

Making landscapes work for pollinators, now and into the future; the role of B-Lines

Workshop Report

(a report of the B-Lines workshop held in York on 31st October 2011)

Participating Organisations

Biodiversity, Ecosystem Services Systems
Programme (University of York)
Buglife
Centre for Ecology and Hydrology (CEH)
Co-operative Group
Conservation Grade
Food and Environment Research Agency (FERA)
Country Land and Business Association (CLA)
Game and Wildlife Conservation Trust
Landlife
National Farmers Union (NFU)
Natural England
Newcastle University
North York Moors National Park Authority

North Yorkshire County Council
Plantlife
Rivers of Flowers
Scottish Agricultural College
Stockbridge Technology Centre
The Environment Bank
University of Cambridge
University of Leeds
University of York
Yorkshire Wildlife Trust
Yorkshire Dales Millennium Trust
West Yorkshire Biodiversity Group



The B-Lines Initiative in Yorkshire- 'Bee Roads' – is
supported by The Co-operative's Plan Bee Programme

Introduction

This report represents a summary of key discussion points made at, and outcomes from Buglife's workshop "***Making landscapes works for pollinators, both now and into the future; the role of B-Lines***" held on 31st October 2011 at Foss House, York.

The workshop was organised to discuss the relative merits of different options (both current and new), for conserving/enhancing habitat for pollinators and other invertebrates across our farmed landscape and to discuss the development of more effective delivery models. The aim was to achieve agreement over what needs doing and to move towards a consensus over an improved landscape-scale approach for pollinators. The B-Lines concept was promoted as one of the core components of any new delivery model; representing a long-term solution which integrates widespread farmland work with habitat based landscape-scale delivery (i.e. bringing together more diffuse farmland delivery with the approach advocated in the Lawton report).

The workshop brought together practitioners, researchers and policy advisers, and was attended by representatives from a range of academic/research establishments, farming/landowning groups and conservation organisations.

Some background to B-Lines

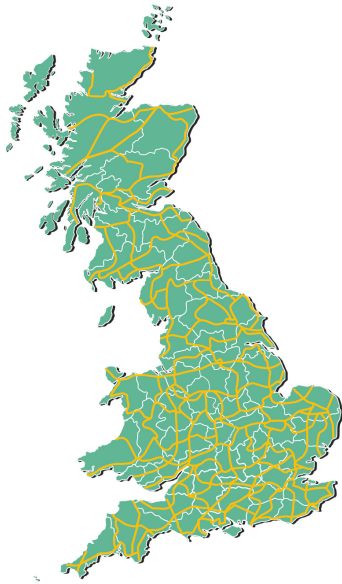
B-Lines is a new concept proposed to help halt the serious declines in many pollinator species and the associated loss of wildflower-rich habitats.

More than two thirds of Britain's pollinators are in decline, including many species of bumblebees, butterflies, hoverflies and moths. This is a matter of serious concern; our native wild pollinators are a key part of Britain's wildlife resource and are responsible for up to 90% of crop pollination. It has been calculated that two out of every three mouthfuls of the food we eat depends on pollination and the annual benefits of insect pollinators to the British Economy have been valued at £400 million.

The dramatic loss in flower-rich habitat in Britain since the 1940s has had a major impact on the wildlife it supports, including bees, butterflies and hoverflies. Over 3,000,000 hectares of flower-rich grassland have been lost and although farmers have helped put back over 6,000 hectares a lot more is needed. Despite the urgency of the issue agri-environment schemes have so far only managed to recreate 0.2% of the area of lost flower rich grassland. In contrast, just last year the USA created 16,600 ha of flower rich habitats, nearly three times as much.

The decline of pollinators in our landscapes is primarily being tackled through the creation of temporary flower-rich strips or patches of land. This approach has been only partially successful in conserving pollinator species. It has helped increase food supply (pollen and nectar) for many insects, however it has not provided all of the necessary conditions for their survival, and is scattered across the countryside. It is also short term and intensive to maintain – often reverting back to species poor grassland due to high nutrients or lack of management.

B-Lines offer a new and attractive solution to the problem of the loss of both flowers and pollinators.



