



Swansea University
Prifysgol Abertawe

Biodiversity Action Plan 2016-2020



Foreword

Biodiversity – the variety of all living things – forms the foundation of the processes that we rely on for life: clean air, clean water, flood mitigation, soil formation, carbon and nutrient cycling and pollution remediation. Biodiversity gives us the landscapes we hold dear and endless opportunities for recreation - all contributing to our health and wellbeing.

Swansea University is blessed with a wealth of habitats across its two campuses, from the beach and dunes of the Bay to the woodland and gardens of Singleton. These habitats are home to a rich variety of wildlife and provide the University with a wonderful resource, whether for teaching the next generation of ecologists vital skills and giving opportunities for research, or simply a healthy and relaxing environment for staff, students and local residents to recharge their batteries. The campuses do not exist in isolation – they form an important part of the environment of the Swansea Bay region, connecting with the wider world and acting as stepping stones for wildlife.

Climate change presents a host of issues and ensuring that the natural environment is in a healthy a state as possible will maximise the chance of species being able to adapt. This includes being aware of the changes that are happening, through research and monitoring, and managing them appropriately. Key habitats have to be identified and managed, invasive species will require controlling, space given for plants and animals to thrive and where development occurs, sensitive planning will be required to ensure that it allows for the needs of wildlife.

This Biodiversity Action Plan explains how the University will meet its legislative duties, but more than this, it is a living document to be used and updated as required to ensure that our campuses remain as much a home for wildlife as they are for people.

Swansea University Biodiversity Working Group, July 2016



Contents

Foreword	2
1) Introduction	4
2) Habitats and Species of Conservation Importance at Swansea University	7
3) Improving Campus Biodiversity (including objectives)	13
4) Action Plan	15
4.1 Management and reporting	15
4.2 Survey, monitoring and data management	16
4.3 Habitat and species management	17
4.4 Awareness raising and education	18
Table 1. Habitats of conservation importance at Singleton Park Campus	8
Table 2. Species of conservation importance at Singleton Park Campus	10
Table 3. Habitats of conservation importance at Bay Campus	12
Appendix 1. Current species lists for Singleton Park Campus	19



1) Introduction

The University's Sustainability Strategy *Sustainability – Our Approach 2016-2020* recognises biodiversity as one of the core areas of work and includes the aim “protect and enhance the biodiversity of our campuses, and communicate their value as important green corridors” with the Biodiversity Action Plan (BAP) forming the basis of all habitat and species management on the campuses. Our Environmental Management System (ISO 14001) requires that the University monitors and reports on the BAP annually.

This is the second Biodiversity Action Plan for Swansea University, updating the original plan from 2012 (when the University only had a single campus, Singleton Park). This plan looks to build on past achievements and establish management of the campuses to ensure that key habitats and species are protected, steps are taken to enhance the wildlife value of other habitats and that any development of the University estate results in an overall biodiversity gain. Engagement and interpretation opportunities will be developed to increase the overall understanding and enjoyment of the wildlife of our campuses by students, staff and the general public.

It sets out the context of biodiversity planning, identifies the species and habitats of particular conservation importance on the University's two campuses, highlights the achievements of the first iteration of the BAP and identifies opportunities for enhancing the wildlife value of the University. The final section is an action plan detailing the specific steps that will be taken over the next four years to protect, enhance and promote the University's biodiversity.

Biodiversity, the UK BAP and Nature Recovery Plan for Wales

The Convention on Biological Diversity (CBD) defines biodiversity as: "the variability amongst living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems." Biodiversity underpins a healthy natural environment. The natural world, its biodiversity and constituent ecosystems are essential to human well-being both directly and indirectly through the multiple benefits provided in supporting the functioning of ecosystems. It recognises that biodiversity has been drastically reduced as a result of human activity; the latest European State of the Environment Report found that 60 % of assessed species and 77 % of habitats continue to be in unfavourable conservation status.

