Blaenau Gwent County Borough Council

Local Flood Risk Management Strategy Strategic Environmental Assessment Environmental Report - Appendices

January 2013

Plan Design Enable

Table of contents

A. Baseline Data

Biodiversity, Flora and Fauna

A.1 There are two Special Areas of Conservation (SAC) adjacent to Blaenau Gwent: Usk Bat Sites and Cwm Clydach Woodlands: each designated under the EC Habitats and Species Directives. Usk Bat Sites is one of the best areas in the United Kingdom for the lesser horseshoe bat. Usk Bat sites SAC is also referred to as Mynydd Llangattock SSSI. Some features of both SAC sites are found to be in favourable condition, whilst others are in an unfavourable condition. The Conservation features of the European Sites are included in **Appendix B**.

A.2 Cwm Clydach SAC is underpinned by Cwm Clydach Sites of Special Scientific Interest (SSSI) while Usk Bat Sites is underpinned by Mynydd Llangatwg SSSI, Siambre ddu SSSI, Buckland Coachhouse and Ice House SSSI and Fox Wood SSSI.

A.3 There are also three SSSIs in the area:

- Cwm Merddog Woodlands,
- Brynmawr Sections (geological site) and
- Mynydd Llangatwg (Mynydd Llangattock).

A.4 The Cwm Merddog Woodlands site is in an unfavourable but recovering condition, Brynmawr Sections' condition is unfavourable maintained and the condition of Mynydd Llangatwg is partially favourable and partially unfavourable for different features.

A.5 Cwm Clydach is designated as a National Nature Reserve (NNR). It is the largest and most representative area of native beech wood in South East Wales. Blaenau Gwent has 6 Local Nature Reserves (LNR) - the Silent Valley LNR (designated in 1997), which includes Cwm Merddog and Coed Ty'n y Gelli SSSIs and covers a total area of 51.62 ha. The parts of the LNR that include SSSIs have been designated as such as a result of the presence of Ancient Semi-Natural Woodland. The Silent Valley is designated as a Wildlife Trust Reserve (WTR). The remaining 5 LNRs were designated in 2007: Parc Nanty Waun; Beaufort; Cwmtillery; Parc Bryn Bach; and Sirhowy Hill

A.6 There are 137 designated Sites of Importance for Nature Conservation (SINC).

A.7 The designation of LNRs is in accordance with targets in the community plan and that the Authority aims to designate 2 per year pending resources. 5 candidate LNRs have been currently defined for the County Borough area.

A.8 Part of the Brecon Beacons National Park falls within the northern part of the Blaenau Gwent administrative area, and includes Brynmawr Sections and Mynydd Llangattock (Usk Bat) SSSIs and Cwm Clydach NNR.

A.9 There are 14 Ancient Semi-Natural Woodland (ASNW) sites and three Plantations on Ancient Woodland Sites (PAWS). Figure A.1 maps all the sites of ecological importance in the Blaenau Gwent area and Figure A.2 shows the Forestry Commission land management area and its 'Semi-naturalness score'.

A.10 The locations of designations for nature conservation are included on the BG LDP Constraints Map (SD03a and key (SD03b)) and the BG LDP Proposals Map (SD02): http://www.blaenau-gwent.gov.uk/environment/17469.asp. The Proposals Map includes the locations of:

- ENV1 Green Wedges
- ENV2 Special Landscape Areas

- ENV3 Site of Importance for Nature Conservation
- ENV4 Land Reclamation Schemes
- ENV5 Cemeteries

A.11 The constraints map includes the locations of:

- BGCBC Boundary
- Brecon Beacons National Park
- Scheduled Ancient Monuments
- Local Nature Reserve
- Ancient Semi Natural Woodland
- Listed Buildings
- National Grid Gas
- National Grid Electric
- Substation
- Hazardous Installation
- Conservation Areas
- Historic Park and Gardens
- Historic Landscapes
- Sites of Scientific Interest
- Flood Zone C1
- Flood Zone C2

A.12 Blaenau Gwent is nationally important for breeding lapwings, a scarce and declining bird species in Wales. **Annex A** includes the results of a river habitat survey in relation to river modification. The majority of watercourses are of moderate ecological status. Salmon Action Plan compliance relates to a small proportion of the County Borough in the north east in the River Usk. Predicted performance identifies a probable risk. This data is included in **Annex A**.

A.13 The Blaenau Gwent Local Biodiversity Action Plan contains key habitat and species as well as protected species. Species and habitats for which action plans have been prepared include:

Table A.1 – Blaenau Gwent BAP Species and Habitats Action Plans

Group	Species
Amphibians	Great Crested Newt (*Triturus cristatus*)
Birds	Skylark (*Alauda arvensis*); Grey Partridge (*Perdix perdix)*; Lapwing *(Vanellus vanellus)*
Birds	Grey Partridge (*Perdix perdix*)
Butterflies	Pearl-bordered Fritillary (*Boloria euphrosyne*)
Mammals	Brown Hare (*Lepus europaeus*)
Mammals	Otter (*Lutra lutra*)
Mammals	Pipistrelle Bat (*Pipistrellus pipistrellus*)
Mammals	Lesser Horseshoe Bat (*Rhinolophus hipposideros*)
Broad Habitats	Calcareous grassland
Broad Habitats	Dwarf shrub heath
Priority Habitats	Blanket bog

Group	Species
Priority Habitats	Mesotrophic lakes
Priority Habitats	Purple moor grass and rush pastures
Priority Habitats	Upland mixed ashwoods
Priority Habitats	Upland oakwood
Priority Habitats	Wet woodland

Cultural Heritage

A.14 Blaenau Gwent has 53 listed buildings, recognised for their special historical and architectural importance. The majority are Grade II listed, although of the total, ten fall into the higher category of Grade II*. However, there are also 8 listed buildings in the County Borough that appear on Blaenau Gwent County Borough Council's register of listed buildings 'at risk', namely:

- Former Tredegar Company Shop (Tredegar)
- Milgatw - Agricultural Range at Milgatw (Blaen-y-cwm, Tredegar)
- Ty-llwyd (St Illtyd, Llanhilleth)
- SW Roundhouse at Roundhouse Farm (Nantyglo, Nantyglo and Blaina)
- Agricultural Range at Roundhouse Farm (Nantyglo, Nantyglo and Blaina)
- Former Boiler House at Dunlop Semtex Factory (Brynmawr, Brynmawr)
- Stables and Barn at the Fountain Inn (Troedrhiw-gwair, Tredegar)
- The Fountain Inn (Troedrhiw-gwair, Tredegar)

A.15 Buildings at risk are distributed throughout Blaenau Gwent as follows: [1]

Table A.2 – Buildings at Risk 2009

		----------Number in Group----------			----------% in Group----------		
Community	No in Group	NOT AT RISK	VULNERABLE	AT RISK	NOT AT RISK	VULNERABLE	AT RISK
Abertillery	1	1			100.0		
Beaufort	2	2			100.0		
Brynmawr	2	1		1	50.0		50.0
Cwm	1		1			100.0	
Ebbw Vale	10	8	2		80.0	20.0	
Llanhilleth	7	6		1	85.7		14.3
Nantyglo and Blaina	7	5		2	71.4		28.6
Tredegar	23	11	8	4	47.8	34.8	17.4

A.16 Part of the Blaenavon Special Landscape of Historic Interest lies within Blaenau Gwent and part of the Clydach Gorge Landscape of Historic Interest also lies within Blaenau Gwent.

A.17 Currently are currently two conservation areas in Blaenau Gwent, Bedwellty House and Park and the Circle, Tredegar.

A.18 The South East Wales region, which comprises 10 local authority areas, contains approximately 56 Registered Historic Parks and Gardens. Of these, only one falls within the boundary of Blaenau Gwent – the Bedwellty Park (also designated as a conservation area). This site is included in

[1] Blaenau Gwent County Borough Council, Buildings at Risk Survey 2009

Cadw's 'Register of Parks and Gardens of Special Historic Interest in Wales'. Blaenau Gwent also has 9 Scheduled Monuments (SMs), which are:

- St Illtyd Castle Mound;
- Incline Haulage Winding Engine, Mynydd Bedwellty;
- Sirhowy Ironworks;
- Marine Colliery Pumping Engine;
- Clydach Railroad Bridge, Brynmawr;
- Clydach Coal Levels;
- Tredegar Ironworks Cholera Cemetery;
- Y Domen Fawr Round Cairn; and
- Trefil Quarries North.

Water Quality

A.19 Blaenau Gwent is within the Severn River Basin District, in the South East Valleys Catchment. The main river catchments in the South East Valleys catchment are the rivers Ebbw, Sirhowy and Lwyd which flow into the Usk Estuary and the rivers Rhymney, Taff and Ely which enter the Seven Estuary. Urban centres include Merthyr Tydfil, Caerphilly, Ebbw Vale and Cardiff. The 'valleys' rivers are typically steep sided with mountainous upper valleys and extensively urbanised valley floors opening out into meandering lowland river valleys. They have a flashy flow regime and due to the underlying geology there is little water storage or base flow and in very dry summers some smaller tributaries can dry up. Most abstraction is for public water supply and commercial and industrial use.

A.20 Many of the river catchments have recovered from historical degradation caused by the iron, coal and other industries and their run-off to the rivers. Historical industrial development and towns tend to lie close to the banks of the rivers resulting in extensive physical modification and loss of riparian habitats. Improvements in water quality have allowed the return of salmon and sea trout with some tributaries providing spawning and nursery areas. Overflows from abandoned mine workings can cause water quality problems, but they do benefit river flows in the summer months. Rivers are vulnerable to diffuse and intermittent point source pollution from urban and industrial development. (Source: Severn River Basin Management Plan December 2009)

A.21 Permitted industrial sites and permitted waste management sites are shown in **Annex A**. These should be considered when developing flood risk strategies, due to the potential for water or land contamination should these sites become flooded.

A.22 The main watercourses in Blaenau Gwent itself are the rivers Ebbw Fach, Ebbw Fawr and Sirhowy. **Annex A** to this Appendix provides extracts from the Environment Agency's Local Evidence Package to Blaenau Gwent CBC including mapped data. In summary, 50% of the water bodies are of 'good' ecological status (compared to 30% for Wales overall), with less than 10% being 'poor'. The remainder are 'moderate' in terms of their ecological status. This compares favourably to national data. The quality of water has improved between 1990 and 2010 in accordance with the General Quality Assessment, which has now been superseded by the WFD. 100% of water bodies (of which 1 river was assessed) 'failed' for chemical status, compared to almost 80% nationally. Reasons for failure are included in **Annex A**. The greatest proportion of reasons (43%) was related to impoundments. 29% failed due to barriers to fish migration. Flood protection and land drainage occurred once as a reason for failure, representing 7% of the total. This occurred in the south of the County Borough - a plan is included in **Annex A**.

A.23 All of the water bodies are in protected areas, for one of the following reasons: drinking water (6 lakes; 1 river; and 2 groundwater); freshwater fish (5 rivers); habitats & species (1 river).

A.24 Approximately 50% of the overall status of groundwater is of poor status, with the other 50% being good. This compares to approximately 65% of groundwater being of good status nationally, with the remainder classified as poor.

A.25 Water service provision in Blaenau Gwent is the responsibility of Welsh Water/Dŵr Cymru. Companies in Wales are predicting increases in household demand for water over coming years, not just because of rising numbers of households but also because of greater individual consumption. Only 5% of households in Blaenau Gwent have a metered water supply.

Flood Risk

A.26 TAN15 Development and Flood Risk (July 2004) is the appropriate framework for guiding planning decisions with respect to flood risk. The policy refers to the Welsh Assembly Government's (WAG) Development Advice Maps (DAMs). The DAMs are based on Environment Agency Wales' flood outlines. In Blaenau Gwent there are zones of both defended and undefended floodplain (C1 and C2 respectively). The DAM maps should be used as a trigger for guiding development away from areas of flood risk.

A.27 Flood defences are only present in one location – to the north west of Cwm. These form part of a network of defences for the rivers Ebbw, Lwyd and Sirhowy. They are designed to be effective for a 1 in 100 year flood event and, to date, have performed acceptably.

Hydrological Climate (Source: Preliminary Flood Risk Assessment, 2011)

A.28 As with much of the Valleys areas of South Wales, Blaenau Gwent has a relatively high amount of rainfall, in comparison with the rest of the UK. The average annual rainfall for the entire area is approximately 1,600mm. Rainfall values were obtained from the Flood Estimation Handbook (FEH) CD-ROM (Marshall and Bayliss, 1999). Rainfall in Blaenau Gwent predominantly falls as relatively low intensity, long duration rainfall that is dominated by frontal weather system. However, short duration, high rainfall intensity storms are also experienced due to the upland nature of the study area.

Topography

A.29 The topography of the land can affect the hydrological regime of an area and dictate how the catchment responds to rainfall. Typically, watercourses in lower lying, flatter areas respond gradually to rainfall and in times of flood can have long duration events. Watercourses in steeper upland areas can respond quickly to rainfall but the flood events themselves have a shorter duration.

A.30 The topography of Blaenau Gwent is fairly typical of the South Wales valleys in that it is dominated by relatively steep sided valleys. However, the areas in the north of the study area have a gentler topography, as they are located within the foothills of the Brecon Beacons. The topography of both the Ebbw and Sirhowy Rivers is characterised by narrow river channels bounded by steep sided valleys, with limited floodplains.

Geology

A.31 The geology of Blaenau Gwent is relatively uniform with the bedrock of the area dominated by the South Wales Coal Measures, made of the Westphalian Series, which are typically coalbearing mudstones and sandstones. This geology can be relatively permeable in places, meaning that water can permeate the surface and enter watercourses via underground (through flow), rather than overland methods.

A.32 The far northern extent of the study area (in the vicinity of the Brecon Beacons, to the north of Tredegar), the bedrock consists of limestones (Carboniferous Limestone) and Millstone Grits (Namurian Millstone). These layers typically have high permeability, particularly where limestones have been fractured or weathered.

A.33 With regard to superficial deposits, much of the upper topographic areas are dominated by the bedrock, with little or no superficial deposits. The exception to this is the areas around Tredegar and Ebbw Vale, which have some Alluvium and Glacial Till present. The areas at the base of the river valleys contain superficial deposits typical of such features, for example alluvial and river terrace deposits. Outcrops of peat are located in the northern extent of the study area, to the north of Tredegar and Ebbw Vale.

A.34 The soils of the upper topographical areas are typified by loams overlying the Coal Measures, which generally have relatively high infiltration rates. Soils in the lower topographical areas of the valleys are typically loamy, sandy soils associated with alluvial deposits and have variable permeability. In the northern extent of the study area (north of Tredegar and Ebbw Vale), surface water gleys and organic soils are found. These soils are typified by seasonal waterlogging and are associated with the peat drift geological deposits explained above.

A.35 It is believed that there are also some man-made soil structures, mostly reformed soils from former mining and quarrying activities. Such soils are typically located within the vicinity of Tredegar, Ebbw Vale and Brynmawr and have variable infiltration rates, depending on the nature of the parent soils or geology.

Historic Flood Events

A.36 As a result of data limitation issues, insufficient historical data is available to draw definitive conclusions on the impacts and consequences of historic flood events on people, the economy and the environment, as this information has not been recorded in the past.

A.37 Due to the lack of information available, no historic flood events have been considered to have had 'significant harmful consequences' and therefore none will be recorded. However, a complete record of locations where flooding has occurred will be kept by Blaenau Gwent County Borough Council as a future evidence base. This base will be built up in the future through ensuring full details of flood events are recorded; this will then be used to support and inform future PFRA cycles as well as Blaenau Gwent's Local Flood Risk Management Strategy. This is reproduced in **Figure A.1**.

Local Drainage Capacity

A.38 Blaenau Gwent has both separate and combined foul and surface water drainage systems. Modern systems are typically designed to accommodate rainfall events with a 3.3% (1 in 30) annual probability and are usually separated into foul and surface water systems. Older systems may have a design standard lower than this, and were often combined foul and surface water systems. The capacity (surcharged conditions) of highway drainage networks and foul sewers is expected to be exceeded in rainfall events with an annual probability of higher than 3.33%.

A.39 Some research was undertaken on future flood risk as part of the Strategic Flood Consequences Assessment during 2010. Modelling for rainfall events with in 1 in 100 annual probability of occurrence was used. The resulting flood map is similar to that for the Environment Agency Flood Map for Surface Water (FMfSW).

A.40 The Environment Agency has produced a national assessment of surface water flood risk. The FMfSW is a model containing two flood events (1 in 30 annual chance and 1 in 200 annual chance) and two depth bandings (greater than 0.1m and greater than 0.3m). The Flood Map for Surface Water is illustrated in **Figure A.2**, highlighting areas at risk of surface water flooding in the future. Using this dataset, the number of properties at risk of surface water flooding within Blaenau Gwent has been estimated.

A.41 For a rainfall event with a 1 in 200 annual chance of occurrence:

- 16000 properties are at risk of flooding to a depth of 0.1m, 13500 of these being residential.
- 18000 properties are at risk of flooding to a depth of 0.3m, 15500 of these being residential.

A.42 This information has been broken down within each of the blue squares, and is shown at **Figure A.5**.

A.43 Compared to figures for Wales, Blaenau Gwent is at low risk of flooding overall (National Assessment of Flood Risk, EA 2009)

Groundwater Flooding

A.44 There is no local information available, which provides evidence on future groundwater flood risk across Blaenau Gwent, and groundwater rebound is not believed to be an issue in the county. The Environment Agency's national dataset, Areas Susceptible to Groundwater Flooding, has been

used to form the basis of the assessment of future flood risk from groundwater. This is shown in **Figure A.3**.

CFMP Sub-Area 5 Upper Ebbw

A.45 **Figure A.7** shows the sub-areas in the Eastern Valleys CFMP. This area covers the upper catchment of the River Ebbw and contains the communities of Ebbw Vale, Llanhilleth, Cwm and Abertillery. The main source of flood risk is from the River Ebbw (Fawr and Fach), which is a fast responding river catchment providing short flood warning times. There is also high risk of locally rapid surface water flooding due to the steep slopes. There are defences at Cwm, Abertillery and Llanhilleth. Approximately 300 properties are currently at risk in the 1% AEP flood event, rising to around 860 properties in the future. People, properties, infrastructure and community assets are at flood risk in the urban areas. **Figure A.8** shows that the highest future flood risk is predicted at Risca.

Consequences

A.46 Flood events are considered to have significant harmful consequences where at least 200 people, 20 businesses or 1 critical service within a 1km area may be flooded to a depth of at least 0.3m during a rainfall event with a 1 in 200 chance of occurring. A flood event could also be designated as significant if the consequences are proportionate to these criteria. The 1 in 200 year flood map is reproduced in Figure A.2. Based on national surface water modelling approximately 3,229 residential properties are estimated to be at risk from flooding to a depth of 0.3m or more during a rainfall event with a 1 in 200 annual chance of occurring. The human health, economic and environmental impacts of flooding are summarised in **Figure A.4**. **Figure A.9** shoes the infrastructure at risk from flooding.

A.47 **Annex A** includes the Flood Risk Index for the Welsh Index of Multiple Deprivation 2011. 7 areas are within the top 25% most deprived areas nationally, in relation to flood risk. The highest risk LSOA for flood risk is Six Bells 1 in Blaenau Gwent.

A.48 A comparison to national data is provided in **Figure A.6**. This shows that the County Borough has a relatively low level of flood risk compared to national risk levels. Accordingly, there is also a relatively low level of properties at risk of flooding. **Annex A** also includes a national comparison of the number of properties at risk of flooding, which backs up this assertion.

