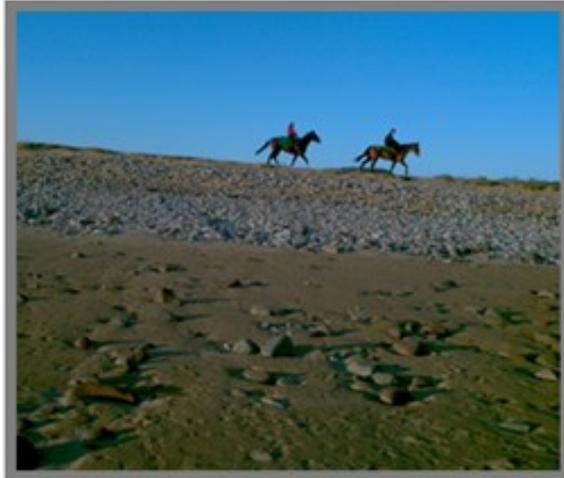


Bridgend County Borough Local Biodiversity Action Plan: Biodiversity and Ecosystem Services Assessment and Revision 2014



Bridgend County Borough Council
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A report produced for
Bridgend County Borough
by



Table of Contents

1	What is the LBAP	2
	1.1 Biodiversity and Ecosystem Services in Bridgend	2
	1.2 Our objectives	2
2	What is biodiversity	3
	2.1 Biodiversity - why we should conserve it	3
3	Biodiversity Action Plans in Bridgend	5
	Ecosystem Service Maps	7



1 What is the LBAP

1.1 Biodiversity and Ecosystem Services in Bridgend



This LBAP (Local Biodiversity Action Plan) is an update of the Local Biodiversity Action Plan originally written in 2002. This LBAP considers the wider role that biodiversity plays in providing benefits to Bridgend County Borough. Bridgend has a wealth of biodiversity with many rare and locally significant plants, animals, insects and

other species, such as organisms living in soil. The habitats these species are found in provide many different functions, which are often called 'ecosystem services'. These include features such as the ability of the land to store and purify water, or the recreational value of woodland. The biodiversity of Bridgend, supplies a wealth of different environmental benefits. This interaction between biodiversity and ecosystem services is explored in this LBAP.

1.2 Our objectives

This LBAP sets out to map and quantify the biodiversity and the underlying ecosystem services (that is the valuable functions our



environment provides) of Bridgend. This LBAP is specifically designed to work in conjunction with other key policies that support planning policy in the Borough. In particular the LBAP should be read alongside the Landscape Character Area (LCA) report by Land Use Consultants (LUC, 2013) which described the different parts of the county and what is unique and special about them.

This LBAP shows why the rich biodiversity of the County Borough of Bridgend is so important and how it supplies a wealth of different benefits to the environment, people and the economy of the area. It provides recommendations for how biodiversity and the ecosystem services in the Borough can be enhanced to increase their value to society. This LBAP is supported by a technical document which describes the ecosystem service in each part of the county in detail. This supporting technical document also describes how the ecosystem services were evaluated and mapped.

2 What is biodiversity

Biodiversity is the word we use to describe the whole variety of life that exists on earth. It includes all animals, insects, plants, fungi and bacteria and the complex habitats and ecosystems which they form. It includes the life in the soil as well as the life we see above ground. It also includes the genetic diversity, because the more genetically diverse a species is, the more resilient the population is to disease. The term covers everything that could be considered to form the 'biological diversity' of our environment. It includes every living thing, from the rare plants and insects found in remote locations, to the common and familiar species, such as the birds and flowers you might see in your garden or local park.

The biodiversity of Bridgend County Borough supplies a wealth of different environmental benefits. This includes crops and grazing land, which are easily seen in the countryside; but there are other benefits that are more hidden from view, such as the way the soil can filter the rain to give clean, fresh drinking water, through to the sense of well-being and enjoyment found in walking through a bluebell wood on a spring morning. All these features of the environment that provide benefits to people are often referred to as '**ecosystem goods and services**'. The link between biodiversity and the range and quality of the ecosystem goods and services is increasingly well understood and is described in the UK National Ecosystem Assessment (2011).

2.1 Biodiversity - why we should conserve it

Biodiversity is important to all of us for a number of reasons, the most significant of which are:

- Many people appreciate **biodiversity for its own sake**, for the opportunity to see wildlife, or walk in attractive or 'natural' places. An environment that is rich in biodiversity is therefore important for our quality of life. The ability to experience nature enriches our lives on a daily basis, whether we are watching the birds in our garden,

looking outside our office windows, or walking across a heather clad mountain side in mid-summer listening to the bees amongst the flowers.

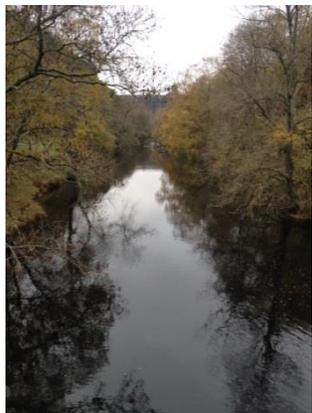


- **Biodiversity provides us with many useful things.** Plants and animals provide food, timber and building materials. They provide material for clothing, and many of our most effective medicines have come directly from the organisms in our natural world.



- Studies are increasingly demonstrating that contact with the natural world not only provides us all with a genuine **sense of wellbeing**, but also helps us to relax, concentrate and deal with stress and anxiety - it generally improves our mental health (Bird, 2007). Environments which support a wide range of natural species and habitats are typically attractive ones that people want to visit, relax and take exercise in. Recreation in the outdoors has been shown to reduce obesity, aid mental health recovery and **support a healthy immune system** (Tzoulas K *et al*, 2007; Thompson Coon J, 2011).





- Biodiversity also helps provide the features and functions from our environment that we sometimes take for granted. These functions are intricate and can be easily disrupted by the loss of species and habitats. For example, peat lands and woodlands gather carbon from the carbon dioxide in the air and store it. This reduces the amount of carbon in the atmosphere helping to counteract the effects of climate change. The oxygen the trees give out and the pollutant particles they trap, clean and

cool the air giving a better environment for people to live and work in. The soil biodiversity (such as worms, fungi and soil bacteria) is particularly important as it plays a major role in regulating water flow and purifying water. Good soil biodiversity enables the soil to hold a large quantity of water, preventing it from running straight into streams after heavy rainfall, slowing water through the landscape and subsequently reducing the risk of flooding.

- Biodiversity is an important part of our **cultural heritage and identity**. The natural or semi-natural environments that surround us today are just as much a part of our heritage as our museums and art galleries. Wooded valley sides (including around Maesteg), moorland on the plateaus and the extensive sand-dune system at Kenfig are features that have been part of the natural heritage of Bridgend for generations. These natural places have nevertheless been shaped by centuries of human activity, and millennia of natural processes. Our natural heritage is therefore both our link to, and the product of, our past. The history of land use and land management varies from place to place, just as the geology, topography, soils and other environmental characteristics differ from one area to another. This results in the formation of many different habitats, and the distribution of different species. These features of the land play an important part in defining the landscape character and the environmental characteristics of each

place. Biodiversity is therefore an essential component of local distinctiveness, providing a sense of identity and place. The Landscape Character Assessment of Bridgend identifies fifteen distinct areas of the county. These areas reflect variations in the natural environment so they have been used in this LBAP to describe the varying interaction of biodiversity and ecosystem services within the county as a whole. In addition, the five main urban areas have been included in the analysis as biodiversity and ecosystem services are important in an urban setting.



3 Biodiversity Action Plans in Bridgend

In 2002, a partnership of organisations prepared a Local Biodiversity Action Plan for Bridgend (LBAP) (Bridgend Biodiversity Partnership, 2002). The report described the distinctive and significant features that form the biodiversity of Bridgend. It laid out a scheme and strategies for action that have maintained and enhanced the physical and biological integrity of the biodiversity resource in the county for over ten years.

The Bridgend LBAP contains detailed aims and action plans for sixteen terrestrial habitats and a statement about the marine environment. Each of these habitats is a significant biodiversity resource. The existing state or 'stock' of these habitats was surveyed and threats and opportunities to maintain and enhance them were identified. Some knowledge gaps were identified in the functioning of the habitats. In addition, species action plans were produced for The Bridgend LBAP, which contained detailed aims for sixteen terrestrial habitats and a statement about the marine environment. Each of the natural habitats in Bridgend contains a significant biodiversity resource and these are described in the LBAP 2002 document. In addition, species action plans were produced for mammals, birds, insects, plants and amphibians (See Table 1). These species form a very significant biodiversity resource and further audit and action will prove beneficial. This is because they can act as an 'indicator' of how well natural ecosystems are functioning. These species are not considered individually in this LBAP, but the habitats and landscapes that support them are. If these are protected and enhanced then the species should continue to do well. Individual species plans are outside the scope of this LBAP.

Table 1: Species action plans prepared as part of the Bridgend LBAP, 2002

Species Group	Species with an Action Plan
Mammals	Bat (4 known species) and (6 possible occurring species) Hazel Dormouse Otter Water vole
Birds	Lapwing Skylark Whinchat Reed Bunting Spotted Flycatcher
Newts	Great Crested Newt
Butterfly	Marsh Fritillary Butterfly High Brown Fritillary Butterfly Small Blue Butterfly
Moths	Double-Line Moth Bordered Gothic Moth Waved Carpet Moth
Flys and Bees	Hornet Robberfly Brown-Banded Carder-Bee Shrill Carder-Bee
Dragonfly and Damselfly	Hairy Dragonfly Scarce Blue-Tailed Damselfly
Cricket	Bog Bush-Cricket
Leech	Medicinal Leech
Flowering plants and Grasses	Fen Orchid Whorled Caraway Shore Dock Viper's-Grass Arable Weed Species (Group Plan)
Lichen	<i>Bacidia incompta</i>

Biodiversity Action Plan and Ecosystem Services Assessment

Biodiversity conservation and enhancement is important as it preserves both the species and genetic inheritance of the county and provides key features that keep our environment functioning properly. The more intact (i.e. less damaged) habitats are, the better they function.

The holistic and integrated management of land, water and living resources is a central principle of the ecosystem approach.

Semi-natural habitats are valued both for their intrinsic biodiversity and for their role in providing water, climate regulation and cultural benefits. Table 2 summarises some of the key features provided by the habitats.

Table 2: Habitats in Bridgend and their ecosystem services

LBAP Habitat Groups and their habitats	Key ecosystem goods and services these habitats provide
HEDGEROWS: Ancient and Species-rich Hedgerows	<p>Above Ground Features</p> <ul style="list-style-type: none"> • A key resource for pollinating insects • A key seed source for grassland species • Help provide shelter against strong winds <p>Below Ground Features</p> <ul style="list-style-type: none"> • Wider hedges and those planted across slopes or near streams play a key role in regulating the flow of water following heavy rainfall. • The soil purifies water through action of roots and soil fauna and flora.
WOODLANDS: Lowland Ancient Woodlands Upland Oak Woodlands Upland Mixed Ash Woodlands	<p>Above Ground Features</p> <ul style="list-style-type: none"> • Support the widest number of species, including pollinator insects. • Large resource of genetic diversity • Capture and store carbon • Clean and cool the air • Regulate surface water runoff through interception of raindrops <p>Below Ground Features</p> <ul style="list-style-type: none"> • Store and regulate water run off • Purify water through action of roots and soil fauna and flora

LBAP Habitat Groups and their habitats	Key ecosystem goods and services these habitats provide
	<ul style="list-style-type: none"> • Capture and store soil carbon (in the lowland woodlands on deep brown earths this can be a very significant resource) • Play a key role in soil fertility through the nitrogen cycle
PARKLANDS AND GRASSLANDS: Lowland Wood-Pasture and Parklands Hay Meadows and Old Pastures Lowland Dry Acid Grasslands Calcareous Grasslands Arable field margins	<p>Above Ground Features</p> <ul style="list-style-type: none"> • Semi-natural grasslands provide us with a grazing resource that produces high quality meat and dairy products. • Semi-natural grasslands provide homes for pollinating insects, which are estimated to be worth £430 million a year to the UK's agricultural industries (Welsh Government, 2013b). • They provide homes for other insects that are predators of important crop pests. • Grass margins around arable fields can capture nitrogen before it enters watercourses. Wildflower seed mixes (or just agricultural varieties of clover) can be sown around the boundaries of arable land and improved grassland fields to provide nectar for pollinators. <p>Below Ground Features</p> <ul style="list-style-type: none"> • Their soils absorb and store carbon, helping to mitigate climate change. • Semi-natural grasslands help purify drinking water, unlike intensive grasslands and arable land (where artificial fertilisers are used), which can add pollutants to drinking water.
WETLANDS: Wet Woodlands Purple Moor-	<p>Above Ground Features</p> <ul style="list-style-type: none"> • Although reed beds are generally just made up of a few plant species, they trap sediment, remove impurities from the water which is a key part of water purification.

LBAP Habitat Groups and their habitats	Key ecosystem goods and services these habitats provide
Grass and Rush Pastures Coastal and Floodplain Grazing Marshes Reedbeds Fens and Flushes Blanket Bogs	<ul style="list-style-type: none"> Wetlands support a wide range of bird species and a number of key plants, such as rushes used in traditional thatching. A number of key medicinal plants come from wetlands. They provide a refuge for insects, which can act both as pollinators and as predators for natural pests. <p>Below Ground Features</p> <ul style="list-style-type: none"> Wetlands have a key role in storing water, preventing flooding by slowing its flow to rivers and providing a steady source of water in drought conditions. Wetland soils are carbon-based peat and therefore both capture and store carbon Wetlands also have a key role in preventing soil erosion
HEATHS: Heathlands	<p>Above Ground Features</p> <ul style="list-style-type: none"> Provide grazing for traditional breeds of livestock Provide game for food and field sports Intact heathlands and blanket bogs hold the fragile peat soils together, thereby stopping organic particles from being carried into drinking water, therefore are a source of natural hazard mitigation Heathlands have a strong landscape value; the brown purple cover of the hill tops of the county borough are a key part of the character of these areas <p>Below Ground Features</p> <ul style="list-style-type: none"> Peat based soils hold a large proportion of organic carbon helping mitigate climate change

LBAP Habitat Groups and their habitats	Key ecosystem goods and services these habitats provide
COASTAL SAND DUNES:	<p>Above Ground Features</p> <ul style="list-style-type: none"> Sand dunes contribute strongly to tourism and regional character Contribution to coastal defence by acting as a barrier to wave and wind action. <p>Below Ground Features</p> <ul style="list-style-type: none"> Coastal stabilisation below ground by roots of the grass species

Ecosystem Service Maps

Since the LBAP was written in 2002, a new and holistic approach to the environment has been advocated by the Wales Environment White Paper (Welsh Government 2012), which sets out an **ecosystem approach**. A holistic approach is one that looks at natural systems and their properties as a whole, rather than a collections of parts. This approach is designed to enable sustainable land use and management decisions about the land by considering the economic, environmental and cultural impacts of any land use / management. In 2010 the "Bridgend / CCW SCCAN" project¹ started as a response to this new approach. The maps produced can be used to show where maximum value can be gained from taking action. The maps also provide a strong evidence base to consider ecosystem services and biodiversity within the wider context of Bridgend planning policy work. This LBAP is accompanied by a technical document which details the ecosystem value for each LCA (Landscape Character Area). In addition it considers

¹ System Cynorthwyo Cynllunio Adnoddau Naturiol, (Welsh for Natural Resource Planning Support System)

the opportunity for enhancing the biodiversity and ecosystem services in each of the LCAs.

The environment provides many benefits which are important to our livelihoods in addition to the main land use. For example a woodland grown for shelter around a farm, also provides clean water, reduces the air temperature in the summer and stores carbon in the soil and vegetation helping ameliorate climate change. During the Millennium Ecosystem Assessment a model was built to help describe the services or features the land provides. It includes four different types of services, shown in Figure 1.

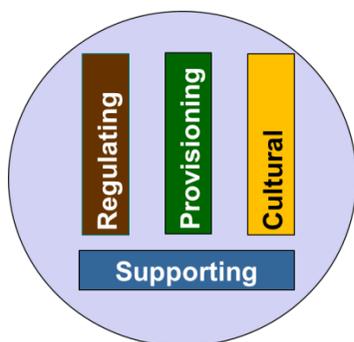


Figure 1: Services from The Millennium Ecosystem Assessments2

Supporting Services: These are features such as biodiversity that underpin general ecosystem functioning and facilitate all the other services.

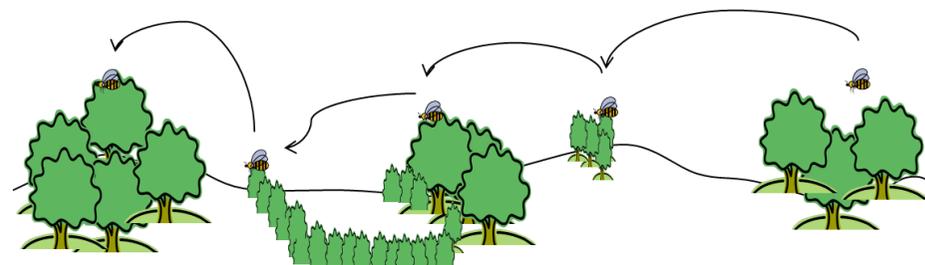
Regulating Services: These include the regulation of water flowing through the environment, the provision of clean water, storage of carbon from the atmosphere into the soil and vegetation and regulation of soil erosion.

Provisioning Services: These include wood for timber and fibres,

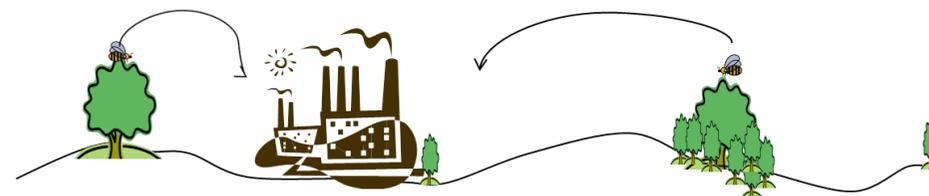
food, agricultural goods and renewable energy.

Cultural Services: Such as recreation, historic significance and 'sense of place'.

In the supporting technical evidence document of this LBAP the significant biodiversity is mapped and described for each Landscape Character Area. The second part of this LBAP should be read in conjunction with the information given about each landscape character area in the LCA document. For each area the most important sites highlighted for biodiversity are shown together with the presence of 'networks' or eco-connectivity corridors of high biodiversity. This concept of eco-connectivity is shown in Figure 2.



Woodland eco-connectivity corridor or network, where species can move between forest blocks using areas of scrub and thicker hedgerows. This enhances genetic biodiversity.



Woodland not connected into a network leaving populations of species isolated reducing genetic diversity and degrading biodiversity.

Figure 2: Eco-connectivity corridors

The Landscape Character Areas are shown on the map in Figure 3. They have been supplemented by the five urban areas which were not described in the LCA report but contain important ecosystem services and biodiversity so have been included.

² <http://www.millenniumassessment.org/en/index.html>

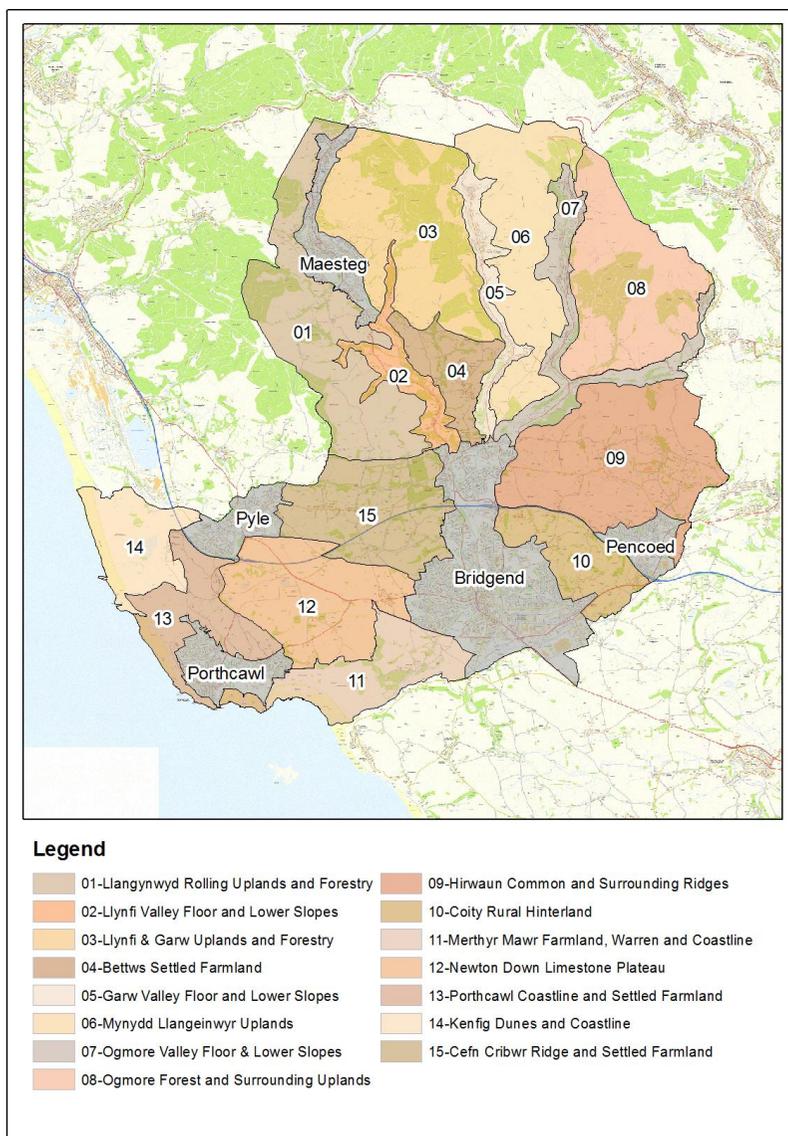


Figure 3: Landscape Character and urban areas in Bridgend

The ecosystem services of prime importance to the area are mapped in the technical report. The main international and national policies and the services they relate to are described below:

The Habitats Directive requires Member States to introduce a range of measures, including to maintain or restore European protected habitats and species listed in the Annexes to a “favourable conservation status”.

