Bioblitz

Evaluation Report

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Summary

The present work is part of a post-doctoral research project, *Generic Venues: Researching the impact of science communication in non-traditional locations*. This in-depth public engagement research project involves a thorough investigation of best practice in science communication within 'generic' venues - locations where audiences naturally congregate and have 'ownership' of the site; spaces that are not normally associated with scientific learning. The research is taking place at the Science Communication Unit (SCU) at the University of the West of England, Bristol (UWE, Bristol) and is funded by the Fundação para a Ciência e Tecnologia[1], a Portuguese governmental institution.

This report summarises audience-based evaluative data from activities which took place at 'Bioblitz'[2], an initiative of the Bristol Natural History Consortium[3]. These activities were used as a case study for the research project mentioned above.

[1] http://alfa.fct.mctes.pt/index.phtml.en

[2] http://www.festivalofnature.org/education.php?pageid=275&parentid=0

[3] http://www.festivalofnature.org/

Table of Contents

1. Introduction

The *BioBlitz 'is a special type of field study, where a group of scientists and volunteers conduct an intensive 24-hour (or 48 hour) biological inventory, attempting to identify and record all species of living organisms in a given area. The area chosen is often an urban park or a nature reserve of some sort.'*[4]

In June 2009, a BioBlitz took place at the Ashton Court Estate in Bristol. This BioBlitz was '*a 30-hour race against the clock event where scientists, naturalists, students, members of the public, schools and community groups work together to find and identify as much wildlife as possible in the Ashton Court Estate*'[5].

1.1. Venue

Ashton Court Estate is a historic area to the west of Bristol. According to Bristol City Council, it is the UK's third busiest country park, with around 1.6 million visitors every year. The estate is open every day from 8am, there is no entrance fee and the car park is also free.

1.2. The activity

The BioBlitz ran from 9am Friday 26th June – 3pm Saturday 27th June 2009. The event was open to the public from 9am – 9pm on the Friday and 9am – 3pm on the Saturday as well as on Friday night for evening activities (bat walks and moth trapping).

The organisation set up Base Camp near the visitor centre (off the Kennel Lodge Road/Clanage Road (A369) entrance), which consisted of 2 large marquees. One marquee included the Identification (ID) Tent, where was possible to identify species. The other one was the Discovery Tent, which included an exhibition area. Outside Base Camp there were 5 main survey areas (Figure 1, signed with butterflies). There was a relatively long walk between Base Camp and some of the survey areas.

On the Friday, prior arrangements allowed local schools to participate in the event. There was some rain on the Friday but the weather was sunny and bright on the Saturday.

[4] http://en.wikipedia.org/wiki/BioBlitz

[5] http://www.festivalofnature.org/education.php?pageid=312&parentid=275&public=0

