Improving biodiversity and highways habitats: A14 Cambridge to Huntingdon Scheme

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A14 Design Joint Venture Environment Lead

A14 Cambridge to Huntingdon

About the scheme

The £1.5bn A14 Cambridge to Huntingdon improvement scheme includes a major new bypass to the south of Huntingdon and upgrades to 21 miles of the A14. Work officially started in November 2016 and the new road opened to traffic on Tuesday 5 May 2020.

The Scheme includes:

• A major new 12 mile bypass to the south of Huntingdon between Swavesey and Brampton
• A wider A1 between Brampton and Alconbury
• Wider sections of the existing A14
• Improved junctions on the A14
• An improved Huntingdon Town centre
• New local access roads
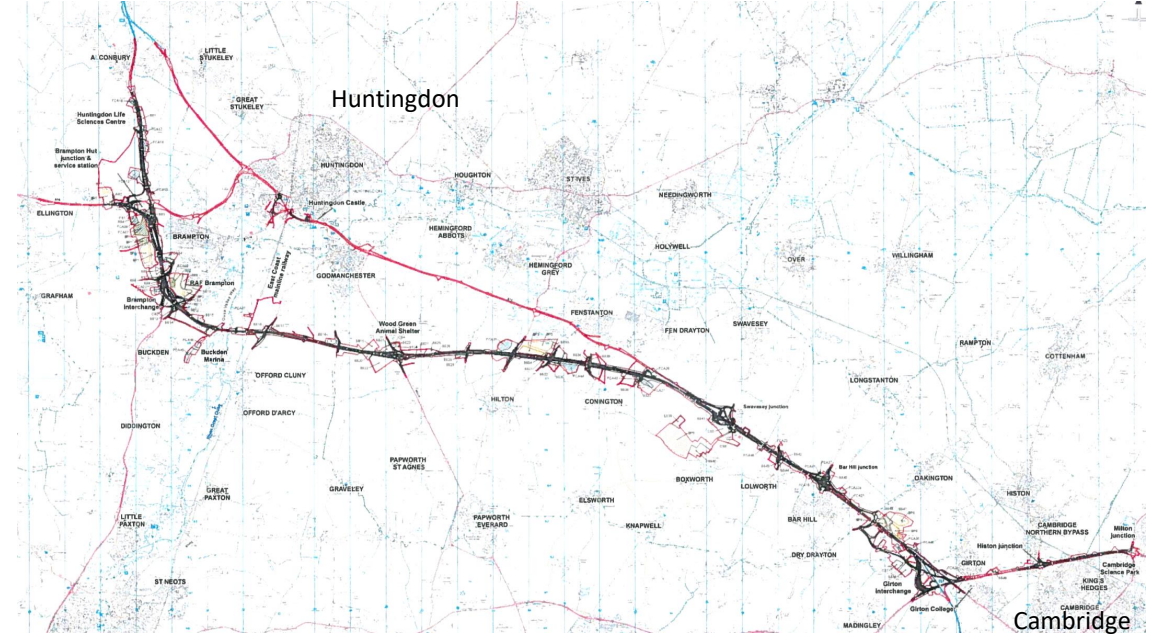
Benefits – the scheme is set to:

• boost the local economy
• cut up to 20 minutes off journeys
• enhance national economic growth
• connect communities
• improve the environment
• create a positive legacy for the region

highways england
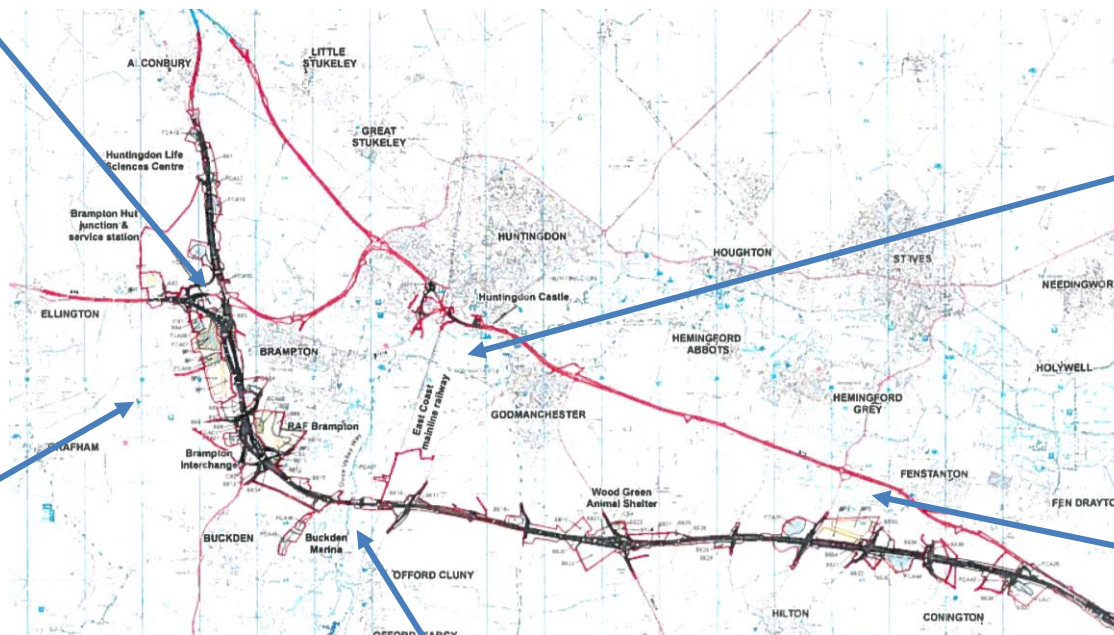
OBJECTIVES - WHY ARE WE PLANTING?

- **Visual Screening**
  - Screening bunds
  - Linear belts of trees
  - Retention of existing vegetation

- **Landscape Integration**
  - Reinforcing field boundaries
  - Using local species
  - Spring and autumn interest at key sites

- **Biodiversity Conservation**
  - Designated sites
  - Species
  - Wider biodiversity

Brampton Meadow SSSI

Brampton Wood SSSI

Portholme Meadow SSSI and SAC

Fenstanton Pits CWS

Buckden Gravel Pits and River Great Ouse CWS

**SETTING -
KEY ECOLOGICAL
DESIGNATED SITES**
(NOT TO SCALE)

DESIGNATED SITES

- **Portholme Meadow SSSI / SAC**
  - Avoidance
- **Brampton Meadow SSSI**
  - Protection, and design of adjacent enhancement area
- **Brampton Wood SSSI**
  - Protection, influence on design of borrow pit restoration
- **Buckden Gravel Pits and River Great Ouse CWS**
  - Protection of retained areas, design of restoration, and influence on design of borrow pit restoration
- **Fenstanton Pits CWS**
  - Protection and influence on design of borrow pit restoration

Buckden Gravel Pits and River Great Ouse CWS

PROTECTED AND NOTABLE SPECIES

- **Work under licence**
  - Badgers
  - Bats (three trees with confirmed roosts)
  - Great Crested Newts (four locations)
  - Water Voles
- **Wildlife crossing features**
  - Tunnels, culverts and adapted bridge design
- **Barn owls and other nesting birds**
  - protection during vegetation clearance and construction & installation of nest boxes
- **Boxes**
  - 360 bat boxes; 90 general bird boxes; 24 swift boxes; 22 barn owl boxes; 24 kestrel boxes
- **Tailored planting**
  - e.g. blackthorn thickets for hairstreak butterflies, and native black poplars and elms

