Number: **WG 17702**

Llywodraeth Cymru
Welsh Government

www.cymru.gov.uk

Welsh Government

Consultation Document

Consultation on the Draft Action Plan for Pollinators for Wales

Date of issue: **9 April 2013**
Action required: Responses by **4 June 2013**

Overview

Bee and pollinator health has been increasingly highlighted as a cause for concern in the UK and globally.

Pollinators are an essential component of our environment. Honeybees are the primary managed pollinator of crops and also provide a crop themselves. Wild pollinators including bumblebees, other solitary bees, parasitic wasps, hoverflies, butterflies and moths and some beetles are also important pollinators in Wales, for crops such as fruit and oil seed rape, for clovers and other nitrogen fixing plants that are important to improving the productivity of pasture systems for livestock grazing, and wild flowers. They contribute to the diversity of plant species, habitats and wildlife in Wales, as well as its resilience and natural beauty. This provides food, makes Wales a better place for people to enjoy and visit, and makes an important contribution to our economy.

Pollination is a vitally important service provided by the environment. Twenty percent of the UK cropped area comprises pollinator-dependent crops, and a high proportion of wild flowering plants depend on insect pollination for reproduction. The value of pollinators to UK agriculture is conservatively estimated to be £430 million per year.

However, the National Ecosystem Assessment carried out in 2011 showed that both managed pollinators (honey bees) and wild pollinators (primarily non-managed bees and hoverflies) have been in severe decline for the past thirty years and it is likely that this trend will continue if we don't act now.

This Action Plan for Pollinators will be developed in partnership across public and private sectors, to help us identify how we might slow and reverse the decline in pollinator numbers.

How to respond

Please respond to this consultation either by;

email:biodiversity@wales.gsi.gov.uk
or post:

Biodiversity Team,
Nature, Landscape and Outdoor
Recreation Branch
Welsh Government
Rhodfa Padarn
Llanbadarn Fawr
Aberystwyth
SY23 3UR

Further information and related documents

Large print, Braille and alternate language versions of this document are available on request.

Contact details

Biodiversity Team,
Nature, Landscape and Outdoor
Recreation Branch
Welsh Government
Rhodfa Padarn
Llanbadarn Fawr
Aberystwyth
SY23 3UR

email: biodiversity@wales.gsi.gov.uk
telephone: 0300 062 2285

Front cover picture © Bumblebee Conservation Trust

Ministerial Foreword

My predecessor, John Griffiths, announced last July at the Royal Welsh Show his intention to produce an Action Plan for Pollinators which will ensure Wales takes necessary steps to address the issues affecting pollinators in Wales.

It is conservatively estimated that the value of pollinators to the UK is £430 million per annum which makes pollination a vitally important ecosystem service. However, despite their importance, pollinator numbers have been on the decline for the last 30 years and if we don't take prompt action, this trend will continue.

I am very encouraged to see the level of interest shown by a range of people with suggestions on how we can address this important matter. This information has helped to inform the consultation document and I look forward to receiving your comments on how together we can put a plan in place to achieve our objective of slowing and reversing the decline of pollinator numbers here in Wales.

Following this consultation it is my intention to launch the Action Plan for Pollinators, which will be the first of its kind in the UK, during the Royal Welsh Show in July 2013.

Minister for Natural Resources and Food

What are the main issues?

Insect pollinators - managed honeybees, and wild pollinators including bumblebees, other solitary bees, parasitic wasps, hoverflies, butterflies and moths and some beetles - are important in Wales; for crops, for clovers and other nitrogen fixing plants that are important to improving the productivity of pasture systems for livestock grazing, and for wild flowers. They also contribute to the diversity of plant species, habitats and wildlife in Wales. As well as improving the biodiversity of Wales, its resilience and natural beauty, this provides food, makes Wales a better place for people to enjoy and visit, and makes an important contribution to our economy.

The cost of hand pollination, were we to lose this valuable service, has been estimated at £1.8 billion per year in the UK[1].

In order to thrive, pollinators need nectar sources and nesting sites, which can be provided by semi-natural habitats, agricultural landscapes and urban areas. However honeybees have shown a 23% decline in Wales between 1985 and 2005, with this trend continuing at present[2] . Butterflies, hoverflies and many species of moth are also declining across Wales. Wildflower meadows and other important semi-natural habitats have also decreased across Wales.

There are an estimated total of 3,377 beekeepers in Wales with 4,388 apiaries and 18,294 colonies of honey bees. Beekeeping has been increasing in popularity in Wales. The spread of the *Varroa* mite from 1994 onwards in Wales caused great losses, although as beekeepers have learnt to control *Varroa* infestation, there are fewer winter losses attributable to this problem. Winter losses are, however, higher than expected for the last two years.

63% of Welsh butterflies are declining and 28% of Welsh moths are severely declining. Other endangered species such as the Shrill Carder Bee and the Longhorn Bee are declining in Wales, and the territories of others constricting.

Evidence for change

The main areas of concern for both managed and wild pollinators are agricultural intensification and the move towards monocultures, habitat destruction or fragmentation, disease, the use of agro-chemicals and climate change. More details of these are given in the Draft plan.

We need pollinators – and our vision is that:

Wales has the conditions to support healthy populations of wild and managed pollinators to benefit the people, economy and environment of Wales.

---

[1] Breeze TD, Roberts SPM, Potts SG, 2012, The decline of England's Bees, University of Reading & Friends of the Earth http://www.foe.co.uk/resource/briefings/beesreport.pdf

[2] UK National Ecosystem Assessment (NEA), 2011, The UK National Ecosystem Assessment Technical Report. UNEP-WCMC, Cambridge.