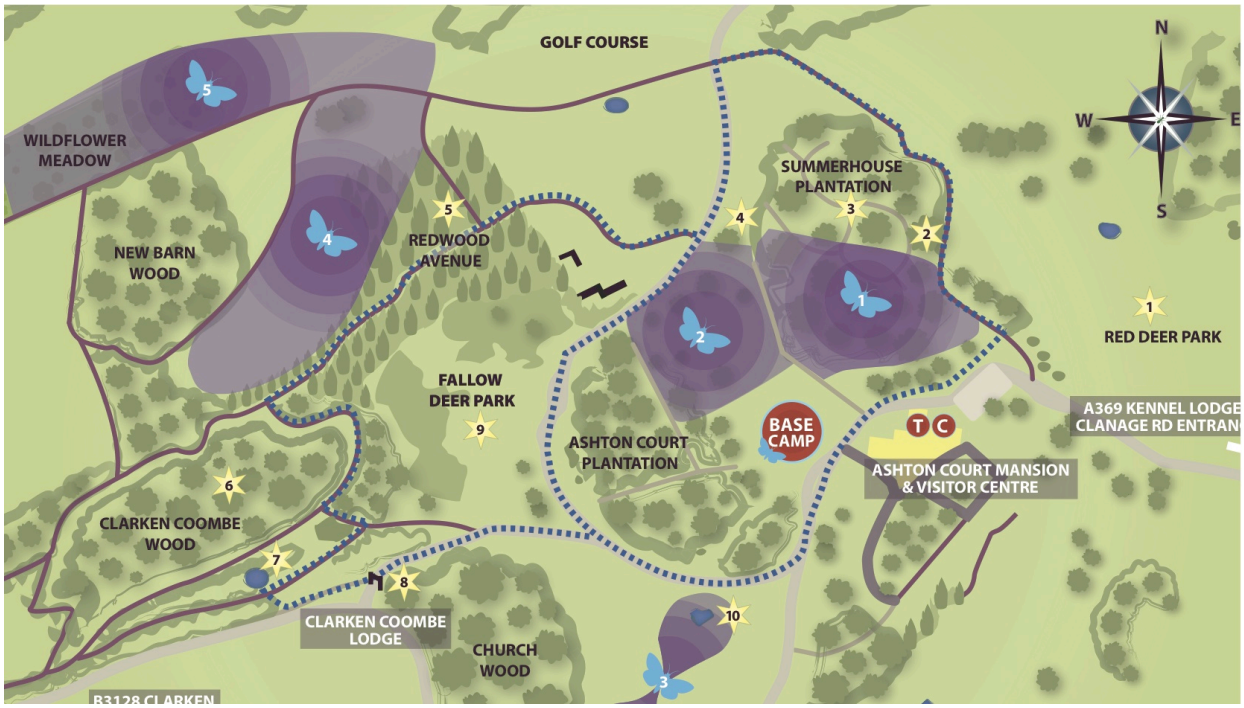

Figure 1. Map of the BioBlitz site.

Figure 2. Base Camp: the Discovery tent and the ID tent.

Figure 3. Inside the Discovery tent, where it was possible to visit an exibition.

Figure 4. Inside the ID tent, where it was possible to identify species that were collected during the survey.

Figure 5. BioBlitz: naturalist, volunteers and members of the public surveying an area.

2. Evaluation methodology

A variety of evaluative techniques were employed in order to judge the effectiveness of the activity in the chosen venue. Through the application of multiple complementary methodologies a range of both quantitative and qualitative data was collected. The participants' reactions to the event were collected in four ways:

- Exit survey - Participants filled in anonymous self-completion questionnaires throughout the two days of the event. The questionnaires took the form of a single side of A4 and included both open and closed questions. A copy of the questionnaire is included as Appendix I.

- Exit interview - 'Snapshot' interviews (~90 seconds' duration) took place with members of the public across the two days of the event. 'Snapshot' interviews are specifically designed to capture short and immediate feedback from participants in busy locations. A copy of the audience interview schedule is included as Appendix II.

- Observations - The activities were observed by the evaluator, who took extensive contemporaneous notes on the size, composition and reactions of the participants. A copy of the observation schedule is included as Appendix III.

- Staff interviews - Interviews took place with staff involved in both managing (organisers and volunteers) and delivering (naturalists) the activities. Staff members were asked to provide both formal and informal feedback of their impressions of the event. A copy of the staff interview schedule is included as Appendix IV.

2.1. Ethical issues

Ethical approval for the research element of this project was granted by the University of the West of England, Bristol after the submission of appropriate procedural details to the relevant Ethics committee. Participant anonymity was maintained throughout the data collection and analysis phases, and the interview participants provided informed consent prior to participating. In the case of participants under 16 years of age their parents / carers provided oral informed consent prior to any interviews commencing. In addition, notices were placed in conspicuous locations within the stall area whenever observations were taking place.

3. Metrics

For this activity, 4 schools (3 primary schools and 1 secondary) and 180 students participated. 70 naturalists, scientists and guides, 15 Media team volunteers and 30 general volunteers were involved in the activity over the course of the two days. From the headcounts done during the observations periods there were 101 people engaging with these activities. The observations were only limited periods (5x 15 minutes each) and the activity took place during 2 days.

