Biodiversity Engagement

A guide to promoting biodiversity engagement amongst university students, staff and the local community

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February 2014
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1 INTRODUCTION

Protecting and promoting biodiversity is very important for a variety of reasons. Engaging with biodiversity and the natural environment can enhance wellbeing, optimising the student experience. Furthermore promoting biodiversity engagement can highlight the green image of a university, whilst raising awareness of the importance of preserving biodiversity. The role of biodiversity as an ecosystem services is increasingly being recognised and it is central that we protect and preserve biodiversity, leading by example. Providing opportunities to engage with biodiversity can create positive social contexts that facilitate relationships between individuals from both the local community and the university.

The following report explores current perceptions of biodiversity at the University of St Andrews to assess how important this issue is to students and to explore how students could be become engaged with biodiversity at the University. The report then suggests ways to improve biodiversity engagement at the University of St Andrews, using case studies from other universities to illustrate effective practices.
2 CURRENT PERCEPTIONS OF BIODIVERSITY

In January 2014 students at the University of St Andrews were offered the chance to express their opinion on biodiversity at the University. An online survey was produced and a total of 35 students completed the survey.

Results
Three quarters of the students surveyed indicated that the natural environment of St Andrews is very important to them, highlighting the relevance of this report. In line with this, figure 2 shows that all of the students surveyed thought that it was either very important (85%) or important (15%) for the University of St Andrews to promote biodiversity in the university grounds.

![Figure 1. Importance of the natural environment to students at St Andrews University](image-url)
This may be explained by the responses given by students when asked why biodiversity at the university was important to them. A variety of responses were received, as outlined in Table 1, however a common recurring theme was that students felt that biodiversity creates a nice environment that enhances their well-being.

**Table 1. Reasons given for why biodiversity is important to students**

<table>
<thead>
<tr>
<th>Theme</th>
<th>Key quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well-being</td>
<td>‘The environment means many things to different people. For me, the biodiversity provides an escape from the realities of uni.’</td>
</tr>
<tr>
<td></td>
<td>‘Personal wellbeing: on a nice day, I like to go for walks in natural areas during my lunch breaks.’</td>
</tr>
<tr>
<td></td>
<td>‘Nature is such an inherent part of my wellbeing.’</td>
</tr>
<tr>
<td></td>
<td>‘I think it is beneficial for humans both physically and psychologically to have a healthy and diverse environment around them.’</td>
</tr>
<tr>
<td>Pleasant environment</td>
<td>‘it makes places nice to be in.’</td>
</tr>
<tr>
<td></td>
<td>‘creating a good environment to live and study in’</td>
</tr>
<tr>
<td></td>
<td>‘It makes the area pleasant to look at and reduces the impact that humans are having on the area’</td>
</tr>
<tr>
<td>Enjoyment</td>
<td>‘I love nature and wildlife’</td>
</tr>
<tr>
<td>Education</td>
<td>‘we can learn a lot from enraging with the environment’</td>
</tr>
<tr>
<td></td>
<td>‘I love animals and like to see different types of animals which all require different habitats to survive.’</td>
</tr>
<tr>
<td>Ecosystem services</td>
<td>‘Maintaining biodiversity helps to maintain ecosystem structure and health’</td>
</tr>
<tr>
<td></td>
<td>‘Biodiversity is essential for maintaining ecosystem services’</td>
</tr>
<tr>
<td></td>
<td>‘More complex ecosystems are more resistant to climate change’</td>
</tr>
<tr>
<td></td>
<td>‘Biodiversity is the cornerstone of a healthy ecosystem.’</td>
</tr>
</tbody>
</table>
Figure 3 shows that an equal percentage of participants were satisfied, neutral or dissatisfied with the current level of biodiversity at the University of St Andrews. However, more people were dissatisfied than satisfied, suggesting that there is significant room for improvement.

