Agenda Item: 13

Meeting of:	**Cabinet**
Date of Meeting:	**Monday, 15 April 2019**
Relevant Scrutiny Committee:	Environment and Regeneration
Report Title:	Biodiversity Forward Plan
Purpose of Report:	To meet statutory requirements of the Environment (Wales) Act 2016 by the adoption of a Biodiversity Forward plan for the Council.
Report Owner:	Cabinet Member for Regeneration and Planning
Responsible Officer:	Rob Thomas, Managing Director
Elected Member and Officer Consultation:	No elected members have been consulted as the report relates to the whole Vale. Head of Regeneration and Planning Head of Neighbourhood Services and Transport Head of Housing and Building Services Operational Manager Regeneration Operational Manager for Planning and Building Control Legal Services (Committee reports) Operational manager for Accountancy
Policy Framework:	This report is a matter for Executive decision by Cabinet.

Executive Summary:

- This report addresses the statutory requirement of all Local Authorities in Wales under section 6 of the Environment (Wales) Act 2016 to demonstrate how they will "seek to maintain and enhance biodiversity in the proper exercise of their functions and in doing so promote the resilience of ecosystems". Part one (the appended document) sets out the background, legislative context and identifies challenges and opportunities.
- The Biodiversity Forward Plan looks at how the Council manages and improves natural resources to ensure that biodiversity and sustainability are considered in all service areas and are core themes in service delivery, becoming an integral part of the decision making processes throughout the Council.
- Part two (to follow in a separate Cabinet report) will translate into specific actions required to

achieve objectives set out in Part 1 and give milestones and targets.

- The actions in the Biodiversity Forward Plan, will be reviewed at the end of 2019 and then reviewed and updated at the end of each 3-year reporting period.

Recommendations

1. That Cabinet approves the Biodiversity Forward Plan (Part 1) set out in Appendix 1.

Reasons for Recommendations

1. In order to conform to the statutory requirement to publish a document setting out the Council's approach to natural resources and to ensure that biodiversity sustainability is considered in all service areas.

1. Background

1.1 All Local Authorities in Wales have a duty to prepare and publish a Biodiversity Forward plan, setting out its proposals to comply with the requirements of the Environment (Wales) Act, section 6, duty in the exercise of the Council's functions, and in doing so, to promote the resilience of ecosystems.

2. Key Issues for Consideration

2.1 The Biodiversity Forward Plan looks at how the Council manages and improves natural resources to ensure that biodiversity and sustainability are considered in all service areas and are core themes in service delivery, becoming an integral part of the decision making processes throughout the Council.

2.2 Part two (to follow in a separate Cabinet report) will translate into specific actions required to achieve objectives set out in Part 1 and give milestones and targets.

2.3 The actions in the Biodiversity Forward Plan, will be reported on every three years in accordance with statutory requirements, and reviewed and updated at the end of each 3-year reporting period.

2.4 These actions will address at least one of our identified objectives (taken from the Nature Recovery Action Plan and each action will be assessed against the 5 ways of working. The plan is linked to and aligned with the Council's Corporate Plan and Service Plans.

2.5 Consultation with officers commenced in 2017 with a questionnaire sent to all Heads of Service and Operational Managers, for an indication of the understanding of the Council`s biodiversity obligations.

2.6 This was followed by a review of the Councils services to identify where the Council`s functions have the greatest likely negative impacts on biodiversity- "High Risk" and where the Council`s functions have the greatest opportunity to provide biodiversity/conservation enhancement "High Opportunity".

2.7 Council service functions which were identified as either High Risk or High Opportunity were then further consulted, resulting in a series of objectives and measures that could be undertaken to either prevent or minimise negative impacts or to explore and identify opportunities for biodiversity enhancement.

2.8 Detailed actions to deliver against these objectives will be presented in Part 2 of the Biodiversity Forward Plan and are not included within this Cabinet report. Part 2 will be submitted at a later meeting for Cabinet approval.

2.9 The Plan has been considered in the context of the Environment (Wales) Act, the Wellbeing of Future Generations (Wales) Act 2015, the Nature Recovery Plan and others as detailed in the report.

2.10 The biodiversity duty seeks to improve the environment for all to benefit, and with the aim that results in biodiversity enhancement and conservation, and a more sustainable way of living, to protect our resources and ensure that future generations have the same or better quality of life. This requirement for a Biodiversity Forward Plan ensures equality across both time and space.

2.11 Larger projects will require collaboration with other Council`s and 3rd party organisations with regards to delivery.

2.12 External funding streams will be sought to carry out biodiversity enhancement and conservation benefits in line with the Biodiversity Forward Plan.

3. How do proposals evidence the Five Ways of Working and contribute to our Well-being Objectives?

3.1 The Biodiversity Forward Plan works alongside the Well-Being of Future Generations (Wales) Act and strives to achieve the same, particularly in the following areas:

3.2 A Prosperous Wales: promoting and striving to achieve a low carbon society which recognises the limits of the global environment and therefore uses resources efficiently and proportionally (including acting on climate change)

3.3 A Resilient Wales: a nation which maintains and enhances a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecological resilience and the capacity to adapt to change (for example climate change)

3.4 A Globally Responsible Wales: a nation which, when doing anything to improve the economic, social, environmental and cultural well-being of Wales, takes account of whether doing such a thing may make a positive contribution to global well-being.

3.5 The plan embodies the Sustainable Development Principle and the 5 ways of working, by promoting each of these aspects with the aim of conserving and enhancing biodiversity and promoting the resilience of ecosystems.

3.6 Long Term: This plan sets out what specific actions are required to conserve and enhance biodiversity today for our generations tomorrow. Part 2:Action plan will incorporate a 3-yearly reporting schedule which will enable us to assess whether the Council has been successful.

3.7 Integration: extensive consultation throughout the Council has resulted in the production of a set of measures to improve biodiversity throughout all of the Councils functions, furthermore, the consultation included how the Council works with our stakeholders, clients and partners.

3.8 Involvement: Some of these aims will be translated directly into the Corporate Plan, which will reference the Biodiversity Forward Plan. Public Consultation will be expanded to include sustainability and climate change, in addition to biodiversity.

3.9 Collaboration: The delivery of the Plan will require maintenance of the existing cooperative partnerships and creating further working partnerships, with other public bodies and the voluntary sector.

3.10 Prevention: The Biodiversity Forward Plan (Parts 1 and 2) will be produced with a strong prevention element, looking at ways to conserve existing biodiversity and reduce further losses arising through the implementation of the Councils' functions. The actions arising from the appended document will require the implementation of new revised national policies and legislation. Part 2 of this document will set out those actions required to meet obligations.

4. Resources and Legal Considerations

Financial

4.1 Actions resulting from the Biodiversity Forward Plan to meet the Councils obligations under section 6, of the Environment (Wales) Act 2016 will need to be funded from existing budgets, with grant sources sought.

Employment

4.2 There are no staffing implications as a result of this report.

Legal (Including Equalities)

4.3 The Vale of Glamorgan Council has a statutory requirement (placed on all public authorities in Wales)) under section 6 of the Environment (Wales) Act 2016 to demonstrate how the Local Authority will "seek to maintain and enhance biodiversity in the proper exercise of their functions and in doing so promote the resilience of ecosystems".

4.4 The Council must prepare and publish a plan before the end of the 2019, and before the end of every third year after 2019, publish a report of what it has done to comply with the Local Authorities biodiversity duty (Environment (Wales) Act, sections 6(6) and 6(7).

5. Background Papers

Environment (Wales) Act 2016 http://www.legislation.gov.uk/anaw/2016/3/contents/enacted

The Well-Being of Future Generations (Wales) Act 2015 http://www.legislation.gov.uk/anaw/2015/2/contents/enacted

Vale of Glamorgan – Biodiversity Forward Plan

Part 1

April 2019

Final Draft

Contents

Executive Summary

The Vale of Glamorgan Council is the principal local authority for the county of the Vale of Glamorgan. As a Unitary Authority it is responsible for delivering a range of services fundamental to living and working in the area, including Housing, Planning, Education, Social Services, Waste / Recycling Collection and countryside/Green space provision. The Vale of Glamorgan Council has 47 elected members or Councillors, each representing an electoral division, or ward. The Council is led by the Leader and Cabinet, a body of seven Councillors that makes key decisions about policy and budget. The Council's Chief Officers are divided into Directors, Heads of Service and Operational Managers. As service managers they make recommendations to, and are held accountable by the Cabinet.

This plan has been published as part of the Vale of Glamorgan Council's obligations under section 6 of the Environment (Wales) Act 2016 to demonstrate how the Local Authority will "***seek to maintain and enhance biodiversity in the proper exercise of their functions and in doing so promote the resilience of ecosystems***". Part one (this document) gives the background, legislative context and identifies some of the challenges that face us. Part two will detail those actions required to achieve our aims set out in Part 1 and give milestones and targets. The actions in Part 2 will be reported on every three years in accordance with the statutory requirements, and as a consequence will be reviewed and updated at the end of each 3-year reporting period. These aims will address at least one Objective and each action will be assessed against the 5 ways of working (the Sustainable Development Principle). The Well-Being of Future Generations (Wales) Act 2015 (WFG) sets out the 5 ways of working public bodies must adhere to in order to demonstrate how they are ensure all elements of well-being are considered together and to facilitate collaborative working.

The aims will compliment those in the Corporate Plan and are detailed under the 6 Objectives of:

- Engage and support participipation and understanding to embed biodiversity throughout decision making at all levels
- Safeguard species and habitats of principle importance and improve their management.
- Increase the resilience of our natural environment by restoring degraded habitats and habitat creation.
- Tackle key pressures on species and habitats
- Improve our evidence, understanding and monitoring
- Put in place a framework of governance and support for delivery.

The Aims outline how the Authority will address conservation of biodiversity, and in doing so, also address climate change and sustainability; such as:

- *Ensuring that biodiversity, conservation and sustainability are considered in the Vale of Glamorgan council's consenting processes to ensure a net biodiversity gain.*
- *Continue to manage areas of existing high value and seek to restore degraded habitats.*
- *Continue working with third parties and developing new working relationships safeguard habitats and improve management.*
- *Address pressures from development via the Development Management process; including addressing INNS where they occur on development sites and working with partners*

1 Introduction

This plan has been published in response to the Vale of Glamorgan Council's obligations under section 6 of the Environment (Wales) Act 2016 to demonstrate how the Local Authority will "***seek to maintain and enhance biodiversity in the proper exercise of their functions and in doing so promote the resilience of ecosystems***". The actions in this plan will provide a mechanism for delivering the Councils requirements under the Well-being of Future Generations (Wales) Act 2015. This plan follows guidance prepared by Welsh Government and the objectives of the Nature Recovery Plan for Wales[1]. The plan will evolve over time to continue to be fit for purpose and to adapt to developing needs, changes in legislation and changing priorities.

This plan will:

- Identify the Vale of Glamorgans' natural resources
- Outline some of the activities ongoing to protect them and identify the risks that threaten them
- Identify the mechanisms for delivery
- Detail milestones for reporting

The Vale of Glamorgan Biodiversity Forward Plan comprises two parts.

Part one (this document) gives the background, legislative context and identifies some of the challenges that face us and it outlines our long term aims.

Part two will detail the actions required to achieve the aims set out in Part 1. Part 2 will be the document that is reported on every three years in accordance with the statutory requirements, and as a consequence will be reviewed and updated at the end of each 3-year reporting period.

A healthy natural environment helps society and the economy flourish. Our natural resources and ecosystems can help us in many ways: to reduce flooding, improve air quality and supply materials for construction. They also provide a home for a variety of wildlife and give us landscapes we value in the Vale of Glamorgan, encouraging people to live in, and visit the county.
However, our natural resources are under constant pressure. Land for development, increased demands for energy and for food and increasing demands on services, with declining budgets are just a few of the reasons that our environment is suffering. A poorly managed natural environment means long-term risks to our well-being. The Environment (Wales) Act and the Well-Being of Future Generations Act are important, revolutionary drivers to change the way we act today, to enable us to hand over an environment to future generations to allow them to meet their own needs. An environment that can sustain our needs, to provide us with the benefits we enjoy without compromising that future ability, is a resilient environment.

[1] Nature Recovery Plan for Wales – see section 3.6

2 Legislative and Policy Context

The Biodiversity and Resilience of ecosystems Forward Plan for the Vale of Glamorgan has been produced in relation to two key pieces of legislation: The Environment (Wales) Act and the Well-Being of Future Generations (Wales) Act.

2.1 Environment (Wales) Act 2016

2.1.1 The Biodiversity and Resilience of Ecosystems Duty

The Environment (Wales) Act became law on 21st March 2016 and replaces the Natural Environment and Rural Communities Act 2006. It puts in place legislation to enable Wales' resources to be managed in a more proactive, sustainable and joined up manner and to form part of the legislative framework necessary to tackle climate change. The Act supports the Welsh Governments wider remit under the Well-Being of Future Generations (Wales) Act 2015 so that Wales may benefit from a prosperous economy, a healthy and resilient environment and vibrant, cohesive communities. Section 6 of the Environment Act requires all that public authorities "***must seek to maintain and enhance biodiversity in the exercise of functions in relation to Wales, and in so doing promote the resilience of ecosystems, so far as consistent with the proper exercise of those functions***".

The intention of this duty is to ensure biodiversity becomes an integral part of decision making in public authorities.

In essence this means that the Vale of Glamorgan Council must take a proactive approach to improve and not reduce biodiversity when carrying out its functions.
Unlike the previous duty the new duty requires formal demonstration of compliance. The Act requires all public authorities to prepare and publish a Forward Plan setting out how they intend to comply with the duty. The Act requires the Forward Plan to be published by end of 2019 and reported on at tevery third year thereafter; the plan can be reviewed and updated at the end of each 3-year reporting period.

The intention is to ensure that in carrying out their functions, public authorities will:

- Place biodiversity as a natural and integral part of policy and decision making within public bodies, embedding it in its plans, policies and projects and day-to-day activities
- Address biodiversity decline through positive actions that will result in maintenance or enhancement of our biodiversity
- Develop ecosystem resilience through maintaining and enhancing biodiversity

A resilient ecosystem is one that is healthy and functions in a way that is able to address the pressures and demands that are placed on it, and is able to meet current social, economic and environmental needs whilst being able to also provide the same benefits for future generation. Our ecosystems provide us with a wide range of services and benefits and we need to take all of these into account when we make decisions about how we use them. This includes taking into account

their intrinsic value. A resilient ecosystem is the cornerstone of the "Resilient Wales" goal in the Well-Being of Future Generations Act (below).