4. Questionnaire

The questionnaire aimed to evaluate four aspects:

a) Audience demographic

b) How the audience enjoyed the activities

c) The educational value of the activities

d) Whether the activities had an effect on the audience's attitude towards science

Participants' responses within the questionnaire are included in this section. In total, 17 participants completed questionnaires, and the vast majority was completed by school students (15 questionnaires). This is a low number in relation to the total participants number: the general public participation was lower than expected, which increased the difficulty in recruiting participants for the evaluation.

4.1. Audience demographics

Of the 17 questionnaires completed, 15 participants (88%) were under 15's: 3 participants were 10 years old and 12 participants were 11 years old. An additional 2 participants were within the age range 20-29. The gender balance of respondents was 16 females and 1 male.

In order to provide an indication of the geographical reach of the event participants were asked for the first part of their postcode. From Table I it is clear that all the participants came from the Bristol postcode area. These results were expected since 88% of the respondents were school students, visiting the event with their local schools.

Table I. Geographic distribution of the audience.

Postcode area name	Frequency
BS3 (Bristol)	2
BS4 (Bristol)	8
BS5 (Bristol)	4
BS7 (Bristol)	1
Missing answer	2

4.2. Enjoyment

The participants' enjoyment of the activity was investigated via a series of inter-related questions:

1. *Did you enjoy this activity?*
2. *Would you recommend this sort of activity to others?*
3. *Which part of the activity have you enjoyed the MOST?*
4. *Which part of the activity have you enjoyed the LEAST?*

Results on levels of audience enjoyment were generally positive (Figure 6): 58% (n=10) of the participants said they either 'loved' or 'liked' the activity. Only 1 participant 'hated it' and 3 'disliked it'.

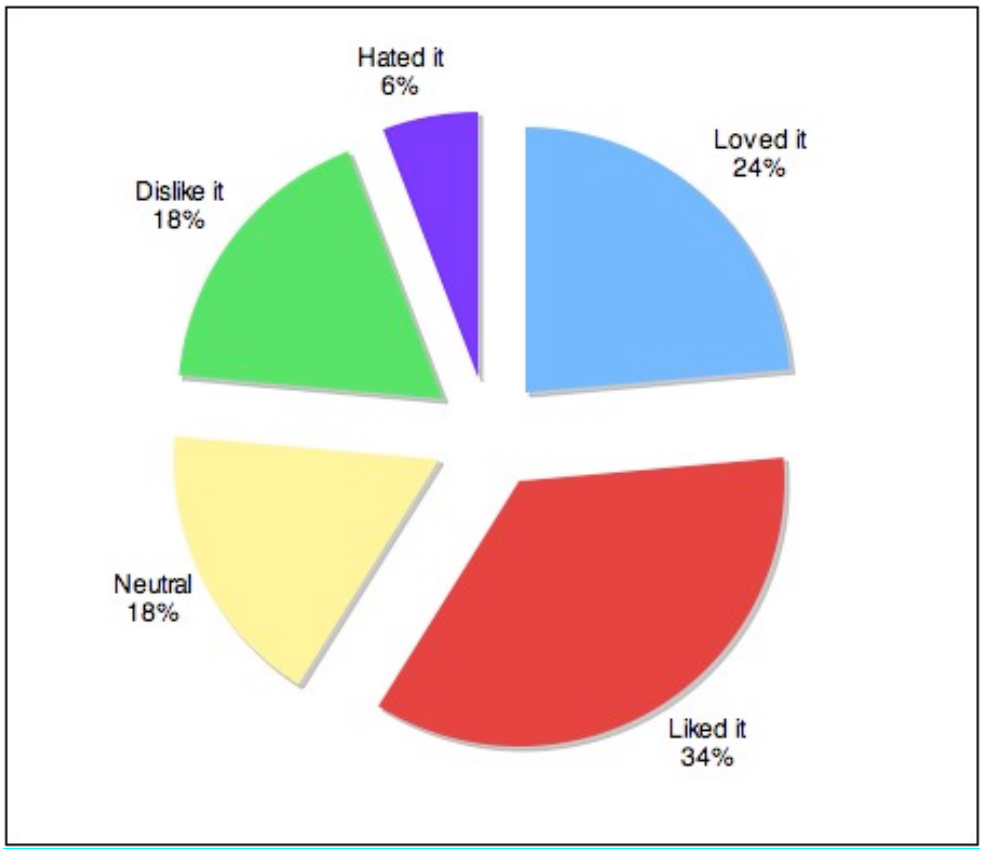

Figure 6. Audience enjoyment of the activity.