The UK Biodiversity Action Plan (UK BAP) was published in 1994, and is the UK Government's response to the Convention on Biological Diversity. The CBD called for the development and enforcement of national strategies and associated action plans to identify, conserve and protect existing biological diversity, and to enhance it wherever possible. The UK's plan sets out a programme for conserving the UK's biodiversity and drawing up of a series of action plans to help UK priority habitats and species.

The Nature Recovery Plan for Wales, published in December 2015 identifies how Wales will deliver the commitments of the EU Biodiversity Strategy and the UN Convention on Biological Diversity to halt the decline in our biodiversity by 2020 and then reverse that decline. Section 42 of the Natural Environment and Rural Communities Act, 2006 (NERC Act) identifies the list of habitats and species of principle importance in Wales. This is currently being reviewed by the Welsh Government under section 7 of the Environment Act (Wales) 2016 (Environment Act).

Biodiversity on the campuses and wider Swansea Bay area

Swansea University straddles two local authority areas, with the Singleton Campus located in the City and County of Swansea and the Bay Campus in Neath Port Talbot County Borough. Both local authorities have produced local biodiversity action plans (LBAPs) for their areas, and the University sits on the partnerships that maintain them. The region is home to a wealth of wildlife – nearly 70% of the habitats and 20% of species identified as being a priority for biodiversity conservation in the UK can be found in the City and County of Swansea and this plan aims to complement the conservation work undertaken in the wider area.

Although the University's two campuses are both in urban locations, they have significant amounts of open space and provide valuable connectivity as well as a biodiversity resource in their own right. Singleton Park Campus was built upon the old sand dune system that once surrounded Swansea Bay and constitutes a plagioclimax of different habitats. These include semi-natural habitats, such as woodland, hedgerow, grassland and aquatic habitats that support native plants, buildings used by nesting birds and bats, together with ornamental flowerbeds, shrubberies and amenity grassland. These habitats are used by a wide variety of wildlife, including bats, otters, polecats, foxes and a variety of small mammals, amphibians, insects and birds. In addition they support a rich native flora, together with numerous species of fungi and lichens. The Abbey Meadow is an area of semi-improved grassland containing an ephemeral pond used by amphibians. The Botanical Gardens used to act as a feeder to Kew Gardens and comprise a wide variety of non-native floral species, some of which are very rare. There are a number of veteran trees on campus, and the location, near to the Clyne Valley, seafront and Singleton Park means that it forms a vital part of the ecological connectivity of the city.

The Bay Campus opened in 2015 and was built on a brownfield site, formerly an oil storage depot for BP. It directly borders Crymlyn Burrows Site of Special Scientific Interest (SSSI) to the east and is separated from the sandy beach to the south by a narrow strip of dune. The verges of Fabian Way have an exceptionally high species diversity and hay collected from these verges was used to seed areas along the north and east of the campus. Other than the beach and dune to the south, there are no natural habitats, but both the buildings and open areas present significant opportunities to create new areas for wildlife.

The Biodiversity Duty

The Environment Act places a duty on public authorities to 'seek to maintain and enhance biodiversity' so far as it is consistent with the proper exercise of their functions. In so doing, public authorities must also seek to 'promote the resilience of ecosystems', including condition, diversity, extent, connectivity and adaptability. This replaces and strengthens the original biodiversity duty under section 40 of the NERC Act and will benefit students, staff and the wider population by helping to:

- contribute to our physical and mental health and wellbeing
- play an important role in tackling climate change
- regulate local climate, for example, temperature, shade, shelter
- intercept and help break down air, water and soil pollution
- reduce flood peaks
- offer opportunities for community engagement and volunteering

Crymlyn Burrows SSSI comprises 244ha of sand dune, saltmarsh and intertidal sediment habitats and became part of the University estate in 2015. Although the site contains a significant part of the University's biodiversity, it has a separate management regime, with its own management committee and management plan. It is not included within this BAP, other than to ensure that activities undertaken on the campus do not impact the conservation of the SSSI and wherever possible complement it.