An agenda for action

Analysis of the current situation in Wales, and input from our stakeholders, shows that the emphasis for the Action Plan should be on providing better and more connected habitats which will support both wild and managed pollinators in farmland, the wider countryside, and in urban and developed areas.

This should be supported by ensuring there are healthy populations of pollinators, greater awareness of pollinators and their importance, and joined up policy and governance based on a sound evidence base.

We hope these action areas will also help us to take an ecosystem approach to developing actions of benefit to the environment, our economy and the people of Wales.

How can you help?

The Draft Action Plan for Pollinators is appended to this consultation document. We have attempted to identify the importance of pollinators in Wales, their current status and the main causes for their decline. We have then proposed the outcomes we will work towards in order to achieve our vision, and given some examples of the action we as Welsh Government can take.

We welcome input and feedback on this draft plan, particularly on where you can contribute further, and we can support you to do so.

Should you wish to comment on these proposals a number of questions are set out below.

Consultation Response Form

Your name:

Organisation (if applicable)

Email/telephone number:

Your address:

Question 1: Do you agree with our vision for pollinators in Wales?

Question 2: Have we identified the main areas of concern for pollinators in Wales or are there further issues you want to identify?

Question 3: Do you agree with the outcomes identified, and the areas for action to achieve them? Your comments are welcomed.

Question 4: How could you contribute further to the areas for action identified? How could we support you to do so?

Question 5: Would you like to be involved in developing the actions needed to achieve the outcomes? If so, in what way?

Question 6: We have asked a number of specific questions. If you have any related issues which we have not specifically addressed, please use this space to report them:

Responses to consultations may be made public – on the internet or in a report. If you would prefer your response to be kept confidential, please tick here: ☐

A Draft Action Plan for Pollinators for Wales

Contents

1. Introduction 1

- What are Pollinators?
- What Pollinators need
- Why we need to take action
- What are the main threats?
- The Action Plan

2. Our Vision for Pollinators in Wales 5

- Programme for Government
- Sustaining a Living Wales
- Biodiversity
- Other Welsh Government Strategies
- Pollinators and the Ecosystem Approach

3. The Current Situation in Wales 9

- Pollinator populations
- The main areas of concern
- Governance and Infrastructure
- Research and Initiatives

4. An Agenda for Action 15

5. Conclusion and Next Steps 21

Biodiversity Policy
Land, Nature, Forestry and Marine Division

25 March 2013

1. Introduction

Pollinators are an essential component of our environment. Honeybees are the primary managed pollinator of crops and also provide a crop themselves. Wild pollinators including bumblebees, other solitary bees, parasitic wasps, hoverflies, butterflies and moths and some beetles are also important pollinators in Wales, for crops such as fruit and oil seed rape, clovers and other nitrogen fixing plants that are important to improving the productivity of pasture systems for livestock grazing, and wild flowers. They contribute to the diversity of plant species, habitats and wildlife in Wales, as well as its resilience and natural beauty. This provides food, makes Wales a better place for people to enjoy and visit, and makes an important contribution to our economy.

What are Pollinators?

In this plan we refer to insect pollinators including all types of bees, some wasps, butterflies, moths and hoverflies.

Bees and wasps visit flowers to collect pollen and nectar to feed themselves or their developing young. Flowering plants have evolved to take advantage of this by offering nectar to insects most likely to carry their pollen to another plant.

Modern honeybee hives are moved from crop to crop and beekeepers may charge for the pollination services provided whilst also harvesting the honey and other products. Crops which benefit from this include orchards and soft fruits (rose family) oil seed rape and other seed brassicas (cabbage family) and peas and beans (legumes).

Bumblebees and other species of solitary bees are also important pollinators that are essential to the maintenance of wild plant populations and to commercial crop production, particularly orchard and soft fruits and protected crops such as tomatoes.

Wasps often feed on nectar whilst on the lookout for other insects to prey upon, many of which are crop pests. Many species of parasitic wasps are used as successful biological control agents.

Butterflies and moths pollinate plants to various degrees by the action of the adult feeding on nectar. They are not major pollinators of UK food crops, but are important pollinators of wild flowers.

Hoverflies are abundant on flowers for much of the year and the adults feed on nectar and pollen, sunflower being the key crop species globally that benefits from hoverfly pollination. However, the larvae eat a much more varied diet that often includes other insects. For this reason predatory species of hoverfly are utilised as part of Integrated Pest Management (IPM) as biological control agents.

What Pollinators need

Pollinators need food in the form of nectar foraged from flowers, and shelter in the form of nesting areas, for example burrows and holes in tree trunks.

In order to provide these, pollinators need flowering semi-natural habitats such as wildflower meadows, hedgerows and woodland edges, and agricultural landscapes which include unimproved grassland, hay meadows, clover rich grasslands, orchards and arable crops. However many of these habitats and land uses are declining or in short supply in Wales. They also need nectar sources to be available from early spring through to late autumn.

Food and shelter can also be provided in gardens, parks, road verges, and any other open area. They are relatively easy to provide, for example by planting or retaining plant species important for pollinators including, for example, Greater Knapweed in wildflower meadows, Willow in hedgerows and woodlands and Cosmos in bedding areas.

Why we need to take action

The benefits of supporting our pollinators are numerous – they are an essential part of healthy functioning ecosystems, providing:

- food production – direct (honey) and indirect (crops)
- a diverse and attractive environment

and supporting:

- health and well being
- tourism
- rural economies
- urban green space

Figure 1 shows many more of these linked ecosystem services and the benefits derived by society.

