FSC BioLinks Activity Plan

Component of the BioLinks project application to the Heritage Lottery Fund
HG 15 01220

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The RSPB State Of Nature Report 2016 tell us that…

Nature is in trouble

Using modern Red List criteria, which identify species of the highest conservation concern, **we assessed 8,000 species. Of these, 15% are extinct or threatened with extinction** from Great Britain.

Over

7,500,000

volunteer hours go into monitoring the UK's nature every year.

From the Isles of Scilly to Unst, St Kilda to Lowestoft, volunteers have covered the four corners of the UK.

Much of this data was used in the State of Nature Report

© State of Nature Report 2016

This report was produced through the FSC BioLinks project, funded by the Field Studies Council and National Lottery Heritage Fund.

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Executive Summary

It is generally accepted that conservation of natural heritage is important to people, communities and the environment. However, invertebrate species populations, distributions and ecology are generally poorly understood in comparison to vertebrate and plant populations. It largely falls to volunteer biological recorders to tackle this data deficit, who often face barriers to their skill development through a lack of a cohesive and complete learning pathway. This in turn weakens both the national and local biological recording communities as organisations struggle to remain sufficiently resilient to support their volunteers and improve our understanding of natural heritage.

The development phase of FSC BioLinks involved extensive consultation with both existing volunteers and sector professionals to shape the project vision, aims and activities. From this the FSC envisages that…

"**BioLinks** will develop nature's existing guardians and engage a new generation to record and tell the story of natural heritage. This will be achieved by offering structured personal development for volunteers and strengthening the biological recording community through working with an extensive network of affiliates."

In order to achieve this vision, FSC BioLinks will developing existing volunteers and reach out to new audiences, including young adults and those with learning difficulties. The project will ensure that project activities are inclusive and will provide an evidence base regarding gender equality in the Biodiversity sector.

An ambitious timetable of project activities will benefit natural heritage, people and communities through training, support, resource production and evolving the FSC's use of digital developments.

Evaluation, sharing lessons and legacy will all be important considerations for FSC BioLinks from project development through to the handing over of legacies upon project completion. The **FSC BioLinks Activity Plan** outlines why and how the FSC plan to achieve this in full, alongside the appended documents and the **FSC Project Business Plan**.

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1.1 Recording biodiversity in the UK

1.1.1 The state of nature

The loss of British wildlife is continuing at an alarming pace. Over half of our key species are in decline, reducing our local environments resilience to future changes. In 2013, an unprecedented report through the collaboration of 25 non-governmental organisations involved in biodiversity monitoring was published. The State of Nature 2013 Report presented an evidence-based assessment of changes to biodiversity over the past 50 years. In 2016 an updated State of Nature 2016 Report was published, this time as a result of a collaboration between 50 nature conservation and research organisations. This report states:

> *"The **loss of nature in the UK continues**. Although many short-term trends suggest improvement, there was no statistical difference between our long and short-term measures of species' change, and no change in the proportion of species threatened with extinction."*
> **State of Nature Report 2016**

The report relied heavily on the large amount of data gathered by an army of volunteer biological recorders that have been identifying and recording the UK's wildlife over the past 50 years. This data was used to analyse the population trends for those species where sufficient data had been gathered. Amongst the headlines resulting from analysis were the following conclusions:

This report also confirms our understanding that the current assessment of UK wildlife is based on a limited number of species and invertebrates are seldom used. This demonstrates that invertebrates, alongside fungi, lichens and mosses are important indicators which are not fully understood and therefore at risk.

With evidence telling us that nature is declining and an increased extinction rate is a real, and current, threat to British species, the risk to the conservation of under-recorded species groups is huge as we have no quantitative measurements to support conservation and planning decisions. This presents us with a situation where species could be wiped out before they are properly understood and dangers to their existence have been established.

Under-recorded species, such as the rarely recorded earthworm Dendrobaena pygmaea, could become modern day examples of the dodo if action is not taken to ensure that all UK wildlife, and not just the popular groups, are recorded and monitored.

1.1.2 Nature's volunteer guardians

Biological recording has been both a pastime and moral mission for amateur naturalists in Britain since the Victorian era. This provides Britain with an impressive army of passionate and skilled volunteers to undertake important biodiversity monitoring activities that the UK government relies on to inform policy and make decisions.

> *"We are fortunate that the UK has thousands of dedicated and expert volunteers recording wildlife. It is largely thanks to their efforts, and the role of the organisations supporting them, that we are able to chart how our nature is faring."*
> **State of Nature Report 2016**

These volunteers are often trained by other volunteers or charitable organisations where resources are limited. From the individual volunteer's perspective, it can be difficult to develop the skills and knowledge needed to identify and record some of the more difficult-to-identify species groups, such as slugs, beetles and bees.

Some organisations, such as the FSC and the Wildlife Trusts, provide a large number of training courses in the area of species identification. However, generally the more difficult and under-resourced a species group is, the fewer the number of courses there are. There is a lack of consistency both within and between organisations regarding the categorisation of course difficulty levels. This in turn leads to gaps in sector training provision and fails to give volunteers the development opportunities that are required to provide a comprehensive training structure.

Volunteers, like career professionals or full-time students, would benefit from a clearly-defined and structured training plan. Furthermore, evidence from **Appendix I FSC BioLinks Consultation Report** suggests that both volunteers and biodiversity training providers would welcome a more structured framework that that could be used in partnership between different biodiversity organisations to facilitate and monitor volunteer development.

In addition to clearer development pathways, volunteers also require support and mentoring in order to develop their skills. Feedback from volunteers participating in previous FSC biodiversity projects (see Section 1.2.1 on page 10) have all demonstrated that mentoring and support are one of the most important factors in facilitating identification course attendees to develop into active biological recorders. Many of the current sector mentors are volunteers and their time and resources are limited. Funded projects, such as Invertebrate Challenge, allow increased access to a mentor (in the form of project staff) enabling volunteers to develop at an accelerated rate to become mentors themselves.

Without a structured plan for volunteer biological recorder development, the biodiversity sector will struggle to fill the gaps in training provision and provide volunteers with the development opportunities that they want and deserve.

1.1.3 A fragmented network

The UK has a well-developed network of organisations involved in biological recording, resulting from its long history of observing and recording natural heritage. However, the sheer size of the network means that relationships between different organisations are often complex and differ from region to region. Many of these organisations are volunteer-led, and even those that can afford to hire staff often have extremely limited resources due to the current economic climate and ever-reducing funding to the biodiversity sector from government.

Some of the types of organisation that are involved in biological recording include:

National Biodiversity Network (NBN) This network consists of non-governmental organisations and government agencies involved in biological recording (including many organisations from the categories below). In addition to managing the taxonomic species dictionary for the UK and producing guidance for the biological recording community, the NBN manages the portal through which biological records can be accessed by users and, ideally, where all biological records should end up (currently this is the NBN Gateway and from spring 2016 this will be the new NBN Atlas).

National Recording Schemes & Societies (NRSSs) National recording schemes collate and verify species records from volunteer biological recorders and other sources for a defined group of organisms and provide guidance on the recording of the species they cover. The size of the species group these schemes cover can range from relatively few species (such as the Earthworm Society of Britain) to larger species groups (Such as the Bees, Wasps & Ants Recording Society) or even a very large and diverse groups of species (such as the Botanical Society of Britain & Ireland). The NRSSs receive support from the publicly funded Biological Records Centre (BRC).

Local Environmental Records Centres (LERCs) LERCs are organisations that collate and manage biological records for a defined geographic area (for example the Cumbria Biodiversity Data Centre collates biological records for the county of Cumbria). Biological recorders may send biological records (of any species) to LERCs to be added to their database for the area they cover. LERCs are able to interpret the local importance of biological records (for example the location of European Protected Species records in relation to planning proposals) and may have contacts for species experts for some groups. An Association of Local Environmental Records Centres (ALERC) was formed in 2009 and many LERCs are now members.

Local natural history groups and societies Local groups are also of huge importance to the biological recording community and these can consist of general natural history groups (such as the London Natural History Society) or groups that cover certain species (such as the Hertfordshire Moth Group). Although a national natural history society, the British Entomological & Natural History Society, has a strong local presence in areas where it has facilities (such as Berkshire, where its headquarters are located).

The biological recording community would benefit from projects that improve the working relationship between different organisations and link the current initiatives and services that these organisations provide for volunteer biological recorders.

1.2 The Field Studies Council

For over 70 years Field Studies Council (FSC) has been providing fieldwork and first-hand learning in the outdoors to people of all ages. We aim to inspire environmental understanding for all through first-hand experience

A large proportion of the FSC's work involves providing high quality curriculum-based Geography and Biology fieldwork courses. The charity is a secondary (Key Stage 3, GCSE and A level) specialist but Key Stage 1 & 2 courses are also offered. Further to facilitating schools, the FSC nurtures young people's interest in the environment through its science camps and Darwin scholarship programmes. Family activity holidays and 'Eco-Adventures' (a mix of environmental and outdoor adventurous activities) are also offered.

FSC is renowned and respected for a wide range of special interest courses for adults ranging from the study of habitats and taxonomic groups to painting and photography, professional training courses for teachers, university students and those involved in the environment. In 2016, the FSC delivered over 5,500 people days of adult biodiversity training through its training courses and biodiversity projects. This is possible through the FSC's extensive network of partner organisations and expert associate tutors, often regarded as national experts in their taxonomic field. In addition, the FSC also delivers modules for the Manchester Metropolitan University postgraduate certificate and master's degree in Biological Recording each year across a range of botanical and zoological subjects.

The FSC is able to deliver all of the above education and training through its field centres network of 18 residential and non-residential field centres located throughout all four countries of the United Kingdom.

As one of the UK's leading publishers of taxonomic publications, the FSC produces a wide range of publications, ranging from entry-level fold out charts through to systematic monographs published for the Linnean Society and Royal Entomological Society. The AIDGAP (Aids to Identification in Difficult Groups of Animals and Plants) project has produced over 40 publications that make the identification of difficult species groups accessible to biological recorders by providing relatively simple to use keys that don't require the user to be an expert in taxonomy in order to be able to use them.

In order to support all of the above work, the FSC head office is also home to several specialist teams, including education, finance, administration, digital and marketing teams. The biodiversity team ensure that the organisation considers biodiversity throughout its work and are responsible for the projects detailed in section 1.2.1 below and the FSC BioLinks project will be housed within this team.

The charity has is a key player in supporting nationally recognised accreditation schemes such as the Natural History Museum's IdQ, Manchester Metropolitan University's certification for species identification and surveying and the Botanical Society of Britain & Ireland's Field Identification Skills Certificate (FISC) programme. In addition, the FSC is also involved in a number of projects that are detailed in section 1.2.2 below.

For further information visit our website www.field-studies-council.org

1.2.1 FSC Biodiversity projects

FSC Biodiversity Training Project 2006-2010

In 2006 funding from the Heritage Lottery Fund was received to deliver a 3-year project aiming to develop the identification and recording skills of volunteers in Shropshire. The Biodiversity Training Project (HG-05-00454) carried out 206 events and trained 849 volunteers, creating over 40,000 new biological records. This included a wide range of training subjects, however the invertebrate courses that ran (whilst well attended) didn't always lead to an increase in biological records. Feedback from volunteers suggested this was due to a combination of limited access to the specialist equipment needed and a lack of long term support and post-course mentoring.

FSC Invertebrate Challenge 2010-2014

Following on from the Biodiversity Training Project, the Heritage Lottery Fund approved a grant for a 4-year project aiming to focus on developing invertebrate identification and recording skills of volunteers in Shropshire and the West Midlands. In response to the lessons learned from the previous project, Invertebrate Challenge (HG-09-02206) focused on developing and supporting a smaller number of core volunteers. There were 23 core volunteers by the end of the project, with 17 individuals recognised to have made a substantial difference to local biological recording (over 70,000 records were attributed to the project). This included the legacy of a fully equipped identification centre at Preston Montford Field Centre for volunteer biological recorders (which continues to be used today), 10 new county recorders for various insect groups and 5 published atlases.

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FSC Biodiversity Fellows 2013

During 2012, the FSC was approached by Natural England to deliver a DEFRA-funded biodiversity training project to develop volunteer skills in identifying and recording Biodiversity Action Plan species groups that are under-recorded. A strict and limited timescale was imposed by the funders and 75 training courses were delivered within this 1-year project. Although the project was successful in engaging a large number of volunteers, volunteer feedback supported the FSC's previous findings that more time is needed to nurture the development of volunteers and mentoring and support is vital to convert course attendees into biological recorders.

FSC Tomorrow's Biodiversity 2013-2017

Tomorrow's Biodiversity is a Field Studies Council project funded by Esmée Fairbairn for five years. The project aim is to identify gaps in biodiversity monitoring and barriers to wider uptake and participation in biodiversity monitoring, enabling the FSC to play its part in filling the gaps and overcoming barriers. An initial 2-year research and consultation phase was used to identify a number of 'exemplar' projects for delivery over the period 2015-2017, which are demonstrating how the FSC can:

- Increase the capacity of recording schemes by hosting their identification training workshops.
- Make identification resources easier for volunteers to locate through our ID Signpost tool.
- Design innovative digital resources, such as multi-access keys, for volunteers to use.
- Set a sector precedent for designing development pathways for species groups.
- Make technology more accessible to volunteer biological recorders.

1.2.2 Other FSC projects

FSC AIDGAP Project

The accurate identification of specimens is a fundamental component of creating biological records. Although most popular groups, such as butterflies, moths, birds and wild flowers, are well served by numerous aids to identification, other groups are often neglected. The principal objective of the FSC AIDGAP (Aids to Identification in Difficult Groups of Plants and Animals) project is to identify those groups for which difficulty in identification is due to the absence of a simple and accurate key (rather than being due to insuperable taxonomic problems) and, subsequently, to produce simple, well-written aids to identification. These aids avoid obscure terminology, are clearly illustrated and need not be restricted to traditional methods of presentation. For example, the AIDGAP keys have multi-access tabular keys, flow charts and pictorial formats. This FSC has been producing publications as part of the AIDGAP project for 40 years, including over 40 publications covering groups such as families of British spiders, British freshwater fishes & lampreys and slugs of Britain & Ireland.

Growing Confidence

FSC partner project

Growing Confidence is a Shropshire Wildlife Trust project funded by the Heritage Lottery Fund, and one of the Our Bright Future initiative projects. The project started in 2016 and will run until 2021. The Field Studies Council is a project partner, alongside the Fordhall Community Land Initiative and the Plunkett Foundation. The project works with people aged 11-25, and aims to grow their own confidence with the natural world and to grow the confidence and capacity of the four partners to carry on working with people of all ages. This project will engage with more than 1,000 young people and targets include engaging young people in practical conservation, moving participants into employment or starting businesses and tutoring young people on a range of environmental issues and opportunities. FSC Preston Montford Field Centre will deliver both residential and day courses covering tailored natural history subjects for the project, as well as offering work experience placements to project participants.

Identification Trainers for the Future

FSC partner project

ID Trainers for The Future (SF-12-08599) is a Natural History Museum (London) project, funded by the Heritage Lottery Fund's Skills for the Future initiative. The FSC are project partners, alongside the National Biodiversity Network Trust. This project aims to address the skills gap that has formed regarding fieldwork, identification, taxonomy and recording skills by training 15 individuals through 1 year traineeships (5 per year over the 3-year project). As a project partner, the FSC offers work based experiences, specialist training courses, mentoring, support and training the trainer qualifications to the trainees. Although this project is due to end in 2018, the FSC is supporting the Natural History Museum's application for further funding from HLF (Identification Trainers for the Future 2 - SF-16-02635) and plans to be continue contributing to this project pending a successful grant request.

1.2.3 A new plan… BioLinks

In 2015 the FSC submitted a grant request to HLF for funds to undertake a new project:

> *"Natural heritage conservation decisions depend on the availability of good quality and robust information. Current trends are measured in biological records. BioLinks will create more records with increased accuracy and focus on those species that are data deficient. As a result of stronger data sets the natural heritage will be better managed and heritage will be more accurately recorded. Over 2000 volunteers will be involved. People will develop new skills and knowledge so sustaining data collection for the long term and providing a better understanding of natural heritage, especially species at risk.*
>
> *The inclusion of skills such as species collections curation, using reference collections, valuing wider natural history observations and sharing them through accessible technology and the use of public citizen science takes BioLinks beyond just being a training project. BioLinks is the result of mature reflection on how to support people to have more understanding of natural heritage.*
> **BioLinks Stage 1 Application Form, 2015**

A grant to fund a 1-year development phase was authorised by HLF and a development phase project officer was recruited to undertake a series of consultations within the sector to investigate during 2016 how the FSC could deliver its vision.

The BioLinks consultation consisted of four consultation methods in order to engage with a wide range of audiences (see Table 1 below).

Table 1: Summary of consultation methods

Consultation method	Target audience	Geographic focus
Online survey	Anyone interested in nature	National
Public consultation workshops	Potential volunteers, existing volunteers, professionals/experts	Regional
Stakeholder consultations	Professionals/experts	Regional and National
Site manager survey	Site managers (professionals/experts)	National

The aim of the consultations undertaken during the development phase was to:

- Identify focus species groups
- Identify suitable training locations

In addition, the consultation also investigated other topics that would be useful when designing the project activity plan for the delivery phase of the project. This included:

- Regionally specific considerations
- Volunteer motivations, development and satisfaction
- Biological recording event and identification courses
- Digital resources and technology
- Existing provision from other providers and relevant projects/initiatives

A summary of the development phase key finding is given in section 1.3 on the following page.

1.3 BioLinks consultation findings

The finding presented in this report are resulting from the feedback received through:

- 326 individual responses to the BioLinks online survey.
- 11 public consultation workshops attended by a total of 85 participants.
- 56 stakeholder consultations, involving 85 different individuals.
- 49 responses from site managers to the BioLinks site manager survey.

A full breakdown of the organisations and individuals consulted is available in the appendices of **Appendix I FSC BioLinks Consultation Report**.

1.3.1 The need for action

Consultees highlighted some of the many benefits of biological recording and thus justification for initiatives, such as the proposed FSC BioLinks project, in order to:

- better understand and conserve our natural heritage
- develop people into active and competent recording volunteers
- strengthen the existing biological recording community.

Natural Heritage Consultees were passionate about natural heritage and stated that biological recording is important for:

- Improving our knowledge of the ecology and distributions of species.
- Monitoring 'indicator species' to detect changes to populations or habitat health.
- Establishing the conservation status of species and ensuring threatened species are protected.
- Informing site managers regarding the management plans for their sites.

People Many of the consultees were active biological recording volunteers themselves and indicated that any biological recording project should consider that:

- Volunteer motivations vary greatly and engaging a wide range of volunteers will require providing activities suitable for this wide range of motivations.
- Retaining volunteers is vital to the success of this project due to the high level of training required to raise the competency level of each volunteer, so project activities should include measures that keep volunteers engaged and motivated to continue.
- Volunteer development should be clear, with continuous training pathways.

Communities Consultees often represented local groups or volunteer-run societies and stated that FSC BioLinks, as a funded project, has the potential to:

- Unify the community through extensive partnership working and delivery of joint events.
- Support local groups by facilitating project activities within their local area.
- Complement existing projects, schemes and initiatives by exploring potential synergies (see Table 2 on the following page for a summary of some projects have perceived substantial synergies with FSC BioLinks and please note that a full list of projects with perceived synergies can be found in **Appendix I FSC BioLinks Consultation Report**).

More details of the consultation findings regarding the benefits this project could bring to natural heritage, people and communities can be found in the **Appendix I FSC BioLinks Consultation Report** (Section 4).

Table 2: Summary of relevant sector projects and synergies with BioLinks project

Project	Funder	Start	Finish	Lead organisation	Region	Contact	Areas of synergy with FSC BioLinks
Bushy Park Restoration Project	HLF	2006	2009	The Royal Parks	London	Toni Assirati	BioLinks will utilise the redeveloped education centre at the Stockyard as a base of operations for the London region and deliver a significant proportion of the project activities from this site.
Wetlands For All	HLF	2013	2016	Wychavon District Council	West Midlands	Liz Etheridge	BioLinks will provide legacy to this project in the form of skills development opportunities for volunteers that were engaged by this project.
Lesnes Abbey Woods Enhancement Project	HLF	2014	2016	London Borough of Bexley	London	Ian Holt	BioLinks will utilise the new visitors centre for delivering project activities to enhance the reach of the project beyond the London base at Bushy Park.
The Biodiverse Society	HLF	2014	2017	Lancashire Wildlife Trust	Regional	Joanne Moore	Consultation between the two projects has allowed sharing of evaluation and barriers to training volunteers in species identification.
Identification Trainers For the Future ***Identification Trainers For the Future 2***	HLF *HLF*	2014 *tbc*	2018 *tbc*	Natural History Museum	London	John Tweddle Steph West	BioLinks will provide legacy to this project via skills development opportunities for ID trainnes engaged by this project, including opportunities for project 'graduates' to deliver taught courses in the BioLinks training programme.
Beautiful Burial Grounds	HLF	2016	2020	Caring For God's Acre	National	Harriet Carty	BioLinks will provide skills development opportunities for this engaged with this project and enhance the range of species groups covered by this project.
Growing Confidence	Big Lottery	2016	2021	Shropshire Wildlife Trust	West Midlands	Cathy Preston	Both projects aim to engage with young people regarding natural history and provide learning opportunities at FSC Preston Montford.
AIDGAP Project	Field Studies Council	1976	Ongoing	Field Studies Council	National	Rebecca Farley-Brown	BioLinks will utilise AIDGAP publications when training volunteers to identify difficult-to-identify species groups. Where no suitable identification resources exist for a species group, BioLinks will liaise with the AIDGAP project to regarding the potential to create new AIDGAP resources to fill these gaps.
FSC Biodiversity Projects (see Section 101.2.1 on page 10)	Various	2006	2018	Field Studies Council	West Midlands and National	Sue Townsend	BioLinks will provide legacy to these projects in the form of skills development opportunities for volunteers engaged by these projects, absorption of social media and digital legacies and utilisation of the equipment and resources purchased/created for these projects.
Mission: Invertebrate	People's Postcode Lottery	2017	2018	Royal Parks Foundation	London	Project staff not yet appointed	BioLinks can provide progression opportunities for those engaged with this project and build upon surveys conducted across these sites within London.

1.3.2 Identifying focus species groups

When identifying focus species groups that should be targeted by the BioLinks project, two key criteria were outlined in the initial project application and explained to consultees:

1. *Focus species groups should be data deficient* – many natural heritage activities (such as conservation of species and habitats) rely on the biological records of a small number of species groups.
2. *Focus species groups should be difficult to identify* – many species groups are under-recorded as they are perceived as they require high levels of skill to identify.

An additional consideration for selecting the focus species groups was the demand for training to record specific species groups from potential volunteers, i.e. are certain groups data deficient because volunteers are not interested in learning to record them?

During the consultation phase it became clear that there are more groups of species that fit the criteria than it would be possible to include within the BioLinks project due to the volume of training and large amount of resources that would be required to develop project volunteers sufficiently. Eight focus species groups were selected for inclusion within the project. These are indicated in Figure 1 below.

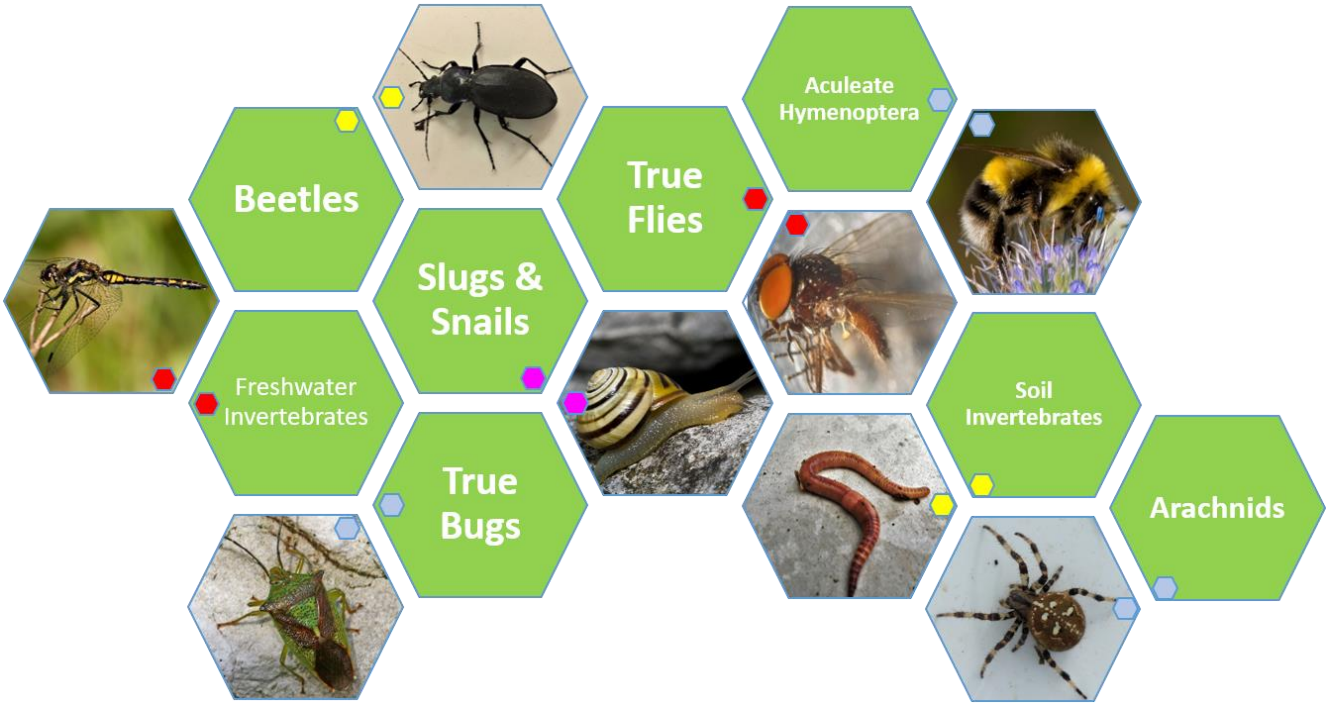


Figure 1: Diagram illustrating the eight focus species groups selected for inclusion within the BioLinks project.

All selected focus species groups were found to be data deficient within both of the project regions. Therefore, there is no need to differentiate between the provision provided within each of the project regions.

Inclusion of two focus species groups based on habitat rather than taxonomy (soil invertebrates and freshwater invertebrates) allows for cross-over between training plans (e.g. freshwater snails can be included in both the mollusc and freshwater invertebrate training plans).

More details regarding the focus species group findings of the consultation can be found in **Appendix I FSC BioLinks Consultation Report** (Section 5).

1.3.3 Identifying training locations

Throughout the public consultation workshops a large number of potential training locations were discussed, including well-equipped existing training facilities, potential training facilities and field sites/nature reserves.

The BioLinks project aims to facilitate training 'hubs' that would act as a base for volunteers and a venue for a high proportion of the project activities, in order to strengthen the provision for local groups and repeat the successes achieved in Shropshire through the FSC Invertebrate Challenge project funded by HLF. The consultation highlighted the existence of several existing and potential training hubs, as well as many other types of training location that could be utilised by BioLinks to deliver project activities.

Existing identification training hubs A number of existing training hubs exist for use by the biological recording community. The use and capacity of these hubs is often limited by finances and resources, and stakeholder meetings were held to determine how BioLinks can support and complement these facilities and what level of project involvement is necessary.

Potential new identification training hubs The consultation highlighted the existence of several potential training hubs, that deliver a limited amount of identification training provision but offer little in the way of support services.

Residential training centres In order to cater for differing lifestyles and work patterns, BioLinks will offer both day and residential courses. In order to deliver residential courses, centres that provide accommodation and catering are required. Where possible, identification training hubs that have these facilities should be used.

It is likely that new training hubs will require more support than existing hubs so more project activities will operate out of a new training hub within each region. In addition, the current training provision provided at existing training hubs within the regions will be signposted to and complemented where necessary.

Additional training facilities As an alternative to the training hub model, it was suggested in the public consultation workshops that utilising many training venues would improve the reach of the project and engage a wider number of volunteers. In order to improve the reach beyond the areas serviced by the training hubs, a small number of BioLinks training courses and field events will be planned at additional training facilities.