Biodiversity 2020 aims to halt overall biodiversity loss, support healthy well-functioning ecosystems and establish coherent ecological networks, with more and better places for nature for the benefit of wildlife and people.

The Natural Environment White paper is under review. It aims to;

- halt the loss of biodiversity and continue to reverse previous losses through targeted actions for species and habitats,
- increase awareness, understanding and enjoyment of biodiversity, and engage more people in conservation and enhancement,
- restore and enhance biodiversity in urban, rural and marine environments through better planning, design and practice
- develop an effective management framework that ensures biodiversity is taken into account in wider decision making.



Biodiversity: This is an important aspect of most of the ecosystem services. It refers not just to the plants and animals that live above the ground but also those in the soil. It also includes the likely genetic diversity of the site and the site’s resilience to change.

The Action Plan for Pollinators in Wales (Welsh Government, 2013) describes the current situation for pollinators in Wales and identifies areas where action is needed.



Pollination: Plants which produce flowers provide a resource for pollinating insects. This is an important ecosystem service as 70% of the major food crops depend on pollination by insects, such as bees and hoverflies. By identifying

Climate Change Act 2008 sets the legally binding target of an 80% cut in greenhouse gas emissions by 2050, and sets a carbon budgeting system that caps emissions over five year periods. It provides UK governments with powers regarding preparing for climate change impacts.

By taking stock of carbon stored in vegetation and soil better decisions can be made about where to best implement action for this act.



Carbon stored in vegetation: As plants grow they remove carbon from the atmosphere. As carbon in the atmosphere is the main driver of climate change, this function can help mitigate climate change effects.



Soil carbon storage: This refers to the amount of carbon held in the soil, mostly in the form of organic matter from roots and other plant material. This is the most important terrestrial carbon store, with peat lands being of particular significance. This is important in mitigating the effects of climate change.

The Common Agricultural Policy (CAP) for Wales (Welsh Government 2013) enables funding for activities which support farmers, the countryside and rural communities.



The land's ability to provide food: This refers to fields used for arable crops, livestock grazing and also to the fruit and vegetables we grow both commercially and in our gardens.

Water Framework Directive (WFD) (EC 2000/60/EC) is a European Directive to establish a framework for the protection of rivers, lakes,

estuaries, coastal waters and groundwater. It aims to ensure that all aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands meet 'good status' by 2015.

EU Flood Directive (EC 2007/60/EC) aims to reduce and manage the risks that floods pose to human health, the environment, cultural heritage and economic activity through flood risk assessments and management plans.

Flood and Water Management Act 2010 aims to provide better flood and coastal erosion risk management for people, homes and businesses, help protect community groups from unaffordable rises in drainage charges and protect water supplies.

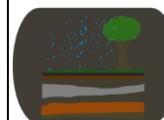
Taking stock and identifying suitable actions of the following services will help to address these policies.



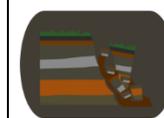
Clean Water: This is a measure of the ability to provide fresh water in streams both as a home for fish and a source of drinking water.



Water Regulation: natural control of flooding Water Regulation is important to control flooding and mitigate the effect of droughts. It is determined by the amount of water a habitat can store after heavy rainfall, as opposed to flowing directly into the rivers over the surface of the land.



Water purification: This is a measure of the ability of the vegetation in a habitat to remove undesirable substances, such as chemicals or sediment particles, from the water leading to clean fresh water.



Soil erosion control: Wind, water flow, and other natural or artificial forces can over time remove high amounts of soil from habitats, causing sedimentation of water ways. Vegetation cover can mitigate this effect: The roots of plants can stabilise soil on steep slopes, while saltmarshes can protect the coastline from waves.

Woodlands for Wales – our strategy for Welsh woodlands and trees (Welsh Government, 2009) aims for Wales to be known for its high-quality woodlands that enhance the landscape, are appropriate to local conditions and have a diverse mixture of species and habitats.



The provision of wood and timber products: Wood is a widely used material, from the construction of houses to papermaking with other fibres used for energy generation.

Partnership for Growth: The Welsh Government Strategy for Tourism 2013-2020 states that it hopes for tourism to grow in a sustainable way and to make an increasing contribution to the economic, social and environmental well-being of Wales.

Providing Accessible Natural Greenspace in Towns and Cities (CCW, 2004) provides simple, sensible ways to make more green spaces accessible close to home where they are most needed.



Scenic quality and sense of place: Many people enjoy spending their spare time in the countryside. This feeling of enjoyment leads to health benefits such as reducing stress.



Recreation: Outdoor recreation has significant health benefits and is an important social and economic value obtained from the countryside.



Historic significance of the area: The remains of old buildings or cemeteries can give us a sense of our ancestry, of where we come from. An area of historic significance might for example contain old mines, which shaped human life in an area over a very long time.



Urban greenspace: Greenspace in urban areas is important for wellbeing and health, and helps to join up patches of habitat allowing species to move through the urban environment.

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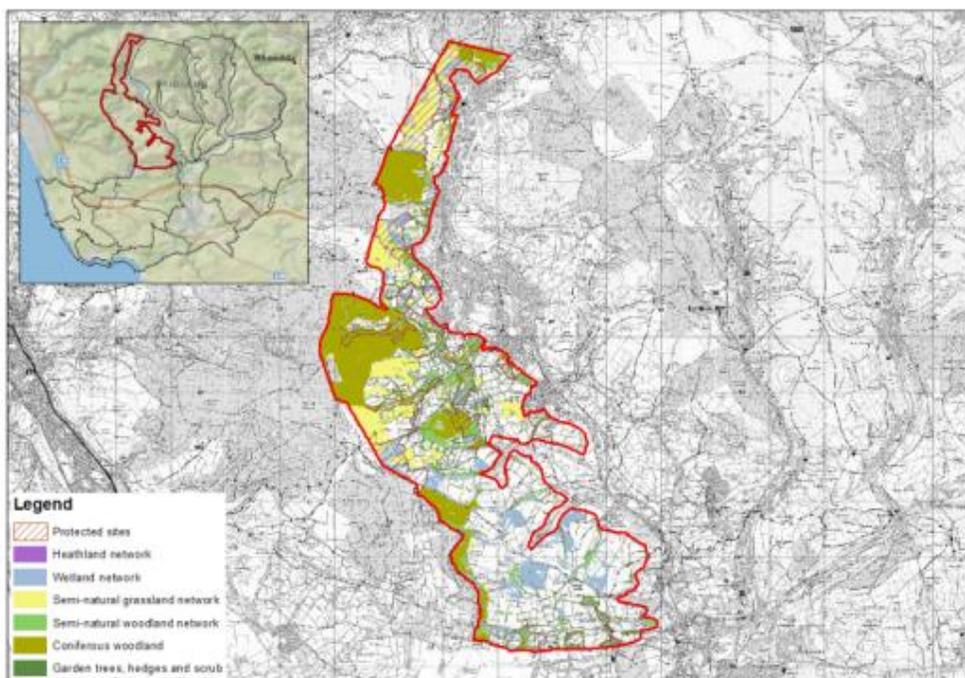
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1: LLANGYNWYD ROLLING UPLANDS AND FORESTRY



1 Habitats in the area

This area contains a range of habitats; much of the area is improved upland grassland with some blocks of coniferous forestry, however there are a few areas of important semi-natural habitats:

- Broadleaved blocks of semi-natural woodland run up the Cwm Cerdin valley and link into Measteg town. Added to this there are a number of thicker, mature hedges which are also linked to an eco-connectivity corridor likely to be used by a range of species to move from one block of woodland to another, helping maintain genetic diversity.
- There are occasional patches of heath and bog within the improved and unimproved upland grassland.
- In addition there are very significant areas of species rich marshy grassland in the Llynfi valley, including the nationally important wet meadow of Cwm Risca SSSI which contains over 80 species of plants and a colony of the marsh fritillary butterfly.
- The conifer plantations in the west of the area support a more limited biodiversity, but have greater opportunities for biodiversity improvement if replanting contains a mix of tree species.

2 Notable species in the area

- The marshy grassland of Cwm Risca contains a population of the nationally important marsh fritillary butterfly. They contain Devil's-bit scabious and other uncommon plants associated with marshy grasslands.
- The woodlands, hedges and scrub may be used by small birds and mammals

Risk to species:

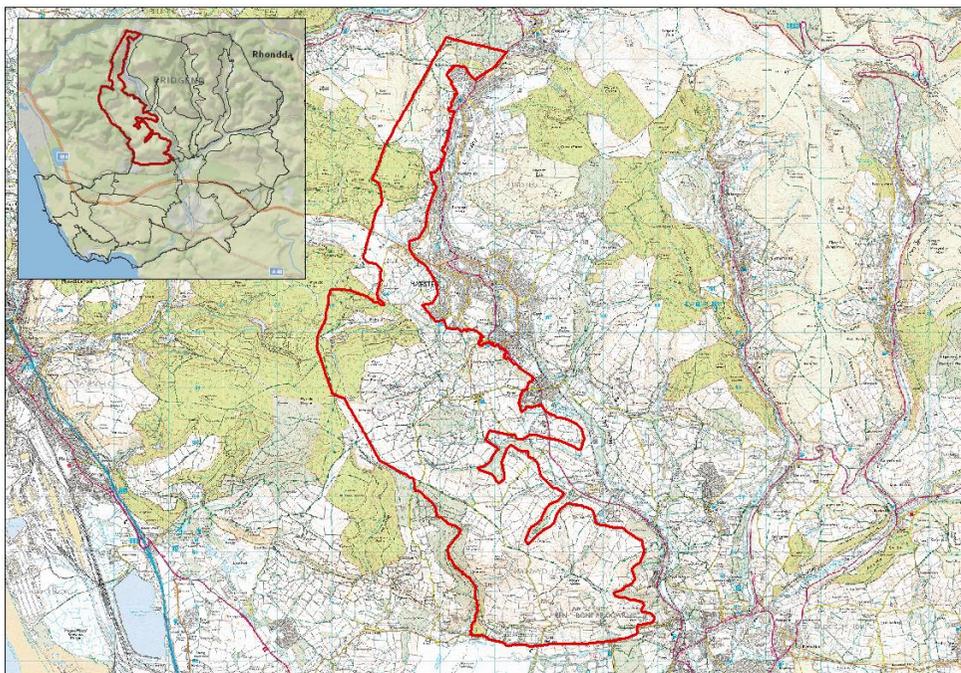
The marsh fritillary relies on the devil's-bit scabious; it tolerates a small range of climatic conditions and is at risk of becoming isolated to small pockets of habitats. In order for this species to thrive there needs to be active management to maintain these important wet grasslands and the links to the grassland eco-connectivity corridor.

Risks to notable habitats

- Continuing application of fertiliser to the improved grassland could have a negative impact on semi-natural habitats down slope unless care is taken with quantities of fertilizer applied, as excess will be washed down hill into the wetlands. This would change the intricate balance of soil hydrology/plant interactions and result in the loss of the more specialised flowers.
- Hedgerows need active management to maintain a good structure which supports a range of wildlife.
- The small areas of heath and bog will need active management to maintain in the face of climate change and increasing agricultural improvement.

1: LLANGYNWYD ROLLING UPLANDS AND FORESTRY

3 Key ecosystem services in the area



For detailed maps of the services please refer to the supporting evidence document.



The southern part of the LCA is important grazing land for sheep and cattle.



Several very large softwood conifer plantations provide a timber resource.



The woodland on the steeper valley sides helps regulate water which would otherwise flow very quickly into the main river Llynfi.



The wet grasslands of Cwm Risca and the broadleaved woodlands have a high biodiversity value.



The area is an important resource for people from Maesteg. Maesteg golf course occurs in the middle of this area, and many people use the wider area for informal recreation and to walk and enjoy the countryside.



The flowers in the hedgrows and species-rich grasslands and fields are an important area for pollinating insects.



The peaty upland soils store soil carbon and water, helping to mitigate climate change. The steeper valley sides have thin clay soils which are particularly vulnerable to erosion.

1: LLANGYNWYD ROLLING UPLANDS AND FORESTRY

4 Actions and opportunities to maintain ecosystem services

Vision for enhanced biodiversity

Biodiversity enhancement through improved woodland and grassland networks and woodland planting schemes with native species and the restoration of more grassland meadows.

High proportion of wetland systems functioning effectively to prevent irreversible habitat loss, as well as regulating flow and filtering water.

The peaty soils on the hill tops hold remnant bog and heath habitats, restoration of these would prevent irreversible habitat degradation and biodiversity loss. This would also help water regulation and soil carbon regulation helping slow flooding events following heavy rainfall and mitigating climate change through capturing carbon in the peaty soils.

The coniferous woodland could be replanted following felling with some areas of mixed native deciduous trees to provide enhanced biodiversity and water and air purification.

Actions and opportunities to achieve the vision



Increasing and maintaining habitat connectivity through this area is vital to maintain flows and mobility of species.



Diversification of plantation woodland promoting plant species and wildlife diversity.



Protection of the soil resource against topsoil erosion through sensitive agricultural management.



Precision agriculture allowing for targeted pesticide and fertiliser application.

Sympathetic stocking of the uplands.

Opportunities to work with the climate to promote crop growth. Upland, riverine and shelterbelt planting to stabilise slopes and banks. A reduction of ploughing on steep slopes will stabilise erosion during high rainfall events, and improve water quality and biodiversity.

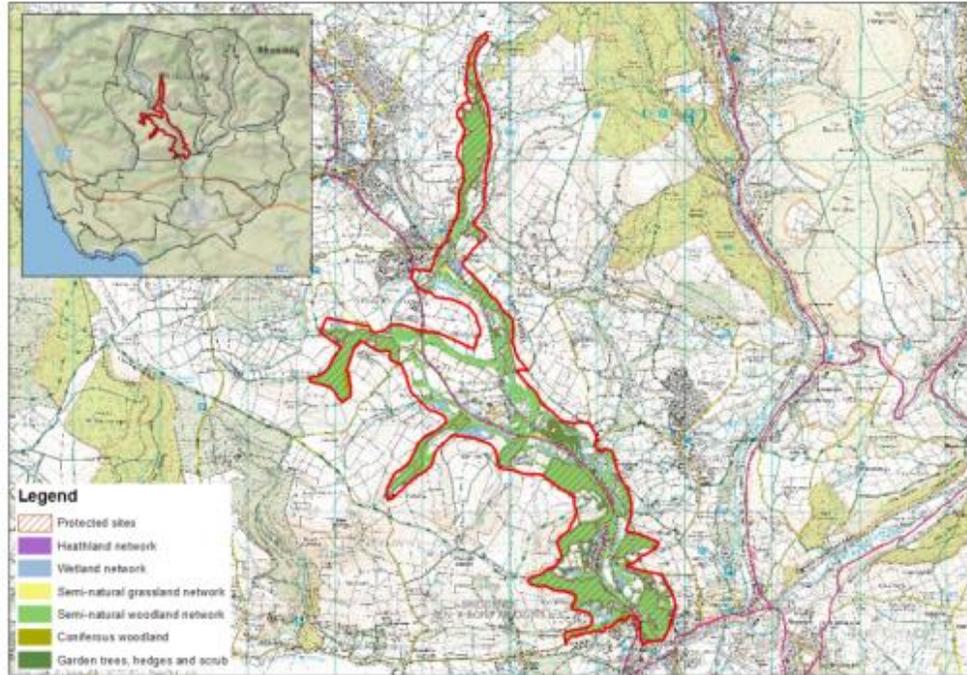


Improvement of networks of hedgerows and field margins supporting flowering plants and therefore pollinators.



Opportunities to promote recreation linkage throughout the area, allowing interactions between the population and the open areas. Sensitive management of recreation pressures.

2: LLYNFI VALLEY FLOOR AND LOWER SLOPES



2 Notable species in the area

The woodlands contain a wide range of woodland plants from ferns such as lemon-scented fern and hart's-tongue fern, through flowers such as wood avens and bluebells, to butterflies such as green-veined white and speckled wood, together with animal species including bats, and birds. There are areas of neutral wet grassland with purple moor grass and sedges which adjoin the woodlands.

Risk to species:

The woodlands form part of a wider network of woodland which allow bat, bird and insect species to move between different woodland areas. If this network is further broken up then genetic diversity will be lost from the species groups. The wet woodland along the river is at risk from invasive species.

1 Habitats in the area

The Llynfi valley has a range of habitats including:

- Broadleaved woodland, with larger blocks of woodland especially on the steeper valley sides and with smaller linear woodland stands on the valley floor. The woods in the northern part of the catchment are part of Cwm Du Woodland SSSI which are made of drier areas of sessile oak and wetter areas where alder dominates. In the south of the area the woodlands are also broadleaved ancient woodland and form part of a locally significant 'Site of Importance for Nature Conservation' (SINC) These woodlands are important for maintaining connectivity along the valley generally.
- There are smaller areas of semi-improved and wet grasslands adjoining the woodlands, with smaller areas of scrub and bracken.
- Hedgerows and overgrown field boundaries add to the connectivity along the valley.

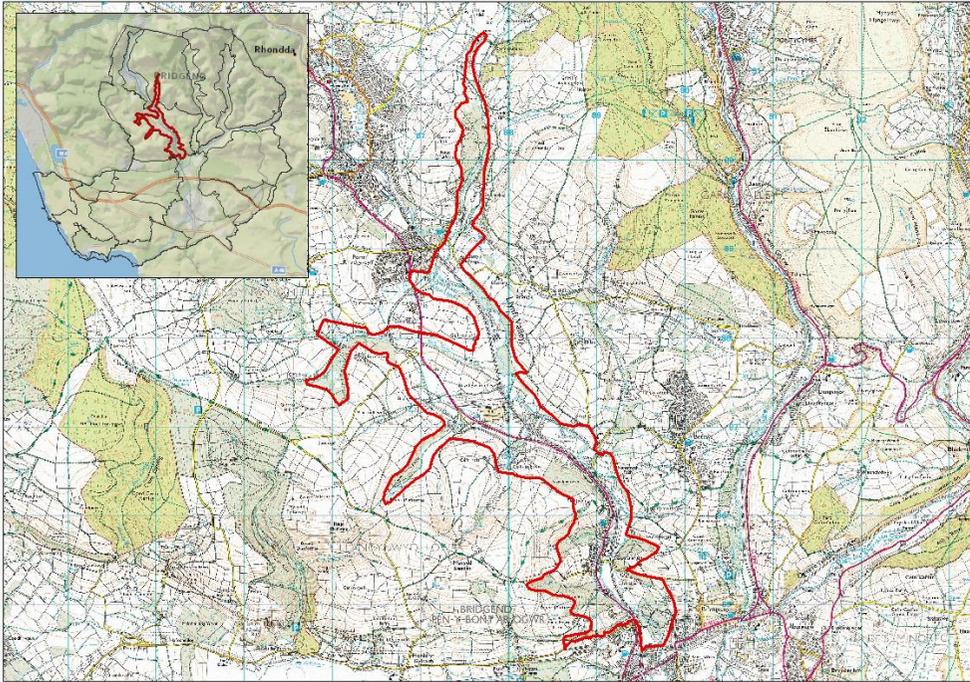
Risks to notable habitats

Risks include:

- Agricultural improvement of wet and semi-improved grasslands
- Urban encroachment along the valley floor
- The spread of invasive species, especially Japanese knotweed and Himalayan balsam, along the river corridor.

2: LLYNFI VALLEY FLOOR AND LOWER SLOPES

3 Key ecosystem services in the area



For detailed maps of the services please refer to the supporting evidence document.



All habitats in the river valley bottoms have an important role in water regulation, particularly for floodplain storage. Woodlands at higher elevations and on the steep slopes are also strong regulators of water flow.



Woodlands provide high levels of water filtration, along with the pockets of semi-improved grassland distributed throughout the area in valley bottoms and on higher ground.



Vegetation carbon storage is highest in the areas of broadleaf woodland, concentrated along the river corridor.



Woodlands are the main contributors to the pollination resource, but hedgerows and semi-improved grasslands are also important sources of pollen rich flowers and provide many different habitats for insects to use.



The Llynfi river is an important area of fresh water with salmon and brown trout being important for recreational fishing.



The steep valley sides are protected from erosion by the woodland cover; care must be taken with any felling and replanting to avoid soil erosion.

2: LLYNFI VALLEY FLOOR AND LOWER SLOPES

4 Actions and opportunities to maintain ecosystem services

Vision for enhanced biodiversity

The area contains a particularly strong woodland network; the largest areas of which are designated sites, affording them some level of protection.

Areas of semi-improved and wet grassland add to the ecological network and assist in the provision of key ecosystem services.

Actions and opportunities to achieve the vision



Active management is needed to maintain woodland habitat quality; neglect can lead to losses in biodiversity. Hedgerows are an important component of the networks; hedgerow restoration and good management can increase the resilience of biodiversity by connecting different populations.



Opportunities exist to improve water regulation in the region through sympathetic management of improved grasslands; particularly on the fields above Bridgend Paper Mills and Nant y Gadlys, and along the Afon Llynfi.