The value of pollination as a contribution to the UK crop market in 2007 was £430 million[3]. Although it was not possible to quantify the value in Wales, insect pollinators are known to be essential for the maintenance of many vegetation types across all land habitats of Wales. The cost of hand pollination, were we to lose this valuable service, has been estimated at £1.8 billion per year in the UK[4]. The value of honey produced in Wales is also considerable with a wholesale value in excess of £2 million in 2011[5].

[3] UK National Ecosystem Assessment (NEA), 2011, The UK National Ecosystem Assessment Technical Report. UNEP-WCMC, Cambridge.
[4] Breeze TD, Roberts SPM, Potts SG, 2012, The decline of England's Bees, University of Reading & Friends of the Earth http://www.foe.co.uk/resource/briefings/beesreport.pdf
[5] National Bee Unit estimated from information provided by Bee Inspectors.

However, bee and pollinator health and declining populations have been increasingly highlighted as a cause for concern in the UK and globally. Honeybees have shown a 23% decline in Wales between 1985 and 2005, with this trend continuing at present[6]. Butterflies, hoverflies and many species of moth are also declining across Wales. Wildflower meadows and other important semi-natural habitats have also decreased in area.

What are the main threats?

The main areas of concern for pollinators are agricultural intensification and the move towards monocultures, habitat destruction or fragmentation, disease, the use of agro-chemicals, and climate change.

The importance of each of these and the extent to which they are inter-related is little known and the subject of research initiatives such as the Insect Pollinator Initiative funded by Defra and the Biotechnology and Biological Sciences Research Council (BBSRC).

The Action Plan

Following the publication of the National Ecosystem Assessment, and calls from stakeholders Welsh Government has worked with industry and Non –Governmental Organisations to look in more detail at the evidence and issues around pollinators and their conservation in Wales.

We have followed the stages of the developing Ecosystem Approach Framework[7] in identifying the key stakeholders, understanding the key drivers, issues and opportunities, and visioning and objective setting. Stakeholders generated a long list of options, and we have identified some areas where we in WG can implement these options.

The guiding principles of precaution, of effecting early intervention, and avoiding the risk of negative economic impacts will be adopted in the actions to halt pollinator decline in Wales.

Section 2 of this plan details Our Vision for Pollinators in Wales, and how that relates to our priorities and policies.

Section 3 describes the Current Situation in Wales and identifies possible areas for action.

Section 4 lays out an Agenda for Action – the outcomes and areas for action that have been identified and how we in Welsh Government can work towards them.

[6] NEA as before.
[7] Welsh Government, 2012, Draft Generic Ecosystem Approach Framework, under development.

