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1.0 Introduction

The University of Exeter aims 'to protect, preserve and enhance biodiversity on sites that it manages or owns' (Environmental Sustainability Strategy 2010-2015). In order to achieve this aim, three biodiversity objectives have been set:

Objective 1. Take positive practical action to conserve and enhance biodiversity on sites that the University manages or owns

Objective 2. Raise awareness of biodiversity amongst students, staff and the local community

Objective 3. Enhance the opportunities for using the University's grounds as a 'Living Laboratory' to promote biodiversity within the curriculum

Objective 1 has been addressed through the 'Biodiversity Enhancement Plan for the Exeter Campuses' document, which proposes a series of recommended biodiversity enhancement measures tailored to the eight main habitats found across the University's Exeter estate. This will guide the University in taking positive practical action to conserve and enhance biodiversity on the sites that it owns or manages.

Objectives 2 and 3 fit with the principle of the campus as a Living Laboratory project, where the campus serves as a community based living laboratory for identifying, evaluating and assessing indicators of progress towards greater sustainability. This will be an instrumental tool for monitoring the effectiveness of the enhancement recommendations implemented from the Biodiversity Enhancement Plan and for raising biodiversity awareness amongst students, staff and the local community through community engagement.

This document outlines a biodiversity monitoring programme designed for the Exeter campuses and provides suggestions for future community engagement activities and projects. These will be delivered through the University's Birds and Bees Campaign and Living Laboratory projects throughout the United Nations Decade on Biodiversity.



2.0 Biodiversity Monitoring Programme

A programme of monitoring is required to assess the success of the implementation of the recommendations in the Biodiversity Enhancement Plan. Monitoring will focus on five biodiversity indicators, which in many cases link to national monitoring networks where the trends noted by the University's monitoring can be compared against national statistics to give the University's monitoring more context and value. These five indicators are:

1. Population of breeding and overwintering birds
2. Population of bats
3. Population of butterflies and moths
4. Plant species diversity
5. Water quality

These indicators have been selected from the 18 UK Biodiversity Indicators which are used to form the basis of the UK's assessment of progress towards biodiversity targets. The five indicators selected will help to indicate broad trends in the state of the natural environment across the Exeter campuses and have been selected to represent groups that respond differently to changes in disturbance and stress levels.

Biodiversity monitoring is typically resource and time intensive, however the University's monitoring campaign has been devised so that it can be undertaken by a combination of specialist surveyors, student research projects and community events organised through the Birds and Bees Campaign. To illustrate this, a set of symbols have been developed to indicate who can be involved in the monitoring of each biodiversity indicator:

Specialist



Volunteer Involvement



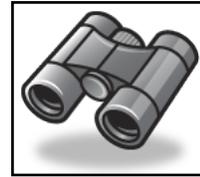
Student Research Projects



The table on the following page summarises the monitoring programme and provides an indication of the methodology and which larger surveys and monitoring networks the University's own biodiversity monitoring could link into.

Monitoring Programme Summary:

Biodiversity Indicator	Action	Frequency	Involvement			Potential Links to National Monitoring Schemes
			 Specialist	 Community	 Student Project	
Population of breeding and overwintering birds	Annual bird surveys to be continued to be undertaken on campus by a specialist surveyor using the standard BTO methodology.	Biannual - spring and winter.	X			No links identified.
Population of bats	Bats on campus to be researched through student projects, and surveyed when possible by trained Biosciences staff.	March to November	X	X	X	National Bat Monitoring Programme, organised by the Bat Conservation Trust.
Population of butterflies and moths	Undertake moth surveys on campus.	April to October.	X	X		National Moth Recording Scheme.
	Setup butterfly transects on the Streatham and Duryard sites.	26 weeks - April to September.	X	X		UK Butterfly Monitoring Scheme.
Plant species diversity	Survey wildflowers within designated 1km survey squares through the 'Wildflowers Count' survey, across the Exeter campuses.	At least one survey annually, spring to summer.		X	X	'Wildflowers Count', the national wild plant survey organised by Plantlife.
Water quality	Undertake pond surveys using the National Pond Monitoring Network 'PSYM' methodology.	At least one pond to be surveyed annually.		X	X	Pond Conservation's National Pond Monitoring Network Database.



2.1 Population of breeding and overwintering birds

Bird populations are considered to be a good indicator of the broad state of wildlife and countryside because they occupy a wide range of habitats and tend to be near or at the top of the food chain.

Annual bird surveys on the Streatham campus and the Duryard Valley have been carried out by an external specialist since 2008 and the surveys results are kept by the Director of Grounds. For surveying, the campuses are divided into three areas (East, Central and West) and the survey route includes a representation of all habitats in these areas. During the spring each area is surveyed twice, once in early April to record resident breeding birds and once in mid May to record migrant breeding birds. During the winter period each area is again surveyed twice, once in late November or early December to record early wintering birds and once in late January or early February to record late wintering birds. Surveying is undertaken in the early morning and typically takes three and a half hours (inclement weather is avoided).

All birds identified by sight/sound are recorded on a map using standard British Trust for Ornithology codes, along with the date, time and weather conditions. These records are also presented in tabular form with total numbers of each species given and any red or amber listed species identified. The percentage change in total bird numbers between surveys are also given in the results table.

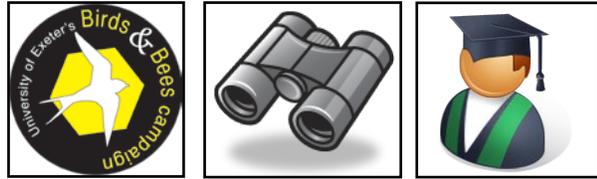
The table below illustrates the change in total bird numbers since surveying began in 2008 – a traffic light shading system has been used to show whether the population numbers are improving or deteriorating against both the previous survey year and the initial baseline.

Breeding Birds Indicator	2008 Baseline	2009	2010	
		Against baseline	Against previous year	Against baseline
Total No	1593	1771	1972	1972
% change	-	(+11%)	(+11%)	(+24%)

Red	Deteriorating
Amber	No change
Green	Improving

Action: Annual bird surveys should continue to be undertaken on campus in the winter and in the spring, using the standard BTO methodology. The results of each survey should be compared against the previous year and the 2008 baseline to assess how the bird population is faring on campus, and the reasons for any deterioration in bird numbers should be determined and addressed.

2.2 *Population of bats*



Bat populations are considered to be a good indicator of the broad state of wildlife and landscape quality because they use a range of habitats across the landscape and are sensitive to pressures in the urban, suburban and rural environments.

On University grounds a combination of surveying by academic specialists and student research projects will be used to monitor bats on campus. Two undergraduate students are carrying out their student research projects on the bats on campus in 2011, which will include surveying a random selection of sites and looking at the impact of night lighting. After the student research work has been completed, bat 'hotspot areas' will be identified and form the basis for further surveys of potential roosts during the following years.

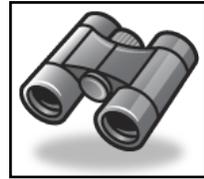
Surveying should follow the 'Bat Surveys - Good Practice Guidelines' produced by the Bat Conservation Trust (available to download from <http://www.bats.org.uk>). Surveying should take place between March and November, although the main period of bat activity is between June and August, and surveying on campus could include:

- Night time transects (lasting for 3hrs after sunset) timed somewhere between June and August
- Automated bat detector surveys
- Extra surveys to investigate social behaviour in the spring (May) and/or in the autumn (September)
- Roost hunting (maternity and/or hibernation) and emergence counts

Results of the surveying carried out on campus could link into the National Bat Monitoring Programme (NBMP) organised by the Bat Conservation Trust (BCT). The UK Biodiversity Indicator focuses on six bat species – Serotine, Daubenton's, Noctule, Common Pipistrelle, Soprano Pipistrelle and Lesser Horseshoe.