Table 3 below highlights the training locations selected for inclusion within the project by region.

Table 3: Training locations highlighted for inclusion within FSC BioLinks

Type of training location	West Midlands region (see Figure 2 on page 17)	South East region (see Figure 3 on page 18)
New training hub	Bishops Wood Field Centre (Worcestershire)	Bushy Park Field Centre (London)
Existing training hubs	Preston Montford Field Centre (Shropshire)	Dinton Pastures BENHS HQ (Berkshire), Angela Marmont Centre (London)
Residential training centre	Preston Montford Field Centre (Shropshire)	Juniper Hall Field Centre (Surrey)
Additional training locations	Birmingham Museum Collections Centre, RSPB Sandwell Valley, The Gateway (MMU), RSPB Coombes Valley	WWT London Wetlands Centre, Tower Hamlets Cemetery Park, Lesnes Lodge, Amersham Field Centre

More details regarding the training location findings of the consultation can be found in **Appendix I FSC BioLinks Consultation Report** (Section 6).

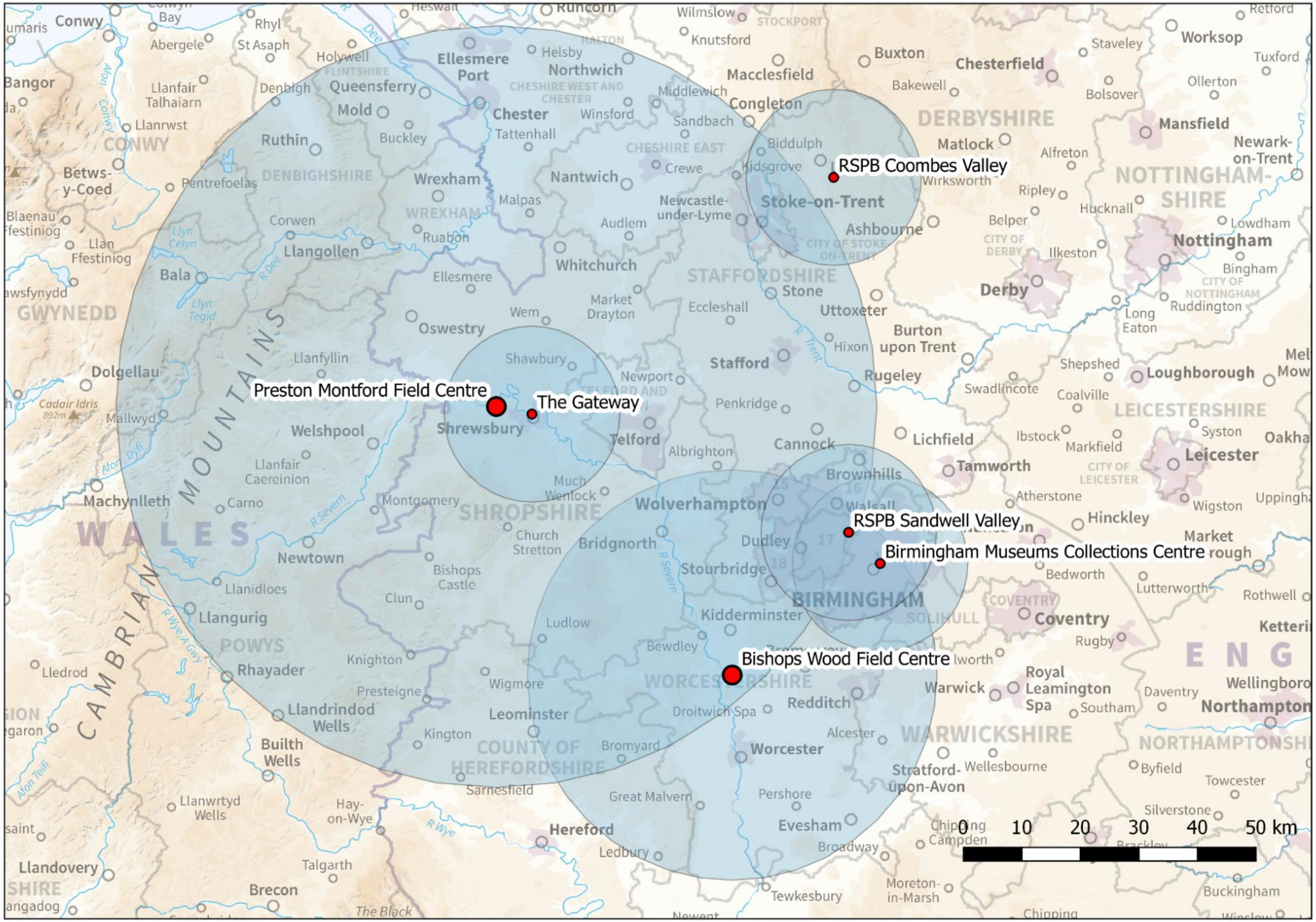


Figure 2: Map of West Midlands region illustrating the predicted influence of FSC BioLinks training locations.

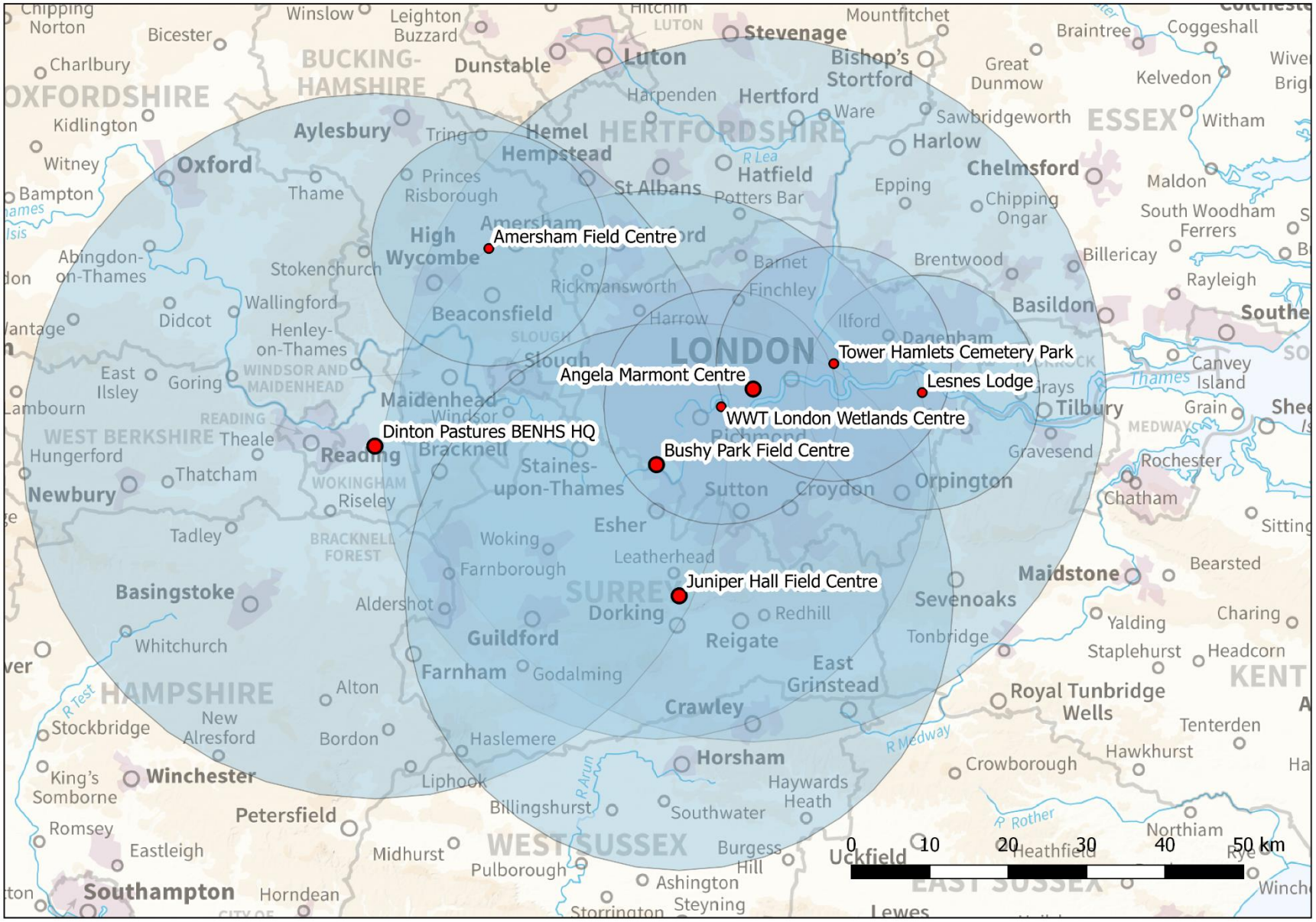


Figure 3: Map of South East England region illustrating the predicted influence of FSC BioLinks training locations.

1.3.4 Training activities

BioLinks will contain a large number and variety of training activities to facilitate the development of volunteers. The consultation investigated how volunteers and sector professionals think the FSC should deliver these activities and what type of activities should be included within the project.

It became clear through the consultation that:

- **Project activities should ensure the development of biological skills and knowledge alongside activities and include events that are specifically designed to engage, motivate, retain and inspire confidence in volunteers.**
- **Training courses should be part of a clear learning pathway that enables both the project and volunteer to assess the volunteer's current competency level and monitor their progression**
- **A variety of training activity formats will be needed to cater for differing volunteer learning styles.**

Many different types of potential project activities were discussed throughout the consultation and a wide range of training courses, events and activities were highlighted for inclusion within the project as a result. These were categorised into taught courses, field events, collections workshops, local recording initiatives and mentoring and support.

Figure 4 below details project activities that were discussed through the consultations and how they benefit volunteers in terms of the four competencies that BioLinks will aim to develop: knowledge, skill, confidence and motivation

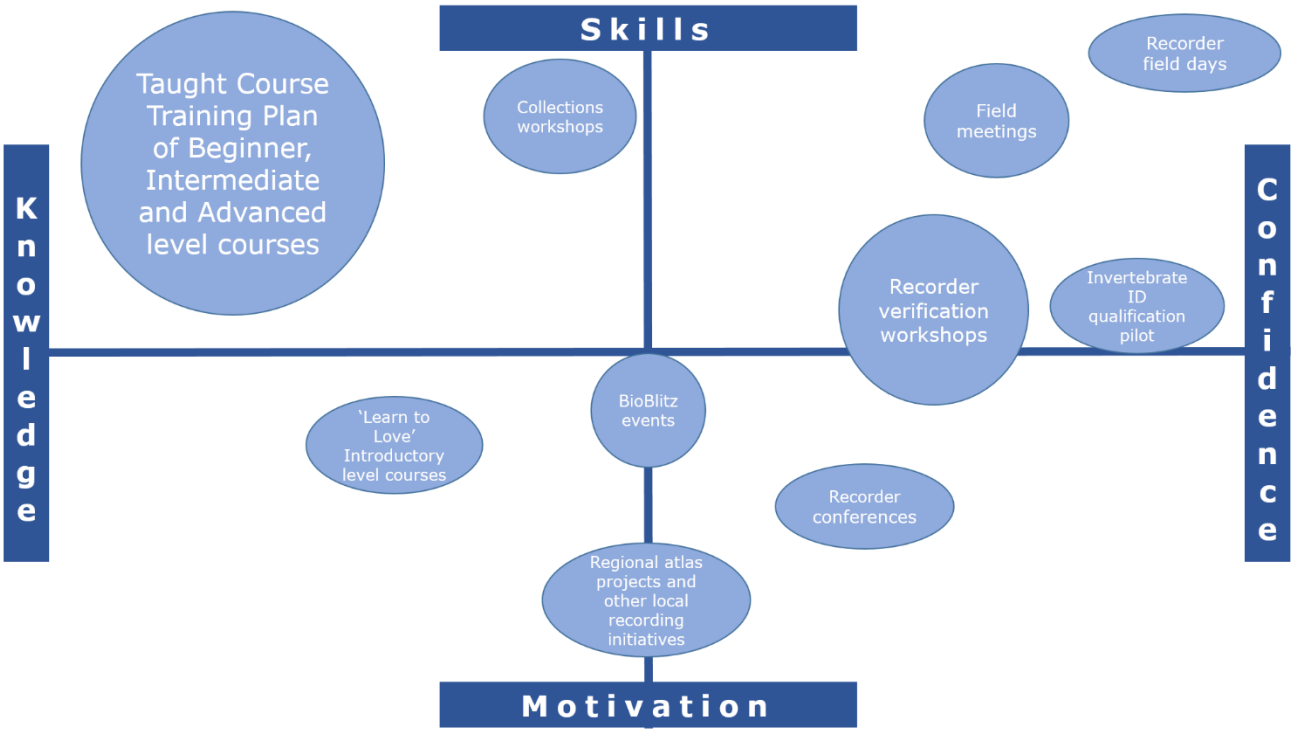


Figure 4: Diagram mapping project training activities and events against the four competencies that the project will aim to develop in volunteers.

More details of the consultation findings regarding project training activities can be found in **Appendix I FSC BioLinks Consultation Report** (Section 8).

1.3.5 Digital resources

The BioLinks project will look to complement the training provision with advances in digital resources to make biological recording easier volunteers and enhance the volunteer experience through innovative tools.

Field Notes Field Notes provides and innovative and new way to record ecological observations, in the format of a searchable database so that the crowd-sourced data can be interrogated by other volunteers, experts and researchers. Many sector professionals were supportive of the concept and believe it has the potential to be a well-received and useful resource for biological recorders and other forms of amateur naturalists. Liaising with the biodiversity sector (such as local environmental records centre, the National Biodiversity Network and the Biological Records Centre) was recommended by sector professionals to ensure it is integrated into existing systems (such as iRecord) and the FSC Digital Team advised that the Digital Development Officer should have experience of rapid prototyping to ensure the success of the Field Notes resource.

Digital resources and technology development should involve liaising with sector professionals and potential users to ensure a lasting legacy is created and that products are integrated with existing systems where possible.

Signposting tools Many consultees suggested that volunteer biological recorders would benefit greatly from better signposting of resources, courses/events, natural history collections and mentors. This feedback was also received during public consultation workshops conducted in 2014 for the Tomorrow's Biodiversity project. An identification resource signposting tool has since been created and, although relatively under-used, has been well-received by sector professionals. A number of independent consultees suggested that an identification course signposting tool would aid volunteer development as courses are often only currently advertised on the training provider's website, of which there are a large number.

Signposting tools are in demand from volunteer biological recorders and can strengthen the biological recording community by linking scattered information, resources and training.

Social media Opinion over the use of specific social media platforms, such as Facebook and Twitter, was divided but many consultees thought it was important that the project actively engages with volunteers through social media to improve recruitment, particularly for young adults, and as a means of providing additional support. The popularity of different social media platforms can change rapidly, so it's important that platforms that are both current and audience relevant are used.

An evolving social media strategy is necessary to ensure the project remains relevant to today's audiences.

More details of the consultation findings regarding digital resources can be found in **Appendix I FSC BioLinks Consultation Report** (Section 9).

1.4 Current and potential audiences

The BioLinks project was conceived with a view to engage those with an existing interest in biological recording, such as amateur naturalists (in areas such as photography, conservation and environmental education), biodiversity sector professionals looking to develop their skills and existing biological recorders.

Potential audiences were investigated throughout the consultation in order to ensure that project activities would have maximum impact on strengthening the biological recording network and promote a diverse and inclusive community.

The consultation highlighted the need to:

1. **Categorise biological recorders according to their competency levels as those with more advanced skills and knowledge have different needs to those relatively new to biological recording.**
2. **Ensure introductory level project activities provide a gateway into the project for potential biological recorders, such as amateur naturalists with interests in wildlife photography, environmental education and conservation.**
3. **Assess the current diversity of biological recorders and determine where groups are under-recorded and how BioLinks can undertake activities to address these gaps and engage with these hard-to-reach audiences.**

More details of the consultation findings regarding digital resources can be found in **Appendix I FSC BioLinks Consultation Report** (section 5).

The 'typical' biological recorder Anecdotal evidence suggests that the common perception of a biological recording volunteer belongs to the white, male middle-aged (45-65) demographic; a perception that has evolved since the days of Charles Darwin when only those who had private income were accepted in society as people of influence (e.g. the clergy and local businessmen). This perception is strengthened by the number of famous naturalists that fit that stereotype (eg; John Rae, Gilbert White, Derek Ratcliffe, Derek Tansley, Arthur Tansley, Eric Hoskins). Even current naturalists are often male (David Attenborough, Chris Packham, Steve Backshall, Nick Baker).

Gathering evidence to support or debunk this perception can be difficult as there may be variation on both a local level (e.g. between local groups) and at a national level (e.g. between different taxa recording schemes). However, both feedback from consultees and analysis of the demographics that participated in the consultation appear to support aspects of the perception of the 'typical' biological recorder and these will be discussed in Sections 1.4.2 - 1.4.4.

We were also aware that there was some evidence that those with mental health and learning difficulties could be excluded from our work and audiences with learning difficulties and special needs will be discussed in (see Section 1.1.1 on page 28).

1.4.1 Biological recorders

The initial BioLinks concept was to develop the skills of biological recording volunteers to enable them to record specific taxon groups which are currently data deficient in terms of species records due to the difficulty in identifying these organisms to species level.

The existing pool of volunteers varies greatly regarding the species identification competency level of a wide range of taxa. Volunteers with differing competency levels may have differing motivations and training needs. Some biodiversity training providers (such as the FSC and Bat Conservation Trust) attribute difficulty levels to courses to enable potential participants to assess which training is suitable for their competency level. However, these competency levels are not clearly defined and are often different between, and even within, training providers. Confusion for potential participants regarding the difficulty level of a course can be further confounded by sector-wide inconsistency in the manner in which training courses are named.

Table 4 below illustrates a number of barriers faced by existing biological recorder and potential solutions that were identified through previous FSC project experience and consultation feedback.

Table 4: Potential barriers and solutions regarding the recruitment of existing biological recorders to project activities

Potential barrier	Potential solution
Relevance– current inconsistency across the biodiversity sector means that biological recorders may be unsure if courses are relevant for individuals at their competency level.	• Creation of a clear system for *assigning competency levels* to individuals (through self-assessment) and training courses. • *Consistent naming of training courses* to indicate competency level and skills required.
Lack of development – gaps in the current training provision limit progression of volunteers.	Ensure that *training pathways are complete* and work project training provision around existing training provision from external providers.
Awareness – courses are provided by a large number of organisations, often with limited advertising, and volunteers may not be aware of what is available.	• Creation of a *biodiversity training signpost tool* to provide a "one stop shop" for potential participants. • Liaise with existing training providers to provide *mutualistic promotion* of training opportunities.
Accessibility – if location of meetings/events is not reachable by public transport it can be difficult for those who don't drive to attend.	Ensure project activities are held at locations that are *accessible by public transport* and within a reasonable distance of participants.
Confidence – participants may not feel confident identifying taxa following a training workshop.	Facilitate *mentoring and support* through project activities (such as verification workshops).
Motivation – participants may not feel confident identifying taxa following a training workshop.	• Regular *feedback and communication* through the project staff using social media, regional conferences and newsletters. • Creation of *local initiatives* to demonstrate local relevance of submitting species records (such as atlas projects and wildlife site species lists).
Time – participants simply don't have the time or availability to contribute significantly to the project.	Provide a *flexible project activity timetable* with varying course lengths, activities on weekdays and evenings/weekends and breaking down species groups into "bite size" portions.

1.4.2 Age

Biological recording volunteers are often perceived as belonging to the middle-aged or older demographic (45+). This was echoed throughout the BioLinks consultations as consultees gave much feedback on the concern regarding recruitment of young people into recording groups and societies. It was seen by many as a lack of engagement or appeal with the younger age of the biological recording community. This could be perceived as lack of awareness as there is so little whole organism biology represented in the formal examination system in biology at A Level and even many undergraduate biology degrees where much of the emphasis on biochemistry and medical and human biology. This is of particular concern, as a **generational skills gap** is developing with regards to identification skills and could lead to a reduced capacity to record British wildlife in the future. A comparison between the proportion of consultees and the UK population by age demographic demonstrates that young people were under-represented (see Figure 5 below).

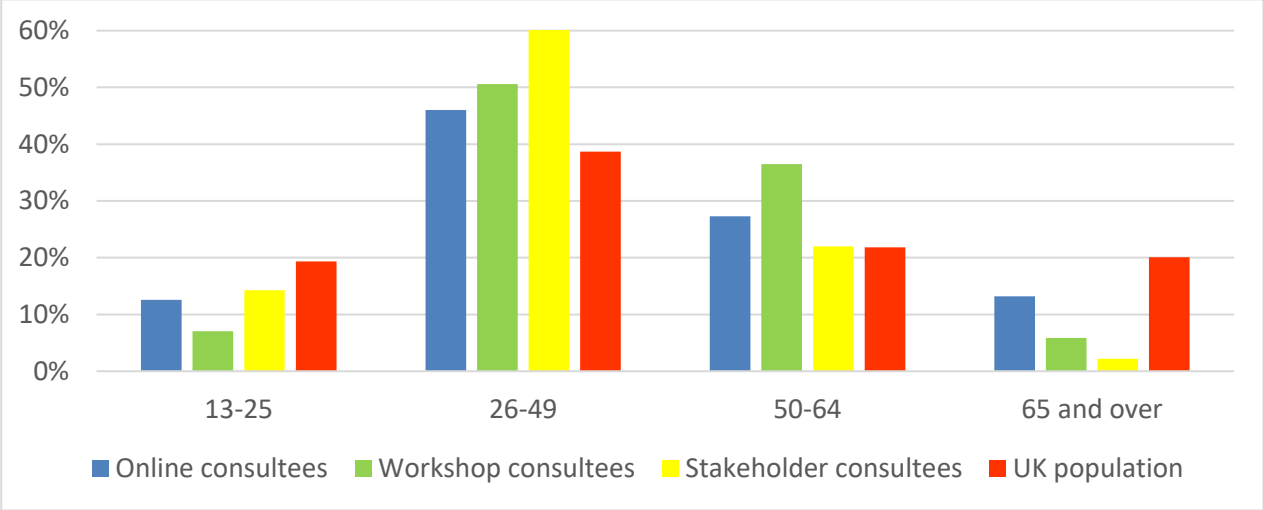


Figure 5: Bar chart demonstrating the proportion of consultees compared to the UK population. Under 13 year olds were not considered within this data (based on 326 online survey respondents, 85 workshop consultees and 95 stakeholder consultees). Mid-2014 UK population estimates. Source: Office for National Statistics, National Records of Scotland, Northern Ireland Statistics and Research Agency

The consultations were widely promoted through social media and A Focus On Nature (a forum for young naturalists) in a targeted effort to reach young people so it is possible that the true proportion of young biological recorders is even lower. Although Figure 5 appears to suggest that the 65 and over demographic is under-represented it should be noted that many consultees participated in a professional capacity, therefore making increasing the proportion of consultees that are below retirement age.

Although a number of organisations reported that they have difficultly recruiting younger members, some groups (such as the Earthworm Society of Britain) stated that they have had success engaging with young people through an active social media presence.

Furthermore, A Focus On Nature (AFON) has continued to grow in size since it was formed in 2011. Their work includes hosting events, facilitating a mentoring scheme and giving young people a voice in the biodiversity sector.

Figure 6: The Earthworm Society of Britain reported that young people regularly attend their identification training.

AFON also recently produced a report detailing their 'Vision For Nature' for 2050 outlining young people's passion for natural heritage and their recommendations to a range of stakeholders.

> *"The conservation sector needs to help foster the next generation of nature lovers and conservationists. The barriers to entry to the profession are extremely high and privilege the wealthy. Internships and apprenticeships paid at the living wage (at least) with sufficient cover for expenses should become common practice. NGOs should abandon the default of requiring all applicants for jobs to have a degree, and only ask for this when it is necessary for the role."*
> **Vision For Nature Report 2016, A Focus On Nature**

So why are young adults (18-25) under-represented in biological recording? The following barriers in Table 5 below for recruiting young people to biological recording groups/societies, and potential solutions to be considered through BioLinks project activities, were suggested during the AFON stakeholder meeting and public consultation workshops.

Table 5: Potential barriers and solutions regarding the recruitment of young people to biological recording project activities

Potential barrier	Potential solution
Cost – membership fees for groups/societies can range from free to £60+. Students and recent graduates may be put off by costs as low as £10 per year.	Consider *subsidising young people* to attend courses to ensure that travel expenses and course fees are not a barrier to participation.
Confidence – young people may be intimated by the thought of attending their first event or course, and feel like they have insufficient experience to make a valuable contribution.	• *Clearly label* events with the necessary competency level recommended. • Ensure that clear *volunteer development* is outlined to participants so that young people are attracted to the professional development afforded through project activities.
Awareness – communication is constantly evolving and groups and societies may be using different methods of communication to those currently 'trendy' with young people.	• Advertise project opportunities through media that is used by young people such as *social media sites* (e.g. Facebook and Twitter). • Liaise with *A Focus On Nature* regarding any strategies to target young people. • *Target university students* through sympathetic universities by advertising training provision to university natural history societies and on university noticeboards.
Accessibility – if location of meetings/events is not reachable by public transport it can be difficult for those who don't drive to attend.	Ensure project activities are held at locations that are *accessible by public transport*.
Disproportional representation – it can be daunting if the demographic is skewed away from young people and make individuals feel like the "don't fit in".	*Raise the profile of young naturalists* already involved in biological recording to promote inclusivity to the young people demographic.
Relevance – young adults that are trying to develop their career may prioritise activities that provide evidence of skills and knowledge development.	Provide *certificates of attendance* to participants for training activities with outlines of the learning outcomes and skills covered by the course.

1.4.3 Gender

We recognise that women are an under-represented audience across the heritage sector and have identified this as an audience that required further investigation.

Within the biodiversity sector, the common perception of a biological recording volunteer is male. Feedback from consultees collated through the BioLinks consultation regarding gender balance suggests did not confirm this, however, and BioLinks development phase participation was relatively even across men and women (see Figure 7 and Figure 8 below), though representatives of organisations were unable to provide empirical evidence to confirm this and there is a lack of evidence detailing the proportion of women across different competency levels.

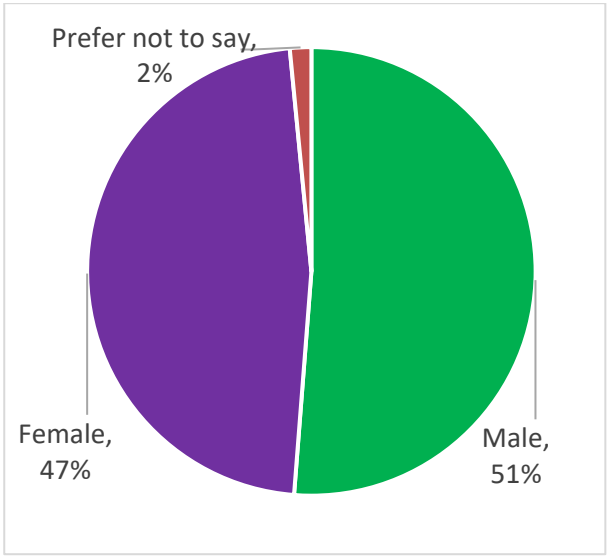


Figure 7: Pie chart of online survey respondent gender (based on 326 responses).

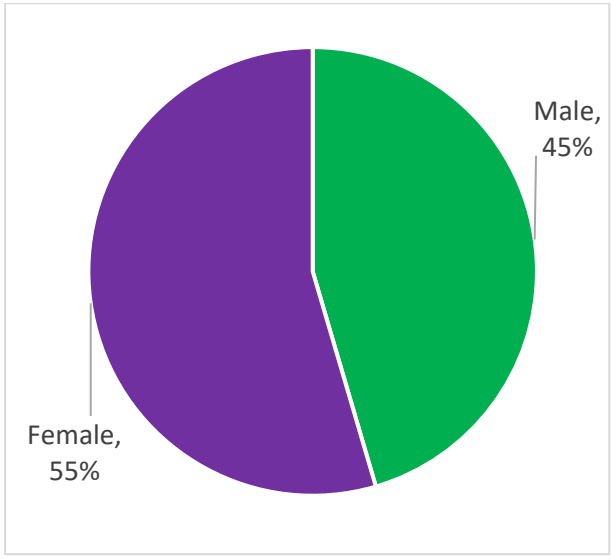


Figure 8: Pie chart of stakeholder meeting / consultation workshop attendee gender (based on 187 attendees).

