can support flora, invertebrates and birds and play roles in water and flood management. Green roofs have been used elsewhere e.g. for bus and bike shelters and could be investigated for other buildings. Bug hotels can also increase habitats for invertebrates (Figure 11).



Figure 11: Left to right: Green wall, Environment Building, Campus West; Bug hotel, Campus West.

As facilities reach the end of their useful lifetime, new constructions offer opportunities for habitat creation. This can be facilitated through greater connection and coordination between the committees and staff working in ecology and biodiversity, sustainability, landscape management and the built environment, and the development of easily accessible biodiversity data that can help identify sensitive areas and ensure new developments lead to a net gain in biodiversity.

Our estates can benefit by efficient co-ordination of biodiversity monitoring and improvement actions, with teaching and research as well as considerations of wellbeing and climate change adaptation. A key example is in using our in-house expertise to create a climate-resilient campus through landscaping that helps to mitigate the increasing risks of heavy precipitation, heatwaves and high-intensity windstorms in the future. Plant choices can also help to improve climate resilience through reduced water demand, improved flood control and better heat mitigation. Landscape and planting with climate change in mind could reduce the risks to buildings and users. Changing climate will have both positive and negative effects on utilisation of outdoor space, with warmer autumns and springs, extending the season in which outdoor teaching and learning is feasible, but also more heat and extreme events. This will require reimagining the interaction of physical space and nature, and can also expand to internal spaces with the integration of biophilic design to increase wellbeing of building occupants.

3. EDUCATION, RESEARCH AND SCHOLARSHIP

Education, research and scholarship goals

	Strategic goals	Management and monitoring	Education and research	Wellbeing
4	Program of regular monitoring of key species groups and habitat quality	■	■	
5	Ensure efficient, long-term and accessible curation of monitoring data	■	■	
6	Enhance connectivity for nature and people between the two campuses via green routes	■	■	■
8	Embed ecological monitoring into undergraduate, postgraduate and CPD courses where possible	■	■	
9	Expand opportunities for engagement with nature for staff, students, local communities and the public	■	■	■
10	Design teaching and learning that enhances the monitoring and management programme	■	■	
11	Develop outdoor teaching and learning spaces		■	
12	Integrate outdoor learning into education and research across disciplines		■	
13	Cultivate a campus culture of outdoor working and learning		■	■

Introduction

At the University of York, we are all in the business of learning: students developing skills towards graduation and independence; scholars exploring and reflecting on how to improve the University's educational experience; researchers contributing to our collective knowledge in or across disciplines; and professional support staff facilitating the structures, processes and people that make education and research

happen. Our learning environment matters, online and in the physical world, to help every member of the community reach their full potential.

Our outdoor spaces on both campuses are already used by people engaging with education, research and wider engagement and exchange of knowledge. However, there are opportunities to connect, extend and develop new activities to link people better with biodiversity and nature, and benefit from learning and living outdoors.

Outdoor learning and learning outdoors

Ecology-led education and teaching-led research in the biodiversity, sustainability and nature spaces directly link the University's core strategic activities with the Ecological Management Plan, providing operational support and resources for biodiversity monitoring and management. Staff and student partnerships will also enhance the experience of studying and working on campus, forming a circular economy of education, research and campus management. York already has an excellent track record: ESAY's York Interdisciplinary Modules on Sustainability won a Higher Education Academy CATE Award in 2024; the York Environmental Sustainability Institute's Fellows Programme has been shortlisted for the THE Awards Outstanding Contribution to Environmental Leadership; our staff publish and are recognised for innovative pedagogy for outdoor teaching; and many past and present senior officers in the British Ecological Society have a York connection.

Education and research that takes people outside, no matter the subject, builds on York's interdisciplinary expertise and inclusive community. It further demonstrates York's commitment to applying effective pedagogy for learning and teaching that is experiential, place and enquiry-based. It also has a powerful impact on wellbeing (Chapter 4). The July 2025 final report from the Youth Shadow Panel for Curriculum and Assessment Review asks specifically for such approaches, to tackle the environmental issues we face. These approaches, while typically used in education, are also suitable for facilitating research and scholarship because the campus is a place of experimentation and discovery. Using the campus for education, research and scholarship overcomes logistical and financial challenges of doing some excursions and preparatory work for fieldwork (on any topic) in more distant locations, thus reducing burdens on cost, time and risk assessments and making such experiences accessible for staff and students who cannot travel, for whatever reason.