Action: Undertake bat surveys on campus and monitor bat numbers through student projects and additional surveying (contact Fiona Mathews). Use the results of bat surveys to guide any necessary mitigation measures regarding.

2.3 *Population of butterflies and moths*



Butterflies and moths respond rapidly to changes in environmental conditions and habitat management, occur in a range of habitats, and are representative of many other insects. Butterflies and moths are complementary indicators to birds and bats because they use the landscape at a much finer spatial scale.

a) Moth Monitoring

To monitor moths on campus the Birds and Bees Campaign could setup moth traps on campus and hold moth trapping events. Moths are an under-recorded group of insects, so any records that the University can contribute to the National Moth Recording Scheme will provide important information on the distribution and status of these species.

The main method of trapping moths is by using a light trap (funding is being sought to purchase Robinson Moth traps), but other surveying techniques include sugar traps and wine ropes. Moth trapping should be carried out in a location which encompasses a diverse selection of habitats in as dark an area as possible – a good location would be in the Hoopern Valley (to enable year on year comparisons to be made, surveys should take place at the same locations annually). Moth trapping should be undertaken on a warm and misty evening between April and October, avoiding full moon. Many more moths will be caught if a light trap is left out all night, but an evening session until midnight would still be productive.

The University could contact the Devon Moth Group to investigate the possibility of working with existing local moth recorders for help with identification. For moth records to be useful, the National Moth Recording Scheme requires the following information:

- What – the names of the moth (English and scientific names)
- Where – a 100m resolution map grid reference and the name of the nearest town
- When – the date of the sighting (when moths have been caught in moth traps overnight then the date of the record should be that on which the trap was switched on, irrespective of when the moths arrived or when you checked)
- Who – the name of the moth spotter and their contact details (if the identification was verified by someone else their name must also be recorded)

Additional useful information includes the abundance of each species of moth recorded, trapping method, life cycle stage, and habitat type.

The moth records accumulated by the University every year should be submitted to the Devon County Moth Recorder, who will collate the records and make them available for wider use for conservation, education and other public benefits (details of the County Moth Recorder can be found at http://www.mothscount.org/text/57/County_Moth_Recorders.html).

Action: Organise moth counts on the campus. Collate annual moth records and submit these to the National Moth Recording Scheme, and use these results to compare year on year trends and establish reasons for any loss or decline in the campus moth population.

b) Butterfly Monitoring

To monitor butterflies on the University campus, a new transect could be set up as part of the UK Butterfly Monitoring Scheme network. The Butterfly Monitoring Scheme recording methodology involves recording butterflies along a 1-2km long transect every week from the beginning of April to the end of September under reasonable weather conditions, for at least 5 consecutive years.

The transect route should evenly sample the habitat types and management activity on the campus (care must be taken when choosing the transect route as it must remain fixed to enable butterfly sightings to be compared from year to year). Butterflies should be recorded in a 5m wide band along the transect every week from the beginning of April to the end of September (26 counts per year). The transect walk should be undertaken between 10.45am and 3.45pm and only when weather conditions are suitable for butterfly activity: dry conditions, wind speed less than Beaufort scale 5, and temperature 13°C or greater if there is at least 60% sunshine, or more than 17°C if overcast.

Data collection should be carried out to UK Butterfly Monitoring Scheme (UKBMS) standards - transect counts should be made on a '*UKBMS F2: Weekly Field Recording Form*' which can be downloaded from Butterfly Conservation website. Data should be sent to the local transect co-ordinator, either as copies of the original recording forms or entered onto computer using the UKBMS Transect Walker software. To be included in the annual UKBMS analyses and reports the recording forms must be sent in by the end of October.

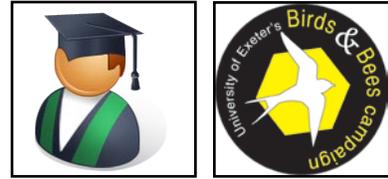
By linking into the UK wide Butterfly Monitoring Scheme the University's surveying will help to show:

- Trends over time in the status of individual butterflies and groups of species (generalist vs specialist, woodland vs grassland)
- Trends over time in the mean appearance dates (phenology) of adult butterflies
- Trends over time in the overall performance of all butterflies
- Identifying sites at which butterflies are generally performing well or badly.

Further details on setting up a UK Butterfly Monitoring Scheme transect can be found in Appendix A.

Action: Due to the time commitment required the Birds and Bees Campaign group decided setting up a UK Butterfly Monitoring Scheme transect to be staffed by academics and students would not be feasible. It was suggested however that the University may have other staff who are butterfly enthusiasts and who would like to setup a transect on campus, and enquiries therefore need to be made to see if this is possible. If a survey is to be setup please contact John Randall, the Butterfly Transect and Monitoring Data co-ordinator for Devon (Tel: 01752 309857 or email jmrandall@blueyonder.co.uk) to register a new transect on campus.

2.4 *Plant species diversity*



Plant diversity is a useful indicator of habitat condition as many species depend on plants and their ecological associations. There are two options for measuring plant species diversity – the University could organise its own wildflower surveying using positive and negative indicator species, and/or the University could join the ‘Wildflowers Count’ initiative organised by the charity Plantlife.

a) Join the national ‘Wildflowers Count’ survey

‘Wildflowers Count’ is the UK’s only annual national wild plant survey, organised by the charity Plantlife. To take part in the survey the University should request 1km survey squares near to the Duryard, Streatham, St Luke’s and Duckes Meadow sites.

The advantage of taking part in the Wildflowers Count survey is that Plantlife will supply a free survey pack which includes a full colour guide to the 99 wildflowers you are asked to count and a map showing the 1km square you are requested to survey. The plants selected for the survey are some of the more simple to identify plants, and the Wildflowers Count Identification Guide uses flower colour to help identification. The surveys could therefore be undertaken as a community engagement initiative, with some expert help for assistance.

The survey needs only to be carried out once every year, ideally during the spring-summer growing season (if the land is being managed as a hay meadow then the surveying must be undertaken before cutting takes place). Plantlife allocate squares at random, so it may be possible that the square covers a significant area of urban space – the survey should still be undertaken. As the University’s grounds in Exeter cover a significant amount of area it would be good if the University took on more than one survey square, which would hopefully cover different habitats across the city.

To take part in the ‘Wildflowers Count’ survey the University should register on the Plantlife website (http://www.plantlife.org.uk//things_to_do/wildflowers_count), by email (wfc@plantlife.org.uk) or by phone (01722 342755). Further details on the Wildflowers Count survey can be found in Appendix B.

The University should keep a copy of the survey results for its’ own biodiversity monitoring records as well as submitting the results to Plantlife online. If any of the survey plots cover a County Wildlife Site (e.g. Taddiford Brook and the Duryard Valley) the survey results may be of interest to Devon Biodiversity Records Centre.

