University of Kent, Estates, Landscape and Biodiversity Strategy 2021 – 2025

Statement of Support

I support the commitment of the Estates Department to work collaboratively to manage the campus grounds sustainably, to protect and enhance Biodiversity and to achieve the targets set out in this Strategy.

Ron Moore, Assistant Director of Estates Maintenance and Technical Services

Contents

1. Introduction

This Landscape and Biodiversity Strategy has been produced by the University of Kent as part of its Environmental Management System which outlines the University's commitment to environmental sustainability and the way in which the Campus is managed. This strategy will set out our broad aims and objectives to ensure the campus is managed in a sustainable way and that habitat enhancement for biodiversity becomes an integral part of the day to day running of the University's outdoor spaces.

Progress and achievements against our last strategy can be found in section 6. Where objectives were not fully achieved, these have been brought forward as commitments in this refreshed strategy.

1.1. Our campuses

The Canterbury Campus is approximately 300 acres (1.2km^2) in area, mainly comprising ornamental horticultural features, amenity and semi-natural grassland, woodland and hardstanding. The main use is recreational, with large areas set aside for grass sports pitches. In addition, there is another 300 acres of farmland let to agricultural use, outside of the scope of this strategy.

The Medway Campus is split into two distinct areas – The Historic Dockyard, for which the University has no input and the HMS Pembroke site, covering 6.25acres and an off campus vacant site, 1.25 acres totalling 7.5 acres, which mainly comprises of ornamental horticultural features, amenity and semi-natural grassland, woodland and hardstanding. The main use is of amenity value, with the grassed areas used in the summertime for marquees.

2. Drivers for Biodiversity and Sustainability

The following drivers are fundamental influences on the way in which we currently manage our campus landscape, and how our green spaces will be managed in the future.

2.1. Legal Compliance

Our Canterbury campus is contained within the North Kent Plain Natural Area, which sits between the North Downs to the South and The Thames Estuary to the north and the area also contains the large Blean woodland complex which is just to the west of the campus. This woodland is designated as a Special Area of Conservation, National Nature Reserve and Site of Special Scientific Interest (SSSI).

As well of these broad designations in the local area, the campus itself is subject to a number of legal protections of woodlands, trees and protected species.

All of our works are covered by the Health and Safety at Work Act 1974.

2.1.1. Tree Protection Orders (TPO)

There are four main Tree Protection Orders in force on the Canterbury campus. Full details of the orders are held by the Landscape and Grounds, and Sustainability teams. These orders either specify individual trees or protect areas of woodland as a whole. Any

landscape, maintenance or capital project work must take special measures to ensure protection of trees subject to protection orders.

Some of the trees on our Medway campus are also covered by TPO's, covered by Medway Council.

2.1.2. Ancient Woodlands

Much of the woodland on central Canterbury campus is designated ancient semi-natural woodland. Ancient woodland is a unique and irreplaceable habitat which covers less than 2% of the land area of the UK. It is afforded special protection in planning law and the University has a responsibility to manage and protect these woodlands accordingly.

2.1.3. Protected Species

The Canterbury campus is home to a number of species offered special protection under the Wildlife and Countryside Act. Under this act the University is required to identify whether protected species are onsite, and ensure that it will not: deliberately kill, capture, injure, or disturb them; cause damage to any breeding or resting place; and intentionally or recklessly obstruct access to any place used by protected species for shelter.

There are a number of species of principle importance on campus that are listed under Section 41 of the Natural Environment and Rural Communities Act 2006. These species are included as part of the UK Biodiversity Action Plan and therefore must be included and considered in all management practices, including any construction work. Species included on the UK BAP and found on campus include: Great Crested Newts; Dunnocks; Starlings; Hedgehogs; Dormice; as well as a diversity of fungi, bees and butterflies. Great Crested Newts are of special consideration as they are protected under the Conservation of Habitats and Species Regulations 2010 which implements EU Habitats Directive in respect of conservation of natural habitats and wild flora and fauna.

Historically species surveys have been carried out across the Canterbury Campus, and protected species have been identified. Additional surveys are carried out by the Durrell Institute of Conservation and Ecology as part of their curricula activities. Targeted surveys are carried out for key species such as Hedgehogs as part of the University's commitment to the Hedgehog Friendly Campus project.

2.1.4. Invasive Species

We have a responsibility to manage invasive species on site. These are species which have been introduced into areas outside their natural range through human actions and can pose a threat to native wildlife. On site we are currently monitoring five invasive species and taking active management on two. We will continue to utilise the Great Britain Invasive Nonnative Species Strategy as guidance.

2.2. Responding to the Climate and Ecological Emergency

Protecting and enhancing the natural environment, and its foundations of natural cycles, biodiversity and abundance are crucial to supporting a sustainable future The scale of biodiversity loss as shown in the IPBES Global Assessment to the Living Planet Index tells us that we must act urgently if we are to avoid the risks associated with continued degradation of the natural environment.

2.2.1. Increasing Biodiversity and Abundance

The University of Kent recognises that UK biodiversity is at risk and therefore, it is an imperative that we work to not only protect the biodiversity that we have but also provide

opportunities for it to flourish and increase. The University also recognises that there has been a reduction in the abundance of the species we have on campus and that by adjusting our management techniques we can support existing species to flourish and encourage other species back in that existed here before.

2.2.2. Action on Climate Change

There is clear evidence that our decisions on how we manage land can influence the impact of climate change on species and ecosystems. Therefore, we have a responsibility to manage our site accordingly. We also have opportunities to use our land in novel ways to reduce our own impact on the climate by (but not limited to) utilising space for renewables, tree planting, research that supports low carbon outcomes, and food production etc.

2.2.3. United Nations Sustainable Development Goals

The University is a signatory to the Sustainable Development Goals Education Accord which celebrates and advances the critical role that education has in delivering the Sustainable Development Goals. The Estates department is committed to embedding the goals into its operations and has considered the goals during the development of this strategy. Of particular significance to this Strategy are Goal 15: Life on Land, Goal 11: Sustainable Cities and Communities, Goal 13: Climate Action, Goal 4: Quality Education and Goal 6: Clean Water and Sanitation.

2.3. Financial Risks and Opportunities

2.3.1. Compliance

The Canterbury campus is home to a number of protected species as well as a number of ecologically sensitive habitats. Managing the campus in a more proactive sustainable way will significantly reduce the risks to these habitats from pollution, erosion and general degradation which would be costly to rectify. The Environment Agency can fine or even prosecute organisations for failing to protect sensitive habitat areas so protection should be central to our grounds activities.