Our survey shows that campus users value the educational experience that our outdoor spaces provide. Teaching and learning relating to biodiversity and nature, and environmental subjects is largely but not exclusively done by people affiliated with Life Sciences, Environment and Geography, Archaeology, and Education. However there is a desire to move education outdoors expressed by participants from a wider range of disciplines and professional support teams, from English, Psychology and the School of Arts and Creative Technologies to International Recruitment and Research, Innovation and Knowledge Exchange (RIKE).

There is a strong desire expressed for more organised events and volunteering activities that foster a sense of community and connection with nature. The ability to work outside, or take breaks from work outside, is seen as beneficial for improving productivity.

Which outdoor spaces are in use?

Diverse habitats with different management regimes and soils/flora/fauna across both campuses are already used for education and research in ecological and environmental subjects (Figure 12). Key spaces include the wildflower, grassland, wooded areas and lake sides on both campuses, and the Campus East bird hide. The University also boasts a nature walk, fitness trail and a number of outdoor art and native and non-native tree trails that support teaching, learning, outreach, transdisciplinary research and community engagement.

The York Experimental Archaeology Research (YEAR) Centre (Figure 12) is a beacon outdoor centre that provides dedicated space for admissions, education and teaching-led research in Archaeology. Students engage in hands-on experiential learning and conversations around the campfire, developing a deeper understanding of the past material world, and forming important social bonds with each other. The YEAR Centre works with Estates on upkeep and management, for example planting dogwood and hazel near the water for future coppicing and sustainability of the wooden structures and campfires.



Figure 12: Clockwise from top left: Students from the Department of Biology carrying out research projects on insect activity and water quality on Campus West; Students learning around a campfire in the YEAR Centre on the edge of Campus West.



Figure 13: The last Covid marquee on Campus West: a bookable space outside the Department of Psychology.

During Covid lockdowns, the University installed marquees (Figure 13) for outdoor learning (for example outside the Department of Psychology), providing resilience and inclusion for staff and students who preferred to be outside.

Education and research for biodiversity and nature

Education and teaching-led research for biodiversity and nature gives us space to directly link the Ecological Management Plan operationally to credit-bearing teaching and student-led research on campus.

Fieldwork-focused ecology modules already use campus-based practicals with project components undertaken by students who elect for a non-residential field course. Activities range from water quality sampling the lake to pollinator surveys and exploring the effect of management on biodiversity. Past student projects have studied the impact of geese and the effectiveness of reed bed filtration on nutrient levels. In 2025-26, a new capstone project for Biology students launched, contributing to monitoring and analysis for the Ecological Management Plan. This provides students with experience in camera trapping, transect monitoring and vegetation surveys while developing their own research and communication skills, and supplementing and extending our shared body of knowledge about campus biodiversity at York.

Education and research outdoors

Education and research outdoors are opportunities to take people out of the buildings, no matter the subject. This might include education about the wider benefits of outdoor education for wellbeing, or simply offer those benefits by doing outdoor education.

Not only does the Department of Archaeology host 100+ undergraduates on multiple modules each year in the YEAR Centre, they run a Masters in Material Culture and Experimental Archaeology which attracts many international and home students because of the uniqueness of their outdoor facilities: it is rare to have an experimental centre located on campus. The centre is frequently used for research projects from Masters through to postdoctoral; for example, bioarchaeologists have used the centre to bury pots used to cook different types of prehistoric foods, which they will dig up and analyse to assess the effects of diagenesis on organic residues.

The Norwegian Study Centre approaches studying the English language in interdisciplinary ways, employing many environmental topics into their learning objectives, while using the campus to engage in initiatives like hedgehog conservation campaigns with nearby primary schools. An example from the Education Department is the undergraduate and Masters module, Outdoor Learning: People, Nature & the Environment, which uses the campus grounds to build environmental awareness in creative ways; to consider equality, diversity and

inclusion issues in outdoor learning; and to incorporate practical logistics such as planning for the weather dynamics, and risk assessments. The Outdoor Learning module is also an optional module in the Masters of Environmental Education Sustainability and Communication.

Our campuses are well used by students in the creative disciplines, from filming final year projects in film, television and interactive media studies to live performance and rehearsals outdoors. Providing bespoke performance space such as an amphitheatre would build on these activities, as well as offering accessible and designed outdoor teaching space for all subjects.