Andrew Melville pond was the favourite green space of many of those surveyed, as shown in figure 4. This indicates that areas that are high in biodiversity are often appreciated by students.
However, over half of the students said that they thought the University of St Andrews was not doing enough to protect local biodiversity, as displayed in figure 5. Despite this students had many positive things to say about the actions taken by the university to promote biodiversity, as shown in table 2. One common theme was that students felt the university was probably doing lots, but that this work was not being showcased or advertised.

![Figure 5. Student’s perceptions of whether the University of St Andrews is doing enough to protect local biodiversity](image)

Table 2. Students perceptions of what the University is doing to protect biodiversity

<table>
<thead>
<tr>
<th>Theme</th>
<th>Key quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growing spaces</td>
<td>‘Albany park community garden is a great place for wildlife’</td>
</tr>
<tr>
<td>Transition</td>
<td>‘Establishing Transition Food waste programs’</td>
</tr>
<tr>
<td></td>
<td>‘The biodiversity interns have a couple of projects planned… to try to improve biodiversity on campus’</td>
</tr>
<tr>
<td>Green societies</td>
<td>‘Green societies are great at promoting biodiversity issues’</td>
</tr>
<tr>
<td>Research</td>
<td>‘Teaching sustainable development, research in fields of biology which will lead to protection.’</td>
</tr>
<tr>
<td>Andrew Melville pond</td>
<td>‘The pond is great for biodiversity’</td>
</tr>
<tr>
<td>Green spaces</td>
<td>By allowing the green spaces within the university’s purview to grow and develop naturally, the university is encouraging natural biodiversity, thereby allowing the ecosystems to balance themselves out without human influence.</td>
</tr>
<tr>
<td>Large sustainability projects</td>
<td>‘The university is making great sustainability progress with Kenly windfarm, the guardbridge biomass project’</td>
</tr>
<tr>
<td>Environment and ethics/hall reps</td>
<td>‘The E &amp; E officer shows that the university is taking these matters seriously;</td>
</tr>
<tr>
<td>Planting trees</td>
<td>‘The tree planting event s have been great’</td>
</tr>
<tr>
<td>Don’t know</td>
<td>‘I don’t know what St Andrews is doing to protect biodiversity’</td>
</tr>
<tr>
<td></td>
<td>‘Not enough done by the university to showcase it’s biodiversity areas even though it’s a ”green” unil!’</td>
</tr>
</tbody>
</table>
Finally the survey asked students about potential biodiversity events and actions for the future, to gauge what students in St Andrews would like to see and be part of. The results of this can be seen in figures 6 and 7. Many students expressed an interest in participating in practical biodiversity volunteering events, such as tree planting, and many were in favour of a university nature trail.

![Figure 6](image)

**Figure 6.** Biodiversity actions that students at the University of St Andrews said that they would attend

![Figure 7](image)

**Figure 7.** Biodiversity features that students would like to see more of at the University of St Andrews
Furthermore, students offered several suggestions and comments regarding biodiversity that are summarised in table 3. Figure 7 shows that simple improvements, like bird boxes and wildflower meadows, would be preferred, and table 3 indicates that the manicured lawns are not always favoured by students.

Table 3. Suggestions and comments given by students for biodiversity at the University of St Andrews

<table>
<thead>
<tr>
<th>Key quotes</th>
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</thead>
<tbody>
<tr>
<td>‘Seems like just flowerbeds and mown lawns’</td>
</tr>
<tr>
<td>‘I would like to see natural habitats that support wildlife, not manicured laws or low value cultivars in flowerbeds’</td>
</tr>
<tr>
<td>‘There is hardly any woodland habitat at all or bird feeding spaces, habitat for bees (i.e. wildflowers) or hedgehogs etc.’</td>
</tr>
<tr>
<td>‘The univeristy could do so much more to redefine what beauty is in a landscape: more than lawns and pretty flowers’</td>
</tr>
<tr>
<td>‘It would be great to know how to make student gardens biodiversity friendly.’</td>
</tr>
<tr>
<td>‘I would like some of the charities that the university and societies support at least include one or two organisations like WWF or the RSPB.’</td>
</tr>
<tr>
<td>‘I would like to see more useful plants: fruit trees &amp; shrubs, fibre plants, medical plants, coppice’</td>
</tr>
<tr>
<td>‘More trees’</td>
</tr>
<tr>
<td>‘There are many otherwise disused places on campus that don’t need their lawns clipped continually... they could instead be turned into a wildlife garden with a small placard explaining the work being done to enhance knowledge on the subject.’</td>
</tr>
<tr>
<td>‘I do understand that places like Sallies Quad need a manicured lawn for the whole image of the university... but there are many other places that could easily be adapted to incorporate more species’</td>
</tr>
</tbody>
</table>