2.3.2. Maintenance costs

Maintenance of traditional amenity landscaping can be very labour intensive as it is focused on visual impact rather than reflecting the natural character of the landscape. Adopting sustainable landscaping techniques in appropriate areas provides financial benefit through lower maintenance costs (reduced mowing frequency, minimal or nil irrigation, lower weed growth).

2.3.3. Revenue generation

There is potential for our land to generate income for the University. Through coppicing our woodlands on a planned cycle over the last five years, we are not only creating a more diverse vegetation structure but have also sold our coppiced wood as a biofuel to a local company. We will continue to review this practice, looking for new ways so sell this resource that keeps carbon locked in the wood.

Revenue is also generated for the University through hiring out of green space for use by Kent Sport, conferencing and events. This is something that we hope to expand by managing existing spaces and creating spaces that can be used for cultural/leisure opportunities that utilise our campus trails, woodlands, and community garden.

2.4. Education, Reputation, and Wellbeing

2.4.1. Health and Wellbeing

The links between outdoor spaces and health and wellbeing are well established. Access to quality outside space has a proven benefit on wellbeing and reducing stress.

The creation of well-designed outdoor quiet spaces for reflections, small meetings and one to ones can enhance how our outdoor spaces are used as well as providing people with more opportunities to engage with the natural environment. The launch of the Kent Community Oasis Garden (KentCOG) in September 2018 for the use of Students, Staff, Partners and the Community will provide a valuable resource on Campus. Providing safe, attractive pedestrian routes helps reduce single car occupancy by encouraging more sustainable forms of transport, further improving health, air quality and wellbeing. Intelligent landscape design can also enhance security, encouraging more people to utilise outdoor areas. Well planned and clearly marked trails that offer long, and short routes support active lifestyles for all fitness levels. We will continue to develop routes on both campuses (in partnership with The University of Greenwich at Medway) so that everyone can find one that suits them including accessible routes that showcase the best of our campuses.

2.4.2. Nature based Covid recovery

Throughout the Covid-19 pandemic, more and more people have realised how valuable outdoors and wilder spaces are to them. People have found solace and beauty in the natural world as well as a safe space to exercise, meet with friends and family and a routine to bring some normality into our lives.

Any recovery program from Covid needs to include an ambitious investment in our green spaces, not just to ensure their survival but also to acknowledge the continued role they play in maintaining healthy lives and a safe environment. We cannot continue with business as usual as we will continue to erode the spaces we have directly contributing to biodiversity loss and the reduction in safe natural spaces for our students and staff to benefit from.

2.4.3. Education

Our students live, study and research on our campus and there are many opportunities to benefit from their knowledge and enhance the student experience. Our campus can be used as a living lab to allow students from a range of disciplines to test out ideas. In particular, the Durrell Institute of Conservation (DICE) has students studying a range of topics that could be implemented on our campus to further understand and enhance biodiversity. However, we want to encourage all Academic Divisions and Professional Service providers to think how they can use the green spaces in the offerings. More information on this is included in section 3.5.

2.4.4. Our place in the community

Our campuses, particularly at Canterbury, offer a unique natural environment that those of us belonging to the University are lucky to have access to. The range of habitats, species, trails and sheer space that we have are invaluable resources that we should be looking at ways to enhance, use and share. We will continue to look at opportunities that link us with our surrounding environment, local projects, networks and community. We are currently represented on the committee of the Canterbury Biodiversity Network and partnered with East Kent Mind at the Kent Community Oasis Garden. We will continue to build these partnerships and seek out new ones where appropriate.

2.5. Internal Drivers

2.5.1. Environment Policy

The University of Kent's Environment Policy was last updated and signed by the Vice Chancellor and Chair of Council in February 2020 and sets out our objectives and commitments to environmental management including:

- Manage our campuses to protect and enhance biodiversity

2.5.2. Sustainability Strategy

The new Sustainability Strategy sets out the University of Kent's objectives for embedding Sustainability and the Sustainable Development Goals throughout our operations, teaching and research. The strategy pulls out some priority areas including supporting Biodiversity. This strategy supports the overarching aim from the Sustainability Strategy to: Regenerate the ecology of the campuses to mitigate biodiversity loss and decline in ecosystem services.

2.5.3. ISO14001:2015

The University of Kent operates an Environmental Management System (EMS) certified to ISO14001:2015. This system requires us to identify our significant environmental aspects and develop a programme of improvement, identify relevant legislative requirements and ensure operational control in order to achieve continuous improvement in environmental performance.

2.5.4. Student and Staff feedback

In the Spring-term of the 2020/2021 academic year we ran an open consultation for students and staff to provide feedback on how we manage our campuses and what they would like to see in this strategy. The Landscape and Ground Team and Sustainability Team have reviewed all of the responses and have considered how each of them could form part of this strategy.

3. Our Key Principles of Sustainable Landscape Management

"A sustainable landscape is designed to be both attractive and in balance with the local climate and environment and it should require minimal resource input. Thus, the design must be "functional, cost-efficient, visually pleasing, environmentally friendly and maintainable" As part of the concept of sustainable development it pays close attention to the preservation of limited and costly resources such as fresh water, reducing waste, and preventing air, water and soil pollution. In addition, woodland management, integrated pest management, planting design, irrigation efficiency and drought resistant gardening are all components of sustainable landscaping"

3.1. Ecosystem Services

Ecosystem services are the many and varied benefits that human's gain from the natural environment and from properly functioning ecosystems. Ecosystem services can be grouped into four main categories:

- provisioning, such as the production of food and water;
- regulating, such as the control of climate and disease; • supporting, such as nutrient cycles and crop pollination and; • cultural, such as wellbeing and recreational benefits.

When developing this strategy and future works we will consider all four aspects of ecosystem services.

3.2. Treat water as a valuable resource

Fresh water is a valuable commodity. The Southeast of England is the most water stressed region of the UK which as a whole has less available fresh water per person than most other European countries. Minimising water wastage and retaining rainfall for use by the landscape is one of the major guiding principles of sustainable landscaping. Potable water in particular is both environmentally costly and not ideally suited to use in landscaping. Groundwater extracted through boreholes should be used in preference to potable water where water use cannot be avoided.