Photo credit: Colin Shawyer,
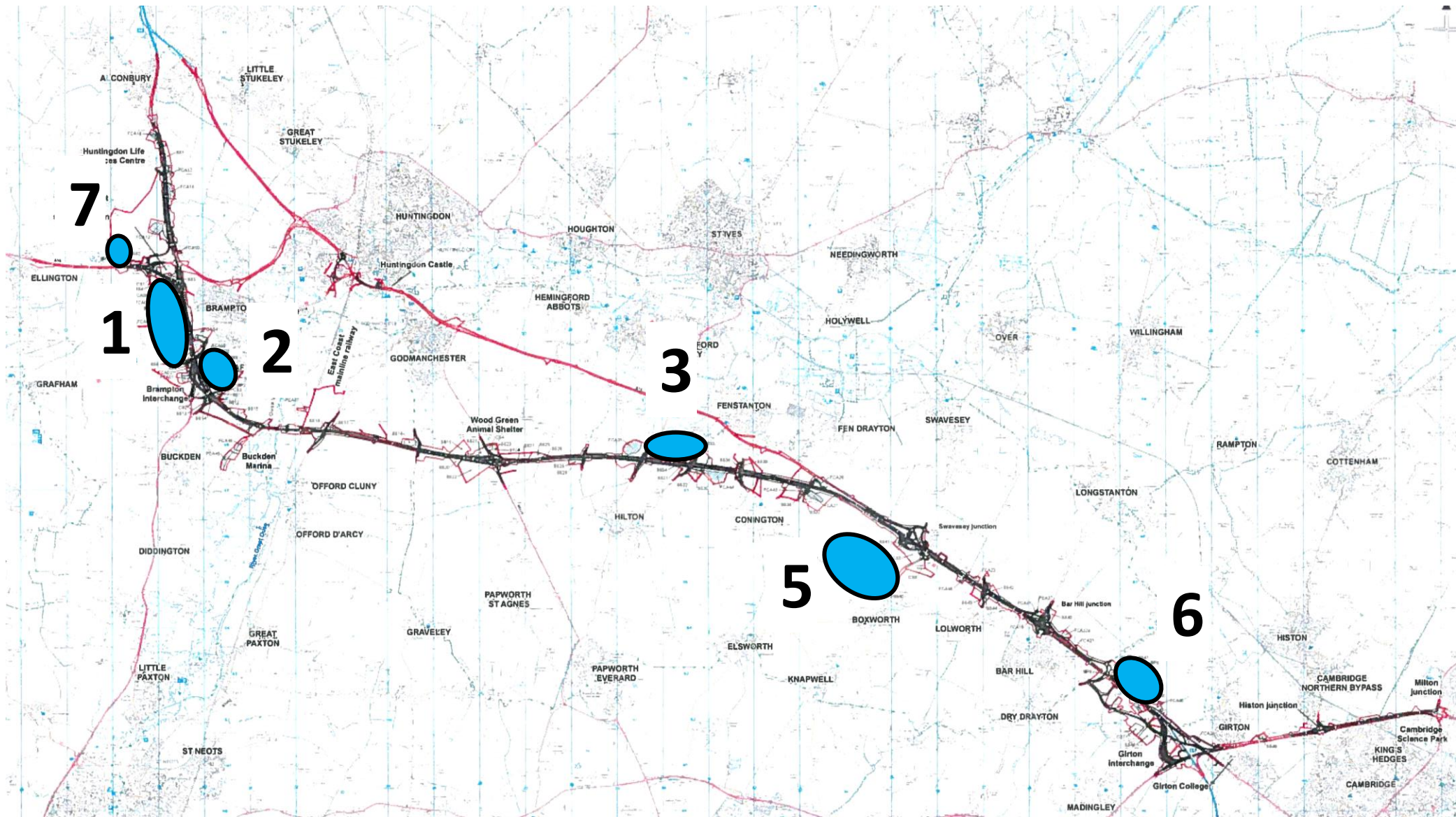photo taken by licenced barn owl expert

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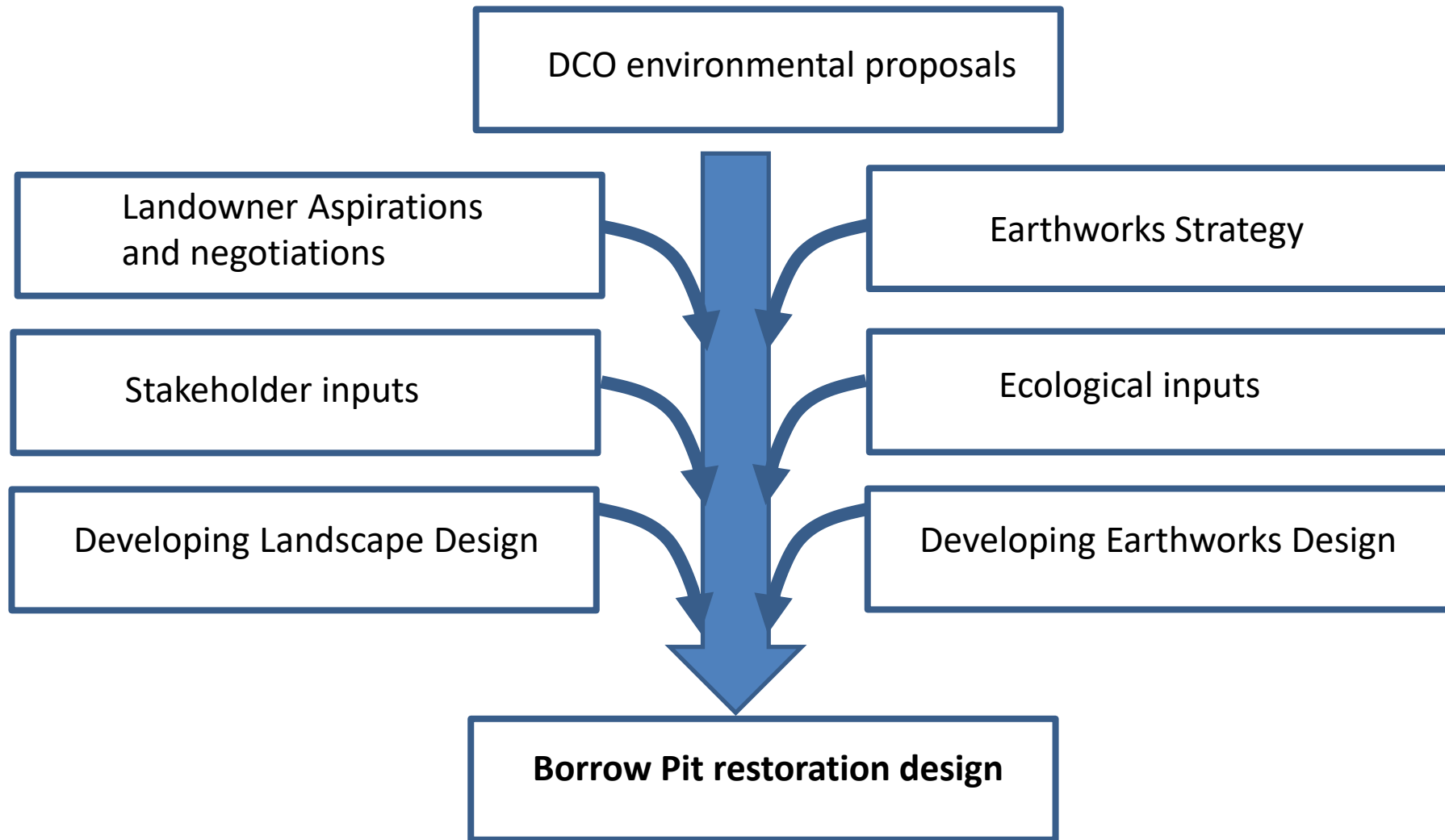# DETAILED DESIGN EXAMPLE – water vole mitigation areas

- 1:1 slope design

- 1m wide palettes planted with species preferred by water voles

BORROW PITS

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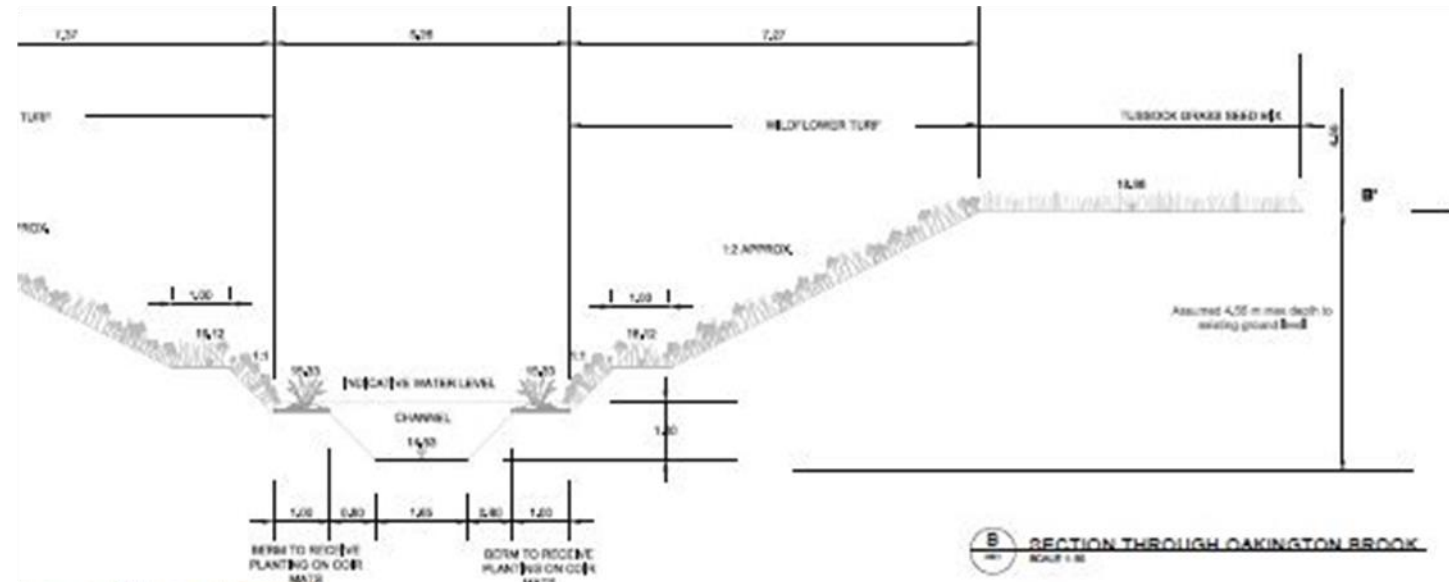
Brampton Racecourse SSSI

Brampton Meadow SSSI

**HABITAT CONTEXT
BORROW PITS 1 & 2 AND
HABITAT CREATION AREA
AROUND
BRAMPTON MEADOW SSSI**

Brampton Wood SSSI

**Buckden Gravel Pits and
River Great Ouse CWS**

What is Biodiversity?