Overall, is it evident that although students recognise that the University is taking steps towards sustainability, they feel that more could be done to promote biodiversity. The following suggestions therefore provide an opportunity to enhance biodiversity engagement at the University of St Andrews.
3 BIODIVERSITY TRAIL

Introduction

Biodiversity or nature trails are a popular way to engage people in the outdoor environment. Nature trails allow people to experience biodiversity first hand, to get some exercise and to relax in the outdoors. They are relatively simple to implement and enjoyable to all members of a community.

Case study

In March 2013 Swansea University opened the Singleton Campus Nature Trail. The Nature Trail encourages students, staff and the community to explore the biodiversity that is located within the university grounds, whilst promoting a healthy, stress free lifestyle. The trail takes around 30 minutes and meanders through a range of environments, including a marsh and woodland. A nature trail map is available to download on the university website and is also available in a hard copy format. Situated along the trail are six information signs that clearly explain the University’s Biodiversity Action Plan and how it is being implemented. The launch of the trail was highly publicised through press releases on the university web page and in articles by the local newspapers. A high profile wildlife television presenter, lolo Williams, officially opened the new nature trail, urging people to use the trail to get away from their computer and as a chance to get outside. A copy of the Singleton Campus Nature Trail map is available at: http://www.swansea.ac.uk/media/Nature%20Trail%20Leaflet_STP.indd.pdf

(Swansea University, 2013)

Recommended Actions

The University of St Andrews Biodiversity Action Plan illustrates that the university estate host a range of diverse habitats that are rich in biodiversity. However, this biodiversity is often unknown to many of the staff and students at the university. A nature trail could showcase the university’s diverse habitats, informing staff, students and visitors of the work that the university is doing to protect biodiversity.
The following are recommendations for a biodiversity trail within the University of St Andrews estate:

- Identify important biodiversity points of interest across the university grounds
  - These sites could include:
    - North Haugh pond area
    - Art History garden
    - David Russell Apartments ‘sedum roof’
    - SUDS pond
    - Albany Park Community Garden

- Create a University of St Andrews Biodiversity Trail Map that identifies these points of interest with a suggested route between them

- Ensure the Biodiversity Trail Map available online and in paper copies that are available to pick up from a convenient location

- Create signs that are situated at the points of interest that explain key features and that also outline the work that the university is conducting to enhance and protect biodiversity

- Hold a launch event that is highly publicised to promote the opening of The University of St Andrews Biodiversity Trail
4 SURVEYS

Introduction

Biodiversity surveys are an important in gaining a comprehensive understanding of the current state of flora and fauna within a university estate. Surveys are often carried out by independent experts and inform important management and planning decisions. However, allowing staff and students to participate in surveys has a range of benefits, including promoting a greater appreciation and awareness of the biodiversity that is present on university grounds as well as transferring important biodiversity identification skills to a range of different people.

Case study

In 2012 the University of Leister conducted a 24 hour BioBlitz survey. Students, staff and the public all came together to do a 24 hour intensive survey of the biodiversity on campus. Over 400 species were identified by more than 100 participants. The event included a well-attended moon lit bat walk where over 45 pipistrelle bats were identified. The results are helping to inform the baseline biodiversity for the university.