Figure A.1 - BGCBC Historical Flooding Events (BGCBC Highways, Dwr Cymru, SWFRS)

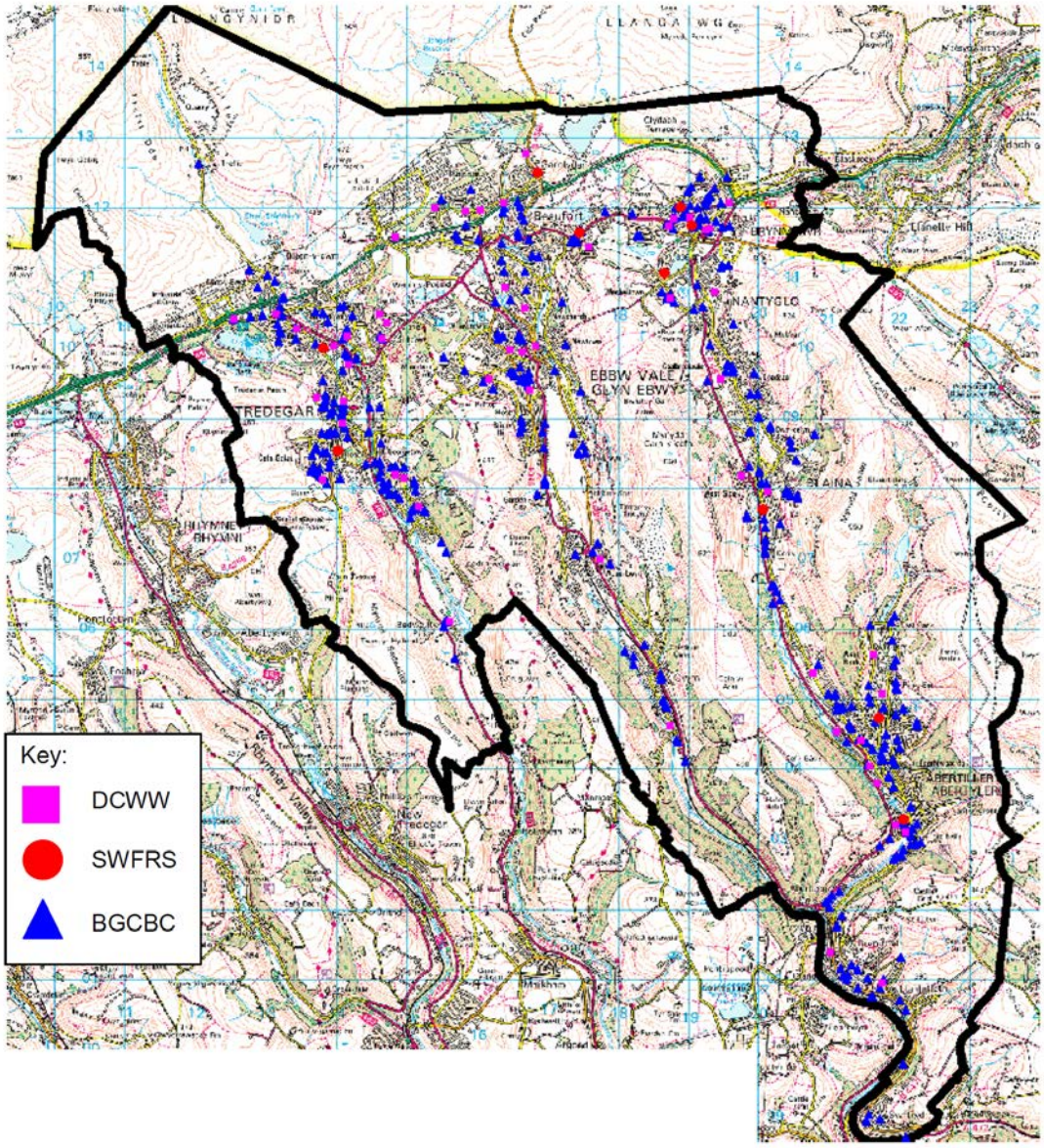


Figure A.2 - Flood Map for Surface Water Flooding (1 in 200 year event to a depth of 0.3m) (Environment Agency)

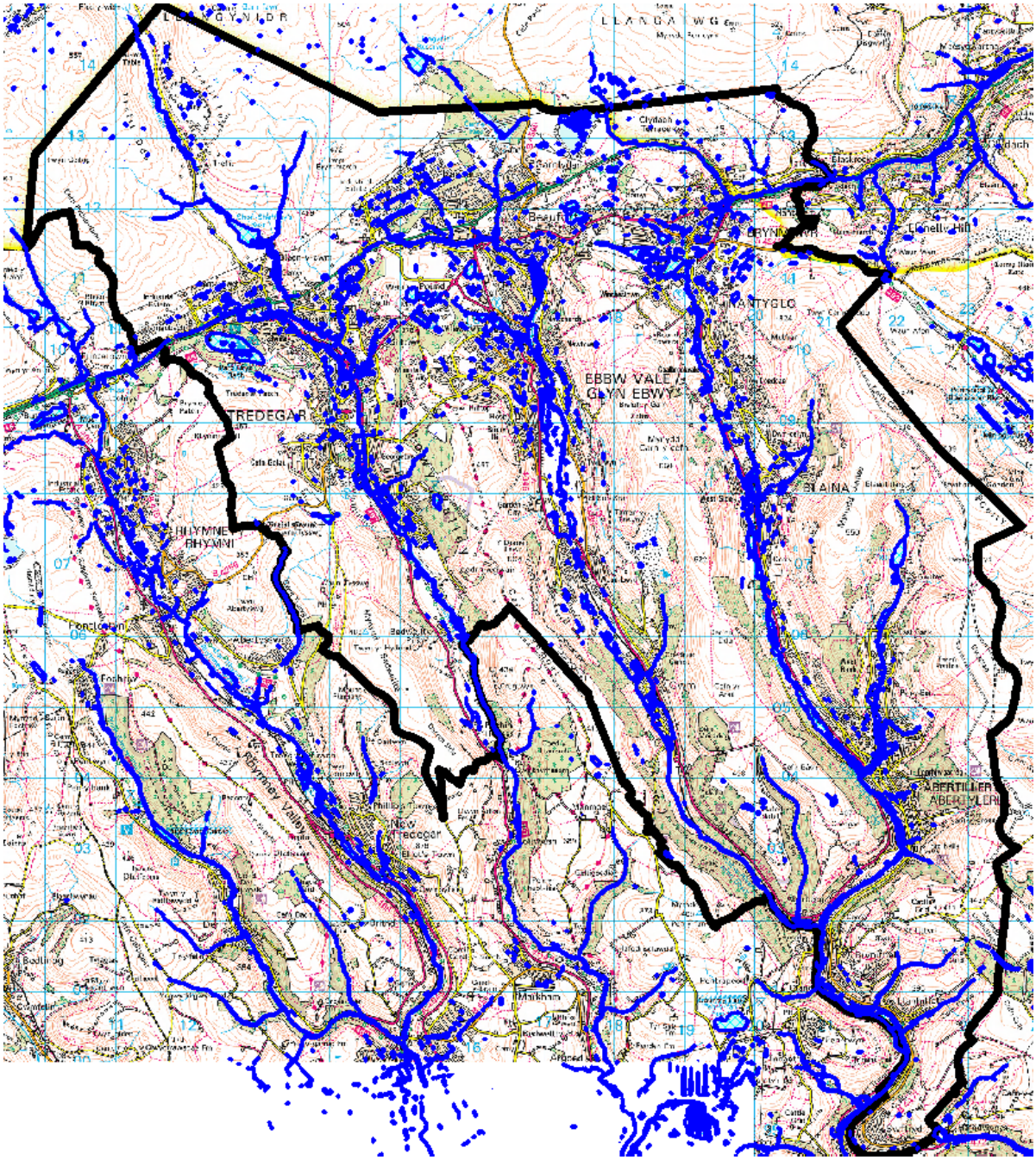


Figure A.3 – Flood Map for Ground Water Flooding (Environment Agency)

Key: Purple Square Possibility >=75%, Red Square Possibility >=50% <75%
Orange Square Possibility >=25% <50% Yellow Square Possibility <25%

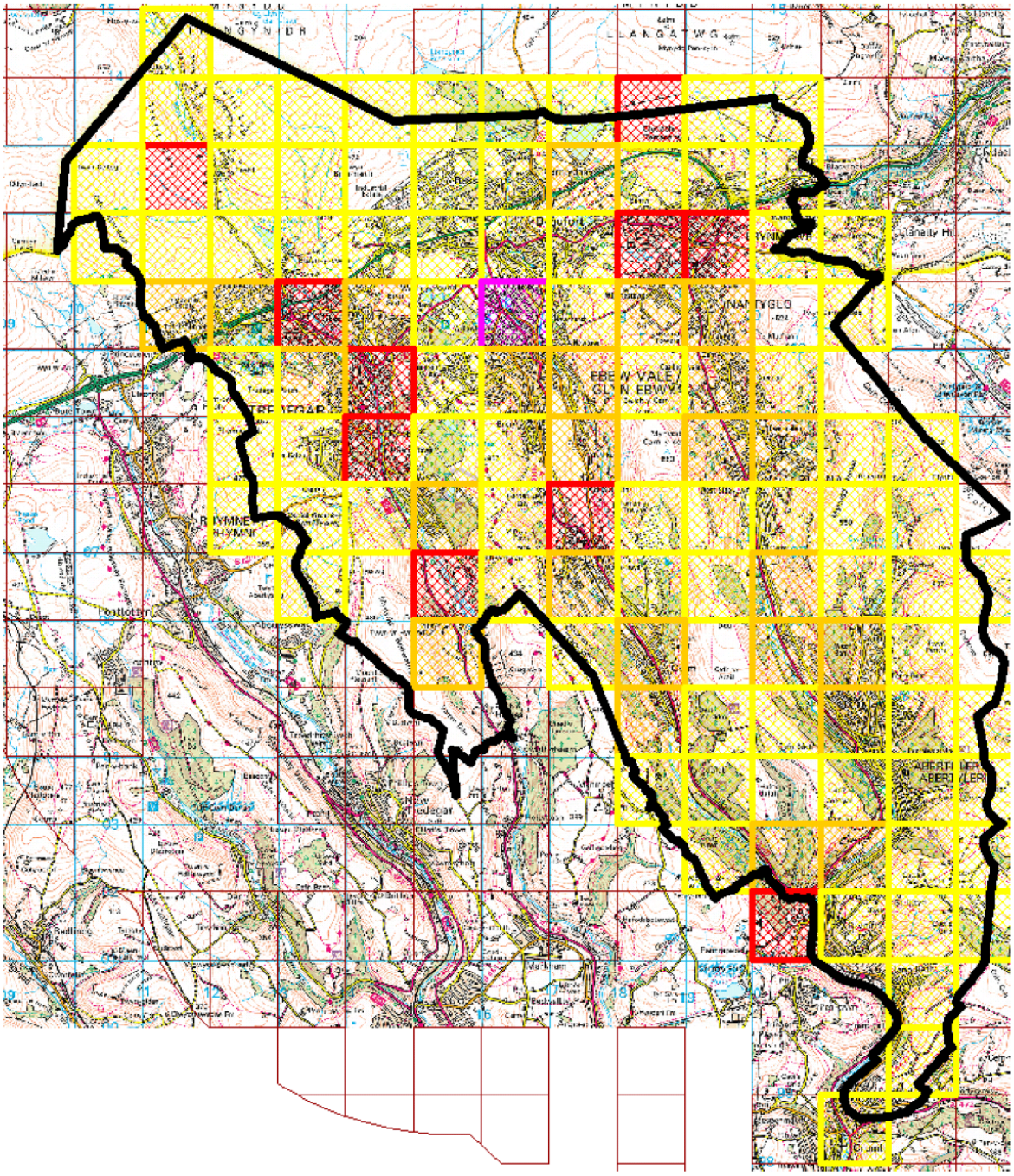


Figure A.4 –Human Health, Economic and Environmental Impact Tables from PFRA

Table 6: Potential consequences - flooded to a depth of 0.3m or greater during a rainfall event with a 1 in 200 chance of occurring (or 0.5%)

Criteria	Predictions
Number of People	13,104
Number of Critical Services	967

Environment Agency Property Count Spreadsheet / Surface Water Flood Map Counts

Table 7: Potential consequences - flooded to a depth of 0.3m or greater during a rainfall event with a 1 in 200 chance of occurring (or 0.5%)

Criteria	Predictions
Number of Non-Residential Properties	1,200
Infrastructure Network (length of A routes flooded)**	3.697 miles

Environment Agency Property Count Spreadsheet / Surface Water Flood Map Counts

Table 8: 'A' Class Roads within Blaenau Gwent flooded to a depth of 0.3m or greater during a rainfall event with a 1 in 200 chance of occurring (or 0.5%)

Road	Total Mileage Affected
A465	1.072
A467	1.440
A4048	1.283
A4047	0.442
A4046	0.532

Table 9: Potential consequences - flooded to a depth of 0.3m or greater during a rainfall event with a 1 in 200 chance of occurring (or 0.5%)

Criteria	Predictions
Number of Pollution Prevention and Control (PPC) sites	5
Number of scheduled monuments	7

Environment Agency

There are no grade I or II listed buildings at risk of flooding.

Figure A.5 – Environment Agency 'Blue Squares' (PFRA)

Figure 7: Environment Agency 'Blue Squares' – areas above the flood risk threshold

- more than 200 people or
- more than one critical service or
- more than 20 non-residential properties

are predicted to be flooded at a depth of more than 0.3m in a rainfall event with a 1 in 200 annual chance of occurrence (0.5%).

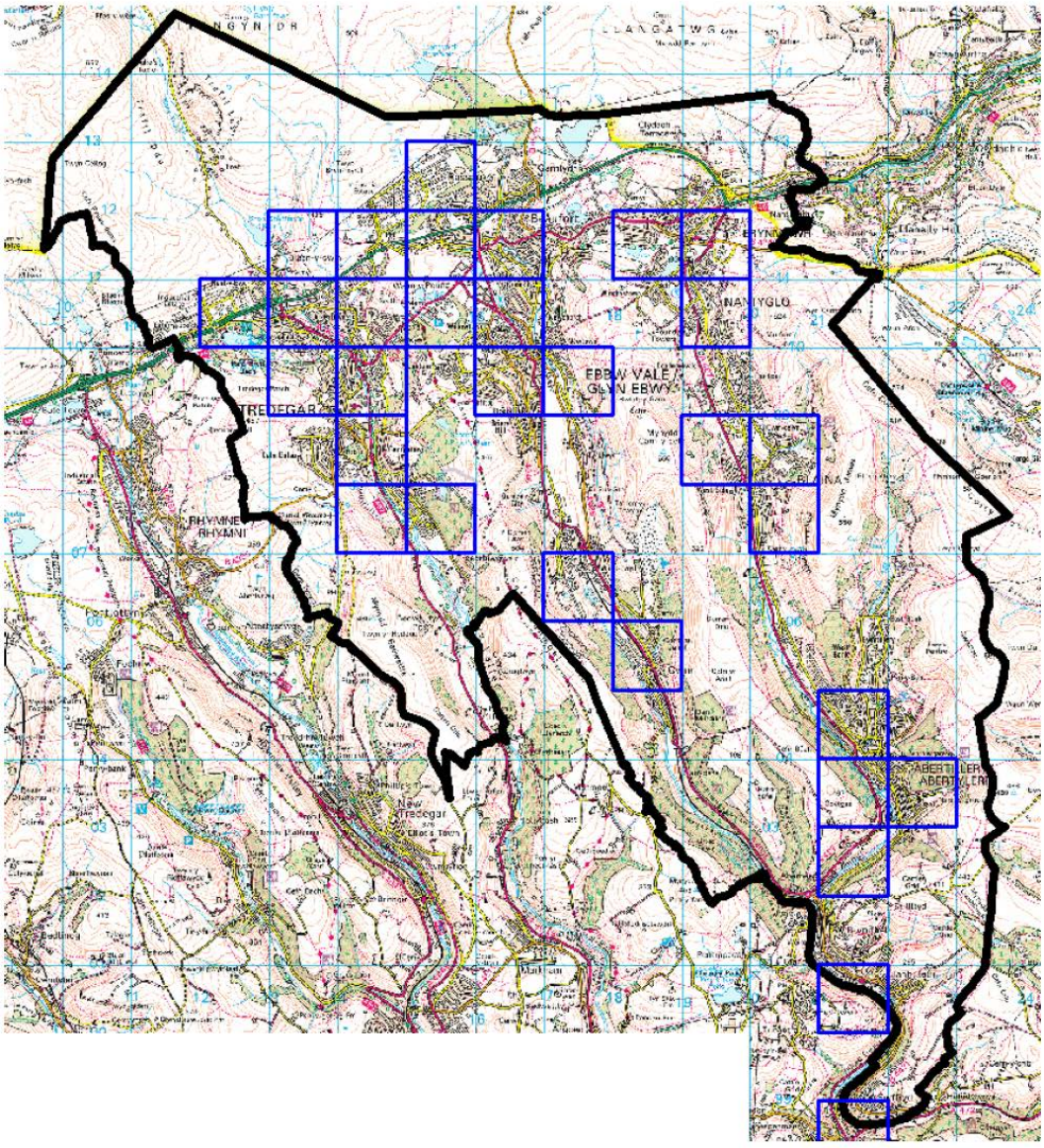


Table A.3 – Environment Agency Blue Squares – identification of Indicative Flood Risk Areas

Two clusters (where a central blue square is touching 3 or more blue squares) have been identified in Blaenau Gwent:

- Abertillery
- Ebbw Vale and Tredegar

Only one cluster of blue squares meets the minimum population criteria, and is therefore designated as an Indicative Flood Risk Area. As shown in Figure 9, the Indicative Flood Risk Area is situated in the north of the Borough, and covers Ebbw Vale and Tredegar with 6,683 people estimated to be at risk from flooding within this area. Annex 3 provides the detailed records of flood risk within these areas.

A review of local information on past and future flooding has shown no justification for making amendments to the Indicative Flood Risk Area identified by EAW, or including additional flood risk areas.