3.2.1. Low Water Usage

Xeriscaping is landscaping that reduces or eliminates the need for supplemental water from irrigation. Key to this is selecting plants whose natural requirements are appropriate to the local climate. Other ways to reduce the need for supplementary water include increasing the soils capacity to store water through composting and mulching, choosing plant locations carefully so moderate water use plants are placed in shaded areas or where natural run-off from slopes and roofs can be utilised.

One of the main benefits of xeriscaping techniques is that they are low maintenance providing economic as well as environmental savings.

3.2.2. Sustainable Drainage Systems (SuDS)

Sustainable urban drainage systems (SUDS) have been developed to improve drainage and reduce the volume of surface runoff in urban areas. Alongside a reduction in the risk of flooding, SUDS in the urban landscape can also provide other environmental and ecological benefits. The inclusion of green space within SUDS can also contribute to noise reduction, air filtering and provide an aesthetically pleasing communal green space. Furthermore, green roofs have been found to support a wide variety of insects and birds, and wetlands can support aquatic species.

3.2.3. Ponds

As well as their impact on controlling surface waters running across landscapes, ponds contribute significantly to the regional species pool providing a vital habitat for many invertebrates and amphibians of significance as well as a source of food and water for birds and mammals. Well managed ponds for biodiversity will have partial shading, a variety of depths, gentle banks, a variety of vegetation presence in and around the pond, controlled reed mace, and little human interference e.g. dumping of fish, artificial feeding of waterfowl.

Each of our seven ponds on the Canterbury campus have management recommendations and information sheets for their ongoing management. The Landscape and Grounds Teams will continue to seek funding to enact these plans to ensure that each pond reaches its full potential to support biodiversity and are attractive features of our campus.

3.3. Consideration / Mitigation through design

3.3.1. Planting

Typically, native species of plants require less maintenance than non-native species as they are better suited to the local climate and soil conditions. When considering plants, species selection should take into account aspect, soil type and accessibility to reduce management input. To further reduce management input, weed suppressant planting can be considered.

When taking into the account the rising frequency of drought we will consider non-native species that are better adapted to low rainfall climates.

We will also choose perennial planting over annual bedding to reduce environmental impact and continue to work with the Kent Community Oasis Garden to look at growing our own annuals on site where they are required.

3.3.2. Layout and Design

When planning landscape design, consideration should be given to how the space will be used and maintained.

- Have desire lines been identified?
- If lawned areas are included has mower accessibility been considered?
- Is there potential to include long, unmown grass at the borders of planting areas?
- Has water flow been considered?

We will also consider how fencing and hard standing will affect the movement of people and wildlife across campus to improve movement and connectivity e.g. ensuring that fences do not act as barriers for certain species, particularly hedgehogs.

3.3.3. Integrated plant pest and rodent management techniques

Avoiding the use of chemical pesticides significantly reduces the impact on the ecosystem. Use of integrated pest management techniques should be used to control plant pests and diseases. Principles of integrated pest management include focusing on control rather than eradication, preventing pests through maintaining healthy plants and quickly removing diseased specimens, regularly monitoring and promoting beneficial insects or other forms of biological control.

Landscape and Grounds management have stopped all pesticide usage (which was limited to sports facilities) now using management techniques such as collecting all grass clippings to reduce organic matter available to worms and therefore reducing wormcasts and ensuring surface quality for sports without using pesticides.

The use of rodenticides to manage rat populations around accommodation and food outlets can have devastating effects on other wildlife. Surveys conducted by UK scientists have found residues of rodenticide compounds in the bodies of many predatory and scavenging species of mammals and birds. Where bioaccumulation of these compounds is allowed to increase there is a significant risk of animals becoming extremely sick and can be lethal.

The University is working closely with its pest control contractor to ensure that proactive management of rodent populations is used without resorting to the use of rodenticides unless absolutely necessary. The Sustainability Team will conduct a 6-monthly review on the use of rodenticides on campus, monitoring how much of it is used and where.

The University's current contractor uses the Campaign for Responsible Rodenticide Use Best Practice guide to limit the use of rodenticides to an absolute minimum, and where it is used in a last case scenario this is done in accordance with best practice guidelines to minimise any primary or secondary risk to other wild species. The University will seek to ensure that this guidance forms the basis of any future tenders.

The Sustainability Team will continue to advocate for zero usage of rodenticides and any glyphosate herbicides, and work with responsible departments to minimise usage of these items with an aim for zero usage.

3.3.4. Wilding

Wilding/Rewilding is a progressive approach to conservation which fundamentally is about allowing natural processes to shape the landscape with limited or no human intervention. Through wilding, wildlife's natural rhythms create wilder, more biodiverse habitats and can massively reduce the input of resources into an area whilst achieving better conservation outcomes. At the University we are looking at ways we can incorporate this principle into how we manage (or do not manage) certain areas of the campus. We are committing to trialling some areas of the campus utilising wilding principles not just on the perimeter areas of the campus but also more centrally.

3.3.5. Designing out and reducing high impact activities

3.3.5.1. Lawn mowing

In line with our commitments to managing our grasslands for biodiversity and trialling the use of wildling techniques, we have considered each area of grassland and how we can reduce the frequency of mowing and increase the sward height from 20mm to 35mm on areas we do cut. More information on this is included in sections 3.4.3. and 6.3. We have also reviewed our practices for mowing and streaming ensuring that areas are checked for hedgehogs and other wildlife before areas are cut.

3.3.5.2. Leaf blowing and collection

We currently leaf blow and collect from 1.1% of our campus predominantly to prevent build up on grassland areas and paths on central campus. 47.5% of the collected leaves are placed around campus and left to mulch down naturally in the wilder areas.

We will continue to review this number to minimise the amount of leaf blowing we do as it can be a noisy and fuel consuming activity and engage with building users and the cleaning team about leaves that are blown into buildings. We also commit to creating a business case for the installation of a proper composting yard at the Landscape and Grounds centre so that we can mulch down collected leaves properly (along with other green waste) to provide us with our own on campus source of compost and mulch.

3.3.5.3. Managing hedgerows

We continue to commit to carrying out no management on hedgerows during the bird nesting season. We will only carry out sensitive management where necessary for health and safety after a survey is done for any nests.

We will continue to identify where hedgerows have gaps and carryout infilling with appropriate species of trees in order to maintain these important wildlife corridors.