Recommended Actions

The following are recommended actions related to biodiversity surveying that would improve biodiversity engagement and awareness amongst staff and students:

- Host a BioBlitz event
- Online up to date survey
- Published survey results
5 WORKSHOPS AND TALKS

Introduction

Workshops and talks provide an opportunity for sharing knowledge and skills. Talks allow students, staff and the community to come together to learn new information that may inspire them to consider biodiversity in a new way or to take more positive actions towards protecting it. Workshops are a friendly environment in which people can socialise whilst learning invaluable skills and completing tasks that may benefit biodiversity, such as learning how to make a nest box.

Case study

During 2012 Newcastle University organised a series of biodiversity workshops, talks and guided trails that promoted biodiversity and encouraged student and staff to engage with the biodiversity on campus. These events were published through the University’s biodiversity twitter account. Guided tree trails, led by the ground manager a man of great expertise in the subject, were carried out throughout the year. As part of the Big University Bird Watch Week the university hosted bird identification talks, walks and bird box building workshops and during Tree Week the university offered talks and a tree festival, involving workshops on willow weaving, bird box building and wood carving. Additionally, the university regularly hosts Knowing Nature Talks, where experts come in to talk about a on a range of natural environment subjects, including tree disease and urban mammals.

(Newcastle University, 2013)

Recommended Actions

The University of St Andrews Biodiversity Action Plan illustrates that the university estate host a range of diverse habitats that are rich in biodiversity. However, this biodiversity is often unknown to many of the staff and students at the university. A nature trail could showcase the university’s diverse habitats, informing staff, students and visitors of the work that the university is doing to protect biodiversity.
The following are recommendations for a biodiversity trail within the University of St Andrews estate:

- Bird box workshops
- Bat walks
- Guided tours
- Identification activities
- Key talks by biodiversity experts
6  WEBSITE

Introduction

University websites are an important means of communicating with staff, students and the wider community. An informative and exciting section on the university website about the university’s biodiversity actions, policy and progress shows students and staff what is happening in an easy to access format. The website can regularly be updated and is a simple way to make biodiversity information available to a wide audience.

Case study

Durham University has a whole series of webpages on its website that are dedicated to biodiversity. These webpages include:

- An introduction to the biodiversity that is present around Durham University’s grounds and the actions being taken at Durham University to protect biodiversity
- An illustrated description of the key habitats that are found on Durham University’s grounds
- An illustrated guide to the biodiversity and wildlife that are found on the university’s grounds
- A biodiversity news page
- An illustrated outline of the biodiversity projects that are occurring at the university
- An online form for students and staff to record biodiversity sightings on
- An updated species record list
- A guided walks programme and guide
- A biodiversity photo e-card competition

The pages are well illustrated and provide the reader with a large amount of useful information that encourages them to get involved in biodiversity at the university.

To view the webpages: https://www.dur.ac.uk/greenspace/internalpartners/biodiversity/

(Durham University, 2013)
Recommended Actions

The University of St Andrews website does contain some information surrounding biodiversity within the University of St Andrews. However, this information is limited and could vastly be improved.

The following are recommendations for improvements to the biodiversity section on the University of St Andrews website:

- Provide a link to the full version of the university’s Biodiversity Action Plan
- Provide an online photographic description of the interesting habitats and species present across the grounds
- Provide a summary of the biodiversity enhancement actions that are occurring on the university grounds
  - Illustrate with case study examples
- Create an online calendar that details university, local and national biodiversity events
- Provide an online opportunity for people to record sighting of species that they have seen on the university grounds, creating an updated species list for the university
- Create a photo gallery of biodiversity actions and sightings
  - Opportunity for a photo competition
  - Opportunity for e-card
- Provide a link to a Nature Trail Map (see above)
- Create an online biodiversity newsletter or blog (see below)
7 VOLUNTEERING

Introduction

Volunteering is known to promote well-being both mentally and physically, as well as allowing people to socialise and to make a positive impact in their community. By volunteering on a biodiversity action on a university estate students and the community are more likely to feel a sense of ownership and belonging.

Case study

Kingston University in London has set up a Biodiversity Action Group which works within the University Campus and the local area to promote biodiversity through practical volunteering. They encourage students, staff and local community to get involved in volunteering tasks such as clearing ponds, biodiversity monitoring and maintaining their nature trail around the campus. The students also voluntarily write a blog on the actions of the group which is published on the university’s website.