Biodiversity Working Group (BWG)

A cross-departmental working group and chaired by the Biodiversity Officer was established under the first iteration of the BAP, including representatives from Biosciences, Estates (Grounds, Projects, Maintenance and Sustainability), Residences and the Students Union. The BWG meet termly to oversee the development and implementation of the BAP, including the production of an annual implementation plan.



2) Habitats and Species of Conservation Importance at Swansea University

Section 7 of the Environment Act lists the habitats and species of particular conservation concern in Wales, replacing the section 42 list from the NERC Act and will be updated in the near future by Welsh ministers. This list forms the basis of the habitats and species identified here, but there are others also, either because of a more local importance or because they provide important ecosystem services.

Detailed habitat maps of the campuses are going to be produced during 2016 and will be included as an appendix to the BAP. As well as identifying the location of the key areas of conservation importance, they will allow the extent of each habitat to be calculated, setting the baseline for measuring future performance.

We do not have full lists of all the groups of plants and animals using the campus, and for those that we do, we often have very limited knowledge of populations and how they use the campus – opportunities for increasing knowledge of all wildlife on campus should be identified and taken. Where we only have limited information this should not be a bar to taking positive action to enhance habitats – good management practices such as leaving rough areas, reducing pesticide use, allowing wild flowers to set seed and controlling invasive species will all help to increase the biodiversity value of the campuses. The tables below simply highlight the known biodiversity priorities to help guide our management of the campuses; with further surveying we will increase our knowledge base, giving the opportunity to improve management further.



Table 1. Habitats of conservation importance at Singleton Park Campus

Phase 1 habitat type	S7 priority habitat?	Other reasons for inclusion in BAP	Rough location	Conservation target
A1.3.2, mixed plantation woodland	Yes - lowland mixed deciduous woodland		Botanical Garden, southern edge of campus	Maintain extent, improve quality, protect veteran trees, retain rough, uncultivated, scrubby areas
A3.3 parkland / scattered trees	Yes - wood pasture and parkland		Abbey Lawn, Botanical Garden meadow	Maintain extent, improve quality, protect veteran trees
B2.2 semi improved neutral grassland	Yes - lowland meadows		Botanical Garden meadow	Maintain extent, improve quality
B5 marshy grassland	Yes - lowland meadows		Abbey Meadow	Increase extent, improve quality
G1.2 man-made ponds	Yes - ponds		Botanical Gardens / Grove Building	Protect water quality, maintain extent, identify areas for new ponds
G2.2 stream	No	Provides connectivity and important habitat for a wide range of animals	Botanical Gardens	Protect water quality
J1.2 amenity grassland	No	Helps sustainable drainage, provides habitat for invertebrates, birds and small mammals, good potential for improvement	Abbey Lawn, widespread around campus	Maintain extent of open grassland, improve quality, identify areas to manage as flower-rich meadows
J1.3 cultivated - ephemeral / short perennial	No	Flowerbeds are important for pollinating insects, provide habitat for other invertebrates, help sustainable drainage and have good potential for improvement	Botanical Gardens, scattered more generally around campus	Maintain extent, improve quality for pollinating insects, use native flowers where possible
J1.4 cultivated - introduced shrub	No	Shrubberies are important for pollinating insects, provide habitat for other invertebrates, help sustainable drainage and have good potential for improvement	Botanical Gardens, scattered more generally around campus	Maintain extent, improve quality for pollinating insects, use native flowers where possible and maintain rough, uncultivated areas to encourage birds, mammals and invertebrates

J2.1.2 species poor hedges	Yes - hedgerows		Botanical Gardens	Maintain extent, improve quality
J3.6 buildings	No	Provides nesting habitat for 57 birds and bats	Around campus	Protect nesting birds and bats, aim to increase population and range of species using buildings where possible by use of artificial nest boxes. Ensure that any development of the University estate has a net biodiversity gain.