Five participants stated they would recommend this activity to others and another 5 said they would not recommend it. Six participants felt they would probably ('maybe') recommend BioBlitz (there was 1 missing answer to this question).

The most enjoyable aspect of the activity was finding bugs and identification (n=8) and going into the woods (n=3). Participants were also invited to leave open comments to explain the aspects they enjoyed the most. Other responses mentioned here included:

'*Hiking and seeing different things.'* (11-year-old female)

'*Catching a caterpillar.'* (11-year-old female)

'Being outdoors.' (20-29 year-old female)

When asked to identify the aspect of the activity that they enjoyed the least, 3 participants said 'nothing', while another 3 participants said 'all of it'. Other responses include 'too long' (n=2) and 'walking through tall grass' (n=2). Some comments in the open section of this question included:

'Learning about fungi.' (10-year-old female)

'When I slipped.' (11-year-old female)

'More information tents would be interesting.' (20-29 year-old female)

4.3. Learning

When asked if they had learnt something from the activity, 76% (n=13) said 'yes' (7 out of 13 respondents did not give any further details) and 24% (n=4) 'no'. Probing this further to investigate what form that learning took resulted in comments including:

'About lichens.' (20-29-year-old female)

'That lichens are plants.' (11-year-old female)

'What plants are called.' (11-year-old female)

4.4. Attitudes towards science

The participants' attitudes towards science both before and after the activity were investigated via separate questions:

6. What did you think about science before today?

7. Do you think that this activity has changed your attitude towards science? If Yes, in what way?

Figure 7 shows that almost half the participants (n = 8; 48%) 'loved' or 'liked' science before this activity, but 24% (n = 4) 'disliked' it or even 'hated' it. A further 29% (n = 5) were neutral towards science prior to participating in the BioBlitz.