- The variety of life on earth: ecosystems, habitats, and diversity within and between species

What is Biodiversity Net Gain?

- Development that leaves biodiversity in a better state than before
- In England, this is being applied alongside existing policy and legal protection, using a metric as a proxy

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Highways England's Biodiversity Route Map

- RIS 1 target was to **Reduce** biodiversity losses
- RIS 2 target is **No Net Loss** of biodiversity
- Beyond RIS 2, the future direction of travel is that by 2040 Highways England will achieve **Net Gain** in biodiversity
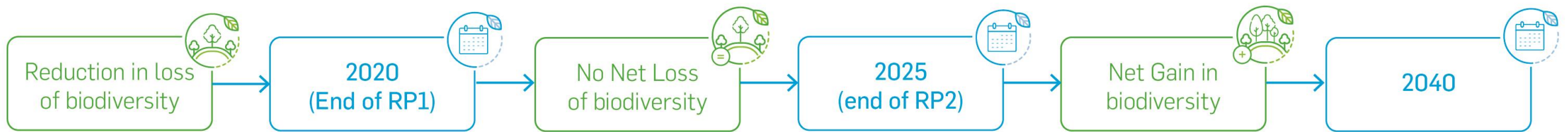
Applying Biodiversity Metric 2.0 to the A14

- Retrospective Study
- Scheme not designed for Biodiversity Net Gain
- Metric predicts positive score (+ 11.5 %) contributing substantially to national target
- What made it positive?
  - Predominantly arable and poor grassland.
  - Landscaping, ecological compensation and borrow pit restoration.
  - Without the borrow pits, the metric would predict net loss.
- Not BNG in good practice terms due to 'trading down', where habitats of high distinctiveness are compensated by creating less distinctive ones.
- Resolving trading down? Report is being used to inform Environment and Wellbeing Fund applications.

LEGACY – DOING MORE ON THE A14

Biodiversity projects under Highways England legacy and biodiversity funds:

- Biodiversity metric and natural capital valuation of borrow pits – retrospective studies
- Pollinators on road verges - funded PhD
- Community engagement e.g. leaflets for schools

Photo credit: Ben Benatt

LEGACY – DOING MORE BEYOND THE A14

Community Fund: Projects which respond to the changes that the new A14 will bring to their communities

Projects up to £10,000, with total fund of £500,000:

https://cambscf.org.uk/A14.html

Examples
- Acting Now – 'Side Roads' a performance by people with mental health issues about life experiences related to the A14
- Butterfly Conservation – growing 30 native elm trees
- Wildlife Trust – improvements to Brampton Wood to reflect the improved access by foot once the A14 scheme is complete
- FWAG East – facilitating the 'A14 Farmer Cluster', enabling them to collectively deliver environmental improvements at a landscape scale
- The Countryside Restoration Trust: project supporting water voles

Photo credit: Ben Benatt

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Future Projects – top tips

- Early Design Engagement to avoid / reduce harm and identify opportunities

- Minimise effect of roads as barriers

- With good landscaping, roads can act as corridors for wildlife as well as people

- Stakeholder engagement – including throughout detailed design and construction

- Habitat creation / landscaping ringfenced funding and long term management commitments – Biodiversity Net Gain is not business as usual

- Adding value – e.g. social value through access and natural capital value through flood protection and carbon capture

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A14 Cambridge to Huntingdon Improvement

Any Questions?

Claire Wansbury – Ecology

Jill Rankin - Environment

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Land Audit Management System Updates

Ian Jones, APSE Solutions Associate

Land Audit Management System (LAMS)

- In 2015 APSE introduced LAMS: a consistent quality audit approach, measuring the level of service delivery for grounds parks and streets.

- Collects data source for comparative Performance Indicators at national level (real time & annual).

- Contributes to annual performance awards.

- Available to all PN members for relevant services.

What LAMS monitors

	Grounds maintenance	Street cleansing	Cemetery and crematorium services
Grounds maintenance	✓		✓
Grass cutting	✓		✓
Shrub bed maintenance	✓		✓
Flower bed maintenance	✓		✓
Surface weeds	✓	✓	✓
Litter	✓	✓	✓
Detritus		✓	
Fly tipping	✓	✓	✓
Fly posting	✓	✓	
Dog fouling	✓	✓	✓
Bins over flowing	✓	✓	✓
Bin structure	✓	✓	✓
Bin cleanliness	✓	✓	✓
Vandalism/ damage			✓
Graffiti		✓	
Staining/ gum		✓	

The reports

apse performance networks

Whole service comparison
LAMS grounds maintenance PI standings

Performance indicator	Number in service	Highest in service	Average for service	Lowest in service	Your output/score	Standing in service	Top quartile mark	Quartile achieved
PI L02 - Percentage of sites classed as acceptable (grounds maintenance)	28	100.00%	95.49%	87.41%	100.00%	1	99.18%	1
PI L10 - Percentage of sites classed as acceptable (grass cutting)	26	100.00%	96.10%	87.07%	100.00%	1	99.55%	1
PI L11 - Percentage of sites classed as acceptable (shrub bed maintenance)	23	100.00%	88.86%	61.54%	96.97%	8	97.65%	2
PI L12 - Percentage of sites classed as acceptable (flower bed maintenance)	18	100.00%	95.01%	84.78%			100.00%	
PI L03 - Percentage of sites classed as acceptable (litter)	28	100.00%	95.85%	81.82%	100.00%	1	98.85%	1
PI L04 - Percentage of sites classed as grade A (fly tipping)	28	100.00%	94.27%	80.88%	97.40%	10	98.85%	2
PI L13 - Percentage of sites classed as grade A (fly posting)	27	100.00%	99.81%	98.68%	98.68%	27	100.00%	4
PI L05 - Percentage of sites classed as acceptable (dog fouling)	28	100.00%	99.55%	96.92%	100.00%	1	100.00%	1
PI L06 - Percentage of sites where bins were overflowing	27	13.04%	4.30%	0.00%	5.41%	20	0.93%	3
PI L07 - Percentage of sites containing bins classed as acceptable (bin structure)	25	100.00%	96.20%	78.72%	93.94%	19	100.00%	3
PI L08 - Percentage of sites containing bins classed as acceptable (bin cleanliness)	25	100.00%	96.30%	78.72%	87.50%	24	100.00%	4
PI L09 - Percentage of sites classed as unacceptable (hard surface weeds)	28	42.54%	12.18%	0.00%	4.41%	8	4.41%	2

Technological development update

This list of initiatives is a result of proposals/requests made by the LAMS membership.

- The Randomiser

- Play Inspection Monitoring System (PIMS)

- The integration of LAMS into council back office systems (API)
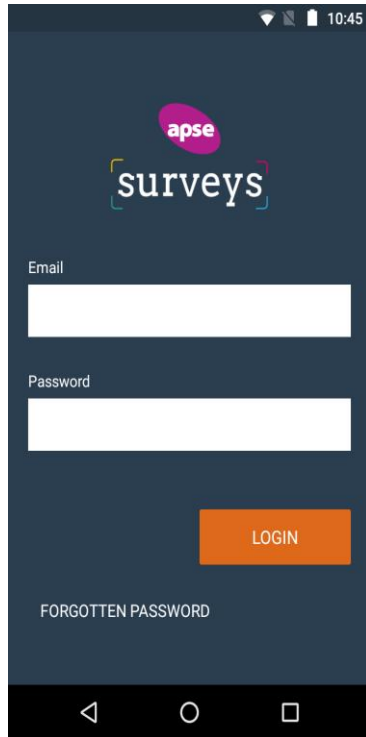
- Memorial Safety Inspection (MSI).