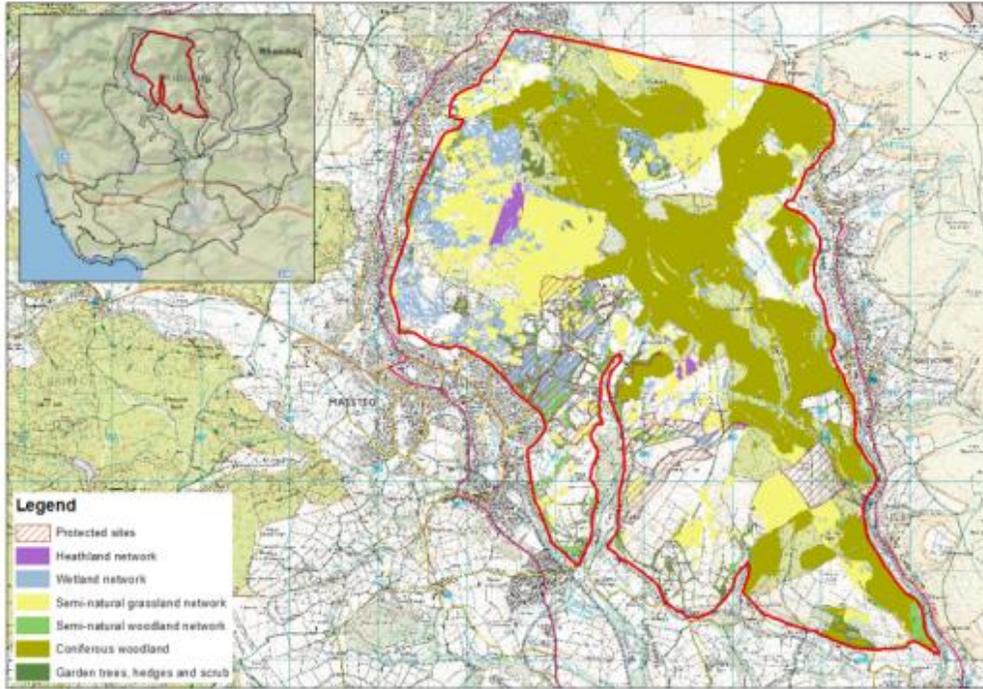
Infiltration could be increased by adopting management practices to reduce soil compaction and improve soil structure. Wider management changes such as habitat restoration could also provide run-off regulation benefits.



Vegetation carbon storage could be enhanced by restoring the hydrology and species-richness in areas of poor semi-improved grassland.

Diversification of plant species and structural components of the vegetation on poor semi-improved grassland will increase the number of ecological niches available to wildlife using the site, as well as improving vegetation carbon storage.

3: Llynfi & Garw Uplands and Forestry



2 Notable species in the area

The marshy grasslands, bracken and scrub dominate slopes which are host to a wide range of butterfly species from small heath through to meadow brown. Some sightings of marsh fritillary have been found. In addition peregrine falcons and bats use the area.

Risk to species:

The marshy grasslands and unimproved grasslands in the area could be at risk from either abandonment or agricultural intensification; either would pose a risk to the important species of butterfly, birds and mammals recorded in the area.

1 Habitats in the area

- An extensively forested upland area where the highest levels of biodiversity provision are found in the remaining unimproved and semi-improved grassland, along with the small and highly fragmented areas of heathland, and in the high density of wetland areas in the west.
- The large conifer plantations provide habitats of more limited importance, although they contribute to the overall woodland and ecological network.
- There are small areas of semi-natural broadleaved woodland.
- In the south of the area an enclosed agricultural landscape of small fields and hedgerows provides additional habitats.

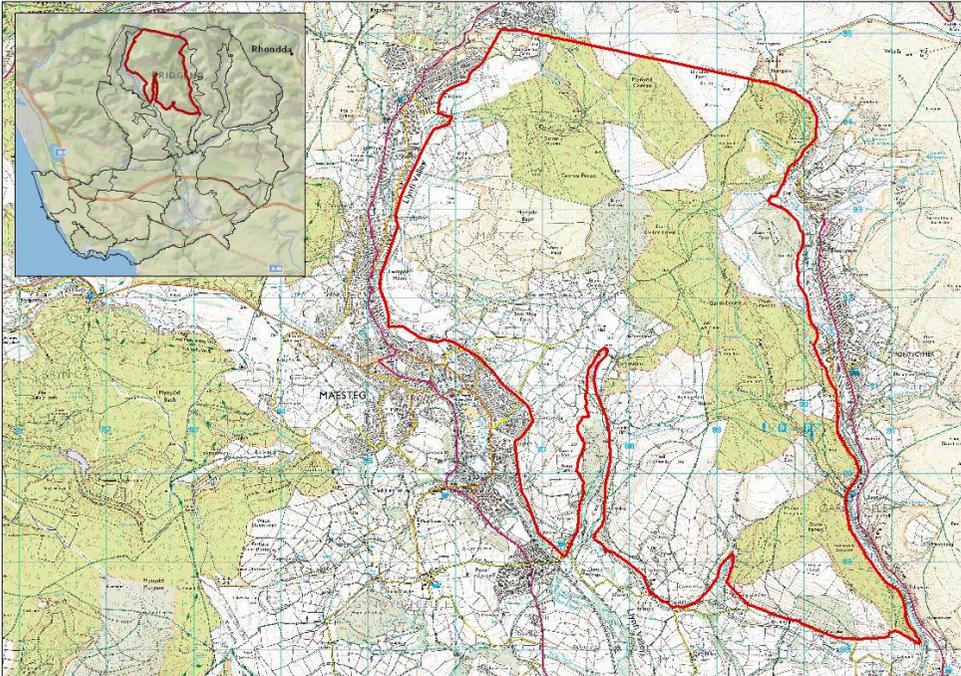
Risks to notable habitats

Risks include:

- Further habitat fragmentation through additional conifer plantations
- Overgrazing or abandonment on remaining semi-natural grassland and heathland habitats
- Wind farm developments on the higher plateau
- Damage and fly tipping on areas around the towns.

3: Llynfi & Garw Uplands and Forestry

3 Key ecosystem services in the area



For detailed maps of the services please refer to the supporting evidence document.



Woodlands store the greatest amount of vegetation carbon, and this storage capacity is lost when trees are felled, but coniferous woodlands act as a renewable carbon source. Semi-natural habitats provide more carbon storage than improved grassland due to a taller and more diverse vegetation structure.



Coniferous plantation on the plateau provides water regulation. Woodland slows water run-off by interception of rainfall, and improving water infiltration through the soil. Care needs to be taken on felling to prevent run-off issues.



The region contains a large component of open-access land, much of which is located on the plateau and at high elevations, offering wide views of the surrounding landscape.



The upland plateau provides high levels of fibre provision, where the coniferous plantations are managed for commercial timber provision.



A large proportion of the region makes a contribution to food provision mainly through grazing land. Levels of this service are highest on the areas of improved grassland. On the upland grassland areas extensive sheep and cattle rearing occur.

3: Llynfi & Garw Uplands and Forestry

4 Actions and opportunities to maintain ecosystem services

Vision for enhanced biodiversity

The area provides important ecological networks (woodland, grassland, wetland and heathland), but generally these do not have protected status. These areas provide a high biodiversity service in their own right, but are also important for connecting other areas of habitat to maintain gene flow; increasing the resilience and long-term viability of populations.

The woodland network could be further enhanced by careful replanting of the coniferous forest with mixed native tree species in key locations

The broad habitat mosaic provided by this upland area provides many ecosystem services that benefit populations downstream and further afield.

Actions and opportunities to achieve the vision



Opportunities for slowing run-off exist in the improved grassland areas; where soil management, hedgerow and targeted tree planting, in addition to actions for improving biodiversity, can all help to increase water interception and infiltration.

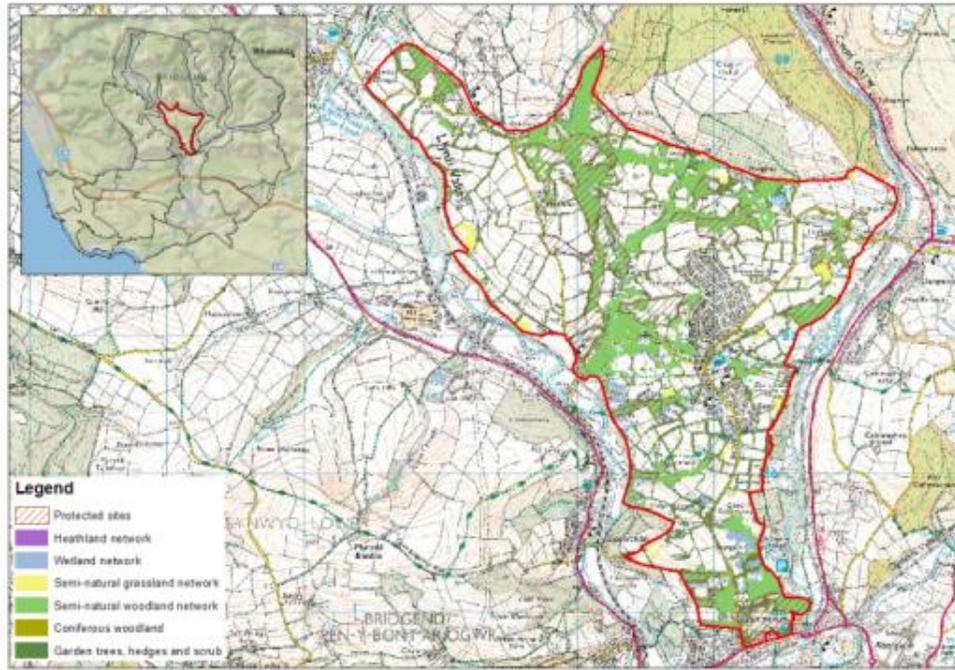
Timber forest management could be used to increase water regulation by moving from clear-fell to continuous cover harvesting practices; this would retain some vegetation cover across the site to provide rainfall interception and maintain soil structure.



Areas of poor semi-improved grassland provide opportunities for increasing vegetation carbon storage through undertaking measures to increase the vegetation structural and species diversity, such as woodland plantation or restoration of heathland.

The conifer plantations on the plateau could also be restructured to incorporate more broadleaved woodland; increasing the long-term vegetation carbon store while also enhancing biodiversity. Continuous cover timber management methods, as opposed to clear-felling, will also promote a stable vegetation carbon balance.

4: BETTWS SETTLED FARMLAND



1 Habitats in the area

- A mixed area of undulating farmland with small fields and small woods with hedgerow boundaries - the highest biodiversity value is provided by the broadleaved woodlands, which also form an important ecological network, while the scattered areas of wet and semi-improved grasslands are also significant and contribute to extending and reinforcing the ecological network.
- Several of the areas have local protection making up Sites of Interest for Nature Conservation. These include Brynnenyn which contains marshy grassland, bracken and woodland, North Bettws and Bettws West with acid grasslands and native woodland. Tylacoch North is high nature value farmland with wet grassland and deciduous woodland. Tylacoch South is an important area for birds.

2 Notable species in the area

The area is important for farmland birds and supports northern lapwings and willow warblers in some of the wetter woodland areas. The wet grassland contains a mix of characteristic species including devil's-bit scabious which supports the marsh fritillary butterfly. Pipistrelle bats also live in the area and the woodland and thicker hedgerows will be important areas of feeding for these species.

Risk to species:

Any enlargement of the fields and increased use of fertilisers will put the wet grasslands and thicker hedgerows at risk which could then impact the species using the sites. Lapwings are a declining species and farming to maintain this population will aid their conservation.

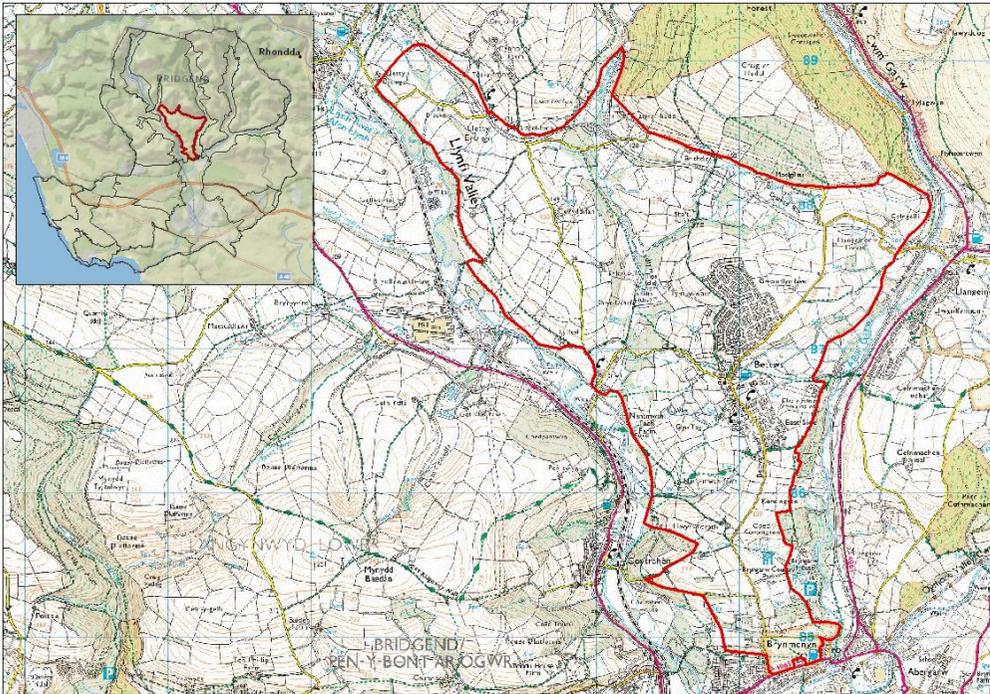
Risks to notable habitats

Risks include:

- Urban expansion around the outskirts of Bettws could alter the landscape character of the area and put at risk the broadleaved woodland and hedge-bounded fields so characteristic of the landscape.
- Neglect of the small woodland network, which needs active management to maintain its diversity
- Further agricultural improvement, leading to a reduction in the wet and semi-improved grassland network.

4: BETTWS SETTLED FARMLAND

3 Key ecosystem services in the area



For detailed maps of the services please refer to the supporting evidence document.



Woodlands and hedgerows, particularly those located on steep slopes, provide high levels of water flow regulation. The Cedfyw valley is susceptible to flooding; and so habitats along the valley are also important for regulating water flow.



The broadleaved woodlands and species-rich marshy grasslands are very important as a pollination resource, as is the network of hedgerows throughout the agricultural landscape. The gardens within Bettws village also contribute to this ecosystem service.



Vegetation carbon is highest in the areas of broadleaved woodland, scrub and hedgerows. Trees and shrubs in the Bettws village gardens also contribute to this ecosystem service as do the marshy grasslands.



The majority of the area is of medium importance for food provision, via stock rearing on improved pasture.

4: BETTWS SETTLED FARMLAND

4 Actions and opportunities to maintain ecosystem services

Vision for enhanced biodiversity

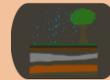
Broadleaved woodlands form a core ecological network in the area, which is enhanced by the surrounding hedgerows and semi-improved and marshy grasslands. While parts of this network are afforded protection by their designated status, a large block of woodland and adjoining wet grasslands in the centre of the region are not protected; these areas provide high levels of biodiversity and are important for connecting habitats in the north with those in the south of the region, facilitating species movement and maintaining viable populations.

Maintaining and extending the key habitats will provide wider ecosystem service benefits.

Actions and opportunities to achieve the vision



Areas of improved grassland provide opportunities to increase run-off regulation by enhancing biodiversity. Land management to reduce soil compaction, maintain diverse soil fauna, and restore field margins and hedgerows, will increase infiltration through the soil and slow run-off. Such management practices would improve water regulation across the region, but would be most effective on the steeper hill-slopes, because these areas readily shed water during rainfall events.



Semi-natural habitats, particularly broadleaved woodland, provide the highest levels of water filtration. Agricultural activity increases the risk of soil compaction and erosion, reducing its capacity to purify water.

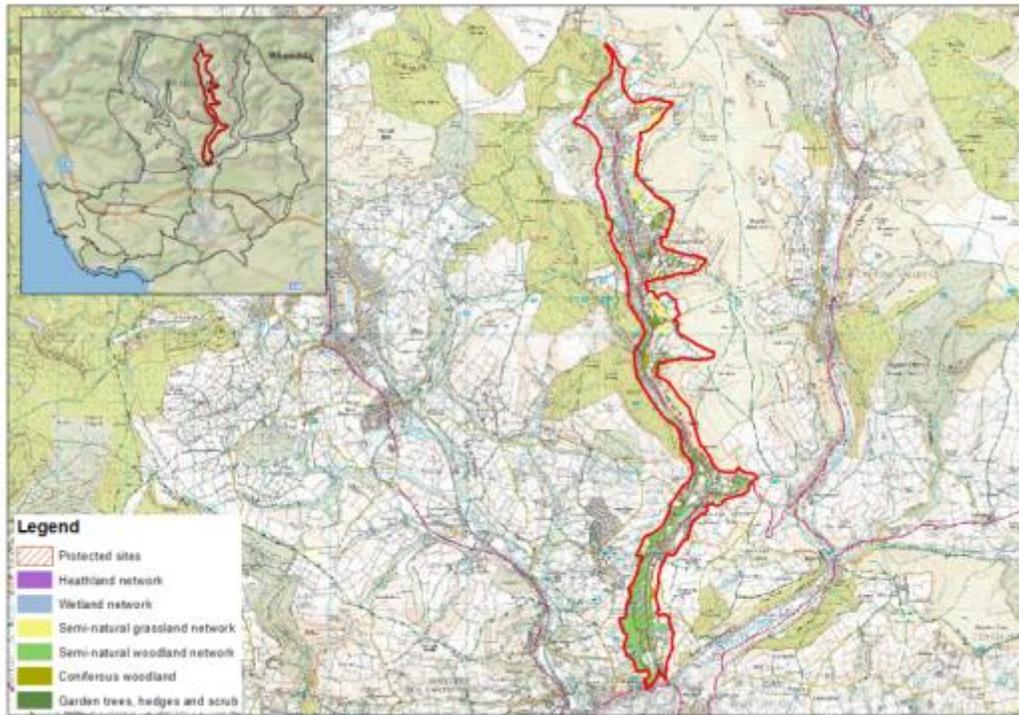


Increased vegetation carbon storage could be achieved by restoring species-poor semi-natural grasslands to develop a greater species and structural diversity amongst the vegetation.



Agricultural use of the land can conflict with biodiversity and ecosystem provision. However, sensitive agricultural practices can manage both. Control of stocking levels on the hill slopes and rotation of the areas used for grazing can control rank growth, while still providing food provision and reduced soil compaction. Maintaining good soil structure is crucial for maximising run-off regulation and water filtration.

5: GARW VALLEY FLOOR AND LOWER SLOPES



2 Notable species in the area

Great crested newts occur in the area as do bats, there are a good selection of grassland and woodland plant, fern and moss species and a number of butterflies and dragon flies recorded in the area.

Risk to species:

Newts need fresh water and areas of thicker tussock grassland, agricultural or urban development could impact on these habitats. The bat species will use the woodlands and hedges and these need to be maintained.

1 Habitats in the area

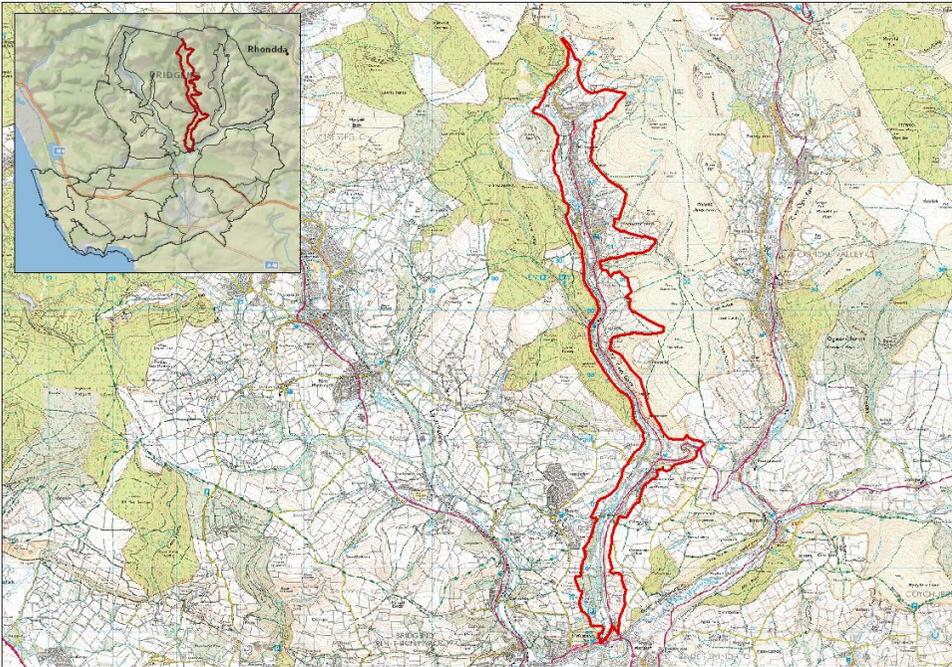
- The narrow and steep-sided valley of the River Garw has important areas of broadleaved woodland habitat, especially on the steeper valley sides and concentrated in the south of the area.
- Further north, where woodland cover is low, semi-improved grasslands make a greater contribution towards biodiversity.
- The Afon Garw is a prominent feature which travels the length of the area. The river is important for biodiversity, supporting a range of invertebrates, birds and mammals, in addition to wet woodland habitat. Its water quality is heavily influenced by surrounding land use, having historically received high levels of pollution from upstream collieries.