3.3.5.4. Herbicides

The use of herbicides is annually reviewed by a collection of students, staff and the Sustainability Team as part of the Hedgehog Friendly Campus Project. The latest report in December 2020 provided the following information:

Specialised spraying is carried out by a contractor on central campus and Parkwood accommodation hard standings using a spray unit that detects chlorophyll in the weed and applies the correct dosage to that weed. This is only used on areas of hard standing around central buildings and not along hedge lines, beds, grasslands or woodlands.

The herbicide used is roundup pro biactive 360. This contains glyphosate which we acknowledge has impacts on wildlife, ecology and human health. Applications usually take place three times a year. Where there are inner courtyards the Landscape and Grounds Team spot treat these weeds themselves when required. (Normally before open days.)

Year	Total Usage (litres)
2015	13.6
2016	11.6
2017	40.77
2018	15.67
2019	18.6
2020	22.0

The group will continue to review this usage and the Landscape and Grounds Team are committed to an annual reduction in usage and will continue to seek alternative methods that are within their resources with the overarching aim to stop all usage of glyphosate and inorganic herbicides.

3.3.6. Integrating biodiversity enhancement with the built environment

The Sustainability Team will continue to work with the Projects and Technical Services Team to embed broad sustainability aims including Biodiversity into their work. Plans and commitments to this will be included in a forthcoming strategy from Estates.

3.4. Our commitments to habitat management

3.4.1. Woodland Management

A simple principle for enhancing landscapes for biodiversity is to start with the diversity of the vegetation. By increasing the variety of vegetation, be that by planting or by allowing areas to naturalise you are creating new habitats and foraging opportunities for invertebrate and vertebrate species.

Within our woodlands, coppicing trees in sections each year, opens up the canopy allowing for light to flood in and for the seed bank already within the soil to germinate and grow. This will increase the variety of plants as forage and shelter for surrounding species and may even encourage new species to move in. The coppicing of different sections of our woodland each year we will give us a mosaic of habitats with tree growth at different stages providing a complex and diverse habitat for insects, mammals and birds to use. Work on woodland management is defined in the supporting document found in the Appendix, section 6.2. Woodland Management Plan

3.4.2. Tree Management outside of woodlands

We monitor the health of all trees across central campus and those that are near pathways and roads. We use the Quantified Tree Risk Assessment and this is carried out every three years. We will only ever remove a tree if it becomes a risk to safety, and we will always consider the removal of limbs as an alternative to removing the whole tree. When we do have to remove a tree, we will always plant two native trees as a mitigation somewhere suitable on campus. This is also our policy in our soft landscaping specification which can be

requested from the Landscape and Grounds Team if required. It is not included in this strategy due to its length. This document states our minimum standards for any construction projects happening across campus that have an impact on the natural environment.

In line of with our commitments made below in 3.4.3 we will be reducing the amount of mowing we carry out, particularly around trees to reduce root compaction and so that we do not disrupt valuable mycelia networks that support the health of our trees. We will also consider how we can help oak trees last for longer by allowing limbs to naturally drop for support. This will be weighed up with health and safety concerns.

Finally, to support with our climate action agenda we will consider where we can add new trees to campus at all possible opportunities. This includes selecting trees that have heritage importance to the campus for example Kentish orchard varieties on the southern slopes.

3.4.3. Grasslands

If left to grow uncut, will naturally diversify with a number of grass and wildflower species that are extremely important to our bees and butterflies. Wildflower meadows can also be seeded to increase the diversity of our meadows even more. We are committing to reducing the amount of mowing we carry out and proactively creating wildflower areas across the Canterbury and Medway campus. Our current plan to expand our hay meadows and wildflower meadows at Canterbury in included in the appendix section 6.3. We will also be creating a wildflower meadow at the Medway campus.

Increasing the amount of uncut areas of grass can lead to much higher pollen concentrations which whilst good for wildlife, can be uncomfortable for those suffering with pollen related allergies. We hope to create an environment where humans can live side by side with nature and some of its inconveniences so we will publish information on the Landscape and Grounds website with some helpful advice on how to cope during high pollen periods. Where there are particular problems arising from this change of management, we will consider these on a case-by-case basis.

We will also commit to placing signage that explains why some of these changes are happening so that during times where grasslands can look untidy it is clear why this is the case and not just has not been attended to by the Landscape and Grounds Team.

3.4.4. Urban Wildlife

Certain species of plants and flowers are known to support the foraging behaviours of native bees and butterflies. In addition, features such as green walls and roofs can be included on buildings to encourage urban biodiversity. By creating wilder areas on central campus we can bring more wildlife into the formal areas of campus to encourage better connections between people and planet. We can also use central campus areas as educational opportunities to demonstrate sustainable landscaping techniques and progressive design for wildlife that is less formal but still aesthetically pleasing.

Over the next few years, we commit to trialling three different management techniques on the central campus to see how well the grasslands flourish, how people interact with them, the impact on long term maintenance and overall the perception of students, staff and visitors on how central campus looks.

3.4.5. Wildlife Corridors

In an increasingly urban environment, the roads and impermeable pathways, and the short cut amenity grasslands, act as barriers for wildlife, preventing them from finding suitable and

abundant forage and shelter. By looking at the different habitats all together we can start to look at way we can create wildlife corridors between them so that no habitat is isolated.

In order to enhance the opportunities for wildlife to travel across our campus and find suitable forage and shelter, we commit (within the timeframe of this strategy) to creating a new planting scheme that stretches from one end of the campus to the other that is particularly high in value for pollinators but also provide foraging opportunities and aesthetic interest for people.

3.5. Education

We want students and staff to be able to use the natural environment for teaching, education, and research. By increasing the use of our external spaces, we will allow the natural environment to become more integral to the way we operate as a University and go onto inform future management techniques.

In order to encourage staff and students to come forward with ideas of how the green spaces could be utilised we commit to creating an easy process for individuals/groups to go through that ensures that the Landscape and Grounds Team and Sustainability Team can properly support an idea; maintain the commitments made in this strategy; and guarantee long term maintenance of a project where appropriate. This will be published online and accessible to all by the end of the 2021/2022 academic year.

3.6. Communication

Communicating what we are doing as well as the incredible wealth of species, habitats, and space we have on our campuses is something that we will continue to improve. This will be done through interpretation boards, online resources, guided trails and talks. We will work with colleagues within the University to ensure that all students and staff have access to the green spaces on our campuses, whether that is through accessible infrastructure or accessible online resources and signage.