2.1.2 Section 7 Biodiversity Lists

Section 7 of the Environment (Wales) Act requires the Welsh Government, in consultation with NRW to prepare and publish a list of habitats and species which, in their opinion, are of principal importance for maintaining and enhancing biodiversity in Wales ("Section 7 list"). 557 species and 55 habitats were selected for prioritised action from the UK Biodiversity Action Plan based on the level of threat they face, the level of responsibility in Wales for their populations and whether remedial action could be taken to improve their status. These habitats and species collectively became the Habitats and Species of Principle Importance for Conservation in Wales and comprised the former Section 42 list of the Natural Environment and Rural Communities Act 2006 (NERC). NERC was replaced by the the Environment (Wales) Act in 2016. The former S42 habitats and species listed as being of principle importance for conservation, became the interim Section 7 list under the Environment (Wales) Act 2016. (see Appendix 1). Public bodies must take all reasonable steps to maintain and enhance the living organisms and types of habitat on this list.

Considerations for Section 7 Habitats and Species will be incorporated into the Vale of Glamorgan Council Plan objectives for the delivery, and specific actions to maintain and enhance Section 7 habitats and species will be incorporated into individual service area plans which will follow the publication of this plan. Many of the S7 habitats in the Vale will already be protected through the LDP Biodiversity policies and many are protected through policy by virtue of their qualifying under the Wildlife Sites criteria as Sites of Importance for Nature Conservation.

2.1.3 State of Natural Resources Report (SoNaRR)

The Environment (Wales) Act 2016 [EWA] requires Natural Resources Wales (NRW) to publish a State of Natural Resources Report[2] (SoNaRR); to provide information on the current state of our natural resources. SoNaRR will be published by NRW on a five year cycle and will enable Welsh Ministers to set priorities for action at the national level. The Authority is required to have regard to the findings of this report in exercising its functions.

The SoNaRR report was finalised in September 2016 and sets out the state and condition of the habitats and species within marine, terrestrial and freshwater environments in Wales. It assesses the extent to which natural resources in Wales are being sustainably managed and recommends a proactive approach to building resilience and for the first time links the resilience of Welsh natural resources to the well-being of the people of Wales. NRW considers how the pressures on Wales' natural resources are resulting in risks and threats to long-term social, cultural, environmental and economic well-being, as set out in the Well-Being of Future Generations Act 2015. It looks at the key issues as well as opportunities for integrated solutions that provide multiple benefits. This Report will underpin

- Natural Resources Policy; and

[2] https://naturalresources.wales/evidence-and-data/research-and-reports/the-state-of-natural-resources-report-assessment-of-the-sustainable-management-of-natural-resources/?lang=en

- Area Statements

The economic and social benefits that a fully functioning environment can provide to human society include agricultural production, forestry, building materials, tourism and leisure, energy generation, flood prevention, pollination services for crops, clean water, clean air and healthy soils. The SoNaRR report spells out the major threats facing the proper functioning of ecosystems in Wales, which if not addressed will contribute to further declines in biodiversity and prevent us from gaining the full economic and social benefits of all that the environment can provide. The major threats as well as causing harm, also cause the failure of the realisation of the full benefits that our ecosystem can provide. Threats include:

- Climate change
- Land use change
- Over exploitation of natural resources; and
- Nutrient enrichment and pollution

These direct drivers of change are often linked and in general, the extent and scale of their impact is increasing. The focus for action needs to be where the resilience of ecosystems and the benefits we get from them are at greatest risk due to unsustainable management. The objective is not to remove all pressures, but to increase our understanding and to manage them in more sustainable ways. Recognising risks and opportunities so that they can be utilised in order that future generations can continue to benefit from all that ecosystems can provide, leaving future generations the same, or better environment that we currently enjoy today.

2.2 Other legislation

Public bodies, including local authorities have various biodiversity commitments under other pieces of legislation. Not all are detailed within this report, but include, for example the duty to maintain a sufficient diversity of habitat for wild birds in the UK (Conservation of Habitats and Species Regulations 2017; Section 9A).

2.3 Convention on Biological Diversity (CBD) and the Aichi Targets

The Convention on Biological Diversity[3] (**Biodiversity Convention or CBD**) was adopted at the Earth Summit in Rio de Janeiro, Brazil in June 1992, and came into force in December 1993. As the first global treaty to provide a legal framework for biodiversity conservation, the Convention established three main goals:

- the conservation of biological diversity,
- the sustainable use of its components,
- the fair and equitable sharing of the benefits arising from the use of genetic resources.

Contracting Parties are required to create and enforce national strategies and action plans to conserve, protect and enhance biological diversity. They are also required to undertake action to implement the thematic work programmes on ecosystems and a range of cross-cutting issues which

[3] http://jncc.defra.gov.uk/page-1365

have been established to take forward the provisions of the Convention. The UK, along with most other European countries failed to meet the 2010 targets.

2.3.1 CBD's Strategic Plan (2011-2020) & Aichi targets

In October 2010, at the 10th Conference of the Parties to the CBD in Nagoya, Japan, the Parties adopted a new 'Strategic Plan for Biodiversity 2011–2020'[4] with its 20 ambitious yet achievable targets. Collectively known as ''Aichi targets'[5] these set out 20 challenging targets under 5 strategic goals to stimulate *" effective and urgent action to halt the loss of biodiversity in order to ensure that by 2020 ecosystems are resilient and continue to provide essential services, thereby securing the planet's variety of life, and contributing to human well-being, and poverty eradication....'*. The goals and targets comprise both aspirations for achievement at the global level and a flexible framework for the establishment of national or regional targets. Parties are invited to set their own targets within this flexible framework, taking into account national needs and priorities.

2.3.2 Delivery of CBD within Europe and the UK

The European Union (EU) adopted its own new **EU Biodiversity Strategy**[6] (EUBS) in May 2011 to halt the loss of biodiversity and ecosystem services in the EU by 2020 as a contribution to meeting the goals of the Strategic plan and Aichi targets. The EU Biodiversity Strategy includes a new 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"*.

Within the UK, delivery of the CBD and the Strategic Plan is now guided by the **UK Post-2010 Biodiversity Framework**[7]. This framework is overseen by the Environment Departments of all four governments in the UK working together through the Four Countries Biodiversity Group. The framework demonstrates how the work of the four countries and the UK contributes to achieving the 'Aichi targets', and identifies the activities required to complement the individual **country biodiversity strategies**[8]. The framework supersedes earlier approaches under the UK Biodiversity Action Plan (1992-2012). The 20 Aichi targets can be found in Appendix 2.

2.4 Natural Resources Policy

This has been produced by the Welsh Government which will set out the priorities for sustainable management of natural resources at a national level. The priorities in the Natural Resources Policy[9] will be delivered at a local level.

The national priorities are:

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[4] https://www.cbd.int/sp/elements/
[5] https://www.cbd.int/sp/targets/
[6] http://jncc.defra.gov.uk/page-5324
[7] http://jncc.defra.gov.uk/page-6189
[8] http://jncc.defra.gov.uk/page-5701
[9] https://gov.wales/topics/environmentcountryside/consmanagement/natural-resources-management/natural-resources-policy/?lang=en

- Delivering nature-based solutions
- Increasing renewable energy and resource efficiency
- Taking a place-based approach

2.5 Area Statements

Area Statements will be produced by NRW to facilitate the implementation of the Natural Resources Policy. Area Statements will set out the key risks that need to be carefully managed and mitigated and the key opportunities and priorities for the sustainable use of natural resources at an area level. And should be completed by December 2019.

2.6 Nature Recovery Plan

The Welsh Government launched the Nature Recovery Plan[10] (NRP) which sets out its commitment to biodiversity in Wales and how Wales will address the Convention on Biological Diversity's Strategic Plan for Biodiversity and the associated Aichi biodiversity targets in Wales.

The Nature Recovery Action Plan links to and complements The Well-being of Future Generations (Wales) Act 2015 and the Environment Act (Wales) 2016.

The NRP highlights the issues that we need to address and the objectives for action to show how, in Wales we can address the underlying causes of biodiversity loss. Specifically through:

- Putting nature at the heart of decision making
- Increasing the resilience of our natural environment
- Taking specific action for habitats and species

The Nature Recovery Plan will identify actions that can be delivered in the short term and set a course to deliver longer term commitments beyond 2020.

The Nature Recovery Plan consists of three parts:

Part 1: Sets out the position with regard to biodiversity in Wales, the issues that need to addressed, and guiding policies.

Part 2: Sets out actions which have been specifically identified to support biodiversity, over and above but contributing to the delivery of the Sustainable Management of Natural Resources in Wales. (**The Nature Recovery Action Plan (NRAP)**)

Part 3: The Nature Recovery Framework is under development and will show the roles and responsibilities of the key players for the delivery of action for biodiversity in Wales, as well as how they will fit into the delivery framework for the Well-being of Future Generations Act and the Environment (Wales) Act.

[10] https://www.biodiversitywales.org.uk/Nature-Recovery-Action-Plan

The Nature Recovery Plan sets out how Wales will deliver the commitments of the Convention on Biological Diversity and the EU Biodiversity Strategy to halt the decline in our biodiversity by 2020 and then reverse that decline. The ambition of the plan is:

To reverse the decline in biodiversity, for its intrinsic value, and to ensure lasting benefits to society.

Adopting and applying the NRAP objectives when carrying out their functions will help to ensure public authorities comply with the new EWA duty. This approach will also tie in with the authorities obligations under the Well-Being of Future Generations Act, meeting, in particular, the Resilient Wales goal, as well as other goals.

2.6.1 Nature Recovery Action Plan objectives

A number of objectives have been identified in the Nature Recover Action Plan (NRAP)[11] to address the issues that are driving the decline in biodiversity, and to support recovery.

The NRAP Objectives are:

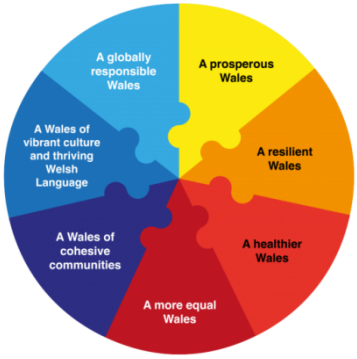
1	**Engage and support participation and understanding to embed biodiversity throughout decision making at all levels**
2	**Safeguard species and habitats of principle importance and improve their management**
3	**Increase the resilience of our natural environment by restoring degraded habitats and habitat creation**
4	**Tackle key pressures on species and habitats**
5	**Improve our evidence, understanding and monitoring**
6	**Put in place a framework of governance and support for delivery**

A set of indicators will also be developed to measure the progress of the Nature Recovery Action Plan against objectives. To accompany the plan, the Nature Recovery Framework will set out the roles and responsibilities of the key players for delivery of action for biodiversity in Wales, and how they are linked together.

[11] https://www.cbd.int/doc/world/gb/gb-nbsap-v3-p4-en.pdf

2.7 Well-being of Future Generations (Wales) Act 2015

2.7.1 The 7 Well-Being goals



There is a strong duty for all public bodies to improve the economic, social, environmental and cultural well-being of Wales. The Well-Being of Future Generations (Wales) Act 2015 (WFG) puts in place a stronger, more coherent sustainable development framework for Wales through a set of seven well-being goals, (see diagram below) and 5 ways of working to achieve the *Sustainable Development Principle*. The Environment Act 2016 complements the WFG.

GOAL	DESCRIPTION of the GOAL
A Prosperous Wales	An innovative, productive and low carbon society which recognises the limits of the global environment and therefore uses resources efficiently and proportionately (including acting on climate change); and which develops a skilled and well-educated population in an economy which generates wealth and provides employment opportunities, allowing people to take advantage of the wealth generated through securing decent work.
A Resilient Wales	A nation which maintains and enhances a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecological resilience and the capacity to adapt to change (for example climate change)
A Healthier Wales	A society in which people's physical and mental well-being is maximised and in which choices and behaviours that benefit future health are understood.
A More Equal Wales	A society that enables people to fulfil their potential no matter what their background or circumstances (including their socio economic background and circumstances).
A Wales of Cohesive Communities	Attractive viable, safe and well-connected communities.
A Wales of Vibrant Culture and Thriving Welsh Language	A society that promotes and protects culture, heritage and the Welsh language, and which encourages people to participate in the arts, and sports and recreation.
A Globally Responsible Wales	A nation which, when doing anything to improve the economic, social, environmental and cultural well-being of Wales, takes account of whether doing such a thing may make a positive contribution to global well-being.

2.7.2 The Sustainable Development Principle

The WFG places a duty on public bodies for new ways of working that ensure all elements of well-being are considered together and to facilitate collaborative working, referred to as the **Sustainable Development Principle.**

This is defined as a process of improving the economic, social, environmental and cultural well-being of Wales and is accomplished by taking action in accordance with the sustainable development principle so that the well-being goals are achieved. The WFG sets out the 5 ways of working public bodies must adhere to in order to demonstrate how they are meeting their duty. Any plan or project must now demonstrate that they are following these ways of working and set out below are the ways in which the Vale of Glamorgan Council will work to meet the Sustainable Development Principle.

Long Term	Looking at the long term implications of plans, projects and consents to ensure that the actions taken today do not jeopardise the ability of future generations to meet their needs. And conversely taking action now to improve the ability of future generations to meet their needs
Integration	Taking an integrated approach so that we look at all well-being goals and objectives of other services and partners
Involvement	Ensuring a diversity of the population is involved in discussions that affect them
Collaboration	Working with others in a collaborative way to find shared sustainable solutions
Prevention	Understanding the root causes of the issues to prevent them occurring / reoccurring

Long Term

- Identification of areas for long term management and changes to policy will allow the safeguarding of long-term needs of the people of the Vale of Glamorgan.
- The Development Management process allows us to ensure long term management of sites with mechanisms for enhancement.
- This plan is the starting point for identifying changes to the way we manage our land and resources which will have a long term effect.

Integration

- The objectives identified in this plan will be mirrored through the Well-Being objectives and translated into actual targets through the Service Plans – with KPI's set for each relevant directorate.

Involvement

- Working with the Wildlife Trust, and many other conservation organisations, professional and voluntary, this plan will promote partnership working, and encourage engagement with residents of the Vale of Glamorgan.
- Supporting a Local Biodiversity Partnership group will allow us to work in collaboration with a wide range of partners, particularly non-government organisations and community groups.

Collaboration

- Many of the actions in this plan require close collaborative working within the Authority.
- By assessing the policies and working practices of different service areas of the Authority we will identify ways of working together.

- Through the area statements we will work with NRW and other partners to deliver actions on the ground.

Prevention

- Early collaboration between service areas will help identify potential issues and allow them to be addressed at an early stage
- Working with voluntary conservation groups and charities provides an opportunity for us to identify issues at an early stage.
- Using SoNaRR to identify issues within VoGC and address them appropriately
- The recently revised Local Development Plan and Biodiversity & Development: Supplementary Planning Guidance (SPG), allows us to pave the way for protecting and enhancing biodiversity through the planning system.

