Merthyr Tydfil Nature Recovery Action Plan 2019-2024

THE BIODIVERSITY & RESILIENCE OF ECOSYSTEMS DUTY S6 ENVIRONMENT (WALES) ACT 2016

Cynllun Adfer Natur Cymru Cyngnor Bwrdeistref Sirol Merthyr Tudful
(2019 – 2024)
Merthyr Tydfil County Borough Council Nature Recovery Action Plan
(2019 – 2024)

Cyngor Bwrdeistref Sirol
MERTHYR TUDFUL
MERTHYR TYDFIL
County Borough Council

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MTCBC High Level Statement:

'Throughout our operations we will (where possible) seek to maintain and enhance the diversity of our natural environment to make it resilient and able to support the social, economic, health and well-being of local communities, both for enjoyment and for its own inherent value'.

Contents

1. Introduction

The Environment (Wales) Act 2016 (Section 6, Subsection 1) introduced an enhanced biodiversity and resilience of ecosystems duty (the S6 duty) for public authorities in the exercise of their functions in relation to Wales.

The S6 duty – public authorities must seek to maintain and enhance biodiversity wherever possible within the proper exercise of their functions and in doing so, seek to promote the resilience of ecosystems.

Public authorities must prepare and publish a plan showing how the S6 duty will be fulfilled (the S6 plan).

This Merthyr Tydfil Nature Recovery Action Plan (MTNRAP) document prepared by Merthyr Tydfil County Borough Council (MTCBC), replaces the previous Merthyr Tydfil Biodiversity Action Plan (MTBAP) 2014-2019, and represents the S6 plan for Merthyr Tydfil County Borough, in accordance with Welsh Government Guidance: *Environment (Wales) Act 2016 Part 1: Guidance for Section 6 – The Biodiversity and Resilience of Ecosystems Duty*.

The MTNRAP, in line with this guidance, sets out the measures undertaken by MTCBC to comply with the S6 duty. The MTNRAP (S6 plan) setting out what MTCBC has done to comply with the duty must be published by the end of 2019. Every three years after this date, an update to the MTNRAP (S6 plan) will need to be published, with the next document available by the end of 2022.

The MTNRAP will be a dynamic document and will be updated and amended when relevant information becomes available, for example, the Area Statements due from Natural Resources Wales in March 2020.

2. Legislative Context

Environment (Wales) Act 2016 – Section 6

This replaces and strengthens (in Wales) the previous biodiversity duty under Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006.

Subsection 1: states that all public authorities are required, when undertaking their functions in Wales, to seek to **maintain and enhance biodiversity** wherever possible within the proper exercise of their functions. In doing so, public authorities must also seek to **promote the resilience of ecosystems**.

Biodiversity ('biological diversity')
'The variety of plant and animal life in the world or in a particular habitat.'

Ecosystem
'A functioning unit made up of living organisms (plants/animals/micro-organisms) within their non-living environment (air/water/minerals/soil) and all the diverse and complex interactions that take place between them.'

Resilience of ecosystems
'A resilient ecosystem has the ability to respond to disturbance by resisting damage and recovering quickly.'

Subsection 4(a): states that **Welsh Ministers, the First Minister for Wales, the Counsel General to the Welsh Government, a Minister of the Crown and a government department** must have regard to the United Nations Environmental Programme **Convention on Biological Diversity 1992**.

The Convention on Biological Diversity (CBD)
This came into force in December 1993 and is an agreement between countries based on natural and biological resources. The CBD has three main goals: to protect biodiversity; to use biodiversity without destroying it; to share any benefits from genetic diversity equally.

In 2015, Welsh Government published the Nature Recovery Action Plan for Wales in order to fulfil its duty in regard to the CBD.

The Nature Recovery Plan for Wales (2015)
This sets out six objectives for reversing the decline of biodiversity to address the CBD goals.

Objective 1: Engage and support participation and understanding to embed biodiversity throughout decision making at all levels.

Objective 2: Safeguard species and habitats of principal importance and improve their management.

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

Objective 4: Tackle key pressures on species and habitats.

Objective 5: Improve our evidence, understanding and monitoring.

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

Subsection 4(b): states that **any other public authority must have regard to any guidance given to it by the Welsh Ministers**.

MTCBC therefore has used the six objectives to help fulfil the S6 duty within this MTNRAP document.

Subsection 5: states that, in complying with subsection 1, a **public authority** other than a Minister of the Crown or government department **must have regard to**:

(a) **The list[s] published under section 7** (lists of living organisms and habitats of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales).
(b) **The State of Natural Resources Report (2019) published under Section 8** (the state and condition of the habitats and species within marine, terrestrial and freshwater environments in Wales).
(c) **Any area statement published under Section 11** (to be published by Natural Resources Wales in March 2020).

3. Biodiversity in Merthyr Tydfil County Borough

Located in the Heads of the Valleys, within the Cardiff Capital Region, Merthyr Tydfil County Borough is the smallest Welsh local authority, with a population of circa 60,183 and covering an area of approximately 11,000 hectares of which 2,300 hectares lie within the Brecon Beacons National Park.

Neighbouring Local Authorities are Rhondda Cynon Taf County Borough Council (west and south-west), Caerphilly County Borough Council (east and south-east) and Powys County Council (north). The A470 (north-south) and A465 (east-west) meet to the north-west of the main town of Merthyr Tydfil and are the County's major roads.

Merthyr Tydfil town lies approximately 20 miles north of Cardiff and is the nucleus of an historic industrial landscape within the County Borough. Having once been the most productive centre of iron making in the world, the County Borough has profound historic and cultural significance. Notable historic remains within the County Borough include:

- four principal ironworks (Dowlais, Plymouth, Cyfarthfa, Penydarren)
- the prominent Cyfarthfa Castle, Park & Gardens, and
- stone viaducts such as the Cefn Coed viaduct

This section of the MTNRAP explores the current state of biodiversity in Merthyr Tydfil County Borough by describing in broad terms the diverse range of habitats and species found. Examples of habitats found within the County Borough include native woodland, ffridd, heathland, rhôs pasture, wetland, naturally re-vegetated mineral spoil areas, rivers and streams. Species include protected species such as European otter, bats, great crested newt, water vole, marsh fritillary butterfly and Ley's whitebeam.

Habitats

See Figure 1 for a chart showing the overall estimated land use/broad habitat type for Merthyr Tydfil County Borough.

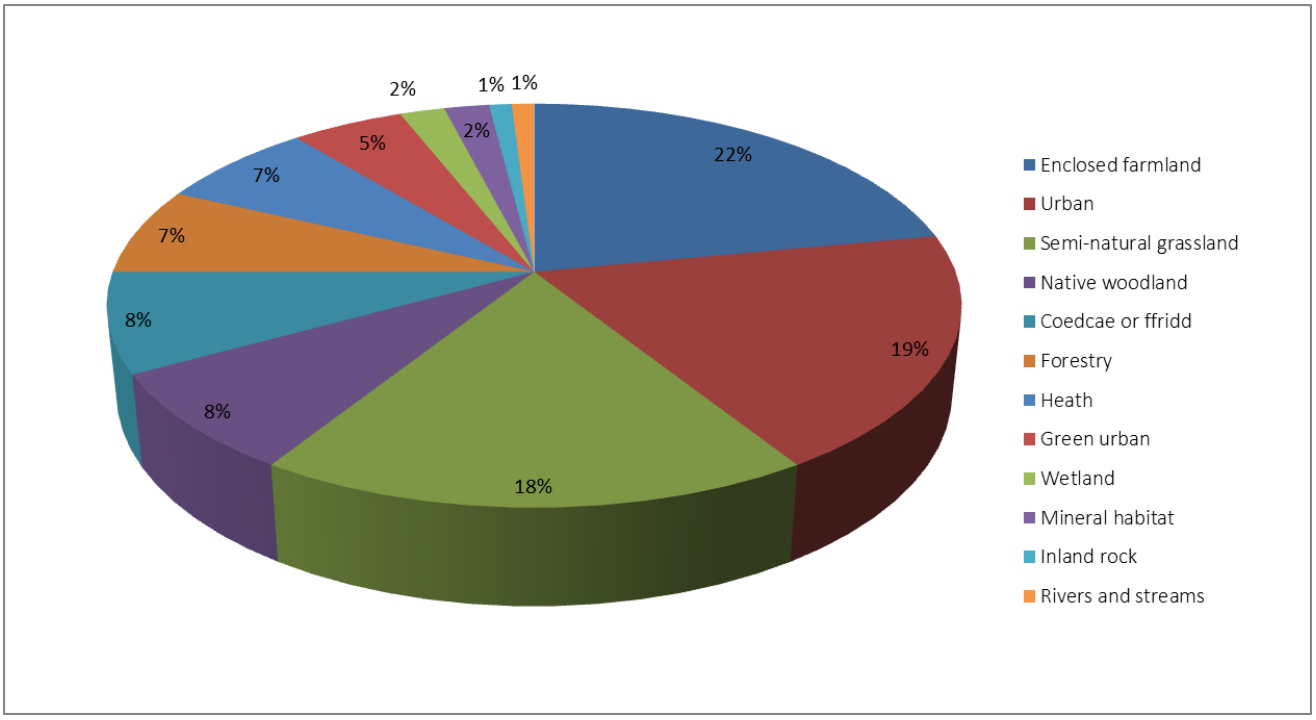

Figure 1 – Estimated land use / broad habitat type for Merthyr Tydfil County Borough.

The following section provides more detail regarding each land use category.

Urban areas

Urbanisation within the County Borough has had a widespread impact on habitats and species. By definition, urban areas are developed with a high density of human-made buildings. Relatively speaking therefore, they have a lower amount of natural habitat and consequently a lower biodiversity than, for example, more rural areas. This means there are good opportunities within the built environment for the creation of new habitats or the enhancement of existing habitats leading to an overall increase in biodiversity. Examples of places within the built environment that could be enhanced include parks, gardens, street trees, dry-stone walls, roadside verges, roundabouts, hospital grounds, school grounds, churchyards, trails and public open spaces. This 'Urban Green Infrastructure' can be strategically managed and improved for the benefit of all our natural resources: nature/biodiversity, air/pollution, water/flood prevention, tranquillity/noise reduction.

The main urban areas within the County Borough extend from Merthyr Tydfil town southwards to Merthyr Vale and are due to extensive development and land use for industrial and commercial

activities. Further urban areas then stretch from Edwardsville, through Treharris, ending at Quakers Yard in the south of the County Borough.

Enclosed farmland

Outside of the County Borough's urban areas, agriculture (along with forestry) has had the most widespread impact on habitats and species in the County Borough. Agriculture, based largely on livestock grazing has traditionally been responsible for maintaining the County Borough's open moorland, hill tops and valley sides. However, agricultural improvement through land drainage and the addition of fertilisers, together with livestock overgrazing, particularly by sheep, has reduced the biodiversity of some agricultural holdings. Notwithstanding this, farmers in the County Borough are the guardians of many high quality habitats and many are keen to actively promote wildlife wherever possible.

There is a significant amount of grazed land within the County Borough, which ranges from calcareous, acidic, neutral and marshy through to heathland, providing nutrient rich fodder for local organic livestock selling high quality produce.

Semi-natural grassland

There is a diverse range of grassland types within the County Borough and these are described below.

Calcareous grassland is increasingly scarce within the County Borough being confined to northernmost areas only.

Species-rich neutral grassland that is agriculturally unimproved or semi-improved is present as isolated pockets on steep terrain within the County Borough and in other areas that have not been intensively farmed. This grassland type is of importance in conserving species becoming rare due to overgrazing and fertilisation regimes.

Wet, marshy grassland is called **'rhôs pasture'** in Wales and usually contains purple moor grass and rushes, but can also include areas of wet heath and drier grassland. Rhôs pasture supports a wide range of species: otter may use these pastures, for example, when hunting for frogs; marsh fritillary butterfly require a specific larval food plant (devil's-bit scabious) found in this type of wet pasture; curlews and lapwing will breed in marshy pastures. The County Borough is important for this type of grassland, which is of conservation value for plants, mammals, butterflies and birds. Careful management and an appropriate level of grazing are required in order to protect the wealth of wildlife found in rhôs pasture.

Large areas of both **unimproved** and **semi-improved grassland** are found in the upland areas of the County Borough, in particular on the commons. It also forms important habitats on former colliery spoils and is found on valley sides where land has avoided agricultural improvement. It is usually found in conjunction with ericaceous heath forming a grassland/heathland mosaic.

Native woodland

Ancient and semi-natural broadleaved woodlands survive locally on the steep valley sides and along the riverbanks within the County Borough, notably along the Taf Fechan and Taf Fawr to the north of Merthyr Tydfil town. Throughout the main valley from Merthyr Tydfil to Treharris and along the Taf Bargod valley, there are woodlands of ash, alder, oak, birch and beech. Woodlands are important for a wide variety of wildlife, particularly birds, mammals, plants and invertebrates. In addition, they can help to minimise flood activity, noise and air pollution.

Ffridd

Ffridd is a widespread habitat type found throughout Wales and is found between the managed lowlands and the uplands at altitudes between 100m and 450m. This transitional zone is extremely diverse and is a complex mosaic of habitats consisting of heath, bracken, acid grassland, woodland, coal spoil and rhôs pasture. Ffridd habitat runs for mile upon mile along the main valleys of the County Borough. It is important for ecological connectivity in particular and a characteristic habitat of the County Borough's valley sides, often stretching from one end of the County Borough to the other. Ffridd plays a vital role in buffering upland sites against habitat intensification. It is capable of supporting a wide range of species: birds such as tree pipits, yellowhammers and ring ouzels; butterflies such as the pearl-bordered fritillary and dark green fritillary; vascular plants such as globeflower and wood bitter-vetch. NB all the species mentioned have been recorded in MTCB.

Ffridd may play an important role in connecting habitats and increasing the resilience of ecosystems in terms of disturbance and change.

Forestry

Forestry (along with agriculture) has played a major role in shaping the landscape. Indeed, outside of the County Borough's urban areas, forestry (and agriculture) has had the most widespread impact on habitats and species. Conifer plantations, managed by Natural Resources Wales, are located on both the western and eastern side of Merthyr's main valley. Whilst the vast non-native coniferous woodlands have decimated semi-natural habitats on a huge scale, with the adoption of appropriate management existing plantations can support a range of species, particularly where there is diversity in age structure and sections of more open habitat. Plantation woodland has extended the natural range of some bird species, for example, the firecrest and common crossbill. In addition, nightjar density can be increased where plantation and heathland meet.

Plantation woodland can support a range of other species, rare butterflies within clearings (pearl-bordered fritillary), reptiles along open ride edges, long-eared owl, bat species, black grouse and ground-nesting raptors (e.g., short-eared owls and hen harriers) in the uplands.

The biodiversity of coniferous plantation can be increased through the creation of edge habitat and creating a mosaic of clear fell, young plantation and old stands. Installation of bird and bat boxes can also increase biodiversity.

Heathland

A special feature within the County Borough is limestone heathland, with its well-drained limestone soil and lime rich quarry spoil. It has developed a specialised mosaic community of limestone grassland plants and ericaceous heathland, an unusual habitat that is extremely scarce in Britain.

Heathland is found on impoverished, acidic mineral and shallow peat soil and is characterised by the presence of heathers, whinberry and dwarf gorses. There are two types: dry heath and wet heath. Dry heath is commonly associated with acid grassland with gorse species being an indicator. Wet heath, indicated more by cross-leaved heath and purple-moor grass, forms an important mire habitat for plants, invertebrates and ground nesting birds. Both types are found in significant amounts within the County Borough, flowering throughout autumn and providing a vital last nectar boost for bee species before winter.

Green urban

Green urban areas are defined here as parks and sports fields within the County Borough. MTCBC has a range of parks. There are five Borough parks (Cyfarthfa, Thomastown, Troedyrhiw, Treharris and Trelewis); these include playgrounds, bowling greens, tennis courts and playing fields. There are six Community Parks (St Tydfil's Park, Thomastown; Bandstand Park, Stables Parks and Engine House Gardens all in Dowlais; Troedyrhiw OAP Gardens and Aberfan Park). There is one Country Park (Parc Taf Bargoed in Trelewis).

These areas all represent opportunities to benefit biodiversity by: creating more habitats (increasing the amount of habitat and adding new types of habitat); allowing natural processes to happen (e.g., leaving dead wood - a valuable habitat for a range of invertebrates, fungi and plants); allowing succession in some areas, for instance, with no intervention grasslands will seed with shrubs and trees and eventually develop into woodland; avoiding pesticide and herbicide use, for example, spraying to kill aphids may also kill pollinators (bees, butterflies, hoverflies); scheduling vegetation clearance to avoid nesting birds (September to February); removing invasive non-native plants, for example Japanese knotweed and Himalayan balsam; engaging park users; raising awareness around biodiversity issues.

Wetland

There is 135.65 hectares of wetland habitat in the County Borough that includes habitat such as blanket bog (e.g., found in both the Merthyr Common North and the Bryn-ddu & Ty'n-y-Coedcae SINCs), upland flushes, fens and swamps (e.g., found in Cwm Golau, Bryn-ddu & Ty'n-y-Coedcae and Cwm Bargod SINCs), reedbeds (e.g., found in the Bryniau, Cilsabws and Lower Cwm Bargod SINCs) and ponds (e.g., found in the Cwm Golau and Winchfawr west SINCS, both of which support populations of great crested newt).

Wetlands are biodiversity-rich habitats and support a range of species within the County Borough (e.g., bats like Daubenton's bat, European otter, amphibians including the great crested newt, birds including kingfisher and wildfowl species, invertebrates like dragonflies and damselflies).

Wetland creation and enhancement can offer sustainable and cost-effective mechanisms to achieve environmental objectives, for example: to mitigate pollution impacts; to help to mitigating for the effects of droughts and floods (see Merthyr Tydfil Flood Risk Management Strategy and also the Water Framework Directive).

From 7th January 2019, all new developments of more than a single dwelling house or where the construction footprint is 100m^2 or more will require Sustainable Drainage Systems (SuDS) for surface water (according to Schedule 3 of the Flood and Water Management Act 2010). As a result of this, new opportunities to create biologically diverse water management have arisen. Good SuDS design can create shelter, food, foraging and breeding opportunities for a range of species and contribute to an increase in biodiversity within MTCB.

Mineral habitat

The geology of Merthyr Tydfil has had a significant influence on its biology, landscape, history, economy and culture. Its archaeological and historical legacy within the landscape has determined the location of most semi-natural habitats within the County Borough. Mineral exploitation has historically been extensive and mainly associated with coal and ironstone extraction, although carboniferous limestone and pennant sandstone have been, and continue to be, quarried within the area. Past industrial activity, particularly the 19th century iron industry has left the County Borough with a rich built and landscape heritage.

Many of these areas have become naturally colonised with vegetation and now form important wildlife habitats.

Coal tips are proving particularly important for their lichen-heath communities in which heathland grows amongst mats of *Cladonia* (cup lichen). Some of the best examples of lichen-heath in Wales occur on old coal spoil tips in the County Borough. Research has confirmed how important these tips are for science in the fields of climate change, geology, evolution and as invertebrate habitat. A 2019 publication through the Colliery Spoil Biodiversity Initiative (Invertebrate conservation value of colliery spoil habitats in South Wales) highlights the importance of colliery spoil sites to invertebrate conservation.

Survey work on five such tips within the County Borough has recorded 85 bee species (including scarce and rare species); this equates to half the known Welsh bee fauna and a third of the UK bee fauna.

Inland rock

The geology of Merthyr Tydfil is one of the key factors influencing the shape of the local landscape. Mineral resources have been utilised since the sixteenth century, initially on a small scale with greater

investment and exploitation starting in the second half of the eighteenth century. Industrial development was facilitated by the underlying geology of the area, and the particular succession of rocks in the South Wales Coalfield, which provided the necessary raw materials for iron production (Carboniferous limestone, millstone grit, coal and ironstone). These resources were close to the surface and easily accessible in the north of the County Borough, with accessibility being even easier in the Merthyr Tydfil area due to the action of the River Taff (and tributaries) exposing the strata.

Carboniferous limestone dominates the geology of the County Borough, with the oldest exposed rocks from the Devonian period.

Devonian old red sandstone makes up high ground in the north, on the southern slopes of the Brecon Beacons. These Devonian rocks give way to limestone from the lower Carboniferous period (the Dinantian series) and underlie land in the vicinity of Trefechan and Vaynor. The overlying substrate includes Carboniferous sandstones and quartzites of millstone grit (from the Namurian stage), which outcrop near Cefn Coed, Trefechan and in the Bryniau and Pant areas. Coal measures from the Westphalian stage overlay the millstone grit and dominate the remaining land within the County Borough, extending southwards forming part of the South Wales Coalfield.

Much of the local geology has been impacted by faulting and jointing, which has led to localised instability and land slippage, exposing rocks and cliffs.

Rocks, cliffs and quarries are important habitats for wildlife in the County Borough. A number of former quarries have not been worked for many years leading to natural colonisation by often specialist plantlife and use by a range of animal species.

Rivers and streams

The County Borough is centred on the River Taff with prominent semi-ancient temperate woodlands on the steeper valley sides especially along the valleys formed by its two upper tributaries – the Taf Fechan and the Taf Fawr. The river and its tributaries form the County Borough's main landscape-scale connective infrastructure, which act as important wildlife corridors and migratory routes for a range of protected species including European otter, Atlantic salmon, European eel and a range of bat species. These habitats have exhibited a level of resilience, despite the impacts of water abstraction (particularly the major upstream reservoirs), pollution and siltation.

The reedbeds of Parc Taf Bargod support regionally important numbers of breeding and overwintering water birds, grass snake and dragonfly species.

New opportunities to create biologically diverse water management have arisen through the implementation of the Flood and Water Management Act 2010 (Schedule 3) through new SuDS applications and enforcements.

Invasive Non-native Species (INNS), pests and pathogens

An invasive non-native species is any non-native animal or plant that has the ability to spread causing damage to the environment, the economy, our health and the way we live.

The Wildlife and Countryside Act (1981) as amended, makes it an offence to release or allow to escape into the wild any animal, plant or micro-organism not ordinarily resident in the UK (as listed in Schedule 9 of the Act).

Examples include species such as Japanese knotweed (*Fallopia japonica*) and Himalayan balsam (*Impatiens glandulifera*).

In addition, Wales has commitments under the GB Invasive Non-native Species Strategy (2015) - http://www.nonnativespecies.org/index.cfm?sectionid=55.

The species causing most impact within MTCBC include Japanese knotweed, Himalayan balsam and signal crayfish.

MTCB has been affected by *Phytophthera ramorum*, for example, in Gethin Woods with Natural Resources Wales involved in restocking parts of the woodland felled to tackle the disease. *Phytophthora* is also under management at Cyfarthfa Park. There is a Plant Health Management Plan in place, agreed with the Animal and Plant Health Agency (which includes the regular removal of *Rhododendron ponticum*, one of the principle hosts of *P. ramorum*).

Chalara fraxinea (ash dieback) has been identified around the County Borough and reported to the Animal & Plant Health Agency (DEFRA). In the future, *Chalara fraxinea* is likely to be a significant risk and will require consideration. In 2020, MTCBC will instigate a survey of all ash trees in the County Borough to identify the distribution and severity of the infection.

MTCBC has mapped all known records showing the distribution of Japanese knotweed within the County Borough. There are no existing strategic plans to manage this species.

NB see also Appendix I for information and actions regarding Section 7 Priority Habitats.

Protected sites

Statutory protected sites

There are seven SSSIs associated with the County Borough.