Risks to notable habitats

- The woodland areas are generally protected by their position in the landscape on steep valley sides, although continuing sensitive management is an issue.
- Flooding is a risk to both the riverine habitats and to the urban areas along the valley floor.
- The river remains at risk from pollution events and from further urban developments within the very narrow valley.

5: GARW VALLEY FLOOR AND LOWER SLOPES

3 Key ecosystem services in the area



For detailed maps of the services please refer to the supporting evidence document.



Overall run-off regulation is moderate. Improved grassland along the valley slopes provides some regulation, but greater levels of this service are provided by woodlands and hedgerows. The valley floor is a high flood-risk area, and so the woodland and grassland habitats here are particularly important. Private gardens in the villages of Pontycymer and Llangeinor are locally significant.



Woodlands provide the highest levels of biodiversity resource, but hedgerows and scrub are also important for this ecosystem service.



High levels of vegetation carbon are stored in the broadleaved woodlands in and around Bryngarw Country Park. The large areas of grassland cover in the region provide low to moderate levels of vegetation carbon storage.



Bryngarw Country Park is a major recreation resource in the region, with year-round access and facilities for visitors. Parts of the hillside in the centre of the region are open access land. A cycle route follows the river valley bottom along a disused railway line and is intersected by footpaths in a number of places.

5: GARW VALLEY FLOOR AND LOWER SLOPES

4 Actions and opportunities to maintain ecosystem services

Vision for enhanced biodiversity

Most of the core habitat areas are covered by designations, which afford them some protection from degradation. Some additional undesignated core areas are located within Bryngarw Country Park, and are likely to be sympathetically managed.

The core habitats in the north of the region are fragmented and less likely to facilitate species movement and gene flow, making habitats and wildlife populations in these areas less resilient and sustainable.

In a narrow valley like the Garw, the narrow river corridor provides the main routes for ecological connectivity, which needs to be maintained and enhanced where possible.

Actions and opportunities to achieve the vision



There are opportunities to improve run-off regulation throughout the region, but particularly around the urban centre of Pontycymer by changing the management of farmland on the slopes above this urban area. Restoration of semi-improved grassland and changes in agricultural management practice to promote good soil condition could enhance water retention and reduce run-off.



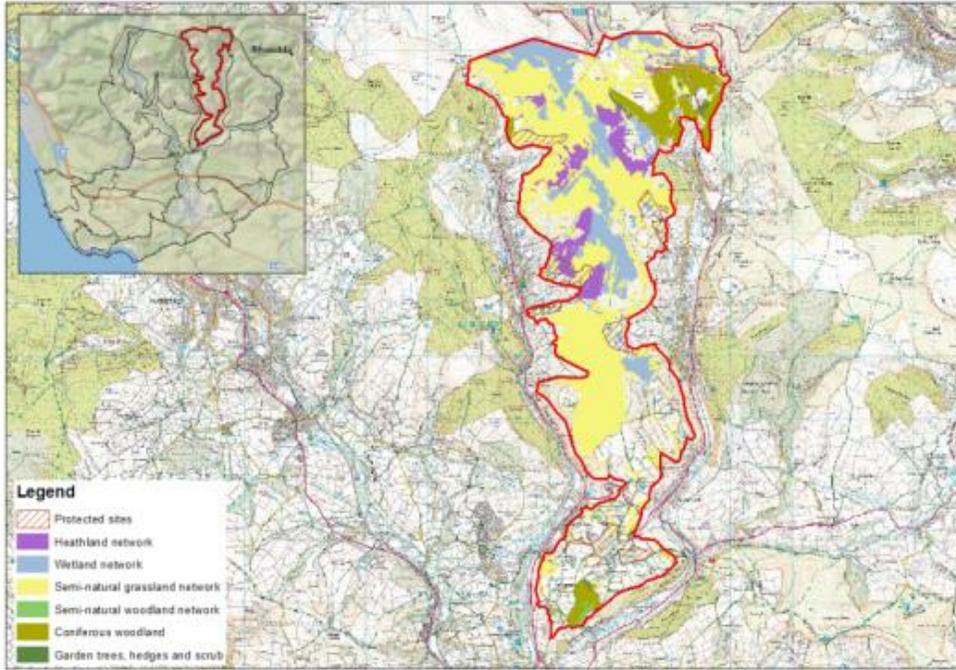
Vegetation carbon storage in the region could be enhanced by restoring areas of semi-improved habitat that are currently in poor condition, to develop greater variety in vegetation structure and sward height.



Increasing and maintaining habitat connectivity through this area is vital to maintain flows and mobility of species.

The river network on this fast flowing upper stretch of water can be enhanced by careful planting of stream side vegetation and careful management of grazing animals.

6: MYNYDD LLANGEINWYR UPLANDS



2 Notable species in the area

Both farmland birds such as linnets and upland species such as skylark, whinchat and peregrine falcon occur in this area. The wet grasslands contain a wide range of grasses, sedges and rushes and well as flowering plants such as devil's-bit scabious. Butterflies and dragonflies have also been recorded in the area. Cwm Cyffog upland blanket mire SSSI supports the locally rare white beaked sedge.

Risk to species:

Agricultural improvement of wet pastures and upland acid grassland would prove a risk to the many species of plant and insects recorded from this area.

1 Habitats in the area

- A north-south trending upland ridge and watershed, with associated spurs, containing a mosaic of important upland habitats, including fragmented semi-natural grasslands, heath and wetland, concentrated in the north of the area.
- The upland habitats are extensive but fragmented by agricultural improvements over many years and are subject to high grazing levels. There are few designations and little statutory protection.
- There are small areas of conifer plantation in the north of the area.
- Further south there are enclosed agricultural habitats of improved grasslands within small fields with hedgerow boundaries.

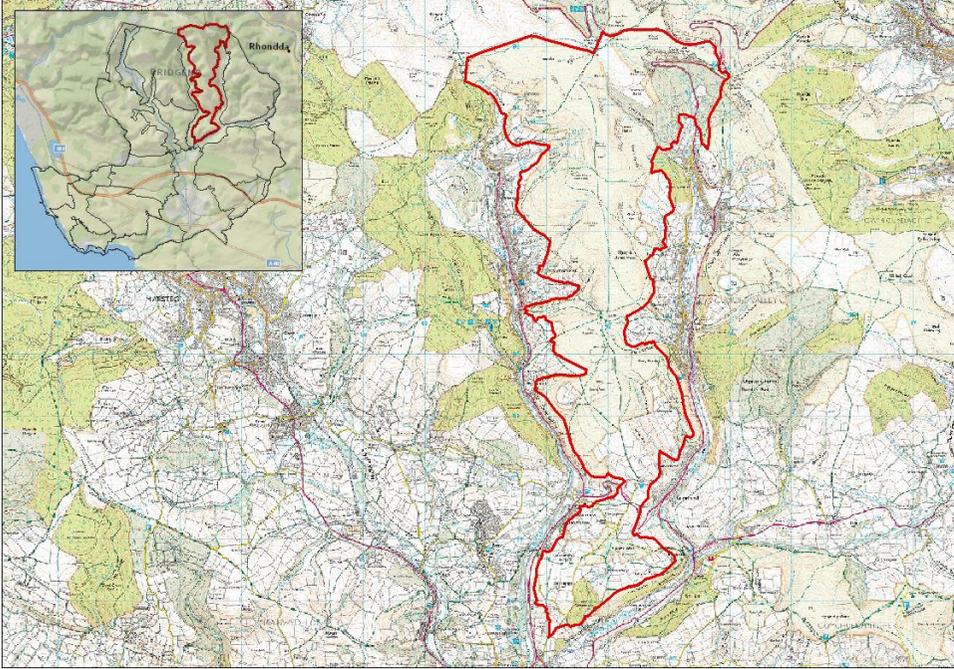
Risks to notable habitats

Risks include:

- Further habitat fragmentation through additional agricultural improvement
- Further habitat degradation through overgrazing and overstocking on the hills
- Wind farm developments
- Further conifer woodland planting
- Potential wind farm developments

6: MYNYDD LLANGEINWYR UPLANDS

3 Key ecosystem services in the area



A large proportion of the region is open access land. The long-distance Ogwr Ridgeway trail follows the ridgeline.



Biodiversity is high on the heathland areas and wet grasslands and on Cwm Cyffog upland blanket mire.

For detailed maps of the services please refer to the supporting evidence document.



The area is important for run-off regulation, as land cover and management in the uplands can significantly influence water flows and flooding in the lowlands.



The majority of this region is of moderate to high importance for water filtration, due to the high coverage of semi-natural habitat types.



Areas of upland heath provide high levels of pollination resource. The rough grassland areas along the ridge provide moderately high levels of this resource, while intensively managed farmland provides lower levels.



The ridge soils are composed of a peaty surface layer that stores a high level of carbon. Where the ridge soils have been disturbed, for example under coniferous plantation, some of the soil carbon has been lost.



The ridge provides a large area of high aesthetic value, offering spectacular panoramic views, together with a sense of wilderness.

6: MYNYDD LLANGEINWYR UPLANDS

4 Actions and opportunities to maintain ecosystem services

Vision for enhanced biodiversity

Overall the area provides a range of ecosystem services, combining biodiversity and water regulation with agricultural production and cultural value, all of which are sensitive to management practices.

A large proportion of the ridge and upper slopes contribute to the grassland, wetland and heathland networks, but only a small proportion of these areas have protected status.

Achieving the optimum land use and management for the area is a key vision for the future.

Actions and opportunities to achieve the vision



Sensitive management of agricultural land, particularly in the south of the region, could enhance run-off regulation by increasing water interception and infiltration through the soil. This could be achieved by remediating soil compaction and maintaining hedgerows. Restoring areas of degraded semi-natural habitat could also bring benefits for water regulation.

Restoration of degraded semi-natural habitat could also bring benefits for water regulation.



Long-term vegetation carbon storage could be increased by converting the coniferous plantation to mixed woodland, by introducing broadleaved species. Avoiding clear-fell in favour of continuous cover forestry would ensure a stable level of vegetation carbon storage.



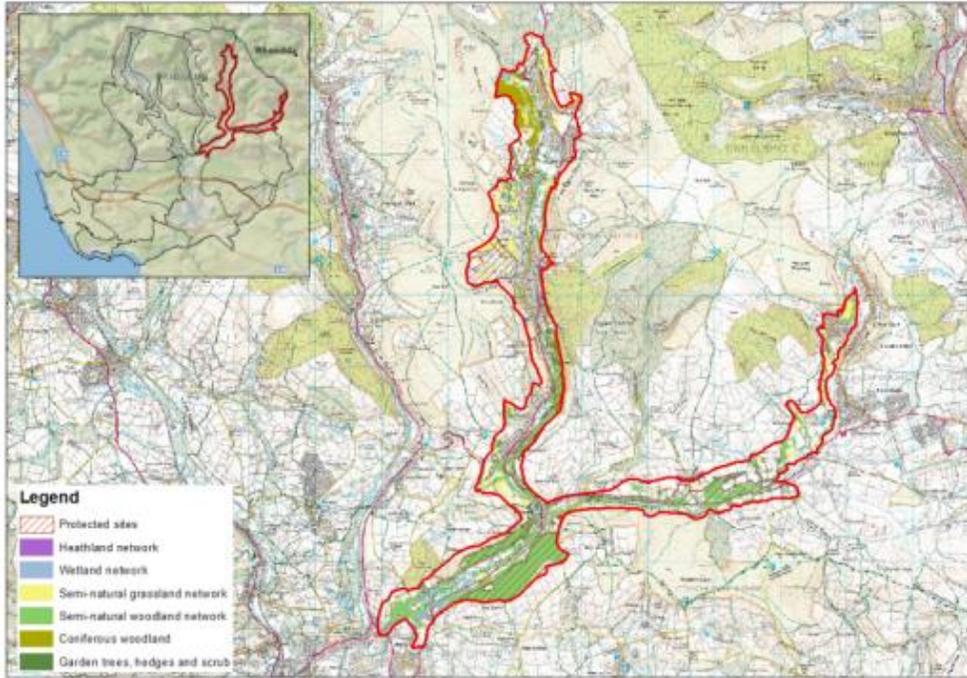
Protection of the peaty ridge soils from disturbance and subsequent carbon loss.

Maintenance of high quality habitat.



There are opportunities to promote recreation linkage across the ridge and between the surrounding valleys, allowing interactions between people and open areas.

7: OGMORE VALLEY FLOOR AND LOWER SLOPES



2 Notable species in the area

There are many species of woodland birds recorded from this area from the European treecreeper to wood pigeon. A large number of butterflies have also been noted. In addition two subspecies of pipistrelle bats have been noted to use the area. A wide range of interesting wetland plants including cranberry, bogbean and remote sedge have also been noted in the wetter areas.

Risk to species:

Maintaining the woodland and grassland networks will be key to keeping the species in this area and ensuring they have resilient populations for the future.

1 Habitats in the area

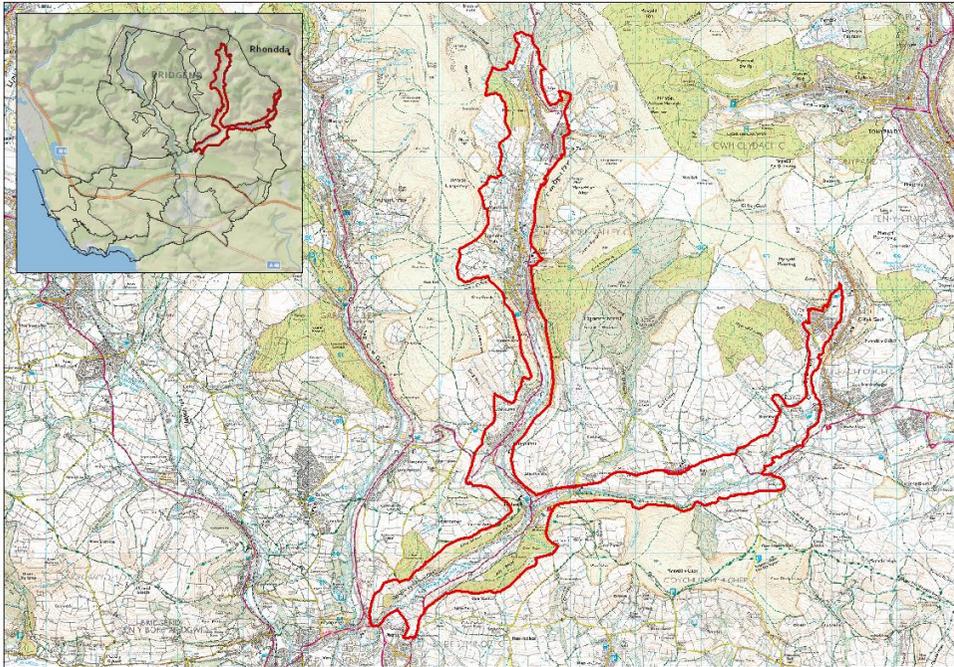
- The steep and narrow valleys of the Afon Ogwr and Ogwr Fach have high levels of biodiversity associated with the semi-natural broadleaved woodland on the steep valley sides.
- In between and connecting with the woodlands there are also important areas of semi-improved grassland and wet pastures.
- There is a strong woodland network in the area, extending north up to Ogmores Vale where it becomes fragmented, but grassland networks become stronger in this area. The main network areas are also protected sites.
- Patches of scrub and hedgerows help to create a pollination resource providing links between the broadleaved woodlands.

Risks to notable habitats

- The broadleaved woodlands themselves are fairly secure, many have protected status and others are too steep for agricultural improvement or urban developments.
- Overgrazing within the woodlands can reduce seedling regeneration.
- Urban expansion: this area is targeted as the Ogmores Vale strategic regeneration growth area.
- Flooding: much of the urban areas within the valleys are at high flood risk, and downstream the rivers drain into Bridgend.

7: OGMORE VALLEY FLOOR AND LOWER SLOPES

3 Key ecosystem services in the area



For detailed maps of the services please refer to the supporting evidence document.



The large blocks of semi-natural woodland along the Afon Ogwr are very important for regulating run-off. The flat valley bottoms are highly susceptible to surface water flooding, so habitats in these areas play an important role in water regulation.



Vegetation carbon storage is high in the areas of broadleaved woodland, concentrated along the river corridors. Areas of scrub and bracken-covered hillsides also provide significant vegetation carbon storage.



Recreation pressure is highest in the large blocks of woodland and plantation forest, which are accessible to the public. A network of footpaths and cycle ways run along the river valleys.



The broadleaved woodland provides a high biodiversity resource, especially for birds and plant species.

7: OGMORE VALLEY FLOOR AND LOWER SLOPES

4 Actions and opportunities to maintain ecosystem services

Vision for enhanced biodiversity

The vision for this area is of a semi-natural broadleaved woodland network in the lower reaches of the valleys following the course of the Afon Ogwr and Ogwr Fach, with semi-improved grassland and high-diversity woodland in the north, which add to the overall biodiversity. Patches of scrub and hedgerows help to create pollination resource links between the broadleaved woodlands.

This is set within the urban areas along the Ogmore Valley, and the agricultural use of the area for cattle and sheep grazing, especially in the valley bottoms.

In a valley floor setting, water regulation and control is a key feature.

Actions and opportunities to achieve the vision



There is high potential for improving run-off regulation by enhancing biodiversity on the slopes above Ogmore Vale; where restoration of improved and semi-improved grassland, or changes in management to reduce soil compaction could slow surface run-off by increasing the permeability of the soil.

Similar measures could be adopted along the southern river corridor, which could influence run-off flows into the Afon Ogwr and Ogwr Fach.

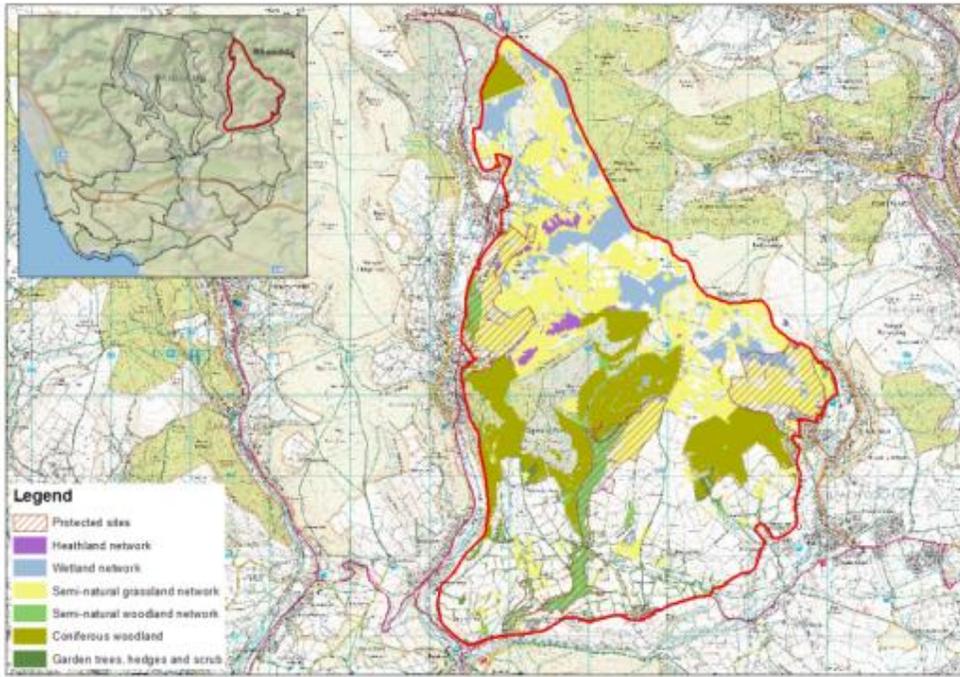


Additional woodland planting adjacent to and linking existing broadleaved woodland would help both biodiversity and improve ecological connectivity, as well as improving water regulation.



Where urban development is planned, it needs to be sustainable, maintaining green networks through the promotion of high diversity road verges, urban trees and green gardens.

8: OGMORE FOREST AND SURROUNDING UPLANDS



1 Habitats in the area

An upland area with a range of important habitats, including:

- Mosaics of heath, acid grassland and marshy grassland on the Mynydd Maesteg plateau, providing strong wetland and grassland networks which are not protected, but act as important links in the overall ecological network.
- Smaller areas of semi-natural broadleaved woodlands, especially on the steeper valley sides, are protected from agricultural improvement.
- Further south there are improved agricultural habitats of small fields and hedgerows, with occasional wet pastures and marshy grasslands.
- There are also extensive areas of coniferous woodland.

2 Notable species in the area

The rocks and deep chasms of the Cwm Dimbath SSSI support a range of mosses, liverworts and ferns with two notable species being the Tunbridge filmy-fern and Wilson's filmy fern. Some species associated with upland heath and bogs are also present, such as sedges, cross-leaved heath and marsh violet. Butterflies such as small skipper and meadow brown and bat species have also been noted in the area.