By improving communication and transparency we hope that more students and staff will get involved with improving our spaces for biodiversity and that it opens up doors for more research/education opportunities as stated in 3.5.

4. Objectives and Targets for 2021 – 2025

Habitat	Commitments	Target
Woodlands and Trees	To continue rotational coppicing in line with the Woodland Management Plan presented in the Appendices in section 6.2.	Achieve a minimum of 80% of the committed areas of coppicing annually. (Measure by area)
	Investigate and transition to more sustainable uses of the wood we coppice	
	Replace fallen and removed trees with two trees	
	Protect every tree and remove trees only when necessary and as a last resort	
	Protect root zones from compaction	

	Pursue opportunities to plant new trees	
	Carry out new surveys of the woodlands across campus to get updated species and structure information. These will include Extended Phase 1 Habitat surveys and fixed photography comparisons.	
Grasslands	Reduce mowing across campus	Increased the acreage of flower and grass meadows on campus by a minimum of 2 acres over 5 years.
	Increase the acreage of meadows	
	Trial three different management types on central campus grasslands	
	Increase sward height where mowing continues	
	Publish clear management/biodiversity/important information regarding grassland management on our website and on signage around campus.	
Ponds	Carry out water quality surveys	Secure funding and complete management works on at least 2 ponds.
	Monitor and manage where appropriate invasive species and biohazards	
	Update habitat profiles as necessary	
	Continue to seek funding for restoration and management requirements for each pond	
Central Campus	Trial three different management types on central campus grasslands	Complete 5 central campus biodiversity projects. (One a year)
	Create a fully accessible Canterbury central campus trail that highlight key biodiversity and sustainable features	
	Continue to develop a multiuse green space for sustainability and wellbeing at the Medway campus	
Wildlife Corridors	Create a new planting scheme that stretches from one end of the campus to the other that is particularly high in value for pollinators but also provide foraging opportunities and aesthetic interest for people	Increase connectivity across the Canterbury campus by planting an additional 2km of vegetation to create a wildlife corridor
	Maintain our hedgerows and attend to any gapping that has occurred	
	Install interpretation boards across campus that inform all about what we have on campus and how we manage our site	Install at least 5 interpretation boards across our campuses and

Communication	Keep relevant webpages up to date with key information including on key species, projects and seasonal information	host/support at least 5 event/trails centred around biodiversity education. (At least one a year)
	Engage directly with users on trial projects	
	Create a calendar of events/nature trails that engage students, staff and community members in our green spaces	
	Develop a central 'library' for all documents and surveys arising from grounds, projects and maintenance work	
Education	Create an accessible process that allows students/staff to utilise the green spaces for education and research whilst balancing maintenance considerations and legacy	Complete a project that creates an outdoor teaching space that is used by academics, student groups etc (Completed by the end of the five years)
	Utilise DICE survey data	
	Collaborate with DICE on an annual BioBlitz	
	Incorporate place making techniques to encourage outdoor teaching	
Community	Stay connected to local projects through the Canterbury Biodiversity Network	Annually increase the numbers of community members visiting and using the KentCOG project. (An annual increase of 10 volunteers)
	Network and create links with local Biodiversity projects	
	Encourage the community to visit our campuses through specific events/projects e.g. Kent Community Oasis Garden	
High Impact activities	Continually review our usage of rodenticide and herbicides to keep these low and driving for an annual reduction	Seek a year-on-year absolute decrease in high impact activities. Numerical data is kept on each of these activities and will be reviewed annually.
	Seek a reduction in leaf blowing activities	
	Create a business case for on site composting of leaf mulch and green waste	
Other	Develop a University-wide SuDS strategy to consider movement of water across at the campus scale rather than on an individual project basis	

	Achieve Gold in the Hedgehog Friendly Campus Project	

5. Supporting Biodiversity now and Beyond 2025

This strategy sets out our commitments to a continual change in how we manage our campuses prioritising biodiversity and access to green spaces, whilst minimising impact and balancing our resources.

Whilst this is a five-year strategy, we will review our progress annually and remain adaptive to new ideas, opportunities and scientific information and adjust our operations and plans accordingly.

The next ten years are a crucial period of time in which to take action on the dual climate and ecological crisis' and we will continue to carry out and make space for activities on our campuses that support a low carbon and bioabundant and biodiverse future.

6. Appendices

6.1. Progress and achievements of the 2018 - 2021 Strategy

In 2018 we launched our Biodiversity and Sustainable Landscaping strategy for the 20182021period. This set out the following targets which we have provided an update on our progress against:

Strategy Area	Target	Progress in 2021
Manage	80% of planned biodiversity work completed on time	Due to funding pond maintenance was heavily reduced. However, we completed 90% of scheduled coppicing work; completed 8 new amenity areas that embedded biodiversity enhancement in their design; carried out biodiversity training for the Landscape and Grounds Management staff, and achieved Silver award in the Hedgehog Friendly Campus scheme.
Design	Create 5 new areas incorporating sustainable landscaping each year, subject to funding.	Over the past 4 years Landscape and Grounds Management have changed 8 landscaped areas improving the biodiversity and amenity of the areas.
Enhance	5 Biodiversity enhancements projects completed each year, subject to funding.	Over the past 4 years Landscape and Grounds Management have changed 8 landscaped areas improving the biodiversity and amenity of the areas
Create Opportunities	Reinvest 100% of copping revenue back into projects which improve access to the campus environment	All revenue is reinvested into

		Landscape and Ground management budget and put towards projects and activities that enhance the campuses.

We also set a number of objectives in the preceding strategy which we have provided a progress report for below:

Strategy Theme	Sub theme	Objective	Progress Report
Manage	Estate Management	Develop robust annual management schedules which take into account all general maintenance and habitat improvement works	Landscape and Ground management have changed their process of works to log all works on the Archibus program. This allows Landscape and Grounds to better plan out all annual processes and attribute staffing hours.
		Explore options to use GIS campus mapping to inform grounds maintenance planning	Due to budget restriction this has not been met. At the moment we will not be pursuing this however, the idea will be revisited in the future.
		Explore options within Electronic Planned Maintenance System to improve scheduling of regular grounds maintenance tasks	Development of Archibus mobile has given Landscape and Grounds management the option to schedule all works
		Prepare detailed documentary evidence to support additional budget requests for additional grounds maintenance resources	Development of Archibus mobile has given Landscape and Grounds management the option to log all works and staffing needed to perform all duties. And short fall can be shown as proof for extra needs of staffing. For projects that require more budget, the Landscape and Grounds Team work with the Sustainability team to put forward business cases and risks/opportunities e.g. the campus pond profiles.
		Plan grounds activities to take into account time-bound legal requirements	Landscape and grounds management is working in seasonal compliance such as not cutting hedges due to nesting birds and not removing brush piles during hibernation periods

	Compliance	Identify those grounds maintenance activities which are restricted by legal requirements and develop guidance for grounds staff on compliance	Landscape and Ground staff are fully trained in all environment actions and works that is restricted by legal requirements.
		Ensure legal requirements are communicated to other sections whose activities impact of the campus grounds (maintenance, projects)	Communications have been improved but ongoing works to connect with other sections is still needed. This will be a continuous process.