B-Lines are wide strips of permanent wildflower-rich meadows and blossoming pastures. They will link existing wildlife areas together creating a network (rivers of flowers) which will weave across the British countryside. As a starting point, each local authority area would have two, one running approximately north-south the other east-west. This will create, restore and retain at least 150,000 ha of flowering wildlife habitat - secured in perpetuity to sustain bees, pollinators and other biodiversity and enable it to adapt more effectively to stresses brought on by climate change.

What a network of B-Lines might look like

The Workshop (format and agenda)

The workshop was designed as a day of debate and discussion, and consisted of series of short presentations and discussion groups (see Annex 1 – Agenda). The key objectives for the day were outlined at the beginning of proceedings:

- To allow delegates to influence, and provide input into, the development of the B-Lines concept
- To share information and experience on pollinator habitats and conservation
- To link evidence with delivery
- To discuss options/approaches for the delivery of landscape-scale conservation for pollinators

Clear outcomes for the day were identified from the outset of proceedings:

- Answers to some key questions relating to provision of pollinator habitat
- Identification of a broad outline of what types of habitat we really need to provide, and where
- Agreement on the role and structure of B-Lines
- Development of support for the B-Lines concept

A full delegate list is provided in Annex 2.

Structure of this report

This report highlights some of the key findings from the workshop. The report is structured to mirror the workshop agenda, i.e. it summarise key outcomes from each of the workshop sessions, along with key points at wider plenary sessions. A short summary is provided for each of the workshops, followed by the more detailed outputs recorded within the individual groups. Brief summaries of the presentations are given, however the full presentations are available at www.buglife.org.uk

The Workshop Sessions

Workshop Session 1 Providing Pollinator Habitat

SUMMARY OF DISCUSSIONS

(full workshop outputs are provided below)

Of primary importance is the need to increase the basic resources that pollinators depend on (foraging, nesting and larval), increase the overall habitat diversity of the landscape and improve connectivity between our fragmented wildlife resource.

There is currently a wide range of organisations and the general public engaged with pollinator conservation, and we are doing some of this well at present, for example some high quality grassland restoration/creation. However much of the work we are presently implementing is not as effective as it could be. Agri-environment options beneficial to pollinators are not being taken up, or are badly managed and there is little back-up support for farmers. The majority of pollinator conservation is delivered through the Entry Level Scheme which means that there is no real co-ordination or targeting of pollinator delivery and therefore no effective work across our landscapes.

The actual questions posed in the workshop sessions, and key points made were:

- 1. What is the evidence saying we need to be doing for pollinators? What are the most important ecological actions? What and where?***

What is the evidence saying:

- We're unlikely to find a 'one answer fits all' solution
- Broadly speaking, there are generalists and specialist species. The generalists tend to be more mobile, limits to populations tend to be habitat-based but it is relatively easy to create new habitat for these. Specialists are more limited, habitats tend to be more isolated and harder to recreate and connect
- B Lines is likely to lead to an increase in generalists initially, specialists less likely to start with
- In the UK, arguments are getting muddled because many people have different points of view in terms of species they argue for
- Can you improve diversity and abundance? Depends on timescales – generalists will tend to come in 5–10 years, specialists longer
- Phased approach required? Make a start and then improve over time?
- Is there too much focus on alternative forage? Not really, it does seem to limit most populations, although hoverflies do have other requirements
- A mega scheme like B-Lines should try and cover/address as many species as possible. You need the plant diversity, need nesting resources – let's do it for everything even though the politics is for bees/pollinators

- Other interest groups also need to think they are benefitting from this
- Pollinator networks – would you miss the replaceable species if they were to become locally extinct? Robust evidence is not available
- Also lack of evidence for the improvement in populations as a whole when a small patch of flowers is provided. There is better evidence for nesting resource provision. However, evidence does support the fact that flowers do attract more species/individuals to an area. Though lack of evidence that it leads to better yield/pollination rate

Key actions needed:

- Increased basic resources – forage, nesting and larval resources
- Reduced pesticide use
- Improved diversity/landscape heterogeneity to support more species
- Improved connectivity between fragmented habitats
- Management/policing/monitoring of improvements

2. What is already happening on the ground for pollinators. What is working well? And what isn't working?

What is already happening on the ground for pollinators:

- Agri-environment delivery and Campaign for the Farmed Environment (CFE)
- Impacts of climate change
- The planning system and development
- Protected sites and their management
- Small-scale conservation projects

What is working well:

- Creative flower-rich areas in cities
- Some good grassland restoration under Higher Level Scheme (HLS) and other initiatives
- Public engagement on pollinator issues – connecting with bees
- SSSI series conserving reservoir of species
- Good range of organisations engaged in pollinator conservation, including corporate organisations
- Some aspects of agri-environment and CFE

What isn't working:

- Entry Level Scheme – broad level schemes are always likely to offer poor outputs without better targeting of options and better advice/support to farmers. Options more favourable to pollinators are not generally taken up (i.e. large amounts of hedgerow management, grass margins and low input grassland is of limited benefit)
- Protected sites may not be working in the landscape context or for all interest groups
- Farmer delivery – there is no co-ordinated or working at a landscape-scale

- Flower-rich margins (shorter-term than thought) and better management required
- Effective delivery between bodies
- No targeting of ELS and limited targeting of HLS
- Management of public land
- Habitat creation often fails
- Back-up and support to farmers is lacking

Workshop Session 2: What could we be doing, or doing better?

SUMMARY OF DISCUSSIONS

(full workshop outputs are provided below)

Quite simply we need more better quality habitat which is more connected. How can this be delivered?

There is a need to consider a more targeted approach with better advice to the farming community. Wildlife organisations need to be better at linking things together at a landscape-scale, joining up initiatives and delivering one joined up message. Delivery on the ground, particularly through agri-environment, needs to be done collectively. Farmers need to be brought together into collective agreements/projects to link their work together and ensure appropriate work is carried out across whole landscapes. Initiative such as B-Lines, which have a landscape-scale vision have a core role to play.

1. What is actually needed to deliver better quality habitat for pollinators? What habitat types and their proportion need to be delivered? What part do other features (e.g. hedgerows, woodlands, heathlands, roadside verges) play?

- Overall we need better quality habitats which are more connected
- Once we have 20% habitat in the environment adding more does not help
- Carrying capacity of landscapes is different for rare species and more scattered generalists
- Rarer species need conservation efforts put in the most appropriate locations
- For more common generalists total abundance of good habitat is key
- Nectar is needed throughout the year + include other non grassland species such as hedgerows (e.g. pussy willow, ivy, woodland flowers)
- Could use some poorer quality habitats as part of the mix, for example adding clover to rye grass swards?

2. *What could a more integrated and targeted approach, linking pollinator habitat delivery to wider landscape-scale habitat and species work look like? (And where do B-Lines fit in?)*

- Should we be considering zoning of the countryside? Having some areas as wildlife areas and leaving some areas for farming?
- Continuous habitat or patches? 2-5km gaps may be ok. Use existing networks, connect with people.
- How much habitat you have is more important than where (need to increase general carrying capacity)
- Targeting will become more important as once you get 20-40% carrying capacity for generalist (e.g. bumblebees), adding more habitat does not lead to further increases in numbers
- Clarification needed as to how long you want it targeted for. Specialist species may rely more on permanent habitats
- Need to consider 'collective delivery' for delivery of nature conservation by farmers at a landscape-scale to allow more connectivity of actions. Your payment depends on what your neighbour does. Need communal/collective schemes to link work of individual farmers.
- ELS is individual farm-based. There is unlikely to be any connectivity developed.
- Farmers (understandably) will generally pick the simplest things to do in ELS, but we need the more complex options delivered as well.
- Need mapping so farmers can be clear what their area is lacking for which habitats/species. Improved targeting and consistent messages.
- Need to provide the knowledge and advice to the farmers who are delivering the work
- Need one clear model, linking things together at a landscape-scale and that is multi-functional delivering across a range of species. This needs to be joined up across conservation organisations so as not to give conflicting views/priorities.
- We need multiple groups coming together to agree delivery. Need to join up initiatives such as Living Landscapes, Green Infrastructure, NIA etc
- Need to have a two stage delivery model with i) some large areas of good quality habitat for specialist species, ii) wider intensive managed. And realise that the emphasis will be different in different areas
- Need to consider demographic changes and development pressures
- Pesticides – risks. Careful management needed and sets of standards (e.g. conservation grade)
- Pollinator habitats need to be integrated into wider farm or discrete areas
- What proportion of land is needed?
- Continuity, pollination needed at similar times, what about other times?
- It might be useful to start thinking of pollinator features as crops.