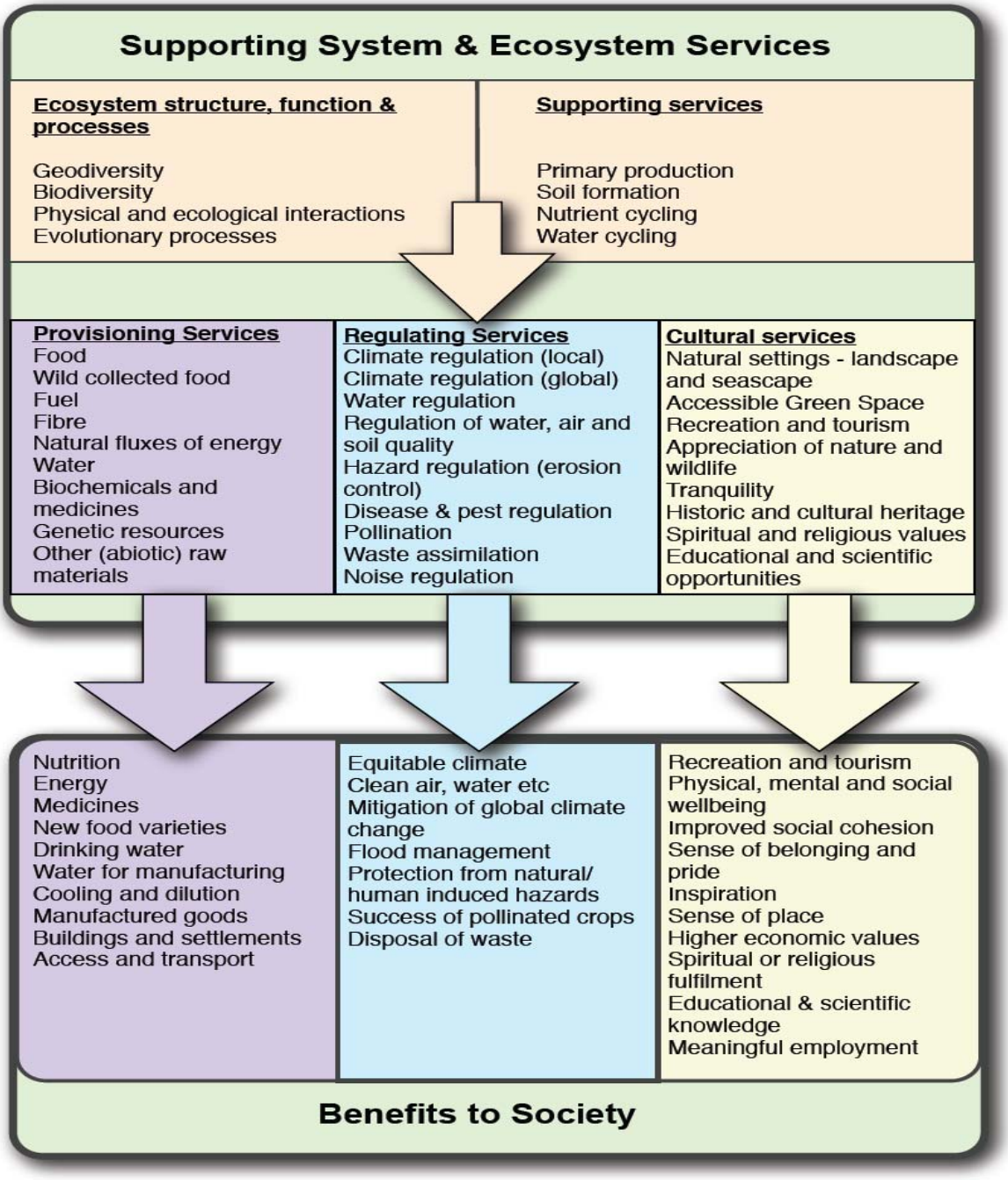

Figure 1: the Ecosystem Services provided by our natural resources[8]. Pollination is an ecological interaction, part of the key supporting services, without which we would not receive many of the other provisioning, regulating and cultural services, or the benefits to society.

[8] Welsh Government, 2012, Draft Generic Ecosystem Approach Framework, under development.

2. Our vision for Pollinators in Wales

Our vision is that:

Wales has the conditions to support healthy populations of wild and managed pollinators to benefit the people, economy and environment of Wales.

This vision, or outcome, will also help to achieve many other policies and outcomes of the Welsh Government, and also contribute to achieving better outcomes for the UK.

The Programme for Government

The Programme for Government includes key actions on living within environmental limits and protecting healthy ecosystems, with the Department for Environment and Sustainable Development leading on:

- Creating sustainable places by delivering 21st Century infrastructure (in waste, water, flood risk management, energy efficiency and energy supply) that move us towards a low carbon economy and make us resilient to future environmental pressures
- Managing Wales' eco-systems (our "green infrastructure") to deliver a positive long-term outcome for water, air, soil, landscape and biodiversity
- Bringing together our environmental objectives and management of our green infrastructure with social and economic objectives in order to maximise wellbeing as a whole and helping people, communities, the public sector and businesses to do the same

Sustaining a Living Wales

The central proposal of Sustaining a Living Wales is to move to an ecosystem approach to environmental regulation and management. This will mean considering and regulating the environment and its health as a whole rather than dealing with individual aspects separately. It will mean weighing up and setting priorities for the many competing demands on our natural resources to provide different services to society – ranging from the value of the environment itself, to food production to land for construction. And it will result in us taking steps at both local and national level that will help to maximise the environmental, economic and social opportunities available to us as a nation. See Box 1 for further detail of how we will apply this approach to the Action Plan for Pollinators.

Overall we expect the new approach will:

- improve the resilience and diversity of our environment and its supporting biodiversity;
- provide simpler and more cost-effective regulation; and
- offer greater certainty for decision-makers.

This is an important part of our commitment to sustainable development and to establishing the positive climate for sustainable long-term investment and job creation in both our urban and rural communities that is particularly vital in the current times.

Biodiversity

The headline priorities for biodiversity in Wales are derived from the Convention on Biological Diversity and the associated Aichi targets[9], and the response to this by the EU in 'Our life insurance, our natural capital: an EU Biodiversity Strategy to 2020.' Wales endorses the vision and target from this strategy, and the plan for pollinators will contribute to how Wales will both meet its statutory obligations to natural resources and work towards the achievement of the EUBS targets.

2050 vision:
By 2050, European Union biodiversity and the ecosystem services it provides – its natural capital – are protected, valued and appropriately restored for biodiversity's intrinsic value and for their essential contribution to human wellbeing and economic prosperity, and so that catastrophic changes caused by the loss of biodiversity are avoided.

2020 headline target:
Halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss

The six targets of the EU Biodiversity Strategy are broadly:

Target 1: Fully implement the Birds and Habitats Directives
Target 2: Maintain and restore ecosystems and their services
Target 3: Increase the contribution of agriculture and forestry to biodiversity
Target 4: Ensure the sustainable use of fisheries resources
Target 5: Combat Invasive Alien Species
Target 6: Step up action to tackle the global biodiversity crisis.

[9] Convention on Biological Diversity, Strategic Plan for Biodiversity 2011– 020 and the Aichi Biodiversity Targets, Living in Harmony with Nature http://www.cbd.int/decision/cop/?id=12268

The Natural Environment and Rural Communities Act

The Natural Environment and Rural Communities Act 2006 ("the NERC Act") places a duty on every public authority, under section 40, in exercising its functions, to "*have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity".*

In Wales Section 42 of the Act specifies a list of priority species that will be used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their biodiversity duty. This list contains many pollinators, including moths, butterflies, bees, hoverflies and many other species reliant on pollinators, especially plants, but also mammals such as dormice and red squirrel which are reliant on fruit and berries in certain seasons[10].

Other Welsh Government Strategies

There are many other Strategies and Action Plans in place throughout Welsh Government which can help to achieve our vision, but also towards which the actions in this plan will contribute.

These include actions for biodiversity in, for example:

The Climate Change Strategy for Wales
Food, Farming and Countryside: Building a Secure Future – A new Strategy for Farming
The Wales Transport Strategy
Trunk Road Estate Biodiversity Action Plan
Planning Policy Wales
Planning Policy Guidance Technical Advice Notes 5, Nature Conservation and Planning and 22 Sustainable Buildings

[10] Section 42 lists can be found here: http://www.biodiversitywales.org.uk/en-GB/Section-42-Lists

Box 1: Pollinators and the Ecosystem Approach

The Ecosystem Approach is defined as 'a strategy for the integrated management of land, water and living resources that promotes nature conservation and sustainable use in an equitable way' (Convention on Biological Diversity).