Two are shared with Powys County Borough (Baltic and Tyle'r-Bont Quarries and Brecon Beacons) – see Table 1.

Table 1 – SSSI shared between MTCBC and PCBC.

SSSI name	Special features
Baltic and Tyle'r-Bont Quarries	• Dinantian (Lower Carboniferous) rocks
Brecon Beacons	• Geology and landform • Sandstone cliffs and rock outcrops • Screes • Cliff ledge vegetation • Dry heathland • Rare plants and broad-leaved woodland

Three are found within the Brecon Beacons National Park in the north of the County Borough (Abercriban Quarries, Daren Fach and Nat Glais Caves) – see Table 2 for details of their special features.

Table 2 – SSSIs found within the Brecon Beacons National Park.

SSSI name	Special features

Daren Fach	• Ash woodland – associated with limestone grassland, cliffs and scree
	• Assemblage of rare and scarce plants
	  ○ Ley's Whitebeam (*Sorbus leyana*)
	  ○ Chalice Hawkweed (*Hieracium cyathis*)

Abercriban Quarries	• Non-marine Devonian rocks
Nant Glais Caves	• Karst and cave system

A further two are found within the County Borough, but south of the Brecon Beacons National Park (Cwm Glo a Glyndyrys and Cwm Taf Fechan Woodlands) – see Table 3 for details of their special features.

Table 3 – SSSIs found within the County Borough, south of the Brecon Beacons National Park.

SSSI name	Special features
Cwm Glo a Glyndyrys	• Species-rich neutral grassland • Marshy grassland • Lowland acid grassland • Grassland fungi

Cwm Taf Fechan Woodlands	• Semi-natural broad-leaved woodland (in a wooded ravine cut through Carboniferous Limestone)

Non-statutory protected sites

There are currently 59 Sites of Importance for Nature Conservation (SINCs) distributed throughout the County Borough and a single Local Nature Reserve (LNR) included within the Local Development Plan, LDP (2006-2021). The SINCs have been selected using the Mid-Valleys SINC criteria and include a wide range of habitats and species, for example

MTCBC are currently in the process of preparing a replacement LDP for 2016-2031 and this proposes five new SINCs.

Open spaces

Well-designed and well-maintained open spaces within the County Borough make a significant contribution to the quality of life of its residents. MTCBC has developed the Merthyr Tydfil Open Space Strategy 2016 (MTOSS) in order to identify and protect Merthyr's open spaces. The key themes of the MTOSS are Health and Well-being, the Economy and the Environment.

Background work identified 139 open space sites across the County Borough (= 573.8 hectares). See Table 4 for a summary of the types of open spaces present.

Table 4 – Summary of the types of open spaces present within MTCB.

Types of open space	Area (hectares)
Allotments	6.84
Amenity Greenspace	14.65
Natural/Semi Natural Greenspace	300.9
Public Parks and Gardens	109.62
Civic Space	1.78
Children and Young Peoples' Space	7.05
Multifunctional Greenspace	89.16
Outdoor Sports Area	43.8
TOTAL	**573.8**

Of the 139 sites, a total of 22 priority open spaces were identified in order to focus resources for improvement.

Species

This section provides examples of species with protection under the Conservation of Habitats and Species Regulations 2017 and explores their status within MTCB.

European otter

The decline of otters in the UK began in the late 1950s, principally caused by the introduction of two persistent organic pollutants (dieldrin and aldrin) used widely as seed dressing and sheep dip. These substances enter the food chain through bioaccumulation and become more concentrated the higher an animal is (biomagnification). The otter is a top predator and so the pollutants had a significant effect of on the UK population. The otter suffered serious declines throughout most of its European range and by the mid-1970s, the UK otter population had been reduced to such an extent that it only survived in Scotland, parts of Wales and south-west England.

Surveys of baseline sites have been carried out on a regular basis since 1984-85 and show an overall upward trend in percentage otter presence, and this is reflected in the figures for the Taff – Hydrometric Area 57, which includes the Rivers Taff, Rhymney and Ely.

Table 5 – Data for national otter surveys of Wales (1984-1985 – 2017-2018).

National otter survey of Wales (dates)	% presence at baseline sites
1984-85	5
1991	17
2002	50
2009-10	79
2017-18	[results yet to be published]

This apparent recovery of the otter population has been attributable to three main factors:

- A ban on the pesticides from many parts of England and Wales in the 1960s and early 1970s.
- Legal protection for the otter since 1978.
- The significant improvement in water quality in Welsh rivers since the 1970s.

Records for otter are found on all main rivers in the County Borough (Rivers Taff and Taff Bargoed).

Current and ongoing threats to otter include:

- Road traffic accidents exacerbated by flooding incidents
- Drowning in fish and lobster traps
- Pollution events, both in water courses and in suitable otter vegetative habitat
- Habitat loss, both along rivers and between catchments
- Lighting

The most recent SEWBReC data search (2019) for the County Borough includes 138 records for European otter between 1960 and 2019.

Bats

In the UK, bat populations have declined significantly over the last century. Threats to bats include:

- building and development work – many bat species roost in buildings and can therefore be impacted by building and development work. If present during works, bats can be disturbed and even injured or killed. If disturbed at sensitive times (e.g., in the maternity or hibernation season), there can be significant impacts on local bat populations.
- habitat loss – suitable habitat for roosting, commuting and foraging bats has been declining and, e.g., woodland, hedgerows, scrub, grassland, waterbodies.
- habitat fragmentation – road construction can disrupt bat commuting habitat by creating open areas that bats are more reluctant to cross. In addition, the traffic introduces high speed movement, increased noise levels, increased light levels (vehicle headlamps and streetlights) and increased risk of injury or death (collision).
- reduction of food resources – habitat loss, pesticide use and intensive farming practices all impact insect numbers, which has a knock-on effect on bat species. Climate change can also alter the timing of insect life cycles, which can therefore impact when food is available for bats.
- lighting – bats are nocturnal and artificial light can affect bats in the following ways:
  - roosts
    - delaying or preventing emergence
    - abandonment
    - entombment
  - foraging
    - insects are attracted to lit areas from outside of the lit area, producing a 'vacuum effect' – this has a knock-on effect on more light intolerant species with reduced numbers of insects in darker areas.
  - commuting and foraging
    - light can produce a barrier effect, which can impact upon foraging areas and commuting routes.
- wind farms and turbines – impacts can be direct (collision and barotrauma) and indirect (habitat loss and fragmentation).

The most recent SEWBReC data search (2019) for the County Borough includes 815 records for bat species between 1966 and 2019. Species recorded included brown-long eared bat, common pipistrelle, Daubenton's, lesser horseshoe bat, Natterer's bat, noctule, serotine, soprano pipistrelle and whiskered bat.

Common dormouse

There has been a long-term decline in both numbers and range of the UK population. The current dormouse range is Southern England and South Wales and along the English/Welsh border. Threats to dormice:

- A decline in traditional woodland management (specifically coppicing), resulting in heavy shading and suppression of the understorey.
- Heavy shading and lack of thinning
- Loss of woodland habitat
- Habitat fragmentation and isolation
- Loss of species-rich infrequently-cut hedgerows
- Deer, domestic stock and squirrels
- Climate change and unpredictable weather

SEWBReC hold no records for common dormouse in the County Borough (2019), however, there is ample suitable habitat and so the dearth of records can be attributable to a lack of survey work rather than a lack of presence. NB the closest common dormouse records to the County Borough boundaries are to the northwest (within c. 1.4km) and the southeast (within c. 3.6km).

Great crested newt

The largest of the three native UK newt species, great crested newts are widely distributed throughout lowland Great Britain, but absent from Ireland. Great crested newts declined markedly during the latter part of the twentieth century, primarily as a result of agricultural intensification. Suitable ponds surrounded by good quality terrestrial habitat are required for heathy great crested newt populations. Changes in farming practices have had a negative impact on both of these essential requirements. A combination of neglect and deliberate destruction has led to fewer ponds available for great crested newts. Over the last century great crested newts have declined across Europe, predominantly as a result of pond loss and deterioration.

Threats to great crested newts:

- In-filling of ponds for development, farming and waste disposal
- Development pressures
- Changes in farming practices
- Water table reduction
- Introduction of fish
- Pond loss through successional changes
- Chemical pollution and enrichment of breeding sites
- Degradation, loss and fragmentation of terrestrial habitat
- Lack of appropriate management of ponds and terrestrial habitat

Pond habitats (occupied between late spring and early summer) are used for breeding and the development of both eggs and tadpoles. Immature newts use habitat surrounding a pond with most newts spending the winter period on land. Long-term survival is likely to depend on movement between neighbouring breeding ponds. Dispersal distances are dependent on habitat quality and availability with most adults remaining within approximately 250m of the breeding pond. However, where there are areas of high quality foraging and refuge habitat extending beyond this range, newts will travel further. Small numbers of individuals disperse as colonisers to distances of 1000m or more.

The County Borough supports several meta-populations of great crested newt, with many of these found within mineral spoil areas. The most recent SEWBReC data search (2019) for the County Borough include 115 records for great crested newt between 1800 and 2018.

NB see also Appendix II for further information and actions regarding Section 7 Priority Species.

4. The Merthyr Tydfil Nature Recovery Action Plan (MTNRAP) and S6 Plan

Objectives of the Nature Recovery Action Plan for Wales

In 2015, Welsh Government published the Nature Recovery Action Plan for Wales, which set out six objectives for reversing the decline of biodiversity. These objectives have been used to develop the Merthyr Tydfil Nature Recovery Action Plan (MTNRAP) and S6 Plan.

Objective 1: Engage and support participation and understanding to embed biodiversity throughout decision-making at all levels

Biodiversity is embedded within higher-level decision-making, for example within policy for the adoption of the Replacement Local Development Plan and more generally, within the Council's planning system (see also Objective 2).

In addition, in line with its duties under the Well-being of Future Generations (Wales) Act 2015, the Council has produced an 'Integrated Impact Assessment (IIA)'. The IIA must be used at the outset of a proposal/initiative/project to help shape the activity from its inception and must accompany all reports to Council/Cabinet. Section 4 of the IIA deals with 'Biodiversity and resilience of Ecosystems duty'. As such the Biodiversity and Resilience of Ecosystems duty is considered as part of every decision made by the Cabinet and Full Council.

Certain gaps have been identified within the existing documentation in relation to the Environment (Wales) Act 2016. Additional text designed to fully update the IIA to reflect the requirements of the Act 2016 have been proposed, and the changes are likely to be implemented in January 2020. The documentation and process will also be reviewed on a regular basis and reported back to the Corporate Management Team.

In support of this, the most recent Planning Policy Wales (Edition 10, December 2018) describes the planning system as having a key role to play in reversing the decline in biodiversity and increasing the resilience of ecosystems (in line with the Environment (Wales) Act 2016). Planning Policy Wales (2018) is supplemented by Technical Advice Note (TAN) 5 - Nature Conservation and Planning 2009.

In addition, the Council's Ecologist and Biodiversity Officer have met/contacted council officers in departments across the Council to raise awareness of the Environment (Wales) Act 2016 and explaining their S6 duty. Where required, advice has been provided to help link the functions of departments with biodiversity and to devise actions that will contribute to its maintenance and enhancement.

Each department has produced details and evidence of the actions they have taken since the Act came into effect in 2016.

Examples of habitat management on Council-owned sites to maintain and enhance biodiversity include:

- Changes in cutting regimes with cuts timed to benefit wildflowers and pollinators.
- Planting schemes will use native species of local provenance for preference. If non-natives are used, species with value for pollinators will be chosen.
- Reduction in the use of glyphosate and other herbicides/pesticides.

Work is carried out alongside partner organisations (e.g., The Wildlife Trust of South & West Wales, Actif Woods) involving elements of community involvement with benefits including the following:

- Increased awareness of biodiversity.
- Promotion of the benefits of biodiversity (e.g., health and well-being).

Objective 2: Safeguard species and habitats of principal importance and improve their management

Planning

The planning process, in line with Planning Policy Wales (Edition 10), has a key role to play in helping MTCBC to reverse the decline in biodiversity and increase the resilience of ecosystems within the County Borough.

The presence of a protected species and habitats under:

- European legislation (Conservation of Habitats and Species Regulations 2017)
- UK legislation (Wildlife and Countryside Act – WACA – 1981, as amended)
- Section 7 of the Environment (Wales) Act 2016

is a material consideration when a planning authority is evaluating a development proposal which, if undertaken, would be likely to result in disturbance or harm to the species or its habitat. The aim is to ensure that the range and population of the species is sustained.

Developers will be required to undertake all relevant protected species ecological survey work on development sites. This will inform appropriate mitigation and compensation measures where protected species and / or habitats are impacted.

Designated sites

Important areas of nature conservation value have been statutorily designated within the County Borough. The statutory designation of a site does not necessarily prevent development; however, the proposals must be assessed to ensure the impacts on its designated features are fully understood. Development will be refused where there are adverse impacts on the features for which a site has been designated.

Statutorily designated sites will be protected from damage and deterioration with their important features conserved and enhanced through appropriate management.

SSSIs are of national importance. WACA 1981 (as amended) places a duty on public bodies (including planning authorities) to further the conservation and enhancement of a SSSI's designated features. There is a presumption against development likely to damage a SSSI. MTCBC will give notice to NRW should any proposed development be likely to damage the designated features of a SSSI and will take account of the advice provided.

Most relevant here are the two SSSIs found within the County Borough, but south of the Brecon Beacons National Park (namely, Cwm Glo a Glyndyrys and Cwm Taf Fechan Woodlands).

Non-statutory designated sites carry less weight than statutory designated sites, however, they can make an important contribution to the maintenance and enhancement of biodiversity and the resilience of ecosystems. Prior to authorising development likely to damage a local wildlife designation, the Planning Department of MTCBC will consult the Council's Ecologist. Assessments will consider protected species and / or habitats on the Section 7 lists. Where a proposed scheme will have no impacts on the features of a non-statutorily designated site, development is not precluded.

There are currently 59 Sites of Importance for Nature Conservation (SINCs) and one Local Nature Reserve (LNR) within Merthyr Tydfil County Borough.

Other

Land management undertaken by landowners can be positively influenced by the provision of support and advice and through joint working with voluntary sector. In so doing, MTCBC can improve ecosystem resilience within the County Borough.

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

Sites within local authority ownership, prior to being released are consulted on internally and with councillors to identify and manage wellbeing, community use, flood risk management, minimising the impacts of pollutants, biodiversity enhancement, ecological connectivity and ecosystem resilience.

In addition, on these sites, MTCBC will seek to enhance the capacity of natural resources to provide essential ecosystem services, for example, water management, climate regulation, pollution mitigation, wellbeing enhancement and environmental enhancement.

All such sites will be reviewed to identify opportunities to improve biodiversity, for example, changing the grass cutting regime with in the County Borough in a way that increases their potential suitability for, e.g., pollinators. Measures employed are likely to include the following:

- Reducing the number of cuts per year and cutting later in the season

- Cutting a 1-2m edge on verges or other grassland areas
- Raking off arisings into a discrete piles or complete removal

On sites not under local authority ownership, landowners will be positively influenced to undertake land management that will restore degraded habitats and / or create new habitats. In addition, where development is proposed for these sites, the planning process will play a role in helping MTCBC to reverse the decline in biodiversity and increase the resilience of ecosystems.

In general MTCBC plays, and will continue to play, a strategic role in supporting and contributing to landscape scale projects. This is essential for maximising the maintenance and enhancement of biodiversity within ecosystems across the County Borough. To date, progress has been made through the allocation of Rural Development Grant funds for habitat restoration and community participation projects in partnership with voluntary sector organisations (e.g., South & West Wales Wildlife Trust, Coed Lleol, Keep Wales Tidy, South East Wales Rivers Trust, Merthyr & Gelligaer Commoners Association and the British Institute for Geological Conservation).

Other initiatives include, for example, the Welsh Government's Rural Communities – Rural Development Programme 2014-2020 Sustainable Management Scheme (funded by the European Agricultural Fund for Rural Development and the Welsh Government). In September 2019, the Council agreed to accept funding towards total project costs of £507,287 for the restoration of Taf Bargod river catchment landscape.

The money will fund, e.g., new fencing, tree planting (contributing to the reconnection of fragmented habitats), river bank restoration and anti-erosion initiatives. These measures will help to maintain and enhance biodiversity and build resistance into local ecosystems.

In October 2019, the Countryside Team within the Planning Department of MTCBC were successful in a bid for grant funding from The Landfill Disposals Tax Communities Scheme (a new Welsh Government funding programme managed by Wales Council for Voluntary Action). A total of £49,999 was awarded to fund a nationally significant project. The project was focussed within a 'Wider Environmental Enhancements' theme with crossover into two other themes ('Biodiversity' and 'Waste Minimisation and the Diversion of Waste from Landfill').

The project, entitled 'Parks Alive', is designed to create community spaces and wider environmental improvements within five selected Welfare Parks within the County Borough:

- Thomastown Park
- Troedyrhiw Park
- Aberfan Park
- Treharris Park
- Trelewis Park

The project will run from November 2019 to September 2021 and will be managed by the Countryside Team in association with the Parks Department.

Project elements will include:

- Detailed consultations undertaken with the communities associated with each park.
- A programme of events/activities to deliver (where feasible) on the aspirations of each community for their own park.
- Activities designed to suit the skills and experience of each community.

The project will aim to:

- Achieve a greater sense of pride in the five Welfare Parks (originally created for and by local communities).
- Re-imagine the relevance of the parks to local people.
- Renew lost heritage
- Share skills
- Address green infrastructure and biodiversity issues
- Ultimately establish either 'Parks Buddies' or 'Friends of parks' groups for each park.

In March 2019, Wales Council for Voluntary Action (WCVA) was successful in its LNP Cymru bid to Welsh Government. As a partner in the bid, MTCBC are to receive a project budget of £7,000 p.a. over three years (with inflationary increases in years 2 and 3). As part of National Tree Planting Week (23rd November – 1st December 2019) and The Big Climate Fightback #EveryTreeCounts, the Countryside Team within the Planning Department have committed to planting 1120 native trees on three selected Open Spaces across the County Borough. A proportion of the £7K LNP Cymru Project funding will be used to purchase the trees:

- Ifor Tip/The Cwm Dowlais - the site (a former tip) contains both native and non-native species from earlier land reclamation projects attempting to create an amenity landscape. Tree planting will replace existing grassland areas (no longer managed) and increase the hectares of tree cover in the Dowlais ward. Species will be a mixture of beech, elm, hazel, holly, and oak sp. The ultimate goal is to connect the Morlais Valley to the north with the Newland Park Reclamation Scheme (to the south) through inter-linked and continuous tree cover.
- Treharris Park - planting primarily beech in what was formerly beech oak woodland in order to supress invasive species that cannot tolerate the dense and complete shade cast by the beech tree canopy.
- Nant Llwynog - former colliery site was featureless raw shale in 2000, it is now a haven for wildlife after the gradual maturation of the broadleaved deciduous woodland blocks that were planted as part of the original scheme. Connectivity of the woodland blocks on this Priority Open Space will

be improved by the planting of further native broadleaved trees between the blocks to provide linked woodland cover.

Key regional environmental projects MTCBC are involved in currently include:

- Rural Development Programme (Projects: TIPical Valleys; Gelligaer & Merthyr Common Goal)
- Healthy Hillsides Initiative
- Local Wildlife Sites
- Long Forest Project
- Tidy Towns Initiative
- Green Flag Awards
- Eco-Schools
- PONT Grazing Animals Projects
- Buglife B-Lines

MTCBC is also currently overseeing the strategic management of priority public Open Spaces, via MTCBC Open Spaces Strategy, Priority Open Space Management Planning and through developing a Green Infrastructure Plan.

Many of the above actions have been developed, promoted and encouraged through the Merthyr Tydfil Biodiversity Partnership (MTBP). The role of MTBP in continuing to bring together key organisations and provide direction for the Local Authority in delivery of the Environment (Wales) Act 2016 and Well-being of Future Generations Act 2015 will continue to be essential for successful outcomes.

Objective 4: Tackle key pressures on species and habitats

There are numerous examples of under pressure species and habitats within the County Borough. This is predominantly due to loss of habitat / loss of habitat connectivity as a consequence of the impacts of development on greenfield sites including both local and nationally protected nature conservation sites, climate change, invasive species, the misuse of land including fly-tipping.

In order to alleviate these pressures a suite of actions will be implemented including the following:

- As mentioned previously, the planning process will play a major role in helping MTCBC, reverse the decline in biodiversity, increase the resilience of ecosystems and prevent or reduce impacts of development on protected nature conservations sites within MTCBC (see further details under the Objective 2, page 21). This will also have a positive influence on climate change, for example by removing CO_2 from the atmosphere through tree planting on development sites.
- Improvements in re-use, recycling and waste management processes.
- Pro-active and strategic management of invasive species on MTCBC land.
- Enforcement regarding land misuse. Examples include: unauthorised development; fly-tipping.
- Increasing the use of and participation in the outdoors by local residents.

- Raising awareness within the Council and with the general public, promoting and implementing actions to reduce key pressures.

Changes will be made with the aim of restoring habitats to a more natural and resilient state. This will focus on, but not be limited to, the safeguarding of Section 7 species and habitats. To achieve this objective MTCBC requires a better understanding of the specific pressures and how MTCBC is able to collaborate across services to deliver multiple benefits to the habitats and / or species involved; a major contribution to this aim will be achieved by developing an MTCBC Green Infrastructure Plan (for further details, see page 26 – 'Green Infrastructure Assessment and Strategy'.

Recent positive actions have been taken by some MTCBC departments through the creation of new habitats for species within local parks (Countryside Team within the Planning Department), pest control involving the re-homing of bees (Environmental Health) and releasing historic species (eels) into watercourses (Countryside Team within the Planning Department in partnership with South East Wales River Trust and Natural Resources Wales).

Objective 5: Improve our evidence, understanding and monitoring

Merthyr Tydfil County Borough Council has relatively good baseline data for species and habitats. The data is subject to regular updates. Close relationships with all levels of educational institutions and voluntary sector organisations will help to maintain up to date information. The following local evidence will be expanded and re-visited:

- Service Level Agreement with the South East Wales Biodiversity Records Centre (SEWBReC) provides up to date data records for protected species and protected sites in MTCBC. The information is accessed via Aderyn - a Local Environmental Records Centres (LERC) Wales system, developed and maintained by the Biodiversity Information Service (BIS)
- Habitat surveys for Site of Importance for Nature Conservation (SINC) sites (2007/8 & 2015/16). This included the 59 current SINC sites plus the 5 proposed SINC sites
- Merthyr Tydfil Pond Survey 1999
- Merthyr Tydfil Hedgerow Survey 1999
- Coed Merthyr Woodland Strategy 1998
- Taf Fechan Local Nature Reserve: Management Plan 2004, 2012, 2018; SSSI Feature Monitoring Report 2010, 2017; Bioblitz 2015
- Bioblitz: Pontygwaith 2014, Scwrfa/Gellideg Fields 2016
- Cyfarthfa Park: Woodland Management Plan 2018; Meadow Management Plan 2018; APHA Plant Health Management Plan 2015; Grey Squirrel dissertation 2013
- Ffos-y-Fran: Great Crested Newt Monitoring 2005-2015; Restoration & Aftercare Insect Monitoring (National Museums Wales) 2014+
- Coal Spoil Colliery Initiative Insect Surveys 2015+
- Nant-yr-Odin Tip Moth Survey 2018

- River Taff Salmon monitoring 2012+

Improving peoples' understanding of the natural world (e.g., species, habitats, biodiversity and ecosystems) can bring about behavioural change and encourage positive actions. This can be achieved through environmental education focussing on, for example, the statutory education sector, community education, outdoor activities and leisure services. Education and training can also be provided for staff from other service functions/departments in order to help them to meet their obligations under the S6 duty.