The Royal Society of Biology is concerned about the loss of women from the biosciences workforce. https://www.rsb.org.uk/policy/policy-issues/equality-diversity/women-in-biology. It recognises the low number that progress to senior positions in universities and research institutes, government, business and industry. The "leaky pipeline" is used to describe the continuous loss of women at consecutive career stages within Science, Technology, Engineering and Mathematics (STEM). These gradual losses reduce the numbers of women retained in STEM at senior levels. The Science and Technology Committee held an inquiry into women in STEM career http://www.parliament.uk/business/committees/committees-a-z/commons-select/science-and-technology-committee/inquiries/parliament-2010/women-in-stem-careers/

There are reports detailing some of the actions needed to ensure a more focussed approach to gender balance across the hierarchy of skills development in science and technology including https://www.rse.org.uk/cms/files/advice-papers/inquiry/women_in_stem/tapping_talents.pdf and the following extracts highlight some key points from this report:

It is recommended
"to ensure that appropriate data is being collected, analysed and reported regularly, and trends examined"
and includes the recognition *that*
"Women who do remain in the STEM work force are still segregated by occupation (horizontal segregation) and grade (vertical segregation). The number of women who advance to the most senior positions in STEM remains proportionately much smaller than that of their male counterparts"
Tapping all our Talents (Women in science, technology, engineering and mathematics: a strategy for Scotland (April 2012), The Royal Society of Edinburgh

This has been supported further in a review of 'The Status of Women in the Life Sciences by J.W. Peters and N. Lane in 2015:

"Women in the life sciences seem to attract less concern and attention than women in physics, IT or engineering. Perhaps because women in the life sciences at undergraduate and, more recently, postgraduate level have equalled or exceeded men for the past 30 or so years. More attention needs to be paid to the career planning and professional preparation of young women, so that more will be able to progress to senior positions and decision-making roles."
Peters, J. W. and Lane, N. J. 2015. The Status of Women in the Life Sciences. eLS. 1–13

None of this research has been carried out directly in the biological recording sector, but anecdotal evidence from sector professionals and senior national experts suggests that there may be a gender imbalance at higher competency levels even though there may be an equal division of participation across biological recording as a whole.

The recommendations in all these reports have kept flexibility of opportunity at the heart of good practice. BioLinks will ensure choice of timescale, day, time of year and skill level to maximise the potential engagement to all and especially those who may have other family related time ties, full time work commitments and or a varied volunteering profile. BioLinks will aim to safeguard an even gender balance at all skill levels and closely monitor those this at the expert level to provide empirical data to help the sector address this nationally.

1.4.4 Ethnicity

It was reported in the BioLinks consultation public workshops that consultees do not believe that black and minority ethnic groups (BMEs) are proportionally represented within the biological recording community and that the majority of volunteer biological recorders are white. This was further supported by the disproportionately high representation of white individuals (>98%) within the BioLinks public consultation.

BMEs are an audience targeted by specialist engagement groups such as the Black Environment Network (http://www.ben-network.org.uk/index.asp). Their guidance for the environment and heritage sector indicates that substantial engagement level activities may be necessary in order to attract BMEs.

> *"Many ethnic communities do not access the natural and built heritage simply because they have no information and have never been introduced to what is on offer."*
> **Engaging Ethnic Communities in Natural and Built Heritage: guidance for the environment and heritage sectors (2005), Black Environment Network**

Feedback from consultees that had experience of engaging with BMEs recommended that any attempts to target this audience would require external expertise to broker relationships with local groups, and their feedback supported the Black Environment Network report by stating that engaging with BMEs would likely require substantial engagement activities in order to recruit individuals to the wider training project activities.

Evidence from the Mosaic Project to involve BMEs in National Parks (http://www.cnp.org.uk/how-mosaic-works) documented some of the barriers that that exist to groups such as BMEs engaging with natural heritage These barriers are relevant to the BioLinks project and potential solutions are outlined in Table 6 below.

Table 6: Potential barriers and solutions regarding the recruitment of black and ethnic minority individuals to biological recording project activities

Potential barrier	Potential solution
Skills – may be few individuals within BME community with skills in recognising and recording biodiversity.	Offer *training at engagement level* to build skills and facilitate BMEs to participate in project activities.
Concerns – feeling unwelcome, specific religious/cultural needs may not be catered for and fear of racist abuse.	• Facilitate *events where BMEs can meet project participants* (staff, mentors and volunteers). • Ensure that *specific needs* are requested when organising training/events.
Awareness – BMEs may not be aware of biological recording and how to get involved, particularly if there are no initiatives within the local community.	• Targeted advertising to local BMEs, such as *social media groups* (e.g. Facebook). • Liaise with *BME engagement organisations* (such as the Black Environment Network) and regarding any strategies to target young people. • Training and support of *Community Champions* to broker relationships with local BME communities.
Accessibility – if location of meetings/events is not within BME communities, participation is less likely.	*Organise events/training within BME communities* with good links to public transport.
Relevance – don't understand the importance of biological recording and the benefits to the local community.	• *Raising the profile of BME naturalists* already involved in biological recording to promote inclusivity to the BME audiences. • Having *representative images* in project promotional material.

1.4.5 Special needs and disabilities

It is a possibility that individuals with special needs or disabilities may be excluded from BioLinks project activities so consideration must be given to the nature of project activities to ensure an inclusive project. There are a large number of different types of special needs and disabilities and it is beyond the scope of this project to investigate all of these in detail. The range of barriers that exist for this wide range of needs are vast and many organisations are undertaking work to engage those with special needs with biodiversity.

One potential audience that could be engaged is individuals with learning difficulties. During the consultation it was noted by one further education educator that there is potential to incorporate project activities into BioLinks that could benefit individuals with learning difficulties, such as autism. South Staffordshire College trains apprentices in the land-based sector (including arboriculture, agriculture and horticulture) and a significant proportion of these apprentices have learning difficulties. Due to the nature of the apprenticeships it was suggested that apprentice trainers could incorporate aspects of biological recording into these vocational training programmes if the trainers were provided with relevant information about biological recording and existing surveys.

The consultee felt that introducing biological recording into apprentice training in relevant vocations could both:

- Benefit apprentices by expanding their knowledge and skills using a scientific survey that has real world applications.
- Contribute useful data to biological recording surveys.
- Engage individuals that may otherwise have not been engaged.

It was concluded that there needed to be a cognitive ability to recognise elements of the natural world and that learning would need an ability to be numerate and literate and learning/mental health issues might be a target area but that those already enrolled on an apprentice scheme have demonstrated sufficient literacy and numeracy to really make a contribution.

The FSC recognises that it does not have the expertise or capacity to engage with audiences with learning difficulties directly. Consultation with the National Autistic Society (NAS) indicated that many autistic people have intense and highly-focused interests that can result in both meaningful contributions to volunteer activities and the well-being of the individuals themselves, and that if autistic people with a particular interest in nature were to be recruited as volunteers for this project, they would in all likelihood have a great contribution to make to the work being done. The NAS also indicated that they would be keen to explore how they could contribute to potential project activities through training and consultancy.

> *"Many autistic people have intense and highly-focused interests and channel their interest into studying, paid work, or volunteering. Autistic people often report that the pursuit of such interests is fundamental to their wellbeing and happiness.*
>
> *If autistic people with a particular interest in nature were to be recruited as volunteers for this project, they would in all likelihood have a great contribution to make to the work being done.*
>
> *We provide training at essential, enhanced and specialist levels. Training for any tutors who will be working closely with autistic people would provide them with the knowledge and skills necessary to meet volunteers' individual needs, which would then provide a more positive experience for volunteers and tutors alike. "*
>
> **Christina Jenkins, Business Development Manager for Training, Consultancy and Conferences, National Autistic Society**

1.4.6 Site managers

Volunteer biological recorders consulted throughout the development phase highlighted the need for site managers as a key user of species data. Following the recommendation of the HLF monitor assigned to the FSC BioLinks project, site managers were also consulted regarding how invertebrate species records can be utilised more effectively by site managers when developing their site management plan for the sites that they manage for wildlife. This consultation highlighted that site managers are faced with the barriers outlined in Table 1Table 7 below.

Table 7: Potential barriers and solutions regarding the use of invertebrate species records by site managers

Potential barrier	Potential solution
Accessibility – site managers do not often have the funds or capacity required to conduct detailed reviews of the invertebrate records that may exist for their site. This can be especially difficult if records are held by a number of different organisations such as the local environmental records centre, national recording schemes and other organisations.	Ensure that volunteer biological recorders are aware of *data flow pathways and provide guidance* on ensuring their records are deposited with a host organisation that is able to facilitate data searches for site managers appropriate to their funds and capacity.
Interpretation – site mangers may not have the specialist knowledge required to interpret invertebrate species records and apply appropriate site management techniques.	Offer *guidance on the use of the Pantheon invertebrate site assessment tool* to simplify interpretation and reduce the need for specialist training for site managers.
Lack of records – invertebrates may be under-recorded on sites resulting in a data deficit for informing site management plans due to a lack of in-house invertebrate skills (and a lack of funds to commission professional surveys).	Conduct field events on sites managed for wildlife and *produce invertebrate site reports* on behalf of site managers.

2 The FSC BioLinks vision

Our vision started out as a simple concept:

"To ensure our natural heritage is protected before it's lost by training volunteers in how to identify and record our 'less charismatic' wildlife."

However, the development of the BioLinks project has demonstrated huge social and community benefits. Our vision to improve our understanding of our natural heritage remains, but now we recognise that this project is about more than training people.

Biological recording volunteers want to develop their skills and training opportunities are present through many organisations, initiatives and projects. But these opportunities are often not linked and our volunteers deserve the same kind of progression pathway that professionals would receive.

If we want to make a lasting difference we need to think about the other players in the field, the players that already do so much good work and will remain after the BioLinks project. BioLinks will NOT compete with these organisations but will design an evolving and fluid training plan that complements existing provision and strengthens the biological recording network. This can only be done by working together and BioLinks has already consulted individuals from hundreds of biodiversity organisations, groups and projects.

And so our vision has grown:

"**FSC BioLinks** will develop nature's existing guardians and engage a new generation to record and tell the story of natural heritage. This will be achieved by offering structured personal development for volunteers and strengthening the biological recording community through working with an extensive network of affiliates."

We recognise that achieving our vision will not be easy… but it is possible. And we have a plan…

2.1 Project aims and outcomes

The BioLinks vision relies on delivering for three aims.

Aim 1: Record and tell the story of natural heritage

Our native wildlife is an important part of our natural heritage and wildlife can contribute significantly to the wellbeing, sustainability and economy of local communities.

Aim 2: Develop nature's guardians

Volunteer biological recorders provide a service that is used by both local and national decision makers, informing planning decisions, conservation action, research priorities and much more.

Aim 3: Strengthen the biological recording network

The biological recording community consists of a diverse range of organisations and individuals that are all working towards the common goal of ensuring our natural heritage is better understood.

The following sections will explain what outcomes we will deliver through these aims and how this relates to the *FSC's vision for 2020* as an environmental education charity: *Inspiring environmental understanding through first-hand experience* (see Table 8 below).

Table 8: FSC's vision for 2020: Inspiring environmental understanding through first-hand experience.

Work with the widest range of learners	Provide learning of the highest quality	Ensure the Charity's activities are sustainable
We will:	We will:	We will:
Extend the range of opportunities for all to experience and benefit from first-hand environmental understanding.	Exceed learner expectations in the quality of service provided, supported by external accreditation.	Develop our staff's confidence, competence to promote FSC's core beliefs and commitments.
Develop an integrated network of contrasting learning locations with access for all.	Build on our successes to influence others to overcome barriers to first-hand experience.	Improve our environmental performance and respond positively to environmental change.
Inspire, encourage and support first-hand environmental understanding through the provision of high quality educational resources.	Become the partner of choice for others looking to inspire environmental understanding through first-hand experience.	Become an increasingly successful charity which is more able to invest in its future.

2.1.1 Record and tell the story of natural heritage

UK understanding of many invertebrate species distributions and the current state of their populations is severely lacking, as is understanding of the ecology and behaviour of these under-recorded species groups. As a result of this, invertebrates are rarely considered by decision makers when managing sites.

What is FSC BioLinks seeking to achieve?

BioLinks aims to increase the number of individuals trained in the identification of under-recorded invertebrate species groups, and support the recording of these groups to Local Environmental Records Centres and National Recording Schemes & Societies. The resulting biological records will help create a more complete picture of the current distribution and state of invertebrate species populations. These records will be enhanced through a new means of collating information regarding the ecology and behaviour of species and will be interpreted for volunteers and recorder users to provide feedback regarding their efforts. This greater depth of knowledge regarding invertebrate species assemblages will also be used to assess the condition of habitats managed for wildlife and influence the way that sites are managed in the future.

What outcomes will FSC BioLinks deliver?

Natural heritage will be better identified and recorded on a regional level through undertaking biological recording of invertebrates. These records will allow us to identify the species composition of wildlife sites and the local species distribution of under-recorded taxa, as well as the ecology and behaviours of these under-studied organisms. Accurate species identifications will be recorded and verified by experts and will contribute to biodiversity monitoring schemes and national dataset.

Natural heritage will be better interpreted and explained through the production of resources that put species records in an ecological context. Regional atlas projects will demonstrate local species distribution and site species lists will allow site managers to assess the habitat quality of local wildlife sites. The ecology and behaviours of species will be interpreted alongside the previous outputs through newsletters and regional conferences. The benefits and uses of local natural history collections will be explained to volunteer biological recorders.

Natural heritage will be better managed on local wildlife sites by equipping site managers with the necessary tools to use invertebrate species assemblages to assess habitat quality. Invertebrate species lists will be provided to site managers alongside guidance on using the new PANTHEON tool. The output from PANTHEON will be used to inform site management plans and help secure local wildlife populations.

How does this fit in with the FSCs vision for 2020?

Recording wildlife and interpreting the findings allows the FSC to inspire environmental understanding, the backbone of our vision. Through the outcomes of BioLinks project activities the FSC can inspire people based on an improved understanding of nature and the current state of UK invertebrate populations.

How will FSC BioLinks achieve this?

Creating invertebrate species records

BioLinks will train and prepare volunteers to identify invertebrates and submit species records to both national recording schemes and local environmental records centres. In addition, BioLinks volunteers will undertake invertebrate species recording at sites managed for wildlife on *Field Recorder Days* (action 1.1.1). As well as providing an environment where volunteers can practice their skills with support from project staff and experts, these events will result in the creation of species records that will be shared with both national recording schemes and local environmental records centres, and be used to compile invertebrate assemblage lists for Invertebrate Site Reports. Biological recorders of other groups (such as vascular plants, vertebrates and fungi) will also be invited to attend the event to maximise the number of species records captured during the event and to develop links between local recorders.

Interpreting invertebrate assemblages for site managers

Pantheon is a new analytical tool developed by Natural England and the Centre for Ecology & Hydrology to assist invertebrate nature conservation in England. Users import lists of invertebrates into Pantheon, which then analyses the species, attaching associated habitats and resources, conservation status and other codings against them. This information can then be used to assign quality to sites, assist in management decisions and augment other ecological study. Invertebrate assemblages will be recorded on Field Recorder Days and project staff will create *Invertebrate Site Reports* (action 1.2.1), alongside instructions on how to use Pantheon, to site managers to equip them with the information they require to manage sites better for invertebrates.

PANTHEON

Diversifying the data we collate

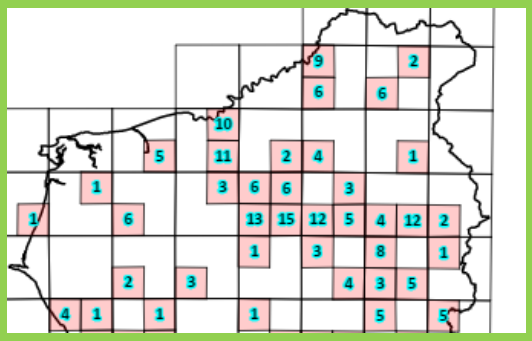
Biological recording has changed dramatically from its roots in Victorian Britain, where naturalists would record beautifully written prose describing the ecology and behaviour of wildlife. Species records are now much more factual and based around specific categories such as location, date and habitat. Although ecology and behaviour is still observed and recorded by naturalists, this is often in member-only publications and personal blogs. The *Field Notes Database* (Actions 1.1.3) will provide a digital platform for naturalists to make such observations, and this data will be open access and searchable so that the ecology and behaviours of our wildlife can be shared more widely. Interesting entries and uses of the data will be shared through the *Field Notes Bulletin* (Action 1.2.3) and sent our every 6 months to registered users of the database.

Demonstrating uses of natural history collections

Natural history collections are under-used and many are threatened by reduced funding and resources to maintain them. BioLinks will engage volunteers with local natural history collections through *Natural History Collections Workshops* (Action 1.2.2). Volunteers will learn how these collections can be used to assist in species identification and build relationships with the curators that look after these collections.

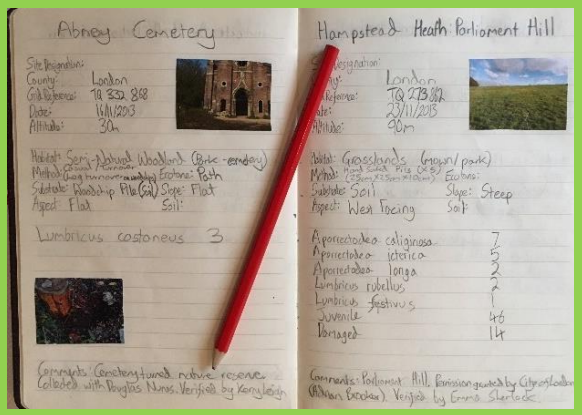
Filling gaps in species distribution knowledge

Geographic distribution of records for species groups is often patchy and may depend on the recording habits of a small number of individuals for under-recorded species groups. Atlas projects, both regional and national, have proved successful in the past at motivating recorders to visit areas that are lacking in records of the target species group. The *BioLinks Digital Atlas* (Action 1.1.2) will be an online tool that allows volunteers to interact with the existing species distribution data for focus species groups visualise the data spatially. The atlas database can be filtered taxonomically and temporally, and displayed at different spatial resolutions in order to allow volunteers to target their efforts on geographic gaps in our species distribution knowledge.



Increasing the number of invertebrate species records

Outside of project activities, project volunteers will feel motivated to observe, identify and record invertebrates in their local area. These records will be submitted to national recording schemes and local environmental records centres, with project staff mitigating for issues with data flow where necessary. This *Species Recording* (Action 1.1.4) will result in invertebrate species datasets that are more comprehensive and robust in terms of scientific value. The impact of personal species recording will be measured by working with local environmental records centres to monitor the number of species records that is submitted annually for each of the focus species groups.



2.1.2 Develop nature's guardians

The training of biological recording volunteers is provided by a large number of organisations, many of which are volunteer-run, and there is a lack of clear development pathways regarding species identification and recording. Invertebrate species groups often include many species that are 'difficult-to-identify' and the lack of clear learning pathways acts as a barrier to the recruitment of highly-skilled volunteers.

What is FSC BioLinks seeking to achieve?

BioLinks aims to bring a highly structured approach to training and developing the skills and knowledge required to identify and record invertebrates through a comprehensive structured programmes of taught courses. These will be complemented by opportunities for support and mentoring will enable volunteers to feel confident and motivated to continue their volunteer contributions to recording our natural heritage outside of scheduled project activities. Furthermore, BioLinks aims to bring enjoyment to volunteers by supporting their integration into local groups and communicating the outputs of their efforts back to them.

What outcomes will FSC BioLinks deliver?

People will have developed skills in many aspects of biological recording, including good practice, taxonomic identification and field sampling. People will also develop skills and confidence in using natural history collections and emerging digital/technological resources. Training techniques will be taught to species identification trainers and training hub staff will be trained on how to facilitate biodiversity training workshops at their venues.

People will have volunteered their time through a host of project activities, including indoor workshops, field events and conferences. Furthermore, people will put the skills and knowledge they have developed to use outside of project activities through species recording locally and continue to contribute to the project outcomes in their own time.

People will have had an enjoyable experience developing their knowledge of local natural heritage and meeting other members of the local biological recording community. Field and indoor events will bring local volunteers together and, alongside regular newsletters, provide feedback regarding the difference that project participants are making through the identification and recording of natural heritage.

How does this fit in with the FSCs vision for 2020?

Appendix II FSC BioLinks Development Plan For Training Provision will extend the range of opportunities for biological recorders to experience and benefit from first-hand environmental understanding by highlighting where current gaps exist in development pathways filling these gaps through project activities

The clear development pathway will exceed learner expectations in the quality of service provided, and a new method of assessing volunteer competence in invertebrate identification will be piloted.

Environmental understanding will be supported through production of educational resources (e.g. guidance notes and training videos) and inspired through the creation of digital species identification resources.

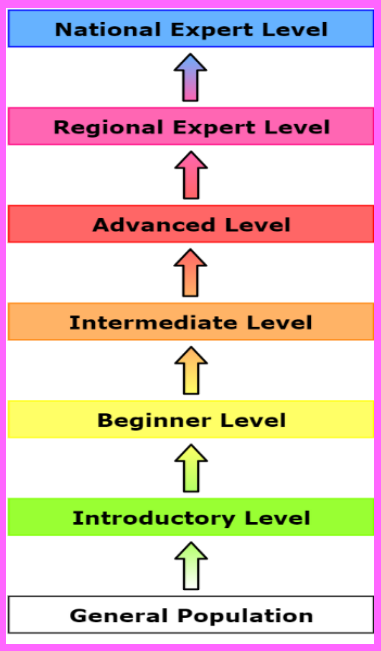
How will FSC BioLinks achieve this

Providing development pathways for species identification training

One significant barrier that prevents volunteers from developing their identifications skills is the lack of structured development opportunities within the biological recording community, particularly regarding less popular groups such as invertebrates. BioLinks will provide a cohesive assortment of project activities that will aim to develop volunteer knowledge, skill, confidence and motivation as set out in **Appendix II FSC BioLinks Development Plan For Training Provision.**

The key project activities that will develop volunteer knowledge and skill regarding species identification will be the *Focus Species Group Training Courses* (Action 2.1.2, 2.1.3 & 2.1.4). These courses will consist of a variety of taxa-focussed one day and residential courses that will be taught by experts in the respective species group. The content will vary depending on the techniques required to observe, identify and record each species group, but all courses will include details of how to submit a species record for the focus taxa.

Each course will be part of a structured training plan of that will deliver learning opportunities at the Introductory, Beginner, Intermediate and Advanced competency levels set out in the BioLinks Volunteer Learning Pathway (see Figure 9 on page 44). These training courses will provide opportunities for volunteers to develop their knowledge and skill regarding the identification of subsets of the focus species groups. Providing a clear pathway will allow new volunteers to plan how their learning pathway will progress and allow existing volunteer biological recorders to enter the project through project activities that are appropriate to their individual competency level. In addition to providing clarity to volunteers, the structured training programme will allow the project staff and affiliates to easily identify where gaps in the provision exist and target future training provision accordingly.



The provision of specific courses outlined in **Appendix II FSC BioLinks Development Plan For Training Provision** will be dependent on the current provision within the region, as BioLinks will aim to fill the gaps within these training pathways rather than repeat training provision that is already provided. Some training courses (such as 'Pseudoscorpion Identification Using Microscopes') are present in multiple training pathways and therefore have several pathways leading to them.

Affiliates will be provided with **Appendix II FSC BioLinks Development Plan For Training Provision** and will be openly encouraged to adopt the same standardised competency level s and course naming system to provide potential attendees with clarity regarding how the sector-wide provision is linked.

Supporting volunteers

Although providing training opportunities for volunteers does improve skill and knowledge, further sustained support is required to ensure that volunteers are sufficiently confident and motivated to undertake biological recording outside of and beyond FSC BioLinks. The *BioLinks Verification and Support Service* (Action 2.2.1) will consist of a number of drop-in workshops where volunteers can visit training hubs on allocated days and have access to equipment such as microscopes and identification literature, as well as support from the regional project officer. These services will run in each region on a roughly fortnightly basis and around one fifth of the workshops will be led by an expert to bridge the link between potential mentors and volunteers.

Bringing new volunteers into biological recording

It's important that BioLinks seeks to recruit new volunteers into the biological recording network so that the project outcomes are not reliant on the relatively small number of existing volunteers. BioLinks will host a series of *Learn To Love Training Courses* (Action 2.1.1) that will be pitched at a level that assumes no previous knowledge or skill in species identification and therefore engage those with an interest in natural history that are yet to start submitting species records. These courses will be hosted by external training centres across the BioLinks regions, rather than the designated training hubs, to reach new communities and encourage individuals to continue their development at the BioLinks training hubs.

Celebrating volunteers' success

Volunteers may find it difficult to stay motivated if the outputs of their efforts are not reported back to them. Social media will enable the project to achieve this on an instant and regular basis, but there is also a need to provide opportunities for the volunteers to celebrate their achievements through events and literature. The *BioLinks e-Newsletter* (Action 2.3.1) will be produced twice per year and disseminated to all volunteers. This electronic publication will provide volunteers with project updates and news, but also provides opportunities for volunteers to share their biological recording stories with other volunteers and learn about the outputs of their efforts. To provide further opportunities for project volunteers to celebrate their successes, a *BioLinks Regional Recorder Conferences* (Action 2.3.2) will be hosted within each of the two project regions each year and consist of a series of presentations regarding biological recording within the region. These will take place in the winter months when there are traditionally less field sampling opportunities available for volunteers.

Biological recording good practice

Creating and managing biological records involves much more than making wildlife observations. It is important that volunteers are not demotivated by potentially confusing and onerous subjects such as understanding spatial data and land-owner permissions. *Biological Recording Guidance Notes* (Action 2.2.2) will be produced to provide volunteers with concise and easy-to-understand information regarding such topics. In addition, *Field & Technical Skills Online Videos* (Action 2.2.3) will be published through an outlet such as YouTube to provide step-by-step instructions regarding the practical aspects of biological recording. Both the guidance notes and online videos will be freely available to all online.

Making invertebrate identification resources more available

Barriers to learning species identification can include the cost of identification resources and the highly technical content of many existing resources. The FSC Tomorrow's Biodiversity project investigated the creation and dissemination of online identification resources and produced a framework for the creation of multi-access identification keys as a result. BioLinks will create new *Online Identification Resources* (Action 2.2.4) for focus species group taxa using this framework, making these resources open to all online.

Recognition of volunteer learning

Providing means for volunteers to evidence and interpret their development is important for both the project and the volunteers to assess their progression. Young adults and career developers require proof of attendance for training courses as evidence for both potential employers and their own personal records. *Training Course Certificates* (Action 2.3.3) will be provided for the attendance of each training course. Furthermore, a new qualification will be designed and piloted to assess the ability of an individual to accurately identify invertebrates to species level. The *Invertebrate Identification Skills Certificate (IISC)* (Action 2.3.4) will be created to determine the competency level (according to the BioLinks Volunteer Learning Pathway) of an individual and will be assessed through assessment days. Individuals will have the opportunity to undertake the assessment at several times throughout the project, allowing them the opportunity to attain the qualification with an increased competency level if their skills have improved sufficiently.


Invertebrate Identification
Skills Certificate

THIS ACKNOWLEDGES THAT

Charles Darwin

HAS ACHIEVED THE FOLLOWING COMPETENCY LEVEL IN THE INVERTEBRATE IDENTIFICATION SKILLS CERTIFICATE ASSESSMENT:

REGIONAL EXPERT LEVEL

2.1.3 Strengthen the biological recording network

The biological recording network is under-resourced and many of the organisations involved are run entirely by volunteers. Cuts to government funding for the environment have led to further pressures on organisations such as Local Environmental Records Centres and local authority ecology professionals. The large number and variety of organisations involved struggle to provide a cohesive service to their members and volunteers.

What is FSC BioLinks seeking to achieve?