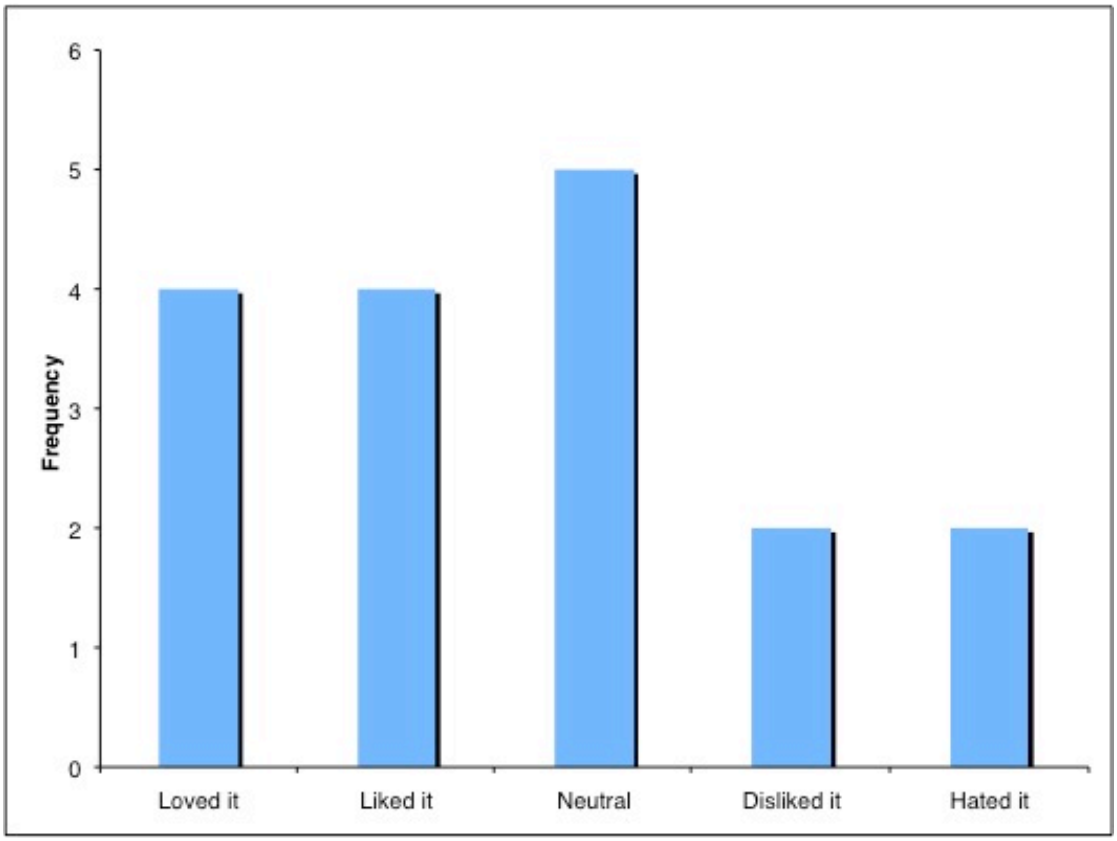

Figure 7. Participants' answers to the question '*What did you think about science before today?*'.

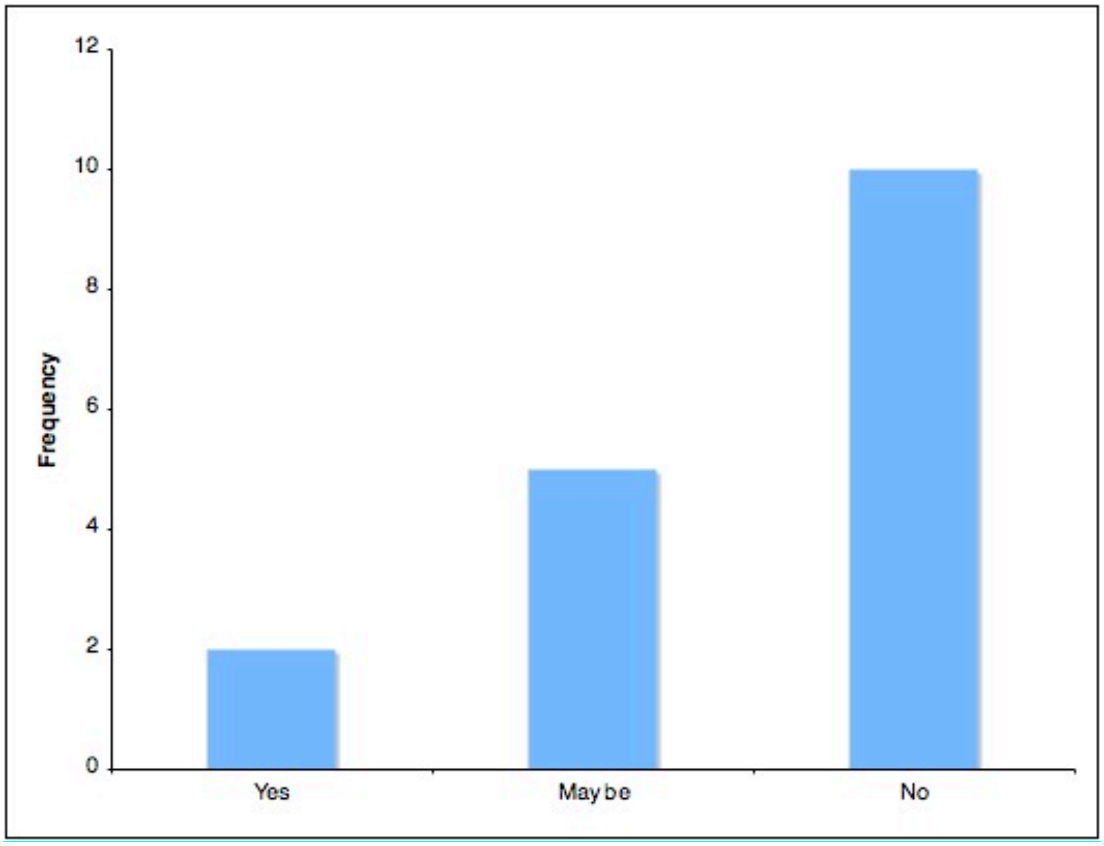

Figure 8. Changes in participants' attitudes towards science.