Table 2. Species of conservation importance at Singleton Park Campus

Common name	Scientific name	S7 priority species?	Notes	Conservation target
Mammals				
Otter	<i>Lutra lutra</i>	✓	Occasional visitor	Record sightings, improve freshwater habitats
Polecat	<i>Mustela putorius</i>	✓	Occasional visitor	Record sightings, protect suitable habitats, maintain population of small mammals
Red fox	<i>Vulpes vulpes</i>		Resident	Maintain as a breeding species
Hedgehog	<i>Erinaceus europaeus</i>	✓	Resident	Maintain / increase population
Common pipstrelle	<i>Pipistrellus pipistrellus</i>	✓	Roosts in Abbey	Maintain / increase population
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	✓	Roosts in Abbey	Maintain / increase population
Noctule	<i>Nyctalus noctula</i>	✓	Roosts in Abbey	Maintain / increase population
Wood mouse	<i>Apodemus sylvaticus</i>		Resident	Maintain / increase population
Bank vole	<i>Myodes glareolus</i>		Resident	Maintain / increase population
Common shrew	<i>Sorex araneus</i>		Resident	Maintain / increase population
Pygmy shrew	<i>Sorex minutus</i>		Resident	Maintain / increase population
Water shrew	<i>Neomys fodiens</i>		Resident	Maintain / increase population
Birds				
Herring gull	<i>Larus argentatus</i>	✓	Resident	Maintain population
House sparrow	<i>Passer domesticus</i>	✓	Resident	Enhance breeding population through provision of nest boxes
Dunnock	<i>Prunella modularis</i>	✓	Resident	Maintain / enhance population
Common starling	<i>Sturnus vulgaris</i>	✓	Resident	Establish / enhance breeding population through provision of nest boxes
Song thrush	<i>Turdus philomelos</i>	✓	Resident	Maintain / enhance population
Swift	<i>Apus apus</i>		Summer visitor, possible breeding species, 40% decline in UK in past 20 yrs	Establish / enhance breeding population through provision of nest boxes
Peregrine falcon	<i>Falco peregrinus</i>	✓	Regular visitor	Protect perching sites, seek to establish as a breeding population through provision of a nest box
Breeding bird assemblage			see appendix 1 for species lists	Seek to maintain and where possible increase the number of species breeding on campus

Assemblage of regularly visiting birds			see appendix 1 for species lists	Seek to maintain and where possible increase the number of species regularly visiting the campus to feed or roost
Amphibians				
Common toad	<i>Bufo bufo</i>	✓	Non-breeding regular visitor	Establish as a breeding species by creating habitat
Common Frog	<i>Rana temporaria</i>		Resident (scarce)	Increase population by creating / improving habitat
Palmate newt	<i>Lissotriton helveticus</i>		Resident (scarce)	Increase population by creating / improving habitat
Fish				
European eel	<i>Anguilla anguilla</i>	✓	Critically endangered, found in pond and stream	Protect habitat and ensure habitat management is undertaken sympathetically
Moths				
Knot grass	<i>Acronicta rumicis</i>	✓		?
Small phoenix	<i>Ecliptopera silaceata</i>	✓		?
August thorn	<i>Ennomos quercinaria</i>	✓		?
White lined dart	<i>Euxoa tritici</i>	✓		?
Small emerald	<i>Hemistola chrysoprasaria</i>	✓		?
Rustic	<i>Hoplodrina blanda</i>	✓		?
Dot moth	<i>Melanchra persicariae</i>	✓		?
Buff ermine	<i>Spilosoma luteum</i>	✓		?
See appendix 1 for full species list				Aim to record and increase knowledge of the moth fauna
Other groups				
Veteran trees				Record the key veteran trees on campus and ensure that they are protected and managed sympathetically
See appendix 1 for full species lists				