3 Council Plans and Policies that link to the Environment (Wales) Act 2016

- **The Vale of Glamorgan Council's Well-Being Plan**[12] 'Our Vale-Our Future' is a five year plan produced by the Vale Of Glamorgan Public Services Board for 2018-2023. This was published in 2018 following a comprehensive Well-Being Assessment and is a requirement of the WFG. The PSB was also established under the WFG and required publice bodies to work together to improve local well-being. The PSB has agreed four well-being objectives including 'To protect, enhance and value our environment'.
- **Vale of Glamorgan Council Corporate Plan (2016-2020)**[13]. In 2016, the council published its Corporate Plan which outlined key areas of focus across seven outcome areas; in particular the embedding of the Environment Act.

3.1 The Vale of Glamorgan Council's Statement of Well-Being

An Environmentally responsible and prosperous Vale	
How we will improve well-being	***Why we think this is important***
• Promoting regeneration, economic growth and employment • Promoting sustainable development and protecting our environment	• Helping people into work is a priority and there is a strong track record of successful regeneration projects in the Vale. • We will work with partners to further invest in our local communities • We want to maximise our location within the South East Wales region • We respect and value the environment in which we live.

Vale of Glamorgan Corporate Plan 2016-2020 (Page 32)

[12] https://www.valepsb.wales/Documents/Wellbeing-Plan/Full-Online-Version-Master.pdf
[13] https://www.valeofglamorgan.gov.uk/en/our_council/achieving_our_vision/Corporate-Plan.aspx

3.2 Corporate Strategic Expected Outcomes and Strategic Focus

Well-being Outcome 2: An Environmentally responsible and prosperous Vale

Objective 4: Promoting sustainable development and protecting our environment	
ACTION	**DUE DATE**
Adopt and implement the Local Development Plan as a framework for sustainable development in the Vale of Glamorgan*	2016/17
Implement the Local Biodiversity Action Plan and enhance and protect habitats for important species through the Natural Environment and Communities Act** and the land use planning system	2019/20

* This includes the supporting Supplementary Planning Guidance

** This will be updated to reflect the current legislation

This objective contributes to the following Well-Being Goals: A prosperous Wales, A resilient Wales, A healthier Wales, A Wales of cohesive communities, A globally responsible Wales. The new Corporate Plan to be published in 2020 and this will reflect the PSB Well-being Objectives and Biodiversity Forward Plan.

4 Biodiversity / Natural Resources

4.1 What is biodiversity and why does it matter?

Biodiversity [Biological-Diversity] is the variety of life on Earth. It includes all living plants and animals, their genetic variation and the ecosystems on which they depend. Biodiversity is everywhere: in gardens, fields, hedgerows, mountains, rivers and the oceans. Biodiversity represents quality of life. It gives pleasure, interest and an appreciation of our natural environment. But more fundamentally, it is the systems that provide us with food, that control floods, the systems that clean our air and our water; in effect the worlds' ecosystem is our life-support system.

Biodiversity matters for a whole variety of reasons: ethically, emotionally, environmentally and economically. It is at the very foundation of our society and the basis of our economic success and well-being. We get a lot of services for free because of biodiversity and the cost of replacing these (if it is at all possible) would be extremely expensive. For example, bees are vital to our economy – they pollinate crops such as strawberries and apples as well as animal fodder crops. It is estimated that it would cost UK farmers (and hence the rest of us, through increased produce prices) £1.8 BILLION a year to pollinate crops without bees (source: WG Bee friendly Action Guide[14]).

The underlying geology, the geography and hydrology of the county allow many important ecosystem servies to work and improve our lives. For example:

- Saltmarsh and coastal vegetation helps dissipate wave action and helps to prevent erosion and flooding

[14] http://www.nationalbeeunit.com/downloadNews.cfm?id=149

- Species rich grasslands provide essential habitat and connectivity for pollinators and food for livestock.
- Woodlands help clean the air of pollutants, provide oxygen and timber products.

The varied habitats also bring job opportunities, particularly in the tourism sector where the Vale of Glamorgan is well known for its magnificent coastline, where the county makes a significant contribution to the Wales Coast Path.

5 The state of our natural resources

5.1 National: Wales

The following is taken from the State of Natural Resources Report 2016[15]

Wales has a wide representation of species across a broad range of taxonomic groups with estimates varying from 25,000 to 50,000 different species of animals, plants and other organisms.
The interim Section 7 list of species and habitats of principal importance in Wales includes 557 species and 55 habitats (see section 2.1.2 and Appendix 1). The Section 7 list includes species as diverse as slow-worm (*Anguis fragilis*), hornet robber fly (*Asilus crabroniformis*) and long-snouted seahorse (*Hippocampus guttulatus*).

The condition of SAC and SPA species features on sites in Wales, as reported in 2013, remains mostly unfavourable (55%), with the exception of birds and mammals of which 86% and 68% respectively were in favourable condition. Between 2002 and 2008, fewer than half of the species on the interim Section 7 list were considered to be stable or increasing. Wales (along with the UK as a whole) did not meet the 2010 international and national biodiversity targets. Trends of extent and population for terrestrial, freshwater and marine species vary enormously within taxonomic groups; with some species increasing and some decreasing. For instance, both increases and decreases can be seen in birds, bats and many pollinator species (e.g. bees, butterflies) whilst for many species we do not have sufficient data on which to base any conclusions. There has been a marked reduction in the abundance of salmon in recent years, particularly in the southern regions of the species' range which is linked to increased mortality at sea. Although stocks in many of our industrial rivers have improved in the last 30 years, most stocks in Wales are severely challenged. All species are directly affected by changes in habitat quantity and quality. These changes are directly related to changes in the intensity of management regimes. Fragmentation and eutrophication create particular problems for many species. The CCRA17 Evidence Report[16] has identified risks to species and habitats due to their inability to respond to changing climatic conditions. There may also be opportunities from new species colonisations. Conversely, native wildlife may be increasingly at risk from pests, pathogens and invasive species. There are also risks from change in the frequency and/or magnitude of extreme weather and wildfire events.

[15] https://naturalresources.wales/media/684070/chapter-3-state-and-trends-final-for-publication.pdf

[16] UK Climate Change Risk Assessment 2017 Evidence Report https://www.theccc.org.uk/tackling-climate-change/preparing-for-climate-change/uk-climate-change-risk-assessment-2017/

The SoNaRR report includes an assessment of the status of some of the Section 7 species in comparison to their condition at the time of the last Biodiversity Action Plan report in 2008. Of the 104 invertebrate species listed as priorities, 67 were assessed. 21% of these were declining, the outlook was improving for 25%, and the remaining 54% showed little change in their status. 83 vertebrate species appear on the list of priority species, of which 78 were assessed further. 37% of these were declining and the outlook was improving for 21%. The remaining 42% showed little change in their status. Of the 87 fungi and lichens listed as priorities, 55 were assessed. 29% of these were declining, the outlook was improving for 27% and the remaining 44% showed little change in their status. 52 bryophytes feature on the priority species list and we assessed 49 of them. 47% of these were declining, the outlook was improving for 24% and the remaining 29% showed little change in their status.

78% of hedgerows in Wales are in unfavourable condition, with a decline forecast to continue. Ash die-back (*Chalaria*) will have a large impact on woodlands and hedgerows in the Vale, with ash an important and abundant species, both as hedgerow trees and mature trees.

73% of Welsh urban areas show a decline in tree cover. Less affluent areas have less tree cover, important for reducing flood run off, providing shade, reducing summer temperatures filtering dust and pollution as well as increasing biodiversity.
The intertidal area between high and low tide is one of the few habitats that is considered to be in good condition, although sand banks are declining in the short and long term.

5.2 County: the Vale of Glamorgan

The Vale of Glamorgan is coastal, low-lying, rural county of 33,097 hectares (130 sq miles) with a maximum height of 137.3 metres (450 ft) above sea level. Intensive agriculture dominates the landscape with pockets of unimproved grassland haymeadows and ancient woodland. The county has 53km (33 miles) of coastline encompassing the most southerly point in Wales and to the western end of the county is the Glamorgan Heritage Coast, stretching for 14 miles, from Aberthaw to Porthcawl.

The county supports 2 Natura 2000 sites: The Severn Estuary SPA, SAC and Ramsar site lies off shore to the east of the county, whilst Dunraven Bay SAC lies on the south coast and is important for its population of Shore Dock. The western boundary of the county borders Kenfig SAC.

There are 24 Sites of Special Scientific Interest (SSSI) in the county, notified for a range of habitats including grassland, ponds, rivers and geological sites. In addition to the designated sites, the Vale of Glamorgan has a suite of approximately 330 SINC (Sites of Importance for Nature Conservation), which are non-statutory wildlife sites identified within the adopted Vale of Glamorgan Local Development Plan 2011-2026 (LDP) in accordance with the standard Wildlife Sites Guidance. The county supports 4 Local Nature Reserves (LNR) and 7 Wildlife Trust managed sites.

There are a wide variety of habitats in the Vale with several nationally important grassland SSSI and areas of high biological diversity. The Vale is home to a number of rare and threatened arable plants and is one of the most important areas for butterflies in Wales. The cliffs of the Glamorgan Heritage

Coast support nesting sites for many seabirds, most notably for a breeding pair of Chough. The cliffs of the Vale coast support a small population of True Service Tree.

Further inland, the undulating managed grassland of the Alun Valley supports Wales' only population of the High Brown Fritillary butterfly. Throughout the county, Great Crested Newt are widespread. The rich mosaic of habitat supports many bat species, particularly the Lesser Horseshoe Bat which has 4 known maternity roosts within the county. The county also hosts a large maternity colony of Serotine Bat, a species uncommon in Wales. The large agricultural fields in the Vale are important for supporting populations of skylark and lapwing.

The main rivers, the River Ely SSSI and the Rivers Thaw and Alun are frequently wooded and support important species populations including otter. The River Ely is notified for its population of Monkshood which grows on the banks of the river and its tributary ditches.

Cosmeston Lakes SSSI, a large waterbody formed from a disused quarry supports Starry Stonewort and a recently reintroduced watervole population.

Pockets of ancient woodland persist in the landscape, some are designated as SSSI and support populations of dormice; these woodlands are connected by the vast network of hedgerows in the county. Woodlands cover 8.2% of the county which is well below the Wales average of 14%. NRW manage 330Ha of small mixed woodlands, mostly Plantations on Ancient Woodland Sites, on behalf of the Welsh Government. Many of the woodlands in the Vale have high conservation value and some offer formal and informal recreation opportunities. Most are privately owned. All woodlands in South Wales are within a Control Disease Zone (CDZ) for *Phytophthora ramorum* (larch tree disease). Larch trees formed a high proportion of the forestry of the South Wales and their removal is having a noticeable effect on the landscape in many areas. The main issues relate to restoring ancient woodland; enhancing sustainable recreation while managing antisocial behaviour, as well as balancing pressure from development. The ability of our woodlands to provide a range of benefits is not being realised due to their often poor condition and fragmented nature. Protecting trees from development, educating people about woodlands and restoring, expanding and improving the condition of our woods is key to realising the benefits that they can provide.

Woodland and trees help regulate our climate, provide income and jobs, store carbon, contribute to reducing flood and low river flow risk, safeguard soils, improve air quality, reduce noise and regulate pests and diseases. They play a major role in pollination, soil formation, nutrient cycling, water cycling and oxygen production which are crucial to supporting well-being. Nationally, woodlands are often in poor condition and fragmented.

Whilst the county supports a wide variety of habitats, these habitats are generally heavily fragmented because of past/present agricultural management, development pressure and habitat loss. As a result, less mobile species of animals and plants are less able to move within the landscape and adapt to the likely impact of climate change. Restoring, creating and managing semi-natural habitats appropriately can help to improve the opportunities for species to move, in turn, helping creating resilient and healthy ecosystems. Positive management of these habitats can also provide

additional benefits for residents through attenuating water flows and reducing soil loss as well as providing interesting, rich and inspiring greenspaces for the benefit of residents.[17]

No data specifically relating to the resilience of ecosystems has been published. Habitats throughout the county are reducing in extent (with the possible exception of woodland and rivers which are likely stable). Some species are increasing eg otter and bats but most (eg farmland birds[18]) are decreasing. For some species, the picture isn't quite so clear, the hedgehog having suffered massive declines in the last 30 years is still in serious decline in our countrysides, however, urban populations appear to be stable or possibly increasing, however the distribution is patchy[19]

The evidence in the Well-Being assessment shows that the Vale of Glamorgan has the second largest ecological footprint in Wales (ecological footprint = sustainability), making it one of the least sustainable counties. However, it has the 7th largest carbon footprint, putting it above Wales average in carbon emissions. It must be taken into account that the county supports a major chemical works (Dow Silicons UK), a power station and an airport, resulting in an otherwise rural county having a higher than expected carbon footprint.

> *Carbon footprint:*
>
> *A measure of the total amount of carbon dioxide (CO_2) and methane (CH_4) emissions of a defined population, system or activity, considering all relevant sources, sinks and storage within the spatial and temporal boundary of the population, system or activity of interest. Calculated as carbon dioxide equivalent using the relevant 100-year global warming potential (GWP100).*

> *Ecological footprint:*
>
> *An indicator of the total environmental burden that society places on the planet. It represents the area of land needed to provide raw materials, energy and food, as well as absorb pollution and waste created and is measured in global hectares[20].*

Evidence relating to biodiversity in the Vale is lacking and needs further improvement to contribute to the Well Being Assessment[21] [22].

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[17] http://www.valeofglamorgan.gov.uk/Documents/Our%20Council/Achieving%20our%20vision/Public-Services-Board/Well-being-Assessment/FINAL-ENGLISH-VERSIONS/Our-Environment-Evidence-Report-Part-1-Version-at-April-2017.pdf

[18] https://www.bto.org/about-birds/birdtrends/2017

[19] The State of Britains Hedgehogs 2018 https://www.hedgehogstreet.org/wp-content/uploads/2018/02/SoBH-2018_final.pdf

[20] Stockholm Environmental Institute and GHD. 2015. *Ecological and Carbon Footprints of Wales*. Update to 2011. July 2015.

[21] http://www.valeofglamorgan.gov.uk/Documents/Our%20Council/Achieving%20our%20vision/Public-Services-Board/Well-being-Assessment/FINAL-ENGLISH-VERSIONS/Our-Environment-Evidence-Report-Part-1-Version-at-April-2017.pdf

[22] http://www.valeofglamorgan.gov.uk/Documents/Our%20Council/Achieving%20our%20vision/Public-Services-Board/Well-being-Assessment/FINAL-ENGLISH-VERSIONS/Our-Environment-Evidence-Report-2.pdf

6 The Vale of Glamorgan Biodiversity Forward Plan

6.1 Development of the plan

This plan contributes to all of the goals set out in the WBF and compliance with the plan can be used to demonstrate how the Authority is fulfilling the "A Resilient Wales" goal. Furthermore, this plan supports the Corporate Plan and the Well-Being Plan in the delivery of their respective objectives.

The Biodiversity Duty Actions in Part 2 of this plan and specifically & targeted in the Service Plans Key Performance Indicators (KPI's) will set out what the Authority intends to do to meet its legal requirements. The actions are organised into the most appropriate NRAP Objective with recognition of the other objectives they contribute towards.