Only 2 participants said that the event had changed the way they felt about science (Figure 8) whilst 10 said it had not and 5 stated 'maybe.' When asked to further explain the way in which the event changed participants' attitudes, only one respondent added a comment:

> *'It's more fun.'* (11-year-old female)

In general, the event served to stimulate those who already enjoyed science. Attitudes towards the activity were generally positive, and the event even succeeded in changing some people's attitudes towards science, including their dislike.

5. 'Snapshot' interview results

Only 10 snapshot interviews were conducted over the course of the event, based on a semi-structured interview schedule and using an audio recorder. Once transcribed the interview contents were analyzed to identify common themes. This low number was due to the low number of general public engaged with the BioBlitz activities. Although there was a fair amount of people visiting Ashton Court on the Saturday, they did not seem to be attracted by the activities.

5.1. What attracted visitors

Members of the public engaged with the activities for different reasons. There were two main reasons that attracted the participants to the activities: either they learnt about it and went there or they went with their school. Some specific comments:

> *'I did know it was on so that's why I came. I heard about it at the nature exhibition [Festival of Nature].'*
>
> *'Heard about it from a colleague I was working with yesterday, who works for the BBC.'*
>
> *'I heard that bug hunting was going on, on the television.'*
>
> *'Someone from school post it on the group and we got to know.'*

5.2. Overall satisfaction

The feedback for the BioBlitz activities was generally positive. Answering the question 'How did you enjoy this activity?' participants responded:

- *'It was very good, my little boy liked it as well.'*
- *'It's great fun.'*
- *'It was ok, I sort of liked it.'*
- *'It was ok.'*

As their favourite part of the activity, participants pointed out a specific aspect such as being with someone with knowledge, looking at bugs, the practical experiments (such as using the microscopes) and the hands-on factor.

As for their least favourite part of the activity, comments included:

> *'Nothing' (8 out of 10 interviews)*
>
> *'It just says something like Tally 300 and it would be good to have more or at least to know where you could go to find out what plants, mammals, invertebrates and so on…'*

5.3. Purpose of the activity

During the interviews, audience members were asked what they thought the purpose of the event was. Common themes and specific comments are summarized in Table II.

Table II. Perceived purpose of the activity.

Common themes	**Example comments**
Learn about the environment/nature	*'To sort of teach kids a bit about nature.'* *'To learn more about nature and the natural world.'*
Surveying	*'To monitor wildlife and biodiversity.'* *'Scrutinising the area and see what species are around.'*
Learn in a fun/practical way	*'To learn in a fun way and it's quite hands-on.'* *'To combine learning with fun.'*
Other	*'To try and raise awareness of the biodiversity that is on the doorstep of people that live in the city.'*

5.4. Attitudes towards science/physics

Answers to the question 'How do you feel about science more generally?' can be grouped into 4 overarching categories:

- Like it
- It's very interesting
- It's important
- It's ok

Some specific comments:

> *'I like science, it's really good.'*
>
> *'I'm not a scientist but I always been quite interested in natural history of science.'*
>
> *'It's not my favourite thing… it's ok.'*

'I think it's a really important subject, without it half of the things that work we wouldn't know why or how.'

5.5. Future events

Nine participants said that they would like to participate in a similar activity again in the future and one said 'maybe'. Some people expanded their answers:

'Yeah yeah, I would definitely.'

'Yes, I would… and quite possible to help volunteering.'

'If it's possible with the time and everything, yeah!'