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

The Well-being of Future Generations Act 2015 requires all public authorities to demonstrate improvements to social, economic, environmental and cultural well-being, whilst looking to the future, planning for the long term and ensuring that the ability of future generations to meet their own needs is not compromised. This is described as the sustainable development principle.

The Act sets out seven well-being goals (see Table 6):

Table 6 – The seven wellbeing goals.

Wellbeing Goals	Benefits
A Prosperous Wales	Biodiversity and resilient ecosystems in Merthyr Tydfil County Borough provide important opportunities for economic activity. Many key industries are dependent on natural resources, e.g., tourism - the landscape and habitats in MTCB attract visitors taking advantage of a range of outdoor activities. Examples include walking, cycling, horse riding along miles of scenic tracks, canal towpaths and historic trails (Taff Trail, Celtic Trail, Trevithick Trail), mountain biking at Bike Park Wales in Gethin Woods, stargazing in the Brecon Beacons (a Dark Sky Reserves), bird watching at Parc Taf Bargoed.
A Resilient Wales	Biodiversity and the wide range of habitat types in MTCB (e.g., semi-natural grassland, native woodland, fridd, forestry, heath, wetland, rivers and streams) all contribute to ecosystem resilience in Merthyr Tydfil and contribute to the County Borough's ability to adapt to climate change. These natural resources are the cornerstones of support for all of the Wellbeing Goals in the County Borough.
A Healthier Wales	Biodiversity and resilient ecosystems across the County Borough (including areas in and around towns and urban spaces) provide ecosystem benefits and services that support the health of residents, including, for example, reducing the risk of flooding, filtering polluted air, and providing a reliable supply of clean drinking water. Examples of these benefits and services include helping to reduce the prevalence of infectious diseases and respiratory disorders, and assisting with adaptation to climate change. Accessible natural spaces also provide other, more direct health benefits, for example, opportunities for physical activity, reduction of developmental disorders and improved mental health. In theory,

	nature provides cost savings for health services by improving the health of the population.
An Equal Wales	Equal access to natural spaces would contribute to equality within MTCB. Well-designed and well-maintained open spaces within the County make a significant contribution to the quality of life of its residents, but not all residents have equal access to open spaces, dependent on the particular Ward they live in. MTCBC has developed the Merthyr Tydfil Open Space Strategy 2016 (MTOSS) in order to identify and protect Merthyr's open spaces. Throughout the development of the MTOSS, the quality of open space has always been central to the problem of improving accessibility. Poorly managed spaces of ill-defined purpose are no longer acceptable if the County Borough is to begin to comply with the Well-being of Future Generations (Wales) Act 2015, local wellbeing objectives and also the Environment (Wales) Act 2016.
A Wales of Cohesive Communities	Communities engaging in the management of their local open spaces has been demonstrated to contribute to an increase in social cohesion and a reduction in antisocial behaviour. Friends groups in parks around the County Borough are actively encouraged and supported by the Countryside Team at MTCBC. For example The Green Flag Community Award (the benchmark for parks and green spaces managed by volunteers) has been awarded to: ○ Nant Llwynog Park ○ Gurnos Men's Project's Community Garden ○ Penywern Top Pond - Merthyr Tydfil Angling Association ○ Royal Crescent Allotment's Woodland Walk ○ Pontygwaith Nature Reserve ○ Dowlais Community Centre Gardens - Stephens & George Charitable Trust ○ Pontsticill Village ○ Dowlais Infants' School & Community Garden ○ Cilsanws Nature Reserve - Merthyr Tydfil and District Naturalists' Society
A Wales of Vibrant Culture and Thriving Welsh Language	In the development of distinct cultural practices, landscapes have played a major role. The geology of Merthyr Tydfil has had a significant influence on its biology, landscape, history, economy and culture. Its archaeological and historical legacy within the landscape has determined the location of most semi-natural habitats within the County Borough. Mineral exploitation has historically been extensive and mainly associated with coal and ironstone extraction, although carboniferous limestone and pennant sandstone have been, and continue to be, quarried within the area. Past industrial activity, particularly the 19th century iron industry has left the County Borough with a rich built and landscape heritage. Many of these areas have become naturally colonised with vegetation and now form important wildlife habitats. A 2019 publication through the Colliery Spoil Biodiversity Initiative (Invertebrate conservation value of colliery spoil habitats in South Wales) highlights the importance of colliery spoil sites to invertebrate conservation.

A Globally Responsible Wales	Sustainable management of natural resources within MTCB will help to reduce the carbon footprint and ensure that actions within the County Borough do not have far-reaching consequences. Measures could include managing habitats (land and water) without leading to environmental damage and ensuring business/industry does not produce emissions that may have impacts further afield. Auditing imports into and exports out of the County Borough in order to understand the impacts and adjusting policies to reduce to eliminate these impacts.

In addition, the Act sets out five ways of working:

1. Long term (balancing short-term needs with safeguarding ability to meet long-term needs)
2. Prevention (prevent problems occurring or getting worse)
3. Integration (an integrated approach to services, looking at the impact our work could have on other services and organisations)
4. Collaboration (working with others to find collaborative solutions)
5. Involvement (involving people with an interest in achieving the well-being goals)

As part of the Council's duty under the Well-being of Future Generations (Wales) Act 2015, an Integrated Impact Assessment (IIA) will set out how MTCBC are planning, delivering and monitoring services in line with, for example, the sustainable development principle, the well-being goals and the five ways of working, the Welsh language, equalities and biodiversity. This will support effective decision-making and ensure compliance with other pieces of legislation, such as:

- Welsh Language (Wales) Measure 2011
- Equality Act 2010 (Statutory Duties) (Wales) Regulations 2011
- **Section 6 of Part 1 of the Environment (Wales) Act 2016**

The IIA is required to be used for:

- All council/cabinet reports requiring approval or information.
- Any project that has a start and end date and is different from day to day business, e.g., purchasing office equipment
- The implementation of significant change, e.g., service provision
- Any council / cabinet report that is not part of the aforementioned project or significant change.

Connectivity and Green Infrastructure

Green Infrastructure (GI) can be defined as a connected network of green spaces, rivers and lakes that intersperse the built environment. GI can be considered at a range of scales:

- Landscape scale: e.g., wetland or waterway ecosystems etc

- Local scale: e.g., public parks, fields, allotments, rights of way etc
- Small scale: e.g., urban street trees, hedgerows, green roofs/walls etc

GI would ideally link habitats in urban environments to habitats in the wider locality and then beyond this into and across ecosystems surrounding our towns and villages.

The population of Merthyr Tydfil County Borough has been on an upward trend since 2012. The 2018 mid-year population count stood at 60,183 with the majority living in urban or semi-urban areas.

Green spaces within such urban areas are important for a range of reasons:

- Health and Wellbeing Benefits: there is evidence to demonstrate that green spaces can provide health benefits:
  - Mental Health and Wellbeing: Researchers have observed a link between increasing urbanisation and depression. Living closer to green spaces is correlated with lower mental distress. Mood, self-esteem and concentration can all be improved with even short exposure to green space.
  - Physical Activity: Whilst the availability of green spaces does not necessarily guarantee increased activity levels, there is evidence to indicate that where people do exercise in green spaces, it results in lower anger, fatigue and depression when compared with exercising in urban areas. Physical exercise can improve, e.g., mental illness, heart disease, obesity and diabetes and can include activities such as gardening, walking to work or running.
- Environmental Benefits
  - Water Management: Traditionally, drainage systems have been designed to remove surface rainwater as quickly as possible. Predominantly, water is directed into public sewers placing a significant burden on wastewater treatment works and during extreme storm events water will discharge through overflows, into watercourses and may result in flooding and pollution. An increase of impermeable surfaces in urban environments increases the volume of water flowing into sewers, further increasing flood and pollution risk. MTCBC has a total area of 58km^2 contained within Flood Risk Areas and the financial cost associated with flooding can be substantial.

    Sustainable Drainage Systems (SuDS) are designed to mimic natural drainage by retaining and filtering surface water and preventing the public sewer from becoming overwhelmed during storm events. Examples of SuDS can include green roofs, permeable paving and rain gardens.
  - Reduced Air Pollution: Air pollution can contribute to respiratory problems, heart disease and cancer. Green spaces can reduce pollution exposure:
    - E.g., trees and vegetation in general can reduce air pollution directly by filtering out fine particulate matter and indirectly by reducing air temperatures.

- Cooling Urban Heat Islands: Urban environments can be warmer than the surrounding countryside due to the higher amount of heating absorbing surfaces (e.g., concrete, tarmac). Green roofs and walls can contribute to thermal insulation of buildings, reducing the requirement for air conditioning. Evaporation of water from vegetation and shading can lower air temperatures in an urban setting.

Green Infrastructure Assessment and Strategy

MTCBC is currently assessing the GI network within MTCB to inform the development of a GI strategy to include an interactive map of the current state of GI in MTCB. The GI assessment will be regularly reviewed to ensure that the information is up-to-date. This can then be used by all relevant departments (e.g., Planning, Engineering, Highways, Parks) as a resource for advice and decision-making.

GI and the Planning System

The planning process, in line with Planning Policy Wales (Edition 10), has a key role to play in helping MTCBC to protect and enhance green infrastructure features and networks. The built environment will be enhanced by embedding green infrastructure into development at an early stage. This should include, for example:

- choosing the correct site in the first instance;
- avoidance of unnecessary habitat damage/removal;
- careful, appropriate and creative development scheme design
- effective mitigation, compensation and enhancement measures.

The requirements of and opportunities presented by a particular site will dictate the specific measures used to protect and enhance GI features and networks. Examples of the types of measures that could be used include: landscaping, green roofs, tree planting, SuDS schemes.

The Environment (Wales) Act 2016

The development, strengthening and management of green infrastructure in the County Borough and its protection through the Planning system would help to make a significant contribution to delivering MTCBC's Section 6 duty.

The development of a network of statutory and non-statutory sites and of the landscape features that connect one habitat to another can contribute, not only to the maintenance and enhancement of biodiversity, but also to ecosystem resilience. This in turn will help the environment within MTCB adapt to the effects of climate change.

State of Natural Resources Report (SoNaRR)

In September 2016, Natural Resources Wales produced a report setting out the state of Wales' natural resources as required by the Environment (Wales) Act 2016. The extent to which natural resources in

Wales are being sustainably managed was assessed and recommendations made for a proactive approach to building resistance. The report also linked the resilience of [Welsh] natural resources to the well-being of the [Welsh] population.

MTCBC is required (as part of their duty under subsection 1 of Section 6 of The Environment (Wales) Act 2016) to have regard to the SoNaRR.

Natural resources in Wales supply economic, social and cultural benefits to the population in a range of ways. For example, there are significant benefits to the Welsh economy from agriculture, forestry, tourism including the historic environment. Building materials (e.g., green timber and aggregates) are produced for the construction industry. Natural resources also supply Wales with drinking water and there are health benefits from physical activity through outdoor pursuits. Other benefits include the production of renewable energy and carbon storage.

The report looked in detail at:

- Wales' natural resources, including animals, plants, other organisms, air quality, water resources, soils and minerals
- Welsh ecosystems, including mountains, grasslands, woodlands, urban, freshwater and marine environments.

The report identified certain failings in management of natural resources along with problems posed, for example, by changes in rainfall patterns due to climate change (fewer, more intense rainfall events increasing the likelihood of flooding). Many of our species are in decline (both plants and animals) and the report states that Wales, along with the rest of the UK, has failed to meet its 2010 international and national biodiversity targets.

Managing ecosystems differently will improve both their resilience and therefore the resilience of natural resources. Ecosystems that are not resilient are unable to continue to deliver services and benefits in the face of disturbance.

The SoNaRR report considered the resilience of ecosystems and natural resources in Wales in terms of attributes as detailed within the Environment (Wales) Act 2016):

- Diversity: declining
- Extent: of some habitats significantly declined
- Condition: mixed results
- Connectivity: greatly reduced
- Adaptability: resistance needs to be through adaptive management of our natural resources

The SoNaRR report has also considered a range of activities to illustrate the types of resource management undertaken in Wales:

1. Waste – performing well, but there are still more opportunities to reduce, reuse recycle and recover waste across Wales.
2. Water – not yet managed sustainably in Wales and this can result in, e.g., poorer river quality or flooding, which can lead to disruption to communities and increased costs.
3. Air – there are gaps in the management of Wales' air quality and this will negatively impact on both ecosystems and well-being. For example, traffic is the biggest polluter in urban spaces and changes to management practices (improvements to traffic controls and design of urban space) will help to reduce this negative impacts.
4. Soil and Land – managing soils more effectively will reduce the risk, for example, of not being able to grow food.
5. Woodland – New woodlands and better woodland management are needed to maintain wood supplies. This will produce wider benefits, e.g., carbon storage.
6. Energy – saving energy and producing energy with a lower environmental cost is important to ensure future generations will be able to access energy. Other positive impacts will include, e.g., a reduction in greenhouse gas emissions.
7. Urban environments – Wales needs to adopt an integrated approach to managing urban systems in order to maximise the benefits of green infrastructure.
8. Seas and coast – Focus is on integrated management where land and sea meet.

SoNaRR has identified a number of areas where management and human activity create negative impacts on ecosystems. These have been placed into four categories:

- Natural resources are continuously declining
- The health and resilience of our ecosystems is being compromised
- The benefits from ecosystems services are not being optimised
- The contribution to well-being of ecosystem services is not meeting basic needs or is declining

NRW's State of Natural Resources Report (SoNaRR) notes that none of Wales' ecosystems is currently resilient, with the decline in range and/ or population of many species a key indicator of this.

Ecosystem resilience issues (evidenced in the SoNaRR report) of relevance to MTCB, are highlighted in the table within Appendix I (Summary of Actions). Actions are proposed to address some of these issues.

Natural resources are defined in the Environment (Wales) Act 2016 as:

a. Animals, plants and other organisms
b. Air, water and soil
c. Minerals
d. Geological features and processes
e. Physiographical features
f. Climatic features and processes

Ecosystems are considered to be resilient if they are able to cope with disturbance or change so that they maintain their functioning and ability to deliver benefits. The Environment (Wales) Act 2016 recognises a number of attributes of ecosystems that support resilience, including their scale and extent, connectedness, condition, diversity, and ability to adapt.

All biodiversity (point a – in the above list) is reliant upon all other natural resources (points b - f), as such significant impact upon these features is likely to have an indirect, and potentially significant impact upon biodiversity.

Area Statements

The Environment (Wales) Act 2016 made it a duty for Natural Resources Wales (NRW) to produce 'Area Statements'. The statements will cover a total of seven areas in Wales:

- Marine
- Mid-Wales
- North East Wales
- North West Wales
- South East Wales
- **South Wales Central**
- South West Wales

Merthyr Tydfil, along with Rhondda Cynon Taf, Bridgend and Cardiff make up the **South Wales Central** area. This area includes:

- The moorland fringes of the Brecon Beacons National Park
- The South Wales valleys of the Rhondda, Cynon and Taf
- The gentle lowlands of Bridgend and the Vale of Glamorgan
- The cliffs of the Glamorgan Heritage Coast
- Cardiff capital of Wales

The Area Statements will collate information within each area providing a better understanding of the current state of natural resources, the pressures they face and the benefits they bring. The ultimate aim will be to manage our natural resources in a sustainable way.

The statements will set priorities specific to each area that, in turn, will shape local NRW work programmes, contribute to national policy and direct funding streams. Collaborative working involving NRW and its partners and stakeholders will be essential.

Each area statement document will be dynamic and regularly updated as further information and data is collected.

Currently, the South Wales Central Area Statement is not available for consideration within the MTNRAP. Merthyr Tydfil County Borough Council will continue to contribute to the South Wales Central Area Statement - currently being developed by Natural Resources Wales. Changes to the MTNRAP will be incorporated as, and when, appropriate.

5. Review of S6 Duty

Reviews of the MTNRAP / Section 6 Plan (2019-2024) will be undertaken annually following its endorsement / adoption in January 2020. The results / outcomes of these reviews will be incorporated within the next published Section 6 report due in 2022. In addition, the document will be dynamic and updated as and when necessary.

6. Links

The full text of the Environment (Wales) Act 2016 and Explanatory notes can be found at: http://www.legislation.gov.uk/anaw/2016/3/contents

Environment (Wales) Act 2016 Factsheet can be found at: https://gov.wales/sites/default/files/publications/2019-05/environment-wales-act-2016-overview.pdf

Environment (Wales) Act 2016 Part 1: Guidance for Section 6 – The Biodiversity and Resilience of Ecosystems Duty (Welsh Government) https://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=7&ved=2ahUKEwiOtere3LTlAhV9ThUIHWvwCFgQFjAGegQIARAC&url=https%3A%2F%2Fwww.biodiversitywales.org.uk%2FFile%2F269%2Fen-GB&usg=AOvVaw13W93R6WLlfUu2X78tmn9u

Cwm Taf PSB Environmental Wellbeing - http://www.ourcwmtaf.wales/environmental-well-being

Merthyr Tydfil Biodiversity Action Plan 2014-2019 - https://www.merthyr.gov.uk/media/1238/lbap-2014-19-final.pdf

State of Natural Resources Report (SoNaRR) - https://naturalresources.wales/evidence-and-data/research-and-reports/the-state-of-natural-resources-report-assessment-of-the-sustainable-management-of-natural-resources/?lang=en

Well-being of Future Generations (Wales) Act 2015 - https://futuregenerations.wales/
The Nature Recovery Plan for Wales: Setting Course for 2020 and Beyond https://www.cbd.int/doc/world/gb/gb-nbsap-v3-p4-en.pdf

The Section 6 guidance and Section 7 lists are available on the Wales Biodiversity Partnership website https://www.biodiversitywales.org.uk/Environment-Wales-act including mammals, birds, fish, invertebrates, reptiles & amphibians, vascular plants, lichen communities, mosses & liverworts, fungi, and marine species.

Ley's Whitebeam - https://botanicgarden.wales/living-attractions/leys-whitebeam

Appendix I: Section 7 Priority Habitats (knowledge and actions)

Habitats [Section 7 - The Environment (Wales) Act 2016]	National	Local	Specific Action
Native Woodland o Traditional orchards o Wood pasture & parkland o Upland oak woodland o Lowland beech and yew woodland o Upland mixed ash woodland o Wet woodland o Lowland mixed deciduous woodland	Woodland in Wales covers 306,000 ha (including 94,940 ha of ancient woodland). This represents 14.8% of land area (compared to an EU average of 38%). Approximately 40% of woodland in Wales has little or no management. This reduces resilience and the ability of woodland to provide well-being benefits. Semi-natural broadleaved woodlands in Wales comprise several Section 7 habitats of principal importance and support 39% of Section 7 species of principal importance. Whilst the overall conservation status of designated woodland habitats in Wales is regarded as unfavourable, there has been some local recovery in response to targeted favourable management actions. Fragmentation is a significant pressure affecting native woodland condition. Woodland condition is negatively impacted by browsing and grazing pressures from domesticated animals, and is also affected by Invasive Non-Native Species (INNS), including grey squirrel and *Rhododendron ponticum* (common rhododendron). Woodland condition and extent in Wales has already been and will be impacted by climate change. Tree health in Wales is declining: >70% of larch has been infected with *Phytophthora ramorum* and *Chalara fraxinea* (ash dieback disease). Pressures from pests and diseases are likely to increase in the future.	2005-2015: MTCBC small-scale finance for Coed Cymru to support all landowners (including MTCBC) to manage native woodlands via WG Agriculture finance - discontinued due to budget savings. 2008: Development related unpermitted felling of oak trees within ancient woodland, protected by TPO, resolved by Planning legislation. 2010-2019: Merthyr Tydfil County Borough Council (MTCBC) owned Cwm Taf Fechan Woodlands SSSI and LNR. This woodland habitat is in unfavourable condition, which mirrors the reported national status. It has moved from a favourable to an unfavourable management regime due to grazing pressure from domesticated animals from the bordering Gurnos Farm. 2012: MTCBC was served a Plant Health Notice (Plant Health Order legislation) from Animal & Plant Health Agency Department for Environment, Food and Rural Affairs to manage Cyfarthfa Park Woodlands to prevent spread of an outbreak of *Phytopthora ramorum.* 2012-2018: Some removal of *Rhododendron ponticum* in the understorey has been undertaken as part of a Plant Health Management Plan to reduce the spread of the disease. 2017: Ash dieback (*Hymenoscyphus fraxineus)* is observable in all ash woodlands within the County Borough. Merthyr West woodlands are largely connected and include forestry plantations and a nationally designated site (Cwm Glo Site of Special Scientific Interest). Merthyr East woodlands are 90% planted and fragmented after mineral extractive reclamation schemes. Most of the woodlands in the Taf Bargod Valley have been less affected and vary from fragmented through to connected. Specific woodland management problems in MTCB: 1. Lack of management 2. Undergrazing 3. Overgrazing	(a) Develop and implement Cwm Taf Fechan Woodland LNR/SSSI Management Plan (2019-2024) in order to regain a favourable management regime. Specific actions at Cwm Taf Fechan Woodland by the Countryside Team: o Gabion baskets installed in carpark o New graziers being sought for grassland management o River improvement/clean of the Taf Fechan o New entrance signage installed o 1 staff (Wildlife Trust) plus 1 volunteer chainsaw trained to deal with fallen trees (b) Continue to implement agreed Plant Health Management Plan (Animal & Plant Health Agency/DEFRA) to support Statutory Plant Health Notice at Cyfarthfa Park Woodlands. (c) Develop and implement a Woodland/Tree Management Plan for Cyfarthfa Historic Park and Gardens. (d) Pro-actively manage trees and woodlands on public land. (e) Support community organisations and volunteers to manage relevant small-scale community woodlands. (q) – see 'Linear Features' (x) – see 'INNS'

			General tree planting pledge across the County Borough (see pages 24 and 25).
Semi-natural Grassland o Coastal and floodplain grazing marsh o Lowland meadows o Lowland calcareous grassland o Upland Calcareous Grassland o Lowland dry acid grassland o Purple Moorgrass and rush pastures	Almost two thirds of the land cover of Wales is made up of grassland habitat, with most of this (>1 million ha) agriculturally improved. Only c.192,000 ha is semi-improved grassland (representing 9% of Wales' landcover). Approximately 78,000 ha is Priority Habitat (90% of this in the lowlands). All forms of European protected grassland in Wales have unfavourable conservation status with 92% of grassland SAC features in Wales considered to be in an unfavourable condition. Only an estimated 43% of grassland features on SSSIs in 2003 was in favourable condition. There was a 91% loss of all semi-natural lowland grassland in Wales between the 1930s and the 1990s. Dry lowland grassland habitat experienced an estimated 97% decline in the same period and only 1,600 ha of unimproved neutral grassland remain. Fragmentation of areas of semi-natural lowland grassland has restricted movement of less mobile species between them. There has been a slowing in the rate of loss of semi-natural grassland habitat in Wales. There is limited data available on the condition of grassland features both within and outside of protected sites	2007-2022: Large areas of high quality unimproved acid and marshy grassland have been permanently lost to Coal Recovery by Land Reclamation at Ffos-y-Fran. Restoration is required (planning condition) and the primary land use proposed for the restored site will be to return it to its former use as urban common land for stock grazing. 2009: Nationally important ('outstandingly diverse') marshy, neutral, acid and waxcap fungi grasslands (Cwm Glo a Glyndyrus SSSI) at risk from development. See 2016 PA/16/0782 MTCBC Pre-application & 2007 Planning Inspectorate APP/U6925/X/03/514357. To the north of the County Borough and into the National Park there are Upland Calcareous grasslands with a high floral diversity, likely of national significance (confirmed by NRW Grassland Ecologist site visits); these tend to be overgrazed. Lowland calcareous grassland in Taf Fechan SSSI has benefitted from reducing grazing pressures over the last 8 years. Development has had the greatest permanent impact upon priority lowland grasslands. Fly-tipping has a large impact upon both lowland and upland priority grasslands. Changes in agricultural economy and practice has resulted in the reversible deterioration of priority grasslands where land is no longer grazed and/or overgrazed.	(a) – see 'Native Woodland' (f) Adopt grass cutting regimes to encourage biodiversity where there is not another specific functional reason for management. In liaison with the Countryside department, the Parks department are proposing to change their grassland management regime. Grassland habitat in the ownership of MTCB is to be mapped and new cutting schedules revised with the overall aim of cutting less and cutting later. Biodiversity and Grassland Management talk – presented to Council Members and the Parks department staff. (g) West Merthyr landscape clearly and transparently protected from development, which would damage the designated features of a nationally important biodiversity designation (Cwm Glo SSSI). Alternate sites for proposals will be encouraged. Designation of a new 'common' SINC (#4 Merthyr Common Central) proposed in the Merthyr Tydfil Replacement Local Development Plan 20106-2031. Meadow management of grassland at Cwm Blacks including scrub clearance / access clearance (in collaboration with Groundwork Wales). Draft Meadow Management Plan for Cyfarthfa meadows. 3x volunteers trained in the use of brushcutters and strimmers to assist with grassland management projects.