Workshop 3: What should B-Lines look like and how should they be delivered?

SUMMARY OF DISCUSSIONS

(full workshop outputs are provided below)

B-Lines will need to be delivered through a range of mechanisms, both national (e.g. agri-environment delivery) and more locally-led initiatives and projects. B-Lines needs to ensure it links with and where possible integrates with other landscape-scale initiatives which can help deliver its core aims. On the ground B-Lines management prescriptions should be flexible and be able to respond to different landscape contexts, however with some generic components including flower-rich grassland, hedgerows and scattered scrub. The long-term future of the concept will depend on general public, local and farming support. Farmers will need to be convinced of the importance of B-Lines and will need to be offered a suitable economic reward for investing into the work.

1. *How could B-Lines be delivered and managed? Which existing landscape scale projects could B-Lines work with and how could this work?*

- Need to consider a range of options, from main-stream farmland delivery, urban-based works, working with key landowners and making the most of existing features (including small-scale features)
- Review conservation objectives for designated conservation sites, to ensure they meet invertebrate/pollinator requirement. This fits in with move to manage/conserv BAP priority species more through habitat management
- Scope for working with agri-environment schemes (HLS & ELS) including ensuring tie in with HLS targeting
- ELS – need to get invertebrates more onto the agenda and influence farm advice
- Biodiversity off-setting – although there are some concerns about this concept
- Challenge existing local and highways authorities over verge & roundabout management
- Exploit public initiatives, e.g. Britain in Bloom, Best kept villages
- Look for novel opportunities such as the proposed new CO2 pipeline from Drax power station, which could offer great new opportunities for new habitat creation
- Management of B-Lines in urban areas likely to be through local authority work, or interested community-led, or conservation groups
- Across the countryside, long-term management will need to be primarily through farming community. May need new businesses to be set up with grazing animals, or expansion of existing ones
- B-Lines needs to work with the protected sites series and also link into existing landscape-scale initiatives, and wider work such as that being delivered through the Water Framework Directive

2. *What should be the habitat components of a B-Line? What standards for these habitats should be defined and maintained? And how can we add value for other invertebrates and other wildlife?*

- Permit a shifting menu of prescriptions to suit the landscape context and management, but with generic features, e.g. hedgerows, scattered scrub and long grass all deliver shelter; other issues are high floral richness and habitat structure. It should be flexible and practical depending on the area, but permanent rather than transient
- Species diversity of flowers – is there a recipe for success? Nearly. Perhaps most important is the components of the plantings – shrubs, shelter, tussocks, flowers with high nectar and pollen reward, larval resources, diversity, structural diversity. What about seed provenance?
- Hedgerows – missed if the focus is on grassland – but still important as corridors, diversifying habitat. They don't have to be continuous hedgerows – scattered scrub/long grass vegetation provides structural and microclimate diversity
- Maintain standards by providing appropriate information for farmers and allowing self-auditing (not to species level but broadly does the picture of their B-Lines match what is expected)
- Suggestions for added value in B-lines: structural heterogeneity, deadwood resources, water. Ask other organisations like the RSPB once you have the baseline set up - what can we do to this habitat to enhance birds?

3. *How can we secure B-Lines into the future. How do we make them financially viable and how can we secure the long term management of the habitats restored/created?*

- Ensure that local communities value B-lines
- Farmers and farming systems need to be convinced of the importance of B-Lines. Need to make the business case
- Provide evidence to demonstrate that B-lines work
- Show how they deliver ecosystem services. Ecosystem services needs to be more than just a buzz word – it should really mean something
- Increase public understanding of the issues so that public pressure can influence land use, e.g. Co-op getting consumers to value sustainable farming
- Link customers with B-Lines
- Steer clear of land-banking at this stage
- Recognise that B-lines will be different everywhere, enough that people are proud of what they are achieving (Being part of a wide project will motivate some but not others)
- Enable higher economic returns from B-lines – economic rates will influence habitat management on the ground
- Linking to policy might be dangerous, e.g. agri-environment scheme changes
- Keep it simple and avoid access at present as this will put people off
- Im perpetuity - How effective are covenants?