6.1.1 Actions to date

- A questionnaire was developed and circulated to all Heads of Service and Operational Managers within the council. This outlined the local authority's new statutory duty and aimed to establish the current understanding, positive actions and threats to biodiversity and ecosystem resilience by the local authority in the undertaking of its duties.
- The questionnaire has raised awareness of the Environment (Wales) Act 2016, particularly the Section 6 Duty and will allow the development of specific Biodiversity & Ecosystem Resilience Action Plans, in the form of Service Plans and KPIs (see below).
- These Service Plans link to the Corporate Plan and represent a formal commitment to actions.
- A review of the questionnaires will be undertaken and service areas that are considered to have the potential to negatively impact on Biodiversity and Ecosystem Resilience and those that could deliver positive change and maximise delivery will be identified. Consultation with Senior Officers has been held to identify where the current risks to biodiversity and ecosystem resilience are, and to identify opportunities where risks can be minimised or eliminated and opportunities to conserve and enhance biodiversity ('risks and opportunities'), and to promote or secure ecosystem resilience in the medium and long term.

6.1.2 Taking this plan forward – the next steps

- Actions required to address the Risks and Opportunities will be published in Part 2 of the Biodiversity Forward Plan. These will feed into their respective service plans.
- At present, the following service areas are considered to be areas where risks and can be minimised and gains can be achieved:
    - ❖ Building Control / Development Management
    - ❖ Planning Policy
    - ❖ Regeneration
    - ❖ Highways
    - ❖ Parks and Open Spaces
    - ❖ Estates

- ❖ Countryside / Country Parks
- ❖ Neighbourhood Serivces
- ❖ Education
- ❖ Waste / recycling

- Working with each directorate, having identified the risks and opportunities, The Authority will develop a set of unique KPI's for each service area. These will be integrated into the Service Plans and will be reported on, on an annual basis as a part of the authorities usual reporting mechanisms..
- The Corporate Plan will be updated in 2020 and the new version will include direct reference to biodiversity & ecosystem resilience.
- Part 2 of the Biodiversity Forward Plan will include specific actions to enable the Local Authority to delivery biodiversity conservation and ecosystem resilience and these objectives will be translated into KPIs for on the ground delivery. The review will incorporate the results of the workshops, identification of any new risks or opportunities or any new information/strategies eg State of Nature Report, Area Statements etc.

6.2 Forward Plan and Reporting

- Part 2 of this plan will be produced in spring 2019 and is expected to be agreed by Cabinet at end summer 2019.
- The plan will be reported on at the end of 2019 and every 3 years thereafter.
- The plan will be reviewed and revised every 3 years to ensure that:-
  - ❖ The objectives set are still relevant and are working; and
  - ❖ To analyse our results and assess whether more could be done

The aims for the Authority are set out in Sections 8-13 below, in line with each Nature Recovery Action Plan (NRAP) Objectives. Specific actions for each team will be developed in line with the aims of the Unitary Authority and agreed at the start of each 3-year programme, with the results being reported in line with the 3-yearly reporting requirements and set out in Part 2 of the plan. As these actions are likely to change, they will be re-evaluated each period. There will be cross-working and overlap in responsibilities and departments. Each action will address at least one Objective (1-6 below) and will be assessed against the 5 ways of working.
All aims and subsequent actions are subject to adequate funding / resources

6.3 Collaboration with other organisations

The Vale of Glamorgan Council works with other government organisations, NGO's and the voluntary sector to deliver conservation, environmental and biodiversity projects and we regard this working partnership with other organisations as key to delivering our objectives in a way as to achieve maximum gain. "Our" in this sense, means every organisation and body with statutory duties and non-statutory commitments to deliver Biodiversity and Ecosystem Resilience.

Organisations include, but are not limited to:

- Natural Resources Wales
- Wildlife Trust of South and West Wales
- Bumblebee Conservation Trust
- RSPB
- Butterfly Conservation
- Lavernock Meadows Volunteer Group
- Wenvoe Conservation Volunteers
- Farming Connect (Glastir)
- Community and County Councils
- Cardiff and Vale Bat Group
- Glamorgan Bird Club
- Amphibian and Reptile Conservation (ARC)
- And many, many more

7 Risks and Opportunities

The short table below identifies some of the risks and opportunities for protection of Biodiversity and Ecosystem Resilience that have already been identified.

RISKS	OPPORTUNITIES
Decision making at all levels Consents, licences, certificates Land management practices Missed opportunities for raising awareness and education Reduction in resources resulting in negative effect on service delivery	Decision making at all levels Raising awareness and training Environmental education Net gain for biodiversity secured in consents granted Green infra-structure approach Better land management practices Wider consultation with ecology officer Improve management of Council Owned land including road verges, parks and open spaces Reduce pesticide use across the county Educate and influencing the public (eg by not expecting heavily mown road verges Planning outcomes to include biodiversity conservation and enhancement & have a positive contribution to Ecosystem Resilience Sharing of best practice and collaborative working both between Directorates in the council and between Councils.

The following sections outline the authority's aims and visions for this plan. With declining financial resources, all the aims listed below and the subsequent actions will be largely dependant upon funding.

8 Nature Recovery Action Plan (NRAP) Objective 1: Engage and support participation and understanding to embed biodiversity throughout decision making at all levels

Objective 1: Engage and support participation and understanding to embed biodiversity throughout decision making at all levels	
VGC MEASURES	**DESCRIPTION**
Consenting processes	Ensure biodiversity, conservation and sustainability are considered in the Vale of Glamorgan council's consenting and permitting processes, by applicants and by the Local Authority. Ensure the sustainable development principles are implemented.
Increase awareness	Increase awareness amongst staff of biodiversity / conservation / ecosystem resilence issues

High level decision making such as policy and plan adoption and future spatial planning programmes including the development plan process are key areas where embedding biodiversity will be vital to meeting the duty set out in Section 6 of the EWA. Objective 1 will particularly apply to all types of consents that the Vale of Glamorgan Council issues including planning permission and Ordinary Watercourse Consent; and other consents that may or may not currently consider biodiversity. It will also apply to decisions taken in relation to procurement, contracts, licences, asset management, internal projects and wider land management policies such as road verge management.

Section 6 also applies to biodiversity in a global sense and requires the Vale of Glamorgan Council to consider the effect of decisions taken or activities undertaken not just within Wales but also in relation to biodiversity outside of Wales. For example in the procurement of sustainable products sourced from other parts of the world. At a more local level, we need to consider the effects of our actions on the adjoining local authority areas of Cardiff, Rhondda Cynon Taf and Bridgend County/Borough Council.

9 NRAP Objective 2: Safeguard species and habitats of principle importance and improve their management

Objective 2: Safeguard species and habitats of principle importance and improve their management	
VGC MEASURES	**DESCRIPTION**
Adherence to national and local guidelines and best practice	Ensure legislation, policy, best practice and current guidelines relating to biodiversity are adhered to, as practitioner, consenting/enforcement body and policy maker.
Management of sites of high biodiversity value	Continue to manage areas of existing high value and seek to restore degraded habitats. Continue working with third parties and developing new working relationships safeguard habitats and improve management.
Funding	Work with third parties and develop new working partnerships to secure resources for biodiversity enhancement/conservation projects

Species and habitats of Principle Importance for Conservation in Wales are those that are listed on the interim Section 7 list of the Environment (Wales) Act 2016. It is a list compiled of those habitats and species most at threat, and/or in serious decline. The full list is included in Appendix 1. Reasons for the current status, and the continued ongoing threats to these habitats and species include changes in agricultural practice, over (or under) management, new development, risks from existing development, pollution, climate change, over demand, or over use of resources.

10 NRAP Objective 3: Increase the resilience of our natural environment by restoring degraded habitats and habitat creation

Objective 3: Increase the resilience of our natural environment by restoring degraded habitats and habitat creation	
VGC MEASURES	**DESCRIPTION**
Habitats restoration / creation	Look for opportunities to identify priority habitats and to match restoration/management projects with funding opportunities
Habitat creation / enhancement	Seek opportunities for habitat creation / biodiversity enhancement in the wider countryside across many Service Areas

Areas of high biodiversity value have been (and are being) identified and where they fulfil the necessary criteria they may be identified or designated as SINC or SSSI respectively. Natural Resources Wales are responsible for the designation and conservation of SSSI. While these are not intrinsically conservation sites, they do however contribute to biodiversity and conservation. SINC are identified at a local level by the local authority and largely represent priority habitats and species of principle importance for conservation. However, these were identified prior to the Section 7 list being developed using the criteria in the Local Wildlife Sites Handbook[23]. SSSI were not identified as SINC, even though they may meet the criteria, as the SSSI designation already identifies and protects them. New SINC sites continue to be identified, usually through site survey undertaken as a precursor to new development. Whilst this provides a good starting point, biodiversity and ecosystem resilience will not be achieved solely through isolated sites. There is a requirement to develop the SINC system further, to identify buffer zones around habitats, connecting important but isolated habitats to form a viable network of habitats, capable of supporting large, resilient populations. Habitat creation and restoration will be an important part in reversing the decline of biodiversity, however it has limitations. Some habitats, once lost are irreplaceable; and Objective 2 above: safeguarding important habitats must be a priority. Ancient woodland is that which is at least 400 years old, this implies that re-creating ancient woodland would take a similar amount of time (certainly 100 years to achieve mature trees). Conservation should follow the mitigation hierarchy of Avoid-Mitigate-Compensate (Objectives 1, 2 and 3 above)

[23] Wildlife Sites Guidance Wales; Wales Biodiversity Partnership; February 2008

11 NRAP Objective 4: Tackle key pressures on species and habitats

Objective 4: Tackle key pressures on species and habitats	
VGC MEASURES	**DESCRIPTION**
Development Management	*Address pressures from development via the Development Management process to ensure a net biodiversity gain from each significant development. This includes addressing INNS where they occur on development sites and working with partners*
Consenting processes	*Ensure biodiversity, conservation and sustainability are considered in each of the Vale of Glamorgan councils statutory consenting processes.*

Pollution, invasive non-native species (INNS) and some land management practices are pressures on species and habitats that need to be tackled. VoGC has statutory duties relating to pollution and INNS under other legislationsuch as the Wildlife and Countryside Act 1981 (as amended) and the Water Framework Directive. By working in partnership with organisations to reduce pollution and the prevalence of INNS, the impacts caused by these pressures can be significantly reducted. By adopting a Green Infrastructure approach to site management and in using nature based solutions to make improvements for example, to improve water quality we can take steps towards achieving the objective. A Green Infrastructure approach to development management can reduce the impacts of development on biodiversity and conserve, integrate and improve ecosystem services to deliver multi-functional benefits.

12 NRAP Objective 5: Improve our evidence, understanding and monitoring

Objective 5: Improve our evidence, understanding and monitoring	
VGC MEASURES	**DESCRIPTION**
Baseline data	Gather baseline data where necessary to inform future action and targets. This includes gathering data in a way compatible with the requirements of the SoNaRR report
Collaboration on data	Work with existing partners and develop new networks to gather, collate and interpret data, organisations can include Welsh Government, voluntary sector, charities and businesses
Monitoring	Work with existing partners and develop new networks to monitor key factors. Use the information gained to inform future decision making and policy.

An improved understanding and awareness of biodiversity and ecosystems leads to behavioural change and encourages everyone to act in a positive way towards the environment. Environmental education has developed significantly in recent years and is now an integral element of mainstream, further and more widespread education practices. This however is now threatened by funding cuts. To make real progress towards better understanding and appreciation of the value of biodiversity and ecosystems it is vital to maintain actions to meet this objective. Environmental education provision by the Vale of Glamorgan Council as the Local Education Authority and through service

areas such as Countryside, Waste and Recycling, Outdoor Education, and Economic Regeneration can help to deliver this objective, requiring sufficient resources to be put in place. Alignment with the work of external partners will be vital and the use of networks such as the Outdoor Learning Wales can facilitate this. Key external partners include: Keep Wales Tidy, Wildlife Trust of South and West Wales, RSPB, Glamorgan Heritage Coast and others.

The connection between benefits to the environment and well-being benefits of people is an important target area for many partner organisations. As well as encouraging action, this work shall contribute to the physical and mental health and wellbeing of those involved.

Data gathered through the various means currently employed, plus others proposed for the future will increase our knowledge of species populations and habitat coverage, allowing us to identify trends in populations and provide a valuable tool in determining whether what we are doing is having a positive, negative or neutral effect. We can then amend our actions accordingly. This feedback loop will be the basis on which this plan is produced.

13 NRAP Objective 6: Put in place a framework of governance and support for delivery

Objective 6: Put in place a framework of governance and support for delivery	
VGC MEASURES	**DESCRIPTION**
Green infrastructure approach	Look at projects locally and holistically to ensure a holistic approach, such as through a Green Infrastructure plan.
Integrate biodiversity and sustainability into policy	Ensure all existing and new policies and strategies include biodiversity / sustainability considerations
Service Area Assessments – protecting biodiversity	Identify Local Authority service areas where potentially harmful practices can occur and develop mechanisms to conservation and enhancement where ever possible.

Primary legislation and national policy provides the framework and the drivers for change. Local authorities are or will be producing local delivery mechanisms such as through the Well-Being Plan. However, the objectives set both at a national level and in this document can be supported and driven through existing governance, **all that is required is a change of mindset**. This must begin at cabinet level and promoted and led by Directors, Operational Managers, Team Leaders and Heads of Departments. Support for change will come from new national policies, direction and input from the biodiversity champion and from the LBAP group.