Heathland o Lowland heathland o Upland heathland o Mountain heaths and willow scrub	Mountain, moorland and heath habitats cover >261,824 ha in Wales, with 70,130 ha (27% of the total) occurring as SSSI features across 118 SSSI sites. The most extensive Habitats and Species Directive Annex I habitats in this category are blanket bog, European dry heaths and northern Atlantic wet heaths with *Erica tetralix*. The condition of the most extensive semi-natural habitats of mountain, moorland and heath within SSSIs ranges between 63% and 73% unfavourable. There is poor connectivity for lowland mountain, moorland and heath habitats (in particular lowland heathland) due to fragmentation. In Wales, approximately 60% of deep peat occurs within mountain, moorland and heath habitats, but mostly in blanket bog. Agri-environmental measures continue to assist in the protection of some of the most extensive mountain, moorland and heath habitats, with encouraging trends noted for blanket bog and heathland. There is only limited information regarding the current distribution, extent and condition of mountain, moorland and heath habitats in Wales (including within SSSIs).	2007-2022: Areas of Upland Heath have been permanently lost to Coal Recovery by Land Reclamation at Ffos-y-Fran. Restoration is required (planning condition) and the primary land use proposed for the restored site will be to return it to its former use as urban common land for stock grazing. Modified heathland is mainly related to large-scale extractive mineral industries, mainly from the past.	(x) – see 'INNS' Other actions: o Y Graig SINC – ffridd habitat dominated by bracken. Paths created through the bracken habitat using a 'bracken bruiser' (supplied and operated by South Wales Fire and Rescue Service) in order to open up the habitat to encourage bilberry and other heathland species. o Bracken cut back in Treharris Park
Wetland o Upland flushes, fens and swamps o Lowland fens o Reedbeds o Lowland raised bog o Blanket bog o Ponds	Wetland – Wales has a rich and varied terrestrial lowland wetland resource. Lowland raised bogs occur widely throughout Wales, with over 40 recognised to date. They are of high conservation value. In total there are around 6,200 examples of lowland fen and swamp (including reedbeds) within Wales. Blanket Bog – Some 59% of Wales' blanket bog resource displays signs of modification resulting from drainage and other land-use impacts. Agri-environmental measures continue to be effective, with encouraging trends noted for blanket bog, though less strong for flush and spring. A significant increase in Sphagnum cover has been noted between 2007 and 2013/14 but this is based on a relatively limited sample size. Ponds – There is no comprehensive inventory of ponds in Wales and is unlikely that one will be developed because of the relatively high turnover of this habitat due to natural succession.	1995-1998: the Coal Authority created large reedbeds at Parc Taf Bargod to filter ferric minewater. 'Lakes' were created in the main Bargod Taf river within the park as part of the restoration of three former coalmines. 1999: MTCBC surveyed all known ponds within the County Borough. 2006: MTCBC Planning P/06/0573 Blanket bog threat from inappropriate windfarm development at Pengarnddu avoided. 2008-2012: Agri-environmental scheme advisors preventing grazing on wetland resulting in loss of wetland to scrub. 2012: New ponds created in partnership with NRW at Blaencanaid 2014: New ponds created and existing ponds managed to minimise flood risk downstream at Coed-y-Hendre, Bedlinog with NRW (formerly The Environment Agency); new ponds created at Pontygwaith Nature Reserve by South East Wales Rivers Trust. 2017: works undertaken on an existing pond in woodland at Cyfarthfa Park to make it more suitable for great crested newt. 2018: complete renovation of an ornamental pond (the 'sensory pond'). 2015-2017: MTCBC restore Cyfarthfa Park woodland ponds	(h) Repeat 1999 MTCBC Pond Survey. (i) Plans for the sustainable management of the Bargod Taf river catchment with a focus on biodiverse, connective and sustainable future management for the lakes (online main river) at Parc Taf Bargod. In September 2019, the Council agreed to accept funding from the Welsh Government's Rural Communities – Rural Development Programme 2014-2020 Sustainable Management Scheme (funded by the European Agricultural Fund for Rural Development and the Welsh Government). An amount of £507,287 was secured for the restoration of Taf Bargod river catchment landscape. (j) Create new sustainably manageable ponds in suitable locations

			Natural Resources Wales (NRW) have provided £7,000 from their 'Vital Nature Fund' towards improvement works at Webber's Pond, in Gethin Woods in the west of the County Borough. A management committee has been created with representatives from NRW, MTCBC, Merthyr Tydfil & District Naturalists Society and Bike Park Wales. There are silt issues along stream that feeds Webber's Pond and therefore within the pond itself. The scheme will not only include restorative and preventative measures for the pond, but also measures to protect and survey for protected species (e.g., the installation of 'otter alert' reflectors along the A470 adjacent to the site and surveys of the pond for water vole and great crested newt). Other actions by the Countryside team included: o Aquatic planting scheme at Treharris Park o Heritage Lottery Fund (HLF) money sought for pond creation in collaboration with the Amphibian and Reptile Conservation Trust (ARC) o River clean at Aberfan, Quaker's Yard, Pentrebach, Taf Fechan and Merthyr Town Centre – MTCBC, Keep Wales Tidy (KWT), Woodland Trust, Actif woods o New wetland habitat created in Sandy Park
Inland Rock o Eutrophic standing waters o Aquifer-fed naturally fluctuating water bodies o Inland rock outcrop and scree habitats o Limestone pavement	The inland rock resource in Wales is dominated by acid/neutral rock exposures (8,600ha), reflecting the character of the dominant rock types of Wales. Exposures of basic rock (mostly limestone) amount to just 460ha, including important exposures of limestone pavement associated with outcrops of Carboniferous Limestone in north and south Wales.	Fforest Fawr UNESCO Geopark covers the north of the County Borough into the National Park and is one of only two in Wales and seven in the UK. Of the seven Sites of Special Scientific Interest (SSSI) associated with Merthyr Tydfil County Borough, six (Baltic and Tyle'r-Bont Quarries – dinantian rocks; Brecon Beacons – geology + landform, sandstone cliffs + rock outcrops, screes; Daren Fach – ash woodland associated with limestone grassland; Abercriban Quarries – non-marine Devonian rocks; Nant Glais Caves – karst and cave system; Cwm Taf Fechan Woodlands – semi-natural broad-leaved woodland (in a wooded ravine cut through Carboniferous Limestone) . A large, non-operational quarry at Vaynor will possibly be reworked. A large unused and prominent limestone quarry remains at Morlais. Two Regionally Important Geological Sites are within the County Borough: Llan-Uchaf and Nant Ffrwdd. A much higher proportion of the nationally rare limestone outcrop, including limestone pavement is found to the north of the County Borough.	(z) – see 'Geodiversity' (k) Geological interpretation and education on unique local natural resources, how climate has changed and links to the impact of their use on socio-industrial history, culture and global economy.
Mineral Spoil o Calaminarian grasslands	In 2015 the Welsh Economic Research Unit of Cardiff Business School reported that mineral products industry is a key employer in Wales. In 2013-2014 the industry provided direct employment to round 3,800 people at more than 200 sites, generating sales of £650M.	*'Merthyr Tydfil's historic core is the focus of a historic industrial landscape that includes surrounding industrial remains on the slopes and uplands. Notable historic features include ironworks and tramways, the prominent Cyfartha Park and dramatic stone viaduct, which give a strong sense of place. There is a loss of lower valley agricultural settlement, fieldscape and early industrial extractive landscapes'.* NRW Landscape Area Statement.	(y) – see 'Soil' (z) – see 'Geodiversity'

<table>
<tr>
<td>o Open mosaic habitats on previously developed land</td>
<td></td>
<td>2015+ National Museum Wales annual insect surveys at Ffos-y-Fran progressive restoration site & across Cwm Taf (Rhondda Cynon Taf & Merthyr Tydfil County Boroughs) https://collieryspoilbiodiversity.wordpress.com/ evidence of nationally scarce/rare insect species on mineral spoil sites contrary to no/very poor national evidence.</td>
<td>(l) Support scientific ecological research on coal/mineral spoil sites</td>
</tr>
<tr>
<td>Urban</td>
<td>Well-managed, high quality parks and green spaces are critical elements of accessible natural green space.

In 2013, open space provided 22% and private gardens 35% of the total land area within Wales' towns and cities.

The expansion of our towns, home improvements and the trend of paving over our gardens has removed large areas of land and thereby its ability to soak up rain, and provide a greenspace and a home for wildlife.

Green Infrastructure is critical in helping to adapt to and mitigate the impacts of climate change and air pollution.

Increasing tree loss in towns is due to:
o an ageing population of trees (leading to an increased number of trees that are dead, dying and/or dangerous);
o disease;
o demands for new building development;
o work to the utility infrastructure;
o a poor understanding of integrating new trees into the built environment (green infrastructure);
o not putting into practice the 'right tree, right place' approach.</td>
<td>Well-designed and well-maintained open spaces within the County Borough make a significant contribution to the quality of life of its residents.

To address this, MTCBC has developed the Merthyr Tydfil Open Space Strategy (MTOSS) in order to identify and protect Merthyr's open spaces.

Background work identified 139 open space sites across the County Borough (= 573.8 hectares). The types of open spaces present are:

<table>
<tr><th>Types of open space</th><th>Area (hectares)</th></tr>
<tr><td>Allotments</td><td>6.84</td></tr>
<tr><td>Amenity Greenspace</td><td>14.65</td></tr>
<tr><td>Natural/Semi Natural Greenspace</td><td>300.9</td></tr>
<tr><td>Public Parks and Gardens</td><td>109.62</td></tr>
<tr><td>Civic Space</td><td>1.78</td></tr>
<tr><td>Children and Young Peoples' Space</td><td>7.05</td></tr>
<tr><td>Multifunctional Greenspace</td><td>89.16</td></tr>
<tr><td>Outdoor Sports Area</td><td>43.8</td></tr>
<tr><td>TOTAL</td><td>573.8</td></tr>
</table>

2013: The Open Spaces Strategy underwent a public consultation.

2016: The MTOSS was adopted by the Council. The key themes of the MTOSS are Health and Well-being, the Economy and the Environment.

Last 30 years: There have been a series of urban infrastructure landscape improvements in the County Borough during this time.

Examples include, planting up of some colliery spoil sites to improve them from a visual perspective.

With the recognition of the unique biodiversity value of naturally colonised colliery spoil sites where there has been no such 'improvement' work, this type of intervention has come to a halt.

Other sites, having been re-shaped and planted up for stability, now make a major contribution, not only to the visual context of urban spaces, but also (in some instances) to the provision of valuable open space i.e., Parc Taf Bargoed.

Urban green infrastructure improvements have included street tree planting projects (Taf Bargoed Valley, Tramroadside) and have contributed significantly to landscape value and appeal.

Over the past 25 years a range of successful species, including some non-natives, has been developed to suit the local climatic and soil conditions in MTCB.</td>
<td>(d) – see 'Native Woodland'

(e) – see 'Native Woodland'

(f) – see 'Semi-natural Grassland'

(m) Develop a real time, online Green Infrastructure spatial plan using existing data.

(n) Aspiration to designate one Local Nature Reserve, from appropriate Open Spaces Strategy sites in each Electoral Ward, through the Replacement LDP process and support sustainable management schemes for wildlife improvements on these sites in particular.

(p) – see 'Ffridd'

(q) – see 'Linear Features'

Other green infrastructure actions:
o 44 way markers to be placed on priority open spaces
o Green Infrastructure website underway
o Tomato growing in abandoned telephone boxes in Bedlinog
o Planting throughout County Borough for pollinators 2018 - 1000 Primula, 50 Geranium sp, 105 Cyclamen sp, 1500 Allium sp, 1100 Fritillaria sp, 2000 Galanthus sp, 2000 Narcissus sp, 100 Camassia sp, 50 Corydalis sp, 2000 Crocus sp, 300 Tulipa sp
o Planting throughout County Borough for pollinators 2019 – 500 Hyacinthoides sp, 200g Hyacinthoides sp seed, 50 Ficaria verna, 100 Allium ursinum, 200 Allium sphaerocephalon, 100 Fritillaria meleagris, 1000 Galanthus nivalis, 100 Narcissus</td>
</tr>
</table>

			pseudonarcissus, 150 *Eranthis hyemalis*, 510 *Anemone nemorosa*, 50 *Camassia sp*, 300 *Crocus sp*, 100 *Ipheion iniflorum* o Green wedge – Swansea Road, four hornbeams planted by the Parks department. o Replacement trees planted at Newlands park o New orchard planted at Well Street o Trees planted at Twynyrodyn Avenue
Forestry	At least 203,000 ha of woodland in Wales is managed to the UK Forestry Standard. As a productive resource, the most recent data indicates that the forestry sector (forestry and logging, manufacture of wood and products of wood and cork, manufacture of paper and paper products) contributes a Gross Value Added of £499.3 million per annum to the Welsh economy. Forecasts of future timber production show a drop in availability from current levels unless more woodland is brought into sustainable management, replanting rates are increased and more new woodland is created that is capable of producing utilisable timber. "*Forestry changes and felling of larch has changed some settings"*. NRW Landscape Area Statement.	MTCBC LDP 2006-2021 had no SINC on Forestry land (none surveyed), however cross-boundary discrepancies between SINCs at Gethin Woodland (RCT & MTCBC) led to independent ecological surveys of Natural Resources Wales Forestry leading to confirmation that the area exceeds Mid-Valleys SINC Criteria thresholds.	(o) Designation of four new 'forestry' SINCs proposed in the Merthyr Tydfil Replacement Local Development Plan 20106-2031 (#61 Gethin Forest; #62 Cefn Forest; #63 St Tydfil Forest (East) and #64 St Tydfil Forest (West).
Rivers and Streams o Rivers	Wales has approximately 24,000 km of rivers and streams. An estimated 15% of the land area of Wales drains into 558 lakes including over 150 large-scale reservoirs, which cover 8,143 ha. In 2015, 63% of Wales' freshwater water bodies did not achieve good or better overall status (as defined by the Water Framework Directive). Nine of the ten worst metal-mine polluted catchments in the UK are in Wales with pollutants from abandoned metal mines impacting on 700 kilometres of Welsh rivers. In 2019, the Welsh Government launched a second statutory consultation on the Water Framework Directive, aimed at finding a solution for 'significant water management issues' identified across the country. Responses to a six-month consultation (to close in December 2019), will inform the third River Basin Management Plans and the next SoNaRR required under the Environment (Wales) Act 2016. Although the most recent SoNaRR (2016) set out some of the improvements to water quality and connectivity of rivers in Wales over the last 25 years, the consultation document noted that Wales was not yet achieving sustainable management of water.	1995-1998: the Coal Authority created large reedbeds at Parc Taf Bargod to filter ferric minewater. 'Lakes' were created in the main Bargod Taf river within the park as part of the restoration of three former coalmines. The WFD (Water Framework Directive) requires MTCBC to define and assess the ecological, chemical and overall status of surface and ground water bodies, including rivers, canals, lakes, estuaries and coastal waters. The most common failing elements are: o In rivers – fish, phosphorus and metals o In lakes – invertebrates and phosphorus o In groundwater – metals The greatest concentration of invasive non-native species in the County Borough occurs on rivers/rivers banks with some causing significant damage to structures (Japanese Knotweed, Himalayan Balsam, Signal Crayfish).	(a) – see 'Native Woodland' (g) – see 'Semi-natural Grassland' (h) – see 'Wetland' (j) – see 'Wetland' (l) – see 'Mineral Spoil' (n) – see 'Urban' (t) – see 'Fish' (x) - see 'INNS' Natural Resources Wales (NRW) have provided £7,000 from their 'Vital Nature Fund' towards improvement works at Webber's Pond, in Gethin Woods in the west of the County Borough. A management committee has been created with representatives from NRW, MTCBC, Merthyr Tydfil & District Naturalists Society and Bike Park Wales. There are silt issues along stream that feeds Webber's Pond and therefore within the pond itself. The scheme will, not only include restorative and preventative measures for the pond, but also measures to protect and survey for protected species (e.g., the installation of 'otter alert' reflectors along

	The five main issues are: 1. physical modifications to existing water bodies 2. pollution from sewage and wastewater 3. pollution from towns, cities and transport 4. pollution from rural areas 5. pollution from mines. Diffuse pollution from rural areas has caused failures in approximately 129 water bodies (113 from farming and 16 from forestry). There would be benefits to both people and wildlife through the prevention and reduction of pollution from rural areas. In addition, mine water discharged from abandoned mines is often contaminated with dissolved metals such as iron, lead, copper, zinc and cadmium, which can enter into adjacent rivers. The Coal Authority operates 15 mine water schemes at abandoned coal mines using funding from the Department of Business Energy and Industrial Strategy (BEIS) in Wales.		the A470 adjacent to the site and surveys of the pond for water vole and great crested newt).
Ffridd	Ffridd is a widespread habitat type found throughout Wales - found between the managed lowlands and the uplands at altitudes between 100m and 450m. This transitional zone is extremely diverse and is a complex mosaic of habitats consisting of heath, bracken, acid grassland, woodland, coal spoil and rhôs pasture.	Ffridd habitat runs for mile upon mile along the main valleys of the County Borough. It is important for ecological connectivity in particular and a characteristic habitat of the County Borough's valley sides, often stretching from one end of the County Borough to the other. Ffridd plays a vital role in buffering upland sites against habitat intensification. It is capable of supporting a wide range of species: birds such as tree pipits, yellowhammers and ring ouzels; butterflies such as the pearl-bordered fritillary and dark green fritillary; vascular plants such as globeflower and wood bitter-vetch. NB all the species mentioned have been recorded in MTCB. In MTCB there are issues surrounding fire-setting in areas where there may be Ffridd habitats. Following trials in the Rhondda Valley in 2017, a Healthy Hillside Partnership between South Wales Fire Service, NRW, RCTCBC, MTCBC was set up. Y Graig, a Site of Importance for Nature Conservation (SINC) and Open Space in Gurnos, Merthyr Tydfil has been targeted by the scheme to simultaneously reduce the fire and air pollution risk, increase the use of space by the public for outdoor activities, promote a healthy lifestyle and increase biodiversity. In July 2019, the South Wales Fire Service under the direction of the County Borough ecologist, used a mechanical 'bracken-bruiser' mounted on the back of a quad bike to create paths through the extensive bracken habitat onsite. This is hoped to have multiple benefits for the site: starting to reduce the overall amount of bracken habitat, making the site more accessible to the general public and creating fire-breaks to try to minimise damage to the site from any future fire-setting.	(p) Work in partnership with other statutory bodies and partners (e.g., The Fire Service) to sustainably & pro-actively manage bracken habitats.
Linear Features o Hedgerows o Drystone Walls	Hedges are important for connectivity, especially in lowland landscapes where general connectivity is often low. The length of Welsh hedgerows is estimated at 106,000 km, however, 78% is in unfavourable condition. Approximately 3.530 km restored under the Tir Gofal agri-environment scheme and 2,300 km restored or under a current management commitment within Glastir.	The Open Space Strategy has brought about collaborative work with MTCBC, Groundwork and Keep Wales Tidy resulting in the planting of several new hedgerows throughout the County Borough. Several hundred metres of hedge and dozens of metres of drystone walling have been installed with assistance from volunteers and community groups since 2007.	(e) – see 'Native Woodland' (q) Provide annual opportunities for voluntary sector to learn traditional countryside and horticultural skills

	Hedgerows contain a large proportion of ash (both in the shrub layer and as standard trees) and as such are under threat from ash die-back. As this species dies back in future years gaps will form in hedgerows and this will have a knock-on effect on other species dependent on hedgerow habitat. Continued decline in length of managed hedgerows, despite progressive uptake of agri-environment schemes, has resulted in increases in both relict and overgrown hedges. Hedgerow trees have reduced by 3.9% (1998-2007).	Drystone walls are a visual and distinct cultural and historic landscape feature within MTCB with an extensive range of styles and materials used for such a small County Borough. Drystone walls provide important connective habitat and shelter for many species including livestock, amphibians, reptiles, insects, mosses and lichens. 2009: A Hedgerow Retention Notice was used to protect an 'important' hedge (Hedgerow Regulations 1997) from development. 2017+: MTCBC supported a Keep Wales Tidy/Woodland Trust Long Forest Project to improve and plant hedgerows as part of a national scheme.	
Enclosed Farmland	Enclosed farmland is a difficult concept to define. It comprises those agriculturally improved grasslands, arable fields, horticultural lands and orchards which are bounded by hedges, walls, fences and other field boundaries, but excludes the fridd as well as all enclosed semi-natural grasslands. The total area of enclosed farmland in the UK National Ecosystem Assessment was estimated to cover 804,000ha. Improved grassland accounted for 731,000 ha and arable land covered 73,000ha. Agriculturally improved grasslands, characterised by various strains of rye-grass and clover, now predominate throughout much of Wales, with an estimated total coverage of 1,027 million ha. During the latter part of the 20th century these highly productive grass crops largely replaced semi-natural pastures and hay meadows. Around 80% of the agricultural land in Wales has been designated under the Less Favoured Area Directive. Such land is characterised by less fertile soils with limited agricultural potential and below average economic returns. Recent data indicate overall plant species-richness has increased in improved land, and is stable in arable land since 2007. Plant species thought to reflect overall condition in both habitat types have remained stable.	There is a significant amount of grazed land within the County Borough, which ranges from calcareous, acidic, neutral and marshy through to heathland, providing nutrient rich fodder for local organic livestock selling high quality produce. Enclosed farmland is comparatively less distinct in MTCB than most other areas of Wales with much bearing similarities to the wider landscape, although this depends very much on the management style of each land user. For centuries by far the greatest influence on enclosed farmland are agri-environmental schemes and macro-economic issues on a national or international scale. All historic cultural practices, such as haymaking and hafod/hendre transhumance, have ceased and will not return in the foreseeable future.	