BioLinks aims to strengthen the links between the volunteers and organisations that make up the biological recording community, making the whole network more resilient. Firstly, the project will recruit new biological recording volunteers to the network through engagement events and introductory level courses, and also target demographics that are currently under-represented (such as young adults). FSC BioLinks will investigate how individuals with learning difficulties may be able to make meaningful contributions to biodiversity monitoring initiatives. Secondly, the project will aim to improve the resilience of the FSC and project affiliates (such as training centres, recording schemes and local groups).as a larger number of individuals will be aware of and have engaged with these organisations and their initiatives.

What outcomes will FSC BioLinks deliver?

More people and a wider range of people will have engaged with natural heritage, including more young adults to address the generational skills gap in identification and field skills that is currently forming. In addition, individuals with learning difficulties will have engaged with natural heritage through contribution to meaningful biodiversity monitoring initiatives and members of the general public will be engaged with their local natural heritage through BioBlitz events.

The FSC and other organisations will be more resilient through extensive partnership working and sharing of ideas. FSC will be more resilient through the creation of improved systems to manage volunteers and better relationships with other organisations within the biodiversity sector. The resilience of natural history collections and biodiversity training centres will be improved through increased engagement with individuals through project activities, and local groups and national recording schemes will receive boosts to their membership. The whole biodiversity sector will be stronger through the sharing of evidence collated throughout the project regarding the successes of BioLinks and the lessons learnt.

How does this fit in with the FSCs vision for 2020?

FSC (and external) learning locations will benefit from an improved capacity to deliver invertebrate identification courses. This will diversify their current provision and widen their existing audience, as well as expanding the reach of FSC learning opportunities beyond our own training centres.

By setting an industry standard regarding volunteer development, FSC BioLinks will build on our successes to influence others to overcome barriers to first-hand species identification training and development.

Working with a wide number of biodiversity organisations will help promote the FSC as the partner of choice for others looking to inspire environmental understanding through first-hand experience.

How will FSC BioLinks achieve this?

Community engagement

It is important to engage local communities with the wildlife found at local sites. *BioBlitz Events* (Action 3.1.1) will be undertaken at the beginning and end of the project in both regions to celebrate the species richness with members of the biological recording community and the wider general public. A BioBlitz uses volunteers to catalogue the species that are present on the site within a given time period. Within this project, these events will act as a means of letting the local community know what this project is trying to accomplish by engaging individuals with a range of biological recording-focused activities. However, it should be noted that the number of species catalogued during a BioBlitz may be limited by the level of expertise held by the participants, and so by repeating the BioBlitz at the same site at the beginning and end of the project it is hoped that an increase in the skill and knowledge of local volunteers will be evident through comparison of the two lists.

Diversifying the pool of volunteers

Not all demographics of society are represented proportionally within the biological recording community. Ensuring that a new generation of biological recorders are engaged is a key aim of this project as many societies report an ageing demographic and the potential formation of a generational skills gap. By implementing a *Young Adult Recruitment Strategy* (Actions 3.1.3) and working with A Focus On Nature (the forum for young naturalists) BioLinks aims to address this issue by raising the profile of young biological recorders and ensuring that project activities are affordable/accessible for young adults to attend. In addition, project activity promotion will be targeted at young adults through A Focus On Nature and will be a key component of the *BioLinks Social Media Strategy* (Action 3.1.2). Both men and women appear to be equally represented within the biological recording community despite the stereotype of a biological recorder being male. BioLinks will ensure *Balanced Gender Representation* (Action 2.1.4) through monitoring of the proportion of female volunteers and undertake targeted recruitment activities if women are found to be under-represented.

Helping other biodiversity training providers

Finding identification training opportunities can be difficult for volunteers as there are many different providers, some of which are small volunteer-run organisations with niche courses. As a result of this it can be difficult for potential biological recorders to know where to look for potential training provision. The *Biodiversity Training Signpost* (Action 3.2.1) will be an online tool that will pool these training courses alongside BioLinks training courses to provide a 'one-stop shop' for identification training. This will not only make searching for courses simpler for potential participants, but will also strengthen the biological recording network by providing a central platform for advertising courses and help some of the small volunteer-led organisations raise awareness of the courses they provide.

Upskilling the experts

Developments in digital tools are developing at an exciting rate. These tools open up many possibilities for us to improve the way we manage and interpret our data, however many volunteer experts do not have the training or skills to be able to take advantage of these developments. *Digital Skills Training Courses* (Action 3.2.2) will be offered to volunteer experts on a range of subjects (such as QGIS, website development, identification visualisations and databases) to upskill our volunteer experts and ensure biological recording keeps up with the digital age.

Learning difficulties pilot

Land-based sector apprenticeships often include a significant proportion of individuals with learning difficulties, such as autism. *The Learning Difficulty Educators Pilot Project* (Action 3.1.5) will look to investigate how FSC BioLinks can equip vocational trainers with expertise in training individuals with learning difficulties to make meaningful contributions to biodiversity monitoring schemes and stimulate increased happiness and wellbeing. The pilot will bring together project staff, learning difficulty experts and educators.

Sharing good practice

To ensure that the work of BioLinks does not come to an end when the project is completed, legacy will be a consideration throughout the entire project. The project staff will ensure *Biodiversity Sector Conference Representation* (Action 3.2.3) throughout the project, and will use this opportunity to promote key developments and findings resulting from the project. These conferences will also be used to investigate what other projects/initiatives could benefit BioLinks and vice versa to ensure maximum impact for the project. Towards the end of the project a *BioLinks Legacy & Resilience Workshop* (Action 3.2.4) will be hosted and sector stakeholders will be invited to attend and participate in determining how the outcomes of BioLinks can benefit their work and future plans, and determine the best way to publicise the lessons learnt during BioLinks to the wider sector.

2.2 FSC BioLinks target audiences

The development phase analysis of current and potential audiences (see Section 1.4 on page 21) highlighted the need for BioLinks needs to incorporate a strategy to:

- *Recruit potential volunteers already engaged in other aspects of natural heritage* (such as wildlife photography, environmental education or conservation) by providing a pathway into the project.
- *Provide structured development to existing biological recorder* by categorising volunteers according to their competency levels.
- *Diversify the existing pool of biological recorders* by engaging under-represented audiences.

A full summary of the audiences that the BioLinks project plans to engage can be found in the audience summary table in Section 2.2.5 on page 46.

2.2.1 Recruit potential volunteers already engaged in other aspects of natural heritage

Amateur naturalists undertake a wide variety of activities associated with nature, including wildlife photography and volunteering in the conservation or environmental education sector. These individuals already have a keen interest in wildlife and may be interested in learning how to accurately identify the organisms they are observing, and may be unaware of the activity of biological recording or lack the confidence to submit wildlife observations to recording schemes or local environmental records centres. Project activities that would appeal to those interested in nature but new to biological recording have been incorporated into the project to ensure that the number of biological recording volunteers is increased, to improve the resilience of the biological recording community.

2.2.2 Provide structured development to existing biological recorders

Biological recording audiences can be divided into two distinct audiences for the purpose of this project and all of these potential audiences will be targeted throughout the project.

Existing biological recorders of focal taxa will have varying levels of species identification competency for their chosen species group(s) depending on a multitude of factors such as the length of time they have been recording any given group, previous training and access to a mentor. This audience was chosen as a key audience due to the existing interest and demand from these recorders for higher level training so that they are able to competently identify the more difficult groups within the species groups they record. In addition, these recorders will come across species that fall outside of their expertise when out recording and may be interested in diversifying their knowledge so that they can contribute to a greater number of recording schemes.

Other biological recorders include botanists, mycologists, ornithologists and lepidopterists. As above, these are a key audience for BioLinks as they are already skilled in biological recording and are likely to have an interest in other species groups, particularly those that are ecologically relevant to the groups they study. For example, botanists may be interested in learning about invertebrates that have animal-plant associations with the plants that they study.

The BioLinks consultation highlighted the need to create a transparent template for assessing competency levels of biological recording volunteers and attributing matching competency levels to training courses. The *BioLinks Volunteer Learning Pathway* (see Figure 9 on page 44) was designed as part of **Appendix II FSC BioLinks Development Plan For Training Provision** in response to these findings and uses four key competencies (knowledge, skill, motivation and confidence) to define 6 competency levels of biological recorder and allows assessment of the needs of each competency level individually (see Table 9 below).

Table 9: Summary of species identification and recording competency levels

Competency level	Potential needs
National expert	Assistance with supporting regional biological recorders. Support from international expert. Advice regarding best practice for sharing and collating national datasets.
Regional expert	Assistance with supporting local biological recorders. Skill development in training techniques. Training regarding digital resources and data management.
Advanced level	Identification of large species groups with cryptic features. Technical identification skills (such as genitalia dissection and specimen clearing). Guidance on checking current state of biological recording knowledge.
Intermediate level	Identification of species requiring use of microscope and identification keys. Specimen collection and preservation techniques. Explanation of group-specific considerations for recording of group.
Beginner level	Identification of species identifiable in the field. General field sampling techniques. Introduction to relevant recording schemes and criteria for making species record.
Introductory level	Training in general ecology and biology of taxa. Basic skills training in microscopy and using identification resources. Introduction to the concept of biological recording.

If BioLinks is to engage new biological recording volunteers, such as amateur naturalists (covering subjects such as wildlife photography, environmental education and conservation), courses that require no previous knowledge of biological recording may be necessary. This would increase the resilience of the biological recording community rather than apply additional competition from existing volunteer's time by widening the reach of the project.

Figure 9: FSC BioLinks Volunteer Learning Pathway

2.2.3 Diversify the existing pool of biological recorders

Evidence suggests that the current biological recording community does not provide proportional representation of the demographics of the UK. This is a recognised issue within the sector and one which BioLinks will help to address. The reasons for the under-representation of certain demographics are complex, and have roots both in history and culture.

Young adults (18 – 25 years old) were selected as a priority audience for the BioLinks project. A lack of young adults participating in biological recording and the subsequent lack of young adults with species identification and field skills is leading to a generational skills gap that risks future monitoring of our natural heritage. Feedback from representatives of A Focus On Nature (a forum for young naturalists) suggested that there are a number of barriers to young people becoming involved in biological recording (see Table 5 on page 24) and BioLinks will tackle this by committing to undertake all of the proposed solutions within this table.

Black and minority ethnic groups (BMEs) are an audience that also currently under-represented within biological recording. Although BioLinks recognises the need for more efforts to engage BMEs with biological recording and wider biodiversity activities it was decided that the level of activity that would be necessary to make a significant difference to this issue is beyond the scope of what BioLinks can achieve based on the capacity and resources of the project. However, some of the barriers to BMEs participating in the project (see Table 6 on page 27) can be mitigated to a certain extent by following good practice (such as ensuring that images on promotional material are more representative of the diversity within England).

Women are an audience that was suspected to be under-represented due to the common perception of the typical biological recorder. Although the feedback from consultees and analysis of the gender of consultation participants did not support this, there is no evidence detailing the spread of women across different competency levels. Therefore, it has been decided that BioLinks will monitor the proportion of women participating in the BioLinks project and take action to directly recruit women if they are found to not be proportionally represented (less than 40%) across all competency levels addressed by the project. This will be reviewed on an annual basis.

2.2.4 Other audiences

Learning difficulty educators will be targeted for training on the inclusion of biodiversity monitoring schemes within the training they provide to individuals undertaking vocational training within the land-based sector. The decision was made to target educators rather than engage with those with learning difficulties directly due to recognition of the FSC's limited experience in this area. A pilot project will help build relationships between the FSC and learning difficulty educators and build FSC resilience for further work in this area in the future.

Site managers will be a key target user of the invertebrate species data collected throughout the project. Relationships between these professionals, the local biological recording community will be developed through project activities. Guidance will be produced to ensure that site manages are able to interpret the data provided to them and enable them to effectively manage their sites better for invertebrates. This will outline good working practice for the FSC when recording on sites managed for wildlife and set a precedent for future species recording activities undertaken by the FSC.

2.2.5 Audience summary tables

Table 10: Biological recording audience summary table

Audience	Current engagement with the FSC	Why will the project engage them?	How will the project engage them?	Outcomes
Existing biological recorders of focal taxa	The FSC: • Produce identification resources for this audience. • Provide identification training for this audience. • Mentoring and support through current and previous biodiversity projects.	Audience is currently limited by lack of training opportunities to develop skills to advanced level and support from host recording schemes is often limited due to lack of resources.	• Producing additional identification resources for the focus species groups. • Providing intermediate and advanced level training. • Increasing the number of support opportunities and fostering mentoring relationships.	Existing recorders of focal taxa will have: • Improved/broadened their identification skills regarding their focal taxa, allowing them to submit records for a wider number of species. • Engaged with new and existing recorders within their local community.
Other biological recorders (such as recorders of plants, fungi, vertebrates and butterflies)	The FSC: • Produce identification resources for this audience. • Provide identification training for this audience.	To increase the robustness of recording schemes dealing with difficult-to-identify data deficient taxa by diversifying the skills of the wider biological recording community.	• Providing introductory and beginner level training to make the focal taxa more accessible. • Increasing the number of support opportunities and fostering mentoring relationships.	Existing recorders of other taxa will: • Developed identification skills for new groups of taxa, allowing them to submit records to additional recording schemes. • Connected with mentors and feel confident submitting species records. • Met other recorders of the focal taxa within their local community.
Amateur naturalists (wildlife photographers, environmental educators and conservationists)	The FSC: • Produce identification resources for this audience. • Provide various training for this audience.	Profile of biological recording needs to be increased with this audience in order to increase the number of active volunteer biological recorders and increase the robustness of recording schemes dealing with difficult-to-identify data deficient taxa.	• Raising the profile of biological recording through social media. • Providing introductory level training to make the focal taxa more accessible. • Increasing the number of support opportunities and fostering mentoring relationships.	Amateur naturalists will have: • Gained an understanding of biological recording and resulting benefits to natural heritage. • Developed identification skills for the focal taxa, allowing them to submit records to recording schemes. • Connected with mentors and feel confident submitting species records. • Met other recorders of the focal taxa within their local community.
Regional and national recording scheme organiser volunteers	The FSC: • Work with recording scheme organisers as Associate Tutors to design and deliver identification training. • Work with recording scheme organisers as taxonomic experts to create identification resources. • Work with recording scheme organiser to mentor and support recorders through current and previous projects.	The impact of this audience is limited by a lack of funding and resources and previous projects have demonstrated that support from the FSC can significantly improve the capacity of this audience to deliver high quality training for volunteers and result in increases in the number of species records produced.	• Producing additional identification resources for the focus species groups. • Providing advanced level and digital skills training. • Sharing the workload with mentors by providing support to project volunteers. • Providing networking opportunities between this audience and recorders through project activities.	Recording scheme organisers will have: • Access to a more skilled pool of volunteers. • Access to a larger pool of volunteers. • Developed additional digital skills. • Engaged with existing and new recorders through project activities. • Access to several digital tools to support their recording schemes (such as atlas, identification and course promotion tools). • An increased number and wider variety of species records being submitted to their schemes.

Table 11: Professional audiences table

Audience	Current engagement with the FSC	Why will the project engage them?	How will the project engage them?	Outcomes
Site managers	The FSC: • Develops relationships with local site managers to allow FSC educational activities to be delivered on non-FSC sites. • Works with site managers where FSC property abuts conservation land eg SSSI and NNR at Slapton, Malham, Flatford	Invertebrate species records are often either lacking or underused with regards to the management of site for wildlife by site managers.	• Develop new and existing relationships with local site managers. • Providing site manager with invertebrate assemblage site reports with guidance on how to interpret the data. • Providing training opportunities for site managers and their staff/volunteers regarding the identification of the focal taxa.	Site managers will have: • A better understanding of the invertebrate assemblages on their sites and guidance on how to interpret this data to manage their sites better for invertebrates. • Improved links with the local biological recording community.
Educators of adults with learning difficulties (land-based sector)	FSC has no formal engagement with this audience.	Apprentice schemes in the land-based sector (such as aboriculture, agriculture and horticulture) involve working alongside natural heritage on a daily basis and some of these apprentices have learning difficulties. There is an opportunity to engage these individuals with biological recording and enable them to contribute in a meaningful way to biodiversity monitoring initiatives.	• Investigating possible opportunities with educators and learning difficulty experts. • Providing training for land-based sector educators of adults with learning difficulties to incorporate biodiversity monitoring into their training programmes. • Producing an online training resource following evaluation of this pilot.	Educators of adults with learning difficulties will have: • Learned how to incorporate biodiversity monitoring into their training programmes. • Access to an online training resource.
Training hub staff	The FSC: • Employ Tutors to act as host training hub staff to associate tutors when adult natural history courses are delivered.	Host training hub staff are often primarily trained with regards to delivering environmental education for primary and secondary education, and have a minimal understanding of the resource needs for identification training courses.	• Training host training hub staff to be able to meet the needs of visiting associate tutors and ensure the preparation needs of identification courses are met.	Training hub staff will have: • Sufficient knowledge to ensure identification course preparation needs are met. • A better understanding of the equipment and resources needed for identification courses. • Increased knowledge of FSC BioLinks and be better placed to support the legacy of the project.
Identification course tutors	The FSC: • Work with Associate Tutors to design and deliver identification training. • Offer free training opportunities to associate tutors.	Identification course tutors (or Associate Tutors) will be key to delivering the structured training programme for volunteer recorders. Many associate tutors have had no formal teaching training.	• Providing 'Train the Trainers' courses for course tutors. • Providing guidance regarding core components and resources that should be provided with every project training course.	Associate Tutors will have: • Improved teaching skills and better knowledge of how to teach individuals with varying learning styles. • A better understanding of the project and how to deliver the project outcomes.
Career developers and higher education students	The FSC: • Provide higher education training programmes to universities. • Deliver biological recording qualifications (Ucert, PGCert, PGDip and MSc) in partnership with Manchester Metropolitan University. • Deliver professional training opportunities through the natural history courses.	These audiences are often looking for opportunities to improve their skill sets in order to progress within their chosen field of study/work. In addition, many of these individuals may belong to the young adult demographic, a key target audience of this project.	• Ensuring training opportunities provided by this project are advertised through university promotional campaigns and via appropriate social media outlets (such as LinkedIn and the A Focus On Nature Facebook group). • Providing clearly tiered competency levels that can be used to quantify student/career developers ability.	Career developers and students will have: • Certificates to evidence their attendance of training activities. • Evidenced their competency level through completion of Invertebrate Identification Skills Certificate assessment days. • Engaged with volunteers and become integrated into the biological recording community. • Gained an understanding of biological recording and resulting benefits to natural heritage. • Developed identification skills for the focal taxa, allowing them to submit records to recording schemes.

Table 12: Demographic audiences summary table

Audience	Current engagement with the FSC	Why will the project engage them?	How will the project engage them?	Outcomes
Young adults (18-25 years old)	FSC has limited engagement with Young Adults as much of the environmental education services that are provided are to primary and secondary education students. Outside formal education, higher education students make up a relatively small proportion of the FSC customer base as the young adult demographic is under-represented with regards to adult natural history course attendance.	Many biological recording schemes and societies report that young adults are under-represented within their pools of members and volunteers. This has led to a concern that a generational skills gap in field and identification skills is forming, and poses a threat to our natural heritage if future generations are ill-equipped to monitor it.	• Working with A Focus On Nature (the forum for young naturalists) to overcome barriers to engaging with young people. • Targeted promotion of project activities to young adults through universities and social media. • Raising the profile of young adult naturalists through in-house and external articles. • Sponsorship of young adults to attend biodiversity sector events to facilitate better integration into the existing community and overcome the barrier of cost. • Also see 'Career developers and higher education students' audience.	Young adults will have: • Been made aware of biological recording volunteer opportunities. • Have a raised awareness of existing young adult naturalists and understand that biological recording is relevant to their demographic. • Been given opportunities to attend events that would often otherwise be difficult to attend due to cost being a barrier for many young people. • Met other biological recorders within the local community and become integrated into the existing network. • Become better represented within the biological recording community through all of the above.
Black & Minority Ethnic (BME) Groups	FSC has no formal engagement with specialist BME groups.	The level of activity that would be necessary to overcome the existing barriers for BME groups to engage with biological recording is beyond the scope of this project due to limited capacity, expertise and resources.	Although black and minority ethnic groups will not be specifically targeted, some of the barriers to BME groups participating in the project can be mitigated to a certain extent by following good practice (such as ensuring that images on promotional material are more representative of the diversity within England and promoting the project activities to organisations undertaking environmental engagement work with BME groups). Furthermore, project activities will be delivered in areas know to have high ethnic diversity, such as Birmingham and London.	BME groups will have: • Been made aware of project activities that occur within their local community.
Women	The FSC does not record data regarding the gender of adult natural history course attendees and can therefore not determine the level of engagement that currently occurs with women. However, anecdotal evidence and representation during the BioLinks consultation events and Ento Day 2016 (regional recorder conference hosted by the FSC) suggests that men and women are equally represented.	The project aims to deliver activities that do not favour one gender over another, and it is expected that women and men will be equally represented in project activities. However, the traditional stereotype of a biological recorder is male so the project hopes to monitor female representation. and provide an evidence base to demonstrate how fairly women are represented within the biological recording community.	• The proportion of project activity participants that are female will be monitored and reviewed annually. • If women are found to be under-represented, targeted promotion of project activities will be undertaken to local charities working with women.	Women will have: • No less than 40% overall representation in project activities.
Retired individuals	Retired individuals make up a significant proportion of the customers that attend FSC adult natural history courses.	Retired individuals are recognised to currently contribute a great deal to the biological recording network and this project will support the continued recruitment and support of this audience.	• Project activities will be advertised through existing methods of engaging this audience, such as local natural history societies and 'friends of' groups. • Social events, such as field recorder days and regional recorder conferences, will help build relationships between retired individuals and other volunteers.	Retired individuals will have: • Continued to participate in biological recording and have attended project activities. • Met other recorders of the focal taxa within their local community. • Become integrated into the local biological recording community.
General public	The FSC engages with the general public through a range of varying methods. Some of these include BioBlitz events at centres, FSC fold-out charts and Real Family Holidays (all-inclusive outdoor holidays provided by some centres).	It is important that local communities value their natural heritage and that awareness is raised of the value of biodiversity (and the volunteers that monitor it).	• BioBlitz events will provide opportunities for the general public to contribute to biodiversity monitoring within their local community. • Field Notes database will allow the general public to record ecological and behavioural observations they have made.	The general public will have: • Learned about the importance of natural heritage within their local community. • Engaged with biological recording volunteers and project staff through BioBlitz activities. • Contributed ecological observations to the Field Notes database.

2.3 Delivering the project

The FSC BioLinks project will be managed and delivered within the *FSC Biodiversity Team*. The organisational structure of the FSC and the working locations across the UK are explained within the **FSC BioLinks Project Business Plan**. The FSC Biodiversity Team sits within FSC Head Office and is managed by the FSC Operations Director.

2.3.1 FSC procedures and policies

The FSC wishes to ensure good practice is maintained throughout its work and promote a culture of safety. This ethos will be incorporated into the work of the FSC BioLinks project by adhering to in-house policies. A summary of these policies is provided in **Appendix V FSC Procedure & Policy Summary**:

- FSC Access Policy
- FSC Equal Opportunities and Inclusion Policy
- FSC Equal Opportunities Statement for Human Resources
- FSC Staff Handbook
- FSC Health and Safety General Statement
- FSC Operational Codes of Practice (OCoP), including FSC OCoP 20: Lone Working.

2.3.2 The FSC BioLinks Project Team

Three new staff will be appointed to deliver the project. All 3 will be part of a close team chosen for a blend of management, knowledge and technical biodiversity skills that will drive the project and FSC forward:

- *FSC BioLinks Project Manager* Responsible for line management of project staff and overall delivery of the project, including liaising with HLF. Responsible for delivery of South East England region project activities.
- *FSC BioLinks Project Officer* Support Project Manager with overall delivery of the project. Responsible for delivery of West Midlands region project activities.
- *FSC BioLinks Digital Development Officer* Lead on digital communications and technology (including the creation and prototyping of digital resources) for the project, closely liaising with FSC Digital, Marketing and Communications teams.

In addition to individual role responsibilities, the *BioLinks Project Team* will be able to:

- Manage and direct the project and the project budget
- Cover the external and internal management reporting responsibilities
- Communicate effectively with volunteers, NGOs, partners and tutors
- Integrate the project into both FSC and partner organisations
- Influence the organisation from within
- Raise the external profile of the organisation
- Cover both regions effectively
- Develop and hone communication strategies.

There will be one project officer or manager in each region and that the Digital Development Officer will be based in FSC Head Office in the West Midlands. Home working will be considered. This will necessitate well understood systems for staff management and team communication. This will include:

- Weekly telephone meetings
- Monthly progress meetings
- Quarterly progress reports
- Reporting to FSC Business Meetings annually
- Delivering training to a mix of staff and volunteers twice annually
- Compliance with the FSC HR review system
- Compliance with the FSC H&S and governance systems (a summary of which is provided in **Appendix V FSC Procedure & Policy Summary**).

The project team will be managed by the *FSC Biodiversity Learning Manager* (based at FSC Head Office in Shrewsbury) and Figure 10 below illustrates the management structure for project staff, volunteers and contactors for the project.

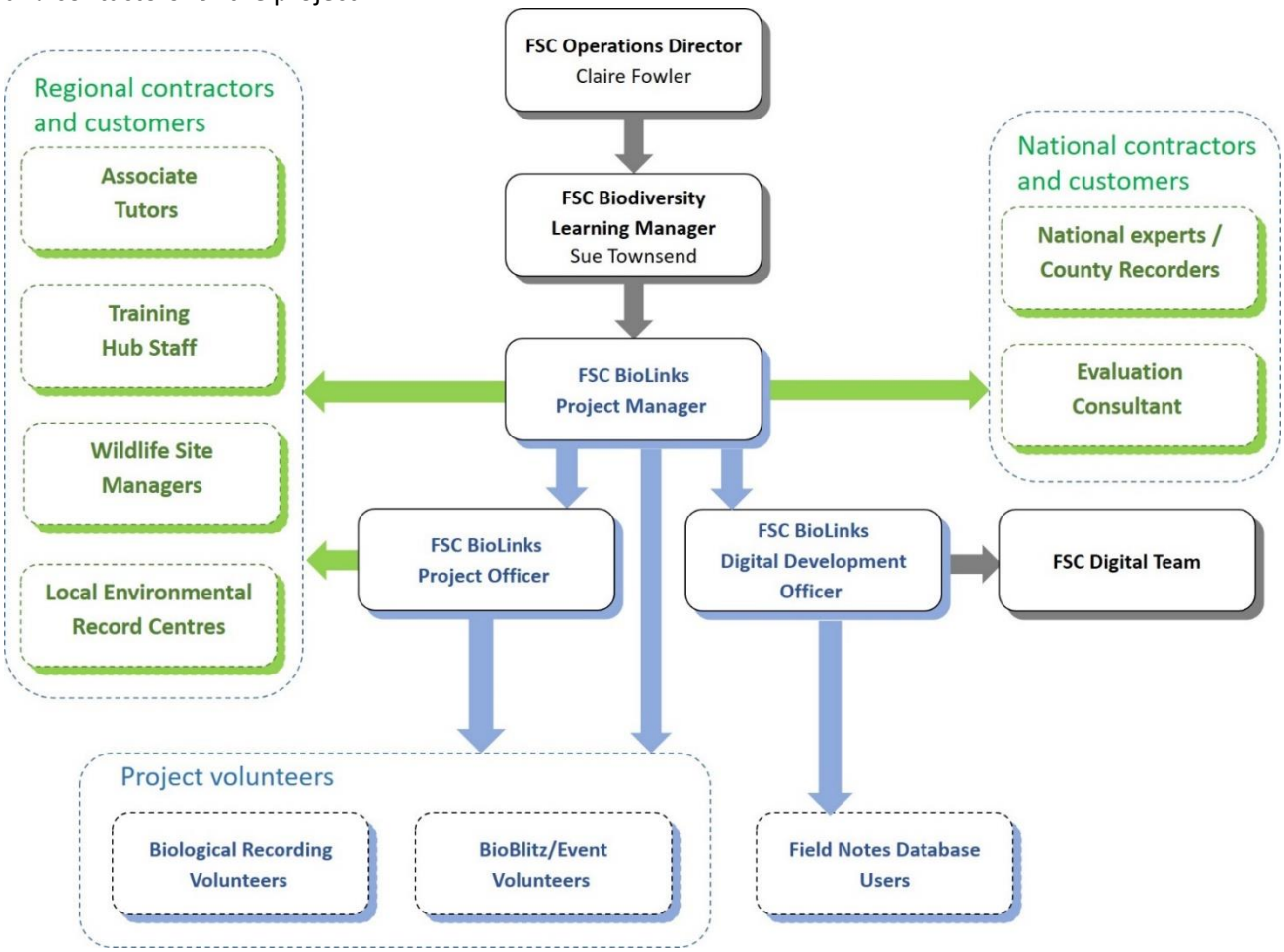


Figure 10: Organogram illustrating the management of project staffing, volunteers and contractors for the FSC BioLinks project. Blue boxes indicate project staff/volunteers; Grey boxes indicate FSC staff/teams; Green boxes indicate external contractors.