6. Staff interviews results

As part of the evaluation process, 4 staff members were interviewed in order to collect their feedback. The main findings from these interviews were:

- **Enjoyment:** all staff interviewed enjoyed being involved in the activities, although for different reasons:

  'It's nice to see the enthusiasm of the children yesterday and the general public today.'

  'It's really nice to see it all coming together.'

  'Because there are a lot of professionals sharing their knowledge.'

  'Because I like working with children and see them sort of in an out-of-school context.'

- **Motivation:** staff interviewed had different motivations to participate:

  'I got asked by my boss!'

  'My employer allows me 2 days a year for environmental work, so I choose to attend this event because it's quite relevant to what I do at work.'

  'I would like to be involved in organising this sort of event in the future, so I had to do some experience as a steward first.'

- **Purpose:** in their opinion the purpose of the activity was public awareness of biodiversity, what is just around the corner from a major city, to get people outside, to collect useful records and to get children interested in nature.
- **Visitors' reactions:** staff members were very pleased with the audience reactions and felt they were very interested in the activities. They also felt it was very easy to engage the audience with the activity and that children were pleased to be outside the classroom.
- **Favourite aspect of being involved:** Aspects mentioned by staff were meeting and learning from other experts, to see the naturalists talking to the public and people's positive reactions.
- **Least favourite aspect of being involved:** working on a Saturday / arrive early and lack of activity planning were the aspects mentioned.

- **Improvement:** The main suggestion was better scheduling of the activity and more activities for kids, rather than just survey and identification.
- **Future participation:** All staff interviewed would like to participate again in similar activities.

7. Successes and challenges

7.1. Successes

- The activity strengthened the public engagement expertise within the local naturalist community and volunteers and inspired them to become involved in further events in future.
- Staff recruited (volunteers, naturalists and guides) were very committed to the BioBlitz and very happy to share their knowledge and experience with members of the public and students.
- The location of Base Camp was appropriate: passers-by could see it from a distance.
- The layout in the tents and the use of colourful and attractive displays made the visitors want to go inside.
- Participants looked very comfortable while engaging with the activities and with the naturalists, guide and volunteers. Participants did answer questions posed during the activities and also provided their own questions and comments. The overall feeling was that participants wanted to know more and had a very active approach to the experience.
- The number of species found was high, and that number surprised the public: they did not expect that such a high number of different species in a public park like Ashton Court.

7.2. Challenges

- A visual display explaining, in a simple way, what the BioBlitz is would be very helpful. Although there was a big and attractive banner near the entrance of Ashton Court, the information provided was not enough and many people didn't understand what was going on.
- Some members of the public were attracted to the marquees, but for several reasons no staff member engaged with them, and they just walked away. The engagement with the general public needs to be improved: e.g. some volunteers could be previously trained to attract and engage passers by with the event.
- A better scheduling of the activity is needed: there were moments where members of the public were interested in going out and surveying, but there was no information about which experts were surveying and where.
- Although participants were very keen on going out and surveying, some mentioned that the activity was too long. More flexibility is needed and maybe smaller survey periods are a better option.

8. Conclusions

A venue such as Ashton Court is an appropriate location for an event like BioBlitz. It's near the city centre and there is no entrance fee. It's also a place that naturally attracts visitors on a regular basis. From a public engagement perspective, the event was overall successful and was able to engage with a reasonable number of members of the public, who enjoyed the activity and were keen to participate in future similar events.

APPENDIX I - Questionnaire

Thank you for taking the time to complete this questionnaire. Completing this questionnaire indicates that you give consent for this data to be used in this research study. All data will be treated anonymously and confidentially.