Risk to species:

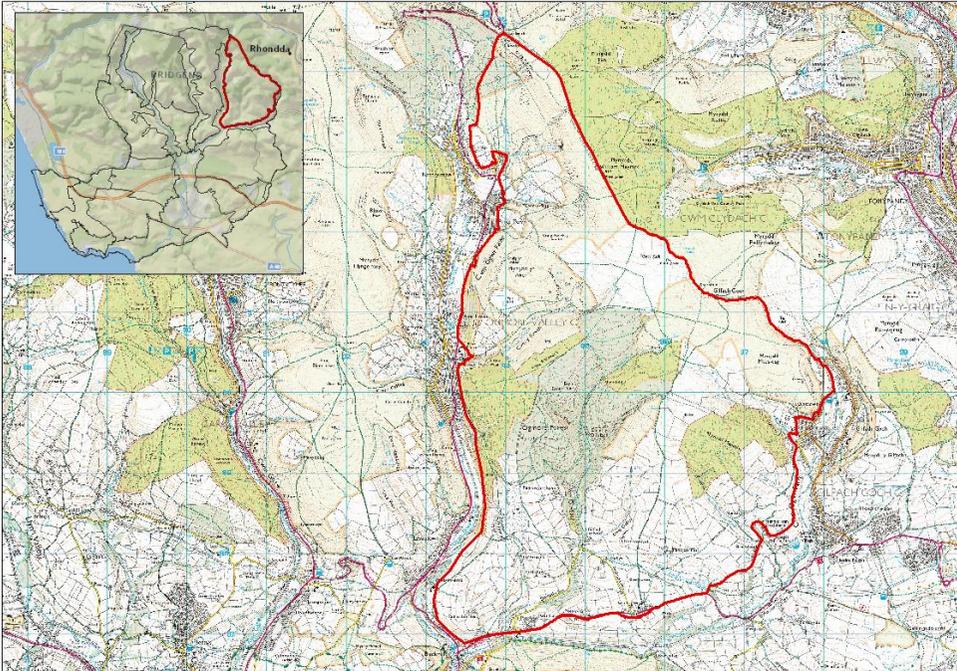
Intensification of the agriculture in the upland area could put many of the heathland and acid grassland species at risk. Forestry planting could also affect the grassland and wetland networks.

Risks to notable habitats

- Overgrazing on the hills in places as well as agricultural abandonment elsewhere. Some land is suffering from a lack of management, leading to scrub encroachment and a sense of neglect.
- Renewable energy; the plateau region has high potential for wind energy production.
- Further coniferous forest development can lead to further fragmentation of key habitats.

8: OGMORE FOREST AND SURROUNDING UPLANDS

3 Key ecosystem services in the area



For detailed maps of the services please refer to the supporting evidence document.



The coniferous plantations are designated accessible woodlands, and a large proportion of the open plateau is open access land. The plateau is connected to the lower-lying areas by public rights of way.



A large proportion of the region is currently devoted to timber production.



The northeast plateau is of high aesthetic value, offering panoramic views towards the Brecon Beacons and Bristol Channel; this area is part of the Northern Uplands Special Landscape Area.



The large conifer plantations provide high run-off regulation, although this function is lost when the trees are felled.



High levels of soil carbon storage are found on the plateau due to the presence of peaty soils.



Broadleaved woodland and coniferous woodland provide a high source of renewable vegetation carbon.

8: OGMORE FOREST AND SURROUNDING UPLANDS

4 Actions and opportunities to maintain ecosystem services

Vision for enhanced biodiversity

Overall the area provides a range of ecosystem services, combining biodiversity and water regulation with agricultural production and cultural value, all of which are sensitive to management practices.

The main areas of the woodland are legally protected. Strong wetland and grassland networks run along the plateau; these are not protected but act as important links in the overall ecological network.

Achieving the optimum land use and management for the area is a key vision for the future.

Actions and opportunities to achieve the vision



Run-off regulation could be enhanced by restoring vegetation cover on the areas of felled woodland; this could be achieved either through the restoration of upland habitat such as heather moorland, or by re-planting with trees and managing with continuous cover forestry practices.

Run-off regulation on enclosed farmland could potentially be improved through careful soil management to maximise levels of organic matter and reduce compaction, increasing water infiltration.



Vegetation carbon storage could be increased by replanting the areas of felled woodland, either as part of an upland habitat restoration project or by replanting the area with trees and adopting continuous cover forestry practices.

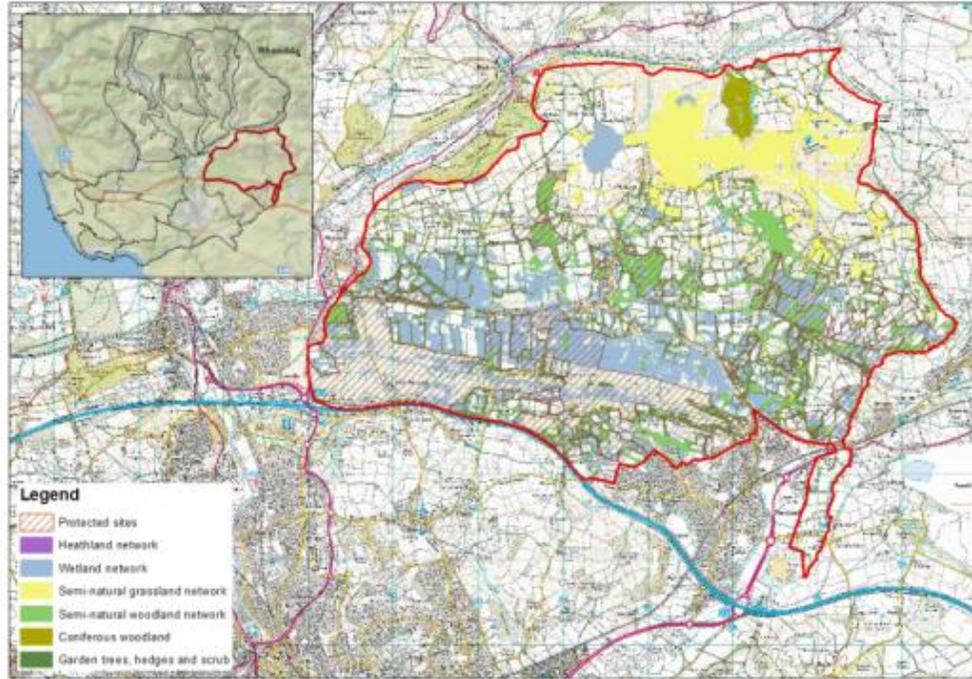


Promotion of sensitive agricultural practices in enclosed farmland could improve soil management to maximise levels of organic matter and reduce compaction, increasing water infiltration, reducing surface water flow.



Reversion of bracken-dominated hill slopes to broadleaved woodland, particularly where these areas adjoin existing woodland areas. This would enhance the existing woodland biodiversity network.

9: HIRWAUN COMMON AND SURROUNDING RIDGES



2 Notable species in the area

The wet species-rich grassland of Brynna a Wern Tarw supports several uncommon plants, including whorled caraway, petty whin and royal fern. The site also contains a significant population of the marsh fritillary butterfly.

Risk to species:

Changes in the nutrient status of the unimproved and marshy grassland will have a significant detrimental effect on species occurrence and number. Careful management is needed to maintain the population of marsh fritillary butterflies.

1 Habitats in the area

A wet area north of Pencoed, with a range of upland and lowland habitats of high biodiversity value, including:

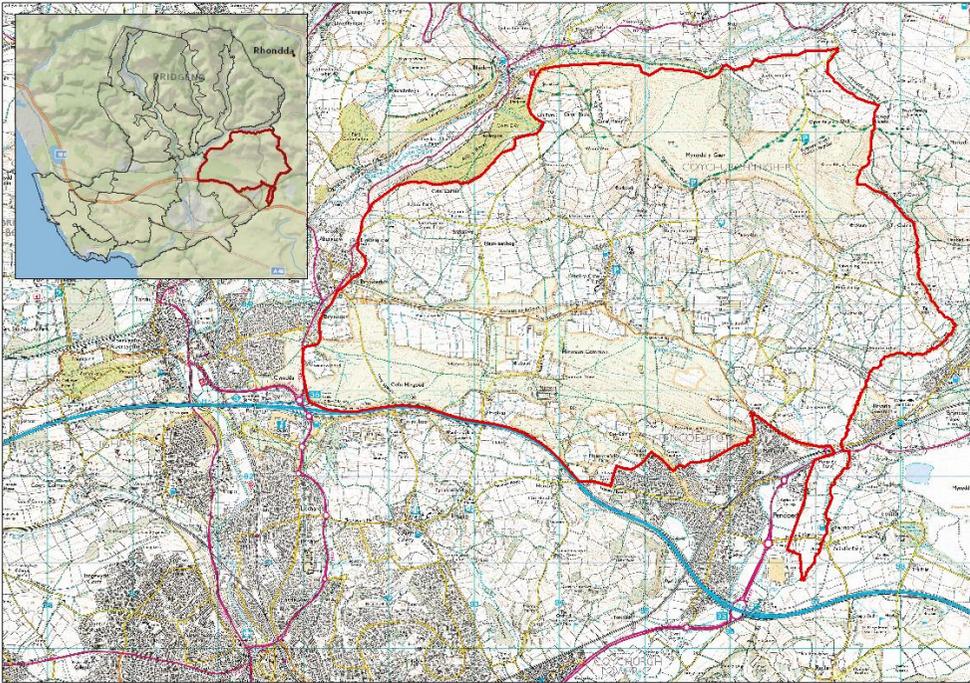
- Broadleaved woodland and overgrown hedgerows, contributing to a strong woodland network throughout the area.
- Wet heath and neutral grasslands of Mynydd Y Gaer in the north of the area contribute to an extensive grassland and heathland network.
- Significant areas of rush pasture, especially south of and adjoining Hirwaun Common contribute to a strong wetland network.
- Brynna a Wern Tarw SSSI is of special interest for its extensive area of mixed, species-rich lowland grassland, including significant areas of marshy and dry neutral grassland. It is also important for the association of these habitats with others including broadleaved woodland and heath.

Risks to notable habitats

- Many risks relate to fragmentation of the habitat networks, including:
- Drainage and agricultural improvement of rushy pastures and wet heaths.
- Potential opencast mining in the south of the area in the rushy pastures and small woods around Hirwaun Common.
- Overgrazing on the hills of Mynydd Y Gaer leading to degradation of the upland habitats
- Urban encroachment from Pencoed and Bridgend

9: HIRWAUN COMMON AND SURROUNDING RIDGES

3 Key ecosystem services in the area



For detailed maps of the services please refer to the supporting evidence document.



A large proportion of the semi-natural habitats in the region are open access land, both in the upland and lowland areas. Mynydd Y Gaer forms part of the Glamorgan Ridgway walk.



The upland areas contain a number of Scheduled Monuments of high historic importance, including Iron Age hill forts and medieval pillow mounds



A large proportion of the soils in this region have a peaty surface that stores a high level of carbon. Wetland habitats such as rush pasture preserve the environmental conditions needed to maintain high levels of soil carbon



Hedgerows and broadleaved woodland are important contributors to the pollination resource in the region, providing high levels of this service and connecting areas of semi-natural habitat such as rush pasture, which provide moderate levels.



Coniferous plantations, wetlands, heath and semi-natural grassland on the upland ridge provide a high level of run-off regulation function, as do the hedgerows and small valley woodlands. Land bordering Nant Crymlyn and its many tributaries is susceptible to surface water flooding, and is therefore important for water storage.

9: HIRWAUN COMMON AND SURROUNDING RIDGES

4 Actions and opportunities to maintain ecosystem services

Vision for enhanced biodiversity

In a wet area close to urban developments, water regulation is a key part of any vision for the area. Coniferous plantations, wetlands, heath and semi-natural grassland on the upland ridge provide a high level of run-off regulation function, as do the hedgerows and small valley woodlands. Land bordering Nant Crymlyn and its many tributaries is susceptible to surface water flooding, and is therefore important for water storage.

Water regulation and biodiversity enhancement are complementary parts of the vision.

Actions and opportunities to achieve the vision



Run-off regulation could be enhanced by restoring degraded habitats to increase their biodiversity and structural variety, this in turn increases the interception and infiltration of water. This is particularly significant for habitats in the upland zone, as levels of water shedding and retention in this zone have downstream effects.

Restoration of degraded habitat helps to promote biodiversity and structural vegetation diversity to increase interception and infiltration of water, helping to protect areas downstream.

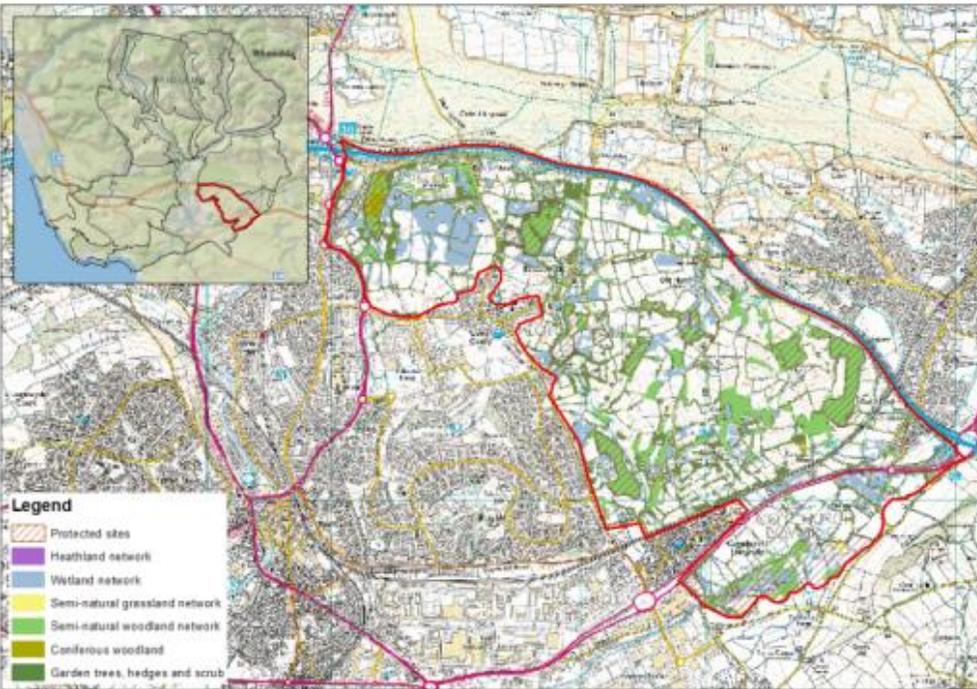


Sympathetic grazing, producing taller swards and reducing soil compaction, will decrease surface water run-off by promoting soil infiltration.



Targeted broadleaved woodland planting in the uplands will increase water regulation and biodiversity, as well as extend key ecological networks.

10: COITY RURAL HINTERLAND



2 Notable species in the area

Coed Y Mwstwr woodlands contain a mixture of ash tree, wych elm and oak on limestone with a species rich ground flora including bluebell, ransoms and wood anemone. Lesser horseshoe bats use the site and other bat species have been noted. Badgers and rabbits occur in this area.

Risk to species:

The woodland areas are connected by the thick well managed hedgerow, loss of these hedgerows or lack of management could result in poorer habitat for bird and mammal species.

1 Habitats in the area

As an essentially agricultural area sandwiched between Bridgend, Pencoed and the M4, key habitats include:

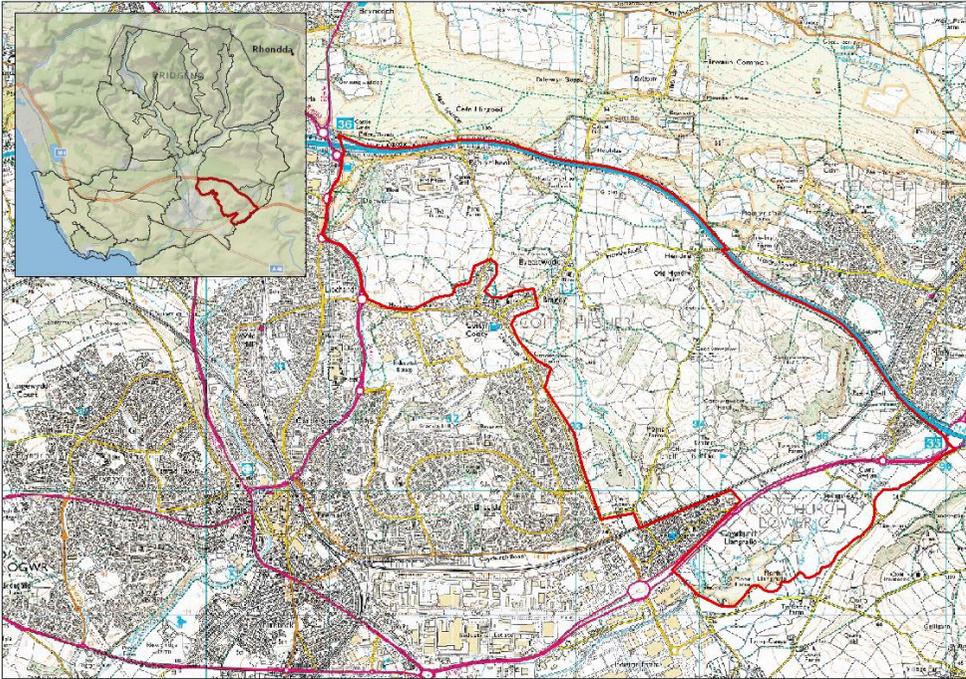
- Many small areas of broadleaved woodland and scrub, well connected through overgrown hedgerows and tree lines.
- There are scattered areas of wet grassland throughout.
- A large area of improved grassland habitat, used primarily for grazing and fodder production, with varying levels of improvement and consequent biodiversity and pollination resource interest.
- The native woodlands at Coed Y Mwstwr provide a further biodiversity resource.
- Ecological connectivity is limited by the M4 motorway to the north and urban boundaries to the south and west

Risks to notable habitats

- The area is managed largely for agriculture, which is productive although largely based on livestock rearing and fodder production. Because of the very close urban proximity there is pressure for urban development, especially in the west of the area and recreational developments such as Coed Y Mwstwr golf course.

10: COITY RURAL HINTERLAND

3 Key ecosystem services in the area



For detailed maps of the services please refer to the supporting evidence document.



There is limited recreational interest in the area, with Coed Y Mwstwr Golf Course providing a primary focus



Core biodiversity is high in the many woodlands, scrubby areas and wet grasslands and of variable quality on the agriculturally improved land, depending on the improvement achieved and the management carried out.



Because of the undulating nature of the landscape there are both receiving and shedding sites throughout the area. Any areas of woodland and scrub will help slow water run-off, whereas urban developments and additional sealed surfaces will speed run-off.



Vegetation storage of carbon is provided by the widespread small woodland network, which also contributes to connectivity within the area, but the M4 motorway and towns of Bridgend and Pencoed limit connectivity outside the area.

10: COITY RURAL HINTERLAND

4 Actions and opportunities to maintain ecosystem services

Vision for enhanced biodiversity

The area has a traditional small field pattern, but is subject to increasing encroachment.

Ecological connectivity is good within the area, with a number of protected sites linked by hedgerows and stream corridors. Connectivity between this area and adjoining areas is, however, low, because the area is bounded by barriers to movement such as Bridgend, Pencoed and the M4 motorway.

The biodiversity vision will focus on water regulation, carbon storage and pollination enhancement.

Actions and opportunities to achieve the vision



Opportunities to slow run-off exist in the middle part of the area, through selective tree planting and habitat creation, which is also likely to enhance pollination resources and water regulation. To the south east, the area forms part of the catchment of the Ewenny river, which drains through eastern Bridgend and presents potential for flood risk.

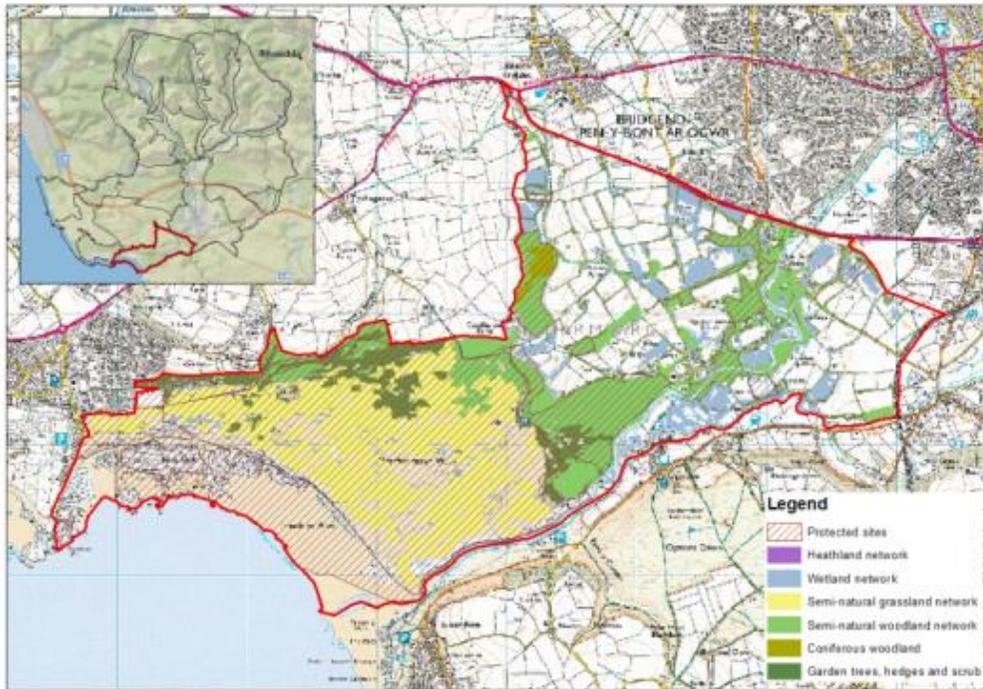


Opportunities exist to increase vegetation carbon storage by tree planting and habitat creation throughout the area. Targets may be to increase the woodland around the Coed Y Mwstwr golf course, which was originally a woodland area, and in the extreme south-east of the area, enhancing and extending the current woodland network and providing important water regulation functions.



Broadleaved woodlands and wet meadows are of high significance for ecosystem services in the area and will contribute most to biodiversity. Appropriate management of improved grassland areas will be important to aid pollination services, as well as to protect and enhance the numerous small springs that issue forth within the area. Both appropriate management of existing resources and the potential to enhance such services are important.