Full job descriptions outlining both team and role specific competencies/responsibilities can be found within **Appendix IV FSC Staff & Volunteers**. Project staff salaries have been calculated and a full breakdown can be found in **Appendix VIII FSC BioLinks Project Budget**. A summary of the starting and final salaries is presented in Table 13 below.

Table 13: Starting and final salaries for FSC BioLinks project staff (estimated at time of funding application).

FSC BioLinks staff position	Starting salary (year 1)		Final salary (year 5)	
	FSC salary point scale	Gross salary	FSC salary point scale	Gross salary
Project Manager	21	£29,855	22	£32,387
Project Officer	18	£26,162	19	£28,381
Digital Development Officer	20	£28,570	21	£30,993

2.3.3 FSC BioLinks project volunteers

FSC BioLinks will be heavily reliant upon the input of volunteers in order to deliver the project aims and vision. Therefore, it is important that systems are in place to ensure that good practice is followed and volunteers are managed appropriately. FSC BioLinks will involve the recruitment of volunteers to two volunteer roles:

- *FSC BioLinks BioBlitz Volunteer* Assist with running of BioBlitz events, including setting up, packing up, engagement activities and data collation.
- *FSC BioLinks Recording Volunteer* Attendance of project training activities and tasked with creating and submitting invertebrate species records.

FSC BioLinks will adhere to the FSC Volunteer Policy and all project volunteers will complete a volunteer agreement prior to undertaking activities as a volunteer on behalf of the FSC. The FSC Volunteer Policy and draft volunteer agreements for both roles can be found in **Appendix IV FSC Staff & Volunteers**. Both FSC BioLinks BioBlitz Volunteers and FSC BioLinks Recording Volunteers will be recruited and managed by the relevant member of regional project staff (Project Manager in the West Midlands and Project Officer in South East England).

In addition to the two volunteer roles, FSC BioLinks will also engage with users of the digital resources created by the project. Interactions with these individuals, such as *Field Notes Database Users*, will be the responsibility of the Digital Development Officer.

2.3.4 External contractors and customers

Many of the project activities involve working with a number of affiliates or contractors. The Project Manager will manage these relationships, with assistance from the Project Officer and Digital Development Officer where necessary. The role of these external contractors and customers within FSC BioLinks is outlined in Table 14 below.

Table 14: Role of external contractors and customers within FSC BioLinks project.

Contractor / Customer	Role within FSC BioLinks project
Associate Tutors	Use of existing FSC Associate Tutors to deliver training courses, support workshops and Field Recorder Days. Any new Associate Tutors will be managed using the existing FSC Associate Tutor systems.
Evaluation Consultant	Contracted by the project to oversee the project evaluation plan according to the brief outlined in **Appendix VII FSC BioLinks Monitoring & Evaluation Framework** (prepared by Kate Measures, Evaluation Specialist, Heritage Insider).
Local Environmental Records Centres	Assist with the advertising of project activities to local recorders and collation of local species records. Contracted by the project to produce an annual species report according to the LERC brief outlined in **Appendix VII FSC BioLinks Monitoring & Evaluation Framework.**
National Experts / County Recorders	Core to delivering regional recorder conferences, support workshops and Field Recorder Days. Natural History Curators required to deliver Collections Workshops. Taxonomic Experts necessary to produce online ID resources.
Training Hub Staff	Responsible for receiving and supporting Associate Tutors at training hubs. Training hub staff will benefit from training to improve their ability to facilitate specialist identification training courses and activities. All training location have signed draft agreements with the project as these can be found in in **Appendix III Training Location Memorandums of Understanding**.
Wildlife Site Managers	Recipients of invertebrate site species reports, accompanied by guidance on the interpretation of this data using the NE Pantheon tool.

2.4 Project timetables

The overall project timetable (Table 15 below) outlines the project activities (see Action Plan on page 74) and milestones over the 5 years of the project.

Table 15: Overall project timetable for the five years of the project. in addition to the regional timetable. PM indicates Project Manager responsibilities, PO indicates Project Officer responsibilities and DDO indicates Digital Development Officer responsibilities.

Year 1	Year 2	Year 3	Year 4	Year 5
Quarter 1 (Jan – Mar) Recruitment of project team, inductions and staff training (Biodiversity Learning Manager) Training hub MoUs reviewed and signed (PO) Training hub equipment purchased (PM) Plan BioBlitz events (PO & PM)	**Quarter 1 (Jan – Mar)** Upload courses/events to Biodiversity Training Signpost (DDO)	**Quarter 1 (Jan – Mar)** Upload courses/events to Biodiversity Training Signpost (DDO)	**Quarter 1 (Jan – Mar)** Upload courses/events to Biodiversity Training Signpost (DDO) Deliver Learning Difficulty Educators Workshop (PM)	**Quarter 1 (Jan – Mar)** Upload courses/events to Biodiversity Training Signpost (DDO) Evaluate Learning Difficulty Educators pilot and create online resource (PM) Plan BioBlitz events (PO & PM)
Quarter 2 (Apr – Jun) Evaluation Specialist contracted (PM) Deliver 2 BioBlitz events (PO & PM) Development of digital administration systems (DDO) Rapid prototyping of Field Notes Database (DDO)	**Quarter 2 (Apr – Jun)** Development of 1 online ID resource (DDO)	**Quarter 2 (Apr – Jun)** Interim evaluation completed (PM and Evaluation Specialist) Deliver 1 IISC assessment day (PO) Development of 1 online ID resource (DDO)	**Quarter 2 (Apr – Jun)** Deliver 1 IISC assessment day (PO) Development of 1 online ID resource (DDO)	**Quarter 2 (Apr – Jun)** Recruitment of Legacy and Resilience Conference participants (all project staff) Deliver 2 BioBlitz events (PO & PM)
Quarter 3 (Jul – Sep) Rapid prototyping of Biodiversity Training Signpost (DDO)	**Quarter 3 (Jul – Sep)** Development of 2 Biological Recorder Guidance Notes (PO)	**Quarter 3 (Jul – Sep)** Deliver 1 IISC assessment day (PO) Development of 2 Biological Recorder Guidance Notes (PM)	**Quarter 3 (Jul – Sep)** Deliver 1 IISC assessment day (PO) Development of 2 Biological Recorder Guidance Notes (PM)	**Quarter 3 (Jul – Sep)** Delivery of Legacy & Resilience Conference (all project staff)
Quarter 4 (Oct – Dec) Review of FSC reports and guidance for biodiversity sector (PM) Relaunch of FSC Biodiversity website (DDO)	**Quarter 4 (Oct – Dec)** Plan Invertebrate ID Skills (IISC) Certificate pilot (PO)	**Quarter 4 (Oct – Dec)** Plan Learning Difficulty Educators pilot (PM)	**Quarter 4 (Oct – Dec)** Plan Legacy and Resilience Conference (PM) Review and report against legacy of training hub project equipment. (PM)	**Quarter 4 (Oct – Dec)** Summative evaluation completed (PM and Evaluation Specialist) Project legacy plan finalised and actioned (PM) Review of project undertaken and published (PM)

FSC BioLinks will deliver training activities and events in two regions, South East England and the West Midlands. Within each region an annual timetable of project activities will be delivered each year of the 5 year project (see Table 16 below) . The Project Manager will be responsible for the delivery of this timetable in the West Midlands region and the Project Officer will be responsible for the delivery of this timetable in the South East England region.

Table 16: Regional project timetable to be repeated each year of the project within each region. The Project Manager will be responsible for the delivery of this timetable in the West Midlands region and the Project Officer will be responsible for the delivery of this timetable in the South East England region.

Quarter 1 (January – March)	Quarter 2 (April – June)	Quarter 3 (July – September)	Quarter 4 (October - December
January Plan Field Recorder Days Plan Focus Species Group Training Courses Plan Collections Workshop Plan expert-led Support Workshops Deliver 2 staff-led Support Workshops	**April** Manage training course and event bookings Deliver 1 expert-led Support Workshop Deliver 1 staff-led Support Workshop Deliver 4 Focus Species Group Training Courses	**July** Manage training course and event bookings Deliver 2 staff-led Support Workshops Deliver 1 Field Recorder Day Deliver 5 Focus Species Group Training Courses Plan Regional Recorder Conference	**October** Manage training course and event bookings Deliver 1 expert-led Support Workshop Deliver 1 staff-led Support Workshop Production of 4 Invertebrate Species Site Reports. Deliver 4 Focus Species Group Training Courses
February Complete project activity planning from January Publish project activity course catalogue Deliver 2 staff-led Support Workshops Deliver 1 Training Hub Resilience Course Manage training course and event bookings	**May** Manage training course and event bookings Deliver 2 staff-led Support Workshops Deliver 4 Focus Species Group Training Courses	**August** Manage training course and event bookings Deliver 2 staff-led Support Workshops Deliver 1 Field Recorder Day Deliver 5 Focus Species Group Training Courses	**November** Manage training course and event bookings Deliver 2 staff-led Support Workshops Deliver Regional Recorder Conference
March Manage training course and event bookings Complete project activity planning from February Deliver 1 Collections Workshop Deliver 2 staff-led Support Workshops	**June** Manage training course and event bookings Deliver 2 staff-led Support Workshops Deliver 1 Field Recorder Day Deliver 4 Focus Species Group Training Courses	**September** Manage training course and event bookings Deliver 2 staff-led Support Workshops Deliver 1 Field Recorder Day	**December** Manage training course and event bookings Deliver 2 staff-led Support Workshops Annual review of training hub equipment

FSC BioLinks will involve a number of national and project management activities that will also be repeated on an annual basis in addition to the regional timetable. Table 17 below outlines the annual project timetable and indicates the member of project staff that is responsible for each activity or task.

Table 17: Annual project timetable to be repeated each year of the project, in addition to the regional timetable. PM indicates Project Manager responsibilities, PO indicates Project Officer responsibilities and DDO indicates Digital Development Officer responsibilities.

Quarter 1 (January – March)	Quarter 2 (April – June)	Quarter 3 (July – September)	Quarter 4 (October - December
January Field Notes Bulletin produced (DDO) Plan Train The Trainers Course (PO) Conduct staff appraisals (PM) Promotion of project activities using social media (all project staff)	**April** BioLinks e-Newsletter produced (PO) 3 Field Skills Video storyboards designed and videographer contracted (DDO) Promotion of project activities using social media (all project staff)	**July** Field Notes Bulletin produced (DDO) Promotion of project activities using social media (all project staff)	**October** BioLinks e-Newsletter produced (PO) Attend ALERC conference (DDO) Deliver 1 Digital Skills Training Course (DDO) Promotion of project activities using social media (all project staff)
February Young Adult Recruitment Strategy delivery (PO) Balanced Gender Representation actions resulting from review (PO) Promotion of project activities using social media (all project staff)	**May** 2 Field Skills Videos filmed and edited in-house (DDO) Attend NFBR conference (PO) Promotion of project activities using social media (all project staff)	**August** Field Notes user evaluation (DDO) Promotion of project activities using social media (all project staff)	**November** Conduct volunteer annual reviews (PO) Balanced Gender Representation and Young Adult Recruitment review (PO) Attend NBN conference (PM) Promotion of project activities using social media (all project staff)
March HLF reporting (PM) Deliver Train The Trainers Course (PO) Plan Digital Skills Training Course (DDO) Promotion of project activities using social media (all project staff)	**June** HLF reporting (PM) 1 Field Skills Video produced by professional videographer (DDO) Promotion of project activities using social media (all project staff)	**September** HLF reporting (PM) Atlas comparison of 'empty' squares (DDO) Promotion of project activities using social media (all project staff)	**December** HLF reporting, including budget readjustment for following year (PM) Project activity record completed (PO) Commission Species Reports from LERCs (PM) Review of digital project infrastructure, including analytics report (DDO) Promotion of project activities using social media (all project staff)

2.4.1 Project milestones

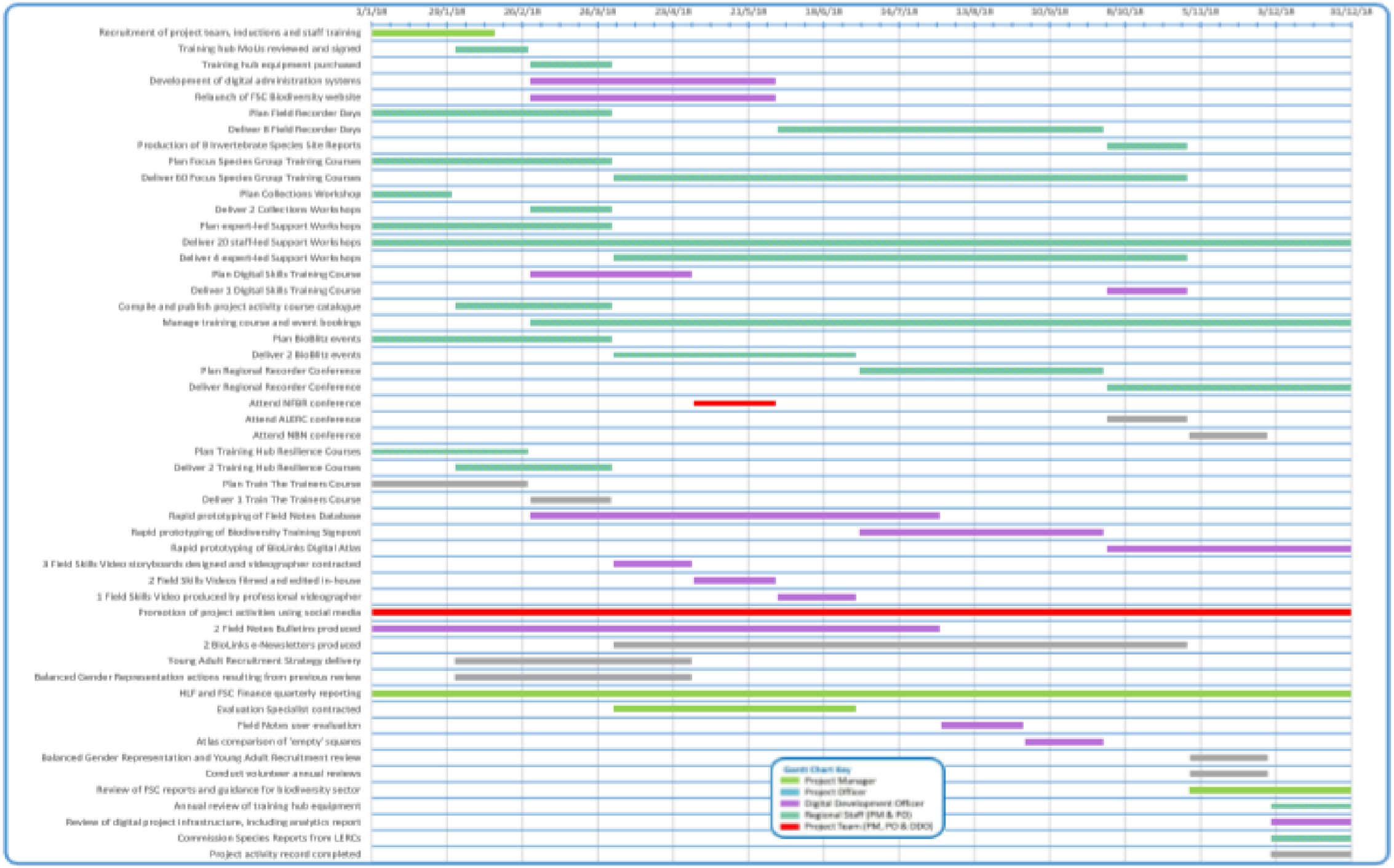


Figure 11: Gantt chart indicating the start and end points of project activities.

2.4.2 Year 1 Gantt chart

Figure 12: Gantt chart indicating the start and end points of year 1 activities.

2.5 Monitoring and evaluation framework

Monitoring and evaluation are particularly important for a project such as BioLinks because it plans to tackle one of the biggest challenges for the sector; how to develop the biological record through recorders. This project has the potential to create a new way of working for the future not only for FSC but also for peers within the natural heritage sector. It is therefore important to properly understand what works and what doesn't about this approach and the extent of the impacts across the outcome areas. This will enable evidence based decision making about similar programmes in the future. Figure 13 illustrates the key features of the project work that make it a high priority for evaluation

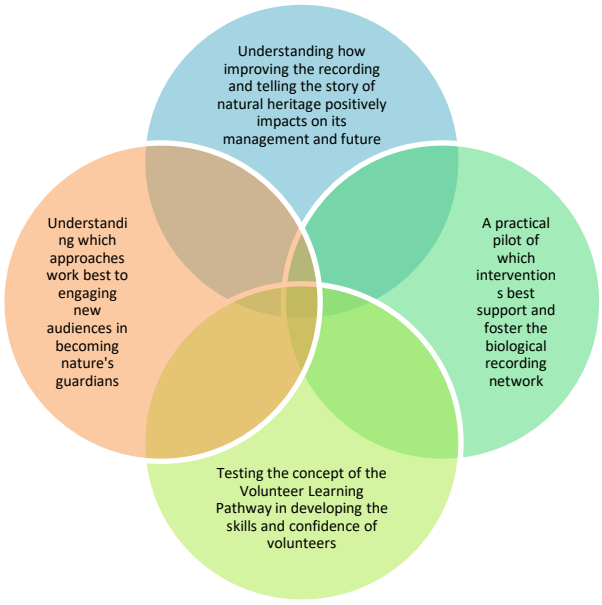


Figure 13: Diagram to show the key features of the FSC BioLinks project which make monitoring and evaluation key to its success and legacy.

Appendix VII FSC BioLinks Monitoring and Evaluation Framework was developed during the planning stages of the project. The key purpose of this document is to provide an overall framework for monitoring and evaluation across the different evaluators, stakeholders and activity strands that form BioLinks. The Framework:

- Provides a joined-up approach to monitoring and evaluation bringing together the diverse ecological, people engagement and delivery within this project
- Establishes a theory of change for the project
- Sets out the process for evaluating the project and associated timeframes and budgets
- Identifies where external support is required and provides a brief for this work
- Explicitly links the evaluation monitoring process to legacy planning.

The **FSC BioLinks Monitoring and Evaluation Framework** outlines:

- The benefits of evaluation
- The scope of the evaluation
- Key considerations when developing the Framework
- The gathering of baseline data
- The vision of FSC BioLinks
- Key questions for the evaluation
- Governance of evaluation throughout the delivery phase (a summary is provided in Table 18 on page 58 outlining the responsibilities of external contractors and project staff)
- The approach to monitoring and evaluation from project start-up through to final summative evaluation (an overview of this is provided in Figure 14 on page 59)
- Draft volunteer evaluation forms (registration, annual review and pre/post-course forms)
- External contractor briefs for evaluation specialist and local environmental records centres

Table 18: The governance arrangements for monitoring and evaluation of the FSC BioLinks delivery phase.

Group or individual	Role regarding evaluation and monitoring
BioLinks Project Manager	• Review reports from task and finish group • Overall responsibility for managing risk in monitoring and evaluation • Appointing and managing the monitoring and evaluation consultants • Acting as a liaison between the LERCs and project team and the external consultants
BioLinks Project Officer and Digital Development Officer	• Report to the Project Manager on major milestones and risks as well as data collected in a timely way • To undertake planning, gathering and organising monitoring and reporting data as part of their delivery roles and feed this to the BioLinks team.
External evaluation consultants	• Provide objectivity and independence • To provide advice and guidance on quality assurance of evaluation • Provide expert skills to the project during the formative evaluation • Ensuring data collection systems are in place • Manage the interim and summative evaluations including data analysis and interpretation which will synthesize data from all outcome areas of the project • Report to the BioLinks Project Manager on progress and risks
LERCs	• Report to the BioLinks Project Manager on biological recording according to the LERC brief
Associate Tutors and Centre Managers	• To undertake planning, gathering and organising monitoring and reporting data as part of their delivery roles and feed this to the BioLinks team.

In addition to the evaluation framework, the project team will meet the requirements for reporting to the primary funder (Heritage Lottery Fund) according to **Appendix HLF reporting Procedures**.

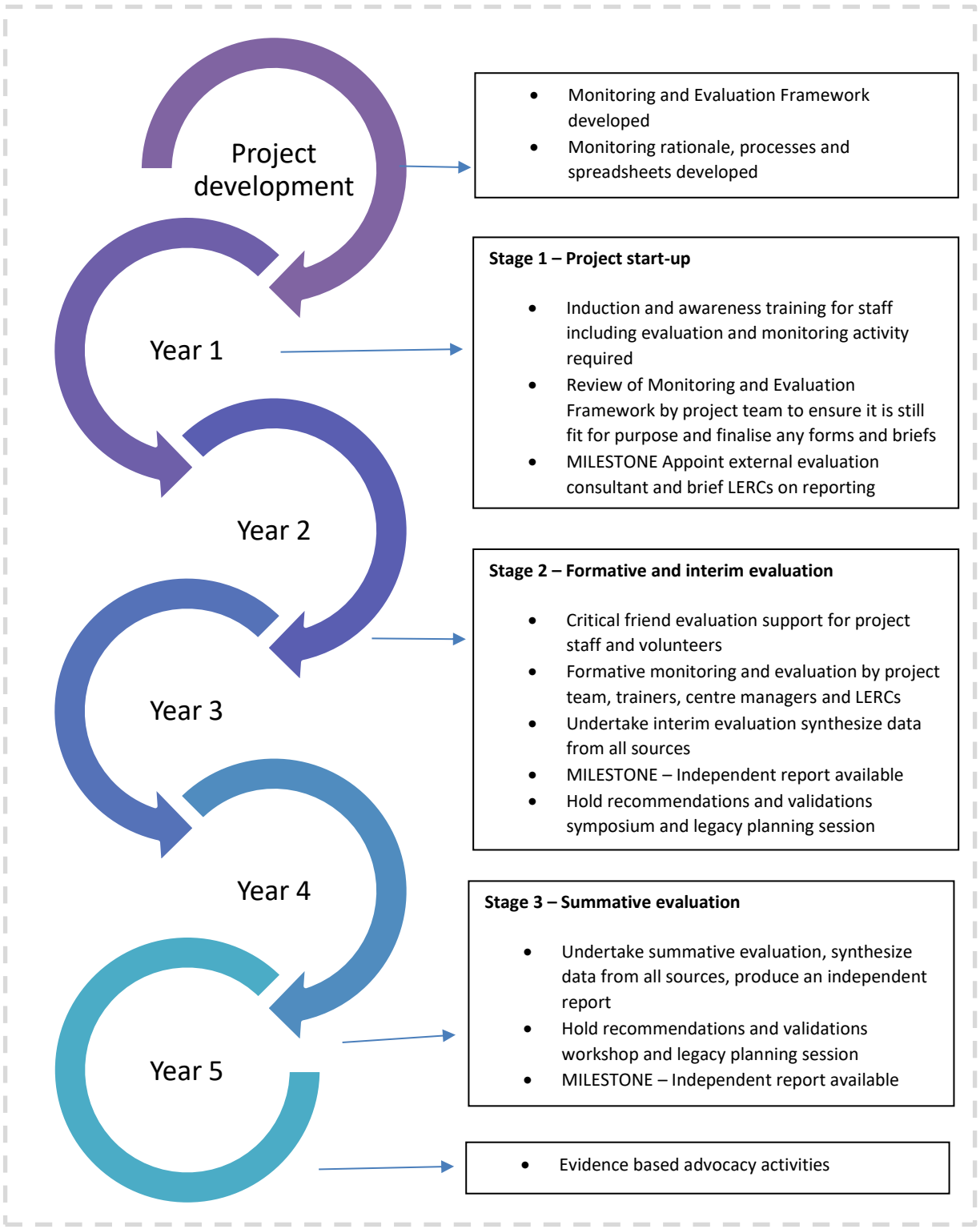


Figure 14: Programme for the Monitoring and Evaluation process.

2.6 Beyond BioLinks – Legacy

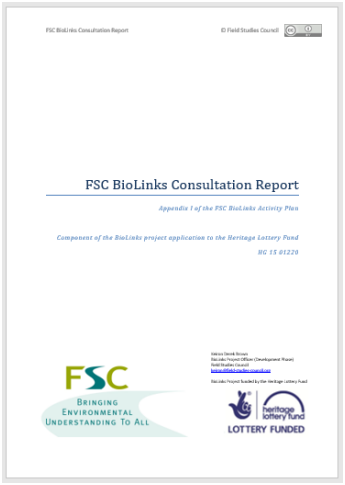
FSC BioLinks aims to achieve a great deal throughout the course of the project. However, it's important to consider which aspects of the project can form realistic legacies that can be sustained following the completion of the project to ensure the momentum achieved by FSC BioLinks continues to make a difference to people, communities and our understanding of natural heritage.

Some aspects of the project will form lasting legacies in themselves, but others may require further support if the legacy is to be maintained. Where the latter is the case, the capacity of the FSC and its affiliates to continue the work started by FSC BioLinks needs to be considered and significant barriers will include cost and a lack of project staff to drive forward the aims of the project. Strategic planning will ensure that legacy barriers are mitigated where possible and that the FSC can share the responsibility of maintaining project legacies with other organisations within the biological recording community.

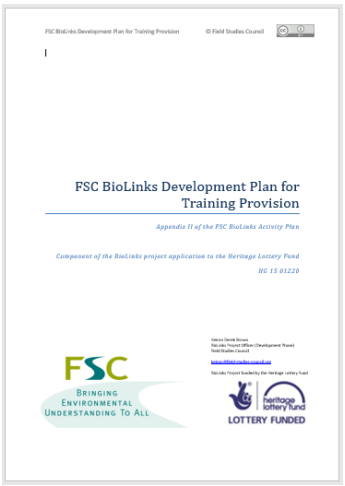
An important activity that will inform the project legacy strategy will be the FSC BioLinks Legacy and Resilience Workshop. This interactive workshop will bring together project staff with sector professionals and volunteers to explore synergies with other organisations, projects and schemes, providing a platform for FSC BioLinks to 'pass on the baton' to willing recipients and determine which legacies the FSC is in a suitable position to continue supporting.

2.6.1 Development phase legacies

The development phase of FSC BioLinks involved extensive consultation with both volunteers and sector professionals. The primary aim of this consultation was to inform the development phase for the project but some of the resulting documents have wider benefits for the biological recording community.



FSC BioLinks Consultation Report This summary document contains the collated findings resulting from the four consultation methods and research employed by the Development Phase Project Officer. The information within this document may be useful to other organisations planning biodiversity projects and will therefore be shared with all people involved in the consultation and made publicly available via the FSC Biodiversity website.



FSC BioLinks Development Plan For Training Provision This document provides a template for classifying identification course difficulty levels and for volunteers to self-assess their competency level. In addition, it provides structured training course pathways for the focus species groups selected for this project. These tools may be of benefit to any biodiversity organisation that delivers, or is planning to deliver, identification training courses and will be particularly useful to any organisation providing training covering the focus species groups. This document be shared with all people involved in the consultation and made publicly available via the FSC Biodiversity website.

2.6.2 Key delivery phase legacies

The delivery phase of the project will deliver a large number of activities that will achieve a variety of outcomes for natural heritage, people and communities. These will be detailed in Section 2.6.3.

In addition to these individual legacies, there are a number of cross-activity benefits that will significantly increase the impact of biological recording on the biodiversity sector. It is vital that legacy is planned strategically for these high impact benefits to ensure that FSC BioLinks has a lasting positive impact.