1. What attracted you to this event today?

☐ Walking past / happened to be here ☐ Learnt about it so came by ☐ Other

2. Did you enjoy this activity?

☐ Loved it☺☺ ☐ Liked it☺ ☐ Neutral😐 ☐ Disliked it☹ ☐ Hated it☹☹

3. Would you recommend this sort of activity to others?

☐ Yes ☐ Maybe ☐ No

4. Which part of the activity have you enjoyed the MOST?

5. Which part of the activity have you enjoyed the LEAST?

6. Did you learn something from the activity?

☐ Yes ☐ No **If YES, what have you learnt?** _____

7. What did you think about Science before today?

☐ Loved it☺☺ ☐ Liked it☺ ☐ Neutral😐 ☐ Disliked it☹ ☐ Hated it☹☹

8. Do you consider yourself a scientist?

☐ Yes ☐ Maybe ☐ No

9. Do you think this activity has changed your attitude to Science?

☐ Yes ☐ Maybe ☐ No **If YES, in what way?**_____

10. What is your gender?

☐ Male ☐ Female

11. What is the first part of your postcode? _____

12. What is your age?

☐ Under 15 – please write your age here:__

☐ 15-19 ☐ 20-29 ☐ 30-39 ☐ 40-49 ☐ 50+

13. What is your highest science qualification? (note that this question does not reflect your highest qualification more generally, which could be at any level)

☐ None ☐ GCSE or equivalent ☐ A level or equivalent ☐ Undergraduate degree ☐ Postgraduate degree ☐ Other:_____

Please keep this pen, it's yours! **Thank You!**

APPENDIX II - Snapshot Interview Schedule

Thank you very much for agreeing to participate. It won't take very long and I'd appreciate it if you could be as honest as possible regarding what you think about this activity.

- What attracted you to this event today?

  - Where you walking past, happened to be here or did you learn about it and cam by?

- How did you enjoy the activity?
- What was your favourite aspect of the activity?
- What was your least favourite aspect of the activity?
- What do you think the purpose of this activity was?
- How do you feel about science more generally?
- Would you like to participate in this sort of event again?

Thanks very much for participating!

Additional questions:

- Would you like to find out more about anything you did or saw?
- Have you ever participated in a science-related event like this one?

Finally, some quick questions about you:

- Do you have any qualifications in science? (If not, that's not a problem, I'm just curious to know the audience)
- What is the first part of your postcode?
- Anything you want to add about the event that hasn't already been covered?

Thanks!

APPENDIX III - Observation Schedule

Location:_____Date:_____Time:_____

Record the following observations over a 10-15 minute time window:

<table>
<tr><td>General Problems?
(accessibility, logistics, weather, scheduling, etc)</td><td colspan="3"></td></tr>
<tr><td>Audience Males</td><td colspan="3"></td></tr>
<tr><td>Audience Females</td><td colspan="3"></td></tr>
<tr><td>Audience Type (size of groups, multi-generational, age range?)</td><td colspan="3"></td></tr>
<tr><td>Staff:
(Age, appearance, confidence, enthusiasm)</td><td colspan="3"></td></tr>
<tr><td>Engagement:
(How were they attracted to the stall? Do they get involved or just observe (watching, asking q’s, touching equipment, taking brochures))</td><td></td><td>Count Observers:</td><td>Count Participants:</td></tr>
<tr><td>Dwell time:
(How long are they staying?)</td><td colspan="3"></td></tr>
<tr><td>Group dynamics
Are they talking to each other? Is conversation about the activity? Are they working together or as individuals?</td><td colspan="3"></td></tr>
<tr><td>Comments made or questions asked:
(lecture / discussion?)</td><td colspan="3"></td></tr>
</table>

Diagram of the Venue (see reverse please)

APPENDIX IV - Staff Interview Schedule

Thank you very much for agreeing to participate in this interview. It won't take very long and I'd appreciate it if you could be as honest as possible regarding what you think about this activity.

1. Did you enjoy participating in this activity?
Why?

2. What motivated you to participate in this event?

3. What did you think was the purpose of the event?

4. How did the visitors respond?

5. How easy of difficult was it to engage the audience in this activity?

6. What was you favourite aspect of being involved in the activity?

7. What was your least favourite aspect of being involved in this activity?

8. What sort of feedback did you get from the audience?
e.g. did any of them approach you with questions or comments?

9. How would you improve this activity?

10. Would you like to participate in a similar event again in the future?

Thanks very much for participating.