Action: Contact Plantlife to register for the Wildflowers Count Survey. Ask for plots on/near the Streatham campus, St Luke’s campus, Duryard Valley and Duckes Meadow. The surveying could be organised as a community engagement activity and/or through the curriculum, therefore request additional survey sheets and identification guides. A copy of the results of each survey should be kept by the University as well as being submitted to the national survey.

2.5 Water quality



Wetlands of good biological quality support a diverse assemblage of aquatic invertebrates and are therefore likely to support an associated range of other species such as fish, mammals and birds. In order to monitor wetland across the campuses the University should carry out annual pond surveys which can link into the 'National Pond Monitoring Network'.

The National Pond Monitoring Network aims to increase the amount of data collected on the UK's ponds and to make it publicly available. There are three pond survey methods available – the basic 'Rapid Assessment for Ponds', the 'PSYM' (Predictive System for Multimetrics) method, and the 'NPS' (National Pond Survey) method. The PSYM method is most suitable for the University's monitoring requirements - if the results of the University's pond surveying are given to the National Pond Monitoring Network Database, a free assessment of the ecological quality of a site compared to ponds nationally is given. The PSYM method is suitable for use on ponds and small lakes up to about 5 ha in area in England and Wales, and involves the following steps:

1. Simple environmental data are gathered for each water body from map or field evidence.
2. A three minute biological survey of the plant and animal communities are undertaken and net samples are processed. The metrics to be assessed are:

Invertebrates

- Average score per taxon (ASPT)
- Number of dragonfly (Odonata) and alderfly (Megaloptera) families (F_OM)
- Number of beetle (Coleoptera) families (F_COL)

Plants

- Number of submerged and emergent plant species (SM_NTX)
- Trophic ranking score for aquatic and emergent plants (TRS_ALL)
- Number of uncommon plant species (PL_NUS)

3. The biological and environmental data are entered into the PSYM computer programme which compares the predicted plant and animal metrics with the real survey metrics to see how similar they are. The metric scores are then combined to provide a single value which summarises the overall ecological quality of the waterbody, and individual metric scores can be examined to help diagnose the causes of any degradation (e.g. eutrophication).

Further details on the PSYM methodology can be found online at:
<http://www.pondconservation.org.uk/Data/surveymethods/psym>.

Action: At least one pond to be surveyed annually on campus using the PSYM method. The results should be submitted to Pond Conservation using the appropriate Excel proforma (see <http://www.pondconservation.org.uk/Data/ponddata/addponddata.htm>). Pond monitoring could be undertaken as a voluntary activity with expert help, as a student research project or used as a teaching opportunity. Appropriate remedial action should be instigated if the survey reveals poor ecological quality in the pond.

3.0 Community Engagement Opportunities

The implementation of the recommendations in the Biodiversity Enhancement Plan will ensure that the Exeter campuses are inspiring places which people want to visit and enjoy. However community engagement opportunities will also be required to help the University's Birds and Bees Campaign to raise awareness of biodiversity amongst students, staff and the local community and to enhance the opportunities for using the University's grounds as a 'Living Laboratory'.

The Birds and Bees Campaign will lead on the activities on campus, but wherever possible the activities should be run in partnership with other partners in the city, such as Devon Wildlife Trust and the Exeter Wild City project. Further funding will be required to conduct community engagement activities.

The potential benefits of running community engagement activities relating to biodiversity on campus include:

- *Improved sense of campus ownership* – activities on the campus will enable members of the campus community to gain an improved sense of campus ownership.
- *Biodiversity enhancement* – high quality habitats which link into the wider biodiversity network across the city of Exeter will be created, restored and successfully reconnected across the University's grounds.
- *Positive impacts on staff and student wellbeing* – in creating an attractive campus rich in wildlife, community engagement will encourage more people to explore the campus and to enjoy the natural environment which has positive impacts on both human physical health and psychological well-being.
- *Improved community relations* – the campus is open to the public and providing activities that bring together the University and neighboring communities, including schools and the local sixth form college, will promote community cohesion.
- *Increased partnership working* – through the collaboration of a range of organisations the profile of the University will be raised and skills will be shared amongst key community organisations to generate a more co-ordinated approach to biodiversity enhancement.
- *Creation of a welcoming environment for potential students* – through enhancing the biodiversity of University grounds the Birds and Bees Campaign will help to create a campus which potential students value as a safe, healthy and enjoyable environment in which to study.
- *Promotion of positive behavioural change* – the University is in an excellent position to inform a huge audience of the importance of biodiversity (the University has over 17,000 students and 2,800 staff members).
- *Increased curriculum enhancement opportunities* – the University grounds present a vast teaching resource encompassing a wide range of habitats which can be used to inspire the formal curriculum and help students to go beyond the theoretical topics covered in lectures through using the campus as a 'Living Laboratory'.

3.1 Annual Opportunities

The following opportunities have been selected from the various national and international days and dates that take place every year which the University's Birds and Bees Campaign could join in with by organising their own activities. Many of the organisations have logos and promotional materials which can be used - the University should also explore the potential use of the 'UN Decade on Biodiversity' logo which can be found at: <http://www.cbd.int/2011-2020/logo/>

Event	Date	More Information
RSPB Bird Watch Potential to organise a one hour bird watch on campus, with help from the expert employed to carry out the annual bird surveys on campus.	28 th - 29 th January 2012	RSPB http://www.rspb.org.uk/birdwatch/
National Nest Box Week Organise a nest box building session at the University (flat pack bird box kits available from www.nestbox.co.uk).	14th - 21st February	British Trust for Ornithology http://www.bto.org/nnbw/index.htm
Walk in the Woods Month Walk in the Woods month is a great time to organise an event and get new people interested in trees in their local area.	Month of May	The Tree Council http://www.treecouncil.org.uk/community-action/walk-in-the-woods
International Day for Biodiversity A day where organisations that deal with the issue of biodiversity can organise activities to celebrate the IBD and take advantage of it to raise public awareness and showcase their biodiversity work.	22 nd May	UN/Convention on Biological Diversity http://www.un.org/en/events/biodiversityday/ or http://www.cbd.int/idb/2011/
Wildlife Week During Wildlife Week The Wildlife Trusts have an annual programme of events to celebrate the diversity of the UK's natural heritage and to raise awareness of conservation issues.	End of May/Start of June	UK Wildlife Trusts http://www.wildlifetrusts.org/index.php?section=events:spring:wildlife-week
World Environment Day World Environment Day (WED) is an annual event that is aimed at being the biggest and most widely celebrated global day for positive environmental action.	5 th June	United Nations Environment Programme http://www.unep.org/wed/
Big Butterfly Count An annual nationwide survey to help assess the health of the environment by using butterflies as indicators of biodiversity.	Mid-Late July	Butterfly Conservation http://www.butterfly-conservation.org/

3.2 *Other Potential Projects*

Organise a 'Meet the Species' London 2012 BioBlitz

Meet the Species is part of 'Discovering Places', the London 2012 Cultural Olympiad Campaign to inspire the UK to discover their local environment. The race is on to uncover 2,012 wild and wonderful species in the run up to the London 2012 Olympics.

The University could run a 'Meet the Species' event on campus between June 2011 and June 2012, which would be similar to the 2010 BioBlitz. Through taking part in Meet the Species the University will be able to use Meet the Species branding and products, such as stickers and bunting, press releases, logos and event management support.

For more information visit: <http://www.bnhc.org.uk/home/meet-the-species>.