Name of Flood Risk Area	Human health consequences - residential properties	Human health consequences - Number of people (2.34 multiplier)	Other human health consequences -Number of critical services flooded	Economic consequences - number of non-residential properties flooded
Ebbw Vale	2856	6683	28	693
Abertillery	993	2324	6	156

Extract from Annex 3

Figure A.6 – National Assessment of Flood Risk Figures

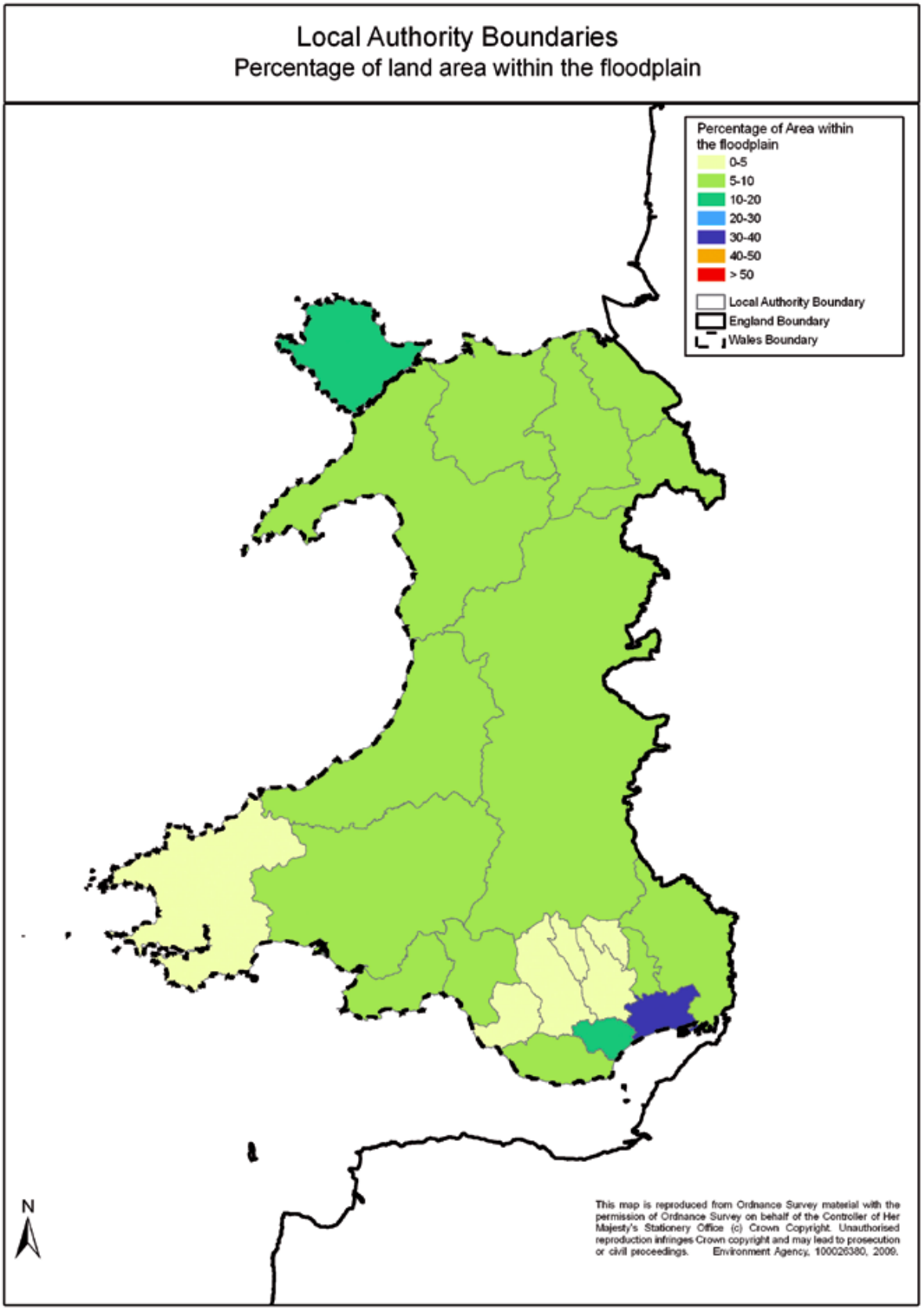


Figure ten: Number of properties in areas with significant likelihood of flooding in Wales, by Local Authority

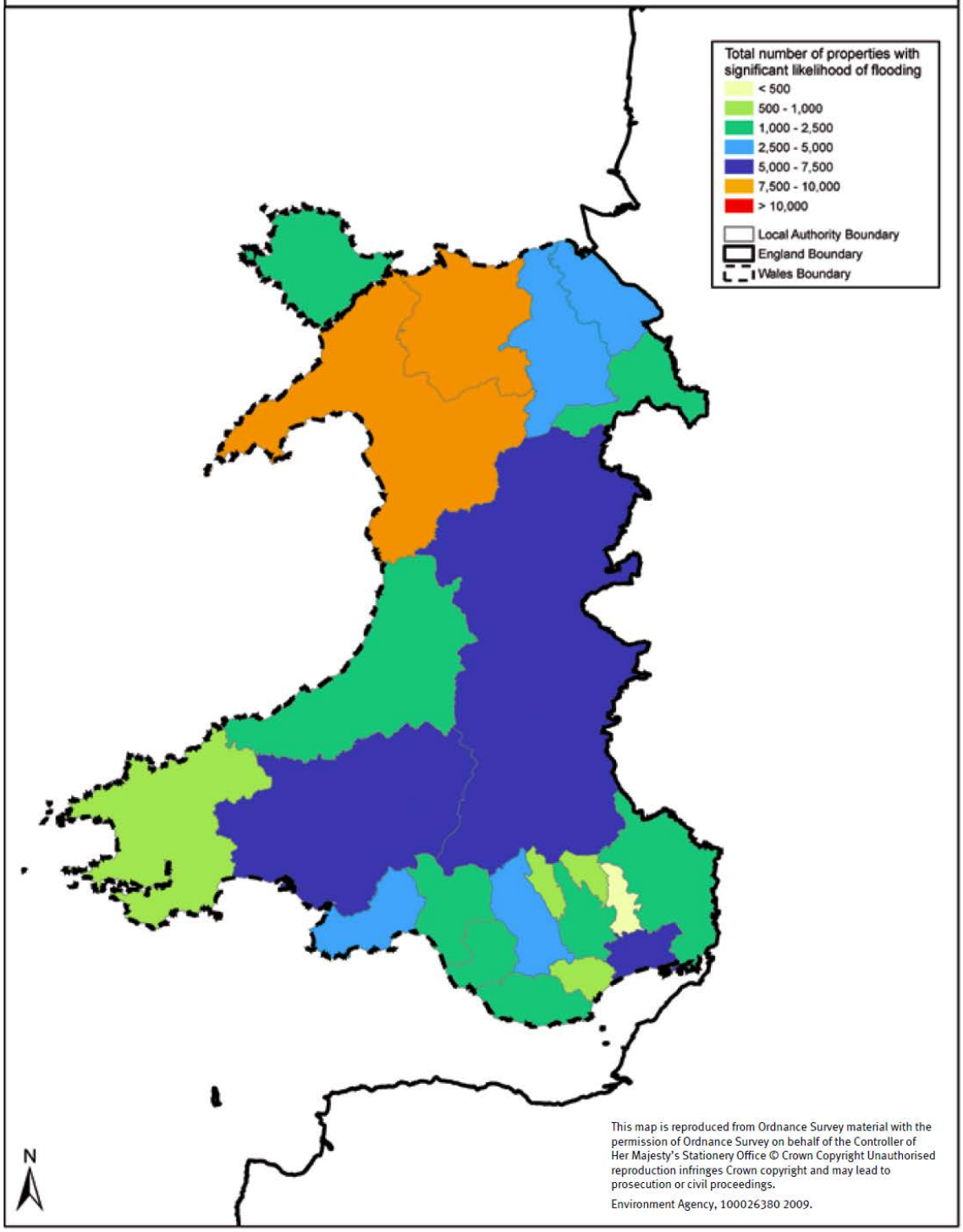
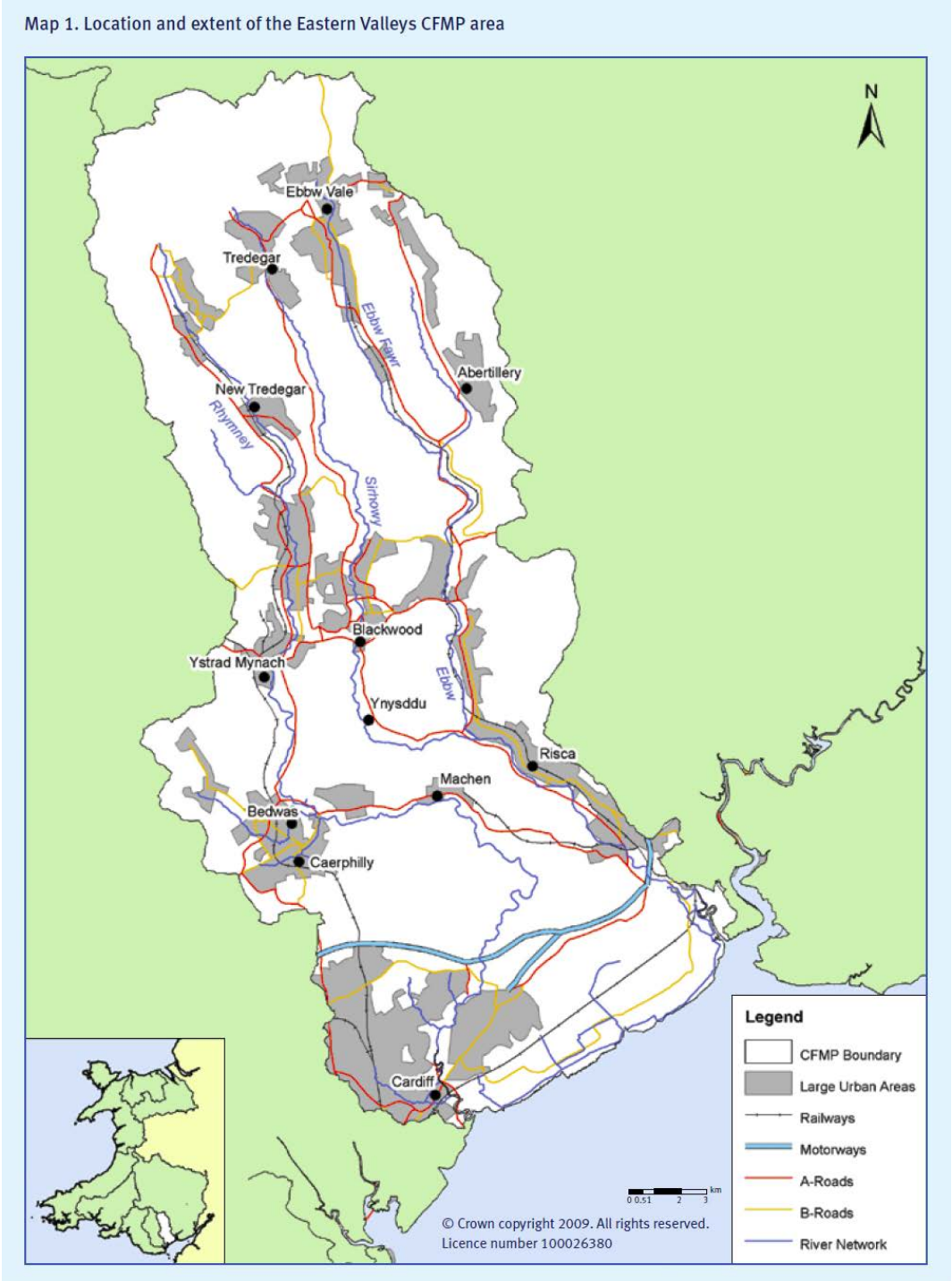


Figure A.7 - Eastern Valleys Catchment Flood Management Plan Area January 2010



Map 2. Number of properties currently at risk in a 1% AEP flood event

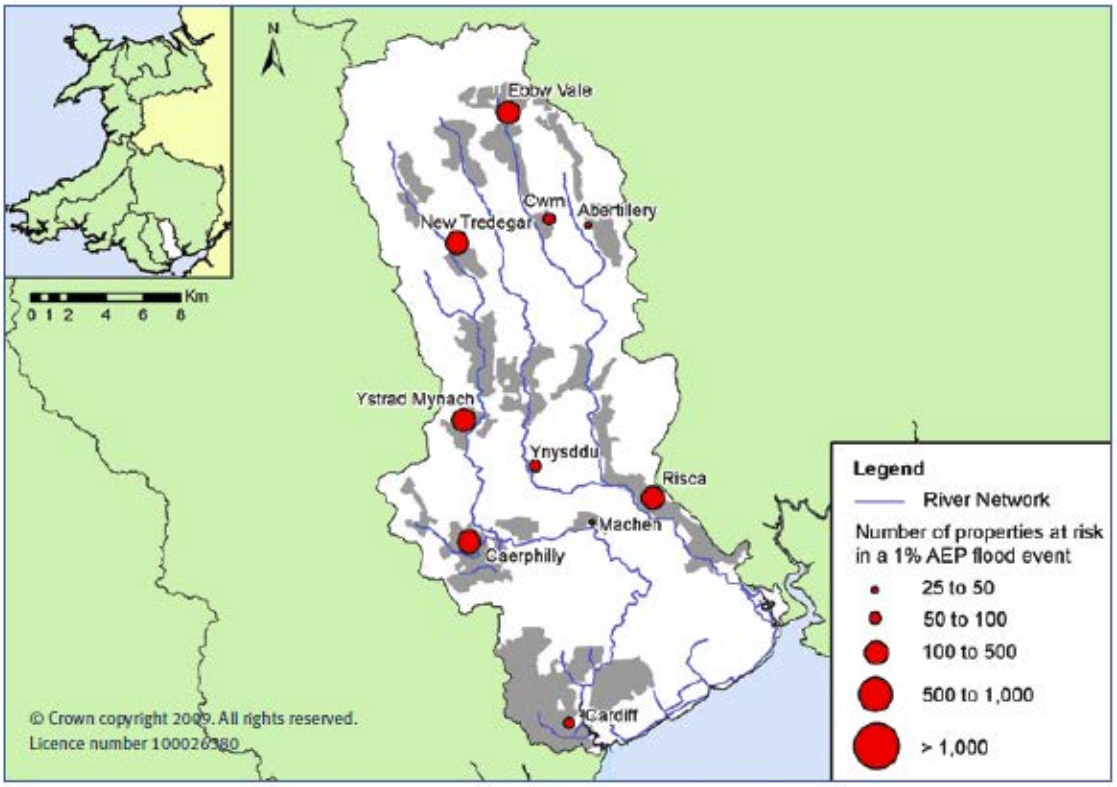


Figure A.8 – Current and Future Number of Properties at risk from a 1% AEP flood event

Figure 2. Current and future (2100) numbers of properties at risk from a 1% AEP flood event

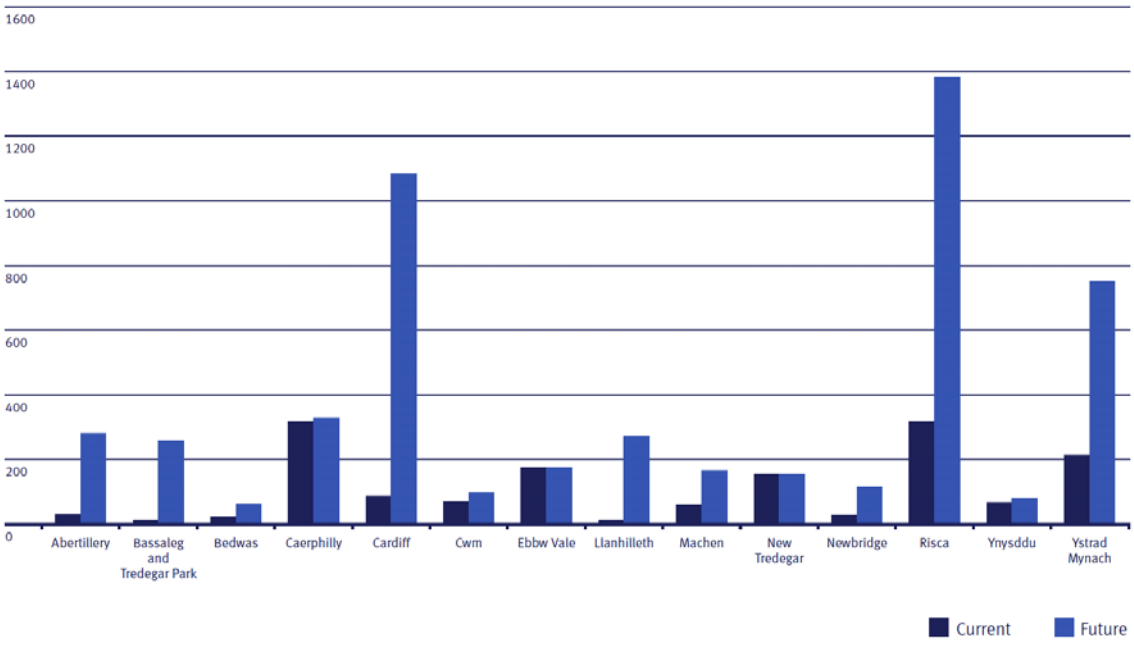


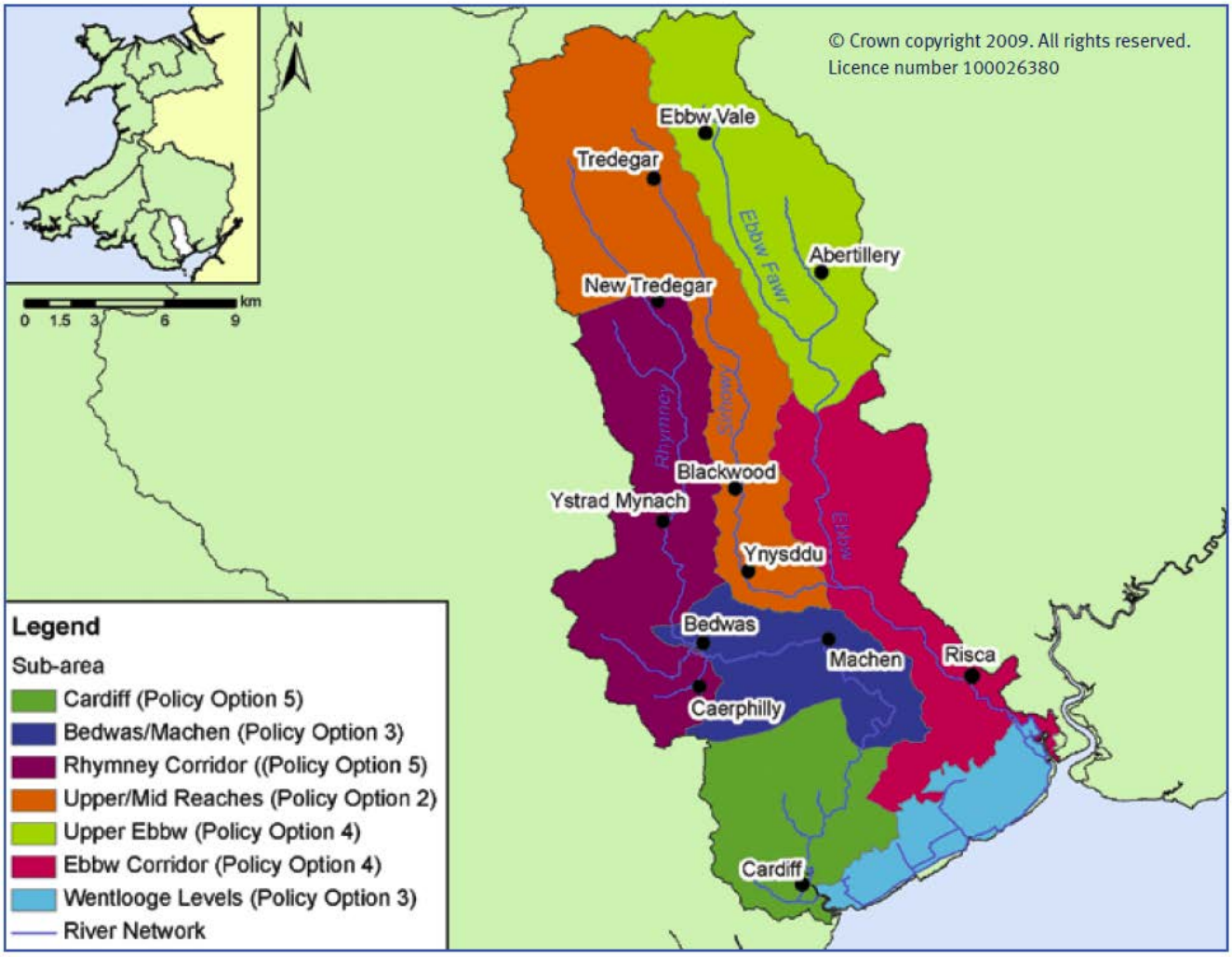
Figure A.9 – Infrastructure at Risk in the future (2100) 1% AEP flood event

Table 4. Infrastructure at risk in the future (2100) 1% AEP flood event

19 electricity sub-stations
3 police stations
1 fire station
2 ambulance stations
11 schools
6 health centres
2 hospitals
6.5 kilometres of 'A' roads

Figure A.10 – Sub-areas in the Eastern Valleys CFMP

Map 3. Sub-areas in the Eastern Valleys CFMP



Water Availability

A.49 The Ebbw and Lwyd Catchment Abstraction Management Plan covers an area that includes the majority of the County Borough. Both the River Ebbw and the River Lwyd flow into the Usk Estuary, which ultimately flows into the Severn Estuary. The Estuary is designated as a SSSI, an SAC, a SPA and as a Ramsar site. Therefore any impact on the Severn Estuary caused by changes to the water resources management of the catchment needs to be considered. The catchment area supports a variety of designated species, as well as hosting a significant brown trout fishery. Salmon and sea trout are present in the Ebbw and Sirhowy. **Annex A** demonstrates that the majority of the County Borough is over abstracted.