The ecosystem approach is a way of looking at our natural environment and the services it provides, such as the provision of food, fibre and clean water, the regulation of flooding, carbon and the environmental settings for recreation and tourism. It is about deciding how the benefits they provide for people (contribution to jobs, livelihoods, health) can be provided over the long term, whilst maintaining the healthy functioning of the ecosystems on which they depend. The essence of the approach is not to look at one or two aspects in isolation but to look at the big picture - the whole range of natural processes - and how they are inter-related.

The process of pollination is an example of an ecosystem "service" – we rely on the actions of pollinators to ensure an ongoing supply of plants, trees, and flowers. This in turn not only provides food for us and other animals in the food chain, but also ensures a healthy, resilient and diverse natural environment.

The Welsh Government is committed to embedding the ecosystem approach into the way it manages all of its activities in relation to natural resources. It is taking this work forward through the **Natural Resource Management Programme**, including demonstrating what can be achieved through using an ecosystem approach, legislating for a more integrated approach to natural resource management through the Environment Bill and embedding ecosystem thinking into its plans and actions.

We realise that pollination is just one of a whole range of benefits that healthy functioning ecosystems bring. Through embedding the ecosystem approach more widely across Government, we will provide a firmer footing for the natural conditions on which pollinators depend, and therefore secure the benefits to us for the long-term. We need to make sure that all of our actions designed specifically for pollinators consider the wider implications on natural processes and systems, and in doing so, seek to deliver as many benefits for people, for business, and for nature as possible.

3. The Current Situation in Wales

There is evidence of widespread decline in pollinators across the UK, and of the main causes of those declines. Data for the current situation in Wales exists for some pollinators and issues, although much more research is needed to establish the full position.

Pollinator Populations

Managed pollinators

The National Bee Unit (NBU) runs a register of beekeepers in England and Wales (Beebase) which currently shows Wales as having 2702 beekeepers, with 3511 apiaries and 14635 colonies of honeybees.

However, it is estimated that a further 25% of beekeepers are not registered on Beebase, which would increase estimated totals to 3,377 beekeepers in Wales with 4,388 apiaries and 18,294 colonies of honey bees.

Every year new beekeepers register on Beebase and these entries have increased year on year in Wales, from 102 in 2007 to 404 in 2011 (with a decrease in 2012 to 256) showing the rising popularity of beekeeping as a hobby, although 40% of honeybee colonies are managed commercially.

In 2011, 427 tonnes of honey was produced in Wales with a wholesale value in excess of £2 million[11].

Wild pollinators

Social and Solitary bees

UK declines are well documented and we can say with certainty that the range of many species previously more widespread in Wales has contracted. Typically, inland populations have been lost and the remaining populations are confined to coastal habitats eg, Shrill Carder Bee *Bombus sylvarum*, Brown-banded Bee *B.humilis* [12] and the Longhorn Bee *Eucera longicornis*. Declining distributions in a UK context are documented in the several provisional atlases published by the Biological Records Centre[13].

[11] National Bee Unit, estimated from information provided by Bee Inspectors.
[12] Countryside Council for Wales, 1997, Action for Wildlife: biodiversity action plans: the challenge for Wales, CCW.
[13] http://www.brc.ac.uk/

Butterflies[14]

Of 43 species of butterfly seen in Wales, 10 are in severe decline, 17 are declining. Although 11 species are stable or increasing, overall 63% of Welsh butterflies are declining.

Moths[15]

There are 337[16] widespread (found in more than 23 10km squares) macro (larger) moths recorded in Wales.

93 widespread macro moths that are recorded in Wales qualify as either 'endangered' or 'vulnerable' under International Union for the Conservation of Nature criteria (based on 10 year population trends over 35 years). Overall, 28% of widespread Welsh moths are severely declining.

There are also a number of flies and wasps on the Section 42 list under the NERC Act for reasons of declining populations or endangered status[17]. For other pollinators there is little or no available data specific to Wales, but there are no reasons to believe that the declining trends shown across the UK would be different in Wales.

The main areas of concern

A Rapid Evidence Assessment[18] identified 5 main areas of concern for both managed and wild pollinators:

- Agricultural intensification and the move towards monocultures
- Habitat alteration – destruction or fragmentation
- Disease
- Agro-chemicals
- Climate change

The importance of each of these and the extent to which they are inter-related is little known and the subject of research initiatives such as the Insect Pollinators Initiative. However these areas have been considered for their impact in Wales and the opportunities to address them.

[14] Data derived from Fox, R., Brereton, T.M., Asher, J., Botham, M.S., Middlebrook, I., Roy, D.B. and Warren, M.S. 2011. *The State of the UK's Butterflies 2011*. Butterfly Conservation and the Centre for Ecology & Hydrology, Wareham, Dorset.
[15] Data derived from Fox, R., Conrad, K.F., Parsons, M.S., Warren, M.S. and Woiwod, I.P. 2006. *The State of Britain's Larger Moths.* Butterfly Conservation and Rothamstead Research, Wareham, Dorset.
[16] National Moth Recording Scheme.
[17] Section 42 lists can be found here: http://www.biodiversitywales.org.uk/en-GB/Section-42-Lists
[18] Welsh Government, 2012, Rapid Evidence Assessment (REA) of the Current Evidence Base on Pollinators, unpublished.