Create an accessible sensory garden

Consideration in the design of a sensory garden will need to be given to access, interpretation, maintenance and planting, and the people the garden is being designed for should be involved from the start of the project. Paths should be wide enough for wheelchairs to pass, there should be no steep gradients, and seating should be provided with room for wheelchair users to sit alongside benches. Planting should take place across a range of heights, both at ground level and in raised beds, and include a variety of textures, colours and scents. Interpretation should be aimed at a range of ages and provided in a range of formats such as tactile maps and Braille, and a finger map or maze could be provided on a wall which visitors can follow with a finger tip.

In terms of making a sensory garden wildlife friendly, local species should be used where possible. Fruit trees and bushes would provide food for small mammals and birds, and bird boxes could be installed to encourage birds into the new area, which will provide bird song and add another sensory aspect to the garden.

Work with the Exeter City Council Green Team

Karen Gallagher and Alison Spreadborough met Bill Thorne in March 2011 to discuss the opportunities to work with Exeter City Council. Bill's successor is Sally Fryer who can be contacted at sally.fryer@exeter.gov.uk. Potential opportunities discussed included:

1. Students liaising with the Green Team leaders and offering some voluntary help with various activities at member schools – the idea is to try to show the Green Team has a link throughout all levels of education in Exeter.
2. Some creative involvement with students possibly supporting the Green Team admin, especially those schools which struggle coming up with ideas for their teams to get involved with. Help with developing a website which could report, back up and promote ideas throughout the Green Team might be one way in which this could work.
3. Inviting students to activities on the University campus could give that next step of knowledge/learning missing from many Green Teams where the science may take second place to activity. Attendance and maybe a certificate could easily count for leaves if the learning is passed onto the rest of their Green Team.

Otter Monitoring Training Event with Devon Biodiversity Records Centre

'Operation Otter' is a volunteer-led, quarterly otter survey which takes place across Devon, organised by the Devon Biodiversity Records Centre. The survey has been running since 1997 and involves 100 volunteers or 'Otter Spotters'. 'Otter Spotters' survey a stretch of river during March, June, September and December.

There is currently no funding available for training 'Otter Spotters' – however DBRC would be happy to run a training event on the University campus if the University is able to find funding for this through the Birds and Bees Campaign. For details contact Devon Biodiversity Records Centre (Telephone 01392 274128 or email: dbrc@devonwildlifetust.org).

Organise a wildflowers talk by the charity Plantlife and a wildflower planting event

Plantlife have approximately 150 speakers across the UK who can travel within their area to give a popular illustrated talk on wildflowers which is ideal for local groups. The slide show usually takes an hour and is a celebration of wild plants and flowers and an explanation of how they are threatened and what Plantlife is doing to conserve them. To find out more about booking a talk visit: http://www.plantlife.org.uk/things_to_do/book_a_talkgive_a_talk/

This talk could accompany a community wildflower plug planting event. The grounds team has indicated that a suitable location for wildflower plug planting would be near the ponds on the eastern side of the campus.

Organise an event on the Streatham Campus to celebrate 'Love Parks Week' (July)

Love Parks Week is an annual campaign, organised by parks charity GreenSpace. Founded in 2006, the campaign has grown steadily and is now established as a major event that is celebrated in parks across the country. Each year hundreds of events take place enabling thousands of people to get out and enjoy their parks and help put forward the case for reinvestment.

The University could hold an event on the Streatham Campus and encourage people from the local community to come along. The main message of the campaign is 'that parks and green spaces need reinvestment and support because they are essential to healthy, happy and strong communities'. The type of event does not matter, but some biodiversity related ideas include a nighttime wildlife walk, a BioBlitz, a 'meet the mini-beasts' activity, a community gardening session, a guided tour of the grounds and a park maintenance helping hands event. For further details and to register the University's event visit: <http://www.loveparksweek.org.uk/>

Biodiversity Bike Ride

Building on the success of the 2010 Biodiversity Bike Ride for University staff, the Birds and Bees Campaign could organise another bike ride which is open to students and the local community as well as staff. This event is a great way of highlighting the work of the campaign and the diverse range of wildlife in Exeter, whilst also encouraging people to use sustainable modes of transport.

Julia Jack, the Sustainable Travel Plan coordinator, and Caroline Jones, from Devon Biodiversity Records Centre, helped to organise the 2010 event.

Community Tree Planting Event (Woodland Trust tree pack)

The University has applied for a free Community Tree Planting pack from the Woodlands Trust, which would supply 420 wildlife trees (blackthorn, hawthorn, hazel, birch, rowan and oak) and protective canes and spirals. These trees would be supplied as small native saplings (approximately 20 - 40cm in height).

If the University is successful and awarded a free tree pack, the Birds and Bees Campaign would need to organise a tree planting event in Autumn 2011. The area where the trees are to be planted will be decided by the Grounds team, but is likely to be as hedgerows and small copses between the Sports Centre and the Community Garden on the Streatham campus.

This event should be open to all University students and staff, the local community and local schools such as Stoke Hill. Advice on tree planting and organizing a tree planting event is available at www.woodlandtrust.org.uk.

Swift Conservation Seminar with Exeter Wild City Project

The University are working with the Exeter Wild City Swift Project to organise a seminar by the charity Swift Conservation on the Streatham campus during the 2011 autumn term. The seminar will be based on swifts and other building-dependent birds and will include a background to the ecology of birds that use buildings (swifts, swallows, house martins, wagtails, black redstarts, peregrines etc), the challenges they face, examples of habitat enhancement to support more beneficial wild species and examples of nest place creation projects.

This seminar will be aimed at a wide audience including planners, architects, developers, students at Universities within the southwest region, and anyone with an interest in swifts and other building dependent birds.

Develop Taddiford Brook as an educational resource

Taddiford Brook, or the Hoopern Valley as it is also known, was selected as a County Wildlife Site due to its mosaic of habitats and also because of its strong community value as a publicly accessible green space and as an education resource for local students.

The valley has a wide range of habitats that have the potential to be used for educational purposes by the University, local schools and community groups – streams, ponds, grassland, woodland, scrub and hedges.

At present the main access to the valley is via footpaths at the eastern end of the valley; the site would benefit from the provision of more interpretation information and better access. Partnerships with local school could be developed so that the University grounds are used as an outdoor classroom and become a 'Living Laboratory'.

Due to the diverse mix of habitats in Taddiford Brook, it is an excellent location to hold the community moth monitoring events as proposed earlier in this document.

4.0 The Campus as a Living Laboratory

4.1 Mapping the current use of the University campus

The Living Laboratory Map has been produced to illustrate the use of the University campus for teaching, research and community engagement purposes. The map will ensure that the University's grounds team is aware of the use of the campus so that management can be sympathetic to these activities.

The Living Laboratory Map will be a 'live' document which can updated as and when required by its' collaborators. Each point on the map has a title, an overview, details of student involvement, links to further information, and photographs/videos (where available).