Our campuses are used to investigate teaching and learning beyond the classroom, such as the value of experiential education for attention-development, immersive learning and restorative wellbeing during experimental archeology lessons at the YEAR Centre. Scholarship work carried out at York for Advance HE and academic practice certification includes exploring the efficacy of walking methodologies for learning on campus, and the value of using place-based biodiversity citizen science training as a means to upskill University students to be facilitators for nature-based public engagement events.

Wildlife information signboards, tree trails and art trails on campus support campus users to notice the nature around them. A regular workshop in the University calendar of environmentally-themed events is a slow nature walk that blends the creative and technological techniques of soundscaping, nature journaling and citizen science, for multi-sensory campus appreciation. This walk is not only a tool to enhance wellbeing by being in the natural environments of our campus, but also a springboard into interdisciplinary inquiry about nature-human interactions and interdependencies.

Our campus plays a part in science communication and raising awareness of biodiversity on a regional scale through initiatives like the York City Nature Challenge: a case-study as part of the University of York's Open Research initiative spotlighted the value of environmental action research and co-organizing the York City Nature Challenge. The Festival of Ideas, which led to the University being awarded as the 'Community University of the Year' (Daily Mail University Guide), and the York Environment Festival, are two notable initiatives which highlight the campus as a learning and research space to wider public audiences beyond the University students and staff. The 2025 programmes of both festivals included events that explored campus ecology and space for human and biodiversity health through multisensory nature experiences, fantastic fungi and art, biodiversity and collaboration.

What outdoor spaces do we need?

As a University community without limits, accessibility should be a principle that underpins all our outdoor spaces, as well as inside our buildings. More teaching outside will require education infrastructure, including more seating, in a variety of configurations to suit different purposes, more covered spaces to mitigate against poor weather, and easier navigating of outside spaces. To encourage and maximise engagement with nature, we need better information on what facilities are available and how to book and use them.

There are numerous concrete courtyards and corners which could be used to create sensory garden retreats and study spaces for students and staff. Campus East has many of these designed into the new colleges; Campus West has room for improvement. Such spaces also provide opportunities for growing food, and there are numerous raised beds on Heslington East that could be reinvigorated through college projects. Survey participants also suggest integrating indoor spaces with nature, to provide green space benefits under cover and to improve indoor-outdoor flow.

We will think about how visitors encounter the University for the first time. People enter our campus, and then often go inside. What if that didn't have to be the case? A beautiful and welcoming approach to both campuses will encourage campus users to enjoy the experience of outdoor space as integral to their visit to the University.

A proposal to renovate and rejuvenate the Walled Garden on Campus West is in development. Restoration of the glasshouses and garden spaces could provide covered teaching spaces and placement opportunities for students, as well as a visitor centre and outreach hub for sharing research with campus visitors and the wider community. Archaeology has staff with expertise in historic building conservation who might be able to advise and use this opportunity to educate, linking to the existing MA programmes on Historic Buildings, Sustainable Built Heritage and International Conservation Studies.

Education and research opportunities

In ecological and environmental education and research, we will:

- **Connect** modules and teaching activities in which we currently run EMP relevant activities with EMP protocols for data collection, analysis and curation, to work with students to directly support the biodiversity monitoring and management plan.
- **Extend** education and student-led research that currently exists, to work in collaboration with the EMP team to extend monitoring, management, analyses and information sharing opportunities.
- **Develop** new modules and programmes that have synergy with the EMP, to be a revenue-generating unique selling point for York.

For education and research outdoors on campus, we will:

- **Connect** staff and students with outdoor spaces and make it easier for these to be used through booking, contingency covered spaces, accessibility and equipment.
- **Explore** opportunities in disciplinary and interdisciplinary teaching through nature-focused networking events, partnerships and collaborations.
- **Develop** new case studies, modules, programmes and continuing professional development (CPD) that enhance existing programmes and the student experience, and open up opportunities for revenue generation.

The EMP opens up a variety of interdisciplinary opportunities in education and research intersecting with monitoring and management activity. Key examples are:

- Undergraduate and graduate projects based on data from the campus lakes, species reintroductions, and changes in management. These would redirect rather than add to teaching effort.
- Business enterprise and revenue generation using some circular economy principles, for example supporting food production and hospitality for the walled garden, managing an orchard, vineyard or microbrewery, and plant sales in a nursery garden.
- Sustainability, for example exploring the interface between solar panels and biodiversity, or the circular economy for food production, food waste and composting on campus, and alternative energy from geothermal power.
- Communication and outreach, bringing together people across faculties and the wider York community to share disciplinary knowledge, use campus to tell research stories, and enhance nature-connectedness and wellbeing.