Landscape, Land Use and Soil

A.50 The main features of Blaenau Gwent are the deeply incised valleys of the Sirhowy, Ebbw Fach and Ebbw Fawr rivers, which flow in a southerly direction from the relatively high moorland plateau running across the northern extremity in an east to west direction. Much of the natural vegetation has been removed because of the industrialisation of the area.

A.51 The largest land use designation in the County Borough is open countryside (45%) and the defined urban area is only 23%. The remainder comprises a combination of other designations including rural settlements and forestry.

A.52 The following Special Landscape Areas (SLAs) are designated in the emerging LDP:

1) St Illtyd Plateau and Ebbw Eastern Sides
2) Eastern Ridge and Mynydd James
3) Cwm Tyleri and Cwm Celyn
4) Mynydd Carn-y-Cefn and Cefn yr Arail
5) Mynydd Bedwellty, Rhymney Hill and Sirhowy Sides
6) Cefn Manmoel
7) Trefil and Garnlydan Surrounds
8) Beaufort Common.

A.53 Blaenau Gwent has a history of potentially contaminating land uses that may have introduced soil contamination to the area. The 2003 Contaminated Land Strategy Review identified 1607 potentially contaminated sites in Blaenau Gwent of which there were 51 High Risk sites (previous or current uses include gas works, landfill sites, petrol stations and military land); 880 Medium Risk sites; and 676 Low Risk Sites. Sites with a history of contaminative usage that have been remediated include the former British Coal Workshops at Tredegar and the Dunlop Semtex site at Brynmawr.

A.54 In Blaenau Gwent there are currently 30 installations regulated under the Pollution Prevention and Control (England and Wales) Regulations. A list of the processes can be found on the link below. Of these 23 are part B, 2 are A2 and 5 are A1.

Infrastructure: Transport

A.55 The public rights of way network in the County Borough is 299.4km in length. 69% of this network is footpaths available solely to walkers, or carriageways mainly used a footpaths; Also, the distribution of the network is not even across the County Borough, and there are several factors arising from a lack of maintenance that have lead to restricted usability of this facility. Three factors identified that need improving are: more circular routes- signed and advertised as such; the need to link paths together- defragmentation; and more long distance routes.

A.56 In 2008, a new rail link to the Ebbw Valley was opened, providing rail stations at Ebbw Vale Parkway and Llanhilleth in Blaenau Gwent. Other nearby rail links are at the Valleys line station at Rhymney and West coast mainline at Abergavenny. Valleys lines provide access to and from Cardiff, which is linked with the Great Western line giving links eastward to London and westward

to Swansea, Fishguard and the Republic of Ireland. Rhymney station has a good bus service (Route 20) to Tredegar including Parc Bryn Bach . Abergavenny Station links to the X3 service between Cardiff and Hereford via Pontypool and Cwmbran. The X4 service between Hereford and Cardiff via Brynmawr, Ebbw Vale, Tredegar, Merthyr and Pontypridd is available within a walking distance to the bus station.

A.57 The current frequency of services between Ebbw Vale and Cardiff are as follows:

- Monday - Saturday: 1 train per hour (first train, 6:40, last train 22:40)
- Sunday: 1 train every 2 hours (first train, 8:40, last train 20:40)

A.58 Although these stations offer good interchange opportunities with local bus services, new bus routes are needed to connect more settlements, e.g. Tredegar, Brynmawr, Nantyglo and Blaina, with this railway line. National Cycle Network Route 47 crosses the line and runs south, parallel to the railway, from near Crosskeys Station. Cwmcarn Forest Drive, which has an off-road cycle route, is also accessible. The emerging LDP identifies the extension of the Ebbw Valley line to Abertillery complemented by the provision of a new station and park and ride facility.

A.59 Bus links provide a good level of service during weekdays and on Saturday, connecting the Blaenau Gwent major towns with the area. Conversely, Sunday service is limited and some lateral connections between valleys are poor. The following list identifies the main bus services that currently operate within Blaenau Gwent:

SERVICE	ROUTE AND TIMINGS	OPERATOR
X4	Cardiff-Merthyr-Tredegar-Ebbw Vale-Brynmawr-Abergavenny (every 30mins throughout the day)	Stagecoach
X15	Brynmawr-Abertillery-Newport (every 30mins)	Stagecoach
X18	Ebbw Vale-Newbridge-Risca-Newport (hourly service)	Stagecoach
X74	Crosskeys-Abertillery-Abergavenny (Tuesdays only 1 service)	Stagecoach
E2	Ebbw Vale-Hilltop (circular every 30mins)	Stagecoach
E3	Brynmawr-Abertillery-Ebbw Vale-Brynmawr (hourly service)	Stagecoach
E4	Brynmawr-Ebbw Vale-Abertillery- Brynmawr (hourly service)	Stagecoach
E8	Ebbw Vale-Rassau-Garnlydan (every 30 mins)	Stagecoach
E11	Ebbw Vale-Tredegar via Ysguborwen (hourly service)	Clarkes Coaches
E12	Ebbw Vale - Tredegar / Tredegar – Peacehaven (hourly Service)	Clarkes Coaches
E13	Tredegar-Ebbw Vale via Peacehaven (hourly service)	Clarkes Coaches
4	Tredegar – Rhymney – Pontlottyn (hourly service)	Stagecoach
20	Cefn Golau – Tredegar – Rhymney Station (hourly service)	Stagecoach
21	Cwmbran-Pontypool-Blackwood (hourly service)	Stagecoach
22	Ebbw Vale-Pontypool-Newport (hourly service)	Stagecoach
30	Brynmawr-Blaenavon-Pontypool-Newport (hourly service)	Stagecoach
48/49	Tredegar-Troedrhiwair (taxi 3 services per day Tuesday, Wednesday, Friday and Saturday)	Met Taxis
52	Cwmtillery-Abertillery-Trinant-Newbridge-Blackwood (every 30 mins)	Stagecoach

SERVICE	ROUTE AND TIMINGS	OPERATOR
56	Tredegar-Blackwood-Newport (30 mins at busy times otherwise hourly)	Stagecoach
C20	Rhymney Station - Tredegar (hourly)	Clarkes
3/S	Abergavenny-Gilwern-Brynmawr (hourly service)	Clarkes
1	Abertillery-Cwmtillery-Brynithel-Hillcrest-Tesco (hourly service)	Henleys Bus Service
1/S	Abertillery-Gelli Crug (1 service per day)	Henleys Bus Services
3	Abertillery-Arael View (every 30 mins)	Henleys Bus Services

A.60 The area's principal road system provides A-road access to the motorway network (the M4, M5 and M50) and combined with the A470 and A465 Heads of the Valley roads, connects the area with the South East, South West, Midlands and London. Dualling work is being carried out to improve the motorway access.

Figure A.12 – Common Land

Date : 19/04/2012	Blaenau Gwent County Borough Council	Blaenau Gwent County Borough Council Regeneration Division
Scale : 1:76000	Common Land	

Reproduced from the Ordnance Survey Mapping with the permission of Her Majesty's Stationary Office (C) Crown Copyright. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. BGCBC - LA09002L

Atgynhyrchwyd o Fapiau'r Ordnance Survey chaniatad Rheolwr Llyfrfa Ei Mawrhydi (c) Hawlfraint y Goron. Y mae atgynhyrchu heb awdurdod yn torri Hawlfraint y Goron a gall arwain at erlyniad neu achosion sifil. BGCBC - LA9002L.

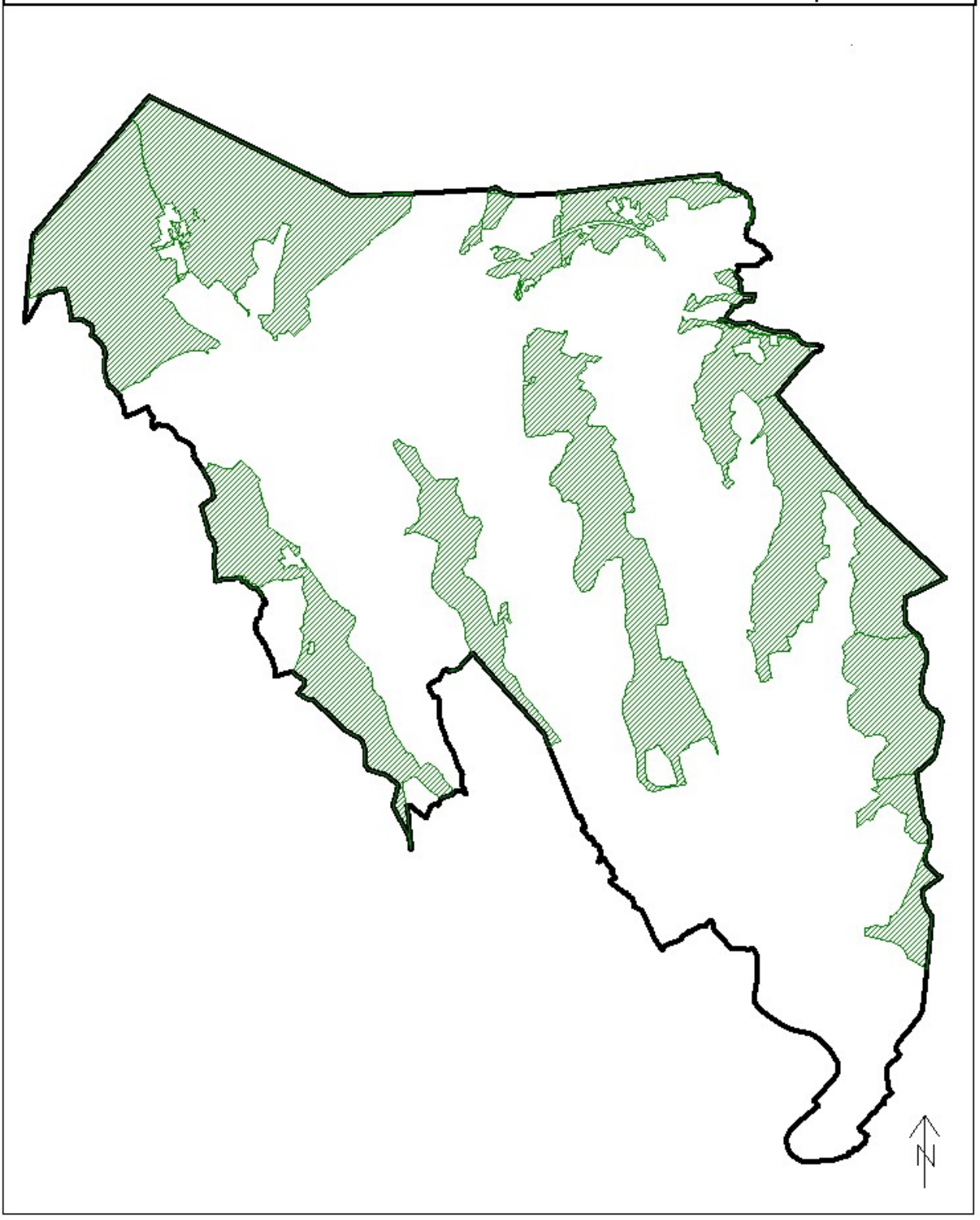


Figure A.13 – Agricultural Land Classification

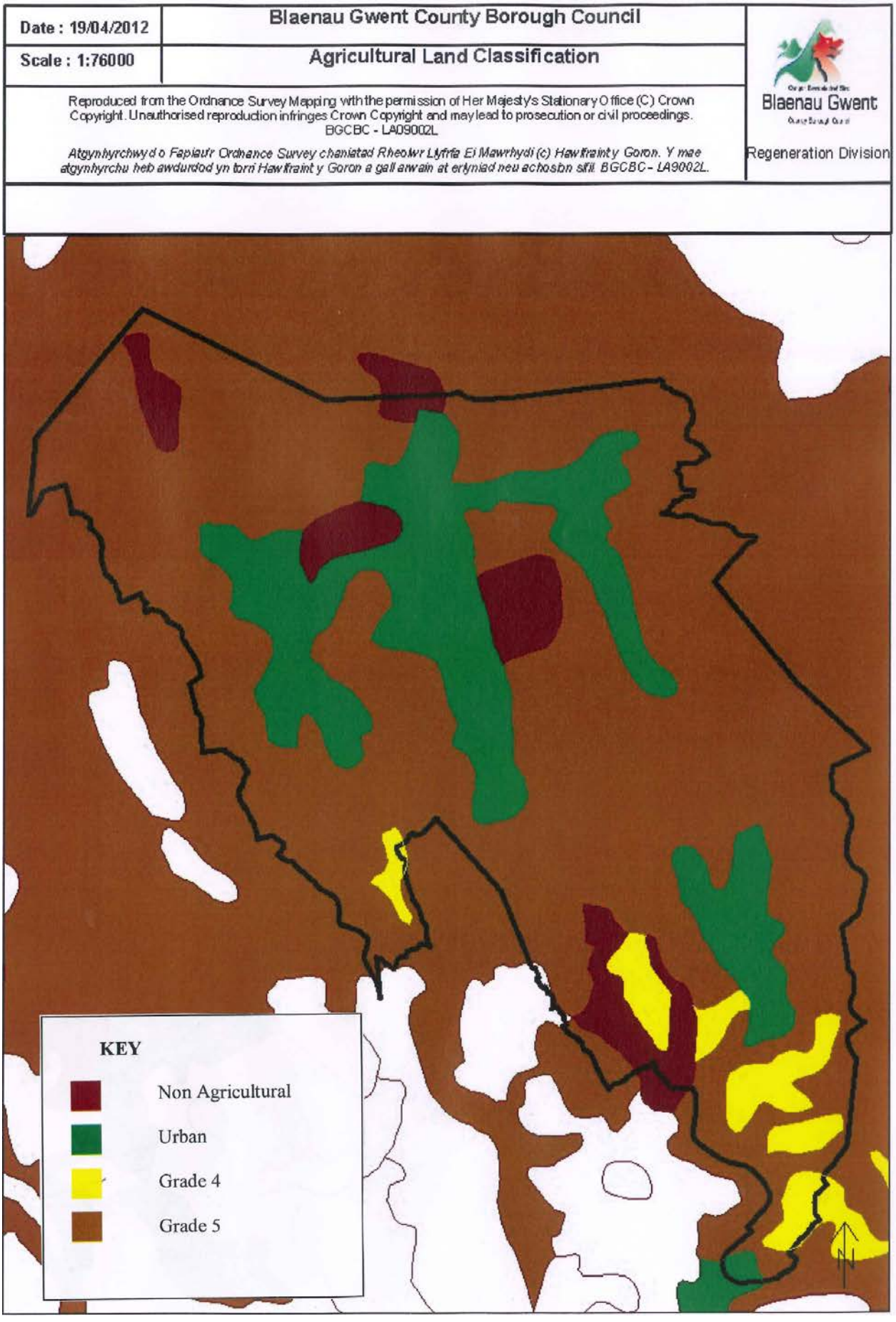


Table A.4 – Baseline Data Tables

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
PM_{10} Concentrations	Background concentrations 2004:15.9 µg/m^3 2005: 16 µg/m^3	South East 2004 - 17 µg/m^3 2005 - 17 µg/m^3		Overall PM_{10} concentrations predicted to decrease slightly within South East region by 2010	No issue identified – it is considered that the LFRMS will not have an effect on air quality.	Air Climatic Factors Human Health	UK National Air Quality Archive (http://www.airquality.co.uk/) 'Air Quality in Wales', Welsh Air Quality Forum (2005)
NO_2 Concentrations	Background concentrations 2004: 10.1 µg/m^3 2005: 9.8 µg/m^3	South East 2004 - 12 µg/m^3 2005 - 12 µg/m^3		Overall NO_2 concentrations predicted to decrease in the South East region by 2010	No issue identified – it is considered that the LFRMS will not have an effect on air quality.	Air Climatic Factors Human Health	UK National Air Quality Archive (http://www.airquality.co.uk/) 'Air Quality in Wales', Welsh Air Quality Forum (2005)
National Atmospheric Emissions Inventory (NAEI) levels of key air pollutants (Benzene, 1,3-Butadiene, SO2)	Benzene – 0.12 -1.3 Butadiene – 0.02 SO2 – 5.42	South East Benzene – 0.114 -1.3 Butadiene – 0.28 SO2 – 13.224			No issue identified – it is considered that the LFRMS will not have an effect on air quality.	Air Climatic Factors Human Health	http://www.airquality.co.uk/archive/laqm/laqm.php
Carbon Dioxide Emissions (tonnes)	Industry & Commercial – 248 (54%) Domestic – 144 (31%) Road Transport – 71	South East nd & Com – 7119 (52%) Domestic – 3628 (26%) Road Transport – 3023 (22%)			It is considered that the LFRMS is not directly related to greenhouse gas emissions. However, the LFRMS could	Air Climatic Factors Human Health	Defra 2006: http://www.defra.gov.uk/environment/statistics/globatmos/regionalr

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
	(16%) Land Use Change - -5 (1%) Total - 457 Per Capita CO_2 (tonnes)- 6.5 Domestic per capita CO_2 (tonnes) – 2.0 Percentage of regional emissions total originating from Blaenau Gwent Industry & Commercial – 3.5% Domestic – 4.0% Road Transport – 2.3%	Land Use Change - -55 (0.4%) Total – 13,715 Per Capita CO_2 (tonnes)- 9.8 Domestic per capita CO_2 (tonnes) – 2.6 <u>Wales</u> Ind & Com - 16,539 (53%) Domestic – 7954 (25%) Road Transport - 7244 (23%) Land Use Change - -433 (1.4%) Total – 31,303 Per Capita CO_2 (tonnes)- 10.8 Domestic per capita CO_2 (tonnes) – 2.7			enable the reduction of emissions/sequestration of gases through measures which seek to encourage the stabilisation and retention of soils and peat including through the planting of vegetation.		pt/laregionalco2rpt20061127.xls
No. of conservation areas	At the moment there are two conservation areas in Blaenau Gwent, Bedwellty House and Park and the Circle, Tredegar (the Park included in Cadw's Register of Parks and Gardens of Special Historic Interest	The South East Wales region includes a considerable number of designated conservation areas and, in comparison; Blaenau Gwent has relatively little protection of areas of heritage interest.		Number of designated sites under review and likely to increase.	Despite having a considerable number of sites of heritage interest, there are only two designated Conservation Area in the authority. This may result in development pressure eroding the	Cultural Heritage Landscape	The Ebbw Vale Works Environmental Statement 2007 BGCBC, personal communicati