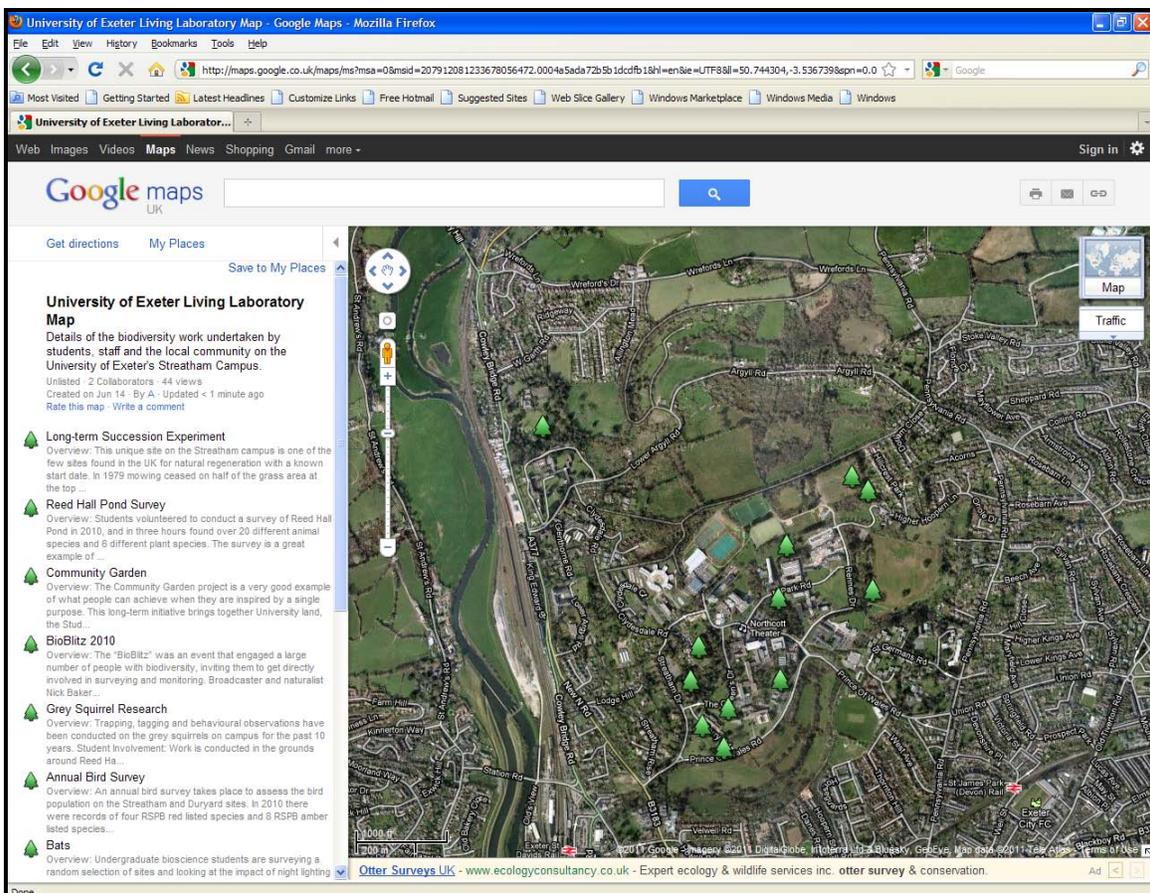


Figure 1. Screenshot of the Living Laboratory map created using Google maps.

In the future the map will be supplemented with video footage and images from other education enhancement projects such as The Big Dilemmas Project, the Augmented Reality Project, the Students as Agents for Change initiative, and the Birds and Bees Campaign BioBlitz. The map will feature on the University of Exeter website.

4.2 ***Biodiversity Trail on the Streatham Campus***

The Streatham campus includes a variety of distinctive habitats and is rich in biodiversity, and one way of showcasing this to visitors is through the development of a Biodiversity Trail. This trail would complement the existing Sculpture Walk and the section of the Exeter Green Circle walk which crosses the campus.

One way of setting up a trail is to follow a similar format to the Sculpture Trail. The Sculpture Trail is a free service open to everyone, with six iPods available to borrow from the University from Monday to Friday. The sculpture trails are not set routes and visitors can personalise their route by flicking through the iPod and selecting the number of the sculpture they want to hear more about. The free map that accompanies the iPod shuffle assists in guiding people around campus as the sculptures are both outside and in certain University buildings.

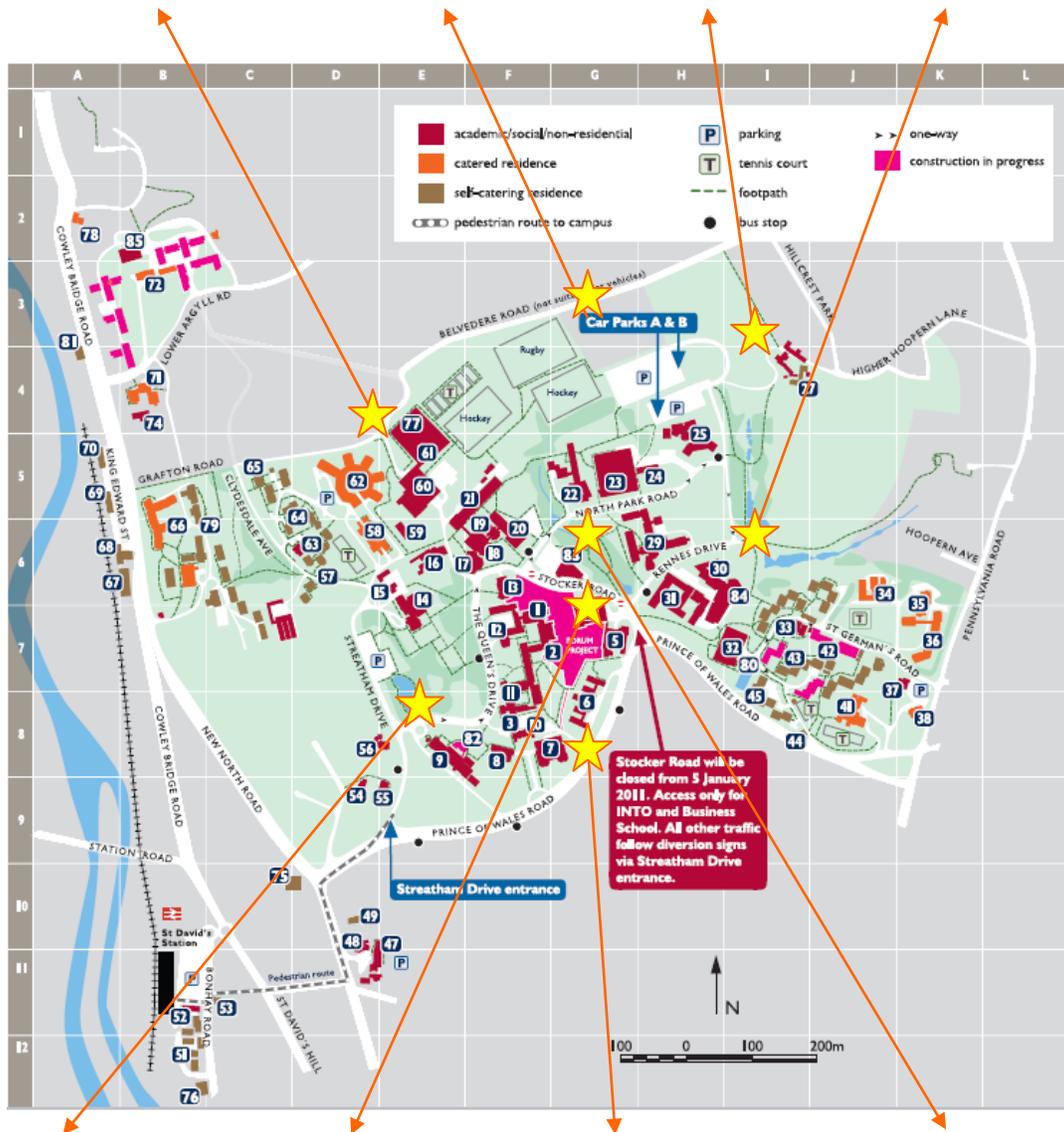
The Biodiversity Trail could also connect to the work of the Augmented Reality Project and the Living Laboratory map. The Augmented Reality Project has already transformed the campus into an accessible learning resource to support the formal and informal curriculum, with visitors to the campus equipped with suitable smartphones/tablet devices being able to trigger information presented as rich visual and audio media as they explore a variety of habitats and areas of particular interest. The new Biodiversity Trail could include QR codes at locations of interest across the campus and on any interpretation boards so that smartphone users can access the Augmented Reality Project information.