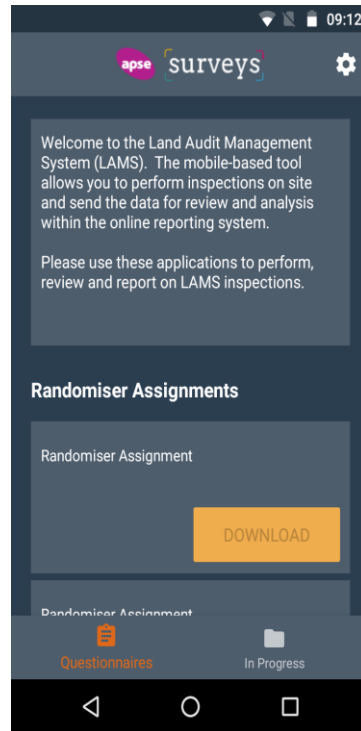# Developments in Apps to support inspections

The Randomiser

- Inclusion of a randomiser to automatically allocate inspection lists to inspectors.

- Inclusion of a map of planned inspections on the App.

- Launched in June 2020 and is now readily available.

On opening the app, login with the email and password you normally do.

If you have been assigned any randomiser sets of locations they will show above your Questionnaires.

Click the Download opens the map displaying all your locations – it also starts the timer for 48 hours to complete the list.

A randomiser list opens the map with all the locations in the list plotted.

Select a pin, the nearest to your location (shown as a blue dot). And you get a Navigate and Start button.
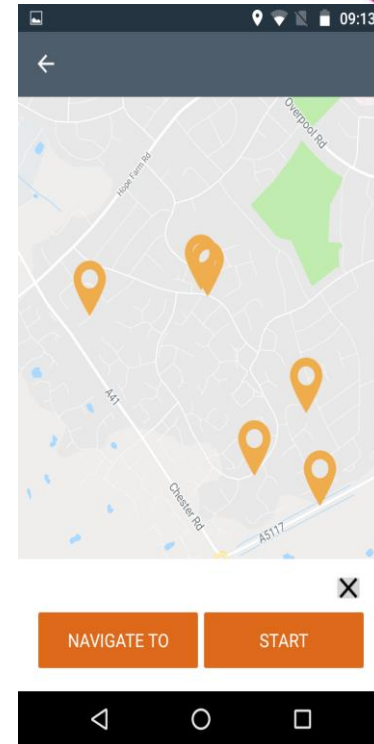
Navigate – takes you out to your native mapping application and directions.

Start – starts and opens (as if from the front screen) the relevant survey for the location you selected to complete the inspection.

Complete your survey as usual and save or send when done.

If you don't complete it the Start button on the map screen will be Continue.

If you complete it then the pin will go from your map and the Randomiser panel will update – see next slide.

A countdown appears against the Randomiser assignment you have in progress with the number of locations still to do.

When the 48 hours is up the card will display for you with 'Expired' and you will be unable to complete any more.

If there are outstanding locations completed but not sent you will have 24 hours from opening the app after expiry to send those completed surveys against the list.

If a list expires with uncompleted locations the list of locations will be emailed to the admin users.

Developments in Apps to support inspections

Play Inspection Monitoring System (PIMS)

The group discussed their thoughts what source of information the survey should record, and the following list is a brief overview of the 'requirements' discussion:

- Play value.

- Usage.

- Anticipated life span of the equipment.

- Maintenance schedules.

- Safety inspections (both risk based and routine) – in house.

- Independent safety inspections.

- Customer satisfaction survey (CSS).

- Inclusivity/access.

Developments in Apps to support inspections

Play Inspection Monitoring System (PIMS)

The group also stated the following facilities would be useful to include:

- Photographs.
- Work tickets.
- Downtime recording.
- Ability to benchmark performance.
- Ability to benchmark CSS performance.
- Flow charts.
- Asset management.

Developments in Apps to support inspections

Play Inspection Monitoring System (PIMS)

Next steps:

Working group to comment on the 'requirements' proposal, meeting to follow.

Members to be updated as we progress.

Developments in Apps to support inspections

The integration of LAMS into council back office systems (API)

- Following the introduction of the LAMS App, during 2018, we have often received enquiries on the possibility of the LAMS App syncing with the existing back-office systems currently in place at your respective authority.

- Predominantly the requests received have been around the capability to 'sync' the App into other back-office systems to create job sheets if an unacceptable inspection grade had been awarded (C or D).

Developments in Apps to support inspections

The integration of LAMS into council back office systems (API)

- We recently held a LAMS working group meeting with the App developer (Bbits) on how the App could/will sync into existing back-office systems, we discussed a number of possibilities but concluded the following option to be the most suitable:

- To create an export from the App which basically provides all the data you will require to import into your existing system (the L/A will carry this out themselves from the export we supply to you)

- This option has a development cost which will be covered jointly between APSE & Bbits.

Developments in Apps to support inspections

The integration of LAMS into council back office systems (API)

- Following the development of this function the L/A would be required to pay an annual additional maintenance fee of £25 per survey (if you complete all 4 of the templates: parks, streets, combined and cems/crems surveys, this would be an extra £100 to the L/A per annum).

- This additional function will be an option and not mandatory, however, before we enter into the development stage we would like to assess the level of demand.

Developments in Apps to support inspections

The integration of LAMS into council back office systems (API)

Next steps:

To asses the level of demand prior to next stage of development.

Members to be updated as we progress.

Developments in Apps to support inspections

A Memorial Safety Inspection Application (MSI App)

•There is an expectation that all burial authorities test all memorials over a 5-year cycle to comply with safety requirements, there may to be a simple way to assist the responsible authorities.

•Which would be a simple App installed on a tablet or phone in the field.

Developments in Apps to support inspections

A Memorial Safety Inspection Application (MSI App)

A Memorial Safety Inspection Application (MSI App) would require a simple approach to assess the safety of the memorial such as;

- Allow comments on observations.

- Take photo of each memorials condition.

- Could be tailored with specific other questions if required.

- Enable data to be sent and stored.

- Hosted externally (cloud based).

- Provide results in simple database view.

- Export data into excel for reporting.

Developments in Apps to support inspections

A Memorial Safety Inspection Application (MSI App)

This stand-alone Memorial Safety Inspection Application holds the potential to cover the following;

- Save time and money on inspections.

- Fulfil its duty to inspect every 5 years.

- Could plot memorials using GPS data.

- Have more reliable/accessible data.

- Be able to report performance better.

- There would be a recognised national system.

- Uniformity of inspection.

- Monitor performance - evidenced based approach.

- National benchmarking.

Developments in Apps to support inspections

A Memorial Safety Inspection Application (MSI App)

Next steps:

On hold until a more appropriate time due to the pandemic.

Members to be updated as we progress.

Further Information Available

Do you feel any of the initiatives covered during this presentation would be of benefit to your service?

If so then please register your interest with the Performance Networks team:

performance.networks@apse.org.uk   0161 772 1810

Q's

Contact details

Debbie Johns, Head of Performance Networks

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Mobile: 07834 334193

INVESTOR IN PEOPLE

ISO 14001
REGISTERED FIRM
GB 11409

ISO 9001
REGISTERED FIRM
GB 11132

ISO 27001
REGISTERED FIRM
GB 14074

Biodiversity Toolkit for Housing Providers

Jodey Peyton
(and the whole team!)