The most significant impact of FSC BioLinks will be a more resilient biological recording community, with stronger links between the extensive network of individuals, groups and organisations involved. Integration of BioLinks into existing projects, schemes and initiatives is imperative to providing a sustainable post-project legacy and will be achieved through extensive partnership working with a large number of varied biological recording organisations.

BioLinks volunteers The project will engage a large number of volunteers through the wide variety and large number of project activities. The FSC recognises that the additional support provided through project staff and activities will not be sustainable by the FSC following the project due to reduced capacity and resources following the end of project staff contracts and project funds. Therefore, it will be a core aim of all BioLinks activities to integrate volunteers into existing local groups, recording schemes and natural history societies throughout the project so that they are confident and motivated to remain active volunteers within the biological recording community once the end of the project is reached. This will be achieved by working closely with these groups and organisations as project affiliates and facilitating them to foster new relationships with the BioLinks volunteers. This will provide a legacy of active integrated volunteers continuing to produce accurate species records and contributing towards UK understanding of natural heritage.

Learning pathways The development pathways that will be implemented within FSC BioLinks have the potential to transform the way the sector offers identification training. These pathways will evolve through continuous evaluation and be shared widely throughout the duration of the project. In the final year of the project the evaluated findings of the project will be shared with the sector and made publicly available via the FSC Biodiversity website with the aim of improving how the FSC and other biodiversity training providers approach designing the training provision they offer.

Digital legacy FSC BioLinks follows four previous FSC Biodiversity projects, each with its own individual online legacy of some manner. Many of these resources could be utilised more by volunteers and professionals so the FSC would like to absorb all of these legacies alongside FSC BioLinks digital content under the banner of FSC Biodiversity and remove the association they have with now defunct projects. The FSC Biodiversity Team are committed to managing the content post-project and the FSC Digital Services Team will provide maintenance and support services. Some digital resources may require additional web hosting fees so these FSC will commit to hosting these for 10 years following the end of the project with this commitment reviewed on an annual basis in subsequent years. However, the Legacy & Resilience Workshop will invite sector professionals to discuss alternative 'homes' for these resources and give relevant organisations the opportunity to take ownership and responsibility of running costs where resources complement their existing offering (for example, taxa-specific recording schemes may choose to house online identification resources or digital atlases relevant for their group). These transfers will be overseen by the Digital Development Officer.

2.6.3 Summary of project legacies

Table 19: Summary of project legacies, their impact and the strategy for sustaining them beyond the project.

Activity	Project Impact	How will legacy be sustained?
Species Recording	Over 5,000 new **accurate species records** of the focal taxa will have been submitted to recording organisations.	Species records will be incorporated into recording scheme and local environmental records centres and made publicly accessible through the **NBN Atlas**.
Mapping the focus species groups	The **BioLinks Digital Atlas** will provide a means for volunteers to interpret data spatially and act as motivational tool for targeting under-recorded sites.	Digital atlas tools are transferred to websites of relevant recording schemes or hosted through **FSC Biodiversity website** for a minimum of 10 years.
Recording ecological observations	Over 1,000 ecological observations will have been recorded on the **Field Notes Database** and user provided with interpretation through 16 **Field Notes bulletins**.	Potential database hosts investigated through the **Legacy and Resilience Workshop**. Tool to be maintained by new host or FSC for 10 years following the end of the project.
Interpreting invertebrate records for site managers	Volunteers will have enjoyed learning about natural heritage and developing their skills through **field recorder days** (totalling approx. 280 volunteer days over 40 events). Volunteers will have developed better relationships with site managers, mentors and other volunteers. The invertebrate species assemblage of 40 sites will have been recorded via **invertebrate site reports** and interpreted using Pantheon, resulting in better site management for invertebrates.	A template invertebrate site report will be hosted on the **FSC Biodiversity website** alongside the guidance for site manager regarding the use of Pantheon to interpret the reports.
Natural history collections	Volunteers will have developed skills in using collections and have developed relationships with natural history curators through 10 **natural history collections workshops**. Natural history collections will be more resilient through increased use.	Collection guidance will be developed by managers to enable them to further support volunteers. This legacy is very much in the hands of natural history curators.
Guidance and information for volunteers	Volunteers will have developed good practice working methods through **Biological Recording Guidance Notes**. Recording schemes will be more resilient through the availability of new **online identification resources** available to them for training and supporting volunteer development. People will have developed field and technical skills through **online training videos** and the biological recording community will be more resilient through the availability of these through a public digital platform (e.g. YouTube). The outcomes of biological recording will be better explained to volunteers through 16 **BioLinks e-newsletters**.	Online identification resources are transferred to websites of relevant recording schemes or hosted through FSC Biodiversity website for a minimum of 10 years. Online videos will be **accessible to all through public digital platform** (e.g. YouTube) and signposted to from the FSC Biodiversity website. The Biological Recording Guidance Notes and BioLinks newsletters will be made publicly available via the **FSC Biodiversity website**.

Activity	Project Impact	How will legacy be sustained?
Digital skills development for experts	National and regional experts will have developed skills regarding digital resources and emerging technologies through 5 **digital skills training courses**.	FSC will investigate the potential to incorporate courses regarding emerging technologies based on demand and a sustainable business model.
Learn to Love Training Courses	More people and a wider range of people will have had an enjoyable experience learning about natural heritage through 50 **'Learn to Love' courses**. More demand will be created for 'Learn to Love' (or introductory) courses.	'Learn to Love' courses will be incorporated into the **FSC Natural History Course Catalogue** through the development of a sustainable business model.
Creation of development pathways and provision of focus species group training	People will have had an enjoyable experience developing identification and recording skills over 250 **focus species group training courses** (totalling over 2,500 volunteer days). The biological recording community will be more resilient through an increased number of better trained volunteers and access to a template for providing identification/recording training.	Evaluation of development pathways, standardised labelling of difficulty levels and Review of development pathways and **FSC BioLinks Development Plan For Training Provision** made publicly accessible via FSC Biodiversity website.
Recognition of learning and evidence of CPD	Volunteers will have evidence of their CPD through **training course attendance certificates** and the assessed **Invertebrate Identification Skills Certificate** (IISC).	FSC will run **Invertebrate Identification Skills Certificate** (IISC) assessment days in house at field centres based on demand and apply a sustainable business model.
BioBlitz Events	More people and a wider range of people will have learned about their local natural heritage and had an enjoyable time engaging with nature and biological recording volunteers through 4 **BioBlitz events**.	Reporting and linking to National BioBlitz Network guidance so that FSC centres are appropriately informed of potential engagement opportunities.
Social Media	More people and a wider range of people will have been engaged with natural heritage through **project social media** outputs.	BioLinks will inherit the social media accounts of previous FSC Biodiversity projects, consolidating these under the banner of FSC Biodiversity and these will be maintained, albeit at reduced activity, by the **FSC Biodiversity team**.
Young Adult Recruitment	More young adults will have been engaged with natural heritage and recognise the relevance of identification, field and recording skills for their personal and professional development.	A Focus On Nature will have better links with other biodiversity organisations and project evaluation will report the successes and lessons learned of the BioLinks project in recruiting more young adults to biological recording. This will be shared publicly with the sector through the FSC Biodiversity website
Balanced Gender Representation	Women will have been proportionally represented within BioLinks activities. Evidence will have been gathered to determine if women are under-represented within biological recording.	Project evaluation will provide evidence of the true representation of women within biological recording activities and across competency levels. This will be shared publicly through the FSC Biodiversity website to inform future projects by the FSC and other biodiversity organisations.

Activity	Project Impact	How will legacy be sustained?
Learning Difficulty Educators Pilot Project	Tutors dealing with learning difficulty audiences will be more aware of how to incorporate natural heritage monitoring into their teaching plans. An online resource for educators will have been produced and disseminated to educators.	Project evaluation will report the successes and lessons learned of the BioLinks project in recruiting more young adults to biological recording. This will be shared publicly with the sector, educators and learning difficulties professionals through the FSC Biodiversity website alongside the online resource created as an output of this pilot.
Improving training hub resilience	Training hubs resilience will be improved through the provision of **equipment** and **training for centre staff** to facilitate high quality identification training activities. More accurate species records will have been validated and volunteers will have developed relationships with mentors through 120 support workshops.	Training hubs to sign **post-project agreements** detailing responsibilities of training centres to prioritise equipment use for volunteers for a minimum of 10 years. If hubs have no capacity to continue supporting volunteers, alternative suitable hosts identified or equipment is sold and funds reinvested into the project.
Strengthening the network	Integration of events run by other organisations into the BioLinks programme through the **Biodiversity Training Signpost** will result in a better connected and therefore more resilient biological recording community across the project regions, providing a free advertising platform for biodiversity organisations. Volunteers will have had an enjoyable time learning about natural heritage through 10 **regional conferences** and natural heritage will have been better interpreted and explained to these audiences.	The Biodiversity Training Signpost will continue to be hosted by the FSC or a suitable alternative organisation (such as the National Biodiversity Network). The **FSC will lead by example** by continuing to upload their Natural History Course Catalogue to the digital tool. FSC Biodiversity will continue to host the Shropshire Entomology Day (a regional conference for invertebrate recorders) at the Preston Montford Field Centre and aspire to encourage similar events in other areas of the project regions.
Associate Tutor resilience	Recording schemes and other biological recording organisations will be more resilient through the training and recruitment of more tutors, mentors and verifiers.	The FSF will **continue to provide training opportunities** for FSC Associate Tutors as part of its commitment to ensure a high standard for FSC courses.
FSC Biodiversity website	The FSC will be more resilient through amalgamation of biodiversity projects and their outputs/legacies into one place, making it easier for volunteers and sector professionals to access resources.	All BioLinks digital content will be hosted on the FSC Biodiversity website (unless preferred alternative hosts for individual resources are identified). The **FSC Biodiversity website will be integrated into the main FSC website** with the Biodiversity Team responsible for content and the Digital Team responsible for maintenance and support.
Sharing lessons and project evaluation	The biodiversity sector will be more resilient through the sharing of good practice via **biodiversity sector conference representation** and integration of BioLinks into synergistic projects and schemes.	Responsibility for maintaining project legacies will be shared across the biodiversity sector through the **Legacy and Resilience Workshop**. The FSc Biodiversity website will host a section containing project reports and resources for sector professionals

Activity	Project Impact	How will legacy be sustained?
Product development	Large number of **new products** produced, including digital resources, training courses and guidance resources.	Individual digital resources will be hosted and maintained by either FSC Biodiversity website or alternative host determined in the Legacy and Resilience Workshop. Guidance resources and project reports will be publicly available through the FSC Biodiversity website. Training courses will be reviewed and a selection incorporated into the FSC Natural History Course Catalogue using a sustainable financial business model.
FSC Biodiversity Team	The capacity of the FSC to deliver biodiversity outcomes will be have been greatly enhanced through the **project team** of three individuals, including at least one individual with significant digital expertise and skills	The FSC recognises that it is unlikely to have the capacity to extend the contracts of project staff without external funding. However, the FSC has committed to increasing the capacity of the FSC Biodiversity Team by increasing the FSC Biodiversity Learning Manager role from a part time position to a full time position, thus improving the capacity of the team in the future.
New affiliations	The FSC will be more resilient through working with an **increased number of affiliate organisations**, including national recording schemes, local environmental records centres and local natural history societies.	Based on the development of these relationships within the project, the FSC will explore how these affiliations can continue under a sustainable business model. The FSC aspires to encourage more relationships between it's field centres and the biodiversity organisations operating within the relevant local area.
Improved customer base	The FSC will be more resilient through integration of project volunteers into in-house **digital administration systems**. Larger and wider customer base created.	Volunteers will **continue to be engaged by the FSC** through biodiversity work external to this project.

2.7 Risk analysis

2.7.1 Risks during project delivery phase

		Risk	Cause	Impact	Likelihood Rating	Impact Rating	Risk Rating	Mitigation	Risk Rating (Post-mitigation)	Owner	Status
Governance	1	Delivery partners support is not forthcoming.	Shifting priorities and capabilities of partners.	New delivery venues need to be found and negotiated.	Low	High	Low	Close working with project partners and good communication throughout development of the project. Formation of memorandums of Understandings to clarify roles and responsibilities.	Low	Project Manager	Live
	2	BioLinks remains a stand-alone project and is not integrated into FSC with long term sustainability.	Short term project funding and lack of development of biodiversity within FSC .	Long term benefits of the project are not realised.	Medium	Medium	Medium	Integrate projects into main biodiversity team. Ongoing evaluation of project fed back to FSC Biodiversity and Directors. Ensure strong FSC presence at BioLinks Legacy & Resilience workshop.	Medium	Biodiversity Learning Manager	Live
	3	FSC Staff remain embedded in curriculum based skills rather than the wider biodiversity understanding of local and national species and habitats.	Prioritisation of curriculum based skills throughout FSC recruitment and training procedures.	FSC staff have reduced capacity to support Associate Tutors delivering natural heritage training courses.	Medium	Medium	Medium	Training and support for staff at hubs to mitigate for inexperience and lack of skills	Medium	Biodiversity Learning Manager & Project Manager	Live
Financial	4	Income shortfall.	Funders not satisfied with progress to date and payments not released.	Failure to complete project and loss of reputation.	Low	High	Low	Careful management of budget. Good reporting systems. Good liaison with FSC Accounts team.	Low	Project Manager	Live
	5	Project overspends.	Expenditure higher than planned.	Project needs to be reallocated or cut.	Medium	High	Medium	Active and careful budget management.	Medium	Project Manager	Live
	6	Technological mechanisms and solutions under costed and become inaccessible due to budget.	Speed of technological advances.	Project aims not met and pressure on budgets to find additional spend.	Medium	Low	Low	Good development and research. Careful research into Digital Development Officer salary to ensure good skill levels. Good contingency level. Preference for use of Open Source platforms.	Low	Digital Developme nt Officer	Live
	7	Budgeting is not as accurate and the project is not able to afford to engage with the right level of regional/national experts.	Complex budget.	Training and verification cannot be delivered at a national level on certain species groups.	Medium	Low	Low	Involve national experts in development phase. Good contingency level.	Low	Project Manager	Live
Project Management	8	Proposed styles of learning do not support the needs of all volunteers especially the target audience of young people, women and learning difficulty educators.	Different focus groups have different needs.	Progress in learning is delayed or slowed and project outcomes are not met.	Low	Low	Low	Trial different learning styles with each audience grouping. Offer a range of differentiated learning style options and evaluate their success.	Low	Project Officers	Live
	9	Volunteers choose to engage at different times and at different levels of ability.	Inherent within the project as people will start their engagement at any time through the 5 years.	Constant need for introductory and beginner courses.	High	Low	Medium	Clearly defined competency levels with structured training pathways designed to facilitate entry points at multiple competency levels.	Medium	Project Manager	Live
	10	Fail to engage with a wide cross section of population e.g. ethnicity is not fairly represented.	Traditionally people from minority ethnic backgrounds do not strongly engage with the natural environment.	Project does not reach as wide an audience as possible.	High	Medium	Medium	Undertake good practice where possible and ensure that promotional literature includes representative photos and that BME groups are targeted through social media. Host some introductory level activities within locations with BME communities.	Low	Project Manager	live
Operational	11	Project falls behind schedule.	Number of training opportunities not delivered due to lack of participants or trainers.	Build-up of spend and backlog of courses to be delivered. Impact of season/calendar issues.	Low	Medium	Low	Regular review of project progress and forward planning. Selection of focus species groups with a variety of field sampling seasons.	Low	Project Manager	Live
	12	Loss of project staff.	Seeking other employment, especially towards end of contracts.	Interruptions to project delivery and pressures on end of grant paperwork.	Low	High	Medium	Sound recruitment and effective line management, including opportunities for personal development for project staff. Good teamwork within project staff.	Low	Project Manager & Biodiversity Learning Manager	Live
	13	Participants willingness not matched by actual involvement.	People too busy to actually attend or to progress their learning beyond the introductory level.	Cancellations on courses or lack of participants will develop and reduce the project outputs.	Low	Low	Low	Project activities offered on combination of weekends and week days to cater for differing lifestyles. Good PR.	Low	Project Officers	Live

		Risk	Cause	Impact	Likelihood Rating	Impact Rating	Risk Rating	Mitigation	Risk Rating (Post-mitigation)	Owner	Status
Operational	14	Insufficient number of participants attend.	Poor publicity and communication.	Courses will be cancelled, people's experiences of the project are of less quality and project targets and aims are not met.	Low	Low	Low	Strong communication and networking, including evolving strategy for the use of social media throughout the project.	Low	Project Manager	Live
	15	Too many participants.	Previous projects success and good preparation through consultation.	Training courses become oversubscribed and puts pressure on the quality of tuition and learning.	Medium	Low	Low	Monitor course participants number and if necessary find ways to repeat popular courses, as well as signposting to alternative training providers of biodiversity training.	Low	Project Manager	Live
	16	Injury caused by or attributed to the project.	Inadequate risk assessment.	RIDDOR incident and reputational risk to FSC and project.	Low	High	Medium	Follow FSC safe working practices and ensure all associated with project follow similar guidelines. All project staff provided with health and safety training.	Low	Project Manager	Live
	17	Learning from previous projects in West Midlands doesn't transfer successfully to new area and there is a lack of SE/London engagement in the project .	Variation in geographical regions caused by many factors including biodiversity variance, social economic population and presence/absence of previous training provision.	Operational delivery styles are not suited to the London region and the target audience needs.	Low	Low	Low	Good networking with local environmental records centre, local natural history groups and training hubs.	Low	Project Manager	Live
	18	Potential discontinuity between Development and Delivery Phase as the project is about people and networks, and relationships between staff and volunteers is crucial.	Change of staff between development and delivery phase would cause a loss of continuity between phases.	Relationship and trust between project and volunteers could be damaged.	High	High	Medium	Break clause in Development Officer contract allows for continuous employment of the same individual if FSC chooses to continue this employment.	Low	Biodiversity Learning Manager	Live
Communications & IT	19	Reputational damage through social media.	Negative message put out by participant or third party or delivery partner.	FSC reputation and lack of uptake by volunteers.	Low	Medium	Low	Closely monitor social media and intercept negative messages promptly and deal with them through non-social media channels to rebalance conflicts or misconceptions.	Low	Project Manager and Project Officers	Live
	20	Technological knowledge of project staff limits project development.	Project staff need to be skilled in both biodiversity and technology which is not a combination which is common.	Lack of skills in the project team and having to rely on external experts.	Medium	Medium	Medium	Good advertisement with clear job description for the role of Digital Development Officer. Appoint strong individual with skills to lead this element of the project.	Medium	Biodiversity Learning Manager.	Live
External factors	21	FSC is reliant upon external experts to deliver the proposed training.	FSC staff not skilled enough especially in the uncharismatic taxa.	Reliance upon an external audience and accurate budgeting.	Medium	Medium	Medium	Maintain and value good relationships with regional and national focus taxa groups. Continue to train FSC staff and close associates to increase skill level and deliver training.	Medium	Biodiversity Learning Manager and Project Manager	Live
	22	Instability of the environmental sector driven by funding cuts, austerity measures and pending BREXIT impacts on legislation.	Funding cut backs, especially for LERCs and NE. Unknown impact of Brexit.	Management of data and support for new and developing recorders is less secure.	High	Medium	Medium	Project manager to maintain good relationships with local, regional and national recording groups and stay up to date with legislative threats.	Medium	Biodiversity Learning Manager and Project Manager	Live
	23	Sector disagreement about NBN data sharing.	Lack of agreed verification protocols.	Some people may be less willing to share data.	Medium	Low	Low	Open and impartial positioning of FSC. Clear explanations of participants' data use. One project activity (Biological Recording Guidance Notes) will involve creating a guidance note on data flow and licences.	Low	Biodiversity Learning Manager and Project Manager	Live

2.7.2 Risks after project completion

		Risk	Cause	Impact	Likelihood Rating	Impact Rating	Risk Rating	Mitigation	Risk Rating (Post-mitigation)	Owner	Status
Governance	24	FSC fails to support individual volunteers in their continued skills development post funded period.	Absence of dedicated project staff in post funded period.	Lack of support for the volunteers and a consequent reduction in individuals volunteering.	Low	Low	Low	FSC to continue to encourage and support volunteers through the annual Entomology Day and provision of microscopes, keys and supportive staff at Centres.	Low	Biodiversity Learning Manager	Live
Financial	25	Volunteers and organisations make demands of FSC as they are unaware the funded period has ended .	Lack of communication of the grant funded period.	FSC is perceived as unhelpful and unsupportive.	Low	Low	Low	Good communication with all volunteers and organisations involved in the last 6 months of the funded period.	Low	Biodiversity Learning Manager	Live
Operational	26	The community of BioLinks volunteers is not able to sustain itself without project staff support.	Community is not self-sustaining but sustained through funded intervention.	With no intervention the community becomes dysfunctional.	Low	Low	Low	Throughout the project build up support for volunteers with wider biodiversity groups such as taxa recording schemes, local environmental records centres and local natural history groups. Integration of all BioLinks contacts into FSC database.	Low	Project Manager and Biodiversity Learning Manager	Live
Comms and IT	27	Web based discussion forums are not closely managed.	Project staff leave and shortage of manpower to manage ongoing web resources.	Volunteers feel unsupported and reduce their efforts. Reputational risk.	Low	Medium	Low	Ensure project website and discussion forums are linked to main FSC site and not standalone so FSC core staff have access, understanding and can manage long term. Offer opportunities to volunteers to help moderate forums to prevent forums relying on project staff.	Low	Biodiversity Learning Manager, Directors	Live
External factors	28	Instability of the environmental sector driven by funding cuts, austerity measures and pending BREXIT impacts on legislation.	Funding cut backs, especially for LERCs and NE. Unknown impact of Brexit.	Management of data and support for new and developing recorders is less secure.	High	Medium	Medium	Project manager to maintain good relationships with local, regional and national recording groups and stay up to date with legislative threats.	Medium	Biodiversity Learning Manager and Project Manager	Live
	29	Sector disagreement about NBN data sharing.	Lack of agreed verification protocols,	People may be less willing to share data	Medium	Low	Low	Open and impartial positioning of FSC. Clear explanations of data use which has been generated through BioLinks project - open source data. One project activity (Biological Recording Guidance Notes) will involve creating a guidance note on data flow and licences.	Low	Biodiversity Learning Manager	Live

2.8 What has changed since the initial application?

Table 20: Summary of changes between initial application and current activity plan

Component	Original plan	New plan
Volunteer feedback loop and activities designed to provide motivation for volunteers to record wildlife	Development of 2 regional atlases for the London region, shared using mixed media including paper, internet, an app and be available for use on mobile devices. A celebratory product to thank and motivate local groups of recorders and encourage and sustain further engagement	Retention of atlas creation projects with recognition that further methods of feedback are necessary to maintain motivation. Quarterly membership packs added to allow dissemination of non-atlas related successes and as a means of enhancing feedback and promoting participation in atlas projects. In addition, annual regional recorder conference will be facilitated to allow volunteers to feed back on their own personal experiences and successes.
Training provision within regions to provide volunteers with necessary identification skills to record focus species groups.	Menu of training courses, both day and weekend/short course based on findings from 5 focus species groups in West Midlands region and 2 focus species groups in London region. Progressive high quality training opportunities with signposting to other projects.	Recognition that training development plan and signposting to external courses needs to be clear and structured. Creation of a tiered learning pathway for allowing volunteers and project staff to monitor volunteer progression and assist other training providers to categorise the difficulty level of external courses in a comparable manner to BioLinks provision.
Recognition of volunteer learning	Not covered sufficiently in the original action plan.	Addition of invertebrate identification qualification pilot and provision of certificates of attendance for project training activities.
Targeting of hard-to-reach audiences	Not covered sufficiently in the original action plan.	Addition of actions to target young people (young adults) through working with A Focus On Nature, working with educators of people with autism. Also action to ensure gender balancing.
West Midlands project area	Shropshire and 'wider West Midlands area'.	Decision to define project area based on location of project training 'hubs. Project will have bases in Shropshire (Preston Montford) and Worcestershire (Bishops Wood) and conduct additional activities in and around the Birmingham area. All residential courses will be run from Preston Montford.
London region project area	Greater London, possibly reaching in Buckinghamshire and Surrey.	Decision to define project area based on location of project training 'hubs. Project will have bases in South London (Bushy Park) and Berkshire (Dinton Pastures) and conduct additional activities in the Greater London Area. All residential courses will be run from Juniper Hall (Surrey).
Digital development of tools for biological recorders	Creation of Field Notes digital resource and digital atlases.	Retention of original plans and addition of signposting tools due to demand for such resources from BioLinks consultation. Also added online guidance for biological recorders, online technical videos, development of online identification resources and furthering the GIS work undertaken by the TomBio project (all due to feedback received from the BioLinks consultation).

Component	Original plan	New plan
Field events and training	Annual citizen science BioBlitz events within each region.	BioLinks consultation strongly highlighted that BioBlitz events can be off putting to volunteer biological recorders and can provide little skill developments if balance between citizen science and volunteer development not managed sufficiently. Celebratory BioBlitz events will be held at Bushy Park and Bishops Wood at the beginning and end of the project to engage with local community and tailored field events will be run throughout the project to maximise the benefit volunteers receive from attending these events.
Natural history collections focus	Volunteer visits to collections in the winter months' activity when no fieldwork. Focus on curation training and using collections as references and record sources. 10 visits planned in each region annually on a mixture of national, regional and local collections.	Recognition from consultations that there is limited demand from volunteer biological recorders for this volume of collections training. Also limited participation within the consultation from collections sector (despite targeted attempts to involve regional collections managers) has resulted in a reduction in the number of collections-focused project activities that BioLinks will deliver.
Volunteer mentoring and support	Not covered sufficiently in the original action plan.	Previous projects and BioLinks consultation reinforce FSC's knowledge that mentoring and support are vital to ensure volunteers continue to develop after attending training. Project area now focused around training hubs, with project supporting an existing hub (Preston Montford and Dinton Pastures) and creating a new hub (Bishops Wood and Bushy Park) within each region. In addition, the project will advertise the facilities and services provided by the Natural History Museum to project volunteers.
Social media strategy	Not covered sufficiently in the original action plan.	Recognition that social media is a valuable method of communicating with modern audiences, specifically young people, and project must therefore have a social media strategy that evolves as project progresses and is relevant to current trends. Social media should be used as both a promotional tool for project activities/news and as a means of providing additional support to project volunteers.
Strengthening the biological recording network	Recognition that working with other organisations within the sector is necessary for project activities and that relevant external activities/training should be signposted to. Activities to ensure all that project successes and failures are communicated widely within the sector.	Realisation through consultation and development of project activity plan that BioLinks should not only work with those organisations that it needs to, but should work with as many willing biodiversity organisations as possible in order to strengthen the local networks and improve the 'community feel' of the sector. BioLinks will have a strong 'strengthening the community' ethos and will set a precedent for other projects and initiatives with regards to sharing information within the sector.

2.9 Costing the project

A preliminary budget for the delivery phase of the FSC BioLinks budget was submitted alongside the Stage 1 application to the Heritage Lottery Fund. This draft budget included total delivery costs of £1,610,482 and income of £371,582, resulting in a HLF delivery grant request of £1,238,900 (77% of the project cost). Please note that FSC BioLinks does not include any delivery phase capital costs.

Throughout the development phase of the project the Action Plan was adapted and developed according to findings from the consultation and a higher level of detail was applied to the costing of project activities and running costs. A fully costed budget is contained in **Appendix VIII FSC BioLinks Project Budget**, and a summary can be seen in Table 21 on the following page. Details of the cost of individual activities can be found in the **FSC BioLinks Action Plan** (Section 3 on page 74 of this document).

The updated cost of the project is £1,605,342, with an income of £371,034 and a HLF delivery grant request of £1,234,308 (77% of the project cost), resulting in a small reduction to the overall project cost, FSC contribution and HLF delivery grant request. However, due to the level of detail added in to the project budget and the modification of the delivery phase activity plan resulting from the FSC BioLinks consultations there are many changes to the individual budget lines. A summary of the main changes is provided in Table 22 on page 73.

Notes regarding Delivery Phase Activity Costs

Overall these costs have risen due to the expansion of the number and variety of project activities that are now included within the **FSC BioLinks Action Plan** in response to the findings of the consultations conducted during the development phase of the project.