	Monitoring	Regularly monitor the health of campus ponds through visual inspection and use of field water testing kits	The Sustainability Team carried out pond health checks twice a year up until the pandemic. This will resume once staff are more routinely back on campus.
		Develop a central 'library' for all documents and surveys arising from grounds, projects and maintenance work	Landscape and Grounds are trying to develop better communication levels with all departments across the university allowing access to these surveys. This is a commitment restated in the new strategy.
		Communicate with DICE on potential to collaborate on work to survey and monitor ecological health	Collaborations have started with DICE, particularly through the green spaces group as part of the School's Declaration of Climate and Ecological Emergency. The Sustainability Team will continue to build upon these relationships and chances to collaborate.
		Include surveying requirements in additional budget requests	Due to budget restrictions this has been reduced, but with a larger biodiversity budget this work will take action in the next 5 years
Design	Design	Ensure the soft landscaping specification is included in initial tender documentation for capital projects	Ongoing communication and collaboration with project team will help to develop a new emphasis on outdoor spaces at the university. Constant works in this area to improve including better input into landscape design. The soft landscaping specification is being adopted more by the Projects and Technical Services Team.

		Develop effective communication between projects and grounds maintenance to ensure sustainable landscaping principles are adopted from the outset	Huge strides have been made in these areas with communications developing, but there is still room for improvement with sections Estates. This work will continue.
		Grounds maintenance will take on all landscaping works on completion of planting / reinstatement of a piece of ground, at a cost to the project, in line with the issued Soft Landscape Specification	The first project taken on by Landscape and Grounds was the Pears building. This has now set a precedent that we hope to sustain in the future.

		Develop a University-wide SuDS strategy to consider movement of water across at the campus scale rather than on an individual project basis.	This has not yet been achieved. This is restated in our new aims.
		Assist projects to ensure that compliance with the planning requirements relevant to Biodiversity and sustainability are discussed and understood and that Projects responsibilities are accepted.	Communication on all projects has improved with the Landscape and Grounds manager improving lines of communications and providing input into the landscape design for projects.
	Urban Wildlife	Use BREEAM and SKA as a framework to develop targets for projects to consider Biodiversity during major construction and refurbishment works	The Projects Team have been using BREEAM on the last three major projects: Sibson, Kennedy and Peers. However, Biodiversity specific criteria were not targeted. The Sustainability Team will continue to work with the Projects and Technical Services Team to develop their objectives in supporting Biodiversity.
		Provide web-based information for staff and students on how Grounds activities support wildlife and guidance on how individuals can encourage urban wildlife, for example bird feeding over winter	The Sustainability Team relaunched their website which now includes new Biodiversity information and specific information for key species such as Hedgehogs. More can be done on this and will be included in our new commitments.

		Identify areas on central campus where wildlife could be encouraged through development of green walls, new ponds and diverse wildlife friendly planting areas	All planting and new landscape projects are developed to improve the biodiversity and habitat for wildlife.

	Place Making	Identify areas of campus where opportunity exists to create character areas in line with the principles of sustainable landscaping	Giles Courtyard has been developed as a student wellbeing space that was designed in line with sustainable landscaping principles. We have developed new seating on central campus that incorporated native hedgerow species and hibernacula. We have also trialled a number of areas of wildflower meadow seed to see where works and where doesn't. Over the last few years we have also been planting thousands of flowering bulbs which are a special mix of species selected especially for Kent and are great for pollinators.
		Consider public interaction and desire lines in the design on landscape areas. Create opportunities for innovative seating and shelter options which utilise natural resources and enhance the sense of 'place' and make the most of views towards Canterbury.	We have installed a variety of new seating in many areas, for example: we installed hibernacula seating on library lawn; seating around Jennison pond with new view lines created that open up the pond; willow pods with benches in to created shady areas to sit in that are interesting; and a wide range of more formal picnic benches in key congregation locations that take advantage of the views across campus. Planting has taken place in many corner areas to reduce the cutting of corners which damages and compacts grass.

	Amenity Planting	Utilise areas of campus earmarked for planting to create an example amenity planting scheme which incorporate sustainable landscaping principles	The two beds in the central square by the shops were refreshed to create high pollen islands whilst still being high amenity value and low maintenance.

		Consider creating an amenity planting ‘catalogue’ listing the most suitable planting options for different areas, and examples of layouts and management options that minimise maintenance input	Due to funding and staffing levels this task was not completed. Due to the changing climate we have to be adaptable in what can be planted where. We are constantly evolving our understanding of the most suitable plants so a fixed catalogue is no longer seen as useful.

Enhance	**Habitat improvements**	Develop a series of habitat profiles which inform decision making on enhancement works	Habitat profiles have been completed for the campus ponds and grasslands have been profiled to inform the new Grassland Management Plans. Woodland profiles exist within our last woodland management plans are kept for reference.
		Bring together survey results, University knowledge and external advice to create a series of habitat profiles covering wetlands (ponds), woodland, grasslands and hedgerows	The Sustainability Team have begun this process but more can be done and this work will continue.
		Identify improvement works for the main habitat types on campus and where required prepare budget requests for this work	The main habitat that requires the improvement works are the ponds on the Canterbury campus. All ponds have had profiles developed with recommendations for restoration. Budget requests have been submitted annually but none yet successful.
	Connectivity	Conduct a mapping exercise and visual survey to identify opportunities to re-connect green spaces	Extension and redesign of meadow grass around the outer campus limits has started the process of reconnecting green spaces. This work will continue throughout the length of the new strategy.
		Consider re-instating historic field boundaries through planting of new hedgerows and restoration of degraded hedgerows	A full hedgerow survey has been carried out with recommendations for the restoration of specific hedgerows. This will go into our planning for the creation of a river of vegetation and our general management of hedgerows going forward.