(Southern Region) Parks and Open Spaces
Advisory Group
27th May 2021

© John Vince

Overview

- Introducing the Project
- Biodiversity and Urban Green Spaces
- Biodiversity Toolkit for Housing Providers

© Jodey Peyton

Introduction

- NERC funded, 18 month project (+3 months)

- Collaborative project: Southern Housing Group (SHG) as well as TVERC, BBOWT, Bracknell Forest Council and ALERC

- Developing a Biodiversity Toolkit to help housing association estate teams improve green spaces for biodiversity
    - Case study site in Bracknell (Mount Pleasant)

© Jodey Peyton

We're losing biodiversity globally

BIODIVERSITY ON THE BRINK: WE KNOW IT IS CRASHING

Sir Robert Watson, Tyndall Centre for Climate Change Research

Biodiversity as we know it today is fundamental to human life on Earth, and the evidence is unequivocal – it is being destroyed by us at a rate unprecedented in history.
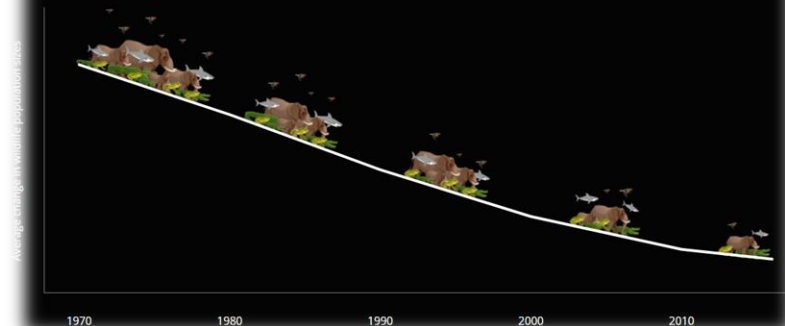
https://www.wwf.org.uk/sites/default/files/2020-09/LPR20_Full_report.pdf

Declines in urban areas

Urban (brown) and rural (green) composite indices for all species for (a) 1995–2014 and (b) 1980–2014. Shaded bars represent 95% confidence intervals from bootstrapping.
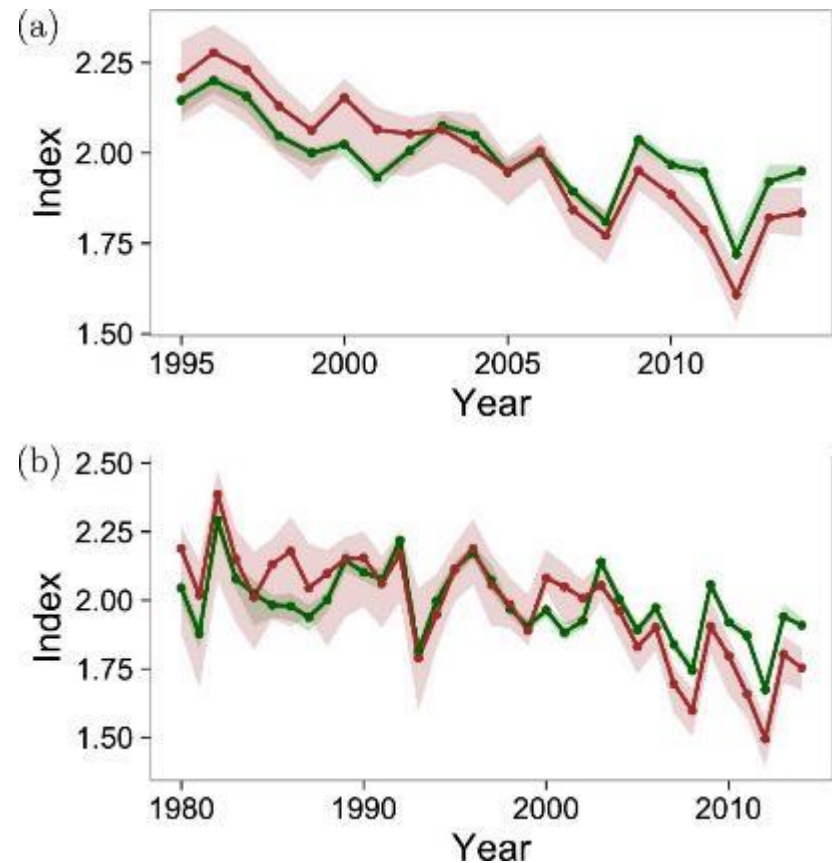
Drivers of declines

Threats to nature and the drivers and pressures behind them

WWF LIVING PLANET REPORT 2020
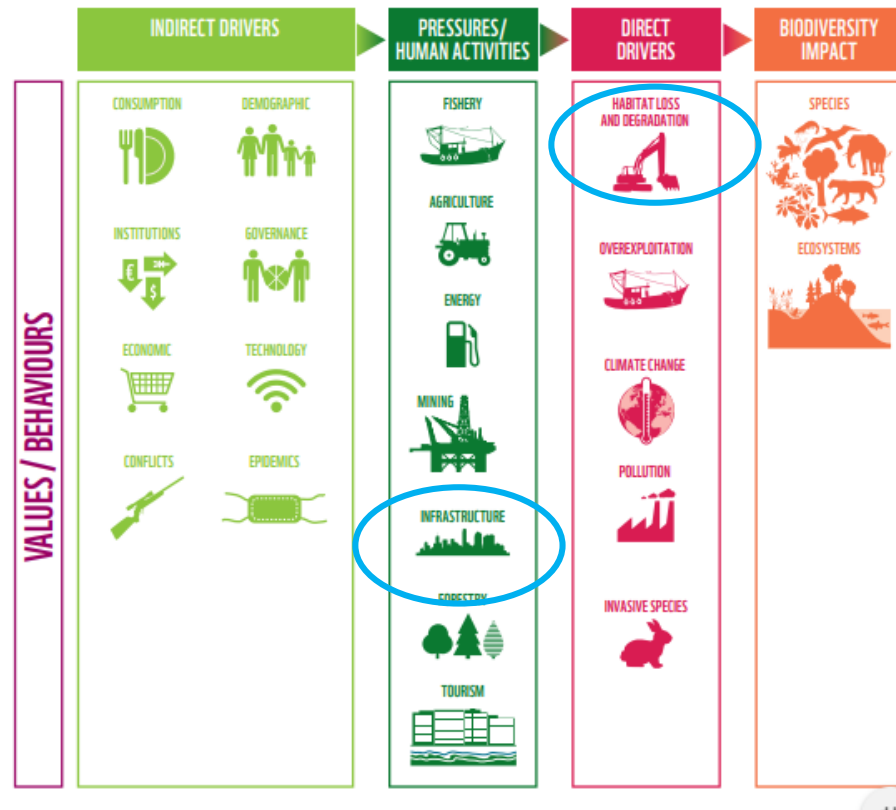
BIODIVERSITY'S CATASTROPHIC COLLAPSE ON LAND

Land-use change is currently the most important direct driver of biodiversity loss on land, with climate change, overexploitation, pollution and invasive species not far behind.

Drivers of declines: habitat loss and degradation

97% loss of meadows in UK since 1930s (Fuller 1987)

Money saving and better for urban biodiversity

Mody K, Lerch D, Müller AK, Simons NK, Blüthgen N, et al. (2020) Flower power in the city: Replacing roadside shrubs by wildflower meadows increases insect numbers and reduces maintenance costs. PLOS ONE 15(6): e0234327.
https://doi.org/10.1371/journal.pone.0234327
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0234327

UK Centre for
Ecology & Hydrology

Money saving and better for urban biodiversity

Flower power in the city: Replacing roadside shrubs by wildflower meadows increases insect numbers and reduces maintenance costs

- (1) many different arthropod taxa occur in roadside vegetation in urban areas **(arthropod = food for other animals!!)**

- (2) replacement of exotic woody vegetation by native wildflower meadows can significantly increase arthropod abundance (**increase of 63% of total arthropod density in unmown compared to mown meadow spots**), especially if meadow management permits temporarily unmown areas, and

- (3) maintenance costs can be considerably reduced **(5x)** by converting woody plantings into wildflower meadows.

- https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0234327

PlanLife

No Mow May: how to get ten times more bees on your lockdown lawn

UKRI Natural Environment Research Council

BLUE CAMPAIGN

HOME   GET INVOLVED ˅   FIND OUT MORE ˅   SHOP   CONTACT US

COUNCIL OWNED LAND

Councils can play a huge role in increasing wild spaces within their area.

There are some councils which are really taking the lead on this, including Stroud Town Council, Chipping Sodbury Town Council, Dorset Council, South Gloucestershire Council and a few more around the country.

BLUE campaign is very keen to work with councils and support them in being forward looking and committed to their ecological responsibilities.

A recent study by the Wildlife Trust suggests that 90% of lowland grassland has been lost in the 20th century, with fewer areas than ever supporting insects, wildlife and grassland species. These areas form an essential part of the UK's ecological infrastructure.

Luckily, combatting this loss is one which is easy and cost effective for Councils.

Please, allocate areas of land which you manage to wildflower meadow. This would mean an annual cut-and-collect followed by little or no maintenance, reducing your costs and carbon footprint, whilst encouraging wildlife to re-inhabit the area.

Rewilded verges help restore biodiversity, act as a carbon sink and save the council money

BARRATT HOMES   🔍 FIND A HOME | BUYING WITH BARRATT | OWNERS HUB   🔒 LOGIN

Giving nature a Barratt Home

We're passionate about making sure our developments are great places for both homeowners and wildlife to live in. That's why we partnered with the RSPB, the UK's largest nature conservation charity, since 2014. Together, we made it our mission to improve the way in which nature and wildlife are incorporated into our new communities – and we're very proud of what our partnership has achieved so far.