Appendix II: Section 7 Priority Species (knowledge and actions)

Species [Section 7 - The Environment (Wales) Act 2016]	National	Local [all SEWBReC data searches undertaken in 2019]	Actions (*Priority Species in Merthyr Tydfil)
Mammals			(a) – see 'Native Woodland' (b) – see 'Native Woodland' (c) – see 'Native Woodland' (d) – see 'Native Woodland' (e) – see 'Native Woodland' (f) – see 'Semi-natural Grassland' (g) – see 'Semi-natural Grassland' (h) – see 'Wetland' (i) – see 'Wetland' (j) – see 'Wetland' (k) – see 'Inland Rock' (l) – see 'Mineral Spoil' (m) – see 'Urban' (n) – see 'Urban' (o) – see 'Forestry' (p) – see 'Ffridd' (q) – see 'Linear Features'
o **Bat species** (barbastelle, Bechstein's bat, noctule, common pipistrelle, soprano pipistrelle, brown long-eared, greater horseshoe, lesser horseshoe).	Bats In the UK, bat populations have declined significantly over the last century. Threats to bats include building and development work that affect bat roosts, habitat loss, disruption to commuting routes due to removal of habitat to make way for roads, lighting (if sited on bat habitat or near roosts) and wind turbines. 15 bat species are resident in Wales. All species of bat are protected under: o The Conservation of Habitats and Species Regulations 2017 o The Wildlife and Countryside Act 1981 (as amended) o Section 7 of The Environment (Wales) Act 2016 (listed as priority species in Wales) Bats are therefore some of the most highly protected species in Wales. The National Bat Monitoring Programme (NBMP) Annual Report 2018 shows bat species trends at country level derived from NBMP data to the end of 2018. In Wales, for those species where data was available (greater horseshoe bat, lesser horseshoe bat, Daubenton's bat, whiskered/Brandt's bat, Natterer's bat, soprano pipistrelle and brown long-eared bat) no species was considered to have declined significantly since the baseline year (2002 for soprano pipistrelle; 2000 for Daubenton's bat – waterway survey; 1999 for all other species).	Bats The most recent SEWBReC data search for the County Borough include a total of 815 records for European otter between 1966 and 2019. Species recorded included brown-long eared bat, common pipistrelle, Daubenton's, lesser horseshoe bat, Natterer's bat, noctule, serotine, soprano pipistrelle and whiskered bat.	Support legislative protection, e.g., through the planning system. 2017: Bat mitigation/compensation contained within Welsh Government A465 dualling proposals. Numerous bat activity surveys undertaken since 2007 at: o Pant Tunnel o Parc Taf Bargoed o Cyfarthfa Park o Cyfarthfa Castle o Pontygwaith Nature Reserve o Taf Fechan Nature Reserve Bat boxes put up throughout woodland/river corridors. Bat tower erected Taf Bargoed Park.

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<td>2019: Bat roost identified within bowling clubhouse building in Treharris Park during a survey of the site (droppings characteristic of brown long-eared bat).

Other actions:
o Bat/Invertebrate/Owl event at Cyfarthfa park with Merthyr Naturalist
o Abernant Tunnel Bat dusk/dawn survey
o Taf Bargoed Bat night - 40 attendees, October 2018
o Taf Bargoed Bat night scouts & cubs, October 2018
o Preliminary bat survey at Cyfarthfa Park, March 2018
o Bat Night Taf Bargoed Aug 2019
o Bat night Nant Llwynog Oct 2019</td>
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<td>o European otter</td>
<td><u>European otter</u>
The otter suffered serious declines throughout most of its European range and by the mid-1970s, the UK otter population had been reduced to such an extent that it only survived in Scotland, parts of Wales and south-west England.
Surveys of baseline sites have been carried out on a regular basis in Wales since 1984-85 and show an overall upward trend in percentage otter presence (see table below).

<table><tr><th>National otter survey of Wales (dates)</th><th>% presence at baseline sites</th></tr><tr><td>1984-85</td><td>5</td></tr><tr><td>1991</td><td>17</td></tr><tr><td>2002</td><td>50</td></tr><tr><td>2009-10</td><td>79</td></tr><tr><td>2017-18</td><td>[results yet to be published]</td></tr></table>
The European otter is protected under:
o The Conservation of Habitats and Species Regulations 2017
o The Wildlife and Countryside Act 1981 (as amended)
o Section 7 of The Environment (Wales) Act 2016 (listed as priority species in Wales)</td>
<td><u>European otter</u>
The most recent SEWBReC data search for the County Borough includes 138 records for European otter between 1960 and 2019. Records for otter have been returned on all the main rivers in the County Borough (Rivers Taff and Taff Bargoed).

Photographic evidence and otter reports from public and anglers increasing within the County Borough.</td>
<td>Support legislative protection, e.g., through the planning system.

Otter passes installed Cardiff Road, Taf Bargoed Park and Town centre.

NRW have provided £7,000 from their ‘Vital Nature Fund’ towards improvement works at Webber’s Pond, in Gethin Woods in the west of the County Borough. As part of this scheme, installation of ‘otter alert’ reflectors along the A470 adjacent Webber’s Pond in Gethin Woodland has been proposed. The aim is to decrease the incidence of road traffic deaths.</td>
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<td>o West European hedgehog</td>
<td><u>West European hedgehog</u>
A nocturnal species and one of the Britain’s few, true hibernators. Habitats of preference includes hedgerows, gardens and agricultural areas. The species is under real pressure with Britain’s population though to have decreased by as much as 73% in the last twenty years (Mammal Society 2019). Threats include: local effects from increases in badger populations and traffic density; loss of habitat (hedgerows and field margins and changes to gardening practices, e.g., no gaps at boundaries and pesticide usage); wounding from garden machinery.
There is a need to encourage the implementation of good practice to halt and reverse the decline.</td>
<td><u>West European hedgehog</u>
The most recent SEWBReC data search for the County Borough includes 77 records for west European hedgehog between 1976 and 2019.

A number of hedgehog footprint tunnel surveys have been held throughout Merthyr to identify abundance and location.</td>
<td>(r) Hedgehog* – Promotion, education, surveying, habitat creation and monitoring

Support legislative protection, e.g., through the planning system in particular make recommendations for considerate site</td>
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	The hedgehog is protected under: o Section 6 of The Wildlife and Countryside Act 1981 (as amended) o Section 7 of The Environment (Wales) Act 2016 (listed as priority species in Wales)		clearance, installation of gaps in boundaries for the passage of hedgehogs through sites. Protection of hedgerows (Section 7 habitat under The Environment (Wales) Act 2016) Other actions: o Hedgehog house installed in Dowlais Community Centre Gardens o Hedge footprint tunnel deployed at St Aloysius Primary School
o **Brown hare**	Brown Hare The brown hare one of the larger British mammals and are found in diverse open habitats, preferring areas of short vegetation for feeding at night and more densely covered areas for resting during the day. Brown hare is found throughout Wales, often on the edges of the uplands. Populations have declined in Wales over the last century. Threats include predation (foxes) and habitat loss (e.g., loss of mixed farming, loss of set aside, use of agrichemicals). The brown hare has minimal legal protection as it is considered a game species and as such can be shot throughout the year, including during the breeding season. However, it is listed as a priority species under Section 7 of The Environment (Wales) Act 2016.	Brown hare The most recent SEWBReC data search for the County Borough includes 17 records for brown hare. There are regular sightings at the Land Reclamation at the Ffos-y-Fran Restoration site. 2014 - Mammal ramp put in on Gurnos Tramroad & Leat Scheduled Ancient Monument.	Brown Hare – Ffos-y-Fran Restoration Strategy Support legislative protection, e.g., through the planning system.
o **Polecat**	Polecat Polecats set up home, e.g., in lowland wooded habitats, marshes and along riverbanks. Their prey preference is for rabbit. Polecats, having virtually become extinct in Wales by 1900 due to persecution, have made a remarkable recovery and have spread throughout the country again from their stronghold in mid-Wales. The polecat is protected under: o Section 6 of The Wildlife and Countryside Act 1981 (as amended) o Section 7 of The Environment (Wales) Act 2016 (listed as priority species in Wales) Polecats have spread out from their historical stronghold in mid-Wales to re-colonise much of southern and central England and reach parts of south-west England East Anglia.	Polecat The most recent SEWBReC data search for the County Borough includes 12 records for polecat between 1978 and 2017.	See sections on: o Native woodland o Wetland o Rivers and streams
o **Common dormouse**	Common dormouse There has been a long-term decline in both numbers and range of the UK population. The current dormouse range is Southern England and South Wales and along the English/Welsh border. Threats to dormice: o A decline in traditional woodland management (specifically coppicing), resulting in heavy shading and suppression of the understorey.	Common dormouse The most recent SEWBReC data search for the County Borough includes no records for common dormouse, however, there is ample suitable habitat within the County Borough boundary and so the dearth of records can be attributable to a lack of survey work rather than a lack of presence.	Nest tube survey undertaken near Rhyd-Y-Car Leisure village in 2019 (May – November). No dormice or dormice signs found. Nest tube surveys for common dormouse are planned for the 2020 season. These surveys will target the most likely areas that this species may be found, including any suitable

	o Heavy shading and lack of thinning o Loss of woodland habitat o Habitat fragmentation and isolation o Loss of species-rich infrequently-cut hedgerows o Deer, domestic stock and squirrels o Climate change and unpredictable weather The common dormouse is protected under: o The Conservation of Habitats and Species Regulations 2017 o The Wildlife and Countryside Act 1981 (as amended) o Section 7 of The Environment (Wales) Act 2016 (listed as priority species in Wales)	A search for common dormouse records within an approximate 8km buffer of the boundary of Merthyr County Borough returned 2 records: o Penmoelallt: Cefn-Coed-y-Cymmer (live animal) o Cefn Hengoed Hillside (eaten hazel nut) Likely sites within Merthyr Tydfil County Borough include: o Taf Fechan Nature Reserve o Pontygwaith Nature Reserve	habitat within MTCB that is connected to the areas with known records (returned by SEWBReC) outside of the boundary of the County Borough.
o **Water vole**	Water vole The water vole is one of Britain's fastest declining mammals (declined by 90% since the 1980s) and is under serious threat from both habitat loss and predation by the non-native American mink. The water vole lives along rivers, streams and ditches, around ponds and lakes and in marshes, reedbeds and areas of wet moorland. The water vole is protected under: o Schedule 5 of The Wildlife and Countryside Act 1981 (as amended) o Section 7 of The Environment (Wales) Act 2016 (listed as priority species in Wales)	Water vole The most recent SEWBReC data search for the County Borough includes 5 records for water vole between 1976 and 2009. Possible water vole feeding signs were identified at Nant Llwnog Park in 2019. There are also 19 records for American mink between 1977 and 2019.	Support legislative protection, e.g., through the planning system. Survey for and then map water vole presence/distribution within the County Borough. NRW have provided £7,000 from their 'Vital Nature Fund' towards improvement works at Webber's Pond, in Gethin Woods in the west of the County Borough. As part of this scheme, water vole surveys are proposed at the pond. NB a presence or absence eDNA test is now available for water vole. Protect sites with existing populations. Enhance, restore, create water vole habitat to connect with sites where there are existing populations. Follow-up water vole survey work to be undertaken in response to feeding signs identified at Nant Llwnog Park in 2019. NB a presence or absence eDNA test is now available for water vole.
Birds [records for MTCB cross referenced with Schedule 7 species – Schedule 1 birds] o Bewick's swan, black grouse, common bullfinch, common cuckoo, common scoter, corncrake, dunnock, Eurasian	Birds In 2018 the State of Birds in Wales report was published (jointly produced by RSPB, BTO, NRW and WOS). The report provides an overview of the state of wintering and breeding bird populations in Wales. The headlines form the report are as follows: o Long-term monitoring shows numbers and distributions of almost one third of birds in Wales are significantly declining. o Research and recovery programmes are underway to try to reverse these declines. o Wales supports a large proportion of the UK populations of a number of UK breeding and wintering species. These include seabirds, for example, Manx shearwaters and gannets; coughs on the coastline and mountains; and woodland species, for example, pied flycatchers and wood warblers.	Birds The most recent SEWBReC data search for the County Borough includes approximately 19,500 records for 151 species between 1930 and 2019. Of these, 31 were Schedule 1 (as defined by The Wildlife and Countryside Act 1981, as amended), for example, barn owl, brambling, Dartford warbler, hen harrier, kingfisher, merlin, redwing and woodlark. Below are some examples of work undertaken in the County Borough for the benefit of bird species:	(a) – see 'Native Woodland' (b) – see 'Native Woodland' (c) – see 'Native Woodland' (d) – see 'Native Woodland' (e) – see 'Native Woodland' (f) – see 'Semi-natural Grassland' (g) – see 'Semi-natural Grassland' (h) – see 'Wetland'

curlew, European nightjar, grey partridge, golden plover, hawfinch, hen harrier, herring gull, house sparrow, kestrel, lapwing, lesser spotted woodpecker, pied flycatcher, reed bunting, red grouse, ring ouzel, ringed plover, skylark, song thrush, spotted flycatcher, starling, tree pipit, wood warbler, yellowhammer. [records for MTCB cross referenced with schedule 1 birds] o Barn owl, Bewick's swan, black redstart, brambling, corncrake, common crossbill, common scoter, Dartford warbler, fieldfare, firecrest, goshawk, green sandpiper, greenshank, hen harrier, kingfisher, little-ringed plover, Mediterranean gull, merlin, osprey, peregrine, red kite, redwing, wood sandpiper, scaup, whooper swan, woodlark.	o Some species have responded to changes in the environment and climate. Birds such as corn buntings, dotterels and nightingales have been lost completely from Wales. Others, including avocets, Dartford warblers and ospreys have expanded their UK range and colonised Wales in the last half century. o Some non-native bird species have established breeding populations in Wales in the last 50 years. Their impacts on native British species and habitats are not yet fully understood. o Recent national surveys have provided updated population estimates for choughs and hen harriers. More than half of the UK's choughs are resident in Wales and the population has remained relatively stable overall, with regional variation. Welsh hen harriers declined between 2010 and 2016 but the population has slowly increased in the long term. In the UK, the provisions of the Birds Directive are implemented through the Wildlife & Countryside Act 1981 (as amended), the Conservation of Habitats and Species Regulations 2017. All wild birds, their nests and eggs are protected it an offence to: o kill, injure, or take any wild bird; o take, damage or destroy the nest of any such bird whilst it is in use or being built; or o take or destroying an egg of any such wild bird. The law covers all species of wild birds including common, pest or opportunistic species. Special protection against disturbance during the breeding season is also afforded to those species listed on Schedule 1 of the Act.	2015: pied flycatcher nest boxes installed at Cwm Taf Fechan SSSI/LNR by The Wildlife Trust of South and West Wales. 2017: dipper boxes installed town centre on the River Taff below the Fire Station with the help of SW Fire Service and at Parc Taf Bargod. 2017: house martin boxes installed on a new home front scheme Treharris. 2017: lapwing mitigation at Dowlais Top contained within WG A465 dualling proposals. 2016: swift tower installed at Taf Bargoed Parc. 2016: house sparrow boxes installed at Cyfarthfa Park Bothy building. Various community events by many organisations focus on bird feeders and nest boxes. Within the planning system, measures for the maintenance and enhancement of application sites in terms of bird life (including the protection and/or creation of suitable bird habitat and the erection of bird boxes) are routinely recommended.	(i) – see 'Wetland' (j) – see 'Wetland' (k) – see 'Inland Rock' (l) – see 'Mineral Spoil' (m) – see 'Urban' (n) – see 'Urban' (o) – see 'Forestry' (p) – see 'Ffridd' (q) – see 'Linear Features' (s) House Sparrow* - Promotion, education, surveying, habitat creation and monitoring Lapwing – Ffos-y-Fran Restoration Strategy (ongoing). Support legislative protection, e.g., through the planning system.
Fish [records for MTCB cross referenced with Schedule 7 species] o European eel o Atlantic salmon o Brown/Sea trout	<u>European eel</u> The stock of the European eel is in a critical condition. Global eel numbers are down 95% in the last 40 years. Natural Resources Wales are aiming to improve conditions with various stakeholders throughout Wales. In 2007, The European Commission (EC) brought in a regulation that requires each member state to establish national eel management plans that include measures to increase the numbers of adult (silver) eels leaving inland waters to cross the Atlantic to spawn at the Sargasso Sea.	<u>European eel</u> The most recent SEWBReC data search for the County Borough includes 7 records for European eel between 1969 and 2006. Salmon and Trout Conservation (S&TC) Cymru and South East Wales Rivers Trust (SEWRT), as joint leaders for the European eel in the Wales Environment Link (WEL) species champion initiative, have	See sections on: o Wetland o Rivers and streams

	In the UK, this EC regulation has been transcribed into law as The Eels (England and Wales) Regulations 2009. NB the species champion for the European eel in the Welsh Assembly is Dawn Bowden AM.	come together with members of Merthyr Anglers and NRW to help protect eels in Merthyr. 2017: South East Wales Rivers Trust trialled a project to release European eels back into the River Taf with help and support from local schools. 2018: young eels (elvers) were released into both Cyfarthfa lake and Taf Bargoed lake. 2019: more than 100 elvers were again released into the Taf Bargoed river, with a similar number released into Cyfarthfa and Taf Bargoed lakes. This conservation project also involves moving barriers (e.g., wiers) from our rivers so that the eels can migrate more easily. 2007-2017: pollution incidents at Taf Fechan reported regularly to NRW.	(t) European eel - promotion, education, surveying, habitat creation, release and monitoring programme. (N.B. signal crayfish predator) Other actions: 2019: 3x Eel tanks bought for project in 2020.
	<u>Atlantic Salmon</u> Following the advice of the International Council for the Exploration of the Sea (ICES) and the North Atlantic Salmon Conservation Organisation (NASCO), conservation limits and management targets have been used to assess salmon stocks in England and Wales since the early 1990s. All salmon stocks are currently assessed as 'At Risk' or 'Probably At Risk' of failing to achieve the management target. Nationally and internationally, salmon stocks are considered to be at the lowest level ever.	The most recent SEWBReC data search for the County Borough includes 38 records for Atlantic salmon between 1986 and 2009. The 'Salmon stock performance in Wales' report (NRW) examines salmon stock performance on the 23 principal salmon rivers in Wales for 2017. On the River Taf the trend in catch and release statistics is assessed as 'Uncertain'. The current compliance in 2017 is assessed as 'Probably at risk' and projected compliance for 2022 is also assessed as 'Probably at risk'. 2011: gravel areas increased at Taf Fechan SSSI/LNR for Atlantic Salmon to spawn. Large rocks added on river. Merthyr Tydfil Angling Association (under NRW licence) re-introduce reservoir gravel in to Taf Fechan regularly but the long running successful 'Salmon Homecoming' school education and breeding project has stopped following NRW withdrawal of funding for salmon rearing at Cynrig hatchery.	Liaise with South East Wales Rivers Trust (SEWRT) for advice and provide support on suitable actions to assist the recovery of Salmon stocks on rivers within MTCBC, for example: o Catch-and-Release fishing o Creation of artificial spawning beds o Fish pass construction o Weir removals o Habitat restoration Welsh Government has asked Natural Resources Wales to compile a Plan of Action (PoA) for Salmon and Sea trout – this will set out all current work being undertaken by various parties to combat the issues impacting on fish stocks as well as identify any gaps in the information that can be filled and new actions that can be taken. The PoA will be considered and recommended actions undertaken where possible and appropriate.

	Brown/Sea trout Natural Resources Wales have developed their approach to include a sea trout assessment, based on compliance with conservations limits using methods equivalent to those used on salmon and first used on sea trout in 2016. Of the 33 main sea trout rivers in the study, 29 had stocks assessed as 'At Risk' or 'Probably At Risk' and only 4 assessed as 'Probably not at Risk'. There has been a marked decline in stocks across Wales, with sea trout in south Wales giving the most cause for concern.	Brown/Sea trout The most recent SEWBReC data search for the County Borough includes 121 records for brown/sea trout between 1960 and 2009. The 'Sea trout stock performance in Wales' report (NRW) examines sea trout stock performance on the 33 principal sea trout rivers in Wales for 2018. On the River Taf the trend in catch and release statistics is assessed as 'Uncertain'. The current compliance in 2018 is assessed as 'At risk' and projected compliance for 2023 is also assessed as 'At risk'.	Liaise with South East Wales Rivers Trust (SEWRT) for advice and provide support on suitable actions to assist the recovery of Brown/Sea trout stocks on rivers within MTCBC, for example: o Catch-and-Release fishing o Creation of artificial spawning beds o Fish pass construction o Weir removals o Habitat restoration Welsh Government has asked Natural Resources Wales to compile a Plan of Action (PoA) for Salmon and Sea trout – this will set out all current work being undertaken by various parties to combat the issues impacting on fish stocks as well as identify any gaps in the information that can be filled and new actions that can be taken. The PoA will be considered and recommended actions undertaken where possible and appropriate.
Reptiles and Amphibians [records for MTCB cross referenced with Schedule 7 species] o *Adder (NB no records held for adder at SEWBReC)* o Common lizard o Grass snake o Slow-worm o Common toad o Great crested newt	Reptiles There are five native (terrestrial) reptile species in Wales (sand lizard, common lizard, slow worm, grass snake, adder). In Britain, all species have declined due to the loss of natural habitats, largely due to human activities. Adders, slow worms, grass snakes and common lizards are protected against killing and injuring under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). This legislation makes it illegal to intentionally kill or injure a common reptile. As a result, reptiles must be removed from areas of development and relocated onto suitable release sites before any site works can commence.	Reptiles The most recent SEWBReC data search for the County Borough includes 129 records for reptiles. This included 56 for common lizard (from 1977-2019), 5 for grass snake (from 1993-2016) and 68 for slow worm (from 1994-2019). The most recent SEWBReC data search for the County Borough includes no records for adder, however, there is ample suitable habitat within the County Borough boundary and so the dearth of records can be attributable to a lack of survey work rather than a lack of presence. There have been reptile/amphibian surveys at: o Taf Bargoed Park o Bedlinog Park o Cyfarthfa Park o Taf Fechan Nature Reserve o Pontygwaith Nature reserve o Gethin Woodlands (bottle trapping) o Ffos y fran – GCN (Miller Argent)	(a) – see 'Native Woodland' (b) – see 'Native Woodland' (c) – see 'Native Woodland' (d) – see 'Native Woodland' (e) – see 'Native Woodland' (f) – see 'Semi-natural Grassland' (g) – see 'Semi-natural Grassland' (h) – see 'Wetland' (i) – see 'Wetland' (j) – see 'Wetland' (k) – see 'Inland Rock' (l) – see 'Mineral Spoil' (m) – see 'Urban' (n) – see 'Urban' (o) – see 'Forestry' (p) – see 'Ffridd' (q) – see 'Linear Features'