Agricultural intensification and the move towards monocultures

This has been shown to be a key reason for the decline of pollinators. Just under 80% of Wales' land use is agricultural. Of that, 61% is permanent pasture, potentially with few flowering species to support pollinators, and 24% rough grazing. Only 12% of agricultural land is used to grow arable crops such as oil seed rape, and legumes, which both need, and support pollinators[19]. However, other farm land uses such as woodlands and orchards, hedgerows and field margins can help. Glastir, Wales' agri-environment scheme, which includes many pollinator friendly options currently covers 226,134ha (13%) of agricultural land.

Habitat alteration – destruction or fragmentation

There was a huge loss in species-rich (or semi-natural) lowland grassland habitat across Wales during the 20th century. An estimated 91% of semi-natural lowland grassland has been lost over a 50 to 60 year period between the 1930s and the 1990s. Dry unimproved lowland grassland loss was estimated to be as much as 97%[20].

A CCW survey of non-Sites of Special Scientific Interest species-rich lowland grasslands in 2004 recorded loss or significant damage at 25% of sites (over an average period of 8 years between surveys)[21].

Heathlands are very important to pollinators because they provide a great abundance of flowers late in the season. Honey producers can rely on heather and heather honey remains a very popular product. Heathlands have been declining since the mid eighteenth century and some of the Welsh figures show, for example, that there was a 97% loss in wet heath and 50% loss of dry heath between 1920/2 and 1987/8 on the Lleyn peninsular[22]. Many of these heathlands are also in poor condition.

Woodland (including farm woodlands) and forestry comprises 13% of land use and could provide better opportunities for pollinators.

Disease

Invertebrate pests and pathogens (viruses, bacteria, and microsporidian fungi) are a major source of mortality for pollinators and have been best studied in the honey bee. The *Varroa* mite is the vector of many viruses that are implicated in loss of honey bee colonies. *Varroa* suppresses host immunity and increases host virus load.

---

[19] Welsh Government, 2012, *Farming Facts and Figures*, http://wales.gov.uk/topics/statistics/publications/farmfacts12/?lang=en

[20] Stevens, D. P., Smith, S. L. N., Blackstock, T. H., Bosanquet, S. D. S., Stevens, J. P. 2010. *Grasslands of Wales. A survey of lowland species-rich grasslands, 1987–2004*. University of Wales Press, Cardiff.Stevens et al. (2010).

[21] Stevens et al, 2010, as above.

[22] Stevens, J.P. (1992). *Vegetation change in Llyn between 1920/2 and 1987/8. CCW Science Report 36.* Countryside Council for Wales, Bangor.

However, bees are commonly infected with multiple pests and pathogens and these vary geographically and seasonally.

It is also becoming clear that many pests and pathogens can spread within and between populations of wild and managed bee species and potentially other pollinating insects. Losses of generalist species, like many bumblebee species, from disease may increase the chance for the collapse of pollination networks and the negative effects that would have for the wider ecosystem[23].

Winter losses are an inevitable and natural seasonal event, fluctuating according to the weather/forage conditions of the previous season and during the winter. Losses can be mitigated by good husbandry on the part of beekeepers.

Historically, beekeepers expected to lose about 10% of colonies in the winter whilst increasing colony numbers during the summer to more than make up the difference. The spread of *Varroa* from 1994 in Wales caused much greater losses. As beekeepers have learnt to control *Varroa*, there are fewer winter losses attributable to V*arroa*, however winter losses since 2011 suggest slightly higher than expected figures of 14% – 22% in 2011 and 15% – 19% in 2012[24].

Agro-chemicals

The use of fertilisers and pesticides has been a part of the move towards more intensive farming in Wales. There is significant concern over the potential direct effects of pesticides on managed and unmanaged pollinators, such as neonicotinoids.

It is the policy of the Welsh Government to reduce to the lowest possible level the effect of pesticide use on people, wildlife, plants and the environment while making sure that pests, diseases and weeds are effectively controlled.

Climate change

There is uncertainty about the degree of potential impact of climate change on UK pollinators. Pollinators that have a broad climatic distribution, like honeybees, may adapt. However, there could be a mismatch between flowering dates of food plants and emergence dates of pollinators if they respond differently to environmental cues. Blackcurrant and its pollinators have diverged by 28 days since the 1970s. This could expose pollinators to periods of starvation, affecting particularly populations of wild pollinators which have little food stores. Bumblebees are particularly sensitive as they are completely dependent on the landscape, without the potential for artificial dietary supplements potentially available for managed honeybees[25].

[23] Various authors, 2012, Linking research and policy workshop report, UK Science and Innovation Network.
[24] Data from Beebase, National Bee Unit.
[25] Welsh Government, 2012, Rapid Evidence Assessment (REA) of the Current Evidence Base on Pollinators, unpublished.

Governance and infrastructure

There are many organisations in Wales concerned with the management, conservation and monitoring of pollinators in Wales, most of whom have been involved as stakeholders with the development of this Plan.

Managed pollinators

The National Bee Unit (NBU) delivers the Bee Health Programme on behalf of the Welsh Government (and Defra) under a Memorandum of Understanding. Since 2009 the NBU's work has largely been determined by the Healthy Bees Plan.

The Welsh Beekeepers' Association is a registered charity that promotes the interests of Welsh beekeepers and the National Beekeeping Centre for Wales (funded by the Rural Development Plan) aims to help develop a vigorous, healthy and environmentally responsible industry in Wales.

Wild pollinators

The Countryside Council for Wales (whose functions will transfer to Natural Resources Wales on 1 April 2013) is our statutory advisor on nature conservation.

Non Governmental Organisations concerned with the conservation and management of pollinators include Buglife, Bumblebee Conservation Trust, Butterfly Conservation Wales, Flowerscapes, Friends of the Earth Cymru, the National Federation of Women's Institutes, North Wales Libraries Partnership, Plantlife, and Wildlife Trusts Wales.