(Kingston University Biodiversity Action group, 2013)

Recommended Actions

The University of St Andrews has links with several student societies and organisations that organise environmental volunteering in the region including the St Andrews Voluntary Service, The Wildlife and Conservation Society and Fife Coast and Countryside Trust. However, biodiversity volunteering on the grounds themselves is limited meaning people may feel detached from the biodiversity on the estate. Furthermore the university could provide better links to these organisations to facilitate and promote biodiversity volunteering.

- Create a Biodiversity Volunteer action Group for volunteering events on the University Grounds
• These volunteering activities could include:
  o Surveying
  o Practical actions eg tree planting, litter picking,
• Create an easy to view timetable and list of all the biodiversity events and organisation across St Andrews
• Involves students in design of biodiversity website, trail, etc
8 VISIBLE BIODIVERSITY

Introduction

Often biodiversity can go unnoticed and unappreciated as it is often hidden in the undergrowth or in a dull looking log pile. This can lead to a sense that nothing is being done to promote biodiversity or to a sense of apathy towards the biodiversity that is around us. However, there are plenty of opportunities to create visible landmarks of biodiversity that draw attention to the importance of biodiversity and attract public interest. These visible actions also promote a green image for the area.

Case study

This sculpture, named Lime Tree sculpture, is situated on the Streatham Campus at the University of Exeter. The sculpture forms a seat and table that were sculpted using a tree trunk that was cleared during building developments. The sculpture is an impressive piece of work that invites people to sit down and to consider the natural biodiversity of their surroundings.

(University of Exeter, 2010)

Case study

After revising their Biodiversity Action Plan in 2012, the University of Brighton has integrated new biodiversity improvements into their land management practices. These improvements included creating a very visible and attractive wildflower meadow. The flower meadow is has already been very successful with the first sighting of rare Adonis Blue Butterflies.

(University of Brighton, 2013)
Recommended Actions

The University of St Andrews currently lacks visible signs of biodiversity. Therefore the following provide opportunities to draw attention to biodiversity:

- Willow Sculpture
- Green walls
- Green roofs
- Bird and bat boxes
- Insect and animal homes
- Wildflower meadow
- Orchard and tree planting
9 BIODIVERSITY EVENTS

Introduction

Hosting biodiversity events are a great way to raise awareness about biodiversity and to engage with staff, students and the community. Events often promote a sense of cohesion and provide a great opportunity for people to feel part of a community.

Case study

The University of Exeter is leading the way in terms of its approach to not only enhancing biodiversity on its campus but in trying to engaging staff, students and the local community in this biodiversity. The university published a Biodiversity Monitoring and Community engagement plan which outlines opportunities and events that could be used to increase engagement. So far biodiversity events at the University of Exeter have included:

- Festival of Ecology-involved a race to discover local ecology
- National Tree Week- staff and student volunteers planted two new hedgerows containing over 400 trees to promote wildlife
- Wildlife In The Built Environment- staff, students, environmental enthusiasts and local architects enjoyed four dynamic speakers sharing their advice for a biodiverse world.
- Bioblitz-event involved over 150 volunteering students, academics, members of the public and was launched by celebrity Nick Baker
- Series of practical events including tree and wildflower planting

(University of Exeter, 2013)
Recommended Actions

The following are recommendations for events that would engage and promote biodiversity:

- Planting events e.g. tree planting
- Festivals-including workshops, talks etc.
- Walking events
- The table below outlines possible annual international and national events that the University could engage with:

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Further Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>World Environment Day</td>
<td>June</td>
<td>[<a href="http://www.unep.org/wed/about/">http://www.unep.org/wed/about/</a>]</td>
</tr>
<tr>
<td>RSPB Bird Watch</td>
<td>January</td>
<td>[<a href="http://www.rspb.org.uk/birdwatch/">http://www.rspb.org.uk/birdwatch/</a>]</td>
</tr>
<tr>
<td>National Nest Box Week</td>
<td>February</td>
<td>[<a href="http://www.bto.org/nnbw/index.htm">http://www.bto.org/nnbw/index.htm</a>]</td>
</tr>
<tr>
<td>Big Butterfly Count</td>
<td>July-August</td>
<td>[<a href="http://www.bigbutterflycount.org/">http://www.bigbutterflycount.org/</a>]</td>
</tr>
</tbody>
</table>