			(u) Slow-worm - Promotion, education, surveying, habitat creation and monitoring NRW have provided £7,000 from their 'Vital Nature Fund' towards improvement works at Webber's Pond, in Gethin Woods in the west of the County Borough. As part of this scheme, great crested newt surveys are proposed at the pond.
	Amphibians There are six native amphibian species in Wales (great crested newt, smooth newt, palmate newt, common toad, common frog. They have declined in recent decades as ponds have disappeared or become polluted or acidified. Therefore, pond restoration and creation (even in residential gardens) will help to halt and then reverse this trend. The common frog, common toad, common newt, and palmate newt receive limited protection under the Wildlife and Countryside Act 1981 (as amended), making it illegal to sell or trade them. The great crested newt (and natterjack toad) is fully protected under the Conservation of Habitats and Species Regulations 2017 as European Protected Species. It is illegal to: o Deliberately capture, injure, kill, or disturb either species, o Intentionally or recklessly obstruct access to any structure/place used for shelter or protection, or o Damage or destroy a breeding site or resting place.	Amphibians The most recent SEWBReC data search for the County Borough includes 351 records for amphibians. This included 77 for common toad (from 1972-2019) and 115 for great crested newt (from 1800-2018). The County Borough supports several meta-populations of great crested newt, with many of these found within mineral spoil habitats. As part of the Ffos-y-Fran Land Reclamation Scheme, there is an area of land referred to as the Central Ecological Area that includes an amount of wetland habitat (e.g., two large ponds and a number of small watercourses draining across the site). Translocation of GCN from the working area has been undertaken along with the creation of additional breeding ponds. There have been reptile/amphibian surveys at: o Taf Bargoed Park o Bedlinog Park o Cyfarthfa Park o Taf Fechan Nature Reserve o Pontygwaith Nature reserve o Gethin Woodlands (bottle trapping) o Ffos y fran – GCN (Miller Argent)	Great crested newt - support legislative protection. Great crested newt – Ffos-y-Fran Restoration Strategy (ongoing).
Invertebrates [records for MTCB cross referenced with Schedule 7 species] o Grey dagger, knot grass, flounced		Invertebrates The most recent SEWBReC data search for the County Borough includes 3578 records for 256 species of invertebrates from 1835 to 2019.	(a) – see 'Native Woodland' (b) – see 'Native Woodland' (c) – see 'Native Woodland' (d) – see 'Native Woodland' (e) – see 'Native Woodland'

chestnut, brown spot pinion, beaded chestnut, green brindled crescent, ear moth, mouse moth, a mining bee, dusky brocade, garden tiger, centre barred sallow, pearl-bordered fritillary, small pearl-bordered fritillary, **marsh fritillary**, minor shoulder-knot, mottled rustic, latticed heath, small heath, goat moth, small blue, small square spot, small phoenix, dusky thorn, august thorn, grey mountain carpet, gallium carpet, dingy skipper, autumnal rustic, the spinach, garden dart, white-line dart, double dart, narrow-bordered bee hawk-moth, ghost moth, grayling, the rustic, rosy rustic, wall brown, a cranefly (x2), brindled beauty, v-moth, dot moth, an oil beetle, powdered quaker, dark spinach, grass rivulet, white letter hairstreak, white-letter hairstreak, shaded broad-bar, white ermine, buff ermine, the anomalous, hedge rustic, feathered gothic, blood-vein, the cinnabar, oak hook-tip, sword-grass, **white-clawed freshwater crayfish**	*Pollinators:* Pollinators are a vital part of ecosystems within Wales. Honeybees and other insect species (e.g., bumblebees, solitary bees, parasitic wasps, hoverflies, butterflies, moths and certain beetles) are important pollinators for a range of wild flowers and crops and help to improve productivity of pasture systems to benefit livestock grazing. The value of pollinators to UK agriculture is >£690 million annually. In 2011 the value of honey production in Wales was >£2 million and in 2017 there were 3,366 registered beekeepers in Wales. The main threats to pollinators include habitat loss, environmental pollution, climate change and invasive non-native species (INNS). In 2013, an 'Action Plan for Pollinators (APP) in Wales' was launched outlining a strategic vision to halt and reverse pollinator decline in Wales. 2018: The Action Plan was updated by members of the Pollinator Task Force to reflect: o The Bee Friendly initiative o The UK National Pollinator Monitoring Scheme o Bee health policy which takes into account the risks from an Asian Hornet outbreak o The ongoing and new work by APP Task Force members and new requirements arising from the Well-being of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016. B-Lines is an initiative set up by Buglife. B-Lines are a series of 'insect pathways' running through our countryside and towns, along which restoration and creation of a series of wildflower-rich habitat stepping stones is being undertaken. Buglife has mapped B-Lines across large areas of Wales and is working with local communities, councils, businesses, landowners and farmers to restore and create wildflower-rich areas across this network (https://www.buglife.org.uk/b-lines-hub/wales). 2016: Bee Friendly – a new initiative aimed at communities and community organisations, schools, public bodies, town and community councils, businesses, universities and colleges etc. Despite the name, the scheme is relevant to all pollinators and not just bees.	*Pollinators*: o Pollinator tower installed in Taf Bargoed park along with giant bug house. o Giant bug house installed at Cyfarthfa park o Various verges/high banks planted throughout Borough with pollinator friendly plants/shrubs/trees., with the help of MVH, KWT and Groundwork. o Bee friendly workshops held at several primary schools within Borough. o Coal spoil sites in MTCB support mosaics of habitats and can be flower-rich and therefore perfect for pollinators.	(f) – see 'Semi-natural Grassland' (g) – see 'Semi-natural Grassland' (h) – see 'Wetland' (i) – see 'Wetland' (j) – see 'Wetland' (k) – see 'Inland Rock' (l) – see 'Mineral Spoil' (m) – see 'Urban' (n) – see 'Urban' (o) – see 'Forestry' (p) – see 'Ffridd' (q) – see 'Linear Features' (v) Promote and create pollinator insect habitats and food sources
	Butterflies and moths: In general terms butterflies are day-flying and moths are night-flying, however, in Wales, there are as many day-flying moths as there are butterflies. Butterflies and moths (and their larvae) are essential for the functioning of ecosystems. They are a food source for a range of other species (e.g., birds, bats, amphibians and other insects) and they are important pollinators. Species distribution changes have also helped to predict the impact of climate change. In Wales, there are 42 species of butterfly and >1700 species of moth. In addition, there are many migrant species (e.g., the painted lady butterfly and the humming-bird hawkmoth. There has been a significant decline in abundance and range of >66% of butterfly and moth species with some species only down to a few sites in Wales, the brown fritillary. The Section 7 list of Species of Principle Importance in Wales (Environment (Wales) Act 1981) includes 14 butterfly and 35 moth species that require conservation action in Wales. Nine moth species are likely to be extinct in Wales. Butterfly Conservation Wales (BCW) works with a wide range of partners to manage key sites for butterflies and moths. For example, initiatives to save the last 10 remaining pearl-bordered fritillary sites in Wales are being undertaken by Montgomeryshire Wildlife Trust, The National Trust and Natural Resources Wales. The UK Butterfly Monitoring Scheme helps to assess changes in butterfly and moth abundance over time and to create a Butterfly Index for Wales.	o 2013+: Several 'moth nights' held at Taf Bargoed Park with the support of Glamorgan Moth Club o 2013+: Butterfly count taken part held at both Cyfarthfa Park and Taf Bargoed Park o Elm trees planted throughout Borough for white letter hairstreak butterfly	

o **Marsh fritillary**	Marsh fritillary One of the most rapidly declining butterflies in Europe. Its conservation is contingent core populations and effective management. The species requires extensive habitats or habitat networks for its long-term survival. The butterfly is found in a range of habiats in which its larval food plant, devil's-bit scabious occurs. An up-to-date record of marsh fritillary distribution in Wales is produced by Butterfly Conservation Wales (BCW). Each population is surveyed at least once every five years as part of the Wales Marsh Fritillary Surveillance Programme (established by BCW in 2012 in partnership with NRW). Annual larval web counts of key populations (21 as in 2016, but none in Merthyr Tydfil County Borough) are undertaken to calculate, not only site-level trends, but also those on a national level. The Welsh stronghold in 2016, with the highest web index was Rhos Glyn-yr-helyg in Cardiganshire. At a Wales-level (as of 2016) there was an overall (non-significant) decline in marsh fritillary numbers. The marsh fritillary is protected under: o Schedule 5 of The Wildlife and Countryside Act 1981 (as amended) o Section 7 of The Environment (Wales) Act 2016 (listed as priority species in Wales)	Marsh fritillary The most recent SEWBReC data search for the County Borough includes 21 records for marsh fritillary from 1500 to 2018. The records are found in the north west of the County Borough. NB there are many more records for devil's bit scabious (larval food plant) that are more widely distributed within the County Borough. Therefore, there is suitable habitat for expansion of the marsh fritillary population.	2019 (September): marsh fritillary larval web surveys undertaken as part of the A465 dualling project.
o **White-clawed freshwater crayfish**	White-clawed crayfish Britain's only freshwater crayfish. In decline largely due to disease introduced by the invasive North American Signal Crayfish. Other issues include climate change, competition, pollution and habitat degradation. In the last 10 years, numbers worldwide have suffered an 80% decline. Without intervention, the species could become extinct in mainland Britain within the next 20-30 years. A Welsh conservation programme has for the first time seen a captive-bred population spawning in the wild for the first time. Experts from NRW released animals in a tributary of the River Irfon near Builth Wells between 2012 and 2014. Up until 2018, >5000 captive-reared crayfish have been released into carefully selected 'Ark' sites in Wales. The project is part of wider work taking place to improve water quality in Welsh rivers. The white-clawed freshwater crayfish is protected under: o Schedule 5 of The Wildlife and Countryside Act 1981 (as amended) o Section 7 of The Environment (Wales) Act 2016 (listed as priority species in Wales)	White-clawed crayfish The most recent SEWBReC data search for the County Borough includes records of white-clawed crayfish within MTCB. 1987: one record from the Nant-Ddu near the Afon Taf Fawr and one record in the Afon Taf Fechan. In 1989, 100 adults were introduced (into the Afon Taf Fechan within the Cwm Taf Fechan SINC (and close to the Taf Fechan SSSI). Also in 1989, another 100 adults were introduced (from the Afon Edw) into the Afon Taf Fawr to the north of Llwyn-onn reservoir in the Brecon Beacons National Park. 2004: records of adults, sub-adults and juveniles disturbed as part of a survey on the Afon Taf Fawr, south of the 1989 re-introduction, but still north of the Llwyn-onn reservoir. 2006: one record on the Afon Taf Fawr, south of the 1989 re-introduction, but still north of the Llwyn-onn reservoir. There was another record, further south again. 2012: record on the Llwyn-onn reservoir itself (two being eaten by a great northern diver. Area was searched and another individual found). White-clawed crayfish also found in Cyfarthfa Park Lake.	Liaise with South East Wales Rivers Trust regarding surveying for white-clawed crayfish near the records on the Afon Taf Fechan and within Cyfarthfa Park Lake.

<table>
<tr>
<td>Vascular Plants
[records for MTCB cross referenced with Schedule 7 species]
o Cornflower
o Fragrant orchid
o Stag's horn clubmoss
o Lesser butterfly orchid
o Small white orchid
o Ley's whitebeam
o Marsh stitchwort
o Globe-flower
o Wood bitter vetch</td>
<td><u>Vascular Plants</u>
2008: The Welsh Vascular Plant Red Data List (Dr Trevor Dines, Plantlife Wales - https://www.plantlife.org.uk/application/files/8514/8155/4086/A_Vascular_Plant_Red_Data_List_for_Wales.pdf) provides scientifically robust data for selection of species of conservation concern in Wales.

The standard International Union for Conservation of Nature (IUCN) Red Data List Categories were used in order to more easily draw comparisons between taxa on the Welsh and GB Red Data Lists – see table below.

<table>
<tr><th></th><th colspan="2">Great Britain</th><th colspan="2">Wales</th></tr>
<tr><th></th><th>No. of taxa</th><th>% of total</th><th>No. of taxa</th><th>% of total</th></tr>
<tr><td>Extinct (EX+EW+RE)</td><td>18</td><td>1.0</td><td>38</td><td>2.6</td></tr>
<tr><td>Critically Endangered (CR)</td><td>32</td><td>1.9</td><td>50</td><td>3.4</td></tr>
<tr><td>Endangered (EN)</td><td>82</td><td>4.7</td><td>64</td><td>4.4</td></tr>
<tr><td>Vulnerable (VU)</td><td>213</td><td>12.3</td><td>142</td><td>9.7</td></tr>
<tr><td>Near Threatened (NT)</td><td>95</td><td>5.5</td><td>28</td><td>1.9</td></tr>
<tr><td>Data Deficient (DD)</td><td>39</td><td>2.3</td><td>18</td><td>1.2</td></tr>
<tr><td>Least Concern (LC)</td><td>1248</td><td>72.3</td><td>1127</td><td>76.8</td></tr>
<tr><td>Total</td><td>1727</td><td></td><td>1467</td><td></td></tr>
</table>
</td>
<td><u>Vascular Plants</u>
The most recent SEWBReC data search for the County Borough includes 7,373 records for 364 species of vascular plant from 1876 to 2019.

In MTCB there are three species within the data list category 'Critically Endangered':
o Rigid buckler fern
o Ley's Whitebeam
o Thyme-leaved speedwell

Ley's Whitebeam is Wales' rarest tree species. The National Botanic Garden of Wales is the lead Conservation Body for the species https://botanicgarden.wales/living-attractions/leys-whitebeam/</td>
<td>(w) Ley's Whitebeam - promotion, education, surveying, habitat creation and monitoring

(e) – see 'Native Woodland'
(k) – see 'Inland Rock'</td>
</tr>
<tr>
<td>Lichens
[when cross referenced with Schedule 7 species there were no records for MTCB]</td>
<td><u>Lichens</u>
For its unit area, Wales has the highest diversity of lichen species in the world. They are found on a range of substrates in a variety of habitat types. Examples include:
o tree bark of
– semi-natural deciduous woodland
– parkland trees
o rocks in the Welsh uplands and at the coast
o soil
o sand
o dune-slacks
o church walls and gravestones
o gateposts
o spoil at abandoned lead mines in mid-Wales

Threats include:
o air pollution from
– industry
– traffic
o intensive farming
o felling of trees
o intensive reclamation of old metal mines

2010: A Lichen Red Data List for Wales was produced by Plantlife with assistance from the British Lichen Society, the Countryside Council for Wales (now Natural Resources Wales) and the National Museum of Wales.

The standard International Union for Conservation of Nature (IUCN) Red Data List Categories were used in order to more easily draw comparisons between taxa on the Welsh and GB Red Data Lists – see table below.

<table>
<tr><th></th><th>Great Britain</th><th>Wales</th></tr>
</table>
</td>
<td><u>Lichens</u>
The most recent SEWBReC data search for the County Borough includes 117 records for 48 species of lichen from 1971 to 2018.

The majority of the lichen records within MTCB are for species in the data list category 'Least Concern'. There are no records for species in the category 'Critically Endangered', two species within category 'Near Threatened (NT)' and two species within category 'Vulnerable (VU)'
o Tuckermannopsis chlorophylla (NT)
o Microbilimbia pilularis (NT)
o Peltigera polydactylon (VU)
o Usnea articulata (VU)</td>
<td>(a) – see 'Native Woodland'
(b) – see 'Native Woodland'
(c) – see 'Native Woodland'
(d) – see 'Native Woodland'
(e) – see 'Native Woodland'
(f) – see 'Semi-natural Grassland'
(g) – see 'Semi-natural Grassland'
(h) – see 'Wetland'
(i) – see 'Wetland'
(j) – see 'Wetland'
(k) – see 'Inland Rock'
(l) – see 'Mineral Spoil'
(m) – see 'Urban'
(n) – see 'Urban'
(o) – see 'Forestry'
(p) – see 'Ffridd'
(q) – see 'Linear Features'</td>
</tr>
</table>

		No. of taxa	% of total	No. of taxa	% of total		
	Extinct (EX) GB, (EW+RE) Wales	31	2.0	22	2.0		
	Critically Endangered (CR)	42	2.0	28	2.0		
	Endangered (EN)	34	2.0	24	2.0		
	Vulnerable (VU)	105	6.0	156	12.0		
	Near Threatened (NT)	205	11.0	131	10.0		
	Data Deficient (DD)	249	14.0	152	12.0		
	Least Concern (LC)	1168	64.0	803	61.0		
	Total evaluated	1834		1467			
Bryophytes [records for MTCB cross referenced with Schedule 7 species] o Lesser squirrel-tail moss	Bryophytes Wales supports c. 0.75% of all British bryophyte species. Examples of bryophytes in Wales include: o lowland mosses of the Wye Valley woodlands and Gower coast montane species of Snowdonia's cliffs o liverworts of raised bogs in west Wales o drought-tolerant rarities of Stanner Rocks in Radnorshire. Threats include: o air pollution o road and housing developments o constantly changing farming practices o habitat loss o spread of rhododendron o climate change. 2011: A Bryophyte Red Data List for Wales was produced by Plantlife with assistance from the British Bryological Society and the Countryside Council for Wales (now Natural Resources Wales). The standard International Union for Conservation of Nature (IUCN) Red Data List Categories were used in order to more easily draw comparisons between taxa on the Welsh and GB Red Data Lists – see table below.					Bryophytes The most recent SEWBReC data search for the County Borough includes 843 records for 157 species of bryophyte from 1958 to 2019. There are no records for species in the category 'Critically Endangered'. 2006: Cwm Taf Fechan Woodlands SSSI Bryophyte Survey undertaken by CCW (now NRW) '*Cwm Taf Fechan Woodlands supports a rich assemblage of calcicolous mosses and liverworts typical of humid wooded limestone. This includes seven Nationally Scarce bryophytes (following the 2006 revision of the Nationally Scarce list) and 18 Locally Rare species. The site is one of only three known sites for the bryophytes of humid wooded limestone in the Mid and South Glamorgan AoS and is the only one currently known in the vice-County of Glamorgan. Bryophytes should, therefore, be considered as an individually qualifying feature of the SSSI.*' Lesser squirrel-tail moss is an epiphyte of base-rich bark (most frequently sycamore and ash). There are confirmed extant populations in Laugharne (Carmarthenshire) and in Vaynor (on the border of Brecon Beacons National Park Authority, mostly on ash trees within a hedge).	
		Great Britain		Wales			
		No. of taxa	% of total	No. of taxa	% of total		
	Extinct (EX+RE)	25	2.0	26	3.0		
	Critically Endangered (CR)	16	1.0	18	2.0		
	Endangered (EN)	40	4.0	64	8.0		
	Vulnerable (VU)	87	8.0	64	8.0		
	Near Threatened (NT)	78	7.0	12	1.0		
	Data Deficient (DD)	19	2.0	15	2.0		
	Least Concern (LC)	845	76.0	651	77.0		
	Total evaluated	1110		850			

Fungi [records for MTCB cross referenced with Schedule 7 species] o a fairy club / violet coral o big blue pink gill o dark purple earthtongue o earthtongue	Fungi There are >15,000 species of fungus in the UK. The UK (Wales and Scotland in particular) have internationally important Waxcap grassland fungi habitats – characterised by colourful waxcaps, but including other species, e.g., coral fungi and earthtongues. Habitats rich in grassland fungi are susceptible to change. Threats include: o application of fertilisers o ploughing o cessation of grazing o scrub encroachment o tree planting o development	Fungi The most recent SEWBReC data search for the County Borough includes 174 records for 19 species of fungi from 1978 to 2017. Cwm Glo a Glyndyrus SSSI Citation for a range of habitats which includes "outstandingly diverse" waxcap fungi assemblage. In October 2017 a critically endangered species of rust fungus *Puccinia pimpinellae* was recorded in the Wood Pasture North compartment of Cwm Taf Fechan Woodlands SSSI – according to the Rust Fungus Red Data List and Census Catalogue for Wales. R G Woods et al. 2015. There are only 4 sites where this rust species has been recorded in Wales.	
Stoneworts [when cross referenced with Schedule 7 species there were no records for MTCB]	Stoneworts A unique group of complex algae that normally grow in clear and unpolluted fresh or brackish water. Thirty species are found in the UK. Stoneworts are excellent water quality indicators as most are unable to tolerate significant levels of phosphates and nitrates from nutrient pollution. In recent years, stoneworts have suffered a severe decline due to nutrient enrichment, eutrophication of water bodies and from the loss of traditional management practices that kept fenland ditches and small ponds open rather than overgrown.	Stoneworts The most recent SEWBReC data search for the County Borough includes a single record for great tassel stonewort (June-July 1994).	
Invasive Non-Native Invasive Species (INNS), Pests and Pathogens	INNS are plants, animals, fungi and microorganisms introduced to parts of the world where they would not naturally exist. They can have significant negative impacts, for example, causing damage to the environment, the economy, human health. The cost to the UK economy has been estimated at an approximate annual figure of £1.8 billion. *'Invasive Japanese Knotweed and buddleia impacting on structures and landscapes, especially post-industrial'.* NRW Landscape Area Statement	In Wales, INNS already cost approximately £125 million to tackle annually (Williams, 2010). The Wildlife and Countryside Act (1981) as amended, makes it an offence to release or allow to escape into the wild any animal, plant or micro-organism not ordinarily resident in the UK (as listed in Schedule 9 of the Act). Examples include species such as Japanese knotweed (*Fallopia japonica*) and Himalayan balsam (*Impatiens glandulifera*). In addition to the Wildlife and Countryside Act (1981) as emended, Wales also has commitments under the GB Invasive Non-native Species Strategy (2015) - http://www.nonnativespecies.org/index.cfm?sectionid=55. The species causing most impact within MTCBC include Japanese Knotweed, Himalayan balsam and Signal Crayfish. MTCBC has mapped all known records showing the distribution of Japanese knotweed within the County Borough.	
	Woodland diseases	Woodland diseases MTCB has been impacted by *Phytophthera ramorum*.	(x) Monitor, record and sustainably manage Invasive species on

	There have been significant impacts on woodland habitat by increasing pressures from pests and pathogens, with outbreaks of two quarantine diseases affecting tree species in Wales *(Phytophthora ramorum and Chalara fraxinea)* since 2010. There are also a small number of non-quarantine pests and diseases affecting tree species in Wales, such as *Phytophthora laterali.* By the end of 2015, approximately 36% of larch in Wales were infected with *Phytophthora ramorum* and *Chalara fraxinea* had been located at 100 individual sites across Wales. *Chalara fraxinea* is now a major environmental threat. Welsh hedgerows contain a large proportion of ash, both in the shrub layer and as standard trees. Loss of ash trees will create gaps in hedgerows as well as removing a significant proportion of mature trees from the landscape. This is also likely to have a major impact on the other species that depend on ash trees. Risks of pests and diseases are likely to increase in the future due to predicted changes in weather patterns and climate. Diversification of woodlands is key to improving resilience.	For example, in Gethin Woods Natural Resources Wales have been involved in restocking parts of the woodland at Gethin Woods that was felled to tackle *Phytophthera*. *Phytophthora ramorum* is also under management at Cyfarthfa Park. A Plant Health Management Plan (for *R. ramorum*) is in place at the park overseen by the Animal & Plant Health Agency (the plan includes the regular removal of *Rhododendron ponticum*). *Chalara fraxinea* has already been identified around Borough and reported to the Animal & Plant Health Agency (DEFRA) In the future *Chalara fraxinea* (Ash Dieback) is likely to be a significant risk to ash stocks within MTCB and action will be required. The Welsh Sentinel Site Programme is a project being developed by the Animal & Plant Health Agency (APHA) in conjunction with Welsh Government. A network of publically accessible sites (one per County) will be regularly monitored to act as an early warning for tree disease. APHA inspectors will visit twice a year, but the aim is also to encourage and facilitate members of public to report any changes or concerns. Cyfarthfa Park has been put forward as the Sentinel site for MTCB.	public land targeting those causing/most likely to cause damage to human health and property: encourage biological predators by habitat management. (b) – see 'Native Woodland Work with the Animal & Plant Health Agency (APHA) at Cyfarthfa Park on: o The Plant Health Management Plan o The Welsh Sentinel Site Programme
○ **Turkey Oak**	<u>Turkey Oak</u> A deciduous oak tree, originally native prior to the last ice-age and then re-introduced in the eighteenth century as an ornamental tree. There are several features that distinguish it from native oak species (leaf lobes more pointed, leaf buds have whiskers, acorn has a 'furry' cup). By 1735, it was widely cultivated in Britain and first recorded in the wild in 1905. Since this time, the population has increased significantly, colonising sandier, acid soils and displacing native vegetation. Turkey oak is a host to the Knopper gall wasp (*Andricus quercuscalicis*). This particular knopper gall wasp requires two species of oak to complete its lifecycle: pedunculate oak (*Quercus robur*) and turkey oak (*Quercus cerris*). In spring, female wasps emerge from vents in previous year's galls. The females then insert eggs in small conical galls that develop on the male catkins of the turkey oak. Within the galls, a sexual generation of male and female wasps is established. When mature the wasps emerge and mate. The males then die and the females migrate to pedunculated oaks and deposit eggs into plant buds and acorns. When the second generation of grubs has hatched, they secrete chemicals causing the plant buds and acorns to turn completely into galls. The galls then thicken in the autumn and fall from the tree. The grubs overwinter and pupate within the galls, emerging as adult females the following spring. Turkey oak is not as valuable to native wildlife as pedunculate and sessile oaks, however, their catkins provide a source of pollen for pollinators and the acorns are a food source for birds and small mammals. The trees also represent a nesting and roosting resource. Impacts Turkey oak is host to the gall wasp whose larvae damage the acorns of the native pedunculate oak. This affects the fertility of the pedunculate oak and reduces the viability of the acorns.	<u>Turkey Oak</u> The most recent SEWBReC data search for the County Borough includes 14 Turkey Oak records from 1960 to 2010. Turkey Oak present at Cwm Taf Fechan SSSI.	(a) – see 'Native Woodland' (x) – see 'INNS' Tree Preservation Orders (TPOs) reviewed for presence of turkey oak. TPOs should be lifted to allow removal.