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
	in Wales). .				character and value of heritage sites, which in turn may reduce the opportunities for tourism in the area. The LFRMS should seek to retain areas of heritage importance and protect them from flood risk.		on with Heritage Officer, 23.04.2007
No. of Listed Buildings and proportion at risk	53 listed buildings with ten listed as Grade II* in recognition of their special historical and architectural importance. 8 buildings particularly are at risk (listed above)	5475 in the South East region (c. 550 per LA area).		Without intervention, it is likely that the conditions of listed buildings will continue to deteriorate and an increased no. will enter the at risk register.	15% of all the listed buildings in the area are at risk. Continuation of current trends would place these heritage assets at greater risk.	Cultural Heritage Landscape	http://www.blaenau-gwent.gov.uk/leisure/5931.asp Personal correspondence with the BGCBC Heritage Officer on 14.05.07 (new listed building - Aberbeeg Packhorse Bridge).
Archaeological Sites	Bedwellty Park - included in Cadw's Register of 'Parks and Gardens of Special Historic Interest in Wales' *Scheduled monuments:* ***Tredegar Area***	Registered Parks and Historic Gardens - South East approx – 56			The South East has approximately 56 registered historic parks and Gardens: out of 10 authorities Blaenau Gwent only has 1 registration - this is a significantly low proportion. There is an opportunity to	Cultural Heritage Landscape	Blaenau Gwent UDP

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
	• *Incline Haulage Winding Engine, Mynydd Bedwellty* • *Tredegar Ironworks Cholera Cemetery* • *Sirhowy Ironworks, Site of* • *Trefil Quarries North* • *Trefil Tramroad* • *Twyn Bryn March Round Cairn* • *Afon Sirhowy Hut Circle* ***Ebbw Vale Area*** • *Marine Colliery Pumping Engine* • *Cefn Man Moel Cross-Ridge Dyke* • *Y Domen Fawr round cairn* ***Upper Ebbw Fach*** • *Clydach Railroad Section near Brynmawr* • *Clydach Coal Level* ***Lower Ebbw Fach*** • *St Illtyd Castle Mound*				improve the Area of Blaenau Gwent for tourism and landscape values.		
No. & area of designated sites for biodiversity	***SAC:*** **Usk Bat Sites** (one of the best areas in the United Kingdom for lesser horseshoe bat) , 1686.4 ha (partially in the BG area)		The Environment Strategy for Wales Action 32 seeks to achieve a favourable condition for all international,		There is a range of designated sites for nature conservation in the County Borough, which could help to ensure the conservation of biodiversity.	Landscape Biodiversity Flora and Fauna	The Ebbw Vale Works Environmental Statement 2007 Blaenau Gwent Community

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
	European dry heaths, degraded raised bogs, blanket bog, calcareous rocky slopes, caves not open to the public, Tilio-Acerion forests and lesser horseshoe bats **Mynydd Llangatwg** Site condition by feature name: • Blanket bog (other ombrogenous mire) - Unfavourable – judgement (confidence in assessment - high) • Calcareous grassland - Unfavourable – judgement (medium) • Natural inland rock exposures, screes & upland ledges - Favourable – judgement (medium) • Semi-natural broad-leaved woodland - Unfavourable – judgement (medium) • Heathland - Unfavourable – measured (high)		national and local designated sites by 2026. Resources are currently being allocated towards achieving this, for example through CCW's Special Sites project				Plan 2005-2009 BGCBC, personal communication with Biodiversity Officer, 20.04.2007 BGCBC LBAP 2002 SEWBReC, Biodiversity Information Search Results: Blaenau Gwent Designations (Sustainability Appraisal LDP), 18/05/2007 http://www.blaenau-gwent.gov.uk/environment/17469.asp

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
	• Raised Bog - Unfavourable – measured (high) • Vascular Plant assemblage (with several individually qualifying species) - Unfavourable - judgement (medium but most species doing ok) • Bryophyte Assemblage (with individually qualifying species) - Favourable – judgement (medium) • Lichen Assemblage - Favourable – judgement (medium) • Lesser Horseshoe Bats - Favourable - judgement(medium) • Bat Assemblage - Favourable – judgement (medium) • Geology - Karst and Caves - Unknown • Geology - Karst and Caves- Unknown • Lesser Horseshoe Bats - Favourable – judgement (medium) • Lesser Horseshoe Bats - Favourable - judgement(medium) • Lesser Horseshoe Bats - Favourable - judgement(medium)						

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
	Cwm Clydach Woodlands / Coedydd Cwm Clydach, 28.81 ha (adjacent to plan area) Site condition by feature name: • Geology - Lower Carboniferous - Unfavourable – judgement (confidence in assessment - high) • Geology - Upper Carboniferous - Unfavourable – judgement (medium) • Semi-natural broad-leaved woodland - Favourable – measured (medium) • Vascular Plant assemblage - Favourable – judgement (medium) • Fungi Assemblage - Favourable – judgement (medium) ***SSSI:*** **Cwm Merddog Woodlands** – 23.54 ha Unfavourable condition, recovering **Brynmawr Sections** - (geological site), 4.36 ha: Unfavourable						

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
	maintained Mynydd Llangatwg (Mynydd Llangattock) - 1,681.30 ha Site condition by feature name: • Blanket bog (other ombrogenous mire) - Unfavourable – judgement (confidence in assessment - high) • Calcareous grassland - Unfavourable – judgement (medium) • Natural inland rock exposures, screes & upland ledges - Favourable – judgement (medium) • Semi-natural broad-leaved woodland - Unfavourable – judgement (medium) • Heathland - Unfavourable – measured (high) • Raised Bog - Unfavourable – measured (high) • Vascular Plant assemblage (with several individually qualifying species) - Unfavourable - judgement (medium but most species doing ok)						

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
	• Bryophyte Assemblage (with individually qualifying species) - Favourable – judgement (medium) • Lichen Assemblage - Favourable – judgement (medium) • Lesser Horseshoe Bats - Favourable - judgement(medium) • Bat Assemblage - Favourable – judgement (medium) • Geology - Karst and Caves - Unknown ***WTR*** **Silent Valley** (SSSI CWM MERDDOG WOODLANDS) 45.70 ha ***National Parks***: The Brecon Beacons National Park ***Country Park*** Brynbach - 121.8249 ha ***NNR*** CWM CLYDACH - 24.26 ha						

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
	LNRs • Silent Valley - 51.62 ha (includes Cwm Merddog and Coed Ty 'n y Gelli S.S.S.I.). Some of the reserve has been designated a SSSI – for ancient semi naturalWoodland; • Parc Nant-y-Waun - 20.51ha • Sirhowy Hill Woodland & Cardiff Pond - 81.55ha • Beaufort Hills - 81.61ha • Cwmtillery Lakes - 9.88 ha • Parc Bryn Bach – 112.22 ha ***Candidate LNRs*** • Six Bells Colliery Site - 10.31 ha • Garden City - 43.29 ha • Roseheyworth Community Woodlands - 18.75 ha • Trevor Rowson Heritage Park- 9.3 ha • Cwmcellyn Pond - 4.03 ha						

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
	SINCs There are 137 SINCS designated in BG. These are shown on the Proposals Map for the LDP.						
Population of species and areas of priority habitat	The Local Biodiversity Action Plan provides a framework for reversing the decline of Blaenau Gwent's wildlife resource and includes 14 Habitat Action Plans and 21 Species Action Plans *Species for which action plans have been prepared*: **Group Species** Amphibians Great Crested Newt (Triturus cristatus) Birds Skylark (Alauda arvensis) Grey Partridge (Perdix perdix) Butterflies Pearl-bordered Fritillary (Boloria euphrosyne) Mammals Brown Hare (Lepus europaeus) Otter (Lutra lutra)	Lapwing Current estimated Wales population = 700 pairs Grey Partridge: Current estimated Wales population = 200 - 500 pairs **Priority Habitats:** **- Upland oakwood -** National: Total area of UK Upland Oak woodlands is between 80,000- 110,000 hectares. Wales: An estimate of 39,000 ha, equivalent to 40% of the UK resource.- **- Upland mixed ashwoods** National: The total resource is uncertain, although it is estimated as 67,500 ha in the UK action plan Wales: An estimate of 17,000 ha, equivalent to 25% of the UK resource **Wet woodland** National: The estimated total area of UK wet woodland lies	**Upland oakwood** • Identify opportunities for further expansion of existing oak woodland, with a view of expanding it by 10% through planting or natural regeneration. • Encourage the establishment of a Nursery in the area, which uses stock of only local provenance. • Identify and designate appropriate woodlands as SINCs. (By 2003) **- Upland mixed ashwoods** Determine the	Without intervention, it is likely that species will experience further dramatic declines and extinction in Blaenau Gwent	*Current factors affecting the habitat and associated species* The most important issue impacting on breeding lapwings and grey partridges is that of development pressure. **Wet Woodland** • Habitat loss through clearance and conversion to other land uses. In particular development along rivers or stream corridors. • Manmade and natural changes to the hydrological regime on which the woodland depends e.g. flood alleviation schemes and subsequent economic development, leading to development of drier woodland types • Fragmentation of	Landscape Biodiversity Flora and Fauna	http://biodiversitywales.org.uk/English/LocalToYou/area.aspx?id=18 http://www.ukbap.org.uk/lbap.aspx?ID=415 BGCBC LBAP 2002 WAG/BGCBC/RSPB

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
	Pipistrelle Bat (Pipistrellus pipistrellus) Lesser Horseshoe Bat (Rhinolophus hipposideros) Lapwing (Vanellus vanellus) Grey Partridge (Perdix perdix) **Priority Habitats:** **Upland Oakwood** Extent: Greater Gwent: Between 500-700 ha Blaenau Gwent: Unknown. More information is needed to fully assess the current status of the upland oak woodland resource in Blaenau Gwent. **Upland mixed Ashwoods** Extent: Greater Gwent: Estimated as in excess of 600 ha Blaenau Gwent: Unknown	between 50,000 – 70,000 ha. Wales: The estimate for Wales lies between 5,000 and 7,000 ha, equivalent to 10% of the UK resource. **Lowland beech and yew woodland** National: A habitat limited to southern England and Wales with an estimate total area of 30,000 hectares. Wales: An estimate of 3,000 ha, equivalent to 10% of the UK resource. **Purple moor-grass and rush pasture** National: 56,000 hectares Wales: 31,000 hectares **Calcareous grassland** National: 21,900ha - Upland; 33,333ha (estimate) - Lowland Wales: 800ha about 3.6% of the national resource – upland; 1,000 ha at least about 3% of the national resource – lowland.	extent, distribution and condition of the resource over 1ha in BGCBC by 2003. • Identify opportunities for further expansion of existing ash woodland, with a view of expanding it by 15% of the known existing resource through planting or natural regeneration by 2006. • Identify and designate appropriate woodlands as SINCs by 2003. • Ensure the management plans and appropriate active management regimes are in place for all designated sites and other key sites by 2005.		woods leading to increased likelihood of loss of wet wood component through development of drier woodland types • Water pollution reducing the quality of individual sites • Difficulty with management due to poor access and boggy condition of site. **Lowland Beech and Yew Woodland** • On steep sites some woodland are inaccessible making fencing operations difficult and a low priority. Many sites are unstable and subject to land slide. **Purple moor-grass and Rush Pasture** • Agricultural improvement through drainage, cultivation, reseeding and fertiliser applications. • Fragmentation and disturbance by developments such as housing, industry and road construction.		

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
	Wet woodland Greater Gwent: An area of approximately 200-500 ha is present. Blaenau Gwent: Unknown. More information is needed to fully assess the current status of the wet woodland resource in Blaenau Gwent. **Lowland beech and yew woodland** Greater Gwent: 279 ha Blaenau Gwent: More information is needed on the extent and condition of surviving beech woodland resource in Blaenau Gwent. Beech and yew woodland has not been subject to extensive replanting although much of the woodland is a remnant of former larger stands especially in the west. **Purple moor-grass and rush pasture** Greater Gwent: Estimated at 420 ha from Phase 1 Survey (1990), approximately	**Dwarf Shrub heath** UK and Ireland: The total area of lowland heath is 290,000 ha. National: 58,000 ha of lowland heath - 20% of the world total: 2,112,000 ha. of upland heath Wales: 62,500 ha. **Blanket bogs** National: The estimated total area of UK blanket bog is 1,475,000 ha. Wales: The estimate for Wales lies between 5,000 – 7,000 ha, equivalent to 10% of the UK resource **Mesotrophic standing waters** National: Approximately 600 known or potentially known mesotrophic lakes have been identified as part of the UK Mesotrophic Lakes Inventory but further work is required to quantify the complete resource Wales: A list of 33 sites under consideration as	• Encourage the establishment of a Nursery in the area, which uses stock of only local provenance. **Wet woodland** • Determine the extent and distribution of the resource for all sites > 0.5 ha within BG by 2003. • Maintain current extent and improve condition of existing wet woodlands. Once the condition is known management can be targeted where required. • Identify suitable candidates for designation as SINC by 2003. • Ensure appropriate management		• Afforestation. • Inappropriate land reclamation schemes where purple moor-grass and rush pasture is often viewed as 'wasteland'. **Calcareous Grassland** • Industrial and residential development (including sites which are currently proposed for development). • Unsympathetic management of road verges and other man-made sites. • Fragmentation, isolation and disturbance of the habitat as a result of residential, industrial or road developments. • Grant aided woodland planting or commercial forestry. • Lack of biological information relating to the habitat and its associations with other habitats/species. • An incomplete		

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
	0.75% of the UK resource. Blaenau Gwent: Unknown **Calcareous grassland** Greater Gwent: Unknown 52 ha, consisting of 44 hectares of unimproved habitat and 8 hectares of semi improved habitat recorded within the Phase 1 Habitat Survey of Gwent in 1995 (Westwood et al.). Blaenau Gwent: 4.73ha (estimate-there maybe some overlap between upland and lowland in this figure.) – upland; Unknown – lowland. The limited resource of calcareous grassland has been severely depleted in recent decades and many remaining areas are now fragmented, with many sites containing small pockets of habitat of less than 1 hectare. **Dwarf Shrub heath** Gwent: 340 ha. of Lowland Heath: 2460	mesotrophic lakes has been established. Further information is required to confirm their status **Ponds and temporary water** National: There are 295,000 ponds in Britain. Wales: There are 4,500 ponds in Wales. **Gardens** National: At least 16 million (covering over a thousand square miles). (Readers Digest statistics). Wales: Unknown	regimes are in place for all key wet woodland sites, by 2006. • Ensure that there is no loss of the current resource. • Create a further 5-7 ha of wet woodland on an existing wet woodland site by 2010 in line with the Greater Gwent Biodiversity Action group objectives. • Encourage the establishment of a Nursery in the area, which uses stock of only local provenance. **Lowland beech and yew woodland** Determine the extent and condition of the beech		inventory identifying the extent of the habitat within Blaenau Gwent – sites may exist which have not yet been identified. • Lack of awareness of the nature conservation significance of the habitat, and particularly on the part of planning authorities, landowners/managers and national or local government bodies. **Dwarf Shrub Heath** • Erosion from recreational vehicles, bicycles and walkers • Heathland fires • Tree planting schemes shading out regenerating heather • Developments especially industrial units • Pipeline developments predominantly gas pipelines • Dwarf shrub heath is often on common land where achieving agreed grazing levels that harmonise nature conservation with		

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
	ha. of upland heath Blaenau Gwent: Unknown **Blanket bogs** Greater Gwent: An area of approximately 200-500 ha is present. Blaenau Gwent: Unknown. More information is needed to fully assess the current status of this habitat in Blaenau Gwent. **Mesotrophic standing waters** Greater Gwent: 5 Candidate lakes are found in Gwent Blaenau Gwent: Approximately 10.9 ha **Ponds and temporary water** *Factors affecting this habitat and associated species:* Greater Gwent: Unknown Blaenau Gwent: Little is known about the extent of small ponds in the borough.		woodland in Blaenau so that by 2003 all woods over 2 hectares within BG should have been surveyed. • Maintain current extent of beech woodlands. • Improve the condition of 100% of beech woodland within SSSI's by 2010. • Consider the establishment of a site or sites demonstrating good practice in both retention and management of existing beech woodland and the expansion of those woodlands by 2015. • Initiate colonisation or planting of 10% of the existing beech woodland,		agricultural land-use can sometimes be difficult •Fragmentation caused by the above factors **Blanket Bogs** • Upland afforestation predominantly with coniferous trees • Drainage of upland areas often to improve grazing • Recreational pressure on uplands causing erosion on peatlands and disturbance to the habitat • Pipelines, Pylons and Windfarms leading to development and destruction of the habitat **Mesotrophic Standing Waters** •Eutrophication caused primarily by nitrates or phosphates in sewage or fertiliser run-off. • Acidification may occur locally in areas with sensitive geology		

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
	• Agricultural in-filling has been responsible for the loss of many farmland ponds. • Industrial and residential development has led to the loss or compromising of urban fringe pools and ponds through in-filling and draining. • Land-fill schemes continue to threaten the remaining pond resource. • Competition for alternative land-use, e.g. development • Natural in-filling, from sediment and marsh vegetation. • Rubbish tipping. • Over fishing. • Pollution (including mine water seepage and historical chemical dumping) is an on-going problem on many sites. • Lack of management or inappropriate management threatens many sites. • Occasionally over-enthusiastic management can destroy marginal and shallow water features		expanding on existing woodland sites by 2010 in line with the Greater Gwent Biodiversity Action Group objectives. **Purple moor-grass and rush pasture** Define extent and condition of purple moor-grass and rush pasture by completion of the upland survey and other locations (by 2003). • Secure sympathetic management agreements and/or conservation status (SINC) for at least 25% of purple moor-grass and rush pasture in BG (by 2004). • Seek opportunities to create/recreat		and soils, as a result of atmospheric deposition of pollutants. • The delicate balance of nutrients found within mesotrophic lakes means that their biological character is very sensitive to environmental change. Pollution arising from organic matter, silt, heavy metals and thermal discharges represents a major threat to this habitat. Pollution in the form of nutrient enrichment (particularly Phosphorus) often results from contamination with sewage effluent, accidental spillages and run-off from adjacent land used for agriculture and forestry. Algal blooms are a common symptom of enrichment • Lowering of water levels caused by over abstraction of surface or ground water; or by drainage. • Urbanisation and in-filling of ponds.		

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
	of biodiversity value. **Gardens** Greater Gwent: Unknown Blaenau Gwent: 25,411 gardens (maximum possible)		e 5% of purple moor-grass and rush pasture in BG. (by 2006). **Calcareous grassland** • Arrest the depletion of unimproved lowland calcareous grassland throughout the UK. • Prepare and maintain a complete record of the habitat resource in BG by 2003. • Maintain the ecological characteristics of the existing BG resource of calcareous grassland habitat. • Secure appropriate management of calcareous grassland to favourable conservation status by 2010.		• Inappropriate management on multiple use water bodies where activities (e.g. Recreation, fish farming) are not sensitively managed (e.g. by zoning), and where surrounding habitats are inappropriately managed or neglected. • Changes in surrounding land use that alters the water table, change the pollution load, or degrade or remove valuable adjacent habitat. In particular soil erosion from neighbouring land can add nutrients and reduce water clarity. • Recreation. Water borne traffic can damage aquatic plants and cause a decline in the macrophyte communities, which may favour algal growth.		