Ways by which these could be delivered include module development (including volunteering for credit), interdisciplinary options within programmes (e.g. a cross-faculty project module), placement years and apprenticeships with Estates, a biodiversity and community strand in York Strengths, and new Masters and CPD development around conservation and ecological management.

Highlighting the benefits of our special campuses for learning, wellbeing and safety will be a unique selling point for the University that supports recruitment and admissions, as well as strengthening teaching and learning for specific programmes and learning opportunities. New programmes, CPD and field centre facilities alongside a Campus East “nature reserve” and Campus West botanic garden could establish York as a centre for outdoor learning, supporting our own students’ education, meeting demand for accessible and inclusive fieldwork and outdoor learning from community, Further Education (FE) and Higher Education (HE) groups. It could also support local schools to deliver ecological teaching and the new Natural History GCSE, and make space for corporate groups and community organisations to run events and share experiences.



Figure 14: A new floating wetland on Campus West Lake will naturally help improve water quality while creating a safe habitat for birds, pollinators and fish.

4. WELLBEING

Education, research and scholarship goals

	Strategic goals	Management and monitoring	Education and research	Wellbeing
6	Enhance connectivity for nature and people between the two campuses via green routes	■	■	■
9	Expand opportunities for engagement with nature for staff, students, local communities and the public	■	■	■
13	Cultivate a campus culture of outdoor working and learning		■	■
14	Build nature-connected community through shared outdoor activities			■
15	Enhance diversity, usability and accessibility of outdoor space on campus			■

Dimensions of wellbeing on campus

Access to nature is increasingly recognised as beneficial to physical and mental health. As well as educational opportunities, time spent outdoors can reduce stress levels and enhance mood. Campus is used by staff, students, local residents and visitors as a place of recreation and relaxation, who appreciate proximity to nature and spaces to spend time outdoors.

In our survey, campus users identified the main barrier to spending more time outdoors on campus as time availability, so interventions that build in outdoor time to everyday activities would be very beneficial. Other barriers identified were a lack of seating (and particularly accessible seating) and a lack of facilities that are open at weekends and outside term time. Some campus users also identified safety concerns that act as barriers, with specific comments relating to cyclists and walkers using the same space, loose dogs and goose faeces. There were also some comments about overhanging bushes, uneven/broken paving and areas which are poorly lit at night, which highlight the importance of the maintenance team, and the work they do, in the perceptions of the campus users.

Infrastructure and features for wellbeing

The physical structure of the campus offers a number of opportunities for enhancing the wellbeing of campus users.

Outdoor seating space

There is a clear demand for more spaces where campus users can sit together to eat and connect. Areas of outdoor seating which are accessible and provide shade from rain and sun are highly desirable. The addition of seats with back rests and benches with spaces for wheelchairs would improve accessibility. Arrangement of seats in more social configurations will encourage social and work interactions outdoors. Example areas that could be targeted for this include the grassed area between the Campus West lake and the Concert Hall (Figure 15), and the seating area at the front of the Fairhurst Building.

Outdoor seating areas must be accessible to all campus users and provide a range of options to meet user needs for quiet and reflection, socialising, and work interactions, with protection from inclement weather (both rain and sun).





Figure 15: Left to right: Arrangement of seats in a variety of configurations will encourage social and work interactions outdoors; The grassed area between the Campus West lake and the Sir Jack Lyons Concert Hall could provide an area for more outdoor seating.

Outdoor recreation space

Campus users would like more clarity about which spaces can be utilised for the playing of games, exercising etc and which areas are for quiet activities. Whilst there are sports facilities on Campus East, there is little informal recreation space on Campus West. Highlighting specific areas as spaces where ball games are permitted, and indeed encouraged, and clearly indicating running routes across the two campuses could mitigate this. There is also demand for outdoor exercise equipment, which again could be placed in an area designated as outdoor recreation space. The grassed lawn areas around Derwent (Figure 16) were identified as under-utilised space, which could be considered for this usage. Areas of mown grass provide important recreational spaces and could be enhanced by the addition of fruit trees that would provide blossom, shade and fruit. Encouraging more human activity in this area will reduce the number of geese congregating and producing waste.