Table 3. Habitats of conservation importance at Bay Campus

Phase 1 habitat type	S7 priority habitat?	Other reasons for inclusion in BAP	Rough location	Conservation target
A1.3.2, mixed plantation woodland	Yes - lowland mixed deciduous woodland		Young trees planted as woodland strips along north and east boundaries of campus	Maintain extent, improve quality, protect veteran trees, retain rough, uncultivated, scrubby areas
A3.3 parkland / scattered trees	Wood pasture and parkland		Young trees planted as scattered individuals and groups in grassland and as street trees across campus	Maintain extent, improve quality, protect veteran trees
H1.1 intertidal mud and sand	Yes - intertidal mudflats		To the south of the campus	Maintain extent and control disturbance
H6.8 open dune	Yes - coastal sand dunes		Southern edge of campus	Maintain extent, control invasive species, monitor
J1.2 amenity grassland	No	Helps sustainable drainage, provides habitat for invertebrates, birds and small mammals, good potential for improvement	Northern boundary and widespread around campus	Maintain extent of open grassland, improve quality, identify areas to manage as flower-rich meadows. Grassland along north and east boundaries and SSSI car park is very species rich, seeded with locally collected hay - employ appropriate cutting regime.
J1.4 cultivated - introduced shrub	No	Shrubberies are important for pollinating insects, provide habitat for other invertebrates, help sustainable drainage and have good potential for improvement	Planted around campus, generally around buildings	Maintain extent, improve quality for pollinating insects, use native flowers where possible and maintain rough, uncultivated areas to encourage birds, mammals and invertebrates
J3.6 buildings	No	Can provide nesting habitat for S7 birds and bats	Around campus	Protect nesting birds and bats, aim to increase population and range of species using buildings where possible by use of artificial nest boxes. Ensure that any development of the University estate has a net biodiversity gain.

3) Improving Campus Biodiversity

The first iteration of the BAP identified a large number of actions to enhance and promote biodiversity at the University (all at the Singleton Park Campus). Key achievements have been:

- Establishment of a cross-departmental Biodiversity Working Group, including representatives from Biosciences, Estates (Grounds, Projects, Maintenance and Sustainability), Residences and the Students Union, with termly meetings held.
- Establishment of a Campus Nature Trail.
- Establishment of on-campus bee hives.
- Construction of the low impact “Oracle” outdoor classroom in the Botanical Gardens.
- Mapping and control of invasive species.
- Changes to cutting regimes in particularly species-rich grassland areas.
- Recognition of the importance of decaying wood and rough, uncultivated areas.
- Use of home produced wood chippings as mulch to reduce need for herbicides.
- Increased awareness of wildlife gardening techniques and use of native species.
- Erection of bird, bat and insect nest boxes.
- Production of species lists and identification of areas for future work.
- Establishment of regular guided walks for staff and students.
- Changes to the approach for dealing with pest species.

Singleton Park Campus is a very rich environment, yet there is still plenty of scope for improvement. Large areas of amenity grassland dominate much of the open space – while some of these are necessary aesthetically and for informal recreation there are opportunities to develop some of these as flower-rich meadows and/or wetland areas. Invasive species are still present on campus and should be removed / controlled and replaced with native species. Many bird and bat nest boxes have fallen into a poor state of repair and should be replaced and opportunities to further increase nesting opportunities for S7 species should be identified. Opportunities to improve the wildlife value of buildings should be investigated and sustainable procedures for the management of “pest” species adopted. A full Phase I habitat map of the campus should be produced, highlighting key biodiversity habitats, areas and features, including all veteran trees and nest boxes; this should then form the focus of communication with stakeholders and for wider interpretation. Future development of the campus should be managed to ensure that there is an overall biodiversity gain.

By contrast, the Bay Campus is relatively poor from a conservation perspective, with the key areas at present the sand dunes and sand and mud flats to the south and species-rich grassland to the north. Appropriate management and protection of these habitats are a key part of this BAP, while the rest of the campus presents a real opportunity for enhancement. The exposed coastal location presents natural constraints on the plants that can be expected to thrive, and any work undertaken at the Bay has to be carefully planned to ensure that the features of the SSSI are not adversely affected (eg by planting potentially invasive species).