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
			• Identify sites which can be restored/re-created by an additional 10% of the total BG habitat resource, targeting those sites which are adjacent to or near to existing habitat (via land management and land purchases) where appropriate (e.g. Trefil Quarry). Minimum of 1ha by 2006. **Dwarf Shrub heath** • Define extent and condition of dwarf shrub heath by completion of the upland survey and other locations (by 2003). • Secure sympathetic management agreements and/or conservation				

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
			status (SINC) for at least 25% of dwarf shrub heath in BG – by 2004 • Review existing and proposed tree planting schemes to ensure that dwarf shrub heath is not adversely affected – by 2002 • Recreate, adjacent to existing blocks of dwarf shrub heath, 5% of the total area by 2005. **Blanket bogs** • Define extent and condition of blanket bog by completion of the upland survey and other locations (by 2003). • Maintain current extent of blanket bogs • Consider the need to protect blanket bogs				

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
			with Site of Importance for Nature Conservation (SINC) status (by 2003) • Create further blanket bog (5 Ha.) by constricting flows in existing mires by 2010 in line with the Greater Gwent Biodiversity Action Group objectives. • Enter into discussions with Commoners Associations to secure sympathetic grazing regimes. (by 2010) **Mesotrophic standing waters** • Define extent and condition of mesotrophic lakes (by 2003). • Maintain and improve the conservation				

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
			interest of standing open waters • Create new standing open waters of maximum wildlife benefit where possible **Ponds and temporary water** • Define number and condition of ponds by survey (by 2004). • Maintain and improve the conservation interest of ponds.				
Geodiversity	The main features of Blaenau Gwent are the deeply incised valleys of the Sirhowy, Ebbw Fach and Ebbw Fawr rivers, which flow in a southerly direction from the relatively high moorland plateau running across the northern extremity in an east to west direction. Much of the natural vegetation has been removed because of the industrialisation of			The geological landscape is relatively robust; in upland plateau areas where the Condition is generally Good. The Trend, where subject mainly to natural weathering and degradation – as across wide areas of the upland plateau - is considered relatively Constant. In coal mining areas, extraction has largely	Coal mining was an important industry, and evidence of previous mining activity remains in the landscape in the form of spoil heaps, tips, mine shafts and areas of made ground. On valley slopes with ancient landslips, renewed instability has resulted from extraction of coal and ironstone.		http://landmap.ccw.gov.uk/files/BLNGWGL170904%5B1%5D.pdf http://www.wefo.cymru.gov.uk/resource/Blaenau_Gwent_Local_Strategy_2003.pdf

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
	the area. The landscape/geomorphology of the Blaenau Gwent area is controlled by Upper Palaeozoic, Upper Carboniferous rocks of the Productive Coal Formation (Lower-Middle Coal Measures) and overlying South Wales Pennant and Grovesend formations (Pennant Measures/Upper Coal Measures). 23 Aspect Areas have been described and recorded in LANDMAP Collector. Evaluations are based on the potential for research and education as outlined for the Geological Conservation Review (GCR), where Outstanding evaluations are restricted to areas with prime geoconservation sites. Currently there are no RIGS sites listed, which typically include prime educational sites not covered by an SSSI designation. Of the 23 Aspect Areas, 26% are rated as Outstanding or High, 61% as Moderate			ceased, and reclaimed or made ground in the valleys has been developed. The condition in such areas is more generally Fair, but the trend remains Constant. Management priorities are long-term, as is appropriate to a Level 3 study.			

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
	(which is the default), and 13% low.						
Woodland cover	**Cwm Merddog Woodlands** SSSI near Cwm is a fine example of ancient semi natural woodland, notably beech woodlands at the western extremity of their range. It is a biological SSSI on the Silent Valley Local Nature Reserve. **ASNW/PAWS sites:** Site ID 2051 – ASNW, 1.95ha 2055 – ASNW, 1.13 ha 2082 – ASNW, 7.16 ha 2083 – ASNW, 4.43 ha 2102 – ASNW, 15.53 ha 2114 – ASNW, 12.17 ha 2120 – ASNW, 3.05 ha 2131 – ASNW, 2.29 ha 2167 – ASNW, 4.26 ha 2175 – ASNW, 3.26 ha 2181 – PAWS, 12.10 ha 2182 – ASNW, 3.10 ha 2188 – PAWS, 82.72		Increase woodland cover by 10% over the next 10 years		The plan to increase woodland cover could provide greater soil and land stability as well as reducing the risk of flash flooding.	Landscape Biodiversity Flora and Fauna	Blaenau Gwent Community Plan 2005-2009 SEWBReC, Biodiversity Information Search Results: Blaenau Gwent Designations (Sustainability Appraisal LDP), 18/05/2007

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
	ha 2209 – PAWS, 2.61 ha 2002 – ASNW, 8.62 ha 2199 – ASNW, 1.34 ha 2305 – ASNW, 1.46 ha						
Contaminated Land	2003 Contaminated Strategy Review: 1607 potentially contaminated sites, of which: - High Risk (previous or current uses include gas works, landfill sites, petrol stations and military land) - 51 - Medium Risk - 880 - Low Risk - 676 Sites with a history of contaminative usage, which have been remediated: the former British Coal Workshops at Tredegar and the Dunlop Semtex site at Brynmawr.				There is a high proportion of contaminated sites which may present issues during flood events. There are only two sites that have had a history of contamination and have been remediated.	Landscape Human Health Soil	Blaenau Gwent County Borough Council Contaminated Land Strategy, Environmental Health and Trading Standards Division
Water Quality (Biological and Chemical quality classified under the General Quality Assessment (GQA) scheme - Note - this has	The main water courses in Blaenau Gwent are the rivers Clydach, Ebbw Fach , Ebbw Fawr and Sirhowy See **Annex A** (Environment Agency	England & Wales Chemical water quality (percentage length) Good/Fair - 93.5 (2005)		See **Annex A**.	Water Quality has improved between 1990 to 2010 in relation to biological quality. Flood mitigation measures such as planting schemes	Water, Landscape, Biodiversity, Human Health, Soil	Environment Agency: River Quality

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
now been superseded by the Water Framework Directive)	Local Evidence Package extract)	Poor/Bad - 6.5 (2005) Biological quality (percentage length) Good/Fair - 95.4(2005) Poor/Bad - 4.6 (2005)			could help to contribute to improved water quality.		
Renewable Energy (RE)	*[no information sourced to date]*		The WAG - 10% of electricity produced from renewable sources by 2010		There is a lack of information relating to the generation and use of renewable energy. It is considered that this topic is not directly related to local flood risk management.	Air Climatic Factors Human Health Soil Material Assets	N/A
Energy Efficiency: ***Average SAP***	*[no information sourced to date]*		Blaenau Gwent Energy Strategy - min 2% energy saving per annum shall be adopted over a three-year period and reviewed annually.		It is considered that this topic is not directly related to local flood risk management.	Air Climatic Factors Material Assets Human Health	Blaenau Gwent Energy Strategy
Annual Energy Consumption (Gwh)	2003 Industry & Commercial – 841.1 Domestic – 780.3	2003 South East Ind & Com -18,333.3 Domestic – 12,203.3			It is considered that this topic is not directly related to local flood risk management.	Material Assets Climatic Factors	http://www.dti.gov.uk/files/file19335.xls

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
	Transport – 252.5	Transport – 24.921.4 Wales Ind & Com 56,294.9 Domestic – 29,554.7 Transport – 24,921.4					
Land utilisation	Open Countryside - 45% Defined urban area - 23% Enclosed agricultural land – 20% Urban fringe – 9% Recreation sites – 3%				BG is predominantly open countryside. The defined urban area is only 23%. The proportion of recreational sites is 3%	Landscape Material Assets	The Countryside and Landscape Strategy 1998
Area of Registered Common Land	*See Figure A.12*	South East: 5,261 Ha National Area: 115,283 Ha				Landscape	South East – Wales Spatial Plan Area Environmental Profile Draft October 2006
Area of Public Forest	*[awaiting data]*	South East: 20,596 Ha National Area: 99,261 Ha				Landscape	South East – Wales Spatial Plan Area Environmental Profile Draft October 2006
Area of Other Statutory Access Land	*[awaiting data]*	South East: 556,600Ha National Area: 612,098 Ha				Landscape	South East – Wales Spatial Plan Area Environmental Profile Draft October 2006

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
Area of Country Parks	*[awaiting data]*	South East: 1,433 Ha National Area: 3,854 Ha				Landscape	South East – Wales Spatial Plan Area Environmental Profile Draft October 2006
Length of Public Rights of Way	299.4Km, comprising: Footpaths: 68% Bridleway: 18% CRB (carriageway mainly used as a Bridleway): 12% CRF (carriageway mainly used as a footpath): 1% BOAT (byway open to all traffic): 1%	South East: 5,744.1 Km National Area: 33,217.6 km		Only 5% of the network is surveyed on an annual basis.	The distribution of the different sorts of rights of way is uneven across the County Borough. The backlog of maintenance of rights of way means that the 68% of rights of way accessible to walkers is not so. Rights of Way are considered to be an asset that should be protected from flood risk if possible.	Landscape	South East – Wales Spatial Plan Area Environmental Profile Draft October 2006 The Blaenau Gwent Rights of Way Improvement Plan 2007 (draft)
Use of Public Rights of Way	25% of population use footpaths on a daily basis. Most walk less than 4 miles, some walk 15 miles or more.					Landscape, Human Health, Population, Air	The Blaenau Gwent Rights of Way Improvement Plan 2007 (draft)
Length of National Trail	0 Km.	South East: 19.5 Km National Area: 640.1 km				Landscape	South East – Wales Spatial Plan Area Environmental Profile Draft October 2006
Area of National Park	*[awaiting data]*	South East: 16,910 Ha				Landscape	South East – Wales Spatial Plan Area Environment

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
		National Area: 409721 Ha					al Profile Draft October 2006
Area of Historic Landscape	*[awaiting data]*	South East: 41,260 Ha National Area: 410,968 Ha				Landscape	South East – Wales Spatial Plan Area Environmental Profile Draft October 2006
Area of Outstanding Natural Beauty	0Ha.	South East: 11,713 Ha National Area: 83,576 Ha				Landscape	South East – Wales Spatial Plan Area Environmental Profile Draft October 2006
IPPC Sites three separate tiers of regulation A1 These tend to be large and complex processes. Local Authority Integrated Pollution Prevention and Control (LA-IPPC) - known as part A2 Installations. Local Authority	In Blaenau Gwent there are currently 30 installations regulated under the Pollution Prevention and Control (England and Wales) Regulations. A list of the processes can be found on the link below. Of these 23 are part B, 2 are A2 and 5 are A1				Waste management sites should be protected from flooding as they could be a potential hazard.		http://www.blaenau-gwent.gov.uk/community/1582.asp

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
Pollution Prevention and Control - (LAPPC) - known as part B Installations. The se are regulated by Local Authorities and are the most common type of process regulated.							

Social Characteristics (Human Health, Population)

Welsh Index of Multiple Deprivation (IMD) 2011[2]

A.61 Figure A.14 shows the IMD by ward in Blaenau Gwent. Of the 47 LSOAs in Blaenau Gwent, 21% were in the most deprived 10% LSOAs in Wales. 43% were in the most deprived 20%, 70% were in the most deprived 30%, 80% were in the most deprived 50%. In 2008, the three most deprived LSOAs in Blaenau Gwent were:

- Tredegar Central and West 2 with a score of 69.9, which ranked 15 out of 1896 in Wales. This LSOA was placed in the 10% most deprived category in Wales.
- Sirhowy 2 with a score of 67.5, which ranked 23 out of 1896 in Wales. This LSOA was placed in the 10 % most deprived category in Wales.
- Ebbw Vale North 2 with a score of 54.6, which ranked 75 out of 1896 in Wales. This LSOA was placed in the 10 % most deprived category in Wales.

A.62 As stated under flood risk above, Annex A includes the Flood Risk Index for the Welsh Index of Multiple Deprivation 2011. 7 areas are within the top 25% most deprived areas nationally, in relation to flood risk. The highest risk LSOA for flood risk is Six Bells 1 in Blaenau Gwent.

In Blaenau Gwent:

- The LSOAs had deprivation score distribution over 71% of the range for Wales.
- 21% of its LSOAs fall within the 10% most deprived LSOAs in Wales.
- 83% of its LSOAs fall within the 50% most deprived LSOAs in Wales.
- There are much higher than average levels of deprivation in all of the 4 most deprived categories (most deprived 10%, 20%, 30% and 50%).

Key to map (Wards):

1. Abertillery
2. Badminton
3. Beaufort
4. Blaina
5. Brynmawr
6. Cwm
7. Cwmtillery
8. Ebbw Vale North
9. Ebbw Vale South
10. Georgetown
11. Llanhilleth
12. Nantyglo
13. Rassau
14. Sirhowy
15. Six Bells
16. Tredegar Central and West

[2] http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=32816

Figure A.14 – Index of Multiple Deprivation 2011 (all indicators)

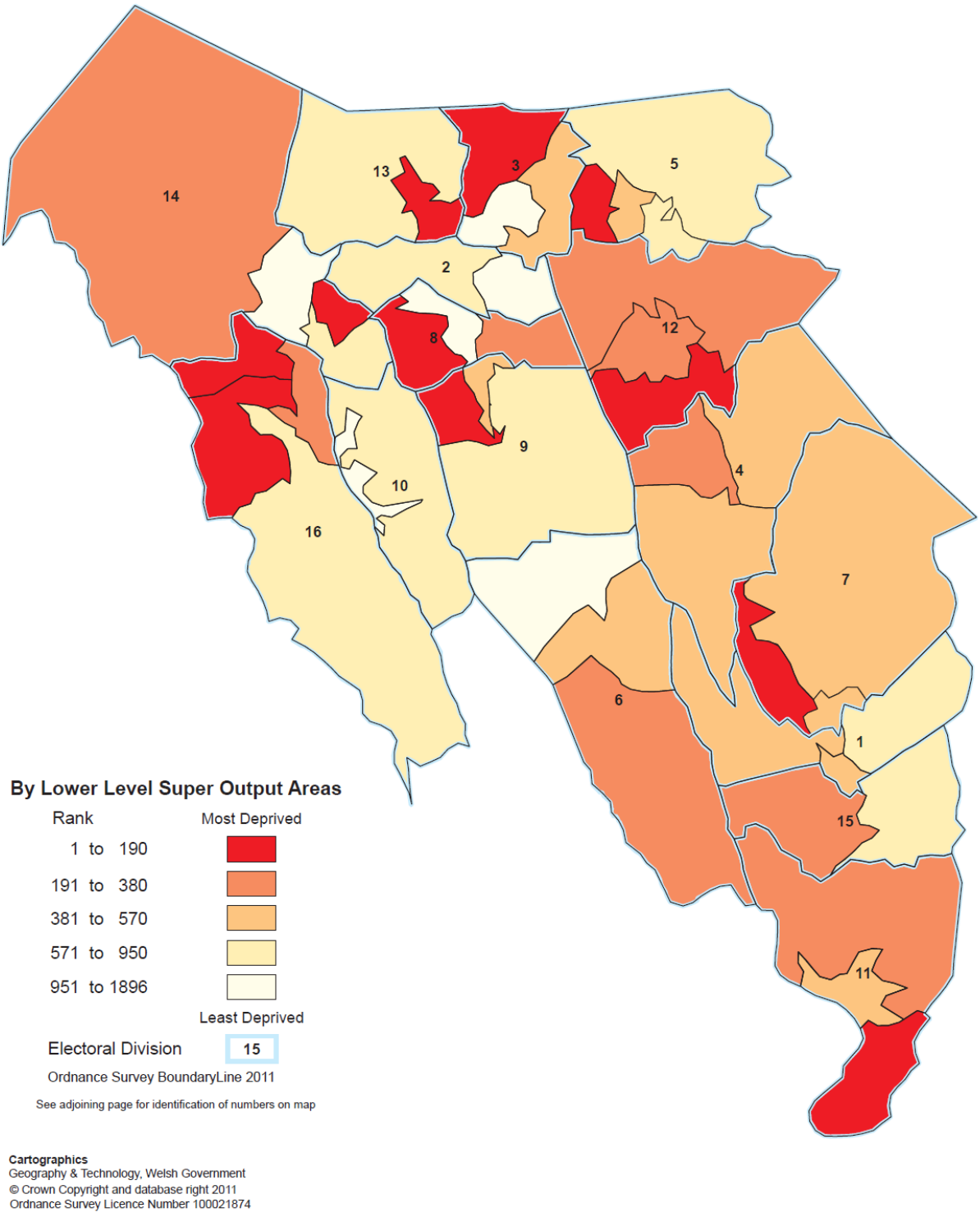
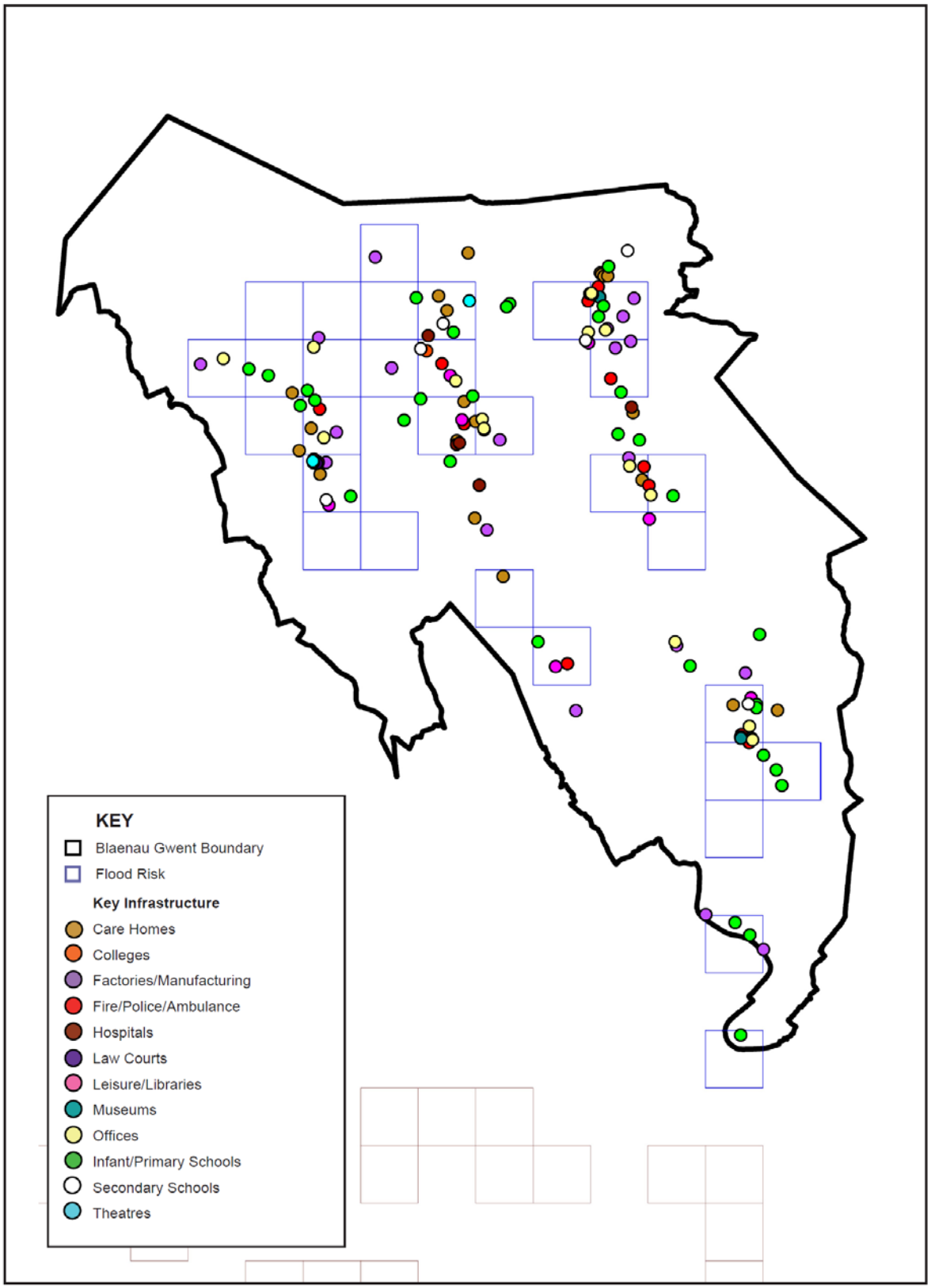


Figure A.15 – Flood Risk 'Blue Squares' and Key Infrastructure

Date : 3/08/2012	Blaenau Gwent County Borough Council	Blaenau Gwent County Borough Council Regeneration Division
Scale : 1:80000	Flood Risk 'Blue Squares' and key Infrastructure	



© Crown copyright and database rights 2011 Ordnance Survey LA09002L © Hawlfraint y Goron a hawliau cronfa ddata 2011 Arolwg Ordnans LA09002L

Population

A.63 The population of Blaenau Gwent has been falling since its peak of 127,611 in 1921 - according to the 2011 census the current population is 69,800.