	Another reason for the success of turkey oak in the UK may be to do with the tannin content of their acorns. The acorns of native oaks (pedunculate and sessile) ripen within six months, whereas the acorns of turkey oak take 14 months. This means the turkey oak acorns develop relatively more tannin. There is evidence to show that hoarding animals (e.g., squirrels, rats, jays) prefer to eat more low tannin acorns, but cache more high-tannin acorns. Control and management Turkey oak should be selectively managed out of woodland areas. Any Tree Preservation Orders (TPOs) allocated to turkey oak trees should be lifted to allow removal of this invasive species.		
○ **Grey Squirrel**	Grey Squirrel The grey squirrel (native to North America) was first released into the UK in 1876 by the Victorians. Today, grey squirrels are now present in most woodland in the UK and their introduction is the main factor in the decline of the native red squirrel over the past century. The main reasons for the decline are: o competition for food and shelter o transmission of the squirrelpox virus (*Parapox virus*) Grey squirrels have replaced red squirrels over almost all of their English and Welsh ranges. Impacts Grey squirrels can have a considerable impact on biodiversity and woodland ecosystems and cause damage to woodland habitats (broadleaved and conifer). Bark stripping can cause callousing around wounds and facilitate fungal infection entry resulting in the death of a tree, staining of timber, or rot. Grey squirrels are a significant INNS in Wales. The economic cost of grey squirrel management and damage to the GB forestry sector is estimated to be £914,500 per year. The grey squirrel is currently listed on the Wales Biodiversity Partnership INNS Group's Priority Species for Action in Wales as a Long-term Management Priority Species. There is also a Grey Squirrel Management Action Plan for Wales (November 2018). Control and management o Live trapping (followed by cranial dispatch) o Drey poking (followed by shooting) o Spring trapping (non-target species should not have access) o Shooting (pilot schemes using baiting stations and coordinated shooting efforts and being tested) Culling grey squirrels has its opponents however and there is evidence to show that recovery of grey squirrel numbers can take place within 10 weeks of intensive culling programs. A study published in 2014 (Sheehy, E. & Lawton, C. Biodivers Conserv (2014) 23: 753. https://doi.org/10.1007/s10531-014-0632-7) provided the first evidence of a grey squirrel population crash in the Irish midlands, suggesting that European pine marten abundance may be a critical factor in the grey squirrel's success or failure as an invasive species. It is though that red squirrels are small and light enough to get to the ends of branches, where martens cannot follow. Grey squirrels are heavier and cannot use this avoidance technique.	Grey Squirrel The most recent SEWBReC data search for the County Borough includes 111 Grey Squirrel records from 1960 to 2019. In April 2013, the following strudy was undertaken by students at the University of South Wales (Glamorgan): '*Estimating grey squirrel (*Sciurus carolinensis*) abundance and distribution in Cyfarthfa Park and determining methods of control in relation to bark stripping to reduce squirrel numbers.*'	(c) – see 'Native Woodland' (d) – see 'Native Woodland' (x) – see 'INNS'
○ **Common Rhododendron**	Common rhododendron *Rhododendron ponticum* was introduced into the UK via Gibraltar in 1763 and is now an established INNS.	Common rhododendron	(b) – see 'Native Woodland' (c) – see 'Native Woodland'

	Impacts A large shrub that can grow to 8m, it will spread to fill the space available to it and can outcompete and displace all other vegetation. Control and management Control methods for the management and disposal of *R. ponticum* include the following: o Mechanical clearance: heavy machinery to dig up roots and crush branches. Must be followed by repeated herbicide applications for at least two years to prevent re-sprouting and recolonization. o Chemical control: spray cut stems with chemicals. o Bury contaminated material deep within a landfill site. o Disposal through production of 'biochar'. o Biological control - there are few natural enemies associated with *R. ponticum* even in its native range. *Rhododendron ponticum* is one of the principle sporulating hosts of *Phytophthora ramorum* and *P. kernoviae* (both fungus-like pathogens that can cause severe damage and mortality of trees in the UK). Eradication and control of rhododendron is currently one of the most effective control measures to reduce the spread of these pathogens and disease into new areas.	The most recent SEWBReC data search for the County Borough includes 9 Common rhododendron records from 1971 to 2018. *Rhododendron ponticum* is being regularly removed as part of the Plant Health Management Plan (for *R. ramorum*) in place at Cyfarthfa Park.	(x) – see 'INNS' See Invasive Non-Native Invasive Species (INNS), Pests and Pathogens – Woodland diseases.
o **Japanese Knotweed**	<u>Japanese Knotweed</u> Japanese knotweed (JKW) is the UK's most invasive non-native plant and was first introduced to the UK from Japan in middle of the 19th Century by the Victorians. The main pattern of distribution was through purposeful planting when sold commercially by nurseries. Evidence from the 1960s shows that JKW was deliberately planted in the coal-mining valleys of Wales to stabilise loose soil. Impacts JKW can colonise most habitats, e.g., riverbanks, woodland, grassland. It reproduces from small fragments of rhizome or stem and can grow vigorously at more than a metre a month. In its native home (Japan, Northern China, Taiwan and Korea), a range of different insects control the growth of JKW. In the UK, however, these insects are not found and JKW poses a significant threat to biodiversity and natural ecosystems. It grows in dense clumps, shading out nearby plants, in addition to releasing a chemical substance that inhibits their growth. This can have detrimental effect on the diversity and abundance of insects and wildlife in the area. JKW growing along watercourses, can possibly affect aquatic life. Aquatic species are not capable of processing the leaf litter of JKW as they are with many native species of vegetation. JKW can cause serious environmental issues, e.g., exacerbating flooding by limiting the capacity and free flow of water. During winter, knotweed usually lies dormant, leaving riverbanks exposed and causing erosion. In addition to its effects on wildlife and environmental issues, JKW was have significant impacts on walls, pavements, tarmac, drainage and the structural foundations of buildings. The total annual cost of JKW to the UK economy is estimated at £166 million (Williams et al, 2010). Control and management JKW must not be strimmed, flailed or mown as this increases the risk of spreading the plant and committing an offence. There are a range of methods that can be used to treat and control JKW.	<u>Japanese Knotweed</u> The most recent SEWBReC data search for the County Borough includes 241 Japanese Knotweed records from 1960 to 2018. Occurrences of JKW have been mapped within the County Borough on a GIS layer. New reports of JKW are regularly added to the layer. This resource can be used as a reference for the formulation of a JKW treatment and control strategy for and to inform Planning related matters. JKW presence can have implications for housing. Mortgages and/or planning permission can be refused if JKW is identified in the immediate vicinity. The control of JKW is the responsibility of the landowner. Waste from JKW is defined as 'controlled waste' under the Environmental Protection Act 1990 and must be disposed of at a suitably licensed waste site and carried by a registered waste carrier. As a significant land owner MTCBC has a duty of care to ensure JKW is not spread from its own land to that of neighbouring land owners.	(x) – see 'INNS' The Parks department undertakes a level of control county-wide by spraying with approved herbicides when the plants are actively growing.

	○ Cutting and digging – not an effective method as almost impossible to remove all of the underground rhizomes. Any remaining will produce more plants. The plants cut or dug up constitute controlled waste and must be carefully disposed of. ○ Herbicide application – glyphosate-based herbicides are generally used to treat JNW. If correctly applied, at the appropriate time of year and repeatedly over 2 to 3 years, eradication is possible. Professional glyphosate products are required and must only be used by suitably qualified individuals who hold the necessary National Proficiency Test Council certificates of competence. ○ Glyphosate must be applied in late summer/autumn after flowering. Herbicide use in water, within a protected site, or near a water abstraction, requires prior written approval from NRW.		
○ **Himalayan Balsam**	Himalayan Balsam Himalayan balsam, as its name suggests, is native to the Himalayas (in India and Pakistan) and following its introduction into the UK in 1839 by the Victorians has become naturalised. It is one of the UK's most widespread invasive species, colonising riverbanks, waste land, damp woodland, roadsides and railways growing in dense monocultures. It has become the largest annual plant in the UK and can grow to a height of c.2.5m from seed in a single season. Himalayan balsam is a good source of nectar and flowers over many months and late into the year (June – October). After flowering the plant forms seed pods that explode when disturbed, throwing the seeds up to 7m away. Impacts ○ Successful competition with native plant species for space, light, nutrients and pollinators, thereby reducing native biodiversity. In addition, pollinators attracted to Himalayan balsam flowers are being drawn away from pollinating other native species in the wider countryside. ○ Die-back in the winter, where it occurs in riparian systems, can leave sections of riverbank bare and vulnerable to erosion, and the dead plant material can increase the risk of flooding by blocking, e.g., drains or small rivers and streams. Control and management ○ Physical control – ▪ Pulling ▪ Excavating ▪ Cutting ▪ Suppressing with mulch NB pulling, excavating or strimming should be undertaken regularly for about 3 years. Cutting should be cut below the lowest node to prevent re-flowering. ○ Chemical control – can be used if physical control is unsuccessful. Will involve treating the plant with either a contact weedkiller containing acetic acid (before flowering) or a systematic weedkiller containing glyphosate (during the early flowering stages). Spraying or stem injection can be employed, however, there are risks of overflow and leakage into nearby water will have consequences for riparian species. Biological control – A specialist natural enemy of Himalayan balsam is being introduced into two trial sites as part of a trial in South Wales during 2019 (https://www.therrc.co.uk/news/rust-fungus-tackle-%E2%80%98out-control%E2%80%99-uk-invasive). The Wye and Usk Foundation together with specialists in the Centre for Agriculture and Bioscience International (CABI) hope that an Indian rust fungus (*Puccinia komarovii var. Glanduliferae*) will be able to have an impact on the species. NB cthe fungus was first trialled by CABI in 2015 (https://www.cabi.org/Uploads/projectsdb/documents/32944/2016-001.pdf). Prior to the introduction a total of 75 plant species were tested and the results demonstrated the rust was a specialist for its host (Himalayan balsam)	Himalayan Balsam The most recent SEWBReC data search for the County Borough includes 29 Himalayan Balsam records from 1971 to 2018. The control of Himalayan Balsam is the responsibility of the landowner. Waste from Himalayan Balsam is defined as 'controlled waste' under the Environmental Protection Act 1990 and must be disposed of at a suitably licensed waste site and carried by a registered waste carrier. As a significant landowner MTCBC has a duty of care to ensure Himalayan Balsam is not spread from its own land to that of neighbouring land owners.	(x) – see 'INNS' Other actions: ○ Himalayan balsam and Himalayan knotwood pulled at Treharris Park.

	and therefore posed no threat to other native species. The rust was demonstrated to have potential as a classical biological control agent for Himalayan balsam in its invasive range.		
○ **Signal Crayfish**	Signal Crayfish The native range of the signal crayfish is North America and British Columbia. It was introduced as a food source in the 1970s and 1980s and quickly spread across much of the UK and now widespread throughout England and Wales. Known UK predators of the signal crayfish include the European otter, American mink, predatory fish (e.g., grayling, pike, perch, Atlantic salmon, brown trout, eel). Impacts o the almost complete loss of native white-clawed crayfish through the spread of disease and direct competition o burrowing into banks of waterbody causing destabilisation o predation on native fish eggs and aquatic invertebrates Detection Signal crayfish are easy to identify due to their small lobster-like appearance. This is important as distinguishing them from the threatened native white-clawed crayfish is vital. Signal crayfish are much larger than white-clawed crayfish. Their claws are bright red on the ventral surface and there is a small turquoise / white blotch on the hinge (dorsal surface). Signal crayfish are active during the day, unlike white-clawed crayfish. The presence of invasive and native crayfish can be detected via environmental DNA (eDNA) methods, even when at low abundance levels. Control and detection methods o Physical control ▪ Trapping ▪ Electroshock ▪ Drainage ▪ Barriers and dams o Biological control ▪ Natural predators ▪ Pathogens o Biocidal control ▪ Chemicals ▪ Natural substances o Autocidal control ▪ Pheromones ▪ Monosex populations ▪ RNA interference ▪ Sterile Males Release Technique (SMRT) ▪ Oral delivery ▪ Gonopods removal o Monitoring ▪ Species-distribution modelling ▪ eDNA ▪ Citizen science	Signal Crayfish The most recent SEWBReC data search for the County Borough includes just 3 Signal Crayfish records from 2011, 2012 and 2015. All records were in the north of the County Borough in the Afon Taf Fawr, Llwyn-onn Reservoir and Garwnant. Despite the low number of records held with SEWBReC, there are other instances of Signal Crayfish within the County Borough. Signal Crayfish are causing both significant structural issues on waterways within the County Borough and also impacting native species; particularly at Cyfarthfa Park lake; Gurnos Tramroad and Leat Scheduled Ancient Monument and reservoirs at the head of the Taf catchments.	(t) – see 'Fish' (x) – see 'INNS' Management of crayfish will be undertaken in 2020 at Cyfarthfa Park lake. A licence to trap and/or remove crayfish has been granted by NRW. Artificial Refuge Traps (ARTs) will be used, which are designed to catch a wide range of size classes of crayfish. ARTs mimic the natural refuges that crayfish utilise in the wild and have advantages over conventional traps, e.g., baited traps tend to be biased towards large adults, particularly males. ARTs will catch crayfish from 5mm (young of year) to 65mm (5+ years).
○ **Cotoneaster**	Cotoneaster	Cotoneaster	(a) – see 'Native Woodland'

<table>
<tr>
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<td>Wild cotoneaster (Cotoneaster cambricus) is endemic to the Great Orme peninsula in north Wales and is the only species of cotoneaster native to the British Isles.

In the UK, there are more than 100 species of cultivated cotoneaster, with just four species considered to be invasive (hollyberry, entire-leaved, small-leaved, Himalayan).

Cotoneaster species are native to Eastern Asia and were first introduced to the UK in 1824 as ornamental plants. The seeds of the plants are dispersed by birds to a wide area.

Impacts
When established, invasive cotoneaster can outcompete native flora and dominate areas creating dense thickets with extensive root systems that are difficult to remove.

Control measures
o Mechanical – pulling young seedlings and excavating the roots. All waste must be chipped or burned onsite.
o Chemical – spraying with herbicide and treating stumps of larger plants to prevent growth.</td>
<td>The most recent SEWBReC data search for the County Borough includes 17 invasive Cotonoeaster species records from 1969 to 2017. See table below for breakdown.

<table><tr><th>Cotoneaster species</th><th># records</th><th>Year(s)</th></tr><tr><td>Hollyberry</td><td>2</td><td>1997 + 2015</td></tr><tr><td>Entire-leaved</td><td>6</td><td>1969-2013</td></tr><tr><td>Small-leaved</td><td>2</td><td>1969 + 1990</td></tr><tr><td>Himalayan</td><td>7</td><td>1987-2017</td></tr></table>
Cotoneaster species are excluded from approved landscape schemes associated with new development as part of the planning application process.</td>
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<tr>
<td>o Canada Goose</td>
<td><u>Canada Goose</u>
Canada geese were originally introduced from north America to the UK (St James' Park) about 300 years ago. Following World War II, Canada geese spread across the UK and are now found throughout the country except in the north of Scotland.
They have been included on the list of non-native species of bird in the UK.

Impacts
Canada geese, particularly if present in large numbers, may cause several problems:
o Vegetation damage – grazing may damage grassland, especially on the banks of pond or lakes. Trampling can also cause damage.
o Droppings – these are unsightly on amenity grassland and may make paths slippery. They add nutrients to waterbodies (e.g., nitrate and phosphate) which can impact on water quality. Some evidence of an effect on human health if ingested.
o Physical damage – extensive areas of bare ground may be created at the water's edge and cause erosion of the banks.
o Aggression – they may become more aggressive towards people, dogs and other waterfowl during the breeding season.

Control and management
There is a range of techniques, but research has demonstrated that control measures used in isolation are unlikely to be effective; an integrated programme of management techniques is required.

Site-based management
o Exclusion from islands
o Restricting access to grazing areas
o Reducing waterbody visibility

Population-based management
o Translocation (a method no longer encouraged – transfers the problem)
o Egg-pricking, oiling or boiling
o Culling (requires a licence)</td>
<td><u>Canada Goose</u>
The most recent SEWBReC data search for the County Borough includes 167 Canada Goose records from 1970 to 2018.

Significant numbers of Canada Goose detrimentally graze newly seeded restoration grassland at Ffos-y-Fran.</td>
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○ **American mink**	American Mink American mink farms were established in the UK from the 1920s onwards. Following World War II, the industry expanded and in the 1950s, at its peak, there were c.400 'official' fur farms known in the UK. Mink were first found to be breeding in the wild in 1956 and by 1967 mink had spread into more than 50% of English and Welsh counties as well as large parts of lowland Scotland. It is a common misconception that the wild population of American mink in the UK originated from mass releases from fur farms by animal rights activists in the 1990s. In fact, mink became established decades before due to multiple escapes from fur farms all over the country. NB the fur farming industry in the UK was banned completely by the Fur Farming (Prohibition) Act 2000. Impacts American mink causes damage to native wildlife in the UK. They are predators of pheasant, partridge, water birds such as moorhen and ducks. They have impact on penned game birds and poultry and may deplete fish stocks. Mink are aggressive predators and will overkill prey. Mink also predate water vole. The water vole is one of Britain's fastest declining mammals (declined by 90% since the 1980s) and is under serious threat from both habitat loss and predation by American mink. One of the reasons for the American mink's significant impact on water vole is that female and young mink are small and agile enough to enter the burrows of water vole. Control and management There is a range of methods for killing mink. Currently the best method is the live capture of mink in a cage followed by shooting. This should only ever be undertaken by a licenced and experienced person. The mink bodies are either buried or burned. The cages used are designed to only trap the target species and must be checked at least once every 24 hours. Mink rafts (designed by The Game and Wildlife Conservation Trust) exploit the inquisitive nature of American mink. The rafts are floated on the water and have a hinged tunnel with a clay pad inside. Curious mink will climb onto the raft and walk through the tunnel (leaving footprints in the clay pad). The rafts are monitored and when it can be shown that a mink has been present in the tunnel, a trap is added to capture the mink, which may revisit the raft several times. There is evidence to show that the establishment of otter populations is likely to result in a decline in mink.	American Mink The most recent SEWBReC data search for the County Borough includes 19 American Mink records from 1977 to 2019.	(x) – see 'INNS'
○ **Montbretia**	Montbretia (*Crocosmia*) Montbretia is a hybrid species first created in France (parent plants of South African origin) and introduced to the UK in 1880 as a garden ornamental plant. In 1911 it escaped from gardens (both naturally and through garden waste disposal). It is now widespread within the UK as an invasive and is most common in western areas of England, Scotland, Wales and Ireland. Impacts Where it grows, Montbretia can become completely dominant and sometimes leads to the exclusion of native plant species. The species normally spreads by rhizome and rarely by seed. Control and management o Mechanical control	Montbretia (*Crocosmia*) The most recent SEWBReC data search for the County Borough includes 14 Montbretia records from 1985 to 2019.	(x) – see 'INNS' Other actions: o Montbretia control measurements undertaken at Treharris Park in 2019.

	▪ Excavation (all plant material and corms must be removed. If corms are broken up or left behind they can produce new plants) ▪ All material should be buried or burned onsite o Chemical control ▪ Herbicides can be used when plants are actively growing.		