The 22 Local Authorities in Wales all have a duty to have regard to biodiversity under the NERC Act in the carrying out of their functions

There is currently no central focus point in Wales for work and information on all pollinators, although many of our stakeholders work together for common aims.

Research and Initiatives

Pollinators are the subject of much research being carried out globally, in Europe and in the UK.

The STEP project (Status and Trends of European Pollinators) aims to assess the current status and trends of pollinators in Europe, quantify the relative importance of various drivers and impacts of change, identify relevant mitigation strategies and policy instruments, and disseminate this to a wide range of stakeholders.

In the UK the Insect Pollinators Initiative is a fund of up to £10m supporting several projects to improve understanding and identify priorities for further research and evidence needs.

In Wales there is much work being carried out to support and provide for pollinators, a few examples being:

- The National Botanic Garden for Wales, our Strategic Science Partner, has several projects underway including beekeeping, and community gardening.
- Keep Wales Tidy is part funded by Welsh Government and has many initiatives to improve our local environment including Tidy Towns and Eco-Schools Wales.
- Many Local Authorities across Wales have engaged with Planting for Pollinators, the Living Wales project previously being carried out by Welsh Government. Local authorities also provide and manage parks, green spaces, country parks and local nature reserves. Many also have successful planting schemes of wild flowers on road verges and roundabouts.

4. An Agenda for Action

We are currently developing our policy on natural resource management, including embedding the ecosystem approach in the management of land, sea, air and living resources in Wales. The potential benefits for the environment include:

- More targeted investment in environmental improvements
- Positive action to address the fundamental drivers of environmental change
- Increased resilience to pressures from climate change and reduction of the impacts of climate change
- A strategic approach to promoting restoration and recovery of species and habitats and
- A fuller reflection in decisions of the benefits we derive from our environment.

Analysis of the current situation in Wales shows that these benefits could be best achieved by providing better and more connected habitats which will support both wild and managed pollinators in farmland, the wider countryside, and in urban and developed areas.

This should be supported by ensuring there are healthy populations of pollinators, greater awareness of pollinators and their importance, and joined up policy and governance based on a sound evidence base.

The following outcomes and areas for action are proposed.

Under each Area for Action we have outlined examples of actions that we as Welsh Government will take forward, or will explore further.

We recognise the excellent work that is currently being undertaken by stakeholders across Wales, and welcome your comments and feedback on these areas for action, particularly with regard to supporting you further to deliver in these areas.

Outcome: Wales provides diverse and connected flowering habitats to support our pollinators

In order to improve conditions for both unmanaged and wild pollinators it is essential that beneficial habitats are provided wherever possible across Wales (although not at the expense of other important habitats) at landscape scale, and also at smaller scales.

Area for Action 1: Promoting diverse and connected flowering habitats across farmland

Farmland comprises 80% of Wales land area, and while Glastir has many options to improve conditions for pollinators there is more to be done for farmland outside of schemes, or land not eligible for such schemes. This includes encouraging further diversification of farmland habitats, implementing an organic farming scheme, providing small-holder grants, and using hedgerow buffers, trees and orchards to provide pollinator friendly habitat.

Under the broad agenda of CAP reform we may consider pollinators under arrangements for Pillar 1 and/or actions taken under Pillar 2 as part of the post 2014 Rural Development Plan (RDP). Suitable actions for pollinators such as providing buffer zones and corridors are included in the current RDP consultation.

The new Glastir Organic support scheme will be guided by CAP reform. By removing the use of pesticides and reducing inorganic fertiliser organic farming will help to protect pollinators, and the host flora; this will compliment options undertaken in Glastir Entry and Glastir Advanced to enhance the provision for pollinators. We will also provide training for Glastir project officers with the aim to further improve uptake of these options.

Simple measures to improve farmland for pollinators could include the addition of clover as a nectar source, to grass leys. This would also address climate change, by fixing nitrogen from the air to improve the soil. We will work with Farming Connect to including pollinator related key messages and guidance such as this within its knowledge transfer programme.

Arable crops in Wales cover a small area of Wales but could provide target areas where beekeeping could be further encouraged.

Area for Action 2: Promoting diverse and connected flowering habitats across the wider countryside

Wales' Natura 2000 network (SSSIs and SACs) covers more than 700,000 hectares (8.5% of Welsh land area). Some of these sites are designated particularly to protect pollinators such as the Marsh Fritillary Butterfly. Biodiversity and pollinators outside of these areas are given consideration through the NERC Act and other work carried out under Biodiversity Action Plans, however many sites and species could be better protected while still maintaining benefits for our economy and communities.

Suggested actions include mapping and identifying the best or potential habitats for pollinators where protection is most needed, supporting the Site of Importance for Nature Conservation (SINC) designation and promoting connectivity (linking up) between sites.

We will work towards improving habitats across the countryside by aiming to achieve the favourable conservation status of protected areas, and the protection and management of habitats which benefit pollinators through Local Authority Biodiversity Champions.

We will ensure that revisions to guidance on National Park and AONB management plans will highlight the need to benefit pollinators.

We will seek to include actions to benefit pollinators within criteria for biodiversity related funding that we provide.

We will make supporting pollinators a priority within Wales' forthcoming Biodiversity Strategy.

We will work with Natural Resources Wales to embed best practice for pollinators within the Welsh Government Woodland Estate, building on the current work to improve woodlands for native flora.

To support these actions we will review and promote best practice guidance for pollinators in partnership with our stakeholders.