A.64 An examination of population demographics indicates that Blaenau Gwent has a relatively ageing population in comparison to national averages, particularly notable for persons over 65 (16.89% compared to 16% for South East Wales, in 2001). In addition, the proportion of the population under the age of 16 is lower than the South East average.

A.65 A continuation of these trends is likely to result in conditions which will be increasingly difficult to sustain, both socially and economically, with a smaller proportion of workers being required to support a higher proportion of elderly dependents. This trend could increase the risk to people during a flood event.

A.66 However, the new railway, relatively low house prices and economic growth generated through the Heads of the Valleys Strategic Programme could promote inwards migration from other areas in Wales/UK, as well as reduce the amount of outward migration, resulting in a larger and more balanced population. Planned improvements to post 16 educational opportunities through the Learning Campus on The Works site may also affect this.

A.67 The population is still very homogenous, although numbers of welsh speakers and demand for welsh language education has increased, and there is a modest inward migration of workers from Eastern Europe and Iberia.

Health and Well Being

A.68 The proportion of people with limiting long term illness is above the South East and national averages: 28.26% compared to 23.4% in the South East and 23.3% in Wales. In addition, people who self-assessed their general health as ‘good’ (2001 Census) represented a lower proportion of the population than the South East and national averages: 59.38% in Blaenau Gwent compared to 64.48% in the South East and 60.06% in Wales. This trend could increase the risk to people during a flood event. Care homes that are at risk from flooding include:

- Maes-y-Dderwen Nursing Home, Tredegar
- The Rookery, Ebbw Vale
- Bedwellty Park, Tredegar
- Bridge House Residential Care Home, Ebbw Vale
- Sonael, Cwm Care, Ebbw Vale
- Grosvenor House Nursing Home, Abertillery
- The Acorns, Ebbw Vale
- Cwm Seren Care Home, Tredegar.

Table A.5 – Baseline Data, Indicators and Trends for Social Issues

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
Population	**2011: 69,800** **2001 (census)** 70,064 **2003 (UDP)** 68,900 6.44 per hectare (2001) (10,876 hectares) Ebbw Vale = 23,600 Abertillery = 16,600 Tredegar = 15,000 Nantyglo & Blaina = 9,100 Brynmawr = 5,600	**2011 Wales: 3,063,500** **2007 GB: 56,075,900** 2001 Average per hectare 6.09 (280,823 hectares **Wales** 2,903,085 2001 Average per hectare 4.07 (2,074,201 hectares)		**Blaenau Gwent** *Population change 1999 – 2002* -4.63% *1982 – 2002* -7.2% *Population Decline 1981 – 1991* 5.84% *1981 – 1991* Decline of 4% in 5 - 24 year old age group 1921 - population 127,611 (peak) 1951 – 1991 20% population decline in BG 1981 – 1991 6% decline though out migration **South East** *Population change 1999 – 2002* 0.034% **Wales** *Population Growth 1999 – 2002* 1.59% 1982 – 2002 4.1%	Since 1921 when the population was 127,611, Blaenau Gwent has experienced substantial population decline. Between 1982 and 2002 it experienced a 7.2% drop. The South East of Wales and Wales as a whole have experienced population increase since 1999, suggesting Blaenau Gwent is becoming less of a desirable place to live and out migration is contributing to population decline.	Population Human Health	ONS, 2001 Census (UV01 – Population) ONS, 2001 Census (Map 39, National SEA of WSP) WSP Topic Paper J: Population Unitary Authority Profiles, WAG https://www.nomisweb.co.uk/reports/lmp/la/2038432100/report.aspx#tabrespop

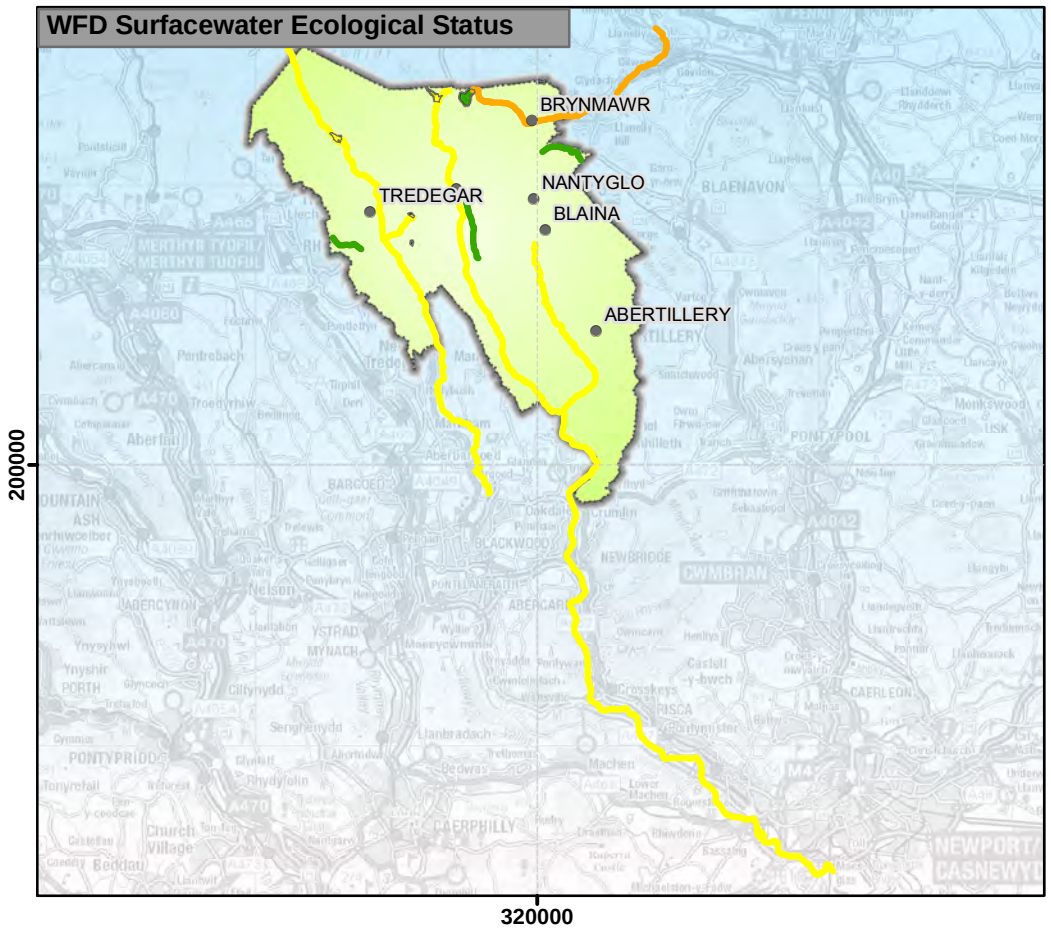
Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
Population Age Profile 2011 (%)	*2011* *(0 – 4)* – 5.7% *(5 – 14)* – 10.1% *(15 – 19)* – 6.7% *(20 – 29)* – 12.8% *(30-39)* – 11.7% *(40-49)* – 15.1% *(50-59)* – 12.5% *(60-64)* – 6.6% *(65+)* – 17.9% *2001* *(0 – 4)* – 5.6% *(5 – 15)* – 15.7% *(16 – 19)* – 4.91% *(20 – 24)* – 32.3% *(45 – 64)* – 24.6% *(65+)* –16.89%	**South East (average)** *(0 – 4)* – 6.07% *(5 – 15)* – 15.05% *(16 – 19)* – 5.19% *(20 – 24)* – 33.85% *(45 – 64)* – 23.85% *(65+)* –16.00%		**Blaenau Gwent** *Population change by age group 0-25 age group 1981 – 2001 (%)* -19% **Wales** *Population change by age group 0-25 age group 1981 – 2001 (%)* -11%	The proportion of population aged over 65 has increased since 2001 from 16.89% to 17.9%, suggesting there is an ageing population. Similarly the proportion of the population aged between 45 and 64 has increased from 24.6% to 26.5% between 2001 and 2011. The proportion of the population aged between 0 and 4 has increased from 5.6% to 5.7% between 2001 and 2011 although the proportion aged between 10 and 14 (10 and 15 for 2001) has dropped by 5% from 15.7% in 2001 to 10.1% in 2011. Population change In the 0 – 25 years olds range in Blaenau Gwent from 1981 – 2001 saw a 19% decrease whereas Wales only experienced an 11% decrease.	Population	Census 2001, Census 2011
Dependent Children	2001 *Households with dependent children (all ages)* Count – 9,447 Percentage – 31.93% *Households with an adult in employment with dependent children* Count – 2,583 Percentage – 8.73%	2001 **Wales** *Households with dependent children (all ages)* Count – 365,553 Percentage – 30.23% *Households with an adult in employment with dependent children* Count – 73,013 Percentage – 6.04%			The percentages of households with dependent children and adults in employment with dependent children are higher than the national averages. With Blaenau Gwent being a low earning area, the quality of life for the dependent children in these households might potentially be relatively low. As such, this statistic may	Population Human Health	Neighbourhood statistics Census 2001 (KS21)

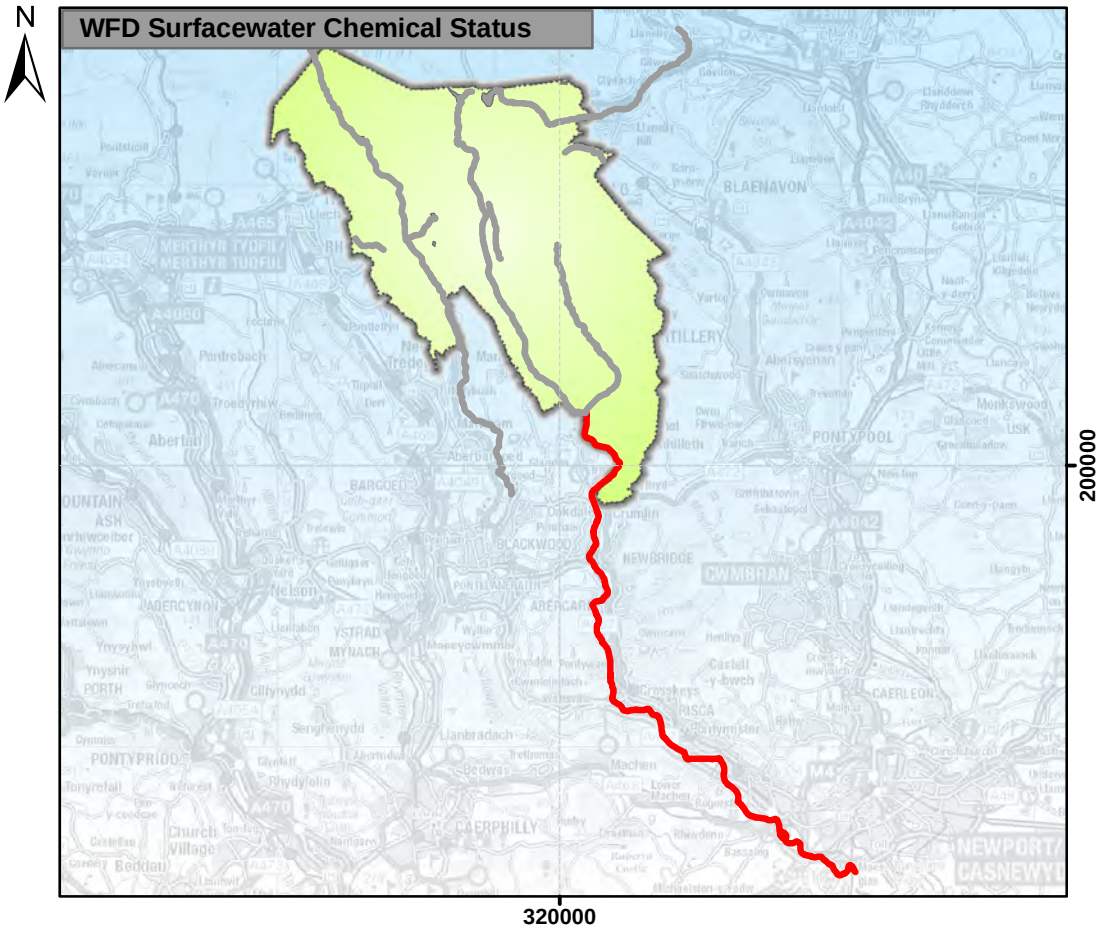
Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
					be an indication of pockets of deprivation.		
Population Density	2001 *Area (hectares)* 10,876 *Density per hectare* 6.44 *People per square km* 638	**2001** **South East** *Area (hectares)* 280,823 *people per hectare* 6.9 **Wales** *Area 2,074,203* *People per hectare* *1.40* *People per square km* – 141			Blaenau Gwent has a population density that is higher than that of Wales; However, because of the area's typography its population is focused on a small number of relatively densely developed settlements within the valley floors, with much of the surrounding land being undeveloped.	Population	ONS, 2001 Census (UV02 – Population Density)
Number of Play Areas	*Static play areas -53* *Visitor play area – 3* *Multi-use games areas (MUGAs) – 8* *Wheeled sports areas – 10* ***Local Play Areas*** *Beaufont - 3* *Cwm – 3* *Badminton – 1* *Rassau – 2* *Ebbw Vale North – 3* *Ebbw Vale South – 4* *Brynmawr – 3* *Abertillery – 2* *Six Bells – 3* *Llanhilleth – 6* *Cwntillery – 5* *Nantyglo – 7* *Blaina – 5* *Tredegar C & W – 1* *Sirhowy – 3* *Georgetown – 2*		Local Play Area – 56 Visitor Play Areas – 5 MUGAs – 16 Wheeled Sports Areas - 16 1 play area per 250 children under 14		A ratio of 1 play area per 250 children under 14 was originally set (1991 census) to ensure that static play provision was provided across the borough equitably. This ratio will remain the target as demographic figures for this age group have not dramitically changed since 1991 when the ratio was set.		Blaenau Gwent Play Strategy 2004

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
	Visitor Play Areas *Abertillery – 1* *Tredegar – 1* *Brynmawr – 1* ***MUGAs*** *Beaufont - 1* *Cwm – 1* *Badminton – 1* *Abertillery – 1* *Llanhilleth – 1* *Cwntillery – 1* *Nantyglo – 1* *Blaina – 1* ***Wheeled Sports Areas*** *Cwm – 1* *Rassau – 1* *Ebbw Vale North – 2* *Brynmawr – 1* *Six Bells – 1* *Cwntillery – 1* *Blaina – 1* *Tredegar C & Wt – 2*						
General Health of Population	2001 *Proportion with a 'good' general state of health* 59.38	2001 **South East** *Proportion with a 'good' general state of health* – 64.48 **Wales** *Proportion with a 'good' general state of health – 65.06%*			The County Borough has a significantly lower proportion of people with a good general state of health than that of the South East and Wales.	Population Human Health	ONS, 2001 Census
Proportion of people with a limiting long-term illness	2001 28.26% *People with limiting long-term illness* – 19,798	2001 **South East** 23.4% **Wales** 23.3%		**Blaenau Gwent** Standardised limiting long-term illness	Blaenau Gwent has a higher percentage of people with a limiting long-term illness than that of the South East. This could reflect poorer living	Population Human Health	ONS, 2001 Census (Map 65, National SEA of WSP) Neighbourho

Indicator	Quantified data (Blaenau Gwent)	Comparators (Quantified data for South Wales and Wales/England)	Targets	Trends	Issue identified	SEA topics	Source
	People without a limiting long-term illness – 50,266	*People with limiting long-term illness* – 675,622 *People* without *a limiting long-term illness* – 2,277,423 **England** 17.9%			conditions and standards of health in the county. Given the industrial legacy of the area, there is also a considerable likelihood that some illnesses are linked to manual labour and/or former mine working.		od statistics 2001 Census
Permanently Sick Persons	*Percentage of people permanently sick (ward data)(1991)* Tredegar C&W - 11.2 Sirhowy - 9.9 Blaina - 9.9 Nantyglo - 9.9 Cwm - 9.8 Llanhilleth - 9.0 Cwmtillery - 8.8 Rassau - 8.6 Six Bells - 8.2 Ebbw Vale North - 8.0 Brynmawr - 8.0 Beaufort - 7.9 Badminton - 7.9 Abertillery - 7.5 Georgetown - 7.1 Ebbw Vale South - 7.1				Tredegar, Sirhowy, Blaina, Nantyglo and Cwm had high levels of people permanetly sick in 1991. This may reflect poorer the number with limiting long term illnesses, etc from past hazardous industrial work (mining)	Population Human Health	Health and social needs June 2002 Blaenau Gwent
People of working age with disabilities	2001 *Percentage of people of working age with disabilities'* 21.2%	2001 **Wales** *Percentage of people of working age with disabilities'* – 15.2%			The percentage of people of working age with disablilites in Blaenau Gwent is significantly higher than the percentage for Wales, which further reflects the poor health conditions which exist in Blaenau Gwent.	Population Human Health	ONS, 2001 Census (Map 64, National SEA of WSP)

Annex A: Environment Agency Local Evidence Pack Extracts





Water Framework Directive Surfacewater Water Body Classification

(Baseline 2009)