Opportunities	Woodland Management	Develop a coppicing PPM specification to ensure that all coppicing activities are conducted in accordance with relevant legislation, maximise biodiversity enhancements and generate maximum resource, and that suitable space for storage and management of this resource is provided	Working in conjunction the Sustainability Team, this was developed and issued to the internal woodsman initially and subsequently an appointed contractor. Please see the Appendix section 6.2. for more details. We will continue to monitor performance against our specification each coppicing season.
		Continue to coppice for biodiversity, selling on the timber produced to “EuroForest” for the CHP Plant at Sandwich, providing sustainable power to 50,000 homes in that local area	This has continued and is still in place.
	Access and Amenity	Produce and install a series of interpretation boards at key locations across campus to improve knowledge and understanding of the biodiversity on campus	Temporary signage has been utilised to explain various management techniques across campus. We have not had the funding to install full interpretation boards, but this has been restated as a commitment for the new strategy.
		Fully restore the campus nature trail including signage, waymarking posts, bridges, and pathways. Develop web-based and paper route maps and ensure the nature trail is communicated across the University and local community	We have not yet achieved this but reiterate our commitment to this in the new strategy. We have started promising talks with Kent Sport for the trails promotion and are seeking ways to fund restoration projects and interpretation boards. We will be utilising crowd sourced information to collate the info for the boards.
		Re-establish the eco-trail across campus	We have installed an SDG trail across the Canterbury campus to encourage students, staff and community members to explore campus and become familiar with the 17 goals.

		Produce regular updates for campus online and other University newsletters highlighting the opportunities for walking, cycling and access to green spaces.	Landscape and ground management has created several social media accounts and updated their estates website. More work is needed to inform stake holders of works and actions that are being taken by landscape and grounds management.
	Space to Grow	Re-develop the campus garden providing accessible growing space for use by staff, students and community groups	The campus garden is now fully established as the Kent Community Oasis Garden in partnership by East Kent Mind. The garden is still being developed but weekly sessions run all year.
		Consider options for using other areas of campus for growing food for use in internal catering and local businesses	Focus on developing links between food grown on campus and internal catering is on KentCOG. When this is delivered then ideas for other areas will be put forward.
		Explore options for using University land as a plant nursery to produce our own plants for use across campus	This is being explored with KentCOG and will continue to form part of the site's development.

6.2. Woodland Management Plan

A full woodland management strategy was produced in 2016 by consultants LUC. This document is retained by the Landscape and Grounds and Sustainability Teams as it contains a huge amount of useful information. However, as part of updating this strategy it has been reviewed alongside our coppicing PPM and the key information that is still relevant is presented below as the plan going forward. This original document can be requested from the Landscape and Grounds or Sustainability Team if needed.

It has been many years since a full assessment of our woods were carried out so a commitment to have new surveys done in the lifetime of this strategy is stated in our objectives.

6.2.1. Our Woodlands

6.2.1.1. Woodlands North of the Campus

When surveyed in 2014 West Triangle Wood and Long Thin Wood were assessed as providing a high-quality ecological resource and that no changes to the existing management were recommended. It is now recommended that these areas are reassessed to see whether this is still the case.

6.2.1.2. Parkwood and Brotherhood Wood

In 2016 a 7-20 year coppice rotation was adopted for the management of Parkwood and Brotherhood Wood with both woodlands being divided in coupes with one coupe being cut every other year. The length of the coppice cycle is dependent on the species, with hazel tending to be coppiced between 6–10 years and sweet chestnut between 8–16 years, dependent on growth conditions. The location and size of these coupes is considered as a guide and when the coppicing is undertaken the conditions on the ground will be reflected in the boundaries of the coupes. For example, where ancient boundary ditches are present these will be used as the divide between coupes.

This management technique will continue to be used until the full cycle is completed. At this point we will conduct a full survey to review how the coppicing program has affected the biodiversity and health of these woodlands and derive recommendations for future management from these surveys.

The coppicing specification, rotation timetable, and coupes diagram are included below in sections 6.2.2, 6.2.3 and 6.2.4.

6.2.1.3. Giles Lane Wood

Giles Lane Wood remains unmanaged as two isolated blocks along Giles Lane. They continue to provide useful screening against the buildings. We continue to survey these woodlands to ensure the trees are healthy and safe where adjacent to pathways. The woodlands are separated by amenity grassland so as a part of our grassland and wildlife corridor commitments in this strategy we will be looking at this area to see how we might improve connectivity between these two blocks.

6.2.1.4. Bluebell Wood

Bluebell Wood has a greater variation is tree species/structure so whilst also included in the 7-20 year coppice rotation there are additional management techniques to be used for this woodland. These are included in the table below: NB: Some work may require a license in which to undertake the works in Great Crested Newt habitat.

Activity	Timing	Frequency
Re-instate hedgerow cutting of understorey shrubs at woodland boundaries.	Spring, Autumn	Once every two years
Retain and protect standard trees (e.g. along former field boundaries).	Year round	

Selective thinning within the hornbeam and Norway maple woodland to encourage the establishment of woodland ground flora.	October - March	As required
Reduce shading and scrub encroachment of stream channel to encourage the establishment of wetland plants and provide sunny areas for invertebrates and reptiles.	Spring, Autumn	Annual
Opening up the woodland around the GCN pond to create glades to encourage increased ground flora away from the immediate vicinity of the pond. This could be implemented in parallel with an opportunity to increase controlled human access to the pond edge	October - March	Initially, then once every 3 years depending on growth
De-silting 50% of pond every 5 years to prevent siltation build up and maintain the diversity of aquatic plants.	October - March	Once every 5 years
Selective thinning of the woodland canopy along the southern edge of the northern pond to encourage the establishment of aquatic plants and provide habitat the ecological value of the pond, including for invertebrates, great crested newt and other herpetofauna.	October - March	Initially, then once every 3 years depending on growth

6.2.1.5. Winkle Wood

In 2017 a 5 acre new woodland was planted as compensation for the woodlands lost in the building of the Sibson building. Between 2017 and 2020 the management of this space was carried out by an external contractor who officially handed over the woodland to the Landscape and Grounds Team in 2021.