That said, the presence of the SSSI alongside the campus shows that a very rich and attractive range of local plants (supporting a very rich diversity of invertebrates) is a real possibility. In the short term, the landscaping of the campus is subject to the planning consent granted by Neath Port Talbot Council, with an approved landscaping scheme and planting list, and there are outstanding issues with the planting to be rectified before work can be undertaken to enhance the wildlife value. As with Singleton, opportunities to improve the wildlife value of buildings should be investigated and sustainable procedures for the management of "pest" species adopted. Future phases of the development of the campus should incorporate best practice for biodiversity as standard.

BAP Objectives:

- 1.1 To ensure structured, multi-stakeholder management, monitoring and reporting of biodiversity issues on campus
- 2.1 To implement efficient and robust data and information management to ensure that biodiversity action is based on the best available information
- 3.1 To improve the management of our campuses for wildlife
- 3.2 To create new areas of valuable wildlife habitat where appropriate
- 3.3 To ensure that maintenance and development of the University estate results in an overall biodiversity gain
- 4.1 To ensure all relevant stakeholders have sufficient training to enable them to play their part in managing biodiversity on campus
- 4.2 To increase educational opportunities, raise awareness of the role our campus plays in supporting wildlife and encourage appreciation of the benefits of biodiversity and green space for health and wellbeing



4. Action Plan

Key contacts:

Biodiversity Officer – Ben Sampson

Grounds Maintenance – Paul Edwards

Biosciences – Dan Forman, Penny Neyland and Wendy Harris

Estates, Maintenance – Kevin McKeown

Estates, Projects – Fiona Nixon

Estates, Sustainability – Heidi Smith

1. Management and reporting					
Objective 1: To ensure structured, multi-stakeholder management, monitoring and reporting of biodiversity issues on campus.					
Action number	Action	Campus	Target date	Progress	Lead contact
1.1	Publish BAP on Swansea University Website	n/a	01/08/2016		Biodiversity Officer
1.2	Hold termly meetings of the Biodiversity Working Group (BWG)	n/a	Termly	Ongoing	Biodiversity Officer
1.3	Produce minutes of BWG - including targets for the next term and review of progress on previous actions	n/a	Within 1 week of meeting	Ongoing	Biodiversity Officer
1.4	Produce an annual implementation plan, detailing all biodiversity projects to be undertaken in the next academic year – habitat and species management, surveying and interpretation	n/a	Annual - August		Biodiversity Officer (with input from BWG)
1.5	Carry out an annual review of the BAP, updating action plan as necessary and reporting on implementation and biodiversity status	n/a	Annual - September		Biodiversity Officer
1.6	Carry out a full review of the BAP every 4 years	n/a	01/08/2020		Biodiversity Officer

2. Survey, monitoring and data management					
Objective 1: To implement efficient and robust data and information management to ensure that biodiversity action is based on the best available information.					
Action number	Action	Campus	Target date	Progress	Lead contact
2.1	Create a hub for biodiversity records on Sharepoint	n/a		Complete	Biodiversity Officer
2.2	Input all datasets into record hub	n/a	31/10/2016		Biosciences
2.3	Carry out a phase 1 survey of both campuses (including mapping invasive species, veteran trees and key species)	both	31/07/2017		Biodiversity Officer / Biosciences
2.4	Map and record the condition of all nest boxes on campus	Singleton	31/12/2016		Biodiversity Officer / Biosciences
2.5	Update species lists with information on status (where known)	Singleton	31/12/2016		Biosciences
2.6	Create species lists for the Bay Campus	Bay	2020		Biosciences
2.7	Identify knowledge gaps for future survey (including reviewing lists of "known" groups)	both	31/12/2016		Biosciences
2.8	Produce an annual target list for survey priorities for bioscience students and interns	both	Annual - August		Biodiversity Officer / Biosciences
2.9	Produce a campus monitoring plan with standard methodology for key species and /or habitats	both	31/08/2017		Biodiversity Officer / Biosciences
2.10	Maintain a record of all ongoing campus survey and monitoring work and include as a standing agenda item for BWG	both	Ongoing		Biodiversity Officer
2.11	Develop a biodiversity index to form the basis of reporting on the status of campus biodiversity	both	April 2017		Biodiversity Officer