The 'Hoopern Valley' stretch of the Exeter Green Circle walk, a twelve-mile walk within the boundaries of Exeter, passes through the Streatham campus, and the Biodiversity Trail could also link into this walk. The route enters in the north of the campus, passes the newly created community garden and the ponds before coming out onto Rennes Drive where the route then crosses the road and goes into and along the Taddiford Brook County Wildlife Site. There is potential to instate an interpretation board at the viewpoint in Taddiford Brook which is shown in the Exeter Green Circle leaflet - this would be pertinent as Taddiford Brook is designated as a County Wildlife Site for its importance as an educational resource.

The map on the following page suggests 'points of interest' around the Streatham campus which the biodiversity trail could link into.

Suggested interpretation point locations (and the appropriate links to biodiversity):

- Site:** Grassway Wood
Habitat: Woodland
Links: Exeter Carbon Observatory.
- Site:** Belvidere Meadows Local Nature Reserve
Habitat: Grassland, hedgerows and woodland
Links: the wider Exeter biodiversity network.
- Site:** Community Garden
Habitat: Semi-improved grassland and scrub
Links: Wildlife gardening / Exeter Green Circle walk/succession.
- Site:** Hoopern Valley Ponds
Habitat: Wetland and amenity grassland
Links: nearby Magnolia collection.



- Site:** Reed Hall Pond
Habitat: Wetland
Links: Interpretation board already located near the pond
- Site:** Forum
Habitat: Built environment
Links: Incorporating biodiversity into new builds
- Site:** Taddiford Brook
Habitat: Semi improved grassland, hedgerows, woodland and wetland
Links: County Wildlife Site
- Site:** Plantation
Habitat: Wetland and woodland
Links: 2010 BioBlitz / Heuchera collection

5.0 Funding Opportunities

Funding for the future work of the Birds and Bees Campaign will be sought through two main streams – funding for community engagement activities will be sought through the Big Lottery Fund's Awards for All scheme (up to £10,000), and funding for physical improvement works will be sought through the SITA Trust Enriching Nature Programme (up to £25,000). Smaller but prestigious grants such as the British Ecological Society Public Engagement Grant will also be sought.

Awards for All is a simple small grants scheme making awards of between £300 and £10,000. The Awards for All programme aims to help improve local communities and the lives of people most in need, through funding projects that meet one or more of the following four outcomes:

- People have better chances in life - with better access to training and development to improve their life skills.
- Stronger communities - with more active citizens working together to tackle their problems.
- Improved rural and urban environments - which communities are better able to access and enjoy.
- Healthier and more active people and communities.

The Birds and Bees Campaign could apply for funding through the Awards for All scheme to run community biodiversity engagement activities on campus.

Latest: July 2011 - Karen Gallagher and Alison Spreadborough putting an application together to fund community engagement events during 2012.

SITA Trust Enriching Nature Programme supports projects with a focus on a species or habitat that has been identified as a priority by the UK Biodiversity Action Planning Process. The focus of the work must be on carrying out physical improvements to benefit priority species or habitats at identified sites. This trust will only fund projects in line with Object DA of the Landfill Communities Fund, which is to 'protect or enhance a species or its environment where it naturally occurs'. This includes physical improvements, such as the construction of a bat hibernaculum, improving otter habitats and enhancing willow holts. This trust *will not fund* Object D projects which 'provide or improve a general public amenity'; this includes playgrounds, new or improved community or visitor centres, facilities for sports clubs, disability access improvements, planting public gardens, and creating woodland boardwalks.

Latest: July 2011 – details of the SITA Trust fund have been passed onto the Director of Grounds, Iain Park.

The British Ecological Society Public Engagement Grant provides support, up to £2000, to help its members and others to engage the public with exciting and important aspects of ecology. The Birds and Bees Campaign could apply for funding through this award - the next application deadline is 15th of January (this grant is run on an annual basis).

Latest: July 2011 – Charles Tyler (biosciences) is willing to help with this application and is not aware on anyone who has put in for this grant before at the University.

6.0 Summary of Biodiversity Monitoring and Community Engagement

Biodiversity Monitoring Programme:

Biodiversity Indicator	Action
Population of breeding and overwintering birds	Annual bird surveys to be continued to be undertaken on campus by a specialist surveyor using the standard BTO methodology.
Population of bats	Bats on campus to be researched through student projects, and surveyed when possible by trained Biosciences staff.
Population of butterflies and moths	Undertake moth surveys on campus.
	Setup butterfly transects on the Streatham and Duryard sites.
Plant species diversity	Survey wildflowers within designated 1km survey squares through the 'Wildflowers Count' survey, across the Exeter campuses.
Water quality	Undertake pond surveys using the National Pond Monitoring Network 'PSYM' methodology.

Community Engagement Ideas:

Event/Activity
Take part in National or International Days/Events such as RSPB Bird Watch, National Nestbox Week, International Day for Biodiversity, Wildlife Week, World Environment Day, Big Butterfly Count, Love parks Week etc.
Organise a 'Meet the Species' London 2012 BioBlitz.
Create an accessible sensory garden
Organise a London 2012 'Meet the Species' BioBlitz
Work with the Exeter City Council Green Team
Organise an 'Operation Otter' training event with Devon Biodiversity records Centre
Organise tree and wildflower plug planting events
Work with Devon Biodiversity Records Centre and the University Sustainable Travel Plan Coordinator to organise a Biodiversity Bike Ride
Develop the campus as a Living Laboratory, including developing Taddiford Brook County Wildlife Site as an educational resource
Work with the Augmented Reality Project to create a Biodiversity Trail around campus.

7.0 Appendix

- A. UK Butterfly Monitoring Scheme Information
- B. Plantlife Wildflowers Count Survey Information

A. UK Butterfly Monitoring Scheme Information



G2: FIELD GUIDANCE NOTES FOR BUTTERFLY TRANSECTS

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TRANSECT RECORDING

Butterfly transects are a way of measuring changes in the abundance and variety of butterflies present at a site from year to year. This requires a commitment to record weekly throughout the main six-month period in which butterflies fly in the UK, or if monitoring a single species, the flight period of that species. It is important to stick to the methodology and remain consistent if results are to be comparable from year to year. When data from a number of transects in an area or over the whole of the UK are combined this can provide information on changes in butterfly numbers over that area. The data also enables the evaluation of changes in butterfly populations on a single site, e.g. due to the effects of management, by comparison with trends from many sites.