Designated quiet outdoor spaces for meditation and practices such as yoga, tai chi etc. are also desired and could be provided in the lawned area and topiary garden behind Heslington Hall. The Quiet Place is currently available for meditation and prayer, but requires booking and therefore does not provide for informal opportunities. The nearby Yew hedges also provide interesting spaces for reflection (Figure 17).



Figure 16: The grassed lawns around Derwent College could be considered as a recreation space.



Figure 17: Topiary garden behind Heslington Hall. The Yew trees provide quiet space and shelter.



Figure 18: The lawned area at the front of the Fairhurst Building includes seating and apple trees.

Horticulture and sensory gardens

The development of a sensory garden and utilisation of the raised beds around some of the student accommodation blocks would enhance wellbeing on campus. Whilst a sensory space could be created in the walled garden, an additional opportunity exists in the outdoor space in front of the Fairhurst Building (Figure 18), which is currently lawned with benches along one edge. This space has existing fruit trees and could be further developed to include a small heritage orchard or additional food growing facilities.

Engagement and support for wellbeing

Community and social activities

Having accessible spaces to meet will improve the wellbeing of campus users, and outdoor spaces offer opportunities for bringing people together in nature. Social and community events that encourage new campus users and the wider community onto campus into spaces such as Greg's Place include cultural food markets and second hand clothing stalls. Nature related activities that build community e.g. volunteering for monitoring and horticulture, alongside active encouragement from senior leaders that staff should engage in such activities, will also help to maintain and improve staff wellbeing.

Food and catering on campus

Campus users would like to be able to access a wide range of healthy and diverse food options all year round. Outdoor spaces offer an opportunity to bring street food vendors and mobile drinks providers onto campus, enhancing the provision within our built estate and encouraging consumers to go outside. Growing food on campus can also help provide access to fresh locally sourced food alongside educational opportunities and experiences in sustainability and horticulture. Community orchards have the potential to provide free sources of fresh fruit as well as shade and habitat.

Trails and information

Campus users appreciate the signs on campus that share information about the waterfowl and other campus creatures. Survey participants suggested that more information would be helpful. This could be provided through physical signs and digital curation, e.g. via QR codes (as on the Long Boiology Art Trail) (Figure 19) or through maps on the MyUoY app and University website.

Virtual trails provide an opportunity to share information about e.g. interesting architecture, history, and walking and running routes, to complement art trails, tree trails and the solar system trail. The InTREEged network is currently working on enriching the campus tree trail with links to art, poetry and nature connection activities, which will be launched at the 2026 York Festival of Ideas.

A calendar of events shared via a Google calendar can support engagement with nature on campus. Information about when ducklings are likely to hatch, or where and when specific flowers are likely to bloom could enable interested staff and students to explore biodiversity and nature through the seasons.

Art on campus

A digital art trail (based on the existing sculpture trail) could be developed to encourage campus users to find the campus artworks and engage with nature and the history of campus as they explore. Art events on campus can also increase wellbeing and connection of staff and students: interdisciplinary teaching and research tapping into arts and biodiversity, and a sustainability and biodiversity artists-in-residence scheme could support space use, workshop events and campus curation goals.



Figure 19: Long Boi (statue by Neil Mason) looks towards a waterfowl information board.

5. A CAMPUS FOR THE FUTURE

The previous chapters have identified actionable strategic goals for a more nature friendly campus that supports education, research and wellbeing. Here we take a more aspirational approach that captures some of the ideas shared by those who took part in our Postcards from the Future, as well as the vision of members of the University community.

Though funding is currently constrained, we hope that the financial situation of the University will improve over the coming decade and we take the opportunity here to capture some of the aspirational ideas that could be included in future campus remodelling, or form the basis for individual flagship grant applications. The ideas here are cross-cutting, providing benefits to broad swathes of campus users.

Walled garden restoration

Restoration of the glasshouses and walled garden on Campus West could provide large covered teaching spaces as well as catering and social spaces, with the opportunity to serve food grown on campus. This would require significant investment but could provide opportunities for revenue generation later through training opportunities and sale of plants.

There are clear links to horticulture, urban agriculture, ecology and sustainability education and research, while enterprise-minded students would benefit from more local opportunities to get authentic experience in business management and operations on campus. Depending on the scale and nature of the renovations, further revenue could be generated through event hire. The space is currently the subject of a National Lottery Heritage Bid - Garden for Life, led by OPPA.

Garden bridge and biodiversity gateway to the University

The library bridge will become a garden walkway, leading to biodiversity and user-friendly outdoor spaces around the JB Morrell Library. Entrance to the garden bridge will be via a remodelled market square, providing street food stalls, student space and outdoor social spaces. The currently fenced area adjacent to market square could become outdoor teaching space.