Appendix III: Departmental Actions

Department	Area	Actions proposed	Measure / process / evidence
Planning and Countryside	Countryside	o Production of the Merthyr Tydfil Nature Recovery Action Plan (MTNRAP), also the Forward Plan for the Council's Section 6 duty under the Environment (Wales) Act 2016 (to be adopted by MTCBC in 2019). Submission of report to Welsh Government regarding actions undertaken to comply with the Council's Section 6 duty. o Includes past, current and future actions to be undertaken to maintain and enhance biodiversity across all functions of the Countryside Team.	1. See - Merthyr Tydfil Nature Recovery Action Plan (MTNRAP) / Section 6 Forward Plan (2018-2024), both within the main report and Appendices I – III.
	Development Control	o All pre-application advice to include ecosystem and biodiversity considerations (where relevant) o Biodiversity enhancements secured through planning permissions o Relevant applications determined in accordance with SPG 5 – Nature Conservation	1. Pre-application responses (examples provided by Development Control) 2. Application reports (examples provided by Development Control) 3. Application reports (examples provided by Development Control)
	Policy	o Using Planning obligations and Community Infrastructure Levy (CIL) to improve Open Spaces in consultation with communities	1. CIL funding is due to be considered by Cabinet (18th December anticipated) for improvements to the Shingrig, Trelewis play area scheme to provide landscaping, planting and diversification of grassland / wet area. No further schemes reliant on planning obligations / CIL funding were identified over the last 12 months.
		o Designation of an additional 4x SINCs and 2x RIGS plus the aspirational goal of 11x LNRs.	1. Additional SINCs and RIGs have been included in the Replacement LDP 2016-2031, due to be adopted in January 2020. 2. Policy protection for Local Nature Reserves has been included in Replacement LDP policy EnW3. Local Nature Reserves are designated under the National Parks and Access to the Countryside Act (1949) as amended. 3. A background paper summarising the evidence for the proposed LNRs has been prepared. This will inform the process required to formally designate LNRs (which requires for example further consultation with Natural Resources Wales). SD27 – Sites of Importance for Nature Conservation background paper June 2018 ED056 - Replacement Deposit Plan Written Statement as amended by the Matters Arising Changes (September 2019) SD52 – Local Nature Reserves background paper December 2018

		○ Integrate the biodiversity improvements within the Open Spaces Strategy into the LDP, Wellbeing Plan & corporate strategies; Survey, Record and Monitor regional quality habitat extent and quality.	1. Monitoring indicators for the existing Adopted LDP (2006-2021), specifically for policy BW16, found that there is been no loss of open space below the identified needs. Although 0.9ha of open space was lost this was considered to be justified and in accordance with the policy. 2. The indicator policy AS15 also identifies that the Parc Taf Bargoed scheme has been delivered. Monitoring for Sustainability Appraisal (SA) Objectives 7 (Built Environment) found 'Progress has been made towards meeting this SA objective, particularly in relation to improving the quality of areas regularly visited by the public'. 3. Monitoring for SA Objective 9 (Biodiversity) found that 'Further progress has been made towards meeting this SA objective, particularly in respect of the continuing trend in safeguarding the conservation value of SINCs, the creation of new habitats and the eradication of non-native species'. https://www.merthyr.gov.uk/media/5450/merthyr-tydfil-ldp-amr-2018-19-final.pdf
	Building Control	○ Raise awareness of biodiversity legislation ○ Provide biodiversity training to staff	1. Informative note regarding biodiversity legislation provided in correspondence with customers – updated to refer to Environment (Wales) Act 2016 to read as follows: ***'The Environment (Wales) Act 2016 requires Merthyr County Borough Council to seek to maintain and enhance biodiversity wherever possible within the proper exercise of its functions and in doing so, seek to promote the resilience of ecosystems. Many of our native plants and animal species are legally protected to varying degrees. For example, all bat species, great crested newts and otters are protected under the Wildlife and Countryside Act 1981 (as amended) and/or the Conservation of Habitats and Species Regulations 2017. For advice on how best to deal with such matters if encountered please contact the MTCBC Ecologist or Biodiversity Officer.'*** 2. CPD for building control staff (presentation 'Bats in Buildings' provided by Planning Ecologist).
Public Protection & Housing	Housing	○ Maximise use of existing housing, minimising the need for new housing and therefore minimising the pressure on habitats and protected species. ○ Consider the Environment (Wales) Act 2016 (biodiversity and resilient ecosystems) and protected species and habitats in relation to works associated with new housing developments, property renovation and home improvements.	1. All new social housing developments requiring planning permission will consider biodiversity and the resilience of ecosystems as part of the planning process. 2. The department offers interest free loans of up to a maximum of £250,000 (£25,000 per unit) to make long-term empty properties safe and secure to make them available for sale or rent (through the all Wales Empty Property Initiative – Houses into Homes). Additionally, there is a Home Improvement Loan (£1,000 - £25,000). Since 2016, 15 Houses into Homes Loans have been issued, but no Home Improvement Loans. NB an informative has been added to the guidance documents for both the *Houses into Homes* and the *Home Improvement Loan* schemes. This provides guidance regarding the Environment (Wales) Act 2016 and protected species and habitats that may be impacted by works associated with both schemes. 3. Additionally, a discount for empty properties for Council Tax has been removed. Measures 2, 3 above and 1 below (Environmental Health section) will help reduce the requirement for new housing schemes in the County Borough and in turn reduce the pressure on biodiversity and ecosystems.

	Environmental Health	○ Maximise use of existing housing, minimising the need for new housing and therefore minimising the pressure on habitats and protected species. ○ Pest control - policy of not destroying bees already in place. Action - relocation both for the protection of the bees whilst at the same time removing conflict with the public.	1. Outside of the Houses to Homes Loans and the Home Improvement Loans, Environmental Health has undertaken work designed to bring empty properties back into use. 2. 2x bee hives acquired and sited on a local farm. Merthyr Bees have provided bee-keeping training for a technical officer. The aim is to populate the hives with swarms taken in response to pest control calls during the summer months. A number of complaints about bees have been responded to and swarms relocated.
Legal & Governance	Legal	○ All departments to be e-mailed to remind them of their statutory duty in relation to the EWA 2016.	1. E-mail sent out to all staff by Legal in December 2019
	Scrutiny	○ Merthyr Tydfil Nature Recovery Action Plan (MTNRAP) to be scrutinised by Council.	1. To be undertaken in January 2020
Neighbourhood Services	Property and Estates	○ Implement environmental legislation ○ Evidence of benefitting biodiversity through strategic and pro-active land management, enforcement and retention of control of critical land ○ Pro-active and strategic engagement with third sector organisations to contribute to land management	1. Internal consultation correspondence – Land considered for disposal or lease is subject to consultation. This consists of a summary of the intentions and is sent to internal departments, Corporate Management Team, Corporate Leadership Team and Councillors, the purpose of the consultation is to draw out concerns, observations and opportunities to identify and manage land/property and in doing so works in conjunction to support the Environment Wales Act 2016 2. Transfer documentation and lease/licences – Data is shared with relevant departments. Additionally as a result of the consultation observations raised in connection with the Environment Wales Act 2016 may be factored/caveated within transfer documents or within Heads of Terms as part of negotiations. 3. There is an existing adopted Asset Management Plan (2014-2019) available to view on the Councils website https://www.merthyr.gov.uk/media/1881/corporate-asset-management-plan-2014-19-v2.pdf. The replacement Asset Management Plan (2020-2025) will include specific actions and references to the Environment (Wales) Act 2016.
	Highways and Engineering	○ Pro-active and strategic approach to planned maintenance and flooding ○ "Biologically friendly" engineering, flooding and highways methods considered and used where appropriate	1. The latest Flood Risk Management Plan for Merthyr Tydfil County Borough is dated 2015. The next iteration of Flood Risk Management plans are due to be consulted in December 2020 and published in December 2021. Work on the unified plan is currently ongoing with Natural Resources Wales leading and each local authority identified as having a flood risk area, making a significant contribution to the plan. 2. On January 7th 2019 Welsh Government implemented Schedule 3 of the Flood and Water Management Act. The act requires that all new developments of over 100m^2 construction area to incorporate sustainable urban drainage systems (SuDS) to manage on-site surface water. The Act also places a duty on the Local Authority to adopt and maintain any sustainable drainage system that serves 2 properties or more. Each of the 22 local authorities in Wales act as a SAB (SuDS Approval Body) responsible for the technical approval, adoption and

			long term maintenance of SuDS systems designed and constructed to the defined statutory standards. Approval must be sought from the SAB prior to construction work commencing.
	Parks	○ In liaison with the Countryside department, the Parks department are proposing to change their grassland management regime. Grassland habitat in the ownership of MTCB is to be mapped and new cutting schedules revised with the overall aim of cutting less and cutting later.	1. Pilot areas have been identified to demonstrate the difference a change in cutting regime can make to grassland habitat. Cuts have been undertaken later in the year (October) in addition to scarifying areas and sowing both wildflower seed and specifically yellow rattle (a semi-parasitic annual that suppresses vigorous growth of grass). 2. Joint talks (by the Parks and Countryside departments) undertaken to provide information regarding Biodiversity and Grassland Management – presented to Council Members and the Parks department staff. 3. Biodiversity and Grassland Management Factsheet plus Frequently Asked Questions document added to the Council website and advertised on the Council's social media platforms. 4. Work is underway to map the grassland habitat under ownership of MTCBC. This will be used to create new grass-cutting regimes for different areas that will be designed to increase biodiversity.
	Waste Management	○ Domestic kerbside recycling	1. There is a weekly kerbside dry recycling service (in 2016/17, the average participation rate was 78%). All collected material is sold onto contracted re-processors achieving an average annual income of c.£250K for the authority. Material quality is recorded weekly and reported to Natural Resources Wales quarterly. 2. There is also a weekly kerbside food waste collection service. A consortium of local authorities, made up of Merthyr Tydfil, Rhondda Cynon Taf (RCT) and Newport are in contract (2015-2031) with Biogen Ltd to treat food waste through anaerobic digestion to generate electricity, gas and soil improver for local farmland.
		○ Domestic refuse collection	1. There is a fortnightly kerbside refuse collection service. A consortium of local authorities, made up of Merthyr Tydfil, Rhondda Cynon Taf (RCT), Blaenau Gwent and Torfaen are in contract (2016-2041) with Viridor Management Ltd to dispose of residual waste through Energy from Waste (EFW), which is the process of generating energy in the form of electricity and/or heat from the primary treatment of waste.
		○ Trade waste NB Recycling reduces the need to grow, harvest or extract new raw materials. This results in less damage to protected habitat and species, with fewer forests felled, rivers diverted, animals injured/killed/displaced, less pollution of water, soil and air.	1. There are several recycling streams that are collected separately and transferred separately at the local waste transfer station (cardboard – any day of the week; glass – any day of the week; paper – once a week; plastic & cans – twice a week; green waste – once a week). All services are chargeable apart from green waste collection, which is free. 2. Trade food waste is collected on an individual business contractual schedule, two days per week. Trade food waste is processed (along with domestic food waste) at Biogen Ltd through anaerobic digestion to generate electricity, gas and soil improver for local farmland. 3. There is a three day per week residual trade waste collection service. The waste is not taken to landfill, but processed through EFW.
	Waste Management	○ Maximising recycling	The following initiatives have been undertaken: 1. ICT equipment amnesty (schools) 2. ICT department (formal recycling of in-house equipment) 3. Pumpkin Rescue Campaign (composting) 4. Christmas card recycling 5. Battery recycling competition 6. Metal Matters campaign (waste amnesty community day). 7. Re-use Shop set up in Unit 10

Community Regeneration	Physical Regeneration	○ Individual environmental improvement projects ○ All projects include one element of biodiversity improvement from concept through to delivery	Example projects include: 1. The Taff Bargoed Catchment project - this focusses on: a. Education – engaging local schools through a series of educational workshops on rivers, b. Wildlife and habitats, community engagement – river clean ups and litter picking c. Environment – river restoration training courses and tackling invasive species d. Restoration of natural processes and ecological resilience e. Provision of downstream benefits to both the environment and communities. f. Enhancement of land owner and partner relationships and adoption of a sustainable guardianship approach to manage the catchment. 2. Countryside Guardians project - Keep Wales Tidy is providing practical support, training and materials to groups carrying out local environmental improvements within MTCB. 3. Tipical Valleys project - a two year public engagement, education, active citizenship, research programme that will bring together people from local communities with specialists from a wide cross section of organisations and encourage them to work together to promote and interpret mineral spoil localities. 4. Connecting People and Nature project - the Wildlife Trust of South and West Wales have partnered up with Small Woods on an exciting 3 year project in Merthyr Tydfil. The project is working with the local communities of Bedlinog, Vaynor, Bryngoleu and Gellideg, and aims are to encourage local people to access green spaces and create opportunities for people to connect with the nature, help manage and enhance biodiversity and, create opportunities to learn new skills.
	Economic Development	○ Prioritise support to businesses seeking to sustainable use and improve the local landscape/environment	1. Direct business support for businesses is extremely limited at present. However, any future programme would have to conform to the Wellbeing and Future Generations Act.
	Tourism	○ Promote the sustainable use of the landscape and environment	1. Sustainable outdoor activities are a central tenet of the Merthyr Tydfil Destination Management Plan.
	Employment & Employability	○ Environment Sector employment and volunteering	1. Parks for People 2 project at Cyfarthfa has a prominent volunteering element. All the RDP funded projects encourage volunteering.
	External Funding	○ Support third sector organisations in environmental improvement projects	1. The only external funding support for businesses at present is through the RDP, most of the projects supported have an environmental element. The cooperation commons project, for example, has elements of habitat creation through tree planting, bracken management and dry stone walling.
	Rights of Way	○ Managed to benefit biodiversity	1. Rights of way are maintained by the relevant landowner.
	Other	○ Provide opportunities for voluntary sector to learn traditional countryside, environmental improvement & horticultural skills ○ Work with partner organisations to provide advice on and implement habitat management for restoring, maintaining and enhancing biodiversity.	NB actions here co-ordinated by the Countryside team: ○ Honey Bee training for MTCBC Staff and community members run by Local Voluntary Group through Rural Development Programme project ○ Several events held throughout the County Borough: to encourage the public/school children to learn and understand our natural world and traditional skills: • World Environment Day • International Environment Day • Wales Nature Week

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British Institute for Geological Conservation (BIGC) community packs for carboniferous plant evolution and Victorian gardens at Cyfarthfa greenhouses.
Grow Wild event undertaken through the Gurnos Men's Project to improve pollinators within the Gurnos area
Grow wild event at Goetre Primary School
Thomastown Park nature event
Sandy Park nature event
6x childrens nature events at Treharris Park
Bulb/seed planting with various groups throughout County Borough
Tree replacements at Edward Street with local community group
Earth hour- Cyfarthfa Park/Taf Bargoed Park – walk and talks
Bioblitz at Nant Llwynog Park
2x apple grafting training – Cyfarthfa Greenhouses
2x plant cutting training – Cyfarthfa Greenhouses

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<td>Learning</td>
<td>Schools</td>
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Direct actions undertaken by schools in MTCB designed to increase biodiversity.

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1. Questionnaires sent out to all schools regarding actions undertaken. Replies received from a number of schools. Actions taken collated into a summary table – see below:
<table>
<tr><th>Action</th><th>Action undertaken ✓</th></tr>
<tr><td>Bird/bat boxes</td><td>✓</td></tr>
<tr><td>Bug hotels/bee homes</td><td>✓</td></tr>
<tr><td>Hedgehog homes/survey tunnels</td><td>✓</td></tr>
<tr><td>Wildlife cameras</td><td>✓</td></tr>
<tr><td>Wetland/pond areas</td><td>✓</td></tr>
<tr><td>Log/stone piles</td><td>✓</td></tr>
<tr><td>Grass cutting regime - leave areas to grow long and benefit invertebrates</td><td>✓</td></tr>
<tr><td>Take part in national biological surveys (e.g., Big Schools Birdwatch RSPB, Oil Beetle Hunt, Buglife)</td><td>✓</td></tr>
<tr><td>Plant hedgerows/trees</td><td></td></tr>
<tr><td>Increase flora diversification</td><td>✓</td></tr>
<tr><td>Biodiversity subject area covered in science lessons and across curriculum</td><td>✓</td></tr>
<tr><td>Reducing plastic usage, for example:
• provision of re-usable drinking bottles to staff and students
• school eco group queried use of single use plastics in relation to catering</td><td>✓</td></tr>
<tr><td>Re-use and recycling leading to reduction in use of skips, including, for example:
• Use of plastic waste in art and technology</td><td>✓</td></tr>
<tr><td>Improvement of paper recycling systems</td><td>✓</td></tr>
<tr><td>Any other activity (please outline):
• Allotment, fruit and vegetables
• Woodland Trust Platinum Award</td><td>✓</td></tr>
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Green flags
Student-led eco-initiatives
Environmental projects

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1. <u>General</u>
In schools, environmental issues are routinely discussed and addressed on a cross curricular basis.

2. <u>Eco-Schools</u>
Eco-School green flags have been achieved annually, since 2016:

<table>
<tr><th>GREEN FLAG NUMBER</th><th>2016/17</th><th>2017/18</th><th>2018/19</th></tr>
<tr><td>1st</td><td>1</td><td>5</td><td>4</td></tr>
<tr><td>2nd</td><td>2</td><td>3</td><td>2</td></tr>
<tr><td>3rd</td><td>2</td><td>4</td><td>2</td></tr>
<tr><td>4th*</td><td>-</td><td>11</td><td>1</td></tr>
<tr><td>5th*</td><td>3</td><td>-</td><td>-</td></tr>
<tr><td>6th*</td><td>1</td><td>-</td><td>-</td></tr>
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(* A 4th green flag is referred to as a Platinum award and any flags above this we refer to renewing their Platinum award).

This programme aims to promote environmental awareness on a cross curricular model and to develop an understanding in sustainability. The Eco-Schools process is holistic and involves the whole school community and as such also encourages teamwork.
3. All schools have School Councils and some also have Eco Committees to ensure that environmental issues are discussed and addressed by the whole school.
4. At the annual Student Conference facilitated by the LA, a workshop is held to promote environmental awareness where the pupils have an opportunity to discuss environmental issues, targets, action to take and how to check the impact.
5. A programme of activities for schools has been produced to reduce, reuse and recycle.
6. Aim: 10% of schools to engage with the Christmas Card Recycling project over the next year.
7. Aim: 100% of schools to engage with an environmental project within next 4 years.
8. Aim: develop a Network group of School based Eco Coordinators and outside agencies.
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<td>21st Century Schools</td>
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New schools considered ecological issues from design through to implementation.
All 21st Century build projects give due consideration to energy efficiency and resources sustainability.

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The policy for new schools (new-build and refurbishment) is to
1. Carry out appropriate preliminary ecological appraisals (PEAs) of school development sites to provide sufficient information for the local planning authority to fully assess the potential ecological impacts of the proposed development, or to identify what further information is required before a full assessment can be made. The results of the PEAs will be used to inform whether further surveys are required, or to establish the need for, and extent of, any mitigation or compensation measures required as part of the proposed development.
2. Assess, rate and certify the sustainability of the school buildings using the Building Research Establishment Environmental Assessment Method (BREEAM). A BREEAM rating of EXCELLENT or above will be aimed for in every case.
3. Consider other sustainability measures, such as Solar Photovoltaic and Solar Thermal systems.
4. Liaise with Welsh Government regarding schools projects achieving carbon neutrality.
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	School Catering, Building & Facilities	○ Background: Since 2011 the refuse collection from school kitchens of waste such as packaging, tins etc. has reduced from 96kilos to just under 18kilos per annum from all schools as they are now being recycled. The LA supplies compostable bags to schools for all food waste for recycling. This is for cooked and uncooked food waste from Breakfast Clubs and lunches. 80kg of food waste is collected per week per school. This equates to 3.2 tonnes per school over 40 weeks. ○ 10% reduction in food waste per annum. Productivity checks will be undertaken in respect of food waste to ensure a reduction. Awareness with staff and pupils to comprise of pupil engagement in designing a poster to displayed in schools and a competition for the school with the biggest reduction in food waste by the end of the summer term. ○ 20% reduction in food waste per annum. (adopting a similar approach as above)	1. The catering department wherever possible tries to purchase local food and beverage provisions 2. Within the comprehensive schools, all disposables are currently being swapped to biodegradable products wherever possible. 3. Kitchen logbooks now have a section used by cooks to make a daily record of food wastage.
Adult Social Services	Day Services Community Occupational Therapy Community Mental Health Older People & Disability Advocacy	○ Support the management and development of Cyfarthfa Greenhouses Environmental Projects.	1. The staff at the greenhouses provide the following: 2. Spaces/facilities used by the Countryside Team and others to propagate native species, growing them on for planting out in the County Borough and assist with both increasing biodiversity and making local ecosystems more resilient. 3. Activities such as grafting sessions for the propagation of trees. Grafting can allow for instance a particularly disease resistant specimen to be reproduced, this could be used to create more resilient ecosystems and allows native species with local provenance to be used to populate other areas of the County Borough. This also decreases the need for importing specimens and therefore intruding diseased specimens. 4. Activities for school parties providing education relating to natural processes. 5. Foraging events for adults with learning disabilities, getting people out in the environment and learning about flora and fauna. 6. Other measures taken include, general recycling, green waste recycling and the purchase of a large capacity water butt to help make the greenhouses more self-sufficient in terms of its water supply.
Children Social Services	Wellbeing & Early Response Merthyr Family Centre Family Support Advocacy Children with Disabilities Early Intervention Looked After Children Fostering & Adoption Cwm Taf Integrated Family Support	○ Use of the outdoor environment for targeted well-being ○ Embed a pro-active and strategic approach (including needs) to the use of the outdoor environment for targeted well-being	The following actions have been proposed for Merthyr Family Centre: 1. Bat boxes on the buildings 2. Bird boxes in the trees 3. Hedgehog houses to be installed in the grounds (13cmx13cm gaps added at boundaries) 4. A wildflower area in the grounds to attract pollinators 5. Addition of a bird bath or small pond – this would attract a whole range of wildlife 6. Information made available to visitors about the plants and animals that will hopefully be attracted to the site

	Cwm Taf Youth Offending		
Business Change		○ Support integration of Environment Act within existing processes and systems	1. In line with its duties under the Well-being of Future Generations (Wales) Act 2015, the Council has produced an 'Integrated Impact Assessment (IIA)'. The IIA must be used at the outset of a proposal/initiative/project to help shape the activity from its inception and must accompany all reports to Council/Cabinet. Section 4 of the IIA deals with 'Biodiversity and resilience of Ecosystems duty'. As such the Biodiversity and Resilience of Ecosystems duty is considered as part of every decision made by the Cabinet and Full Council. Certain gaps have been identified within the existing documentation in relation to the Environment (Wales) Act 2016. Additional text designed to fully update the IIA to reflect the requirements of The Environment (Wales) Act 2016 have been proposed, and the changes are likely to be implemented in January 2020. The documentation and process will also be reviewed on a regular basis and reported back to the Corporate Management Team. In support of this, the most recent Planning Policy Wales (Edition 10, December 2018) describes the planning system as having a key role to play in reversing the decline in biodiversity and increasing the resilience of ecosystems (in line with the Environment (Wales) Act 2016). Planning Policy Wales (2018) is supplemented by Technical Advice Note (TAN) 5 - Nature Conservation and Planning 2009.
Re-use and Recycling	ICT Planning department	○ ICT equipment recycled ○ Surplus food used for wildlife schemes or recycled	1. ICT equipment recycled certification 2. ICT recycles ICT equipment through various recyclers over several years due to the WEEE directive prior to Act coming into force in 2016. MTCBC Waste Management Dept has now arranged to start collecting the old ICT equipment to get their recycling figures up. No collections made as yet, but Sara Rees in Waste should be able to provide evidence when they do. 3. Trial teracycle crisp packet recycling in Planning department, Unit 5.
Performance		○ Support integration of Environment Act within existing processes and systems ○ Embed integration of Environment Act within existing processes and systems ○ 3. Monitor integration of Environment Act within existing processes and systems	See point 1 (Business Change)
Human Resources	Occupational Health	○ Promote the use of the outdoor environment (Open Spaces Strategy) to manage health	The following proposed actions have been suggested: 1. Well-being Wednesdays: Council staff are allowed time in work-hours to undertake activities to improve well-being (linked to Wellbeing of Future Generations Act 2015). Programme of events currently in progress. Proposal to offer some activities related to maintenance and enhancement of biodiversity (for example tree planting, invasive species control). 2. Reduce, re-use, recycle materials, but where products such as paper are bought, ensure that supplies come from sustainable sources, e.g., paper from sustainable forests. 3. Process of moving away from paper and towards electronic dissemination of information. A trial has been undertaken for moving from paper to electronic Payslips for c.80 staff. 4. Adding an informative paragraph regarding the EWA 2016 to any and all correspondence sent out. 5. Agreement with the Commoner's Association to provide Health and Safety advice – similarly, correspondence could include an informative regarding the EWA. 6. Hannah Brown (workforce development) currently compiling a list of work experience placements (comprehensives and colleges).

			7. Communications with all staff: 8. Suggestions of actions that might be taken at home, for example: 9. Planting native plants: a. wildflowers b. a tree c. Putting up boxes for bats / birds / dormice or a bee/bug house d. Ensuring there are gaps (13cm x 13cm) in boundary walls and fences to allow passage of hedgehogs e. Keeping the garden dark at night f. Recording native wildlife and passing on the information to the local biological records centre (South East Wales Biodiversity Records Centre) g. Being aware of bird breeding season so that removal of vegetation is carried out when birds are not nesting. h. Talk to your neighbours and spread the word about biodiversity!!