Encouraging nature to thrive

With British wildlife in decline it's essential that we, the UK's largest housebuilder, are considering nature and the environment with every home we build.

We're committed to building wildlife into new housing developments wherever possible, making sure that people and wildlife can live happily alongside each other at our developments for years to come.

NATUREHOOD
Working together to support the wildlife on your doorstep

Get involved

NATUREHOOD IS A COMMUNITY PROJECT FROM EARTHWATCH EUROPE, WORKING TO REVERSE WILDLIFE DECLINE.

UK Centre for Ecology & Hydrology

ALERC Association of Local Environmental Records Centres

TVERC

Bracknell Forest Council

Berkshire Buckinghamshire Oxfordshire

The Wildlife TRUSTS

Southern Housing Group
www.shgroup.org.uk

10

The Biodiversity Toolkit

Biodiversity Toolkit
for Housing Providers

- 'Working together': Links to local environmental record centres, local wildlife trusts and local councils to share wildlife supporting initiatives

- 'Engagement': Methods for engaging with residents

- 'Monitoring': Links for ways for residents to record wildlife

- https://www.shgroup.org.uk/about-us/sustainability/biodiversity-toolkit-increasing-biodiversity-in-urban-green-spaces/

UK Centre for Ecology & Hydrology

ALERC
Association of Local Environmental Records Centres

TVERC

Bracknell Forest Council

Berkshire Buckinghamshire Oxfordshire

the wildlife TRUSTS

Southern Housing Group
www.shgroup.org.uk

Working together

Working together with local organisations and councils

By working with established wildlife groups and your local council, you can benefit from existing conservation, training and community engagement expertise. It may even be possible to pool resources, and work together to link up areas of urban habitat.

Local groups might include natural history and conservation volunteers, as well as special interest groups focusing on particular groups of species like birds, plants and bats.

Local wildlife organisations can also contribute volunteers and practical skills. Local councils (county, district, town and parish) are important stakeholders as they control decisions about how many urban green spaces are managed.

Examples of these organisations are discussed here, but there are many more. We recommend a flexible approach to make the most of those who have time to share with you. See the Southern Housing Group website for more information on the variety of organisations with which housing providers can work with.

Local Environmental Records Centres

Local Environmental Records Centres (LERCs) are organisations that collect, collate and manage wildlife data to support the conservation, understanding and enjoyment of local biodiversity. LERCs provide a 'one-stop-shop' for information on sites, habitats and species in their region. LERCs by region can be found via the Association of Local Environmental Record Centres (ALERC) website at: http://www.alerc.org.uk/lerc-finder.html.

The Wildlife Trusts

There is a good opportunity to form links with a local Wildlife Trust who can provide expert help with delivering resident engagement schemes. Wildlife trusts can also provide the expert advice on the specific wildlife-friendly actions. http://www.wildlifetrusts.org/find-wildlife-trust.

Local councils

Local authorities in England and Wales have a key role to play in the conservation of biodiversity, recognised in Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006, where:

'Every public body must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity'

One of the ways councils can contribute to delivering this duty is through partnerships with environmental organisations and other local community groups http://www.gov.uk/find-local-council.

Involving local residents with projects on site

It's really important to involve local residents from the beginning and throughout the process. Studies have shown that both exposure to nature, and the opportunity to get

practices or the installation of wildlife features, and address potential concerns. Suppliers include Nature Sign Design.

- *Newsletter / fliers.* Volunteer residents could to help disseminate information through fliers and newsletters.

Sharing resources, knowledge and expertise

Working together

Connecting landscapes
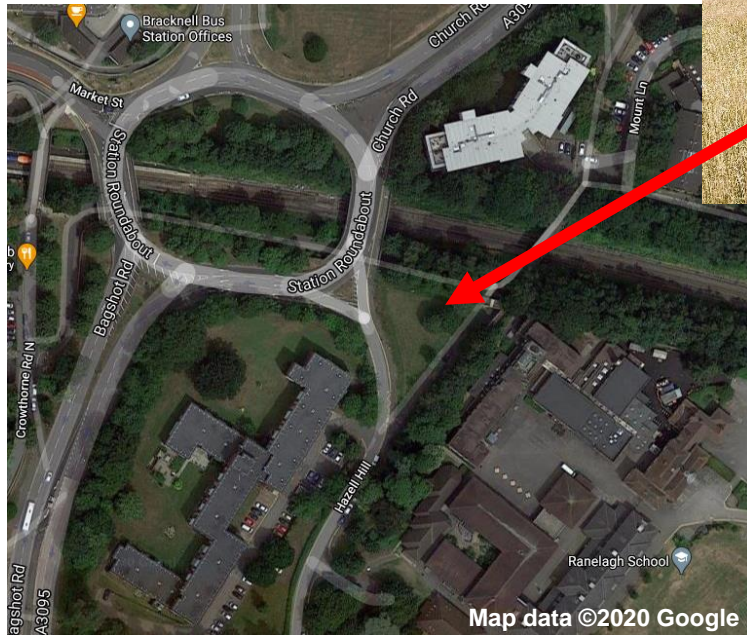
Improving green spaces for local species and habitats

Green corridors in Oxfordshire

Green Corridors for West Oxon Garden Village

Brize Norton - Green Corridors

Legend

Corridor

- Existing
- Proposed
- Brize Norton parish boundary
- Brize Norton LWS

Footpaths | GreenCorridors | Oxfordshire LWS | WoodlandConnectivity
Bridleways | ProposedGreenCorridors | GrasslandConnectivity | FreshwaterConnectivity

0 0.125 0.25 0.5 Kilometers

1 cm equals 200 meters
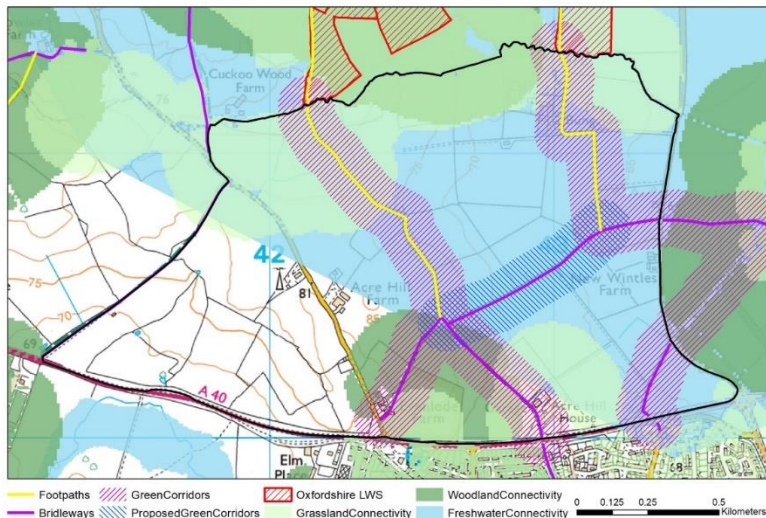
Map produced by Thames Valley Environmental Records Centre in 2018 ©
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Thames Valley
Environmental Records Centre

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14

Oxfordshire Nature Recovery Network

The NRN consists of 3 zones:

- Core zone

- Recovery zone

- **Wider Landscape zone - the important contribution that agricultural and urban landscapes beyond the Recovery zone can make to nature's recovery**

- https://www.wildoxfordshire.org.uk/biodiversity/draft-map-of-oxfordshires-nature-recovery-network/