WHEN TO MAKE TRANSECT COUNTS

Time of year: A full season's transect counts take place once a week for 26 weeks from the beginning of April to the end of September. Week 'one' runs from 1st-7th April, week 'two' 8th-14th April and so on, until week 'twenty-six' which runs from 23rd-29th September. You can record earlier than 1st April (25th-31st March is week 0, 18th-24th March is Week -1 etc.) or after September (30th Sept- 6th Oct is Week 27, and so on). If the weather conditions are suitable, you should record even if there are not likely to be any butterflies present (e.g. early/late in the season) – a negative result is still a result.

How many weeks: As many weeks should be walked as possible, as gaps reduce the quality of the data and too many can render it virtually useless. The more gaps the less species-indices can be calculated. Where it has been decided that a transect is aimed a single, usually rare, species (or sometimes for two or three species) then weeks should be walked that cover the flight period(s), with zero counts at either end.

Time of week: You can record on any day of the week, but should aim to walk the transect on the first opportunity that the weather is suitable (some weeks you may not get a second chance!). You only need to record more than once a week if the weather on your first walk did not meet the criteria.

Time of day: Transect counts should ideally be made between 10:45 and 15:45 hours, though between 10:00 and 17:00 hours is usually allowable, though butterfly activity may drop off rapidly during the late afternoon so later times should be avoided.

Weather conditions: Transect walks should only be carried out in warm and at least bright weather, with no more than moderate winds and not when it is raining. The minimum criteria are either 13-17°C with at least 60% sunshine, or if there is no sunshine the temperature must be 17°C or above. Windspeed (Beaufort scale) should be no more than 5 unless the transect route is sheltered from the wind. Do not record if the temperature is below 13°C except in northern upland areas where, if butterflies are active, they may be recorded in temperatures down to 11°C. Check that conditions are suitable before you start the transect, and that if the temperature is less than 17°C there is likely to be sufficient sun.

WHAT TO RECORD ON

Transect counts should be made on a **UKBMS F2: Weekly Field Recording Form**. The form can be downloaded from Butterfly Conservation (BC) and UKBMS websites. Use this form in the field rather than a notebook, as experience shows that transcription errors are more likely when data is copied from a notebook.

How to record - in eight easy steps

1. Use a separate F2 form for each weekly visit.
2. Always follow exactly the same route each time you make a transect walk (be clear that you know exactly where each section starts and finishes).
3. Before you start recording complete the top of the form up to the start time.
4. Record each section once only.
5. For long sections where species are present in large numbers, it may be advisable to tally numbers on a separate sheet or notebook before entering the final total onto the standard recording form (or customise the form beforehand - see previous section above). Record actual numbers seen – an estimate will do if it is not possible to be accurate.
6. If rare species are present, resist stopping and waiting at favoured hotspots to improve your count, as this will bias results.
7. Record butterfly numbers and % sunshine in each section as you go along (see below).
8. At the end of your transect record the time, make notes of any management activity or other points of interest and check that you have filled in all the relevant boxes on the recording form.

Recording butterflies: walk at a slow, steady pace counting all butterflies seen within a fixed distance – the recommended distance is 2.5m either side of the transect line and 5m ahead. In some habitats e.g. along sea cliffs or woodland rides, it is acceptable to record at a width of 5m along one side only of the transect line. A wider area is recorded on part or all of some transects (e.g. 10m instead of 5). Always stick to the limits established when the transect was set up. Try to avoid double counting where possible e.g. when an individual butterfly repeatedly flies in and out of your recording zone. However, if you lose sight of an individual, and later regain sight of the same species do not assume this is the same individual. Do not count butterflies behind you.

Try to identify and separate all species you encounter, including where possible 'difficult' species such as Small and Essex Skipper, whites and the fritillaries. If similar species such as Small White and Green-veined White are flying together at a site you may want to net a sample (a small clear plastic pot can be very useful to temporarily confine the butterfly so it can be examined more easily – hold pot in the shade), to determine the proportion of each species present -



G2: FIELD GUIDANCE NOTES FOR BUTTERFLY TRANSECTS



you can then divide up your overall counts accordingly. For example, if you catch and identify 8 Small Whites and 2 Green-veined Whites, a count of 30 unidentified whites can be converted to an estimated 24 Small Whites and 6 Green-veined Whites. Note that you will need a license to capture High Brown Fritillary and the use of nets may be prohibited in some areas - contact BC for details. If you are not sure how to identify any species of butterfly you are likely to encounter with certainty then you should take a good identification guide with you. If you see interesting species outside your recording area these should not be included in the transect count but can be recorded in the notes section at the foot of your form or on the back of the form.

Recording the weather: If possible, sunshine should be estimated for *each* section to the nearest 10% of the time it was sunny while you were walking that section. If a distinct shadow is cast (bright cloud) then conditions may be classed as sunny. At the end of the transect, record shade temperature (e.g. with a portable thermometer placed in a shaded situation at the beginning of the transect before you start), estimate average sunshine (based on section data), and average windspeed, using the following Beaufort scale (see right).

THE BEAUFORT SCALE:			
Code	MPH	Description	Specifications on land
0	0-1	Calm	Smoke rises vertically
1	1-3	Light air	Slight smoke drift
2	4-7	Light Breeze	Wind felt on face & leaves rustle
3	8-12	Gentle Breeze	Leaves & twigs in constant motion
4	13-18	Moderate Breeze	Raises dust and small branches move
5	19-24	Fresh Breeze	Small trees in leaf begin to sway
6	25-31	Strong Breeze	Large branches move & trees sway

WHO SHOULD RECORD

Anyone who has reasonable eyesight, is reasonably able-bodied and can accurately identify butterflies in natural situations. If you are colour-blind you probably should be aware that you are likely to have more difficulty in identifying some species and maybe less difficulty in identifying others.

Ideally, a transect is recorded by a single recorder as this eliminates recorder bias. However, single recorder transects should have at least one substitute recorder who can provide cover when the main recorder is unavailable. Increasingly transects can only operate if a team of recorders is available. In this case it is vitally important that all recorders not only know the exact route to walk (including the beginning and end of each section), but should also know the recording area limits that have been set up (e.g. is it a 5m area or larger). New recorders should always be taken on a transect walk with the main recorder two or three times before recording it on their own. Training may be available from your local Butterfly Conservation branch or from BC Regional Staff. When accompanying a recorder, walk almost alongside or just behind the person recording so as not to obstruct their line of sight or distract them and only those butterflies seen by the recorder should be recorded. It is advisable to check the forms of new recorders for any anomalies when they return from doing a transect count to ensure that the data are correct.

TRANSECT WALKER™ SOFTWARE

Transect Walker software has been specifically designed for data from butterfly transects. It is easy to use and will run on most personal computers and it can be downloaded free from the BC and UKBMS websites. Ideally, data from your F2 Recording Forms should be entered into Transect Walker each season. Transect Walker can then be used to 'package' your data ready for sending as an email attachment.

WHEN AND WHERE TO SEND YOUR DATA

Data should be sent in full, either as hard copies of the F2 Weekly Recording Forms or in Transect Walker format, to your local Butterfly Conservation transect co-ordinator (details on both BC and UKBMS websites). **If your data is to be included in the annual UKBMS analyses and reports, recording forms must be in by the end of October, and Transect Walker data by the end of November at the latest.**

FOR FURTHER INFORMATION

Visit the UK Butterfly Monitoring Scheme website (www.ukbms.org) or the BC website (www.butterfly-conservation.org). Both include details of local transect co-ordinators.