14 Glossary of terms

Abbreviations and Acronyms

The Authority	Vale of Glamorgan Council
Biodiversity	Is defined in the Environment (Wales) Act as the diversity of living organisms, whether at the genetic, species or ecosystem level. Biodiversity drives the functioning and resilience of our ecosystems.
CBD	United Nations Convention of Biological Diversity
DM	Development Management
Ecosystem Approach	The CBD describes the **ecosystem approach** as: "*a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way*"[1] This is widely recognised as international best practice for addressing the decline in biodiversity
Ecosystem Services	Are the conditions and processes through which natural ecosystems and the species that make them up, sustain and fulfil human life. They maintain biodiversity and the production of ecosystem goods. They are split into 4 categories: **Supporting Services** – underpins all other services and include nutrient recycling, soil formation and primary production. **Provisioning Services** – all our food, fresh water, wood and fibre, and fuel **Regulating Services** – cleaning air and water, flood control, carbon capture **Cultural** – aesthetic, spiritual, educational and recreation
Ecosystems	Are defined by the UN Convention on Biological Diversity (CBD) as a dynamic complex of plant, animal and micro-organisms and their non-living environment interacting as a functional unit.
EWA	Environment (Wales) Act 2016
EU	European Union
GIS	Geographic Information System
Glamorgan Heritage Coast	The Glamorgan Heritage Coast stretches for 14 miles, from Aberthaw to Porthcawl with plunging cliffs, secluded coves and breathtaking views. The coastline is fringed with small towns and villages, and miles of footpaths and country lanes, wooded valleys and spectacular wildlife. The area has a rich and diverse geological history, with limestone formed in the Carboniferous Period (350 million years ago) to the Blue Lias of the Liassic period (180 million years ago). The tidal range here is the second highest in the world after the Bay of Fundy in Canada. At Dunraven, there is the Heritage Centre, a tourist information hub.
Global warming potential (GWP)	**Global warming potential** (**GWP**) is a measure of how much heat a greenhouse gas traps in the atmosphere up to a specific time horizon, relative to carbon dioxide. It compares the amount of heat trapped by a certain mass of the gas in question to the amount of heat trapped by a similar mass of carbon dioxide and is expressed as a factor of carbon dioxide (whose GWP is standardized to 1).
Green Infrastructure	The network of natural and semi-natural features, green spaces, rivers and lakes that intersperse and connect villages, towns and cities. When appropriately planned, designed and managed, green infrastructure has the potential to deliver a wide range of benefits for

	people and wildlife.
Heritage Coast	A **heritage coast** is a strip of coastline, the extent of which is defined by agreement between NRW (in Wales) and and the local authority. Such areas are recognised for their natural beauty, wildlife and heritage and amongst the purposes of definition is support for these qualities and enabling enjoyment of them by the public.
HRA	Habitat Regulations Assessment
INNS	Invasive Non-Native Species, eg Japanese Knotweed, African Bullfrog
KPI	Key Performance Indicators
LDP	Local Development Plan
LNR	Local Nature Reserve
LPA	Local Planning Authority
Natural Resources	These are defined in the Environment Act as ➢ Animals, plants and other organisms ➢ Air, water and soil ➢ Minerals ➢ Geological features and processes ➢ Physiographical features (Physical-geography features) ➢ Climatic features and processes These individual components defined in the Act combine and work together in many ways and at many scales, from which humans use and obtain benefits. These components and processes work together and are referred to as **ecosystems**.
NERC	Natural Environment and Rural Communities Act 2006 (superceded by the Environment (Wales) Act 2016)
NRAP	Nature Recovery Action Plan
NRP	Nature Recovery Plan for Wales
NRW	Natural Resources Wales
Public Service Boards (PSB)	A group (board) set up in each local authority area as defined in the Wellbeing of Future Generations (Wales) Act. The boards comprise of the local authority, the local health board for an area any of part of which falls within the local authority area, the Welsh fire and rescue authority for an area any part of which falls within the local authority area, and the Natural Resources Body for Wales (Natural Resources Wales, NRW).
Ramsar	A wetland site designated to be of international importance under the Ramsar Convention
RDP	Rural Development Plan
Resilience	Ecosystems are considered Resilient if they are able to cope with disturbance or change so that they maintain their ability to function and deliver benefits. The Environment Act recognises a number of attributes of ecosystems that support resilience, including their scale and extent, how well connected they are, their condition, diversity and ability to adapt.
Section 7 (S7)	Section 7 of the Environment (Wales) Act 2016, refers to the habitats and species that are of principle importance for conservation in Wales.
SAC	Special Area of Conservation
Section 7 Habitats and Species	Lists of living organisms and habitat types in Wales identified as of a Priority for Conservation in Wales, lists to be published by the Welsh Government in Section 7 of the Environment (Wales) Act 2016.
SEWBREC	South East Wales Biodiversity Records Centre

SINC	Site of Importance for Nature Conservation
SoNaRR	State of Natural Resources Report
SPA	Special Protection Area
SPG	Supplementary Planning Guidance
SRG	Single Revenue Grant
SSSI	Site of Special Scientific Interest
Sustainable Development	The process of improving then economic, social, environmental and cultural well-being of Wales by taking action, in accordance with the sustainable development principle, aimed at achieving the well-being goals
Sustainable Development Principle	Ensuring ones actions and needs today are met without compromising the ability of future generations to meet their own needs.
VGC	Vale of Glamorgan Council
WFG	Well-Being of Future Generations (Wales) Act 2015
WG	Welsh Government

15 Appendix 1 – (Interim) Section 7 lists

Environment (Wales) Act 2016 Section 7 – list of the habitats of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales. Note: This interim list, which is exactly the same as the previous list under Section 42 of the NERC Act, is under review in consultation with NRW.

Habitats	**Cynefin**	**Priority Habitats**	**Cynefin sy'n Flaenoriaeth**
Terrestrial, coastal & freshwater	**Daearol, arfordirol a dŵr croyw**		
Broadleaved, mixed and yew woodland	Coedwig lydanddail, gymysg ac ywen	Traditional orchards	Perllannau traddodiadol
		Wood pasture & prkaland	Porfa goediog a pharcdir
		Upland oak woodland	Coedwig dderi yn yr ucheldir
		Lowland beech and yew woodland	Coedwig ffawydd ac ywen ar dir isel
		Upland mixed ash woodland	Coedwig ynn gymysg ar dir uchel
		Wet woodland	Coedwig wlyb
		Lowland mixed deciduous woodland	Coedwig gollddail gymysg ar dir isel
Boundary and linear features	Nodweddion llinellol a therfynau	Hedgerows	Gwrychoedd
Arable and horticultural	Tir âr a garddwriaethol	Arable field margins	Ymylon caeau ŷd
Improved grassland	Glaswelltir wedi ei wella	Coastal and floodplain grazing marsh	Tir pori corslyd ar forfa arfordirol a gorlifdir
Neutral grassland	Glaswelltir niwtral	Lowland meadows	Gweirgloddiau yr iseldir
Calcareous grassland	Glaswelltir calchaidd	Lowland calcareous	Glaswelltir calchaidd yr

		grassland	iseldir
		Upland calcareous grassland	Glaswelltir calchaidd tir uchel
Acid grassland	Glaswelltir asidaidd	Lowland dry acid grassland	Glaswelltir asidaidd sych yr iseldir
Dwarf shrub heath	Gweundir o gorlwyni	Lowland heathland	Gweundir yr iseldir
		Upland heathland	Gweundir yr ucheldir
Fen, marsh and swamp	Ffen, cors a chors siglennaidd	Upland flushes, fens and swamps	Trylifiadau, ffeniau a chorsydd siglennaidd ar dir uchel
		Lowland fens	Ffeniau ar dir isel
		Purple moorgrass and rush pastures	Porfeydd brwyn a glaswellt y gweunydd
		Reedbeds	Gwelyau cyrs
Bogs	Corsydd	Lowland raised bog	Cyforgors ar dir isel
		Blanket bog	Gorgors
Montane Habitats	Cynefinoedd mynyddig	Mountain heaths and willow scrub	Gweundir a phrysgwydd helyg ar dir mynyddig
Rivers and Streams	Afonydd a nentydd	Rivers	Afonydd
		Standing open waters and canals	Dŵr llonydd agored a chamlesi
		Oligotrophic and dystrophic lakes	Llynoedd oligotroffig a dystroffig
		Ponds	Pyllau dŵr
		Mesotrophic lakes	Llynnoedd mesotroffig
		Eutrophic standing waters	Dyfroedd llonydd ewtroffig
		Aquifer-fed naturally fluctuating water bodies	Dyfroedd a gyflenwir gan ddyfrhaen, ac sy'n arddangos amrywiadau naturiol yn lefel y dŵr
Inland rock	Craig fewndirol	Inland rock outcrop and scree habitats	Cynefinoedd brigiadau craig a sgri mewndirol
		Calaminarian grasslands	Glaswelltiroedd Calaminaraidd
		Open mosaic habitats on previously developed land	Brithwaith o gynefinoedd agored ar dir a oedd cynt wedi ei ddatblygu Limestone pavement Palmentydd calch
Supralittoral rock	Craig uwch-lanw	Maritime cliff and slopes	Clogwyni a llethrau arforol Supralittoral sediment Gwaddodion uwch-lanw
		Coastal sand dunes	Twyni tywod arfordirol
		Coastal vegetated shingle	Gro arfordirol gyda llystyfiant

Marine	Morol		
Littoral Rock	Craig o fewn cylchfa'r llanw	Intertidal boulder communities	Cymunedau ar glogfeini yn y gylchfa rhyng-lanw
		Sabellaria alveolata reefs	Riffiau Sabellaria alveolata
		Estuarine rocky habitats	Cynefinoedd creigiog aberol
Littoral sediment	Gwaddodion o fewn cylchfa'r llanw	Coastal saltmarsh	Morfa heli
		Intertidal mudflats	Eangderau llaid yn y gylchfa rhyng-lanw
		Seagrass beds	Gwelyau o wellt-y-gamlas
		Sheltered muddy gravels	Graean lleidiog mewn man cysgodol
		Peat and clay exposures	Amlygiadau o fawn a chlai
Sublittoral rock	Craig is-lanw	Tidal swept channels	Sianelau sy'n cael eu 'sgubo gan y llanw
		Fragile sponge & anthozoan communities on subtidal rocky habitats	Cymunedau bregus o sbyngau ac anthosoaid ar gynefinoedd creigiog islanw
		Carbonate reefs	Riffiau carbonad
Sublittoral sediment	Gwaddodion is-lanw	Subtidal sands and gravels	Graean a thywod is-lanw
		Subtidal mixed muddy sediments	Gwaddodion lleidiog cymysg is-lanw
		Mud habitats in deep water	Cynefinoedd lleidiog mewn dŵr dwfn
		Musculus discors beds	Gwelyau o fisglod gwyrdd (Musculus discors)
		Blue mussel beds	Gwelyau o fisglod glas
		Horse mussel beds	Gwelyau o farchfisglod
		Maerl beds	Gwely maerl
		Saline lagoons	Lagwnau hallt

Environment (Wales) Act 2016 Section 7 – list of the living organisms of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales. Note: This interim list, which is exactly the same as the previous list under Section 42 of the NERC Act, is under review in consultation with NRW.

Ψ Wales only species

† original S74 species

Mammals (17 species)			Revisions
Arvicola terrestris	Water vole†	Llygoden bengron y dŵr	

Barbastella barbastellus	Barbastelle bat†	Ystlum du	
Erinaceus europaeus	West European hedgehog	Draenog	
Lepus europaeus	Brown hare†	Ysgyfarnog	
Lutra lutra	Otter†	Dyfrgi	
Martes Martes	Pine marten	Bele'r coed	
Micromys minutus	Harvest mouse	Llygoden yr ŷd	
Muscardinus avellanarius	Dormouse†	Pathew	
Mustela putorius	Polecat	Ffwlbart	
Myotis bechsteinii	Bechstein's bat†	Ystlum Bechstein	
Nyctalus noctula	Noctule	Ystlum mawr	
Pipistrellus pipistrellus	Common Pipistrelle†Ψ	Ystlum lleiaf	
Pipistrellus pygmaeus	Soprano Pipistrelle†	Ystlum lleiaf meinlais	
Plecotus auritus	Brown long-eared bat	Ystlum hirglust	
Rhinolophus ferrumequinum	Greater horseshoe bat†	Ystlum pedol mwyaf	
Rhinolophus hipposideros	Lesser horseshoe bat†	Ystlum pedol lleiaf	
Sciurus vulgaris	Red squirrel†	Gwiwer goch	
Birds (51 species)			
Acrocephalus paludicola	Aquatic warbler†	Telor y dŵr	
Alauda arvensis subsp. arvensis/scotica	Skylark†	Ehedydd	
Anser albifrons subsp. flavirostris	Greenland greater whitefronted goose	Gŵydd dalcen-wen yr Ynys Las	
Anthus trivialis	Tree pipit	Corhedydd y coed	
Botaurus stellaris	Great bittern†	Aderyn y bwn	
Branta bernicula subsp. bernicula	Dark-bellied brent goose	Gwydd ddu Siberia	
Caprimulgus europaeus	European nightjar†	Troellwr mawr	
Carduelis cabaret	Lesser redpoll	Llinos bengoch fach	
Carduelis cannabina subsp. autochthona/cannabina	Common linnet†	Llinos	
Carduelis flavirostris subsp. bensonorum/pipilans	Twite	Llinos y mynydd	
Charadrius hiaticula	Ringed plover Ψ	Cwtiad torchog	
Circus cyaneus	Hen harrier†Ψ	Boda tinwyn	
Coccothraustes coccothraustes	Hawfinch	Gylfinbraff	
Crex crex	Corncrake†	Rhegen yr ŷd	
Cuculus canorus	Common cuckoo	Cog	
Cygnus columbianus subsp. Bewickii	Tundra swan = Bewick's swan	Alarch Bewick	
Dendrocopus minor subsp. Comminutus	Lesser spotted woodpecker	Cnocell fraith leiaf	
Emberiza calandra	Corn bunting†	Bras yr ŷd	

subsp. calandra/clanceyi			
Emberiza citrinella	Yellowhammer†	Bras melyn	
Emberiza schoeniclus	Reed bunting†	Bras y cyrs	
Falco tinnunculus	KestrelΨ	Cudyll coch	
Ficedula hypoleuca	Pied flycatcherΨ	Gwybedog brith	
Lagopus lagopus subsp. scotica	Red grouse	Grugiar goch	
Lanius collurio	Red-backed shrike	Cigydd cefngoch	
Larus argentatus subsp. argenteus	Herring gull	Gwylan y penwaig	
Larus ridibundus	Black-headed GullΨ	Gwylan benddu	
Limosa lapponica	Bar-tailed godwitΨ	Rhostog gynffonfraith	
Locustella naevia	Common grasshopper warbler	Troellwr bach	
Lullula arborea	Woodlark	Ehedydd y coed	
Melanitta nigra	Common scoter†	Môr-hwyaden ddu	
Motacilla flava subsp. flavissima	Yellow wagtail	Siglen felen	
Muscicapa striata	Spotted flycatcher†	Gwybedog mannog	
Numenius arquata	Eurasian curlew†	Gylfinir	
Parus montanus subsp. Kleinschimdti	Willow tit	Titw'r helyg	
Parus palustris subsp. palustris/dresseri	Marsh tit	Titw'r wern	
Passer domesticus	House sparrow	Aderyn y to	
Passer montanus	Eurasian tree sparrow†	Golfan y mynydd	
Perdix perdix	Grey partridge†	Petrisen	
Phylloscopus sibilatrix	Wood warbler	Telor y coed	
Pluvialis apricaria	Golden plover†Ψ	Cwtiad aur	
Prunella modularis subsp. Occidentalis	Hedge accentor (Dunnock, Hedge sparrow)	Llwyd y gwrych	
Puffinus mauretanicus	Balearic shearwater	Aderyn drycin y Balearig	
Pyrrhocorax pyrrhocorax	Chough†Ψ	Brân goesgoch	
Pyrrhula pyrrhula subsp. pileata	Common bullfinch†	Coch y berllan	
Sterna dougallii	Roseate tern†	Môr-wennol wridog	
Stretopelia turtur	European turtle dove†	Turtur	
Sturnus vulgaris subsp. vulgaris	Common starling	Drudwen	
Tetrao tetrix subsp. britannicus	Black grouse†	Grugiar ddu	
Turdus philomelos subsp.clarkei	Song thrush†	Bronfraith	
Turdus torquatus	Ring ouzel	Mwyalchen y mynydd	
Vanellus vanellus	Northern lapwing†	Cornchwiglen	