Draft Oxfordshire Nature Recovery Network

Thames Valley Environmental Records Centre
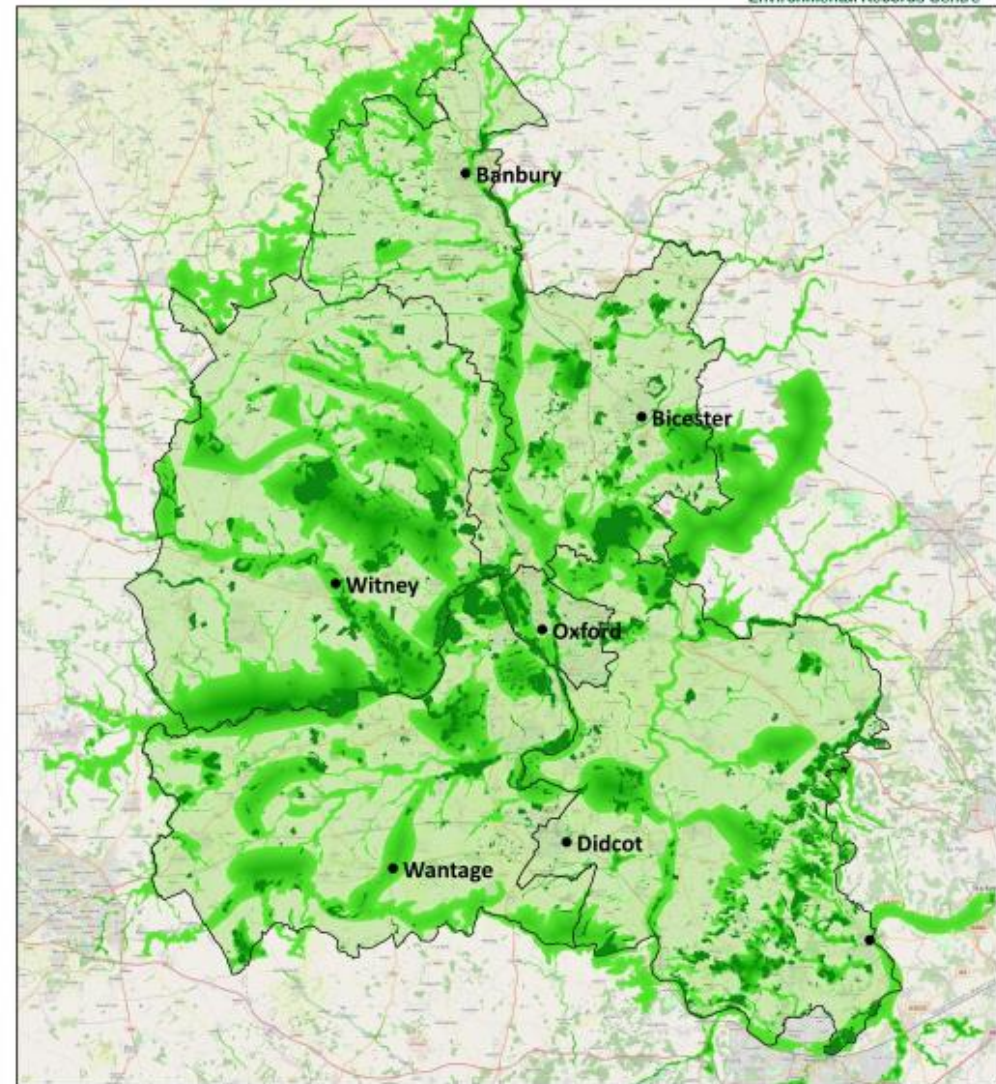
Key

Nature Recovery Network
- Core Zone
- Recovery Zone
- Wider Landscape Zone

Boundaries
- District Boundaries

Map produced by Thames Valley Environmental Records Centre in 2020. Contains TVERC data
Contains OS data (c) Licence number 100023343
Contains OpenStreetMap data
Contains Environment Agency information (c) Environment Agency and/ or database right

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Local Planning Authority perspective

Part of our Sustainability Policy
Rethinking & reinvesting in green spaces

Marlies Boydell,
Biodiversity Officer

"We welcome the creation of a biodiversity toolkit for housing groups. This provides an important opportunity to restore biodiversity in urban settings that will contribute towards our local biodiversity action plan and encourage residents to reconnect with nature."

Engagement

- Asking residents what they want and identifying those with existing interest

- Giving residents chance to help design, maintain and their green spaces

- Providing information
  - signage important
  - regular updates

are discussed here, but there are many more. We recommend a flexible approach to make the most of those who have time to share with you. See the Southern Housing Group website for more information on the variety of organisations with which housing providers can work with.

Involving local residents with projects on site

It's really important to involve local residents from the beginning and throughout the process. Studies have shown that both exposure to nature, and the opportunity to get involved are beneficial.

Getting residents on board at an early stage can also help to overcome any potential objections to the project. Keeping everyone informed will help to create a sense of community ownership over green space, vital for its long-term sustainability.

Different types of engagement are useful to work with residents.

- *Recording wildlife.* One of the simplest ways to get residents involved is to get them to tell you what they have seen around the site and/or to submit records to local and national recording schemes.

- *Information boards.* Use signs to tell residents about wildlife on site, explain the benefits to biodiversity from management

practices or the installation of wildlife features, and address potential concerns. Suppliers include Nature Sign Design.

- *Newsletter / fliers.* Volunteer residents could to help disseminate information through fliers and newsletters.

- *Social media.* Volunteer residents could help to disseminate information through social media.

Local social media groups are a great way of enabling a wide array of people to participate in exploring wildlife, by sharing their pictures and asking questions.

Social media can support community social cohesion, like arranging events and getting people together.

- *Local resident wildlife group.* Engage with resident wildlife group, if one exists, or help support the set up.

- *Monitoring success.* Resident questionnaire surveys, feedback through local residents' wildlife group.

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Southern Housing Group
www.shgroup.org.uk

Engagement and monitoring

- Using existing recording platforms and schemes

PoMS: Flower-Insect Timed Count (FIT count)

Flower-Insect Timed Count

Watch on YouTube

App Store Preview

eBMS
Centre for Ecology and Hydrology

iRecord App
Record any species on the go.

Download on the App Store — GET IT ON Google play

Plantlife

Find out about Plantlife   Donate   Join Plantlife

Every Flower Counts...
Let's get counting!
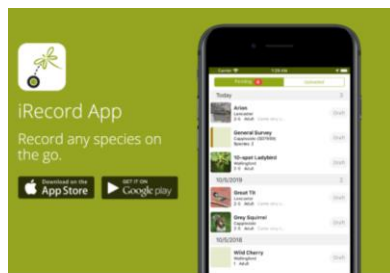
Plantlife's Every Flower Counts survey will run from 22nd to 31st May 2021. We'd love you take part and count the flowers on your lawn.

Measuring biodiversity

To assess whether the options you have implemented have been successful, measuring the outcomes is important. It can also be a great way to get Estate Care and Environment teams and residents more involved in the work you are doing and help them to engage more with nature on your site to help improve their well-being.

Here we discuss some simple ways to do this. Some management options can take several years before the full benefits are seen. So monitoring how things change over longer time periods is important.

Recording wildlife

Every record counts and will not only help you get a picture of what wildlife is on your site, but can contribute to recording schemes who use the data to tell how well different plants and animals are doing over time. Not every record needs to be identified to species level and no prior experience is needed: everyone can get involved.

iNaturalist https://www.inaturalist.org is a network of naturalists, citizen scientists and biologists. Records of any wildlife (with a photo) can be submitted with a provisional identification to whatever level the recorder feels comfortable. They are then identified by the online community after which they can become part of national and regional recording schemes. This approach not only means residents can start to learn about the wildlife they see, but can also help others learn about the

wildlife by helping them identify records as they gain experience themselves. General recording is appropriate for helping to monitor the success of the biodiversity management options presented in this toolkit.

There are also more specific recording schemes targeting particular types of wildlife or to submit records where the recorder has more experience and confidence in the identification of what they are recording.

Further details can be found on the Biological Records Centre (BRC) website at: http://www.brc.ac.uk. This type of recording is listed as 'General recording' under the 'Monitoring success' section for each biodiversity management option in this toolkit.

Examples of information for residents who want to get involved in green activities

Garden Organic

Advice and support for individuals or groups who want to become involved in organic gardening, including local community groups who want help to set up and run organic community gardens http://www.gardenorganic.co.uk.

Natural England

Government's adviser for the natural environment, helping protect England's nature and landscapes for people to enjoy and the services they provide.

Social Farms and Gardens

A UK-wide charity that supports communities to farm, garden and grow together. They offer a wealth of information, in-depth knowledge and advice for groups planning to start a community garden, with a comprehensive Resources Section: http://www.farmgarden.org.uk/resources.

Community Growing Resource Pack

A comprehensive guide to setting up, developing and sustaining a community-managed farm, garden or related community growing space: http://www.farmgarden.org.uk/resources/community-growing-resource-pack-england.

Green Flag: Community Green Space Awards

Social Farms & Gardens are a partner in the Green Flag Awards Scheme, working with Keep Britain Tidy, and its respective organisations in Northern Ireland, Scotland and Wales http://www.greenflagaward.org.uk.

The Conservation Volunteers (TCV) Green Gym

TCV created and runs Green Gyms across the UK and offers a number of ways for public sector organisations and local community groups to establish a Green Gym http://www.tcv.org.uk. They also have local volunteer groups who do practical tasks and they also publish practical guides on habitat management and sell trees for planting.

Estate Care and Environment teams and residents could also be encouraged to take part in more structured biological recording which help us record wildlife in a standardised way so that we can assess changes to animal and plant populations over time. The schemes provide advice on how to carry out simple and fun surveys and often have free identification tools and mobile apps to submit records of wildlife. They are a great way to monitor changes to wildlife over time on your site and can help to measure the success of any management options put in place.