11: MERTHYR MAWR FARMLAND, WARREN AND COASTLINE



1 Habitats in the area

A coastal area to the north of the Rivers Ogmore and Ewenny, dominated by four main habitat types:

- Intertidal sand, forming an extensive area along the coast, with occasional rocky outcrops, providing an important cultural and recreational ecosystem service.
- Dune habitats, from open dunes and dune slacks to dune grasslands and dune scrub, with occasional pools, forming a rich biodiversity, recognised as the Merthyr Mawr National nature Reserve.
- Further inland the ancient dunes form a mixture of scrub and broadleaved woodland, with occasional areas of coastal grassland in-between, another rich source of biodiversity and pollination, as well as contributing to carbon storage and capture.
- Further inland the landscape becomes one of well-managed farmland, with small areas of woodland and wet grassland habitats with hedgerows providing both a pollination resource and connectivity through the landscape.

2 Notable species in the area

A wide range of maritime and wet grassland species occur in this area associated with the dune system at Kenfig. Several species of butterfly have also been recorded. Pipistrelle, lesser horseshoe bats and hazel dormouse are also noted in this area.

Risk to species:

Agricultural intensification further upstream could result in a change in the nutrient balance of the site which might adversely affect the plants and therefore the animals and insects which occur in this area. The bats and dormouse will be sensitive to changes in hedge lines and woodland.

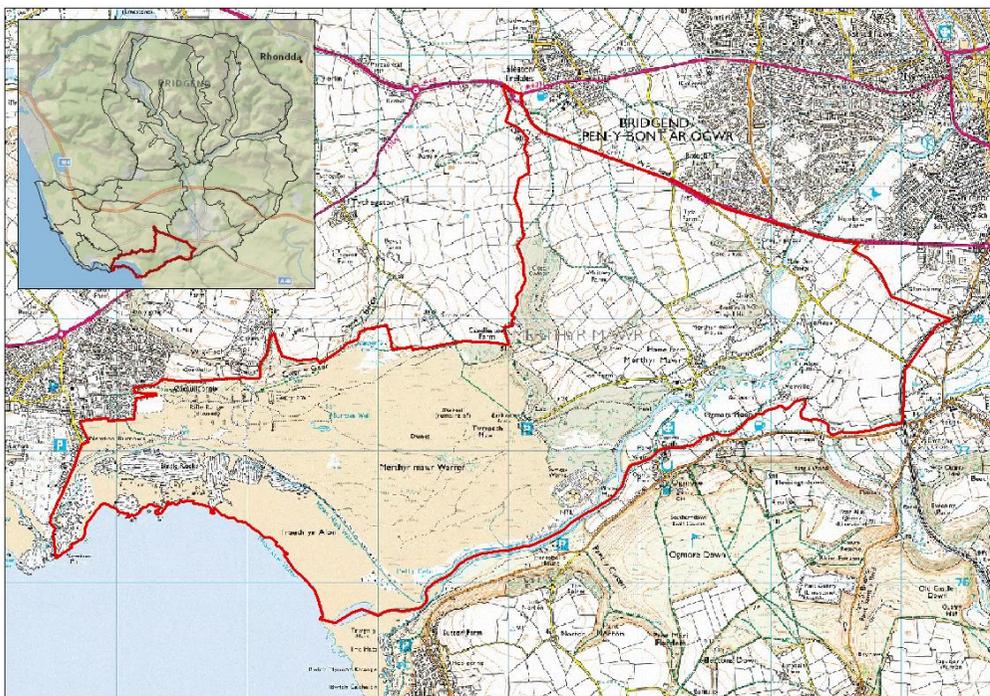
Risks to notable habitats

Risks include:

- Uncontrolled recreational access to the dune system and their vulnerable habitats
- Urban encroachment south from Bridgend
- Agricultural improvement and increasing intensity of management

11: MERTHYR MAWR FARMLAND, WARREN AND COASTLINE

3 Key ecosystem services in the area



The woodlands and copses on the inland edge of the dunes provide a useful vegetation carbon store.

For detailed maps of the services please refer to the supporting evidence document.



The coastal dunes and rocks provide an important recreational resource.



Candleston Castle is an important cultural and historical site within the dunes, linked to Ogmore Castle, situated just outside the area across the River Ogmore.



Biodiversity value is high across the coastal area, an important core area internationally, with links along the coast and inland. Inland biodiversity is largely concentrated in the woodlands and hedgerows and occasional wet meadows.



The dunes flowers provide an important pollination resource, along with hedgerows and field margins inland.



The rivers Ogmore and Ewenny, flowing through and along the boundary of the area, provide a water provision and regulation resource, as well as potential flood storage area.



The inland area is important for food production.

11: MERTHYR MAWR FARMLAND, WARREN AND COASTLINE

4 Actions and opportunities to maintain ecosystem services

Vision for enhanced biodiversity

The coastal part of the area is already managed extensively for biodiversity, so opportunities to enhance this area are limited. With its location along the coast, any impact of the area on slowing run-off further inland will always be small, even though the Ogmore floodplain does provide potential for flood storage facilities.

The vision for the future will focus on balancing biodiversity enhancement with increasing recreational pressure and maintaining agricultural production inland.

Actions and opportunities to achieve the vision



Towards the coast, sand provides a natural filtration service, although the lack of any real link to drainage across the rest of Bridgend limits the potential for extending this role more widely. The floodplain of the Ogmore and Ewenny rivers does provide potential for the provision of clean water.



There are opportunities for the recreation of coastal grassland habitat and the restoration of species-rich grasslands inland.

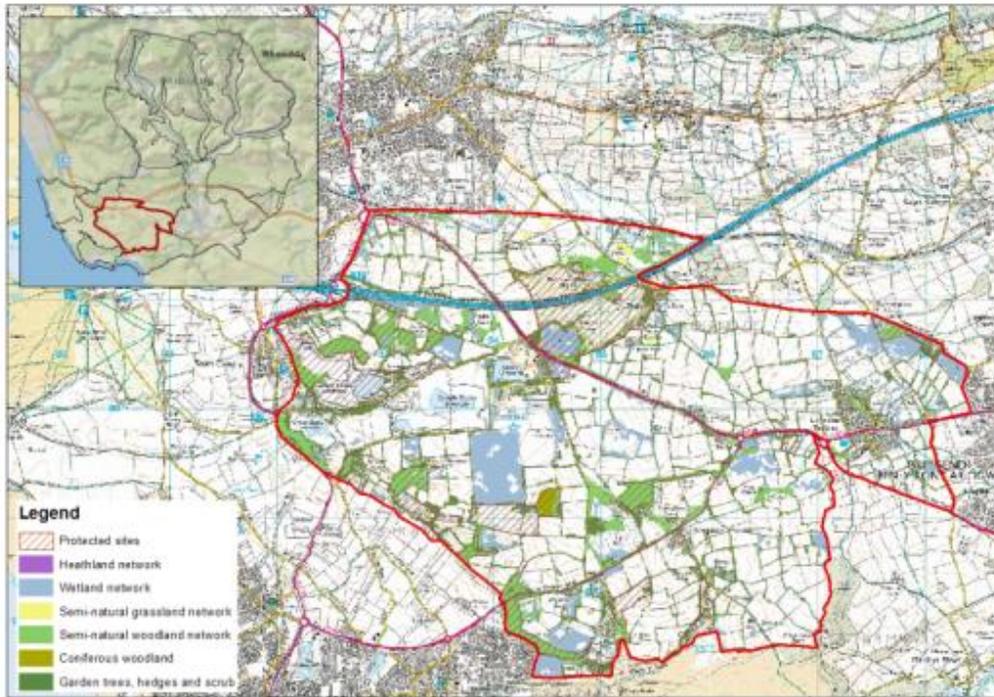


There are many opportunities for increasing vegetation carbon storage throughout the area by increasing tree planting and woodland habitat creation. Areas to be targeted include those adjacent to existing woodlands. This will considerably increase the biodiversity resource where those are wet woodlands, and also help water run-off regulation and clean water filtration. It will also aid woodland connectivity networks.



There are also opportunities to reduce the intensity of agricultural production, which will benefit biodiversity and pollination resources.

12: NEWTON DOWN LIMESTONE PLATEAU



2 Notable species in the area

Several species of farmland and other birds have been noted from the area including linnet, nightjar and skylark. Several mammals including pipistrelle bats, bank vole and shrews have also been noted as have adder and great crested newts.

Risk to species:

This area of productive farmland could be at risk from further agricultural intensification which would adversely affect species in the area.

1 Habitats in the area

This is an intensively managed productive agricultural area, with only small areas of scattered habitat. These include:

- Field boundaries and hedgerows, as well as roadside verges, where remnants of the calcareous grassland survive.
- Small woodlands and copses are scattered throughout the area.
- Small areas of scrub and unused land occur especially around the quarries. Here again calcareous vegetation has survived. Stormy Down is a larger area of open access common land straddling the M4 motorway
- There are a number of water bodies, largely associated with former quarries.

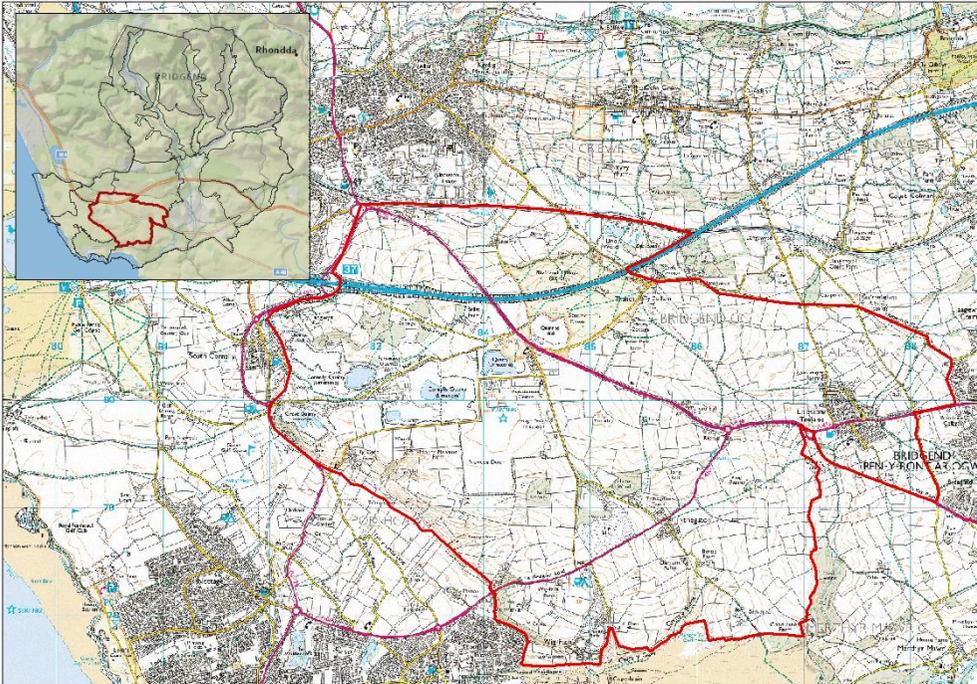
Risks to notable habitats

Sandwiched between major urban centres and bisected by the M4 motorway there are many risks to habitats in the area, including:

- Further limestone quarrying
- Farming intensification
- Urban encroachment, especially along the M4 corridor

12: NEWTON DOWN LIMESTONE PLATEAU

3 Key ecosystem services in the area



For detailed maps of the services please refer to the supporting evidence document.



Food production is very important, with a range of livestock and arable enterprises



The soil and limestone substrate form an important water filtration resource, although chemical inputs from the intensive agriculture may add to the requirement for filtration.



Biodiversity is very fragmented across the area. It is high in small areas where broadleaved woodland and calcareous grassland has survived, but poor where intensive agriculture dominates. Stormy Down is a locally important SSSI.



The pollination resource is also scattered and fragmented, high in areas of unused land and scrubby grassland and some hedgerows and roadside verges, but low over much of the agricultural part of the area.



A recreation resource is provided by Stormy Down common, although bisected by the M4 motorway, which limits its wider use

12: NEWTON DOWN LIMESTONE PLATEAU

4 Actions and opportunities to maintain ecosystem services

Vision for enhanced biodiversity

There are a number of protected sites in the area, linked largely to woodlands and areas of remnant calcareous grassland, as well as Stormy Down. There is currently little connectivity between these areas and some major barriers to species movement, such as the A48 and M4 motorway, which bisects the Stormy Down SSSI.

The vision takes account of the limestone and calcareous nature of the area and its position between major urban areas.

Actions and opportunities to achieve the vision



There are many opportunities for improving ecological connectivity and extending existing networks, although the main east-west transport links provide a limitation. The woodland network, currently a series of small disconnected woods, could benefit greatly from more targeted planting.

Improving habitat connectivity through the maintenance of hedgerows and field margins will increase habitat resilience and species mobility in the landscape.



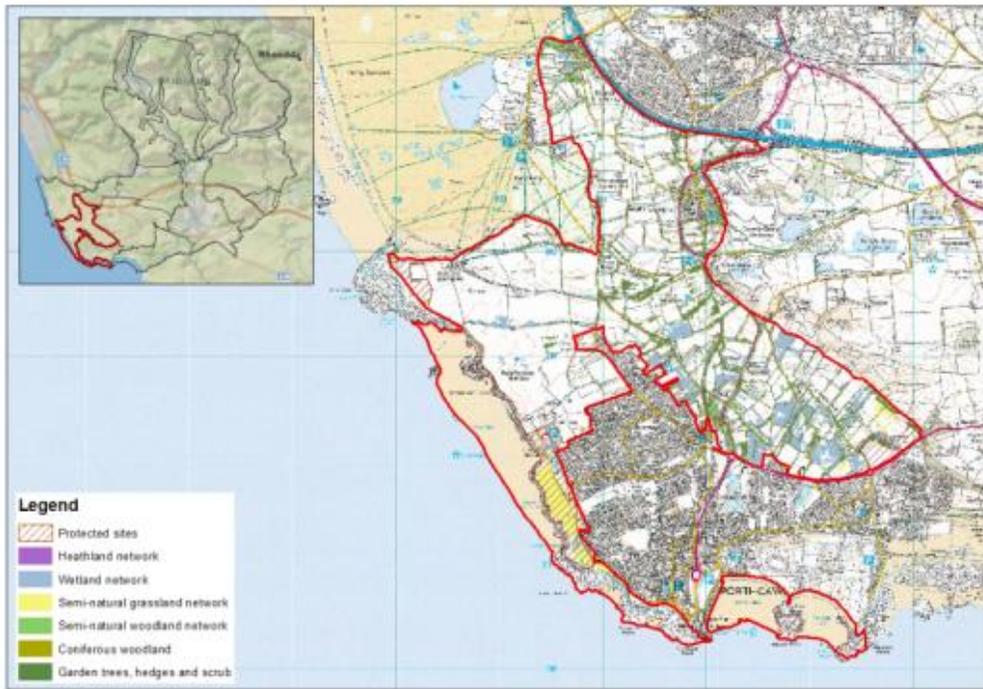
There are important opportunities for slowing run-off through woodland planting and habitat creation, which will be more effective on the steeper slopes on the fringes of the area to the north and south, but will also benefit biodiversity and enhance ecological connectivity within and across the area.



There is potential to increase the pollination resource in some of the more improved pastures that could easily revert to less intensive production.

It would be possible to enhance other ecosystem services such as pollination and water infiltration whilst maintaining agricultural production.

13: PORTHCAWL COASTLINE AND SETTLED FARMLAND



2 Notable species in the area

Some areas of semi-improved calcareous grassland contain maritime species such as spring squill and sea-holly. A wide variety of butterflies has been noted in the area. Great crested newts have also been recorded

Risk to species:

Risk to species comes from disturbance from the urban areas, possible nitrification from increasing agricultural improvements and development pressures.

1 Habitats in the area

A diverse coastal area adjoining Porthcawl, habitats ranging from:

- An intertidal area of sand and rocky outcrops, along the coast and within the Porthcawl urban area
- A narrow strip of coastal grassland forming a buffer between the urban area of Porthcawl and the sea
- Inland, within an intensive agricultural area, there are few habitats, limited to hedgerows, lines of trees and small copses, with only occasional more diverse grassland fields. Given the calcareous nature of the substrate inland, the value of hedgerows and field margins for biodiversity is important.

Risks to notable habitats

Habitats are highly at risk, from:

- Urban encroachment from the urban area of Porthcawl.
- Further fragmentation of the coastal grassland and degradation caused by increasing recreational use.
- Farming intensification.

13: PORTHCAWL COASTLINE AND SETTLED FARMLAND

3 Key ecosystem services in the area



For detailed maps of the services please refer to the supporting evidence document.



The coastline is an important recreational resource, with 3 golf courses within the area.



The farmland inland is important for food production, with mixed livestock and arable farming.



The low lying farmland provides a water storage resource if required to protect urban flooding in Porthcawl.



Biodiversity is important in coastal grasslands, agricultural hedgerows and field margins.



The underlying sand and limestone both provide a natural filtration service, although the lack of any real link to drainage inland from Porthcawl limits the potential for extending this role more widely.

13: PORTHCAWL COASTLINE AND SETTLED FARMLAND

4 Actions and opportunities to maintain ecosystem services

Vision for enhanced biodiversity

The bulk of the area is managed for agricultural production, but there is a continuing threat of urban development with the expansion of Porthcawl further inland.

Management for recreation and leisure is important, with three golf courses within the area, all within close proximity and a number of caravan and camp sites, all catering for the tourist and visitors to the area.

Biodiversity within the area is concentrated:

- 1) Along the coast, especially on the strip of coastal grassland, which is very fragmented and forms only a poor link between bordering areas to the north and south.
- 2) In hedgerows and field margins on the limestone, surviving as a relic of a more extensive past.

Although there are no designated sites within the area, it sits between important designated sites to the north and south, but currently provides little connectivity, other than immediately along the coast, due to the urban area of Porthcawl and the improved grassland which forms barriers to movement along the coast and inland.

A vision for biodiversity must take account of these pressures.

Actions and opportunities to achieve the vision

There are important opportunities for:



Maintenance, extension and enhancement of the coastal grasslands.



Sensitive management of the agricultural area, with reduced chemical inputs and intensity of management.

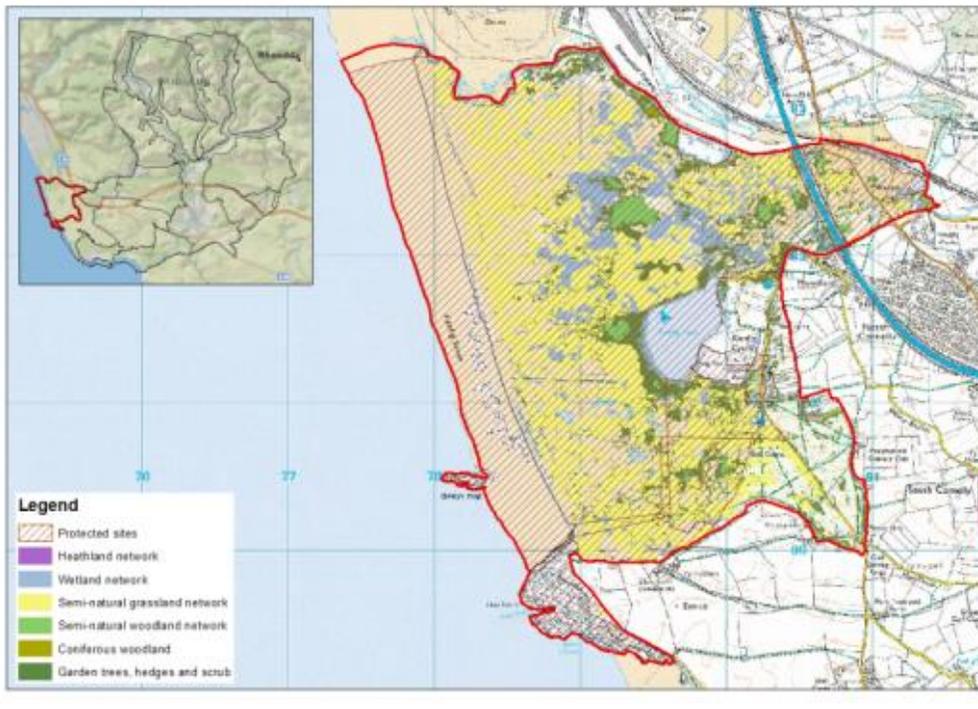


Habitat creation, especially on the limestone, will benefit both biodiversity and water regulation locally around Porthcawl.



Sensitive recreational management is required to prevent further degradation of the coastal habitats.

14: KENFIG DUNES AND COASTLINE



2 Notable species in the area

The humid dune slack in Kenfig are noted for their rare and significant plants including species such as fen orchids and petalwort. A very wide range of species from butterflies to fish are supported by this internationally significant site and the surrounding land.

Risk to species:

Kenfig is managed as a National Nature Reserve and as such the species present are given some protection. Agricultural intensification further upstream could result in a change in the nutrient balance of the site which might adversely affect the plants, and therefore the animals and insects which occur in this area.

1 Habitats in the area

A sandy coastal area, dominated by four main habitat types:

- Intertidal sand forms an extensive area along the coast, providing an important cultural and recreational ecosystem service.
- Dune habitats, from open dunes and dune slacks to dune grasslands and dune scrub, with occasional pools, forming a rich biodiversity, recognised as the Kenfig National Nature Reserve. This area forms an important barrier between the sea and the settlements inland, as well as a pollination resource.
- Further inland, the ancient dunes form a mixture of scrub and broadleaved woodland, with occasional areas of coastal grassland in-between. This is another rich source of biodiversity and pollination, as well as contributing to carbon storage and capture.
- Kenfig Pool itself forms a large area of open water, with shallow margins, also important for biodiversity and helping with water regulation in the local area.