Fish (10 species)			
Alosa alosa	Allis shad†	Herlyn	
Alosa fallax	Twaite shad†	Gwangen	
Anguilla anguilla	European eel	Llysywen	
Coregonus lavaretus	Whitefish (Powan, Gwyniad, or Schelly)	Gwyniad (Gwyniad Llumonwy, Gwyniad Derwennydd)	
Lampetra fluviatilis	River lamprey	Llysywen bendoll yr afon	
Osmerus eperlanus	Smelt (Sparling)	Brwyniad Conwy	
Petromyzon marinus	Sea lamprey	Llysywen bendoll y môr	
Salmo salar	Atlantic salmon	Eog	
Salmo trutta	Brown / Sea trout	Brithyll / Siwin	
Salvelinus alpinus	Arctic char	Torgoch	
Reptiles and amphibians (8 species)			
Anguis fragilis	Slow-worm	Neidr ddefaid	
Bufo bufo	Common toad	Llyffant dafadennog	
Epidalea calamita	Natterjack toad†	Llyffant y twyni	
Lacerta agilis	Sand lizard†	Madfall y tywod	
Natrix natrix	Grass snake	Neidr y gwair / neidr y glaswellt	
Triturus cristatus	Great crested newt†	Madfall ddwr gribog	
Vipera berus	Adder	Gwiber	
Zootoca vivipara	Common lizard	Madfall	
Invertebrates (188 species)			
Acronicta psi	Grey dagger	Bidog llwyd	
Acronicta rumicis	Knot grass	Bidog y tafol	
Adscita statices	The forester	Coediwr	
Agonopterix atomella	A micro-moth	Micro-wyfyn	
Agonum scitulum	A ground beetle	Chwilen ddaear	
Agrochola helvola	Flounced chestnut	Castan Grech	
Agrochola litura	Brown-spot pinion	Castan smotyn brown	
Agrochola lychnidis	Beaded chestnut	Castan leiniog	
Allophyes oxyacanthae	Green Brindled crescent	Cilgant brych	
Amphipoea oculea	Ear moth	Clustwyfyn llygeidiog	
Amphipyra tragopoginis	Mouse moth	Ôl-adain lyglwyd	
Anania funebris	A Pyralid moth	Gwyfyn o deulu'r Pyralidiau	
Andrena tarsata	A mining bee (yn GyrA)	Gwenynen durio	
Apamea anceps	Large nutmeg	Brithyn ocraidd	
Apamea remissa	Dusky brocade	Brithyn llwydolau	
Aporophyla lutulenta	Deep-brown dart	Gwladwr brownddu	
Arctia caja	Garden tiger	Teigr yr ardd	
Argynnis adippe	High brown fritillary†	Britheg frown	
Asilus crabroniformis	Hornet robber fly†	Pryf llofrudd	
Asteroscopus sphinx	The sprawler	Cwcwll bwaog	

Atethmia centrago	Centre-barred sallow	Melyn yr onnen	
Austropotamobius pallipes	White-clawed freshwater crayfish†	Cimwch dŵr croyw	
Bembidion quadripustulatum	A ground beetle	Chwilen ddaear	
Bembidion testaceum	A ground beetle†	Chwilen ddaear	
Bidessus minutissimus	A diving beetle†	Chwilen blymio	
Blepharita adusta	Dark brocade	Pali tywyll	
Boloria euphrosyne	Pearl-bordered fritillary†	Britheg berlog	
Boloria selene	Small pearl-bordered fritillary	Britheg berlog fach	
Bombus humilis	Brown-banded carder-bee†	Cardwenynen lwydfrown	
Bombus muscorum	Moss carder-bee	Cardwenynen y mwsogl	
Bombus ruderarius	Red-shanked carder-bee	Cardwenynen goesgoch	
Bombus ruderatus	Large garden bumblebee	Gwenynen bwm yr ardd	
Bombus sylvarum	Shrill carder-bee†	Cardwenynen feinlais	
Brachylomia viminalis	Minor shoulder-knot	Gwargwlwm bach	
Brachyptera putata	Northern February red†	Coch y mis bach (math o bryf cerrig)	
Calosoma inquisitor	A ground beetle	Chwilen ddaear	
Carabus monilis	A ground beetle	Chwilen ddaear	
Caradrina morpheus	Mottled rustic	Gwladwr brith	
Celaena haworthii	Haworth's minor	Gwyfyn plu'r gweunydd	
Celaena leucostigma	The crescent	Clustwyfyn cilgantog	
Chesias legatella	The streak	Rhesen y banadl	
Chesias rufata	Broom-tip	Rhesen gam	
Chiasmia clathrata	Latticed heath	Seffyr delltog	
Chlaenius tristis	A ground beetle	Chwilen ddaear lwydaidd	
Chrysis fulgida	A ruby-tailed wasp	Cacynen gynffon ruddem	
Cicindela hybrida	A tiger beetle†	Chwilen deigr groesryw	
Cliorismia rustica	A Stiletto-fly†	Pryf pigfain	
Coenagrion mercuriale	Southern damselfly†	Mursen Penfro	
Coenonympha pamphilus	Small heath	Gweirlöyn bach y waun	
Coenonympha tullia	Large heath	Gweirlöyn mawr y waun	
Cosmia diffinis	White-spotted pinion†	Llwyfwyfyn brith	
Cossus cossus	Goat moth	Gwyfyn drewllyd	
Cryptocephalus decemmaculatus	A leaf beetle / Ten spotted beetle	Chwilen ddail ddeg smotyn	
Cupido minimus	Small blue	Glesyn bach	

Cyclophora pendularia	Dingy mocha	Moca tywyll	
Cylindera germanica	A tiger beetle†	Chwilen deigr	
Cymatophorima diluta	Oak lutestring	Tant y derw	
Dasypolia templi	Brindled ochre	Cwcwll melynaidd	
Diarsia rubi	Small square-spot	Smotyn sgwâr bach	
Diloba caeruleocephala	Figure of eight	Crwbach ffigwr wyth	
Dipoena inornata	A Comb-footed spider	Copyn/corryn coes gribog	
Dolomedes plantarius	Fen raft spider†	Corryn rafftio'r ffen	
Donacia aquatica	A reed beetle	Chwilen gyrs	
Donacia bicolora	A reed beetle	Chwilen gyrs	
Ecliptopera silaceata	Small phoenix	Ffenics bach	
Empis limata	A dance fly	Pryf dawnsio	
Ennomos erosaria	September thorn	Carpiog Medi	
Ennomos fuscantaria	Dusky thorn	Carpiog tywyll	
Ennomos quercinaria	August thorn	Carpiog Awst	
Entephria caesiata	Grey mountain carpet	Brychan llwyd y mynydd	
Epirrhoe galiata	Galium carpet	Brychan y friwydd	
Erigone welchi	A money-spider	Copyn lwcus	
Eriopygodes imbecilia	The silurianΨ	Gwyfyn Gwent	
Erynnis tages	Dingy skipper	Y gwibiwr llwyd	
Eucera longicornis	Long-horned Bee	Gwenynen gorniog	
Eugnorisma glareosa	Autumnal rustic	Gwladwr yr hydref	
Eulithis mellinata	The spinach	Brychan cyrens	
Eurodryas aurinia	Marsh fritillary†	Britheg y gor	
Eustroma reticulatum	Netted carpet moth†	Brychan rhwydog	
Euxoa nigricans	Garden dart	Dart y gerddi	
Euxoa tritici	White-line dart	Dart gwynresog	Added SG6 item 13
Formicoxenus nitidulus	Shining guest ant	Morgrugyn gwestai gloyw	
Graphiphora augur	Double dart	Dart deunod	
Gryllotalpa gryllotalpa	Mole cricket	Cricsyn y tes	
Hagenella clathrata	A caddis fly (yn gyra)	Pryf gwellt delltog	
Haplodrassus dalmatensis	A spider	Copyn/corryn	
Harpalus melancholicus	A ground beetle	Chwilen ddaear	
Heliophobus reticulata	Bordered gothic†	Rhwyll ymylog	
Hemaris tityus	Narrow-bordered bee hawk- moth†	Gwalchwyfyn gwenynaidd ymyl gul	
Hemistola chrysoprasaria	Small emerald	Emrallt barf yr hen ŵr	
Hepialus humuli	Ghost moth	Chwimwyfyn rhithiol	
Hipparchia Semele	Grayling	Gweirlöyn llwyd	
Hoplodrina blanda	The rustic	Llwyd llyfn	
Hydraecia micacea	Rosy rustic	Gwladwr gwridog	
Hydrochara caraboides	Lesser silver water beetle†Ψ	Chwilen-blymio ariannaidd leiaf (Gwell: chwilen blymio ariannaidd fach)	

Hydroporus rufifrons	A diving beetle†	Chwilen blymio	
Idea contiguaria	Weaver's waveΨ	Ton Gwynedd	
Idaea dilutaria	Silky wave†	Ton sidan	
Idiocera sexguttata	A cranefly	Pryf teiliwr chwe smotyn	
Isogenus nubecula	A stonefly	Pryf cerrig	
Jodia croceago	Orange upperwing†	Uwchadain oren	
Lampronia capitella	Currant shoot-borer	Tyllwr egin cwrens	
Lasiommata megera	Wall brown	Gweirlöyn y cloddiau	
Leptidea sinapis	Wood white	Gwyn y coed	
Limenitis camilla	White admiral	Mantell wen	
Lipsothrix errans	A cranefly†	Pryf teiliwr crwydrol	
Lipsothrix nervosa	A cranefly†	Pryf teiliwr gïeuog	
Lipsothrix nigristigma	A cranefly	Pryf teiliwr smotyn du	
Lophopus crystallinus	A freshwater bryozoan	Bryosoad dŵr croyw	
Lucanus cervus	Stag beetle†	Chwilen gorniog	
Lycia hirtaria	Brindled beauty	Rhisglyn brith	
Lycia zonaria subsp. britannica	Belted beauty†	Rhisglyn y morfa	
Macaria wauaria	V moth	Seffyr y ffyrch	
Malacosoma neustria	The lackey	Gwaswyfyn	
Margaritifera margaritifera	Freshwater pearl mussel†	Misglen berlog yr afon	
Mecopisthes peusi	A money spider	Corryn lwcus	
Meioneta mollis	A money spider	Corryn lwcus	
Melanchra persicariae	Dot moth	Gwyfyn dotiog	
Melanchra pisi	Broom moth	Gwyfyn y banadl	
Melanthia procellata	Pretty chalk carpet	Brychan hardd y calch	
Meloe proscarabaeus	An oil-beetle	Chwilen olew	
Meloe rugosus	An oil-beetle	Chwilen olew	
Meloe violaceus	An oil-beetle	Chwilen olew	
Meotica anglica	A rove beetle†	Chwilen grwydr	
Mesoligia literosa	Rosy minor	Corrach gwridog	
Minoa murinata	Drab looper	Dolennwr llwydfelyn	
Monocephalus castaneipes	A money spider	Corryn lwcus	
Mythimna comma	Shoulder-striped wainscot	Gwensgod gwar rhesog	
Myxas glutinosa	Glutinous snail†	Malwen ludiog	
Nemapogon picarella	A micro-moth	Micro-wyfyn	
Nematopogon magna	A micro-moth	Micro-wyfyn	
Nigrobaetis niger	Iron blue mayfly	Gwybedyn Mai haearnlas	
Noctua orbona	Lunar yellow underwing†	Isadain felen loerol	
Notioscopus sarcinatus	A money spider	Corryn lwcus	
Ochthebius poweri	A water beetle	Chwilen ddŵr	
Odontomyia hydroleon	A soldier fly†	Pryf soldiwr	
Odynerus melanocephalus	A mason-wasp	Saerbicwnen benddu	

Omphiscola glabra	Mud snail	Malwen y llaid	
Orthonama vittata	Oblique carpet	Brychan lletraws	
Orthosia gracilis	Powdered quaker	Crynwr llychlyd	
Osmia parietina	A mason bee†	Saerwenynen	
Osmia xanthomelana	A mason bee†	Saerwenynen	
Panagaeus cruxmajor	A ground beetle†	Chwilen ddaear	
Pelurga comitata	Dark spinach	Brychan y wermod	
Perizoma albulata subsp. albulata	Grass rivulet	Gwregys y gwair	
Philodromus fallax	A running crab-spider	Cranc-gorryn y tywod	
Phyllonorycter sagitella	A micro-moth	Micro-wyfyn	
Pisidium tenuilineatum	Fine-lined pea mussel†	Misglen rhesi main	
Plebejus argus	Silver-studded blue†	Glesyn serennog	
Polia bombycina	Pale shining brown†	Gwyfyn arennau disglair	
Potamanthus luteus	A mayfly	Gwybedyn Mai	
Pseudanodonta complanata	Depressed river mussel†	Misglen yr afon bantiog	
Pyrausta sanguinalis	A pyralid moth	Perl coch ac aur	
Pyrgus malvae	Grizzled skipper	Gwibiwr brith	
Rhabdomastix japonica	A cranefly	Pryf teiliwr	
Rheumaptera hastata	Argent and sable†	Brychan du a gwyn	
Rhizedra lutosa	Large wainscot	Gwelltwyfyn mawr	Added SG6 item 13
Saaristoa firma	A money spider	Corryn lwcus	
Sabra harpagula	Scarce hook tipΨ	Bachadain brin	
Satyrium w-album	White letter hairstreak	Brithribin wen	
Scopula marginepunctata	Mullein wave	Ton arfor	
Scotopteryx bipunctaria	Chalk carpet	Brychan y calch	
Scotopteryx chenopodiata	Shaded broad-bar	Rhesen lydan dywyll	
Sitticus caricis	A jumping spider	Corryn neidio	
Spilosoma lubricipeda	White ermine	Ermin gwyn	
Spilosoma luteum	Buff ermine	Ermin llwydfelyn	
Stilbia anomala	The anomalous	Llwyd gloyw	
Synanthedon scoliaeformis	Welsh clearwing†Ψ	Cliradain Gymreig	
Synaptus filiformis	Hairy click beetle†	Chwilen glec flewog	
Thecla betulae	Brown hairstreak†	Brithribin brown	
Thinobius newberyi	A rove beetle†	Chwilen grwydr	
Tholera cespitis	Hedge rustic	Rhwyll y crawcwellt	
Tholera decimalis	Feathered gothic	Rhwyll bluog	
Timandra comae	Blood-vein	Gwyfyn gwythïen goch	
Trichiura crataegi	Pale eggar	Wylun gwelw	
Tyria jacobaeae	The cinnabar	Teigr y benfelen	
Vertigo angustior	Narrow-mouthed whorl snail†	Malwen droellog geg gul	
Vertigo geyeri	Geyer's whorl snail†	Malwen droellog Geyer	
Vertigo moulinsiana	Desmoulin’s whorl	Malwen droellog	