Notes regarding Delivery Phase Other Costs

Detailed risk analysis (see Section 2.7 on page 66) and incorporation of mitigation for perceived risks has enabled a significant reduction of the contingency budget line costs, though this has also resulted in increased evaluation and publicity costs. The full cost recovery is calculated using FSC Overheads which are reviewed in line with annual costs and updated annually by FSC Director of Finance. Inflation has been calculated at 1% in year 1 and 2% in all subsequent years.

Notes regarding Delivery Phase Income

FSC will provide 10% cash match funding and then work to secure funding against this. Currently FSC has applications submitted to Ernest Kleinwort Charitable Trust and Esme Fairbairn Foundation (EFF). EFF have progressed FSCs request for further support to stage 2 of their application process. The firm outcome will be 3-4 months after submission, with submission needed by 20 April 2017. The BioLinks concept was rejected by Jean Jackson Charitable Trust as the project falls beyond the geographical reach and timeframe of this Trust which is aiming to close down.

A full Financial Appraisal can be found in section 7 of the **FSC BioLinks Project Business Plan**, including the cash flow calculations for the project.

Table 21: Summary of BioLinks delivery phase project costs and income. Please note that there are no delivery phase capital costs associated with this project.

	Budget Line	Cost	VAT	Total
Delivery Phase Activity Costs	New staff costs	£543,107	£0	£543,107
	Training for staff	£28,000	£950	£28,950
	Paid training placements	£0	£0	£0
	Training for volunteers	£384,850	£16,220	£401,070
	Travel and expenses (Staff)	£38,000	£1,650	£39,650
	Travel and expenses (Volunteers)	£21,000	£0	£21,000
	Equipment and materials	£49,800	£9,960	£59,760
	Other activity costs	£16,250	£2,170	£18,420
	Professional fees	£14,500	£2,900	£17,400
	Total: Delivery Phase Activity Costs	**£1,095,507**	**£33,850**	**£1,129,357**
Delivery Phase Other Costs	Recruitment	£2,400	£0	£2,400
	Publicity and promotion	£23,250	£400	£23,650
	Evaluation	£15,500	£3,100	£18,600
	Other costs	£3,250	£220	£3,470
	Full cost recovery	£85,313	£9,540	£94,853
	Contingency	£74,938	£9,937	£84,875
	Inflation	£37,637	£0	£37,637
	Increased management & maintenance	£0	£0	£0
	Non cash contributions	£10,500	£0	£10,500
	Volunteer time	£200,000	£0	£200,000
	Total: Delivery Phase Other Costs	**£452,788**	**£23,197**	**£475,985**
Delivery Phase Income	Local authority	£0	£0	£0
	Other public sector	£0	£0	£0
	Central government	£0	£0	£0
	European Union	£0	£0	£0
	Private donation - individual	£0	£0	£0
	Private donation - trust/charity	£0	£0	£0
	Commercial/business	£0	£0	£0
	FSC contribution	£160,534	£0	£160,534
	Other fundraising	£0	£0	£0
	Increased mgmt and maintenance costs	£0	£0	£0
	Non cash contributions	£10,500	£0	£10,500
	Volunteer time	£200,000	£0	£200,000
	Total: Delivery Phase Income	**£371,034**	**£0**	**£371,034**
Total: Delivery Phase Costs		**£1,548,295**	**£57,047**	**£1,605,342**
Total: Delivery Phase Income		**£371,034**	**£0**	**£371,034**
			HLF delivery grant request	**£1,234,308**
			HLF delivery grant	**77%**

Table 22: Table demonstrating differences in the original BioLinks project budget submitted during the stage 1 application and the updated budget accompanying the stage 2 application following the development phase consultation and creation of the current activity plan.

Budget Line	Original costs	Updated costs	Difference	Comments
New staff costs	£537,602	£543,107	£5,505	Revision of salary for DDO and end of contract redundancy costs.
Training for staff	£5,400	£28,950	£23,550	Under-budgeted on compliance and training for associate tutors and training location staff.
Training for volunteers	£386,880	£401,070	£14,190	Minor uplift to costs due to detailed costing of full calendar of training events.
Travel and expenses (Staff)	£26,640	£39,650	£13,010	Reduced the travel for atlas work and collections visits due to consultation information. Adjusted staff travel according to lessons learned through development phase regarding amount of travel required by project officers.
Travel and expenses (Volunteers)	£12,300	£21,000	£8,700	Reduced the travel for atlas work and collections visits due to consultation information. Added in sponsorship for young adults to sector conferences/events. Also added in expenses for BioBlitz event volunteers, legacy workshop volunteers and volunteer speakers at regional conferences.
Equipment and materials	£60,520	£59,760	-£760	Removed costs for atlas materials as digital resource will be produced in replacement of printed resource (delivers better value for money, more environmentally friendly and more dynamic resource for volunteers). Reduced costs of collections equipment due to consultation feedback.
Other activity costs	£38,904	£18,420	-£20,484	Mistake in original budget line – we have now avoided duplication but added additional items and removed atlas costs due to replace of printed atlas projects with BioLinks Digital Atlas resource.
Professional fees	£26,700	£17,400	-£9,300	Removed costs of external software development now in DDO job description. Added in fees for taxonomists and videographers.
Recruitment	£2,860	£2,400	-£460	The need for printed adverts is reduced through networks and digital communications
Publicity and promotion	£1,300	£23,650	£22,350	Determination of target audiences within development phase has highlighted the need for additional publicity mechanisms to ensure these audiences are successfully reached. Increased budget for event promotion to ensure good attendance of BioBlitz events and regional conferences.
Evaluation	£1,300	£18,600	£17,300	Under-budgeted originally and need for external evaluation is recognised. Also includes costs for Local Environmental Records Centres to produce of regional species recording reports.
Other costs	£0	£3,470	£3,470	Addition of costs for affiliation with relevant biodiversity organisations (e.g. recording schemes, NBN, NFBR, Linnean Society, NatSCA). Important to ensure project is integrated into biological recording sector and enable project staff to remain current on the activities of other biodiversity organisations.
Full cost recovery	£114,786	£94,853	-£19,933	Revised overheads estimates - sharing resource. Full cost recovery is calculated using FSC Overheads which are reviewed in line with annual costs and updated annually by FSC Director of Finance.
Contingency	£162,312	£84,875	-£77,437	Reduced due to critical evaluation of project risks and more accurate costings for training.
Inflation	£22,478	£37,637	£15,159	Error in original budget sheet, only calculating inflation for half of budget lines. Higher costs and inflated 1 % then 2% for remaining 4 years due to current economic climate.

3 FSC BioLinks Action Plan

The following tables outlining the Action Plan for the FSC BioLinks project are colour-coded according to the three aims that sit within our vision:

Aim 1: Record and tell the story of natural heritage

Our native wildlife is an important part of our natural heritage and wildlife can contribute significantly to the wellbeing, sustainability and economy of local communities.

Aim 2: Develop nature's guardians

Volunteer biological recorders provide a service that is used by both local and national decision makers, informing planning decisions, conservation action, research priorities and much more.

Aim 3: Strengthen the biological recording network

The biological recording community consists of a diverse range of organisations and individuals that are all working towards the common goal of ensuring our natural heritage is better understood.

A fourth aim is included within the Action Plan to ensure good project management and effective administration of project activities (and these are colour-coded blue):

Aim 4: Effective project management

The success of project activities is dependent on effective management and evaluation of project activities, following good practice with clear procedures.

3.1 Recording & telling the story of natural heritage actions

3.1.1 Recording natural heritage actions

Activity: Detailed description	Audiences	Benefits for people	Outcome	Resources	Costs	Timetable	Targets and success	Method(s) of evaluation
1.1.1 Field Recorder Days Field trip to site to undertake recording of site for focus species groups. Volunteer recorders covering non-focus taxa also invited to participate through advertising of event through the biological recording network. Presence of minimum of 2 associate tutors and regional project officer to facilitate mentoring and support to volunteers. *4 field events per region per year = 40 field events*	Potential and existing volunteers (beginner, intermediate and advanced levels); Regional experts	Volunteers are able to access support and mentoring from experts and project staff. Site managers are engaged with local volunteers.	Natural heritage (species composition) will be better identified and recorded on sites managed for wildlife People will have had an enjoyable experience recording local natural heritage in the field People will have volunteered their time	Regional project staff (40 days delivery, 40 days planning, 40 days follow up); Associate Tutors (80 days); Volunteers (2,800 days) Associate tutor fees; Venue Hire; Travel expenses (staff and tutors); Course materials (e.g. printing, stationary); Consumables (e.g. preservative, sample tubes); Publicity; Field equipment	Total = £28,400 + £1,280 VAT Consisting of (per event): Venue hire = £200 Tutor fees = £350 Resources = £160 VAT = £32	Yrs 1-5: 2 events per region per year in Q2 and 2 events per region per year in Q3.	40 field events delivered. 100 new biological records submitted to the local environmental records centre. 50 previously un-recorded species recorded on site. Volunteers feel supported and confident to identify and record focus species. Volunteers enjoy volunteering and feel connected to their local centre. Each centre feels connected to a network of local volunteers.	Record of project progress. Comparison of records for the site pre and post event. End of event volunteer evaluation form and a sample of informal interviews with participants/follow-up telephone interviews. Annual review with centres/site managers.
1.1.2 BioLinks Digital Atlas Creation of digital atlas platform covering focus species groups, including interactive geographic display of species records by taxonomic and temporal ranges. Update atlas database regularly to ensure content is current and can be used by volunteers to identify geographic gaps in species distribution data. Atlases will be shared using mixed media including paper, internet, or perhaps an app available for use on mobile devices.	Potential and existing volunteers (all levels)	Volunteers are provided with an opportunity to contribute to the publication of a natural heritage publication.	Natural heritage (species distribution) will be better identified and recorded on a regional level Natural heritage (species distribution) will be better interpreted on a regional level People will have volunteered their time	Regional project staff (20 days); Digital Development Officer (20 days); Volunteers (200 days); Technical data base support and interactive software for mapping; Social media for promoting initiative	No additional costs other than project staff time and costs associated with action 4.2.5	Yr 1: Creation of digital atlas platform and upload of historic datasets for focus species groups. Yrs 2-4: Promote regional atlas projects and support volunteers contributing species data. Regularly update database with new records. Yr 5: Support to existing recording schemes for incorporating atlas software onto their in-house websites.	Creation and launch of digital atlas platform. 50% of 'empty' squares for each atlas contain at least one record. Volunteers are actively involved in data collection of each atlas. Volunteers enjoy volunteering and feel their contribution to the project is valued.	Record of project progress. Comparison of 'empty' squares pre and post project (reviewed annually). Annual volunteer reviews.
1.1.3 Field Notes Database Develop a mixed media database. This encourages field observations of ecological patterns and behaviours and provides a first opportunity for ecologists to publish scientific articles. Crowd source information encouraged progressively. Database searchable to general public with Open Data Policy.	Potential and existing volunteers (all levels) Other volunteer biological recorders (all levels)	Volunteers, experts and the general public are able to record and research natural heritage observations in a dynamic platform.	Natural heritage (species ecology and behaviour) will be better recorded More people and a wider range of people will have engaged with natural heritage	Digital Development Officer (40 -80 days): Regional project staff (20 days) Consultation with sector (e.g. BRC, NBN and ALERC) Website costs (e.g. domain, hosting)	No additional costs other than project staff time and costs associated with action 4.2.5	Yr 1: Initial framework developed and rapid prototyping conducted in Q2. Database populated with relevant content in Q3. Yrs 2-4: Encouragement of crowd-sourced information. Reviewed quarterly with editing ongoing. Yr 5: Evaluation of the success of the Field Notes digital resource and legacy strategy developed and implemented.	Database is established and available to the public. 1,000 observations are input to the database. A wide variety people input data to the database.	Record of project progress. Record keeping on the profile of those inputting data (monitoring data questions for each inputter?).

Activity: Detailed description	Audiences	Benefits for people	Outcome	Resources	Costs	Timetable	Targets and success	Method(s) of evaluation
1.1.4 Species Recording Project volunteers will undertake invertebrate species recording outside of project activities. This will involve observing and identifying invertebrates and submitting accurate records to national recording schemes and local environmental records centres.	Project volunteers (all levels)	Volunteers are able to contribute to invertebrate species datasets.	Natural heritage (species distribution) will be better identified and recorded, contributing to both local and national invertebrate species datasets	Regional project staff (100 days for support and guidance); Volunteers time	No costs other than project volunteer time	Yrs 1-5: Ongoing, evaluated annually.	500 new species records annually per focus species group per region.	Record of project progress. Local environmental records centres provide annual report of number of records submitted within project regions for focus taxa.

3.1.2 Interpreting natural heritage actions

Activity: Detailed description	Audiences	Benefits for people	Outcome	Resources	Costs	Timetable	Targets and success	Method(s) of evaluation
1.2.1 Invertebrate Site Reports Records from Field Recorder Days compiled by PO into an invertebrate site invertebrate species list. Report produced containing site invertebrate species list and instructions regarding the use of Pantheon to use invertebrate assemblages to assess habitat quality of a site and shared with site manager (as well as volunteers) so that site's natural heritage (invertebrate populations) can be better managed. *4 events per region per year = 40 invertebrate site reports*	Wildlife site managers	Site managers are able to access and interpret high quality invertebrate data for the sites they manage for wildlife.	Natural heritage (invertebrate species) will be better interpreted on sites managed for wildlife Natural heritage (invertebrate species) will be better managed on sites managed for wildlife	Regional project staff (2 days report template production, 20 days report writing) Pantheon guidance (produced by Natural England)	No costs other than project staff time	Yrs 1-5: Production and sharing of 4 reports per region per year.	40 invertebrate site reports produced and available to site managers. Site managers are aware of the reports and are accessing this invertebrate data to help inform the management of the site.	Record of project progress. Annual review with centres/site managers.
1.2.2 Natural History Collections Training Use of collections at a local, regional and national level as a teaching and learning tool. Train volunteers on how to make and manage personal collections; how to use regional and national collections to provide support and validation for identification purposes. Volunteer visits to collections in the winter months activity when no fieldwork. Focus on curation training and using collections as references and record sources. *1 workshop per region per year = Total 10 collections workshops*	Existing volunteers (intermediate and advanced levels)	Volunteers are able to access specialist knowledge and training. Natural history curators will develop relationships with local volunteer biological recorders.	Natural heritage (natural history collections) will be better interpreted to biological recorders People will have developed skills and confidence in using national and local natural history collections for identification purposes. People will have volunteered their time Natural history collections will be more resilient	Regional project staff (10 days delivery, 10 days planning); Associate Tutor/Natural History Curator (10 days delivery, 10 days planning); Volunteers (70 days); Collections verification specialist (8 days) Associate Tutor/Natural History Curator fees; Venue hire; Catering; Travel expenses (staff & tutors); Travel subsidies (volunteers); Course materials (e.g. printing); Consumables (e.g. preservative, pins); Storage equipment	Total = £32,200 + £2,440 VAT Consisting of: Professional fees = £8,000 Collections equipment = £3,000 VAT = £2,200 Plus per event: Venue hire = £1,000 Tutor fees = £500 Refreshments = £20 Resources = £100 Volunteer expenses = £500 VAT = £24	Yrs 1-5: Delivery of 1 workshop per region per year in Q4.	10 workshops delivered. Volunteers feel supported and confident to use museum collections as an identification tool. Volunteers enjoy volunteering and feel connected to the museum. Natural history curators have developed improved relationships with local volunteer biological recorders.	Record of project progress. End of event volunteer evaluation form and a sample of informal interviews with participants/follow-up telephone interviews. Interviews with natural history curators.

Activity: Detailed description	Audiences	Benefits for people	Outcome	Resources	Costs	Timetable	Targets and success	Method(s) of evaluation
1.2.3 Field Notes Bulletin Electronic newsletter sent to all registered users of the Field Notes database, highlighting interesting entries and developments. E-newsletter will also be used to provide feedback to users regarding any use of data for research in scientific fields such as ecology, behavioural studies, taxonomy or conservation. Small number of printed version for promoting database at events and centres. *2 e-newsletters per year (from year 2) = Total 16 e-newsletters*	Registered users of the Field Notes database	Field Notes users are able to access interpretation of the natural heritage data entered into the database.	Natural heritage (species ecology and behaviour) will be better interpreted and explained	Digital Development Officer (4 days development and distribution systems; 16 days e-newsletter production)	Total = £1,000 Based on the production of 500 units @ £2 per unit.	Yr 1: e-Newsletter template designed.. Distribution method set up. 2 e-Newsletters produced and distributed (Q2 and Q4). Yrs 2-5: 2 e-Newsletters produced and distributed per year (Q2 and Q4).	16 e-newsletters produced and circulated to database users. Database users feel that the newsletter enhances their involvement.	Record of project progress. Interim and summative survey of database users.

3.2 Developing nature's guardians actions

3.2.1 Training nature's guardians actions

Activity: Detailed description	Audiences	Benefits for people	Outcome	Resources	Costs	Timetable	Targets and success	Method(s) of evaluation
2.1.1 Learn to Love training courses Delivery of one-day introductory level courses across training venues in the London and West Midlands regions to engage new local groups at the introductory level of the BioLinks Volunteer Learning Pathway. *5 courses per region per year = Total 50 training courses*	Potential volunteers (introductory level)	Volunteers recorders are able to access specialist knowledge and training. Volunteer recording scheme organisers are able to promote their schemes and recruit new volunteer recorders.	People will have had an enjoyable experience learning about natural heritage People will have volunteered their time More people and a wider range of people will have engaged with natural heritage	Regional project staff (15 days planning, 50 days delivery); Training hub staff (50 days); Associate Tutors (50 days); Volunteers (350 days) Associate Tutor fees; Venue hire; Catering; Travel expenses (staff & tutors); Course materials (e.g. printing, identification resources); Consumables (e.g. preservative, sample tubes)	Total = £32,500 + £1,000 VAT Consisting of (per event): Venue hire = £200 Tutor fees = £350 Refreshments = £20 Resources = £80 VAT = £20	Yrs 1-5: Delivery of 5 courses per region.	50 training courses delivered. 350 course attendees. Introductory level new or potential volunteers attend the training. Participants have an increased awareness of the biological recording process, its importance and the ways in which they can get involved. New volunteer recorders are recruited to local volunteer recording scheme organisers.	Record of project progress. Annual survey/review with recording scheme organisers. End of event volunteer evaluation form and a sample of informal interviews with participants/follow-up telephone interviews.

Activity: Detailed description	Audiences	Benefits for people	Outcome	Resources	Costs	Timetable	Targets and success	Method(s) of evaluation
2.1.2 Focus Species Group Identification Training - One-day Courses (Existing Hubs) Delivery of one-day training courses/events to complement the existing provision provided for a minimum of 3 of the focus species groups by the existing hub (Dinton Pastures in the London region and FSC Preston Montford in the West Midlands region) according to the BioLinks Volunteer Learning Pathway. *6 courses per region per year = Total 60 training courses*	Potential and existing volunteers (beginner, intermediate and advanced levels).	Volunteers recorders are able to access specialist knowledge and training. Volunteer recording scheme organisers are able to promote their schemes and recruit new volunteer recorders.	People will have developed skills and confidence in taxonomic identification skills of under-recorded species groups People will have had an enjoyable experience learning about natural heritage People will have volunteered their time	Regional project staff (20 days planning, 60 days delivery); Training hub staff (60 days); Associate Tutors (60 days); Volunteers (420 days) Associate Tutor fees; Venue hire; Catering; Travel expenses (staff & tutors); Course materials (e.g. printing, identification resources); Consumables (e.g. preservative, sample tubes)	Total = £39,000 + £1,200 VAT Consisting of (per event): Venue hire = £200 Tutor fees = £350 Refreshments = £20 Resources = £80 VAT = £20	Yrs 1-5: Delivery of 6 courses per region.	60 training courses delivered. 420 course attendees. Introductory level new or potential volunteers attend the training. Participants have an improved knowledge of the focus species group and how to identify members of it. New volunteer recorders are recruited to local volunteer recording scheme organisers.	Record of project progress. Annual survey/review with recording scheme organisers. End of event volunteer evaluation form to assess progress along BioLinks Learning Pathway and a sample of informal interviews with participants/follow-up telephone interviews.
2.1.3 Focus Species Group Identification Training - One-day Courses (Emerging Hubs) Delivery of training courses/events to create complete BioLinks Volunteer Learning Pathway for a minimum of 5 focus species groups at the emerging training hub (FSC Bushy Park in the London region and FSC Bishops Wood in the West Midlands region) according to the BioLinks Volunteer Learning Pathway. *15 courses per region per year = Total 150 training courses*	Potential and existing volunteers (beginner, intermediate and advanced levels).	Volunteers recorders are able to access specialist knowledge and training. Volunteer recording scheme organisers are able to promote their schemes and recruit new volunteer recorders.	People will have developed skills and confidence in taxonomic identification skills of under-recorded species groups People will have had an enjoyable experience learning about natural heritage People will have volunteered their time	Regional project staff (50 days planning, 150 days delivery); Training hub staff (150 days); Associate Tutors (150 days); Volunteers (1,050 days) Associate Tutor fees; Venue hire; Catering; Travel expenses (staff & tutors); Course materials (e.g. printing, identification resources); Consumables (e.g. preservative, sample tubes)	Total = £97,500 + £3,000 VAT Consisting of (per event): Venue hire = £200 Tutor fees = £350 Refreshments = £20 Resources = £80 VAT = £20	Yrs 1-5: Delivery of 15 courses per region.	150 training courses delivered. 1,050 course attendees. Introductory level new or potential volunteers attend the training. Participants have an improved knowledge of the focus species group and how to identify members of it. New volunteer recorders are recruited to local volunteer recording scheme organisers.	Record of project progress. Annual survey/review with recording scheme organisers. End of event volunteer evaluation form to assess progress along BioLinks Learning Pathway and a sample of informal interviews with participants/follow-up telephone interviews.
2.1.4 Focus Species Group Identification Training - Residential Courses Delivery of training courses/events to create complete BioLinks Volunteer Learning Pathway for a minimum of 5 focus species groups at the designated training hub (FSC Bushy Park in the London region and FSC Bishops Wood n the West Midlands region) according to the BioLinks Volunteer Learning Pathway. Residential courses will be delivered from FSC Preston Montford in the West Midlands region and FSC Juniper Hall in the London region. *4 courses per region per year = Total 40 training courses*	Potential and existing volunteers (beginner, intermediate and advanced levels)	Volunteers recorders are able to access specialist knowledge and training. Volunteer recording scheme organisers are able to promote their schemes and recruit new volunteer recorders.	People will have developed skills and confidence in taxonomic identification skills of under-recorded species groups People will have had an enjoyable experience learning about natural heritage People will have volunteered their time	Regional project staff (50 days planning, 160 days delivery); Training hub staff (160 days); Associate Tutors (160 days); Volunteers (560 days) Associate Tutor fees; Venue hire; Catering; Travel expenses (staff & tutors): Accommodation (staff & tutors): Accommodation subsidies (volunteers); Course materials (e.g. printing, identification resources); Consumables (e.g. preservative, sample tubes)	Total = £80,800 + £960 VAT Consisting of (per event): Tutor fees = £700 Residential/catering = £1,200 Resources = £120 VAT = £24	Yrs 1-5: Delivery of 4 courses per region.	40 training courses delivered. 280 course attendees. Introductory level new or potential volunteers attend the training. Participants have an improved skills and confidence in taxonomic identification skills of under-recorded species groups. New volunteer recorders are recruited to local volunteer recording scheme organisers. New biological records are produced.	Record of project progress. Annual survey/review with recording scheme organisers. End of event volunteer evaluation form to assess progress along BioLinks Learning Pathway and a sample of informal interviews with participants/follow-up telephone interviews.

3.2.2 Supporting nature's guardians actions

Activity: Detailed description	Audiences	Benefits for people	Outcome	Resources	Costs	Timetable	Targets and success	Method(s) of evaluation
2.2.1 BioLinks Verification and Support Service Volunteer identification workshop with support from project officer and availability of equipment/facilities. 2 workshops will be delivered in each region each month, with occasional taxonomic emphasis with expert present to facilitate high-quality mentoring of project volunteers. *2 expert-led workshops per region per year = Total 20 expert-led workshops 10 project staff-led workshops per region per year = Total 100 project staff-led workshops*	Existing volunteers (Beginner and Intermediate levels)	Volunteers are able to access support and mentoring from experts and project staff.	Natural heritage will be better recorded through accurate/verified species identification People will have developed skills and confidence in taxonomic identification of under-recorded species groups People will have volunteered their time	Regional project staff (20 days planning, 230 days delivery); Training hub staff (230 days); Associate Tutors (50 days); Volunteers (350 days on expert-led workshops, 720 days on project staff-led workshops) Associate Tutor fees (expert-led workshops only); Venue hire; Catering; Travel expenses (staff & tutors): Consumables (e.g. preservative, sample tubes)	Total = £26,000 + £600 VAT Consisting of : Per tutor-led workshop: Venue hire = £200 Tutor fees/expenses = £700 Refreshments = £20 Resources = £5 VAT = £5 Per staff-led workshop: Venue hire = £50 Refreshments = £20 Resources = £5 VAT = £5	Yrs 1-5: Delivery of 2 expert-led and 10 project staff-led workshops per region per year.	20 expert-led workshops and 100 project staff-led workshops and delivered. Beginner and intermediate level volunteers attend workshops. Participants feel supported and have access to experts and project staff. 500 new species records annually per focus species group per region.	Record of project progress. Volunteer annual registration with review. Local environmental records centres provide annual report of number of records submitted within project regions for focus taxa.
2.2.2 Biological Recording Guidance Notes A series of guidance notes relating to biological recording such as land permissions, making a record, collection, curation. *Total 6 guidance notes*	Volunteer biological recorders (all levels)	Volunteer biological recorders will have access to free online guidance.	People will have developed skills in biological recording good practice	Regional project staff (12 days); Digital Development Officer (2 days): Website costs (e.g. domain, hosting)	No additional costs other than project staff time and costs associated with action 4.2.5	Yrs 2-4: Creation of a minimum of 2 guidance notes per year and published online.	6 guidance notes produced and are accessible to volunteers. Volunteer biological recorders have access to free online guidance and feel that the guidance assists them in good biological recording practice.	Record of project progress. Volunteer annual review and interviews/focus group. Record of number of downloads.
2.2.3 Field and Technical Skills Online Videos Production of 'Biological Recording' series of online videos published through relevant social media video platform (e.g. YouTube) to provide guidance to volunteers regarding field and technical skills. *5 online videos(professional standard) + 10 online videos (self-produced) = 15 online videos*	Volunteer biological recorders (introductory , beginner and intermediate levels)	Volunteer biological recorders will have access to free online training.	People will have developed skills in field sampling and taxonomic identification techniques	Regional project staff (12 days); Digital Development Officer (6 days); Video production consultant (10 days)	Total = £5,000 + £1,00 VAT Consisting of (per video): Professional videographer fees = £1,000 (Remaining videos produced in-house at no additional cost other than project staff time)	Yrs 1-5: Creation of a minimum of 1 professional standard and 2 in-house standard videos per year and published online	15 online videos produced (5 to a professional standard) and are accessible to volunteers. Volunteer biological recorders have access to free online videos and feel that the guidance assists them in good biological recording practice.	Record of project progress. Volunteer annual review and interviews/focus group. Record of number of views and comments from viewers.

Activity: Detailed description	Audiences	Benefits for people	Outcome	Resources	Costs	Timetable	Targets and success	Method(s) of evaluation
2.2.4 Online Identification Resources Creation of online tools to assist volunteers with identification of focus species group taxa, , making species identification more accessible to those who cannot afford to purchase expensive identification resources. *Total 3 online identification resources*	Volunteer biological recorders (level varied dependent on resource)	Volunteer biological recorders will have access to free online identification resources.	People will have developed skills in taxonomic identification skills of under-recorded species groups	Regional project staff (12 days) Digital Development Officer (12 days) Digital resource support (hardware and software); Taxa expert guidance; Website costs (e.g. domain, hosting)	Total = £1,500 + £300 VAT Consisting of (per resource): Taxonomic expert fees = £500	Yrs 2-4: Creation of a minimum of 1 online identification resource per year.	3 online identification resources produced and are accessible to volunteers. Volunteer biological recorders have access to free identification resources and feel that the guidance assists them in good biological recording practice.	Record of project progress. Volunteer annual review and interviews/focus group. Record of number of users using Google Analytics.