Area for Action 3: Promoting diverse and connected flowering habitats in our towns, cities and developed areas

10% of our land is urban and developed and provides many opportunities to promote flowering habitats and landscapes of benefit to pollinators, as well as local communities. Many choices for pollinators are also low cost or no cost for land managers, such as adjusting mowing regimes, or leaving areas of long grass.

Action here will include:

- supporting the provision of parks and green space, and allotments,
- ensuring that the Green Flag Awards recognise and encourage managing for pollinators
- promoting pollinator friendly gardening, for example by raising the profile of pollinator friendly plants, and community engagement initiatives.

We as Welsh Government will continue to incorporate pollinator friendly policies across our administrative estate (our offices and specialist properties) where appropriate, through our landscaping and grounds maintenance contracts.

We will continue to encourage partners, such as Keep Wales Tidy, to carry out work on pollinators and highlight to the community groups they work with the importance of considering this aspect of their projects. We will work towards including pollinators as a consideration for related funding that we provide.

Planning Policy and Guidance is already in place to support work for pollinators in new developments through TAN 5. We will consider including pollinator friendly practice when reviewing sustainable housing policy guidance for planning.

Within Transport we will seek to review our current guidance and also the Trunk Road Estate Biodiversity Action Plan.

Outcome: Wales' pollinator populations are healthy

It is essential that we maintain healthy populations of pollinators in Wales to support the pollination service that they provide.

Area for Action 4: Supporting UK action to promote healthy populations of pollinators in Wales

We will continue to support the Healthy Bees Plan and fund the National Bee Unit, in line with any relevant recommendations made after the current consultation on delivery of the Bee Health Policy. We will work with the NBU and Defra to put in place a contingency plan to deal with notifiable honeybee pests and diseases in Wales.

We will monitor the situation with regard to the introduction of non-native bees for commercial pollination purposes.

We will work with stakeholders to monitor the use of pesticides; and consider any new evidence bans introduced. Because of the relatively small areas of arable land where these pesticides are used in Wales, we may need to concentrate efforts on raising awareness of the effects on pollinators of the use of pesticides in urban areas.

We will continue to support beekeeping and associated awareness activities under the Rural Development Plan. We will also ensure that honey producers continue to have as much support as possible for market development through our marketing programmes.

Outcome: Wales' citizens are better informed and aware of the importance and management of pollinators

Although bees and their importance for functioning ecosystems are widely known and supported there is still much to do to raise awareness in the general public of the positive benefits of pollinators and how simple actions can improve conditions for them. This also includes raising awareness of the economic importance of pollinators, for example, over 70% of visitors surveyed by Visit Wales stated that the quality of the Welsh environment was one of the main reasons for their visit.

Area for Action 5: Working to raise awareness of the importance of pollinators and engage our citizens in their management

We will aim to utilise the extremely successful Ecoschools initiative in Wales to improve information and facilities in schools on pollinators and their importance.

We will explore ways to extend the work already underway by stakeholders to provide information and develop a Centre of Excellence for all pollinators.

We will ask Natural Resources Wales to review the 'plant for wildlife' work with garden centres, undertaken by the Countryside Council for Wales, and to consider the potential for further such activity.

We will promote best practice guidance to Local Authorities, land managers and the public, and seek to work with award schemes to promote pollinator friendly practice, building on previous work towards this.

We will promote pollinator friendly practice to farmers through Gwlad and the Farming Connect knowledge transfer programme.

Outcome: Wales has joined up policy, governance and a sound evidence base for action for pollinators

Welsh Government already carries out much work in support of pollinators although this may not always be explicit. Generally what is good policy for pollinators is good for biodiversity, and therefore ecosystem health more widely. It is important that policies link together to strengthen healthy ecosystems as far as possible.

There are gaps in our knowledge of the status and trends of pollinator populations in Wales, and particularly in the interrelationships between impacts on them.

Area for Action 6: Linking together Welsh Government policies to produce beneficial actions that are good for pollinators and therefore wider ecosystem health

The need for partnership and the integrated approach that delivering for biodiversity demands underpins all of the areas for action for pollinators, and we will seek to put in place a mechanism to advise on and progress delivery of agreed actions.

We will continue to embed an Ecosystem Approach to decision making, taking into account action for pollinators as an essential ecosystem service.

We will develop and implement a biodiversity strategy which recognises pollinators.

We will work within Welsh Government to highlight the importance of biodiversity and pollinators, securing benefits across Departments.

Area for Action 7: Building an evidence base to support future action for pollinators

Although there is a large amount of research being carried out on pollinators there are many evidence gaps regarding their status and trends, the interactions between threats to pollinator populations, and mitigation methods.

In Wales, we need to establish baseline data and monitor pollinator populations not least to monitor the outcomes of this plan. The value of retaining pollination services in Wales is one important area for future research.

We will engage further with UK research initiatives to improve information for Wales.

We will work towards improving surveillance and monitoring of pollinators to fulfil our obligations under the Habitats Directive, and to improve our evidence base on the use of the Section 42 of the NERC Act lists.

We will monitor the outcomes of this action plan developing indicators around:

- Pollinator populations
- Area of pollinator friendly habitat
- Public Awareness

5. Conclusion and Next Steps

In this draft Action Plan we have attempted to identify the importance of pollinators in Wales, their current status and the main causes for their decline. We have then proposed the outcomes we will work towards in order to achieve our vision, and given some examples of the action we as Welsh Government can take.

The need for partnership and the integrated approach that delivering for biodiversity demands underpins all of the areas for action for pollinators. We welcome your input and feedback on this draft plan, particularly on where you can contribute further, and where we can support you to do so.

We intend to launch the Action Plan for Pollinators in July 2013, and we will look to finalise a delivery and implementation plan over the following months.