- Create an online biodiversity newsletter or blog (see below)
10 RESEARCH AND LEARNING

Introduction

The university grounds and the green spaces in St Andrews provide an excellent space for learning. Local fieldtrips within the schools of biology and geography already make use of this natural laboratory but this could be applied across a range of other disciplines.

Case study

Exeter University is promoting their grounds as a living laboratory for research and assessing sustainability issues. Their aim is to create a campus that serves as a ‘community based living laboratory for identifying, evaluating and assessing indicators of progress toward greater sustainability.’ This encourages students and staff to use the grounds and local biodiversity as part of their learning, research and teaching. The Living Laboratory Map has been produced to illustrate the use of the University campus for teaching, research and community engagement purposes, demonstrating to others the range of biodiversity related activities that are occurring.

(University of Exeter, 2014)

Recommended Actions

- Utilise the grounds of St Andrews for learning and teaching.
- Create an online open map of biodiversity that promotes learning from the biodiversity in the grounds of the University.
A blog or newsletter provides another accessible form of communicating important information regarding biodiversity to staff, students, and the public. Blogs and newsletter can inform people of the actions that are being undertaken to preserve biodiversity and can encourage their involvement in these activities. Blogs and newsletter can also be a forum for discussion and description of the biodiversity that is present on the University Grounds. These publications can be made and managed by students allowing them to gain valuable work experience as well as promoting a sense of pride and ownership over the university’s biodiversity.

Case study

The Whiteknights Biodiversity Blog was set up in order to improve student and public access to the records that have been gathered on the University of Reading’s biodiversity and wildlife. The blog also encourages local participation in the seasonal recording of wildlife on campus. Blog posts cover a wide range of topics including activities on campus, descriptions of campus wildlife found and outlines of recent research on biodiversity that has been done by the university. (Whiteknights biodiversity, 2013)

Recommended Actions

Transition at the University of St Andrews has an existing blog and newsletter that discusses environmental issues across the university and the town. However, biodiversity has not really featured in this blog and is such a big topic that it deserves its own blog and newsletter.

- Create a Biodiversity Blog for the University of St Andrews
  - This blog should be run and managed by students
  - Topics covered could include:
    - Biodiversity events
    - A description of campus biodiversity
    - An outline of current biodiversity research
- Create a news section on the webpage that describes all biodiversity news on campus
12 CONCLUSIONS

Conclusion
Overall the survey results indicate that students at St Andrews are interested in engaging with biodiversity and feel that the University has a responsibility to do more to protect biodiversity. The University would benefit from improved biodiversity engagement. This would increase wellbeing, promote a positive green image and help raise awareness of the importance of sustainability and biodiversity.

Summary of Recommended Actions

<table>
<thead>
<tr>
<th>Recommended Action</th>
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<tbody>
<tr>
<td>Biodiversity Trail</td>
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<tr>
<td>Surveys</td>
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<tr>
<td>Workshops and Talks</td>
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<tr>
<td>Website</td>
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<tr>
<td>Volunteering</td>
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<tr>
<td>Visible Biodiversity</td>
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<tr>
<td>Biodiversity Events</td>
</tr>
<tr>
<td>Research and Learning</td>
</tr>
<tr>
<td>Blog and Newsletter</td>
</tr>
</tbody>
</table>

For more information on any of the ideas within this document please use the reference list below. These provide links to the website of other university projects and provide more detailed examples of ways to promote biodiversity and to increase engagement.
13 REFERENCES


University of Leicester (2012) *BiobBlitz*. Available online: http://www2.le.ac.uk/offices/estates/environment/biodiversity/events (Accessed 27/12/13).