3.2.3 Recognising natures guardians actions

Activity: Detailed description	Audiences	Benefits for people	Outcome	Resources	Costs	Timetable	Targets and success	Method(s) of evaluation
2.3.1 BioLinks e-Newsletter Newsletter detailing project updates, results of project activities, news from affiliates and calls-to-action. Newsletter created and distributed electronically twice per year alongside additional project documents, such as courses/events catalogue (including relevant signposted courses from external training providers) and any relevant support resources (such as the guidance notes). Small number of printed copies produced for posting out to non-computer based rewarders eg 'centres' or those with no access to internet. *2 e-newsletters per year (from year 2) = Total 16 e-newsletters*	Existing volunteers (all levels)	Volunteer recorders are able to access interpretation of the natural heritage data they have collected.	Natural heritage (outcomes of biological recording) will be better interpreted and explained People will have had an enjoyable and motivating experience learning about the outputs of their volunteer activities People will have volunteered their time	Regional project staff (22 days newsletter production, 10 days course/events catalogue production, 10 days newsletter distribution); Volunteers (20 days newsletter article production) Pack materials (e.g. printing & envelopes): Postage costs	Total = £1,000 Based on the production of 500 units @ £2 per unit.	Yr 1: e-Newsletter template designed. Distribution method set up. 2 e-Newsletters produced and distributed (Q1 and Q3). Yrs 2-5: 2 e-Newsletters produced and distributed per year (Q1 and Q3).	16 e-Newsletters produced and distributed to volunteers. Minimum of 25% of newsletters opened. 32 articles produced by project volunteers.	Record of project progress. Use of digital mailing platform (e.g. MailChimp) to measure open-rate of e-newsletters.
2.3.2 Regional BioLinks Recorder Conferences Delivery or support (current provision dependant) of regional indoor meetings for project volunteers and other biological recorders. Events involve presentations by local volunteers and promotion of local groups and initiatives. *1 regional conference per region per year = Total 10 regional conferences*	Potential and existing volunteers (all levels); Regional experts	Volunteers and regional experts will be provided with a forum to develop relationships with others (volunteers and mentors) and interpret regional species datasets and outputs arising from natural heritage data they have collected.	Natural heritage (outcomes of biological recording) will be better interpreted and explained People will have had an enjoyable and motivating experience learning about local natural heritage. People will have volunteered their time	Regional project staff (30 days planning, 10 days creating & assembling delegate packs, 10 days delivery; 10 days follow up); Volunteers (800 days - 10 X 80 delegates): Venue staff Speaker fees (keynote speakers); Volunteer speaker £50 bursaries (10 per conference); Venue hire; Catering; Travel expenses (staff & speakers); Delegate pack materials (e.g. printing & stationary); Publicity	Total = £52,000 + £5,000 VAT Consisting of: Advertising (regionally) = £5,000 Also consisting of (per event): Venue hire = £1,500 Keynote speaker fees = £200 Catering = £1600 Resources = £900 Volunteer expense bursaries = £500 VAT = £500	Yrs 1-5: Delivery of 1 regional conference per region per year in Q1.	10 regional conferences delivered with attendance of 80 delegates per conference. Volunteers feel connected, part of a wider network and motivated as a result of attendance. Volunteers and regional experts share and interpret regional species datasets and outputs arising from natural heritage data they have collected.	Record of project progress. Record keeping of event attendance. Post event participant survey.

Activity: Detailed description	Audiences	Benefits for people	Outcome	Resources	Costs	Timetable	Targets and success	Method(s) of evaluation
2.3.3 Training Course Certificates Provision of certificates of attendance for volunteers attending courses in recognition of volunteer learning. IISC assessment workshop attendees provided with certificate of achievement stating the competence level achieved during the assessment. *1 certificate per course attendee = Estimate 5000 certificates (based on 10 attendees per course)*	Volunteers attending training courses	Volunteers will receive evidence of their learning	People will have had an enjoyable experience through recognition of their learning	Regional project staff (3 days template design, 62 days creation & printing) Certificate paper; Printing costs;	No additional costs (printing costs incorporated into individual workshop resources costs)	Yr 1: Certificate templates designed. Yrs 1 -5: Certificates issued to course attendees during training courses.	Volunteers feel valued and their achievement recognised.	Volunteer annual review and interviews/focus group.
2.3.4 Invertebrate Identification Skills Certificate (IISC) Develop and pilot qualifications for a series of taxon groups (minimum of 2) designed to test participants level of skill in successfully identifying invertebrates to species level, using the framework set out in the botanical Field Identification Skills Certificate. 6 assessment workshops conducted during qualification pilot. *Total 6 IISC assessment workshops*	Existing volunteers (all levels)	Volunteers will receive evidence of their competency level in species identification of the piloted taxa.	People will have had an enjoyable experience through recognition of their learning People will have volunteered their time	Regional project staff (5 days development, 6 days pilot planning & delivery, 8 days assessment workshop planning & delivery, 8 days marking assessments and providing volunteer feedback); Taxonomic expert (12 days specimen verification); Volunteers (60 days assessment attendance); Venue hire; Catering; Travel expenses (staff); Workshop materials (e.g. stationary & printing); Consumables (e.g. preservative & sample tubes)	Total = £9,150 + £150 VAT Consisting of (per event): Venue hire = £200 Tutor fees = £700 Catering = £120 Resources = £5 Volunteer expense bursaries = £500 VAT = £25	Yr 2: Development of assessment workshops format and assessment criteria. Yr 3: Provision of 2 pilot assessment workshops, feedback collated and assessment of success. Yrs 4-5: Provision of 2 assessment workshops per year.	Assessment developed and piloted and 6 IISC assessment workshops delivered with 42 Participants. Volunteers receive evidence of their competency level in species identification of the piloted taxa and feel valued and their achievement recognised.	Record of project progress. Record keeping of event attendance. Post event participant survey.

3.3 Strengthening the biological recording network actions

3.3.1 Extending the biological recording network's audiences

Activity: Detailed description	Audiences	Benefits for people	Outcome	Resources	Costs	Timetable	Targets and success	Method(s) of evaluation
3.1.1 BioBlitz Events Celebratory events to launch and close the project held at new training hubs (FSC Bushy Park in London region and FSC Bishops Wood in West Midlands region). Results to be publicised and compared to provide demonstration of the impact of the project. *1 celebratory launch BioBlitz per region + 1 celebratory close BioBlitz per region = Total 4 BioBlitz events*	General public	General public will have an opportunity to engage with natural heritage in their local area. Volunteers will have an opportunity to share their knowledge of local natural heritage with the general public.	Natural heritage (species composition) will be better identified and recorded on sites managed for wildlife People will have had an enjoyable experience learning about local natural heritage People will have volunteered their time More people and a wider range of people will have engaged with local natural heritage	Regional project staff (20 days planning, 4 days delivery, 8 days follow up); Site staff; Volunteers (40 days); General public (250 people engaged per event) First aid cover; Venue Hire; Catering (refreshments); Travel expenses (staff and volunteers); Event materials (e.g. printing, stationary); Equipment; Consumables (e.g. preservative, sample tubes); Publicity;	Total = £14,000 + £2,000 VAT Consisting of (per event): Venue hire = £500 Catering = £1,000 Resources = £1,500 Volunteer expense bursaries = £500 Publicity = £650 VAT = £630	Yr 1: Delivery of celebratory BioBlitz project launch event in each region (Q2). Yr 5: Delivery of celebratory BioBlitz project close event in each region (Q3).	4 BioBlitz/celebratory events delivered attended by 1,000 participants. 28 volunteers assist in planning and delivery of events. New biological records are produced.	Record of project progress. Creative evaluation with participants at the event. Reflective practice amongst organisers to analyse event logistics.
3.1.2 BioLinks Social Media Strategy Use social media (e.g. Facebook and Twitter) on a daily basis to disseminate information regarding the project. Posts proactively sent to affiliates, local groups and relevant organisations to improve the reach of the project and ensure strong social media presence within the biological recording community.	Potential and existing volunteers (all levels); Regional and national experts; sector professionals	Volunteers will be able to engage with the project and each other outside of project courses and events. Young adults (hard-to reach audience) will be engaged by the project. Sector professionals/ volunteer experts will be provided with an opportunity to explore potential synergies due to increased project awareness.	More people and a wider range of people will have engaged with heritage	Project staff (130 days); FSC Marketing department	No costs other than project staff time	Yr 1: Develop social media strategy and build social media presence. Yrs 2-5: Regular engagement with volunteers, local groups and affiliates through social media.	Social media channels for the project established and well used by participants. Volunteers, including young people, engage with the project and each other outside of project courses and events through social media. Sector professionals and volunteer experts use social media channels to explore potential synergies due to increased project awareness.	Assessment of social media activity and impact using analytics tools. Volunteer annual review and interviews/focus group including AFON members. Volunteering monitoring data
3.1.3 Young Adult Recruitment Strategy Actively recruit young adults (18-25) through liaising with A Focus On Nature to deliver a range of activities and opportunities for their members, including improving the profile of young adult AFON members already involved in the recording of BioLinks focus species groups.	Young adults (18-25 year olds)	Young adults (hard-to reach audience) will be engaged by the project and high achiever young adults will be given an improved profile within the biodiversity sector.	More young adults will have engaged with natural heritage	Regional project staff (20 days): A Focus On Nature volunteers (5 days)	Total = £8,000 Consisting of: University poster campaign = £2,000 Sponsorship for young adults to attend events = £5,000 Advertising = £1,000	Yr 1: Liaise with A Focus On Nature to determine relevant targeting methods for recruiting Young Adults (18-25) Yrs 2-5 (Q1): Active recruitment of Young Adults to project activities.	50 Young adults (hard-to reach audience)are engaged by the project and high achiever young adults have an improved profile within the biodiversity sector.	Annual assessment by project team. Volunteer annual review and interviews/focus group including AFON members. Volunteering monitoring data

Activity: Detailed description	Audiences	Benefits for people	Outcome	Resources	Costs	Timetable	Targets and success	Method(s) of evaluation
3.1.4 Balanced Gender Representation The proportion of female volunteers engaging with the project will be monitored to ensure that women are equally represented. This will be reviewed annually to determine if the proportion of female volunteers engaging with the project is below 40%. In the event of the proportion of female project volunteers falling below 40%, the project staff will undertake targeted advertising to increase the proportion of women engaging with BioLinks.	Women (if under-represented in project activities); Men (if under-represented in project activities)	Women will be fairly represented within the project activities.	More people and a wider range of people will have engaged with heritage	Regional project staff (20 days) Regional conference attendance; Targeted advertising	Total = £3,000 Consisting of: Engagement with local charities for women = £2,000 Advertising = £1,000	Yr 1: Set up of monitoring procedure for measuring proportion of women engaged with the project. Yrs 1-5 (Q4): Annual assessment . Yrs 2-5 (Q1): Active recruitment of Women if necessary.	Volunteers are at least 40% women.	Annual assessment by project team. Review of project process to track any remedial marketing. Volunteering monitoring data
3.1.5 Learning Difficulty Educators Pilot Project Pilot project working with educators delivering vocational training to individuals with learning difficulties (such as autism). Pilot will investigate how biological recording content can be delivered within vocational training (such as apprenticeships in arboriculture, agriculture and horticulture) to allow individuals to contribute towards meaningful scientific surveys. Pilot will involve development consultation and course design/training material creation (Yr 3) course delivery of a 'Train the trainers' workshop (Yr4) and evaluation of the course and materials followed by the production and dissemination of an on-line manual to facilitate learning difficulty trained educators to deliver meaningful biodiversity content leading to useful biological records.	Learning difficulty-trained educators	Learning difficulty-trained educators will be able to incorporate biological recording into the training they deliver.Individuals with learning difficulties will be able to contribute to meaningful biodiversity monitoring schemes.	Natural heritage will be better recorded through contribution to biodiversity monitoring schemes People will have developed skills and knowledge to train others to contribute to biodiversity monitoring schemesPeople with learning difficulties will have engaged with natural heritage	Regional project staff (5 days planning, 5 days pilot delivery, 5 days evaluation, 5 days resource production): Digital Development Officer (5 days resource production); Associate Tutor (2 days); Educational/Learning difficulty professionals (12 days)Associate tutor fees; Venue hire; Catering; Travel expenses (staff & tutor); Course materials (e.g. printing, course resources); Digital resource support (software)	Total = £2,520 + £64 VAT Consisting of: Attendee expenses = £2,200 Catering = £160 VAT = £64	Yr 3: Development consultation workshop and training course and teaching materials designed.Yr 4: Delivery of 'Train the Trainers' workshop.Yr 5: Evaluation of pilot success and creation of online manual for learning difficulty-trained educators.	Consultation with education and learning difficulty professionals. Delivery of training workshop to educators. Production of online training resource aimed at educators of individuals with learning difficulties.	Interviews with educators that attended training post-training and post-production of online resource.

3.3.2 Strengthening the existing biological recording network

Activity: Detailed description	Audiences	Benefits for people	Outcome	Resources	Costs	Timetable	Targets and success	Method(s) of evaluation
3.2.1 Biodiversity Training Signpost Develop a crowd-sourced online biodiversity event/course signpost. Advertise tool widely to project affiliates and sector training providers to create a user friendly 'one-stop-shop' for biodiversity training. Information.	Potential and existing volunteers (all levels) Other volunteer biological recorders (all levels)	General public will have access to a 'one stop shop' for biodiversity training. Regional and national experts (often volunteers) will benefit from a platform that allows their training provision to be advertised alongside the larger biodiversity training providers.	More people and a wider range of people will have engaged with natural heritage FSC and other biodiversity training providers (such as conservation NGOs, biological recording schemes, local natural history groups and local environmental records centres) will be more resilient	Digital Development Officer (40 -80 days): Regional project staff (20 days) Consultation with sector (e.g. FSC, Wildlife Trusts, recording schemes, LERCs) Technical data base support (software); Website costs (e.g. domain, hosting)	No additional costs other than project staff time and costs associated with action 4.2.5	Yr 1: Initial framework developed by Q3. Yrs 2-5 (Q1): Populated with all project courses/events and external training provision present in project regions. Yr 5 (Q3): Evaluation of the success of the Biodiversity Training Signpost digital resource and legacy strategy developed and implemented.	Training Signpost digital resource is produced and made publically available. Target audiences access the resource and find it helpful in signposting specialist training.	Record of project progress. Google Analytics data. Poll of resource users.
3.2.2 Digital Skills Training Courses Training courses to make technology and digital resources (such as QGIS, database, website or identification visualisation training) more accessible to biological recorders, regional experts and volunteer recording scheme managers. *1 training course per year = Total 5 training courses*	Regional and national volunteer experts	Volunteer regional and national experts will have access to specialist digital expertise and training.	People will have developed digital and technological skills People will have volunteered their time Biological recording schemes and local natural history groups will be more resilient	Digital Development Officer (5 days planning, 5 days delivery, 5 days post-course support); Training hub staff (5 days); Volunteers (35 days) Venue hire; Catering; Travel expenses (staff & tutor); Course materials (e.g. printing, teaching resources);	Total = £3,250 + £100 VAT Consisting of (per event): Venue hire = £200 Tutor fees = £350 Refreshments = £20 Resources = £80 VAT = £20	Yrs 1-5: Delivery of 1 training course per year (Q4).	5 training events delivered. Volunteers develop digital and technological skills and feel more confident at accessing relevant digital resources.	Record of project progress. Record keeping of event attendance. Post event participant survey.
3.2.3 Biodiversity Sector Conference Representation Sharing good practice from existing and emerging work (such as digital resource developments and the BioLinks Volunteer Learning Pathway) at national sector conferences (such as (ALERC, NBN and NFBR). *Estimated at 3 conference places per year =15 national conferences attended*	Regional conference: Potential volunteers; Regional experts National conferences: National experts; sector professionals	Sector professionals and volunteer experts will be provided with an opportunity to explore potential synergies due to increased project awareness.	FSC and other biodiversity sector organisations will be more resilient	Project staff (6 days presentation development, 30-45 days conference attendance, 15 days follow up) Conference attendance fees; Travel expenses (staff): Accommodation (staff)	Total = £6,250 + £200 Consisting of: Promotional materials = £1,000 Plus consisting of (per conference): Attendance fees = £100 Display fees = £100 Travel = £150 Accommodation (NBN only) = £200 VAT (accommodation only) = £40	Yrs 1-5: Attendance of 3 national sector conferences per year.	15 national conferences attended .A range of sector professionals have the opportunity to explore the project and benefit from the lessons learned during the project.	Record keeping of attendance at events/PO project diary.

Activity: Detailed description	Audiences	Benefits for people	Outcome	Resources	Costs	Timetable	Targets and success	Method(s) of evaluation
3.2.4 BioLinks Legacy & Resilience Workshop One day conference in London venue (e.g. Natural History Museum or Linnean Society) with sector professionals to celebrate the success of BioLinks and the lessons learned, and including interactive workshops to celebrate the project legacies and discuss the integration of project outputs into the wider biodiversity sector. Target of 100 delegates. High catering costs due to restrictions imposed by venue. *1 one-day event in Year 5*	Sector professionals ; Regional and national experts	Sector professionals will be provided with an opportunity to explore potential uses of project legacies and benefit from the lessons learned during the project. Project staff will benefit from evaluating the project with external professionals.	FSC and other biodiversity sector organisations will be more resilient	Project Manager (5 days planning, 1 day delivery; 5 days follow up); Project Officer (5 days planning; 1 day delivery; 1 day follow up); Digital Development Officer (5 days planning; 1 day delivery; 1 day follow up) Venue hire; Catering; Travel expenses (staff); Volunteer and Associate Tutor bursaries (20 delegates): Delegate pack materials (e.g. printing & stationary); Publicity	Total = £8,200 + £840 VAT Consisting of: Venue hire = £3,000 Catering = £3,000 Resources = £1,200 Volunteer expense bursaries = £1,000 VAT = £840	Yr 4 (Q4): Event planning and administration. Yr 5: Recruit participants and manage bookings (Q2). Delivery of one-day event (Q3). Evaluation conducted and disseminated (Q4).	1 legacy event delivered. A range of sector professionals have the opportunity to explore potential uses of project legacies and benefit from the lessons learned during the project.	Record of project progress. Record keeping of event attendance. Post event participant survey.

3.4 Project management actions

3.4.1 Preparing for the BioLinks project

Activity: Detailed description	Audiences	Benefits for people	Outcome	Resources	Costs	Timetable	Targets and success	Method(s) of evaluation
4.1.1 Employ Digital Development Officer Advertise position and hold interviews to recruit for this role.	Digital sector professionals		FSC will be more resilient	FSC human resources team (3 days): FSC Biodiversity Manager (3 days); FSC digital team (1 day); FSC Grants Officer (3 days) Advertising costs; Travel expenses (candidates & non-head office staff); Accommodation expenses (non-head office staff)	Total = £800 Consisting of: Advertisement = £200 Interviewee/Interviewer expenses = £600	Yr 1: Employ digital development officer (Q1).	Post successfully filled and retained.	Record of project progress.
4.1.2 Employ Regional Project Staff Advertise positions and hold interviews to recruit for Project Manager and Project Officer.	Biodiversity sector professionals		FSC will be more resilient	FSC human resources team (3 days): FSC Biodiversity Manager (3 days); Training hub representative (2 days); FSC Grants Officer (2 days) Advertising costs; Travel expenses (candidates & non-head office staff); Accommodation expenses (non-head office staff)	Total = £1,600 Consisting of (per post): Advertisement = £200 Interviewee/Interviewer expenses = £600	Yr 1: Employ project manager and project officer (Q1).	Post successfully filled and retained.	Record of project progress.

Activity: Detailed description	Audiences	Benefits for people	Outcome	Resources	Costs	Timetable	Targets and success	Method(s) of evaluation
4.1.3 Project Staff Training FSC training requirements for all project staff including FSC induction, training hub inductions (regional project staff only), EduCare course, first aid certification (regional project staff only) and driving assessments, plus any additional training required of FSC staff during the project's lifetime.	BioLinks project staff	Project staff will have access to training and personal development opportunities.	Project staff will have developed necessary skills to facilitate project activities FSC will be more resilient	FSC non-project staff (15 days); Project staff (15 days) Course fees (e.g. EduCare and first aid); Travel expenses (staff); Accommodation (staff)	Total = £4,500 + £450 VAT Consisting of 1 training event per project staff member per annum @ £300 per training event.	Yr 1: Initial training delivered (Q1). Yrs 1-5: Training needs assessed on 6-monthly basis.	Staff feel supported and that they have the skills required to effectively deliver their roles.	Training needs assessments. Staff telephone interviews.
4.1.4 FSC Health & Safety Procedures H&S OCOPs and WICs work training and production and updating of WICs regarding any sites used for project activities.	BioLinks project staff	Project staff will have access to training opportunities and personal development.	Project staff will have developed skills needed to ensure project activities are delivered in a safe and responsible manner FSC and other organisations will be more resilient	FSC non-project staff (3 days); Project staff (9 days training, 10 days H&S document production) FSC H&S documentation and policy	No costs other than project staff time	Yr 1: Initial training delivered (Q1). Yrs 1-5: Training delivered and site assessments undertaken according to project demands.	Staff feel supported and that they have the skills required to effectively deliver their roles.	Training needs assessments. Staff telephone interviews.

3.4.2 Making the FSC and project affiliates more resilient

Activity: Detailed description	Audiences	Benefits for people	Outcome	Resources	Costs	Timetable	Targets and success	Method(s) of evaluation
4.2.1 Equipping the Training Hubs Purchase of necessary equipment and resources needed to deliver project activities at each of the 4 identified training hubs. Equipment includes identification literature library, microscopes, field sampling equipment, preservative storage facility, consumables (e.g. preservative) and other equipment.	N/A	N/A	Biodiversity training centres will be more resilient	Regional project staff (20 days); Training hub staff (8 days) Literature library (e.g. identification resources); Microscopes and lamps; Projection equipment; Field sampling equipment; Laboratory equipment (e.g. petri diches & forceps); Preservative storage facility; Consumables (e.g. preservatives)	Total = £46,800 + £9,360 VAT Consisting of: Microscopes (and lamps) = £31,400 Projection equipment = £2,000 Field equipment = £3,000 Literature libraries = £7,600 Tablets = £2,000	Yr 1: Signing of MoUs with designated training hubs (Q1). Purchase and delivery of necessary equipment and resources (Q2). Yrs 1-5: Need for additional equipment and resources assessed quarterly and purchased when necessary. Yr 5 (Q3): Legacy plan for remaining equipment and resources created, authorised by HLF and delivered.	Equipment purchased. Centres feel better equip to deliver species identification courses.	Record of project progress. Annual review with centres/site managers.

Activity: Detailed description	Audiences	Benefits for people	Outcome	Resources	Costs	Timetable	Targets and success	Method(s) of evaluation
4.2.2 Training Hub Resilience Courses Training courses for relevant centre staff with regards to facilitating field and laboratory identification courses for adults. *1 training course per region per year = Total 10 training courses (with 6 attendees per course)*	Training hub support staff	Training hub staff will have access to training and personal development opportunities.	Training hub staff will have developed skills in facilitating species identification courses FSC and other organisations will be more resilient	Regional project staff (10 days planning, 10 days delivery); Training hub staff (60 days) Venue hire; Catering; Travel expenses (project staff & training hub staff); Course materials (e.g. printing, teaching resources)	Total = £7,000 Consisting of (per event): Attendee expenses = £600 Catering = £100 (No VAT on FSC catering) Not including non-cash contributions by FSC (per course): Venue Hire = £200 Tutor Fees = £250 Resources = £20	Yrs 1-5: 1 training course per region delivered per year (Q1).	2 training courses delivered. Training hub staff have developed skills in facilitating species identification courses. Centres feel better equip to deliver species identification courses.	Record of project progress. Post event survey of participants. Annual review with centres/site managers.
4.2.3 Train the Trainers Courses Bespoke training sessions for Associate Tutors on how to deliver effective training for the BioLinks project. 2 day course covering teaching methods and first aid. *Training delivered according to project demands = Estimated 5 courses (with 8 attendees per course)*	BioLinks Associate Tutors	Associate Tutors (regional and national experts) will have access to training and personal development opportunities.	Associate Tutors will have developed skills in delivering training to others FSC and other organisations (such as biological recording schemes and local natural history groups) will be more resilient due to increased number of trained tutors.	Regional project staff (20 days planning, 10 days delivery); Associate Tutors (40 days); Associate Tutor fees (for attendance); First aid trainer fees; Venue hire; Catering; Travel expenses (staff & tutors); Course materials (e.g. printing, teaching resources)	Total = £16,500 + £500 VAT Consisting of (per event): Tutor expenses = £1,600 Catering = £1,200 Resources = £500 VAT = £100 Not including non-cash contributions by FSC (per course): Venue Hire = £200 Tutor Fees = £250	Yr 1-5: 1 Train the Trainers course delivered per region per year (Q1).	Workshops delivered as required. Associate Tutors will have developed skills in delivering training to others. Centres feel they have a pool of associate tutors to draw upon with higher skills.	Record of project progress. Post event survey of participants. Annual review with centres/site managers.
4.2.4 Digital Administration Systems Create a group database and contact system and on line closed contact group which is well managed, integrated into FSC customer database and can be used to manage course bookings, keep volunteers informed and exchange information efficiently. Invest time in devising systems to support volunteer integration.	Field Studies Council		FSC will be more resilient	Regional project staff (10 days); Digital Development Officer (20 days); FSC non-project staff (5 days)	No costs other than project staff time	Yr 1: Development of initial framework with FSC digital and marketing teams. Good systems established and existing volunteers integrated into new system. Yrs 2-5: Development and maintenance ongoing.	Database developed and is useful in managing communications with volunteers and contacts.	Record of project progress. Interview with project staff.

Activity: Detailed description	Audiences	Benefits for people	Outcome	Resources	Costs	Timetable	Targets and success	Method(s) of evaluation
4.2.5 FSC Biodiversity Website Design and hosting of website to host all digital services of the BioLinks project. The website will absorb previous FSC Biodiversity department projects and outputs. To be developed in-house by the Digital Development Officer and integrated into existing FSC digital platforms. Minimum of 15 year hosting contract to ensure legacy.	All	Previous, current and future FSC volunteers are able to locate FSC Biodiversity department digital resources from a single website.	FSC will be more resilient	Digital Development Officer (40 days); FSC Digital team Website hosting; Software licences	Total = £10,100 + £2,200 VAT Website hosting = £9,000 Software licences = £1,100	Yr 1: Development of initial framework with FSC digital and biodiversity teams. Previous biodiversity project content integrated and website launched by Q3. Yrs 2-5: Development and maintenance ongoing.	Website developed and launched.	Record of project progress. Google Analytics tools.
4.2.6 Project Evaluation Plan Recruit and consult with evaluation specialist. Analyse progress towards targets and success and adapt project plan appropriately through liaising with HLF. Disseminate project evaluation report to biodiversity sector professionals and make publicly available on the FSC Biodiversity webpage.	BioLinks project staff; Field Studies Council; Sector experts		FSC and other biodiversity sector organisations will be more resilient	Project Manager (40 days); Project Officer (10 days); Digital Development Officer (10 days; Evaluation consultant	Total = £15,500 + £3,100Consisting of:Evaluation consultant = £7,500Species record searches = £8,000	Yr 1: Recruit evaluation specialist to assist in production of evaluation plan. Setup in-house evaluation methods.Yr 3: Interim evaluationYr 5: Final project evaluation.	Evaluation consultant successfully recruited. Interim and summative evaluation reports completed and communicated to a range of stakeholders.	Record of project progress.

4 List of FSC BioLinks Appendix Documents

Appendix I FSC BioLinks Consultation Report

Appendix II FSC BioLinks Development Plan for Training Provision

Appendix III Training Location Memorandums of Understanding

Appendix IV FSC BioLinks Staff, Tutors and Volunteers

Appendix V FSC Procedure and Policy Summary

Appendix VI HLF Reporting Procedures

Appendix VII FSC BioLinks Monitoring & Evaluation Framework

Appendix VIII FSC BioLinks Project Budget

Appendix XI HLF Application

Appendix X Project Business Plan