	snail†	Desmoulin	
Watsonalla binaria	Oak Hook-tip	Bachadain y derw	
Xanthia gilvago	Dusky-lemon sallow	Melyn y llwyf	
Xanthia icteritia	The sallow	Melyn penfelyn	
Xanthorhoe decoloraria	Red carpet	Brychan coch	
Xanthorhoe ferrugata	Dark-barred twin-spot carpet	Brychan deusmotiog tywyll	
Xestia agathina	Heath rustic	Clai'r rhos	
Xestia ashworthii	Ashworth's rustic	Gwladwr Cymreig	
Xestia castanea	Neglected rustic	Clai'r waun	
Xylena exsoleta	Sword-grass†	Cleddwyfyn cyffredin	
Vascular plants (77 species and 1 Hieracium sp.			
Artemisia campestris subsp. maritima	Field wormwood	Y feidiog ddi-sawr	
Asparagus prostratus	Wild asparagus†	Merllys gorweddol	
Asplenium trichomanes subsp. pachyrachis	A maidenhair spleenwortΨ	Duegredynen gwallt y forwyn	
Blysmus compressus	Flat-sedge	Corsfrwynen arw	
Bupleurum tenuissimum	Slender Hare`s-ear	Paladr trwyddo eiddilddail	
Campanula patula	Spreading bellflower†	Clychlys ymledol	
Carex divisa	Divided sedge	Hesgen ranedig	
Centaurea cyanus	Cornflower	Glas yr ŷd	
Centaurium scilloides	Perennial centaury	Canrhi barhaol	
Cephalanthera longifolia	Narrow-leaved Helleborine	Caldrist gulddail	
Cerastium nigrescens (=Cerastium arcticum)	Arctic mouse-ear	Clust-y-llygoden ogleddol	Taxonomic revision SG13[1]
Chamaemelum nobile	Chamomile†	Camri	
Cicendia filiformis	Yellow centaury	Canrhi felen eiddil	
Clinopodium acinos	Basil thyme	Brenhinllys y maes	
Cotoneaster cambricus	Wild cotoneaster†	Cotoneaster y Gogarth	
Dactylorhiza purpurella var. cambrensis (=Dactylorhiza purpurella subsp. cambrensis)	A Marsh orchid	Tegeirian y gors	Taxonomic revision SG 13[1]
Dactylorhiza viridis	Frog orchid	Tegeirian y broga	
Dianthus armeria	Deptford pink†	Penigan y porfeydd	
Euphrasia cambrica	An eyebright†	Effros Cymreig	
Euphrasia officinalis subsp. anglica (=Euphrasia anglica)	Glandular eyebright	Effros Lloegr	Taxonomic revision SG 13[1]
Euphrasia ostenfeldii	An eyebright	Effros Ostenfeld	
Euphrasia pseudokerneri	Chalk eyebright	Effros y calch	
Euphrasia rivularis	An eyebright†	Effros y nant	
Euphrasia officinalis subsp. monticola (=Euphrasia rostkoviana	An eyebright	Effros	Taxonomic revision SG 13[1]

subsp. montana)			
Fumaria purpurea	Purple ramping-fumitory†	Mwg y ddaear glasgoch	
Galeopsis angustifolia	Red hemp-nettle†	Y Benboeth gulddail	
Galeopsis segetum	Downy hemp-nettleΨ	Benboeth	
Galeopsis speciosa	Large-flowered hemp-nettleΨ	Y Benboeth amryliw	
Gentianella anglica	Early gentian	Crwynllys cynnar	
Gentianella campestris	Field gentian†	Crwynllys y maes	
Gentianella uliginosa	Dune gentian†	Crwynllys Cymreig	
Gymnadena borealis	Northern fragrant orchidΨ	Tegeirian pêr gogleddol	
Gymnadena conopsea	Fragrant orchidΨ	Tegeirian pêr	
Gymnadena densiflora	Marsh fragrant orchidΨ	Tegeirian pêr y gors	
Hammerbya paludosa	Bog orchidΨ	Tegeirian bach y gors	
Hieracium spp.: Hieracium angustatiforme Hieracium breconicola Hieracium reticulum Hieracium radyrense Hieracium snowdoniense Hieracium subminutidens	6 threatened endemic speciesΨ	6 rhywogaeth endemig dan fygythiad	
Hordeum marinum	Sea barley	Haidd y morfa	
Hypopitys monotropa (=Monotropa hypopitys)	Yellow bird`s-nest	Cytwf	Taxonomic revision SG 13 G[1]
Hypopitys monotropa subsp hypophegea (=Monotropa hypopitys subsp hypophegea)	A bird’s-nest	Cytwf	Taxonomic revision SG 13 G[1]
Hypopitys monotropa subsp monotropa (=Monotropa hypopitys subsp hypopitys)	A bird`s-nest	Cytwf	Taxonomic revision SG 13 G[1]
Juniperus communis	Juniper†	Merywen	
Juniperus communis subsp. hemisphaerica	A juniperΨ	Merywen	
Liparis loeselii	Fen orchid†	Gefell-lys y fignen	
Luronium natans	Floating water plantain†	Dŵr-lyriad nofiadwy	
Lycopodiella inundata	Marsh clubmoss†	Cnwp-fwsogl y gors	
Lycopodium clavatum	Stag’s-horn clubmossΨ	Cnwp-fwsogl corn carw	
Matthiola sinuata	Sea stock	Murwyll arfor	
Melittis melissophyllum	Bastard balm	gwenynog	

Mentha pulegium	Pennyroyal†	Brymlys	
Neotinea ustulata	Burnt orchid	Tegeirian llosg	
Oenanthe fistulosa	Tubular water-dropwort	Cegiden bibellaidd	
Ophrys insectifera	Fly orchid	Tegeirian y clêr	
Pilularia globulifera	Pillwort†	Pelenllys	
Platanthera bifolia	Lesser butterfly-orchid	Tegeirian llydanwyrdd bach	
Poa glauca	Glaucous meadow-grass	Gweunwellt llwydlas	
Polystichum lonchitis	Holly-fern	Rhedynen gelyn	
Potamogeton compressus	Grass-wrack pondweed†	Dyfrllys camleswellt	
Potentilla rupestris	Rock cinquefoil†	Pumnalen y graig	
Pseudorchis albida	Small-white orchid	Tegeirian bach gwyn	
Pulicaria vulgaris	Small fleabane	Cedowydd	
Ranunculus arvensis	Corn buttercup	Blodyn-ymenyn yr ŷd	
Ranunculus tripartitus	Three-lobed water-crowfoot†	Crafanc-y-frân dridarn	
Rumex rupestris	Shore dock†	Tafolen y traeth	
Salsola kali subsp. kali	Prickly saltwort	Helys pigog	
Saxifraga cespitosa	Tufted saxifrage	Tormaen siobynnog	
Scandix pecten-veneris	Shepherd's needle†	Crib Gwener	
Scleranthus annuus	Annual knawel	Dinodd unflwydd	
Scleranthus annuus subsp. annuus	Annual knawel	Dinodd unflwydd	
Silene gallica	Small - flowered catchfly†	Gludlys amryliw	
Sorbus eminens	A whitebeam	Cerddinen Mynwy	
Sorbus leptophylla	A whitebeam	Cerddinen Gymreig	
Sorbus leyana	Ley's whitebeam†	Cerddinen y darren fach	
Sorbus minima	A whitebeam	Cerddinen wen fach	
Stellaria palustris	Marsh stitchwort	Serenllys llwydlas	
Trollius europaeus	Globe-flowerΨ	Cronnell	
Vicia orobus	Wood bitter-vetchΨ	Ffacbysen chwerw	
Viola lactea	Pale dog-violet	Fioled welw	
Woodsia ilvensis	Oblong woodsia†	Cor-redynen hirgul	
Lichens (67 species and 2 communities)			
Anaptychia ciliaris subsp. ciliaris	A lichen	Prysgwydden y coed	
Arthonia atlantica	A lichen	Cen	
Bacidia circumspecta	A lichen	Cen	
Bacidia incompta	A lichen†	Cen	
Biatoridium monasteriense	A lichen†	Cen	
Blarneya hibernica	A lichen	Cen	
Bryoria smithii	A lichen†	Cen	
Buellia hyperbolica	A lichen	Cen	
Calicium adspersum	A lichen	Cen	

Caloplaca atroflava	A lichen	Cen	
Caloplaca flavorubescens	A lichen	Cen	
Caloplaca herbidella	A lichen	Cen	
Caloplaca lucifuga	A lichen	Cen	
Caloplaca luteoalba	Orange-fruited elm lichen†	Cen llwyfen ffrwythau oren	
Chaenotheca phaeocephala	A lichen†	Cen	
Cladonia peziziformis	A lichen†	Cen	
Collema dichotomum	River-jelly lichen†	Cen gwymonaidd yr afon	
Collema fasciculare	A lichen	Cen	
Collema fragile	A lichen	Cen	
Collema fragrans	A lichen	Cen	
Cryptolechea carneolutea	A lichen	Cen	Added SG 13 G
Endocarpon adscendens	A lichen	Cen	
Fulgensia fulgens	A lichen	Wygen y twyni	
Fuscopannaria sampaiana	A lichen	Cen	
Gomphillus calycioides	A lichen	Cen	
Graphina pauciloculata	A lichen†	Cen	
Gyalecta flotowii	A lichenΨ	Cafneddgen Flotow	
Heterodermia leucomela	Ciliate strap-lichen†	Cen rhuban blewog	
Lecania chlorotiza	A lichen	Cen	
Lecanographa amylacea	A lichen	Cen	
Lecanora achariana	Tarn lecanora	Cen llyn mynydd	
Lecanora quercicola	A lichen	Cen	
Lecanora sublivescens	A lichen	Cen	
Leptogium brebissonii	A lichen	Cen	
Leptogium cochleatum	A lichen	Cen	
Lobarion community	A lichen communityΨ	Cymuned o gen (Lobarion)	See Annex 1
Megalospora tuberculosa	A lichen	Cen	
Melaspilea lentiginosa	A lichenicolous fungus	Un o'r ffyngau cen	
Mine site community	A lichen communityΨ	Cymuned o gen (safleoedd mwynglawdd)	See Annex 1
Opegrapha prosodea	A lichen	Cen	
Parmelina carporrhizans [=Parmelina quercina]	A lichen	Cen	Taxonomic revision SG 13 G[3]
Parmeliella testacea	A lichen	Cen	
Parmelinopsis horrescens	A lichenΨ	Cen	
Parmotrema robustum	A lichen	Cen	

Peltigera venosa	A lichen	Cen	
Pertusaria velata	A lichen	Cen	
Physcia tribacioides	Southern grey physcia	Ffysgia llwyd y de	
Porina effilata	A lichen	Cen	
Porina hibernica	A lichen	Cen	
Pseudocyphellaria intricata	A lichen	Cedennog blawd llwyd	
Pseudocyphellaria lacerata	Ragged pseudocyphellaria	Cen cedennog llarpiog	
Pseudocyphellaria norvegica	A lichen†	Cen	
Pyrenula hibernica	A lichen	Cen	
Pyrenula nitida	A lichen	Cen	
Ramonia chrysophaea	A lichen	Cen	
Ramonia dictyospora	A lichen	Cen	
Rinodina isidioides	A lichen	Cen	
Schismatomma graphidioides	A lichen†	Cen	
Stereocaulon delisei	A lichen	Cen	
Stereocaulon symphycheilum	A lichen	Cen	
Sticta canariensis	A lichen	Pysg-gen glas	
Strangospora microhaema	A lichenΨ	Cen	
Strigula stigmatella var. stigmatella	A lichen	Cen	
Synalissa symphorea	A lichen	Cen	
Teloschistes flavicans	Golden hair-lichen	Cen eurwallt	
Toninia sedifolia	A lichen	Cen	
Usnea articulata	A lichen	Brig-far flodeuog	
Usnea florida	A lichen	Cen	
Wadeana dendrographa	A lichen	Cen	
Mosses and liverworts (52 species and 1assemblage)			
Anoina rigida	Rigid Aloe-mossΨ		Added SG 15 H
Anomodon longifolius	Long-leaved tail-moss†	Cynffon-fwsogl hirddail	
Barbilophozia kunzeana	Bog paw-wort	Pawen-fwsogl y gors	
Bartramia stricta	Rigid apple-moss	Afal-fwsogl anystwyth	
Bryum calophyllum	Matted bryum	Edeufwsogl cedennog	
Bryum gemmiparum	Welsh thread-moss	Edeufwsogl Cymreig	
Bryum intermedium	Many seasoned Thread-mossΨ Added SG 15 H		
	Bryum knowltonii	Knowlton's thread-moss Edeufwsogl Knowlton	
Bryum marratii	Baltic bryum	Edeufwsogl y Baltig	
Bryum muehlenbeckii	Muehlenbeck's ThreadmossΨ		Added SG 15 H