Comments from the final plenary session

- There is a need to define a strategy for maintaining the continuity of B-Lines (i.e. to prevent gaps/breaks). This may mean a need for more flexibility as to how B-Lines are ultimately delivered. Peer pressure may play a part in this
- May need to be some flexibility as to how you fill the B-Lines, but the overall ambition of large areas of good quality habitat should not be compromised and watered down.
- The B-Lines ambition is what makes it so good. Do not walk away from this.
- River banks and roadside verges may provide some quick wins, as may up-grading some agri-environment agreements. Start working on these to demonstrate impacts.
- Need to communicate the B-Lines message to the general public
- Need to challenge other land uses, particularly on publically owned land (e.g. local authority owned/managed land etc)
- B-Lines has a clear role in unifying other areas of work together
- B-Lines is a 'grand unifying concept' but is it too large for Buglife alone. People need to reclaim their natural spaces. Everyone should be able to adopt B-Lines, but there is a need to work out how to pass it to other institutions without losing the integrity of the concept
- There is a need to engage the public using publically-accessible sites to demonstrate the concept. Convince people with evidence at a local scale and the concept will spread naturally
- Is there potential to market and label produce to show the B-Lines brand? A national branding scheme could work
- Exploit the 'low hanging fruit', or returns for least effort.
- If B-lines are mapped and then marked to show who is participating, they may allow small towns and villages to adopt the B-line 'brand'.

Final summing up (Matt Shardlow)

- B-Lines is a really attractive and simple to understand proposal – we need to maintain its overall vision.
- B-lines 'has legs', it captures the imagination as a way of linking habitats together. Linking is clearly important, but this does not necessarily need to be contiguous in all cases
- There is a need to keep the concept simple, flexible and unthreatening
- We should exploit the 'low-hanging fruit' – land pre-disposed to B-lines habitat creation, and influencing agri-environment
- How do we achieve it? Both economically and by engaging communities to link the towns with the countryside.
- People need to value the concept: understand it, value it and buy-in, thus having pride in the process.
- Evidence and monitoring is needed to show that B-lines works.
- Political action is needed by Defra, individuals & NGO's.

The Presentations

Pollinators, their decline and the decline of their habitats (Matt Shardlow, Chief Executive, Buglife)

Insect pollination is vitally important; 90% of the world's crop species rely on it and it has been estimated that the value to the world economy is £132 billion. Insect pollinators are also vitally important to our natural ecosystems, for example 80% of British wild plants depend on them. Insect pollinators include bumblebees, hoverflies, moths, butterflies and solitary bees – many are in serious decline, for example six out of twenty-five species of bumblebees have declined in the UK by over 80% in the last 50 years. Across the EU 38% of bee and hoverfly species are declining (and only 12% increasing) and 71% of British butterfly species are also in decline. The picture is bad pretty much across the board and over 250 UK pollinators are in danger of extinction and listed on the UKBAP priority list. If the losses in pollinator species continues we could see major knock on impacts, for example the loss of 80% of wild plant species, 13% less agricultural production and fewer future food production options. And the major cause for this is the overall intensification of agriculture since the 1950s - increased pesticide use, increased field size, destruction of flower-rich grasslands and the fragmentation of remaining natural habitats. Three million hectares of flower-rich grassland have been lost over the last sixty years and only one hundred thousand remains. To date agri-environment and other measures have only managed to replace a very small percentage of this. Only 6,500 hectares of 'insect habitat' has been created under agri-environment, which equates to less than 0.3% of the loss. We therefore need bold steps to improve wildflower and pollinator resources to feed us and enrich our lives into the future. B-Lines is proposed as one key mechanism to make this happen.