3. Habitat and species management					
Objective 1: To improve the management of our campuses for wildlife					
Objective 2: To create new areas of valuable wildlife habitat where appropriate					
Objective 3: To ensure that maintenance and development of the University estate results in an overall biodiversity gain					
Action number	Action	Campus	Target date	Progress	Lead contact
3.1	Review and embed grassland management into grounds management procedures for the benefit of biodiversity	both	31/12/2016		Grounds
3.2	Review and embed pond management into grounds management procedures for the benefit of biodiversity	Singleton	31/12/2016		Grounds
3.3	Use native species in planting unless specified otherwise	both	Ongoing		Grounds
3.4	Identify areas to be left "scruffy" and uncultivated on both campuses	both	31/12/2016		Grounds / Biodiversity Officer
3.5	Identify areas for creating wildflower meadows	both	31/12/2016		Grounds / Biodiversity Officer / Biosciences
3.6	Identify areas for creating new ponds	both	31/12/2016		Grounds / Biodiversity Officer / Biosciences
3.7	Develop an annual programme for repairing, replacing and erecting additional nest boxes	both	31/12/2016		Biodiversity Officer
3.8	Creation of an Ancient Woodland Garden with underplanting of trees in Botanic Garden with native ancient woodland indicators	Singleton	31/12/2017		Grounds
3.9	Plant nectar rich native plant species to encourage pollinators	both	Ongoing		Grounds
3.10	Create new habitat - wildflower meadow	both	31/08/2017		Grounds
3.11	Create new habitat - ponds / wetland areas	both	31/08/2018		Grounds
3.12	Remove / control all non-native invasive plant species and replace with native species as appropriate	both	Ongoing		Grounds
3.13	Incorporate biodiversity gain into all new building projects - ensure Biodiversity Officer is consulted at an early stage	both	Ongoing		Estates - Projects
3.14	Ensure that all ongoing building maintenance considers and protects biodiversity - consult Biodiversity Officer if unsure	both	Ongoing		Estates - Maintenance

4. Awareness raising and education					
Objective 1: To ensure all relevant stakeholders have sufficient training to enable them to play their part in managing biodiversity on campus					
Objective 2: To increase educational opportunities, raise awareness of the role our campus plays in supporting wildlife and encourage appreciation of the benefits of biodiversity and green space for health and wellbeing					
Action number	Action	Campus	Target date	Progress	Lead contact
4.1	Communicate objectives of the BAP to all grounds management staff to raise awareness of biodiversity issues	both	Annual - January		Biodiversity Officer
4.2	Identify any biodiversity related training required for other staff as required for the Environmental Management System	both	Annual - July		Biodiversity Officer / Sustainability
4.3	Develop wildlife information for staff and student induction	both	31/08/2016		Biodiversity Officer
4.4	Develop wildlife interpretation for the Bay Campus	Bay	31/07/2018		Biodiversity Officer
4.5	Review and replace (if necessary) the Nature Trail interpretation boards	Singleton	31/07/2018		Biodiversity Officer
4.6	Develop and deliver a programme of guided walks and other interpretative events to raise awareness of the University's biodiversity with staff and students	both	Ongoing		Biodiversity Officer / Biosciences
4.7	Write articles to communicate Swansea University's biodiversity/low impact initiatives for the local press and other media	n/a	Termly		Biodiversity Officer / Press Office / Business Development
4.8	Use social media to communicate key biodiversity messages - aim for at least one per month	n/a	Ongoing		Biodiversity Officer / Sustainability
4.9	Promote the use of campus green space to benefit health and wellbeing of staff and students, supporting the Corporate Health Standard and SWell programme	both	Ongoing		Sustainability
4.10	Promote volunteering opportunities for staff and students	both	Ongoing		Biodiversity Officer