Bryum warneum	Sea bryum†	Edeufwsogl arfor	
Buxbaumia aphylla	Brown Shield-mossΨ		Added SG 15 H
Cephaloziella calyculata	Entire threadwort	Llysiau'r afu edafeddog cyfan	
Cephaloziella nicholsonii	Greater copperwort†	Llysiau'r afu mawr y copr	
Cephaloziella massalongii	Lesser CopperwortΨ		Added SG 15 H
Daltonia splachnoides	Irish Daltonia		Added SG 13 G
Dendrocryphaea lamyana (=Cryphaea lamyana)	Multi-fruited river moss†	Mwsogl afon amlffrwythog	Taxonomic revision SG 13 G²
Dicranodontium asperulum	Orange Bow-mossΨ		Added SG 15 H
Dicranum undulatum (=Dicranum bergeri)	Waved Fork-moss	Crafancfwsogl tonnog	Taxonomic revision SG 13 G²
Didymodon tomaculosus	Sausage beard-moss	Mwsogl barfog cnapiau hirion	
Ditrichum plumbicola	Lead-moss†	Mwsogl plwm	
Ditrichum subulatum	Awl-leaved ditrichum	Crafancfwsogl y mynawyd	
Entosthodon pulchellus (=Funaria pulchella)	Pretty cord-moss	Rheffynfwsogl hardd	Taxonomic revision SG 13 G²
Fissidens curvatus	Portuguese pocket-moss	Pocedfwsogl Portiwgal	
Fossombronia fimbriata	Fragile FrillwortΨ		Added SG 15 H
Fossombronia foveolata	Pitted frillwort	Crychfwsogl tyllog	
Grimmia arenaria	Nodding Donn's GrimmiaΨ		Added SG 15 H
Habrodon perpusillus	Lesser squirrel-tail moss	Mwsogl cynffon gwiwer fechan	
Leiocolea fitzgeraldiae	Fitzgerald's NotchwortΨ		Added SG 15 H
Leptodon smithii	Prince of Wales feather-mossΨ	Mwsogl (pluenfwsogl Smith)	
Meesia uliginosa	Broadnerved Hump-mossΨ		Added SG 15 H
Micromitrium tenerum	Milimetre Moss		Added SG 13 G
Oceanic Ravine Assemblage	A Bryophyte AssemblageΨ		See Annex 1 Added SG 15 H
Orthotrichum obtusifolium	Blunt leaved Bristle-moss		Added SG 13 G
Orthotrichum pumilum	Dwarf Bristle-moss		Added SG 15 H
Pallavicinia lyellii	Veilwort†	Llysiau'r afu gwylaeth y gors	
Paraleptodontium recurvifolium	Drooping leaved Beard-mossΨ		Added SG 15 H
Petalophyllum ralfsii	Petalwort†	Llysiau'r afu petalaidd	
Pseudocalliergon	Large HookmossΨ		Added SG 15 H

lycopodioides			
Radula voluta	Pale ScalewortΨ		Added SG 15 H
Riccia canaliculata	Channelled crystalwort	Llysiau'r afu llabedog rhychog	
Riccia nigrella	Black crystalwort	Llysiau'r afu llabedog du	
Scopelophila cataractae	Tongue-leafed copper-moss	Mwsogl copr dail tafod	
Seligeria oelandica	Irish Rock-bristle		Added SG 13 G
Sematophyllum demissum	Prostrate Signal-moss†Ψ		Added SG 15 H
Sphagnum balticum	Baltic Bog-moss†		Added SG 13 G
Tomentypnum nitens	Woolly Feather-mossΨ		Added SG 15 H
Tortula canescens	Dog Screw-mossΨ		Added SG 15 H
Tortula cuneifolia	Wedge-leaved screw-moss	Mwsogl troellog dail lletem	
Tortula wilsonii	Wilson's pottia	Mwsogl troellog Wilson	
Weissia levieri	Levier's beardless-moss	Mwsogl minfoel Levier	
Weissia multicapsularis	Many-fruited Beardless-moss†		Added SG 13 G
Weissia squarrosa	Spreading-leaved beardless-moss	Mwsogl minfoel dail atblyg	
Fungi (27 species)			
Amanita friabilis	Fragile amanita	Amanita brau	
Armillaria ectypa	Agaric marsh honey fungus†	Agarig (ffwng mêl y gors)	
Chrysomyxa pirolata	Wintergreen rust	Rhwd glesyn y gaeaf	
Clavaria zollingeri	A fairy club/violet coral†Ψ	Ffwng cwrel dulas	
Cotylidia pannosa	Woolly rosette	Roset manflewog	
Entoloma bloxamii	Big blue pinkgill	Tagell binc las fawr	
Geastrum elegans	Elegant earthstar	Seren ddaear gain	
Geoglossum atropurpureum	Dark-purple earthtongue	Tafod daear dulas	
Hericium erinaceus	Bearded tooth fungus†	Ffwng draenog pigau hirion	
Hohenbuehelia culmicola	Marram oyster	Madarch y moresg	
Hydnellum concrescens	A tooth fungus zoned tooth†	Ffwng draenog	
Hydnellum scrobiculatum	A tooth fungus ridged tooth†	Ffwng draenog	
Hydnellum spongiosipes	Velvet tooth†	Ffwng draenog melfedaidd	
Hygrocybe spadicea	Date-coloured waxcap date waxcap†	Cap cwyrog melynddu	
Hypocreopsis lichenoides	Willow gloves	Menig llwyfain	

Hypocreopsis rhododendri			Added SG 13 G
Microglossum olivaceum	Olive earthtongue†	Tafod daear bach melynwyrdd	
Phellodon confluens	A tooth fungus (fused tooth)	Ffwng draenog	
Phellodon melaleucus	A tooth fungus (grey tooth)	Ffwng draenog	
Phellodon tomentosus	A tooth fungus Woolly tooth	Ffwng draenog	
Phylloporus pelletieri	Golden gilled bolete	Boled tagellau aur	
Piptoporus quercinus	Oak polypore	Ysgwydd y derw	
Poronia punctata	Nail fungus†	Ffwng tail ceffyl mannog	
Puccinia scorzonerae	Scorzonera rust	Cawod barf yr afr	
Tremellodendropsis tuberosa	Ashen coral	Cwrel lludlwyd	
Tulostoma melanocyclum	Scaly stalkball	Twlostoma coes gennog	
Urocystis colchici	Colchicum smut	Penddu saffrwm	
Stoneworts (5 rhywogaeth)			
Chara baltica	Baltic stonewort	Rhawn-yr-ebol y Baltig	
Chara curta	Lesser bearded stonewort†Ψ	Rhawn-yr-ebol barfog	
Nitella gracilis	Slender stonewort†	Rhawn-yr-ebol main	
Nitella tenuissima	Dwarf stonewort†	Rhawn-yr-ebol bach	
Nitellopsis obtusa	Starry stonewort	Rhawn-yr-ebol serennog	
Marine (55 species)			
Alkmaria romijni	Tentacled lagoon wormΨ	Llyngyren dentaclog	
Ammodytes marinus	Sand-eel	Llymrïen	
Anotrichium barbatum	Bearded red seaweed†	Gwymon coch barfog	
Arctica islandica	Icelandic cyprine or Ocean quahogΨ	Cocosen fawr	
Atrina fragilis	Fan mussel†	Cragen adain	
Balaenoptera acutorostrata	Minke whale†	Morfil pigfain	
Balaenoptera physalus	Fin whale†	Morfil asgellog llwyd	
Caretta caretta	Loggerhead turtle†	Crwban môr pendew	
Cetorhinus maximus	Basking shark†	Heulgi	
Clupea harengus	Herring†	Pennog	
Cruoria cruoriaeformis	A red seaweed	Gwymon coch	
Delphinus delphis	Common dolphin†	Dolffin cyffredin	
Dermochelys coriacea	Leatherback turtle†	Crwban môr cefnlledr	
Dermocorynus montagnei	A red seaweed	Gwymon coch	
Dipturus batis	Common skate†	Morgath	
Edwardsia timida	Burrowing anemone	Anenome dyllu	
Eunicella verrucosa	Pink sea-fan†	Môr-wyntyll binc	

Gadus morhua	Cod†	Penfras	
Galeorhinus galeus	Tope shark	Ci glas	
Globicephala melas	Long-finned pilot whale†	Morfil pengrwn	
Grampus griseus	Risso's dolphin†	Dolffin Risso	
Haliclystus auricula	A stalked jellyfish	Slefren goesynnog	
Hippocampus guttulatus	Long snouted seahorse	Morfarch myngog	
Hyperodon ampullatus	Northern bottlenose whale†	Morfil trwyn potel	
Lagenorhynchus acutus	Atlantic white-sided dolphin†	Dolffin ystlyswyn	
Lagenorhynchus albirostris	White-beaked dolphin†	Dolffin pigwyn	
Lamna nasus	Porbeagle shark	Corgi môr	
Lithothamnion corallinoides	Coral maerl	Cramen goch gwrelaidd	
Lophius piscatorius	Sea monkfish†	Cythraul y môr	
Lucernariopsis campanulata	A stalked jellyfish	Sglefren fôr goesynnog	
Megaptera novaeangliae	Humpback whale†	Morfil cefngrwm	
Merlangius merlangus	Whiting†	Gwyniad môr	
Merluccius merluccius	European hake†	Cegddu	
Molva molva	Ling†	Honos	
Orcinus orca	Killer whale†	Lleiddiad, orca	
Ostrea edulis	Native oyster†	Wystrysen	
Padina pavonica	Peacock's tail	Gwymon cynffon paun	
Palinurus elephas	Crayfish, crawfish or spiny	Cimwch coch lobster	
Phocoena phocoena	Harbour porpoise†	Llamhidydd	
Phymatolithon calcareum	Common maerl	Cramen goch	
Pleuronectes platessa	Plaice†	Lleden goch	
Prionace glauca	Blue shark	Morgi glas	
Raja brachyura	Blonde rayΨ	Morgath felen	
Raja clavata	Thornback rayΨ	Morgath styds	
Raja undulata	Undulate ray	Morgath donnog	
Rostroraja alba	White or Bottlenosed skate	Morgath wen	
Scomber scombrus	Mackerel†	Macrell	
Solea solea	Sole†	Lleden chwithig	
Squalus acanthias	Spiny dogfish	Ci pigog	
Squatina squatina	Angel shark	Maelgi	
Stenella coeruleoalba	Striped dolphin†	Dolffin rhesog	
Tenellia adspersa	Lagoon sea slug	Môr-wlithen y morlyn	
Trachurus trachurus	Horse mackerel†	Marchfacrell	
Tursiops truncatus	Bottlenose dolphin†	Dolffin trwyn potel	
Ziphius cavirostris	Cuvier`s beaked whale†	Morfil gylfinog Cuvier	

At present we have standard Welsh names for vertebrates, flowering plants, ferns and conifers. All other names are liable to change as a result of current and ongoing work on Welsh environmental terms and names.

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[2] Hill, M.O., Blackstock, T.H., Long, D.G. & Rothero, G.P. (2008). A Checklist and Census Catalogue of British and Irish Bryophytes. British Bryological Society, Middlewich.

[3] Smith, C. W., Aptroot, A., Coppins, B. J., Fletcher, A., Gilbert, O. L., James, P. W., and Wolseley, P.A. (eds.). (2009). The Lichens of Great Britain and Ireland. The British Lichen Society, London.

Annex 1 Section 42 Communities and Assemblages

Lichens /Cen Communities

The Lobarion Community

The following provides some guidance on the identification of the Lobarion lichen community. For fuller details see James, P.W., Hawksworth, D.L., & Rose, F. (1977) Lichen Communities in the British Isles pages 322-327 in Seward, M.R.D. (Ed.) (1977) Lichen Ecology, Academic Press, London. When well-developed this is a spectacular community that can include some of the largest foliose lichens. Unfortunately most of its constituent species are highly sensitive to suphur dioxide, acid rain and excessive ammonia levels and many examples of the Lobarion in Wales are now species poor. The Lobarion is likely to be present on a tree or shrub or any rock face that supports the following

Any species of the genera:

Degelia	Menegassia	Parmeliella (except Parmeliella parvula – see below)
Fuscopannaria	Nephroma	Psuedocyphellaria
Heterodermia	Pannaria	Sticta
Lobaria		

Any of the following species (*=species individually listed in Section 7)

Agonimia octospora	Leptogium brebissonii*	Phyllopsora rosei
Collema fasciculare*	Leptogium cochleatum*	Porina coralloidea
Collema furfuraceum	Pachyphiale carneola	Porina hibernica*
Gyalecta flotowii*	Parmotrema crinitum	Punctelia reddenda
Gomphillus calycioides	Peltigera collina	Thelopsis rubella
Leptogium burgessii		

Any three of the following species:

Acrocordia gemmata	Leptogium lichenoides	Opegrapha sorediifera
Arthonia vinosa	Leptogium teretiusculum	Parmeliella parvula
Catinaria atropurpurea	Loxospora elatina	Peltigera horizontalis
Dimerella lutea	Mycobilimbia pilularis	Pertusaria hemisphaerica
	Normandina pulchella	Thelotrema lepadinum

Mine site community (Metallophytes).

Once Wales probably supported a significant assemblage of lichens associated with natural outcrops of heavy metal-rich rock. Due to the destruction of these outcrops by our mining activities the survival of metallophyte lichens are now almost entirely dependant upon the conservation of old mine sites. Two special types of lichens are almost completely confined to these sites in Wales:-

1. Obligate metallophytes. Those lichens that appear, in some way, to require heavy metals and only occur on heavy metal-rich substrates.

2. Faculative metallophytes. Those lichens which can tolerate heavy metals, but can be found elsewhere in sites, without such heavy metals. Most of these species are probably poor competitors but can survive extreme conditions. In Wales, they are mostly confined to metal-rich sites but also occur, for example, on exposed peat on the summit ridges of high mountains. The following species fall into one or other of these two categories in Wales and any threatened site supporting more than three of these species should be subject to a detailed assessment:

Acarospora sinopica	Rhizocarpon oederi
Baeomyces placophyllus	Sarcosagium campestre
Belonia incarnata	Steinia geophana
Epilichen scabrosus	Sterocaulon condensatum
Gyalidea subscutellaris	Sterocaulon dactylophyllum
Lecanora epanora	Stereocaulon delisei
Lecanora gisleriana	Stereocaulon glareosum
Lecanora handelii	Stereocaulon leucophaeopsis
Lecanora subaurea	Stereocaulon nanodes
Placopsis lambii	Sterocaulon pileatum
Placynthiella hyporhoda	Stereocaulon symphycheilium
Polyblastia agraria	Vezdaea spp.
Psilolechia lepraria	
Rhizocarpon cinereovirens	
Rhizocarpon furfurosum	

Mosses and liverworts

The Oceanic Ravine Assemblage of bryophytes is likely to be present if a site supports:-

Any one of the following species; *=species individually listed in Section 7
Aphanolejeunea microscopica
Campylopus setifolius
Daltonia splachnoides*
Drepanolejeunea hamatifolia
Hageniella micans
Harpalejeunea molleri
Leptoscyphus cuneifolius
Metzgeria leptoneura
Paraleptodontium recurvifolium*
Plagiochila exigua
Plagiochila heterophylla
Radula volute*
Sematophyllum demissum*

Three or more of the following species

Adelanthus decipiens
Andreaea megistospora
Dicranum scottianum
Fissidens polyphyllus
Jubula hutchinsiae
Lepidozia cupressina
Lepidozia pearsonii
Radula aquilegia
Five or more of the following species
Anastrepta orcadensis
Colura calyptrifolia
Douinia ovata
Heterocladium wulfsbergii
Hygrobiella laxifolia
Hygrohypnum eugyrium
Isothecium holtii
Marchesinia mackaii
Plagiochila bifaria
Plagiochila punctata
Platyhypnidium lusitanicum
Porella pinnata
Rhabdoweisia crenulata
Sphenolobopsis pearsonii

Eight or more of the following species
Bazzania trilobata
Fissidens bryoides var. caespitans
Hyocomium armoricum
Lejeunea lamacerina
Lejeunea patens
Lophocolea fragrans
Plagiochila spinulosa
Saccogyna viticulosa
Scapania gracilis
Solenostoma paroicum
Sphagnum quinquefarium

16 Appendix 2 – the Aichi targets

Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society
Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use
Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity
Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services
Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building

Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming

biodiversity across government and society

Target 1

By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.

Target 2

By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.

Target 3

By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.

Target 4

By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.

Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use

Target 5

By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.

Target 6

By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.

Target 7

By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.

Target 8

By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.

Target 9

By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.

Target 10

By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.

Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity

Target 11
By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.

Target 12
By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.

Target 13
By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.

Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services

Target 14
By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.

Target 15
By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.

Target 16
By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.

Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building

Target 17
By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.

Target 18
By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.

Target 19
By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.

Target 20

By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.