Risks to notable habitats

Although currently largely managed for biodiversity, risks to the main habitats include:

- Increased urbanisation, leading to increased fragmentation of the habitat
- Agricultural improvement inland
- Over-exploitation of the area for recreation, which may affect some of the more sensitive habitats and species
- Scrub encroachment within the delicate dune system

14: KENFIG DUNES AND COASTLINE

3 Key ecosystem services in the area



For detailed maps of the services please refer to the supporting evidence document.



The area is an important recreational resource, somewhat limited by its inaccessibility. The Pyle and Kenfig Golf Club extends into the extreme south of the area, forming a typical coastal links golf course.



The area is a very important biodiversity resource, and is of national significance.



The largely semi-natural nature of the area provides an important pollination resource.



The sandy soils provide a natural filtration service.



The sand dunes provide an important buffer against the sea and help reduce the impact of coastal flooding. The many pools in the area, especially the large Kenfig Pool form an important water storage and regulation resource.

14: KENFIG DUNES AND COASTLINE

4 Actions and opportunities to maintain ecosystem services

Vision for enhanced biodiversity

Current management of the bulk of the area is essentially for biodiversity and natural resources. It is a well-managed active dune system which needs to be maintained.

Most of the water is a groundwater resource as few streams flow into or out of the area.

The vision takes account of the largely protected nature of the area and current biodiversity management, with increasing pressure for recreational use and urban encroachment.

Actions and opportunities to achieve the vision



Continuing sensitive management of the dune system

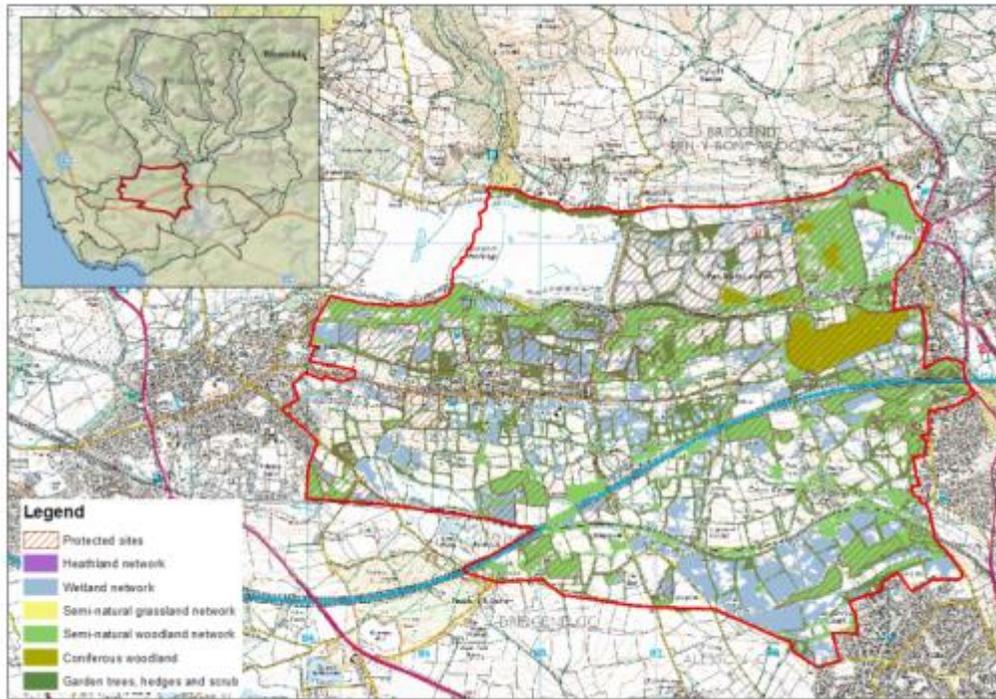


Continuing sensitive recreational management, focussing recreation away from the more sensitive areas



Opportunities exist for increasing vegetation carbon in the area. This will occur naturally to some extent without intervention as the dunes become further scrubbed over and woodland develops further. Potential areas exist on the fringes of the dunes, where there is a typical dune substrate which has been improved in the past, in order to revert land to a dune habitat with scrub and woodland areas.

15: CEFN CRIBWR RIDGE AND SETTLED FARMLAND



1 Habitats in the area

A rolling agricultural area, with a range of important habitats, including:

- Wet meadows and marshy grasslands, especially in the north of the area but scattered throughout, with an important pollination role
- Areas of broadleaved woodland, scrub and overgrown hedgerows, bordering the small grassland fields, contributing to water regulation and carbon storage
- The agricultural area contains a number of improved grassland habitats, important for grazing and with varying pollination and water regulation role
- The former Parc Slip opencast mine has been converted into a large nature reserve containing a range of recreated, largely wetland, habitats.

2 Notable species in the area

Plants of the wet-species rich grasslands are of particular interest: viper's-grass and marsh fern, in addition dyer's greenweed, petty whin and marsh helleborine all present in the area. Devil's-bit scabious also occurs supporting the nationally scarce marsh fritillary butterfly. A wide range of additional butterfly and bird species have been noted. The brown long-eared bat, lesser horseshoe bat, pipistrelle bat, European water vole and hazel dormouse have all been recorded in this area.

Risk to species:

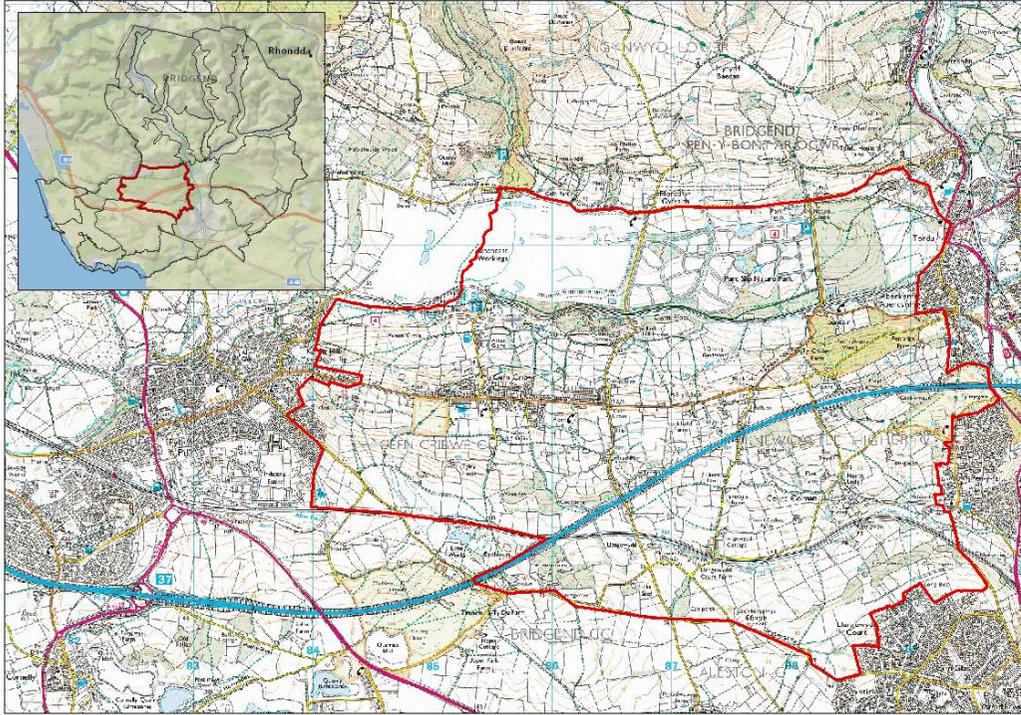
Many of the significant species use the wet species rich meadows and their associated hedge line and woodland, any damage to the networks of these habitats could adversely affect the species present.

Risks to notable habitats

- There has been extensive open-cast mining activity in the past, with the former Parc Slip opencast site a strong influence on the area with a possible extension in the future. The area is straddled by the M4 motorway and the main South Wales rail link. It acts as a buffer between Bridgend and Pyle and is subject to major management issues related to urban expansion.

15: CEFN CRIBWR RIDGE AND SETTLED FARMLAND

3 Key ecosystem services in the area



The area has an important food producing function, largely from livestock farming.

For detailed maps of the services please refer to the supporting evidence document.



Biodiversity is high in the extensive woodlands, overgrown hedgerows and in the wet meadows and pastures. This is reinforced by the small field pattern which creates a high nature value farming pattern. Connectivity is good across the area. The Parc Slip nature reserve has created new opportunities for biodiversity.



The pollination resource is strong in the same areas that have high biodiversity value, especially in the wet meadows and field boundaries.



The wet 'clayey' nature of the soils throughout the area helps to retain rainfall and influence run-off by releasing water slowly over the year.



The high organic nature of the soils helps store carbon.



The extensive small woodlands and overgrown hedgerows also help store carbon.

15: CEFN CRIBWR RIDGE AND SETTLED FARMLAND

4 Actions and opportunities to maintain ecosystem services

Vision for enhanced biodiversity

The area is well supplied with protected sites and strong ecological networks, especially in the north and reinforced by the Parc Slip nature reserve.

The M4 motorway and the main rail line provide barriers for north to south movement, although they do provide corridors for movement from east to west.

The biodiversity vision is to maintain and enhance biodiversity within this urban fringe setting and contribute to water regulation, flood mitigation and other ecosystem services where possible.

Actions and opportunities to achieve the vision



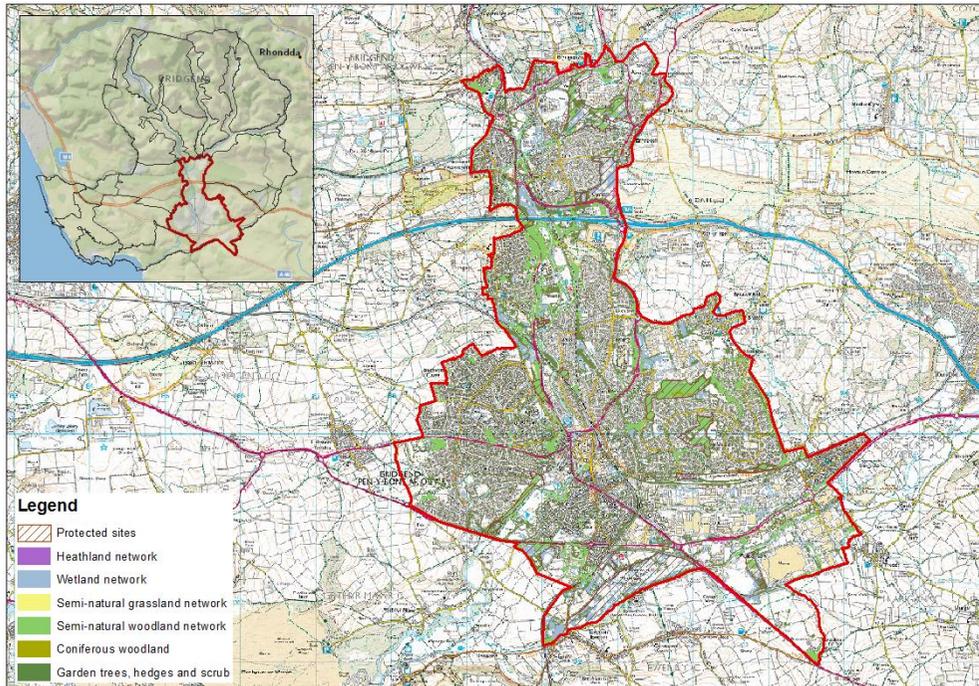
There is potential to increase the pollination resource in some of the more improved pastures that could easily revert to less intensive production.



Much of the area also influences clean water provision, through control over infiltration into the groundwater resource. Again woodlands and wet meadows provide most of this influence, scattered throughout the area.



There are many opportunities for increasing vegetation carbon storage throughout the area by increasing tree planting and woodland habitat creation. This will considerably increase the biodiversity resource where those are wet woodlands, and also help water run-off regulation and clean water filtration. It will also aid woodland connectivity networks.



2 Notable species in the area

Garden birds such as the blue tit, nuthatch and blackbird are recorded in the town as are butterflies such as red admiral and painted lady. A wide range of native plants occur in the town from wetland species such as meadow sweet through to woodland species such as wood avens. Brown long-eared bat, pipistrelle and the lesser horseshoe bat all occur in the town

Risk to species:

The loss of tall garden trees and species rich gardens which connect the woodlands inside and outside the town are the biggest risk to the bat and bird species that occur in the area.

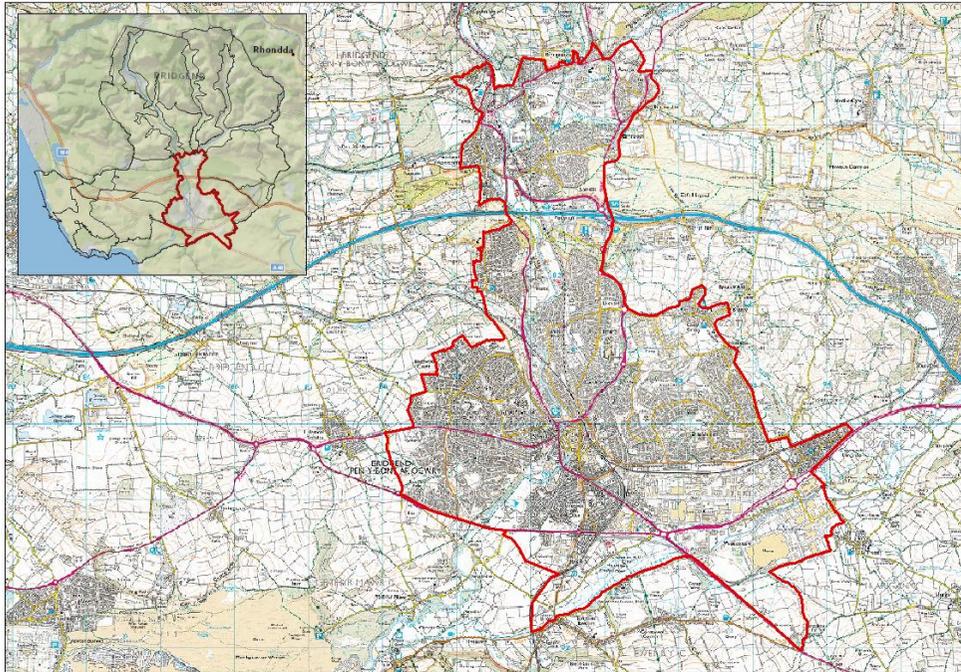
1 Habitats in the area

- The urban area of Bridgend has several important woodland habitats. Many of these are joined by tall trees and scrubs in people's gardens and trees alongside water courses provide a woodland network.
- Several areas of species rich grassland occur within the town and these are occasionally important sacrificial flooding areas that carry flood water during heavy rainfall events.
- Private gardens are also an important area of biodiversity in the town, especially where flowers, trees and bushes provide a resource for pollinating insects and homes for small birds.
- Cemeteries, parks and allotments can also be an important source of biodiversity especially where native large trees species such as oak and ash occur.

Risks to notable habitats

- Risks occur from development pressures especially in areas such as large gardens with mature trees which are targeted for infill development. These gardens are a significant part of the network and development should maintain as much of the native vegetation as possible.
- Disturbance, vandalism and invasive species such as Japanese knotweed and buddleia are all significant issues.
- Water and wetland habitats are at risk from pollutants from fly tipping and from water which runs off the roads.

3 Key ecosystem services in the area



Several significant historic buildings and parks occur in the town that add to its 'sense of place'.



Parks and riverside walks as well as woodland areas all provide an important recreational resource for people to enjoy the fresh air.

For detailed maps of the services please refer to the supporting evidence document.



The grasslands and woodlands in the north of the town have an important role in intercepting rainfall and helping to slow its passage in heavy rainfall events



The grasslands and woodlands and bankside vegetation also help purify rainwater keeping the water of the river clean.



Several areas of high biodiversity value occur in the town - some of these are locally protected sites.



Gardens, allotments and species rich hedges and verges are a significant source of pollination resources.



The river provides an important habitat for fish and other aquatic species.



Greenspace in Bridgend is important for wellbeing and health, and helps to join up patches of habitat allowing species to move through the urban environment.

4 Actions and opportunities to maintain ecosystem services

Vision for enhanced biodiversity

The area has several locally significant Sites of Interest for Nature Conservation which protects significant areas of species rich grassland and woodland.

The gardens, particularly those with mature native trees support a range of bird and bat species of significance.

The biodiversity vision is to maintain and enhance biodiversity within this urban setting and contribute to water regulation, flood mitigation and other ecosystem services where possible.

Actions and opportunities to achieve the vision



There is potential to increase the pollination resource in many gardens. Planting native species of flowers and trees is particularly important.



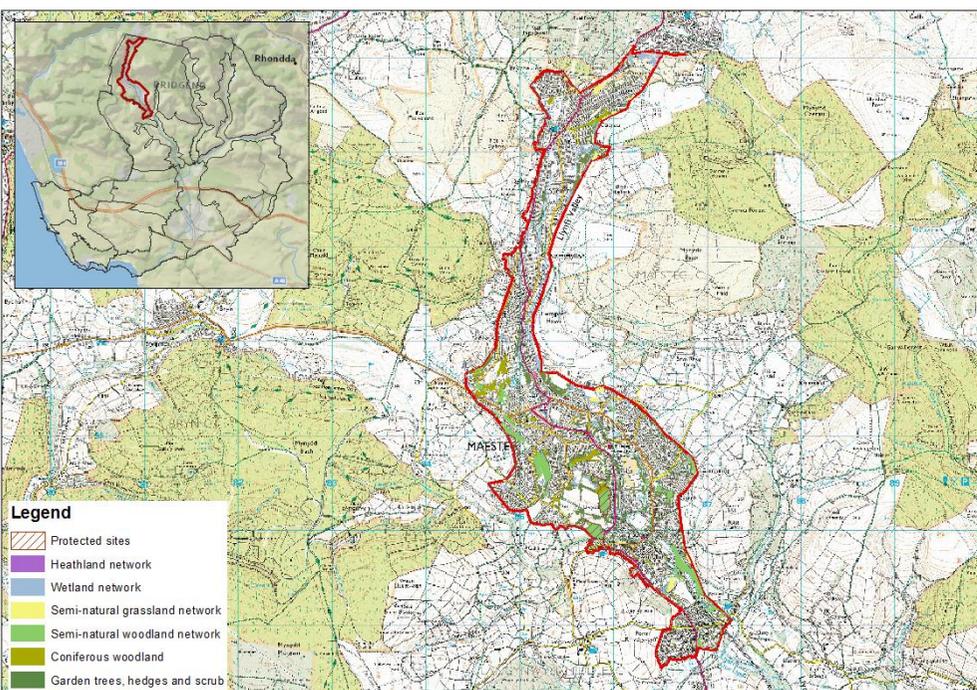
The greenspace in the northern part of the town influences clean water provision, through control over infiltration into the groundwater resource. Again woodlands and meadows provide most of this influence. Maintaining gardens with natural soil and vegetation and reducing those turning gardens to hard standing will help maintain water infiltration and reduce flood risks.



There are opportunities for increasing vegetation carbon storage throughout the area by increasing tree planting, this will also help cool and purify the air.



Recreation and enjoyment of nature can be encouraged by signage, the creation of more paths and raising awareness of how much biodiversity the town contains.



2 Notable species in the area

Some native species of plants, trees and flowers have been recorded in the town, but the most significant records are for a wide range of butterfly species and pipistrelle bat.

Risk to species:

The largest risk to species is the loss of gardens with flowerbeds and trees, other risks include disturbance and the spread of invasive species.

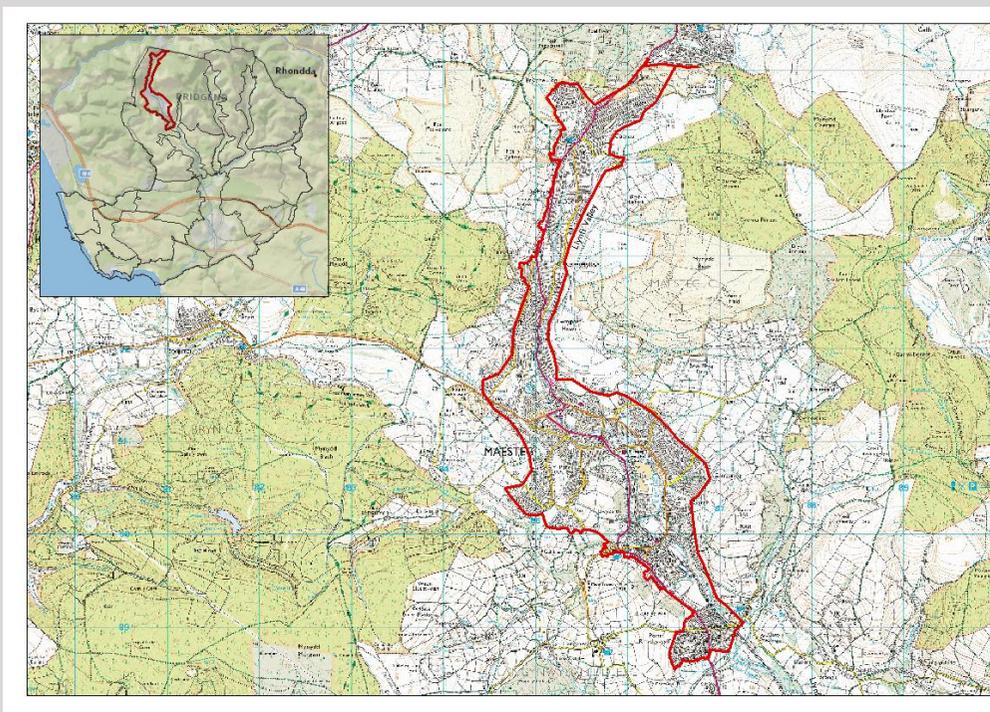
1 Habitats in the area

- There are several small blocks of existing native woodland in the west of the town; in places these are connected to form a woodland network through larger gardens and tree planting on streets and alongside the rivers and streams.
- The river is an important habitat – it is home to fish and other aquatic species.
- Gardens can be an important habitat in the area especially where these are planted with flowers, scrubs and native trees. These areas also provide a pollination resource and locally grown food.