Over the next five year the Landscape and Grounds Team will be carrying out the following management as recommended by Land Use Consultants Ltd after surveying the area. The table below was provided by LUC:

Maintenance component and operation	Period of year	Frequency per annum	Management responsibility
New woodland			
Strim between trees	Spring, Autumn	1 per year for initial 3 years of establishment	University of Kent
"Beat up" assuming replacement of 10% of planted trees	Sep-Feb	1 occasion in second year	University of Kent
Thinning woodland		Depending on growth rates, possibly 1 x in the first 10 years, removing 25% of tree numbers, thereafter on 5-10 year intervals removing 25% of the remaining trees. This proportion decreasing to 10 – 15 % after 5 or so thinnings.	University of Kent
Felling to create space for new planting.		25% of area per 20 years after 40 years	University of Kent
Replanting and establishment of new planting after 30 years to promote mixed age woodland		25% of area per 20 years after 40 years	University of Kent
Understory planting beneath pylons and on buffer strips			
Undertake 3 yearly cyclical pruning of scrub	January - March	1/3 *per* annum[a]	University of Kent
Maintain free of litter	Year round	As required	University of Kent
Prune foliage from paths to a distance of 1m and to a height of 2m	Year round	As required	University of Kent
Regularly inspect standards for safety, carrying out any work needed to maintain suitable safety, but still allow for decay and dead wood to provide habitats.	Spring, Autumn	2 per year and after major storms	University of Kent
Replace fallen trees or manage self-seeded trees to produce mixed age woodland.	As required	As required	University of Kent
Monitoring			
Survey woodlands and review management approach	May-June	Annually for the first 5 years, then once every five years.	University of Kent

6.2.2. Detailed requirement of coppicing works

The coppicing activity whether carried out by internal staff or external contractors must meet the following descriptions of activity.

Late summer

- Area to be coppiced to be examined by the Grounds Supervisor with stems to be cut marked
- Approximately 12 standards per hectare should be retained and should be of a variety of sizes and ages. Where possible, one mature tree should be present in each coppice coupe
- Bramble growth must be managed at the edge of our woodlands. The shrub layer should be monitored each summer and the brambles trimmed back every three years. Caution should be taken to not remove all new species that are establishing
- Invasive species in our woodlands must be controlled, in particular Sycamores. During the walk around the coupe, any invasive identified should have their locations marked and actions for management agreed.
- Before works proceed, a min 3ft chestnut fence with clear signage should be erected around the coupe

20th October – 20th February (Extra time will be allowed at the discretion of the Sustainability team and will be dependent on temperature and weather conditions).

- Access – All access routes to the coupe being worked on must be kept to a maximum of one vehicles width to avoid carving up the woodlands

- Coppicing – Trees that are coppiced must be cut close to the base to encourage shoot regrowth. Cuts should be outward facing on multi-stem stools to encourage water drainage away from the centre of the stool. Where there are high rabbit populations the cut height can be increased to 50cm to decrease damage by rabbits to new shoots
- Removal of timber - 80% of timber cut must be removed from the area at the time of cutting. 20% must be left in the coupe and piled to provide habitat opportunities. Once piled, timber must not be moved. Timber can be piled neatly, partially buried or left as naturally as possible. A variety of hibernacula is preferred. Collaborations with the conservation society should be encouraged here
- Deadwood - Deadwood in the coupe ideally should be left in situ, including standing deadwood unless this poses a safety issue
- All hanging deadwood must be safely brought down to ground level
- Ivy – Ivy to be left in the canopy of the trees remaining, however this must be monitored and managed to ensure that it does not get out of control and affect the health of the tree
- Holly – 25% of holly to be retained
- Invasive – Where invasive species have been located, any management requirements should be carried out in this period, as directed by the Landscape and Ground Management Supervisor
- Oaks and Ash – Oak and Ash regeneration should be encouraged through replanting of fallen trees and managing self-regeneration e.g. limit strimming activities to ensure shoots are maintained
- Litter – Litter exposed by coppicing activities must be collected and removed from the area. Litter should be bagged up as recycling or general waste in accordance with the University's waste guidance and taken to the Landscape and Grounds Management Yard. Information on correct waste disposal will be provided by the Landscape and Grounds Management Supervisor
- All core wood to be cut into 3 metre lengths and stacked in agreed location for euro forest to remove off site. (Location to be determined by safe proximity of road and in conjunction with Landscape and Ground Supervisor). Alternatively, if a contractor is at work, they will be invited to offer a tonnage rate to purchase and remove coppiced timber for their own purposes. The Sustainability Team will review any potential different uses

May

- Inspect cut stools for new growth and replace failed stools with new planting.

6.2.3. Coppicing rotation timetable

Academic year	**Brotherhood Wood**	**Park Wood**	**Bluebell Wood**
	Rotational Coppicing	Rotational Coppicing	Rotational Coppicing
2014/15	3 & 5*		
2015/16	Mark out coupes		9, 3 & 4
2016/17	10	Mark out coupes	
2017/18		10	
2018/19	9		
2019/20	9	12	
2020/21	8		5 & 8

2021/22		13	
2022/23	5		
2023/24		8	
2024/25	7		
2025/26		9	9, 3 & 4
2026/27	3		
2027/28		6	
2028/29	1		
2029/30		5	
2030/31	6		5 & 8
2031/32		7	
2032/33	4		
2033/34		4	

6.2.4. Coupes

Figure 1: Woodland Management Plan: coupe divides. Produced by Land Use Consultants Ltd. 2016.

6.2.5. Education and Amenity

The woodlands on campus provide a great resource for education and leisure activities. As outlined in Section 3.5 of the strategy we will be compiling a clear guide for how students and staff can utilise all areas of the campus for education, research and extra curricula activities. This will include the woodlands. We have also committed to improving the trails throughout the woodlands as part of our nature trails and providing key biodiversity information through our websites and interpretations boards around campus.

6.2.6. Singular Tree Management requirements

Remedial works are identified throughout the year from the QTRA and Landscape and Grounds Management in house tree surveys. This allows us to identify where individual trees require management or removal.

- Tree works identified that do not pose a health and safety risk should be scheduled into the October to February period.
- Tree works that do pose a health and safety risk must have the required works carried out immediately.
- All works required will be outlined by the Landscape and Grounds Supervisor.
- Safe working practices must be observed and all relevant precautions taken when bringing down wood, especially around footfall and vehicle areas.

6.3. Grassland Management Map