Linking the Evidence to Delivery: Knowledge Exchange (Lynn Dicks, University of Cambridge)

Widespread concern about declining pollinators has led to active conservation efforts in both the public, private and third sectors. This has been accompanied by substantial science funding to look at the ecology of pollinators and the causes of their decline. To ensure we make the most of all of this effort it is an imperative that these two responses are linked through knowledge exchange. A NERC-funded programme led by Cambridge University is bringing together a large number of people with an interest in pollinator conservation, including businesses from food, farming and retail sectors, Government and NGO representatives and researchers, to form a Pollinator Conservation Delivery Group. This Group will identify what we know, what extra we need to know and from this identify evidence-based actions. This will ensure that priority action to conserve pollinators can be identified, and that this will ultimately ensure more efficient use of funding and other resources.

There will be opportunities for B-Lines both to contribute to and to benefit from Knowledge Exchange. The provision of up-to-date evidence and identification of priority conservation actions, will enable B-Lines to deliver appropriate works in key areas. Conversely, B-Lines can help add to the evidence-base, for example through testing the viability of landscape-scale conservation for pollinators and providing new information on the abundances of flowers/pollinators.

Habitat re-creation strategies and connectivity (Jenny Hodgson, University of York)

Connectivity has become an important concept in conservation biology because of concern about the loss and fragmentation of natural habitat. The connectivity of a particular point or patch is the estimated rate of immigration into it. High connectivity can be beneficial to populations because it can deliver re-colonisation after extinction, lower dispersal mortality and reduce problems with inbreeding and edge effects. If you have a fixed amount of habitat, the way to achieve maximum connectivity is to cluster all of the habitat together in space. However, climate change presents a new and different challenge to populations; their best current habitats may become completely unsuitable and they will have to shift their geographic ranges over large distances if they are to survive. Making existing habitat clusters bigger does not seem to be the best way to help with this challenge; instead, the probability of colonisation between one cluster and the next could be the biggest limiting factor.

For the fragmented semi-natural habitats of Yorkshire and Humber, which cover only a few percent of the land area, we tested several scenarios of future habitat re-creation with simulated species. We found that the best strategy for allowing species to spread from one end of the region to the other was to place new habitat along broad routes linking the largest existing habitat clusters. Placing new habitat totally at random was also a reasonably successful strategy, which emphasises that we need not be too concerned about getting the spatial pattern exactly right, still less about having completely continuous corridors. The more habitat which is created, the better the range expansion, and the less important the exact spatial arrangement.

The B-Lines initiative and lessons learnt from the pilot (Paul Evans, Buglife)

B-Lines is now five months into its initial ten month pilot. There is a national dimension to the work, however the project is primarily being focussed in Yorkshire where we are testing approaches, developing the B-Lines concept and exploring delivery options. An important part of the work has been to develop a wider 'partnership' around the concept and a Project Implementation Group has been established to provide information, guidance and support. One significant area of work has been to map potential Yorkshire B-Lines. A pragmatic approach has been taken, identifying key habitats and constraints, and also reviewing a range of other mapping initiatives including green infrastructure, regional biodiversity opportunity mapping and Living Landscapes. The mapping will continue to be refined using more local datasets and knowledge. It is now being used to proactively target land owners/managers and has also been passed to a range of conservation organisations, to look for potential integration with other initiatives, and to Natural England to review against agri-environment delivery. We have started to create and restore wildflower-rich grassland areas and are developing a portfolio of other opportunities along the proposed B-Lines.

B-Lines is a new approach and does challenge our existing practice for pollinators. However we do know that the current approach is not working well, so it is time to make changes. B-Lines offers the 'step-change' in delivery as promoted in the 'Lawton' report. There is good evidence to support much of this change, but there are still clearly a lot of answers needed. However the argument for more good quality habitat is there; we should be taking action, and using this action to increase our knowledge. B-Lines has the potential to work both within existing landscape-

scale project areas whilst also providing a framework to hold them all together, and we will aim to work with and alongside a range of initiatives such as Living Landscape, Nature Improvement areas, floodplain management etc. B-Lines also appears to be able to capture the imagination, much in the same way as flagship or fluffy species can do, so we should capitalise on this interest.

Britain is famous for its range of landscapes and we will need to work with the landscapes through which B-Lines will pass. We will also need to look to creating a range of wildflower-rich habitats and maybe in some cases something new. All of this will take time so we should work from expanding existing wildflower-rich areas, providing stepping-stones and slowly linking them together. B-Lines provides a framework and vision in which this can happen.