Contact:

✉ Butterfly Conservation HQ
Manor Yard, East Lulworth, Dorset, BH20 5QP
transect@butterfly-conservation.org
☎ 0870 7744309

Join the transect walking e-group - visit <http://groups.yahoo.com/group/UKTransect>

UKBMS WEEK NUMBERS:																	
Week	Days							Month	Week	Days							Month
1	1	2	3	4	5	6	7	April	14	1	2	3	4	5	6	7	July
2	8	9	10	11	12	13	14		15	8	9	10	11	12	13	14	
3	15	16	17	18	19	20	21		16	15	16	17	18	19	20	21	
4	22	23	24	25	26	27	28		17	22	23	24	25	26	27	28	
5	29	30							18	29	30	31					
6	6	7	8	9	10	11	12	May	19	5	6	7	8	9	10	11	August
7	13	14	15	16	17	18	19		20	12	13	14	15	16	17	18	
8	20	21	22	23	24	25	26		21	19	20	21	22	23	24	25	
9	27	28	29	30	31						22	26	27	28	29	30	
10	3	4	5	6	7	8	9	June	23	2	3	4	5	6	7	8	Sept
11	10	11	12	13	14	15	16		24	9	10	11	12	13	14	15	
12	17	18	19	20	21	22	23		25	16	17	18	19	20	21	22	
13	24	25	26	27	28	29	30		26	23	24	25	26	27	28	29	

B. Plantlife Wildflowers Count Survey Information - FAQs

Plantlife International is the UK's leading charity dedicated to the conservation of wild plants in their natural habitats. Plantlife acts directly to stop common wild plants becoming rare in the wild, to rescue wild plants on the brink of extinction, and to protect sites of exceptional botanical importance. The charity carries out practical conservation work, influences relevant policy and legislation, and collaborates widely to promote the cause of wild plant conservation. For more information visit our website: www.plantlife.org.uk or call 01722 342 730.

Is the Wildflowers Count complicated?

No it isn't! All the information that you need is in the Wildflowers Count Guide which you will receive when you register in your free survey pack.

Also in the free survey pack there is a full colour guide to the 99 wildflowers you are asked to count, safety notes and a map showing your 1km survey square

Help is always available at wfs@plantlife.org.uk, or on our helpline telephone: 01722 342755

Do I have to know a lot about wildflowers?

No, the plants we have chosen are some of the more simple to identify, and the Wildflowers Count Identification Guide is very good, using flower colour to help you find the right plant. Your confidence will build as you go on with the survey and gain more experience. Take someone with you as two heads are better than one. If you are keen you could go on a course to learn more www.wildaboutplants.org.uk/events has a diary of events run by Plantlife, or you could try the Field Studies Council, the Wildflower Society or the BSBI. There are many books such as the field guides suggested in the Wildflowers Count Instructions that are very useful as well.

What if I find a wildflower than I cannot identify with any certainty?

Take a photograph of it with your digital camera or mobile phone and email it to us at wfs@plantlife.org.uk

What if my 1km square isn't suitable?

Squares are chosen at random based on your postcode and will always be within 5km of your home. If there is a problem your square please contact us at wfs@plantlife.org.uk, or on our helpline telephone: 01722 342755 and we will do our best to help, allocating a new square if necessary.

Why do I have to go to a random 1km square? Can't I survey somewhere of my choosing?

Scientific experiments often involve taking samples at random and the Wildflowers Count is no different. We want to get a picture of what is happening to our common plants at a national level, but we do not have enough people to cover every 1km square, so we take a random sample. If we allowed people to send in data from places where they knew plants were growing, we would get biased results and probably too rosy a picture of the state of our common plants and the habitats where they grow.

How do I work out my 1km walk?

It is best to plot a route on your map before you set out, try using the website 'Where's the path' which is best found by putting that into a search engine. The site shows your ordnance survey map next to a Google Earth image of the same area and allows you to plot routes, it even

works out the distance for you. There are helpful tips in the Wildflowers Count Guide too. It is best to do the walk first without recording anything, and do your recording on the way back.

I find it difficult to locate my plots in a featureless landscape.

We appreciate that it is tricky to find your plots in large fields with no obvious landmarks. Problems can also arise in thick woodlands where it is difficult to accurately assess where you are. Making a simple sketch map is a great help, and you could take photographs. Please do your best to get to where you think the centre of your square is, as this is a key part of the survey. In future years it is important that you survey the same area again. If the landowner is in agreement, you could mark your plot using a stake or similar. Perhaps you could pace out a distance from a fixed object. Use your ordnance survey map that came with your pack to mark your survey areas.

The centre is in a field of crops / ploughed field, should I still survey there?

Don't walk through crops, but try to find an area within 50m of the centre. Probably this will be at the edge of the field and means that part of your 5m x 5m plot is adjacent to a linear feature, but that cannot be helped. Try and record what you can see from the edge of your square. Previous surveyors please continue to survey your existing plots.

My square is in an urban area, do I still need to survey it?

Yes, please. The best method to choose is the Wildflowers Path. There may be very few wildflowers to record, or maybe none, but that is important information for us. It may seem odd to be looking for wildflowers in towns and cities but there are always areas where seeds can establish themselves, grass verges for example.

The centre is in a golf course, what do I do?

Please don't survey if there is any risk to your safety (eg when the course is open). Seek advice from the owners of the course as it may be possible to do a Wildflowers Path, but if it is not safe we will allocate you a new square.

What happens if I don't find any of the wildflowers in the guide?

Please fill in the form and send it to us, it is just as important to know where plants are not growing as it is to know where they are growing. What is most important is that you have thoroughly searched the plots so that we can be sure any changes detected are real. If you would like to do a count in another 1km square in addition to your original one simply email wfs@plantlife.org.uk or telephone on 01722 342755 and leave a message.

How often do I need to do the survey?

You only need to survey once, but you can survey more than once, just fill in a separate form for each visit, and make sure that you cover the same ground, so you need to know the route of your wildflower path, and/or the position of your plots.

It is worth remembering that if you have woodland in your survey it is best to do it in spring, more open habitats can be visited later.

Can I record all the wildflowers or just the 99 in the guide?

If you want to record more than the wildflowers in the guide then you will be one of our Super-surveyors. There is a super-surveyor box on the front of the survey form to tick to tell us which groups of plants you are recording.

I'm finding it difficult to work out the % for habitat types.

Please do not worry about this too much as the % cover categories are quite broad. We are just looking for an overall picture.

I have done the Common Plants Survey and would like to continue to survey my habitat plots.

Yes, please continue to survey the habitat plots as the information will be very useful. There is a copy of the Common Plants Survey form on the website for you to download, or we can send you a copy if you contact us at wfs@plantlife.org.uk or telephone 01722 342755 and leave a message.

Do I need permission to go onto farms?

Unless you are walking on marked footpaths or bridleways then it is essential to ask permission, try to find the name of the farm and ring them up. In our experience most landowners are interested in the survey and are very happy for their land to be surveyed.

I am worried about surveying on my own?

We recommend that you take someone with you, for company and for your own safety. It can be very helpful to have someone to fill in the form while you do the identification, and two heads are always better than one!

Do I have to return to the same area each year or can I go to new places?

We ask you to use the same 1km square each year, and take the same Wildflower Path and the same plots within your square because this is how we can build up a picture of any changes taking place. We need to know if the wildflower species in your survey are declining, increasing or staying the same and only time will tell us that. It is this repeated surveying of the same areas every year that makes this a unique and very valuable survey.