Community orchards and apple festival

A river of fruit trees flowing from Campus East to West would provide uplifting displays of blossom in the spring, summer shade and autumn fruit, as well as connectivity for wildlife and resources for pollinators (Figure 20). Work will be needed to identify the best sites for the orchard and to source varieties that reflect local heritage while also being suitable for a warming climate.

Visions from the survey's 'postcard' questions include the wider York and University community coming together around an "*apple harvest festival.. to enjoy the outdoor space, listen to local music and see local art in the orchard, and enjoy fresh apples, cider, and apple pies and bakes; (where) the value of nature to people, the value of pollinators, and local/regional food and agriculture traditions are celebrated.*"

The orchards could potentially form part of a biodiversity corridor linking other green spaces across the city and encouraging visitor flow from the city.

Outdoor amphitheatre for outdoor performance and teaching space

There are a number of locations on both campuses where the landscape is already well shaped for banked seating, such as the Heslington entrance to Campus East, and Vanbrugh bowl (Figure 20). These could provide unique outdoor teaching and performance spaces for the School of Arts and Creative Technologies and across the disciplines. These spaces would also create a green welcome to the campus for visitors and encourage engagement with local communities through participation in art events.



Figure 20: Top to bottom: Illustrative images of amphitheatre seating at Vanbrugh bowl and a community orchard creating a biodiversity corridor between campuses

Field station

Bespoke physical and virtual structures would facilitate delivery of training in biodiversity monitoring, ecological fieldwork, support teaching on campus and in the local community, and provide a space for residential and corporate training of University and external groups, and community use. This could be a new development, or integrated with existing residences or buildings on campus, or in collaboration with regional partners.

Towards a circular economy on our campus

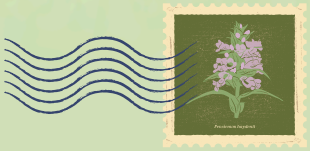
Joined up thinking across green, built and blue environments affords opportunities for reduced waste, greater energy efficiency, and climate change adaptation. On-site food production and composting, banning of single-use plastics, review of outdoor lighting and integration of sustainability throughout all campus operations would position York to be a world leader in campus sustainability.

Geothermal synergy

The geothermal energy project provides unique opportunities for sources of heat that could not only contribute towards our journey towards net zero but also provide unique opportunities for recreation and community building (e.g. heated outdoor swimming and horticulture).

Postcards from the Future

In our campus survey, we asked campus users to send us a virtual postcard from their ideal future campus. Vivid responses included:



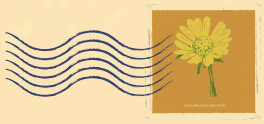
Hello from the indoor garden and waterfall at SBS. ... it has been well maintained and has become a wonderful space for students and staff to meet, have lunch and also relax between classes. The indoor garden has given us a feeling of being outdoors, but allows us to experience tropical and other plants that would never grow outside. It provides the building with an exotic, relaxing, and tropical feel and has become a little oasis for many of us.



I'm enjoying the outdoor study space developed by the library, there is lots of sensory planting and plenty of comfy perches to sit, read and enjoy fresh air.



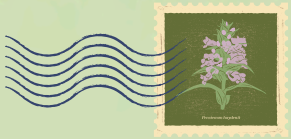
the abandoned student hub converted into a garden with trees, pollinator-friendly planting and a sensory space, the area feels welcoming and relaxing... a great place to eat lunch, or to meet and study. There are several living woven willow pods, providing covered study spaces, and artworks hidden in the greenery.



The small [outdoor] visitor centre welcomes people to campus and helps with school visits and student outreach. The place is relaxing and a good place to watch the world go by or to teach others about the wildlife we share our campus with.



outdoor lessons really help the students to focus on themselves, identify what is important to them, and how they would like to develop their mindset... it seems to make them feel refreshed and rejuvenated and... focus on the tasks.



These wonderful green spaces across campus are not only here for out-of-hours use but we are regularly encouraged & led by department management who want us to use these outdoor spaces in the ways we work and during working hours. We are able to mix with other staff, students and local people and there is a greater sense that we are a community who cares about these great spaces.



Sensory garden with bamboo, a waterfall and edible plants (herbs, fruit trees, berries), that provides soothing sounds and encourages connection with nature and enjoyment of our campus.



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