See the Southern Housing Group website for some of the surveys you can take part in http://www.shgroup.org.uk/toolkit.

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Management Options

Over 20 management interventions for biodiversity

- Suitability to different estates
- What they benefit
- Costs
- How achieved
- How maintained
- When to implement
- How can monitor their success
- Opportunities for residents to get involved

Biodiversity management options

This table summarises 26 management options to improve biodiversity around your site. We recommend getting a survey of the wildlife on your site (see page 1) and/or consulting your local Wildlife Trust before the work starts to help you select which options and plant species are best for your site. You can also use the RHS website http://www.rhs.org.uk/advice to help select plants suitable for your soil type and location.

Quick guide to scales		
Density*	Cost	Level of ongoing maintenance
Low	£10 – £200	Minimal
Medium	£200 – £1000	Annual
High	£1000 +	Regular

Option		Housing density suitability			Cost			Level of ongoing maintenance		
		Low	Med	High	Low	Med	High	Low	Med	High
Plants: grassland and flowers										
1	Reduced mowing	•	•		N/A – cost-saving			•		
2	Addition of Yellow-rattle	•	•		•				•	
3	Wildflower enhancement: plug plants	•	•		•	•			•	
4	Re-seed grassland with meadow mix	•	•		•				•	
Plants: trees and shrubs										
5	Plant native wildlife hedge	•	•	•	•				•	
6	Provide vertical planting	•	•	•	•				•	
7	More flowering shrubs and herbaceous plants	•	•	•	•					•
8	Plant container gardens	•	•	•	•				•	•
9	Plant native trees and shrubs	•	•	•	•			•	•	
Pollinators and other invertebrates										
10	Bug hotels and nest boxes for solitary bees	•	•	•	•				•	
11	Leave or plant ivy as a food resource	•	•	•	•				•	
12	Create natural bee nesting sites	•	•		•			•		
13	Create log piles and a loggery	•	•		•			•		
Birds and mammals										
14	Bird nest boxes	•	•	•	•			•	•	
15	Reduced hedgerow cutting	•	•	•	N/A – cost saving			•		
16	Bat boxes	•	•	•	•			•		
17	Hedgehog houses and highways	•	•	•	•				•	
18	Retain areas of scrub	•	•		•			•	•	
General biodiversity										
19	Create pond habitat	•	•		•	•			•	
20	Reduce input of herbicides/pesticides	•	•	•	•					•
21	Green roofs and living walls	•	•	•			•	•	•	
Sustainability										
22	Build/ install compost bins	•	•	•	•					•
23	Create vegetable plots	•	•		•					•
24	Install a water butt	•	•	•	•			•		
25	Create rain gardens	•	•	•	•	•		•		
26	Sustainable lighting	•	•	•	•	•		•		

* Low density (1-100 homes and/or large areas of green space – greater than 1 ha (10 000 m²). Medium density (101-200 homes and/or small-medium areas of green space – between 100 m² and 1 ha (10 000 m²), where at least 100 m² is available as one continuous area). High density (> 200 homes and/or with very limited green space – less than 100 m² and in fragmented patches).

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Management options

PLANTS: GRASSLAND AND FLOWERS
Wildflower enhancement

Wildflower seeds and plug plants increase floral diversity at a low cost. Plant plug plants and scatter seeds into spaces in existing grassy areas in April-May after main frosts have finished. This will help create more habitat and increased resources for pollinating invertebrates like bees.

Suitability	Low to medium density housing if sufficient areas of grassland are available.
Management type	Grassland management.
Supplier information	Consult with your local Wildlife Trust for advice on suitable suppliers. Information on how to source wildflower seeds can be found at: http://www.growwilduk.com/where-get-uk-native-wildflower-seeds-plants
Community engagement?	Yes – potential to involve volunteer residents in helping to enhance grassland areas by planting plug plants as part of a community engagement exercise.
Benefits	Greater floral diversity creating more habitat and increased resources for invertebrates and other wildlife such as birds and small mammals.
Costs/Disbenefit	Financial cost: Low-medium depending on number of plants.
Level of ongoing maintenance	Medium.

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Management options

3 PLANTS: GRASSLAND AND FLOWERS
Wildflower enhancement

		Notes
How achieved	Plant plug plants (and/or scatter wildflower seeds) in designated areas in April-May after main frosts have finished.	
Timing of activity	Plug-planting: April-May after the main frosts have finished. Seed sowing: October/November or February/March.	
Long-term management	Recommend 2-3 mows per year maximum: year 1 mow in March (spring cut), mid-late July (summer cut) and late September to October (autumn cut). Mow the edges of paths more regularly than the rest to help show residents that this is a deliberate activity. Try not to mow all areas at the same time. Leave a few patches of longer vegetation over winter. Where possible, leave the cuttings in place for 1-3 days to give any sheltering wildlife a chance to move away. Don't leave the cuttings for longer than this time as this can increase soil fertility and reduce the diversity of plants that can grow. Where possible cuttings could be moved elsewhere on site, as they can provide food and shelter for other wildlife. Some plant materials such as hollow plant stems can be used in bug hotels and bee nests.	
Monitoring success	General recording (see page 6). A butterfly transect or timed count could be set up as part of the UK Butterfly Monitoring Scheme http://www.ukbms.org. Simple butterfly timed counts can be conducted using the European Butterfly Monitoring app https://butterfly-monitoring.net/ebms-app. Flower-Insect Timed (FIT) counts as part of the National Pollinator Monitoring Scheme (PoMS) https://www.ceh.ac.uk/pollinator-monitoring. Conduct Plantlife's 'Every Flower Counts' survey of lawns to survey the number of flowers present and contribute to calculating a National Nectar Score: http://www.plantlife.org.uk/everyflowercounts.	

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Management options

14 BIRDS AND MAMMALS
Bird nest boxes

Purchase (or self-make) and install boxes and cameras in carefully selected locations on buildings or mature trees. The addition of nest-box cameras will enable residents to observe and appreciate wildlife present.

Suitability	Low, medium and high density housing.
Management type	Wildlife 'housing'.
Supplier information	Consult your local Wildlife Trust for advice on suitable suppliers. We recommend purchasing woodcrete boxes as they are more durable. Consult with your Local Environmental Records Centre to find ... Wildlife cameras for nest boxes can be ...
Community engagement?	Yes – good opportunity to involve vol... purchased boxes and camera(s). Possib... residents in a 'build a nest box' activit... install boxes around the site.
Benefits	• Increases nesting sites around the ... • The addition of nest-box cameras ... appreciate wildlife present.
Costs/Disbenefit	Financial cost: Low (depending on nu...
Level of ongoing maintenance	Low to medium.

12 POLLINATORS AND OTHER INVERTEBRATES
Create natural nesting sites for invertebrates

Drill holes into existing tree stumps to create nesting sites for bees, wasps and beetles as well as other invertebrates, increasing invertebrate diversity and encouraging wood-feeding invertebrates.

Suitability	Low to medium de...
Management type	Natural bee nestin...
Supplier information	Not applicable.
Community engagement?	Yes – potential to i... use of hand tools i...
Benefits	Creates nesting sit... increasing invertek...
Costs/Disbenefit	Financial cost: Low

11 POLLINATORS AND OTHER INVERTEBRATES
Bug hotels and nest boxes for solitary bees

Install artificial bee nesting boxes and habitats for wildlife to shelter (bug hotels) in suitable locations around the site. These can be bought or home-made using natural materials. Making sure they are secure and well positioned is vital.

Suitability	Low, medium and high density housing.
Management type	Wildlife 'housing'.

Supplier information	• Consult your local Wildlife Trust for advice on suitable suppliers. If purchasing a bug hotel/bee nests, make sure to choose a responsible design. Badly designed artificial nesting sites could negatively impact solitary bee numbers due to parasitism.
	 • Easy to make these by drilling into logs etc. Instructions on how to make a bee hotel:
	   • RSPB: http://www.rspb.org.uk/get-involved/activities/give-nature-a-home-in-your-garden/garden-activities/buildabeebandb.
	   • Wildlife Trust: http://www.wildlifetrusts.org/actions/how-make-bee-hotel.

Community engagement?	Yes - scope for involving residents in building bug hotels and nest boxes, as well as helping to install such features in suitable locations around the site.
Benefits	Increases nesting sites, refuges from predators and overwintering sites for a wide range of invertebrates.
Costs/Disbenefit	Financial cost: Low
Level of ongoing maintenance	Medium.

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Natural Environment Research Council

Thank you for listening

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