Annex 1

Making Landscapes work for pollinators – now and into the future; the role of B-Lines

Workshop Monday 31st October 2011 at Foss House, York

10:00 Registration and coffee

10:20 Welcome and objectives for the workshop (Paul Evans, Buglife)

Morning Session (Chair – Prof Dave Raffaelli)

10:30 **Pollinators, their decline and the decline of their habitats**
(Matt Shardlow, Chief Executive of Buglife)

10:45 **Workshop Session 1: Providing pollinator habitat**

- 1) Evidence - What is the evidence really saying we need to do to increase the area of and improve the effectiveness of pollinator habitat?
- 2) Delivery of pollinator habitat - What are we doing, what works well and what doesn't?

11:20 Feedback from groups and discussion

11:35 **Linking the Evidence to Delivery: Knowledge Exchange** (Lynn Dicks, University of Cambridge)

11:45 Tea/Coffee

12:00 **Habitat re-creation strategies and connectivity** (Jenny Hodgson, University of York)

12:10 **Workshop Session 2: What could we be doing?**

Reviewing outputs from first workshop – what is actually needed to deliver more effectively for pollinator habitat?

A more integrated and targeted approach – linking pollinator habitat conservation to wider landscape-scale habitat and species conservation

12:55 Feedback from groups and summary of morning session

13:15 Lunch

Afternoon Session (Chair – Matt Shardlow)

14:00 **The B-Lines Initiative and lessons learnt from the pilot** (Paul Evans)

14:15 **Workshop Session 3: What should B-Lines look like and how are they delivered?**

15:00 Feedback from groups and discussion

15:25 Next Steps and Close

Annex 2 (Delegate List)

Name	Organisation	Position
John Atkinson	Co-operative Group	Environment Adviser
Nigel Boatman	Food and Environment Research Agency (FERA)	Head of Agri-environment and land strategy
James Copeland	National Farmers Union (NFU)	Environment and Land Use Adviser (North East)
Lynn Dicks	University of Cambridge	Research Associate
Paul Evans	Buglife	B-Lines Officer
Don Gamble	Yorkshire Dales Millennium Trust	Haytime Project Manager
Mark Gillespie	University Of Leeds	Research Fellow (Insect Pollinator Initiative)
Jane Harrison	Country Land and Business Association (CLA)	Regional Adviser
David Hargreaves	Yorkshire Wildlife Trust	Head of Conservation (North)
Matt Heard	Centre for Ecology and Hydrology (CEH)	Head of Community Ecology
Brin Hughes	Conservation Grade	Agri-Environment Adviser
Richard Jefferson	Natural England	National Grasslands Expert
Jenny Hodgson	University of York	Post-doc
Vicky Kindemba	Buglife	Projects Manager
Alastair Leake	Game and Wildlife Conservation Trust	Director of Policy
James LePage	Natural England	Land Management Senior Specialist
Kathryn Lwin	Rivers of Flowers	Director
Davy McCracken	Scottish Agricultural College	Head of Farmland and Biodiversity Unit
Matthew Millington	North Yorkshire County Council	Biodiversity Officer
Jane Moseley	British Beekeepers Association	Operations Director
Giselle Murison	West Yorkshire Ecology	Biodiversity Co-ordinator
Tim Pankhurst	Plantlife	Regional Conservation Manager, East of England
Eileen Power	Newcastle University	Post-doc
Dave Raffaelli	University of York	Director of Biodiversity and Ecosystem Service Sustainability (BESS) Programme
Sara Robin	Yorkshire Wildlife Trust	Policy Officer
Clare Robinson	Natural England	Landscape-scale delivery unit North
Richard Scott	Landlife	Senior Project Manager
Matt Shardlow	Buglife	Chief Executive
Richard Smith	Buglife	Farming and Pollinator Officer
Kate Somerwill	Food Environment Research Agency (FERA)	Land Use Change Scientist
Chris Thomas	University of York	Department of Biology
Catherine Thompson	University of Leeds	Researcher
Tom Tew	The Environment Bank	Chief Executive Officer
Ami Walker	North York Moors National Park Authority	Farm Conservation Adviser
Graham Ward	Stockbridge Technology Centre	Chief Executive