Risks to notable habitats

- Risks occur from development pressures especially in areas where there are large gardens with mature trees which are targeted for infill development. These gardens are a significant part of the network and development should maintain as much of the native vegetation as possible.
- Disturbance, vandalism and invasive species such as Japanese knotweed and buddleia are all significant issues.
- Water and wetland habitats are at risk from pollutants from fly tipping and from water which runs off the roads.

3 Key ecosystem services in the area



For detailed maps of the services please refer to the supporting evidence document.



There is a good pollination resource in the Llwydarth native woodland and scrubland. Also the banks of the Llynfi are important for pollinators.



As well as the river there are a few areas of high biodiversity in woodlands and scrublands, some of the gardens with many plants, flowers and vegetables will also be high in biodiversity value.



Many of the steeper hillsides in the town are covered by woodlands which have an important role in preventing rapid rainwater run-off. They help alleviate flooding and guard against soil erosion.



The countryside and green space within the town especially alongside the river are an important recreational resource.



Greenspace in Maesteg is important for wellbeing and health, and helps to join up patches of habitat allowing species to move through the urban environment. This is mostly focused around the river corridor.

Vision for enhanced biodiversity

The area has several locally significant Sites of Interest for Nature Conservation which protect significant areas of species rich grassland and woodland.

The gardens, practically those with mature native trees, support a range of bird and bat species of significance.

The biodiversity vision is to maintain and enhance biodiversity within this urban setting and contribute to water regulation, flood mitigation and other ecosystem services where possible.

Actions and opportunities to achieve the vision



There is potential to increase the pollination resource in many gardens. Planting native species of flowers and trees is particularly important. Leaving road verges uncut (regulations require 1.5m back from the road to be cut for safety) can also aid pollinators enabling plants to flower. Community involvement in such as scheme could help prevent fly tipping which can be a problem in uncut grassland areas.



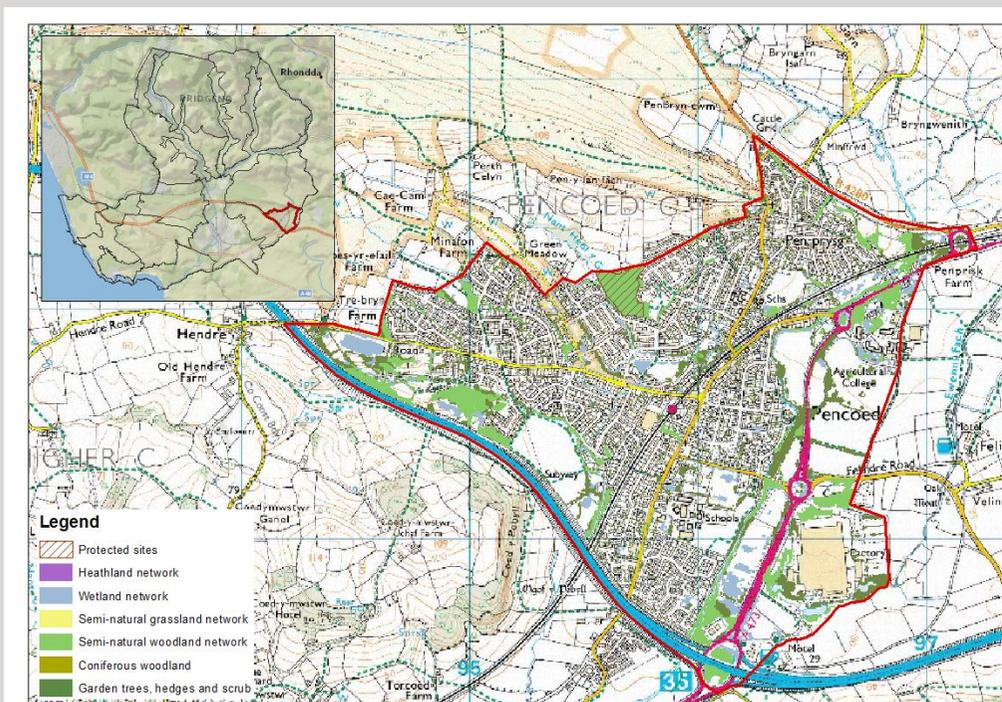
On the Llynfi river there is a project to develop a 8ha path which highlights areas of high biodiversity and gives access alongside the river.



The green space up-hill of the town influences clean water provision, by controlling infiltration into the groundwater resource. Maintaining gardens with natural soil and vegetation and careful management of existing green space will help maintain water infiltration and reduce flood risks



There are opportunities for increasing vegetation carbon storage throughout the area by increasing tree planting this will also help cool and purify the air.



2 Notable species in the area

Great crested newts, pipistrelle bats and a number of butterflies have been recorded in the town.

Risk to species:

Disturbance, pollution from fly tipping and invasive species all pose a risk to these species; bats will be particularly affected by the change in tree/scrub cover.

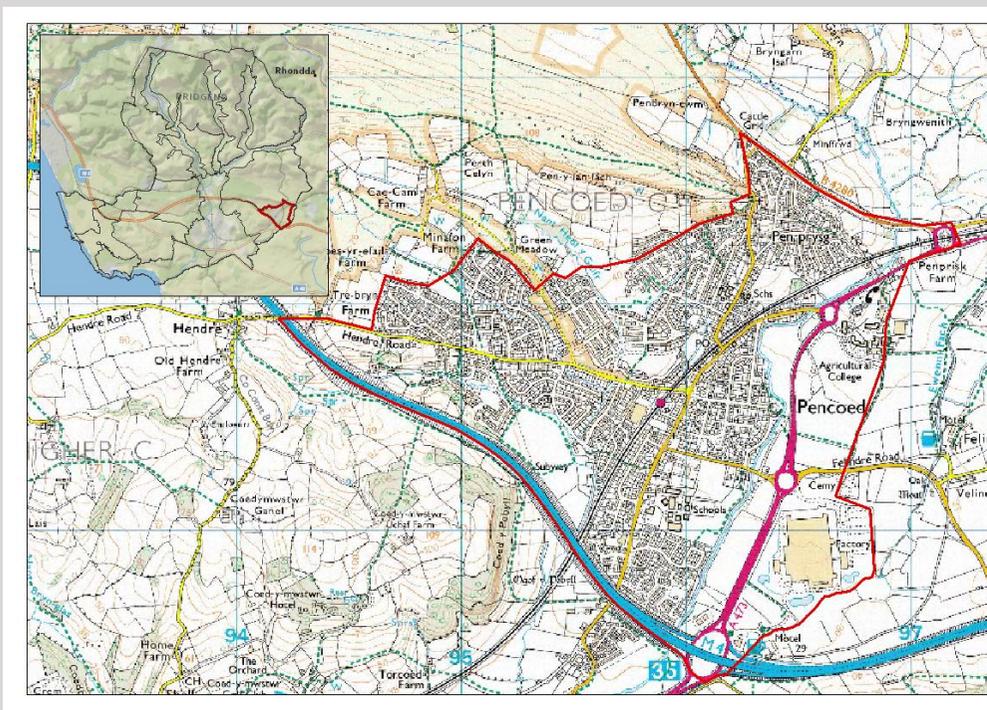
1 Habitats in the area

- To the north of Pencoed the woodland and marshy grassland networks are protected in the Site of Importance for Nature Conservation Coed Iestyn. The woodland network stretching right through the northern part of the town through the presence of large native trees and larger gardens.
- The Ewenny River runs through the east of the town and also provides a significant habitat for fish and aquatic species.

Risks to notable habitats

- Urban development and infilling or paving of gardens are large risks especially in the north of the town where there is currently a good woodland network.
- Within the grasslands and river, fly tipping, disturbance and invasive species could become a problem.

3 Key ecosystem services in the area



For detailed maps of the services please refer to the supporting evidence document.



Biodiversity is high in the woodlands and larger gardens with a mix of flower, fruit and vegetables growing. Ewenny Moor grasslands are also a source of high biodiversity.



The grasslands adjacent to the river provide an important natural flood mitigation area, the woodland also helps slow down rainfall reducing flood risk.



Recreation is important in the green spaces and playing fields of the town the river Ogmore has paths alongside either bank.



Pollination is a significant resource through flower in private gardens and in the species rich grasslands and river banks.



Greenspace in Pencoed is important for wellbeing and health, and helps to join up patches of habitat allowing species to move through the urban environment. This is mostly focused around the river corridor.

Vision for enhanced biodiversity

The area has a locally significant Sites of Interest for Nature Conservation which is woodland. Enhancing tree planting of native species in the northern part of the town will add to the network and give biodiversity benefit.

The gardens, practically those with mature native trees, support a range of bird and bat species of significance; flower rich gardens which are not paved should be encouraged.

The biodiversity vision is to maintain and enhance biodiversity within this urban setting and contribute to water regulation, flood mitigation and other ecosystem services where possible.

Actions and opportunities to achieve the vision



There is potential to increase the pollination resource in many gardens. Planting native species of flowers and trees is particularly important.



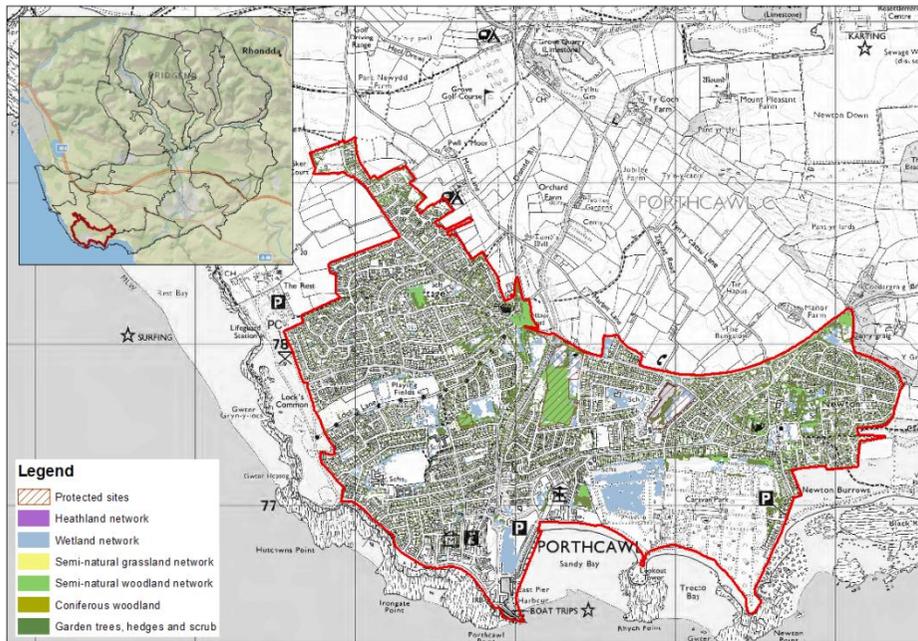
The woodland in the northern part of the town influences clean water provision, through control over infiltration into the groundwater resource. Maintaining gardens with natural soil and vegetation and reducing those turning gardens to hard standing will help maintain water infiltration and reduce flood risks.



There are opportunities for increasing vegetation carbon storage throughout the area by increasing tree planting. This will also help cool and purify the air.



Recreation and enjoyment of nature can be encouraged by signage the creation of more paths and by raising awareness of how much biodiversity the town contains.



1 Habitats in the area

- Pwll-y-Waun has a lake on the eastern side, then planted woodland and grassland. The wilderness also contains a pond with native woodland and grassland.
- Gardens are also a significant biodiversity resource in the town, particularly where they contain mature trees, plants, fruit and vegetables.
- The small woodland at Trafalgar Woods is also an important habitat in the town.

2 Notable species in the area

A number of birds associated with the ponds such as moorhen, and mallard have been recorded in the town as have some wetland plants such as water mint and meadow sweet. A large number of dragonfly species have also been recorded in the area.

Risk to species:

Disturbance, pollution from fly tipping and invasive species all pose a risk to these species.

Risks to notable habitats

- Pwll-Y-Waun is a Site of Importance for Nature Conservation. The lake here could be at risk from pollutants and nutrients from surrounding roads and land which could damage the wildlife in this area. Invasive species and disturbance are also threats.
- Urban development and infilling or paving of gardens are a large risk. Within the grasslands and river, fly tipping, disturbance and invasive species could become a problem.

3 Key ecosystem services in the area



For detailed maps of the services please refer to the supporting evidence document.



Biodiversity is high in the woodlands and especially around the ponds; gardens will also be a good source of biodiversity.



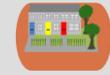
The ponds are a significant habitat for fish and other aquatic species, and also for dragonfly.



Recreation is important in the greenspaces and playing fields of the town, and especially along the shore where many tourists come to enjoy the natural environment.



Pollination is a significant resource through the flowers in private gardens and in the species-rich grasslands and river banks.



Greenspace in Porthcawl is important for wellbeing and health, and helps to join up patches of habitat allowing species to move through the urban environment.

Vision for enhanced biodiversity

The area has several locally significant Sites of Interest for Nature Conservation which protect significant areas of woodland and fresh water ponds, these can be managed to encourage biodiversity and people's appreciation of their environment.

The gardens, particularly those with mature native trees support a range of bird and bat species of significance.

The biodiversity vision is to maintain and enhance biodiversity within this urban setting and contribute to other ecosystem services where possible.

Actions and opportunities to achieve the vision



There is potential to increase the pollination resource in many gardens. Planting native species of flowers and trees is particularly important.



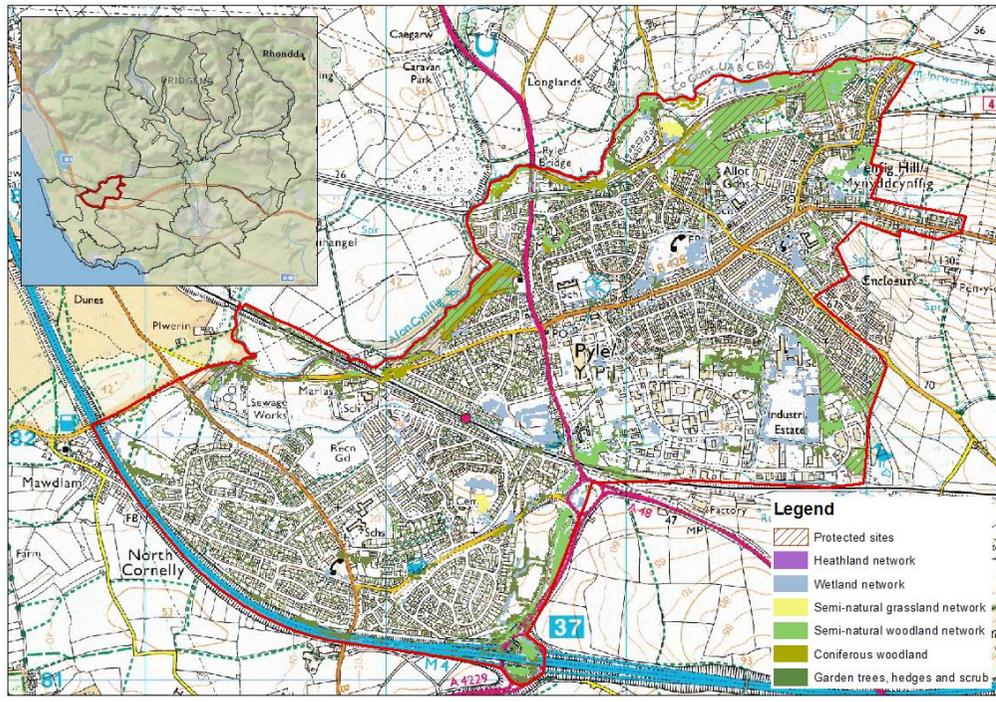
The greenspace in and around ponds influences clean water provision. Woodlands help provide this ecosystem service. Maintaining gardens with flowers, fruit and vegetables and reducing those turning gardens into hard standing will help maintain water infiltration and reduce flood risks.



There are opportunities for increasing vegetation carbon storage throughout the area by increasing tree planting which will also help cool and purify the air.



Recreation and enjoyment of nature can be encouraged by signage, the creation of more paths and raising awareness of how much biodiversity the town contains aside from the beach.



1 Habitats in the area

- The river (Afon Cynffig) runs along the northern edge of the town. This is an important ecosystem supporting a range of aquatic species.
- Several areas of semi-natural native woodland occur in the area, these have some protection as they are important areas for nature conservation. The woodland networks run through the northern part of the town with the presence of tall trees and bushes in gardens.

2 Notable species in the area

Several wetland species including devil's-bit scabious, heath spotted-orchid and the marsh fritillary butterfly have also been noted from the wet grassland around the town. Water vole, pipistrelle bats and a number of other butterfly species are also present.

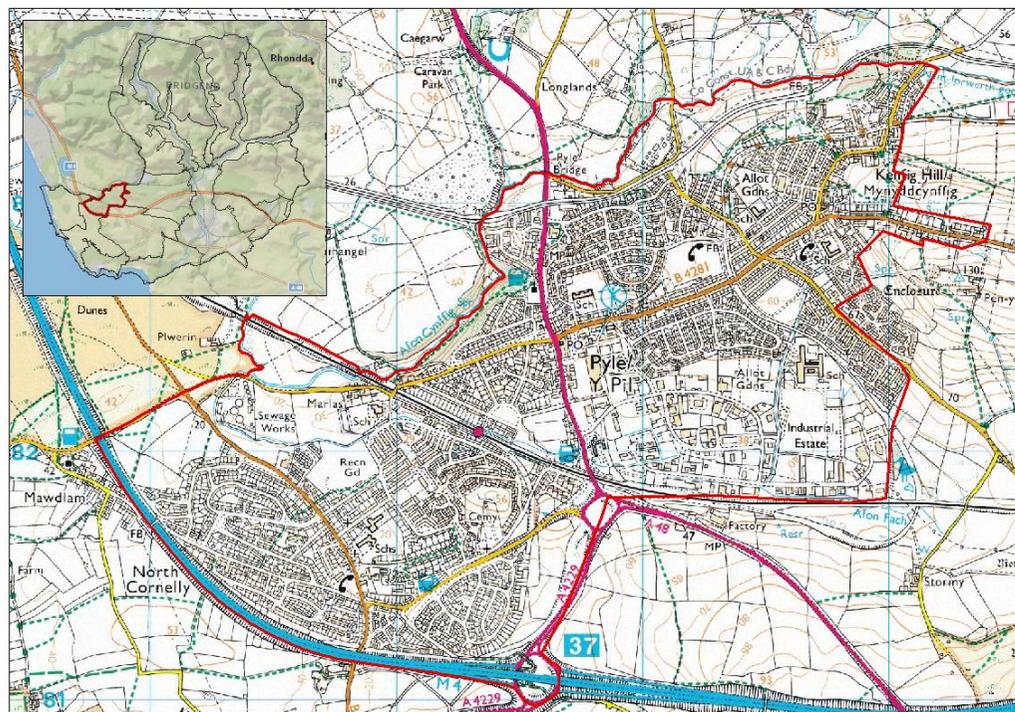
Risk to species:

Loss of tall garden trees and species rich gardens that connect the woodlands inside and outside the town are the biggest risk to the bat and butterfly species that occur in the area. Water quality issues from fly tipping, pollutants and invasive species are also risks.

Risks to notable habitats

- Risks occur from development pressures especially in areas such as large gardens with mature trees which are targeted for infill development. These gardens are a significant part of the network and development should maintain as much of the native vegetation as possible.
- Disturbance, vandalism and invasive species such as Japanese knotweed and buddleia are all significant issues.
- Water and wetland habitats are at risk from pollutants from fly tipping and from water which runs off the roads.

3 Key ecosystem services in the area



For detailed maps of the services please refer to the supporting evidence document.



Biodiversity in the area of the native woodland alongside the river is good.



The river is a significant habitat for fish and other aquatic species.



There are important areas of pollination resources from the allotments and gardens with larger trees, scrubs and native species.



Recreational opportunities occur throughout the town especially along the river and in the parks and playing fields.



Greenspace in Pyle is important for wellbeing and health, and helps to join up patches of habitat allowing species to move through the urban environment.

Vision for enhanced biodiversity

The area has several locally significant Sites of Interest for Nature Conservation which protects significant areas of species rich grassland and woodland and the river banks.

The gardens, practically those with mature native trees support a range of bird and bat species of significance.

The biodiversity vision is to maintain and enhance biodiversity within this urban setting and contribute to water regulation, flood mitigation and other ecosystem services where possible.

Actions and opportunities to achieve the vision



There is potential to increase the pollination resource in many gardens. Planting native species of flowers and trees is particularly important.



The woodland and marshy grasslands along the river banks influences clean water provision, through control over infiltration into the groundwater resource



Maintaining gardens with native species of flower, fruit and vegetables and reducing those turning gardens to hard standing will help maintain water infiltration and reduce flood risks



There are opportunities for increasing vegetation carbon storage throughout the area by increasing tree planting. This will also help cool and purify the air.



Recreation and enjoyment of nature can be encouraged by signage the creation of more paths and raising awareness of how much biodiversity the town contains.