Legend

Ecological Status

- High
- Good
- Moderate
- Poor
- Bad

Chemical Status

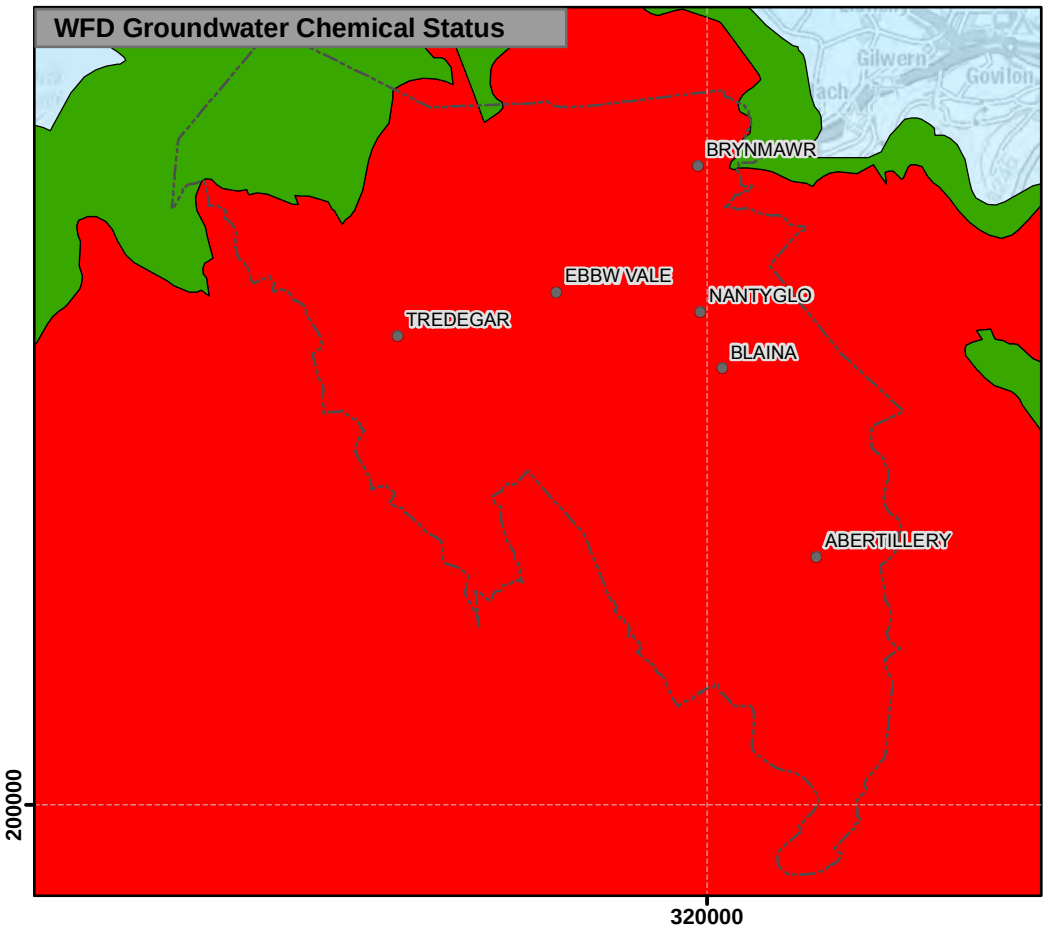
- Good
- Failing to achieve Good
- Does Not Require Assessment

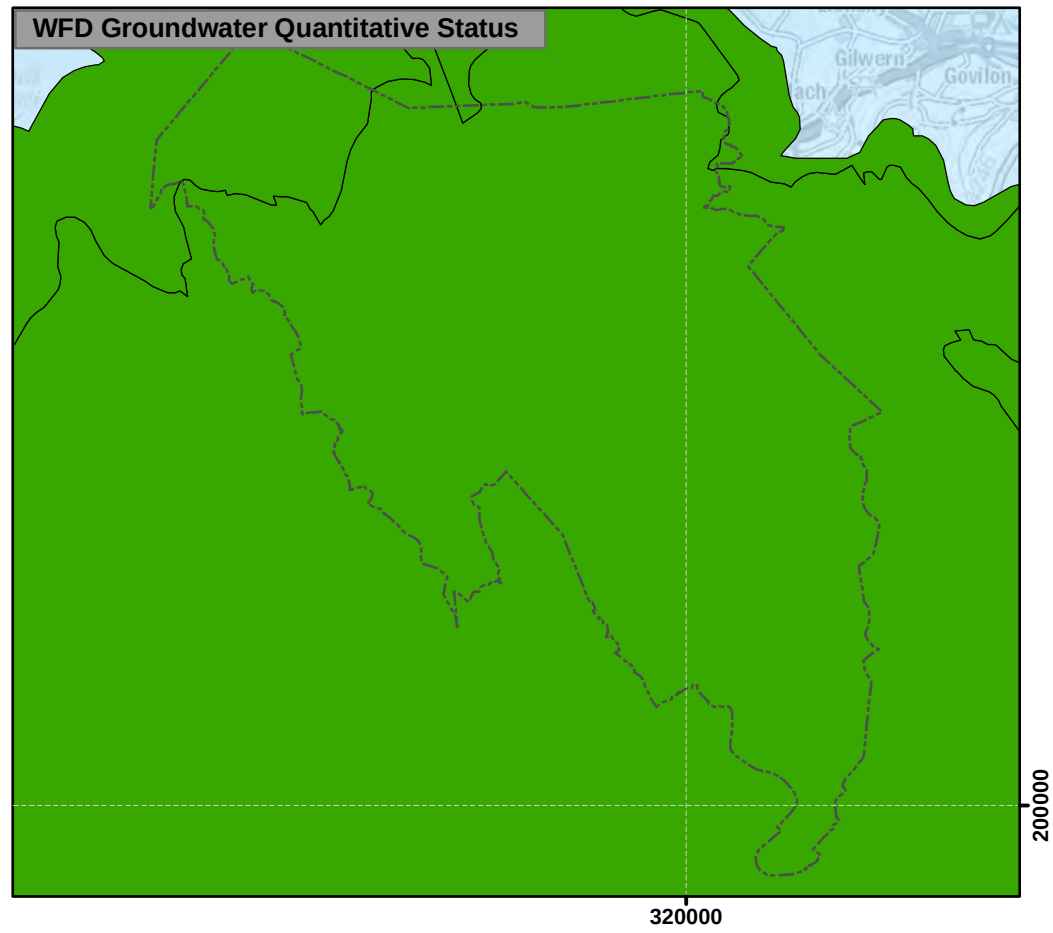
- Towns & Cities
- Planning Authority Boundary

Asiantaeth yr Amgylchedd Cymru
Environment Agency Wales

4 2 0 4 km

© Crown Copyright and database right 2012 Ordnance Survey licence number 100024198. © Hawlfraint a hawliau cronfa ddata'r Goron 2012 Rhif Trwydded yr Arolwg Ordnans 100024198. © Environment Agency 2012.
© Environment Agency © Automobile Association Developments Ltd and Crown Copyright; Ordnance Survey [2001] All rights reserved. Licence number [399221] Based on information supplied by the Centre for Ecology & Hydrology.





Water Framework Directive Groundwater Water Body Classification

(Baseline 2009)

Legend

Chemical/Quantitative Status

- Good
- Poor

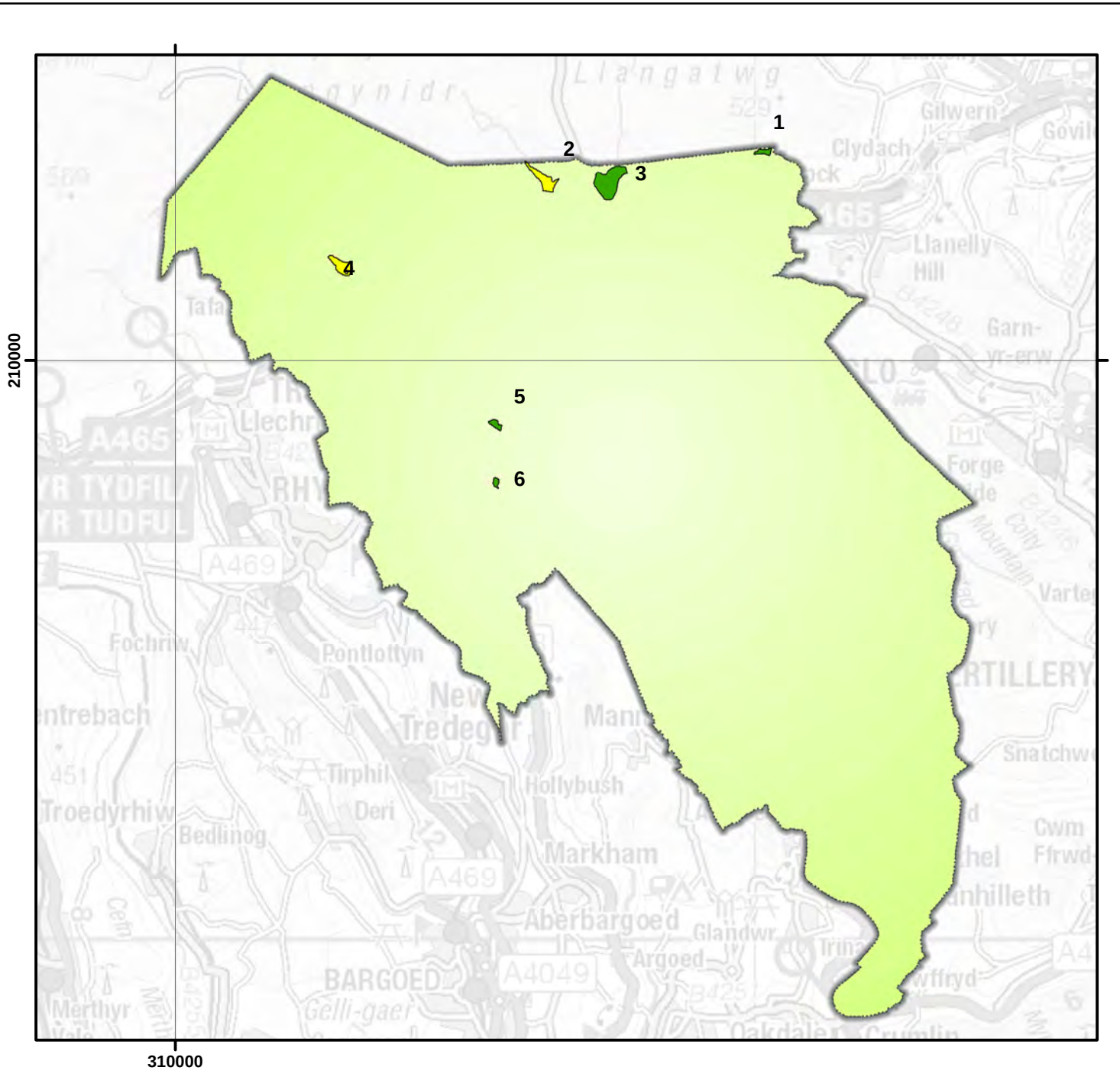
Towns & Cities

Planning Authority Boundary

Asiantaeth yr Amgylchedd Cymru
Environment Agency Wales

2 1 0 2 km

© Crown Copyright and database right 2012 Ordnance Survey licence number 100024198. © Hawlfraint a hawliau cronfa ddata'r Goron 2012 Rhif Trwydded yr Arolwg Ordnans 100024198. © Environment Agency 2012.
© Environment Agency © Automobile Association Developments Ltd and Crown Copyright; Ordnance Survey [2001] All rights reserved. Licence number [399221] Based on information supplied by the Centre for Ecology & Hydrology.



Water Framework Directive Lakes Ecological Status

(Baseline 2009)

Legend

Ecological Status

- High
- Good
- Moderate
- Poor
- Bad

Planning Authority Boundary

The numbers on the map refer to the table on the following page

Asiantaeth yr Amgylchedd Cymru
Environment Agency Wales

1 0.5 0 1
km

© Crown Copyright and database right 2012 Ordnance Survey licence number 100024198. © Hawlfraint a hawliau cronfa ddata'r Goron 2012 Rhif Trwydded yr Arolwg Ordnans 100024198. © Environment Agency 2012.
Based on information supplied by the Centre for Ecology & Hydrology.

Water Framework Directive: Lakes - Ecological Status (Baseline 2009)

Label No.	Lake	Ecological Status
1	Cairn Mound Reservoir	Good
2	Carno Reservoir	Moderate
3	Blaen-y-cwm Reservoir	Good
4	Shon-Sheffreys Reservoir	Moderate
5	Scotch Peters Reservoir	Good
6	St James Reservoir	Good

© Environment Agency, 2012.
This information has been developed by the Data, Information and Environmental Assessment Section

Water Framework Directive: Water Bodies Status Summary (Baseline 2009) for Blaenau Gwent

		Chemical status			Ecological status					Quantitative status	
Water Body Category	**Total No. Water Bodies**	**Good**	**Failing to achieve Good**	**Does not require assessment**	**High**	**Good**	**Moderate**	**Poor**	**Bad**	**Good**	**Poor**
Coastal	0										
Groundwater	2	1	1							2	
Lake	6			6		4	2				
River	8		1	7		3	4	1			
Transitional	0										

Water Framework Directive Status Maps

The five maps shown in the previous four pages show the baseline, 2009, classification of WFD water bodies. The Water Framework Directive requires there to be no deterioration from this baseline. The aim is to achieve at least Good status by 2015. Where this is not possible and subject to the criteria set out in the Directive, we aim to achieve Good status by 2012 or 2027.

Ecological status is shown for all surfacewater water bodies. Ecological status includes biological elements such as invertebrates and fish as well as supporting physico-chemical elements such as phosphates and nitrates.

Chemical assessment of water bodies is risk-based. Not all water bodies require assessment. Chemical monitoring looks for **priority substances** such as mercury that have been identified as presenting a significant risk to or via the aquatic environment under the Water Framework Directive.

Groundwaters are classified in terms of chemical and quantitative status. **Quantitative** status is about the impacts of groundwater abstraction.

Transitional waters are intermediate between fresh and marine water. They include estuaries and saline lagoons.

Lake water bodies and status are shown separately because many of them are too small to identify on the map. The numbered labels shown on the map refer to the table on the page following the map which gives the ecological status for each lake. None of the lake water bodies require chemical assessment.

For further information on WFD classification, see:
http://www.environment-agency.gov.uk/research/planning/33260.aspx

Water Bodies Status Summary

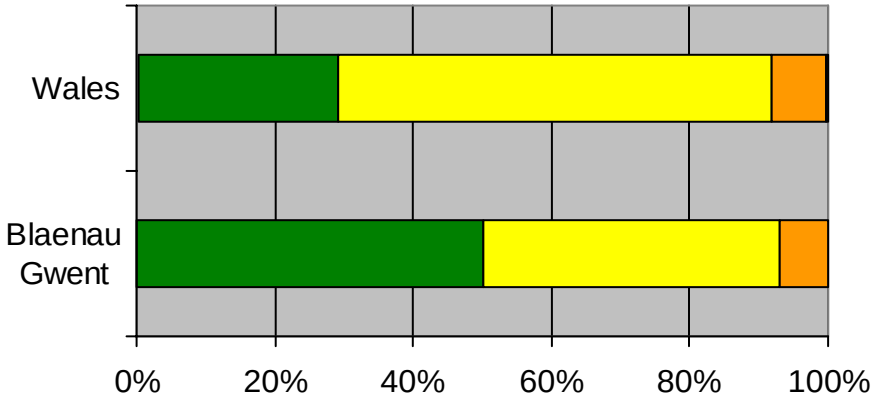
The Water Bodies Status summary table above shows the numbers of each type of water body in each ecological, chemical and quantitative (groundwater only) class according to the baseline, 2009, classification of WFD water bodies.

Baseline 2009 data is shown here because this is the standard that WFD progress will be measured against. Annual updates to the classification and further information on the reasons for failure and the actions that need to be taken are available from your Planning Liaison contact or the Environmental Assessment & Reporting team (wales.local.evidence@environment-agency.gov.uk).

© Environment Agency, 2012.
This information has been developed by the Data, Information and Environmental Assessment Section

Water Framework Directive: Surfacewater Water Bodies Ecological and Chemical Status (Baseline 2009) for Blaenau Gwent

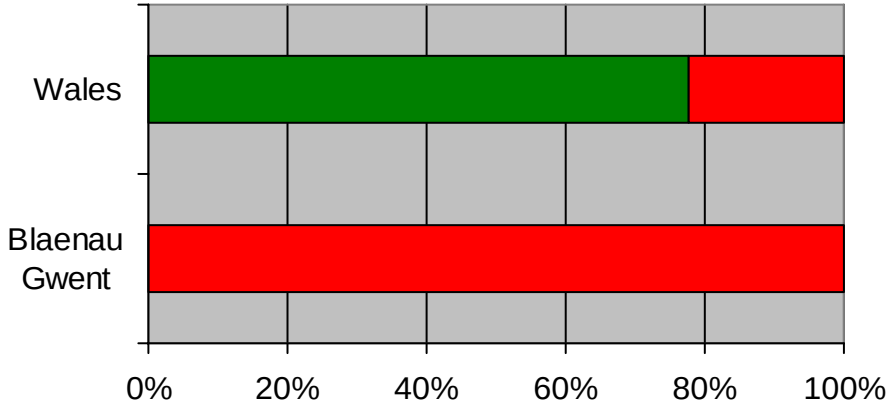
Water Framework Directive: Surfacewater Ecological Status, Percentage of Water Bodies in Each Class



	Blaenau Gwent	Wales
Bad	0	4
Poor	1	92
Moderate	6	738
Good	7	339
High	0	5

Number of water bodies in each class

Water Framework Directive: Surfacewater Chemical Status, Percentage of Water Bodies in Each Class



	Blaenau Gwent	Wales
Fail	1	21
Good	0	73

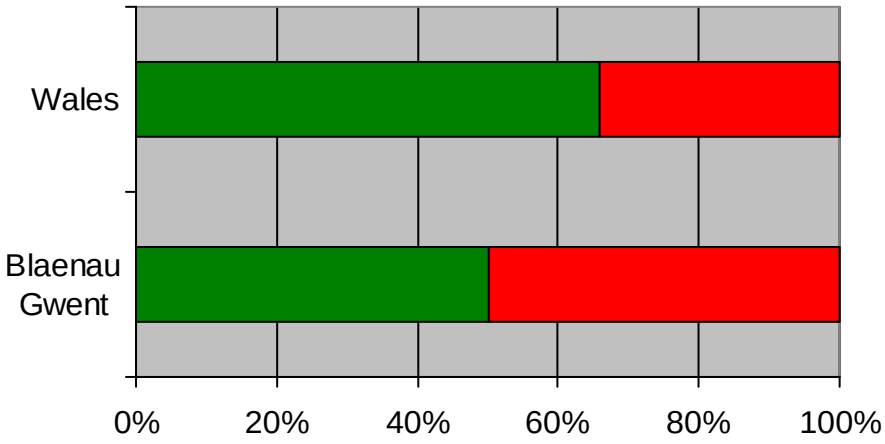
Number of water bodies in each class

The charts above show the percentage of surfacewater water bodies in each class for the whole of Wales and for the Planning Authority.

The tables show the numbers of surfacewater water bodies in each class for the whole of Wales and for the Planning Authority.

© Environment Agency, 2012.
This information has been developed by the Data, Information and Environmental Assessment Section

Water Framework Directive: Groundwater Overall Status (Baseline 2009) for Blaenau Gwent



	Blaenau Gwent	Wales
Poor	1	13
Good	1	25

Number of water bodies in each class

The overall classification status for groundwaters is assessed by combining the chemical status with the quantitative status. If either or both of these is Poor, then the overall status is Poor.

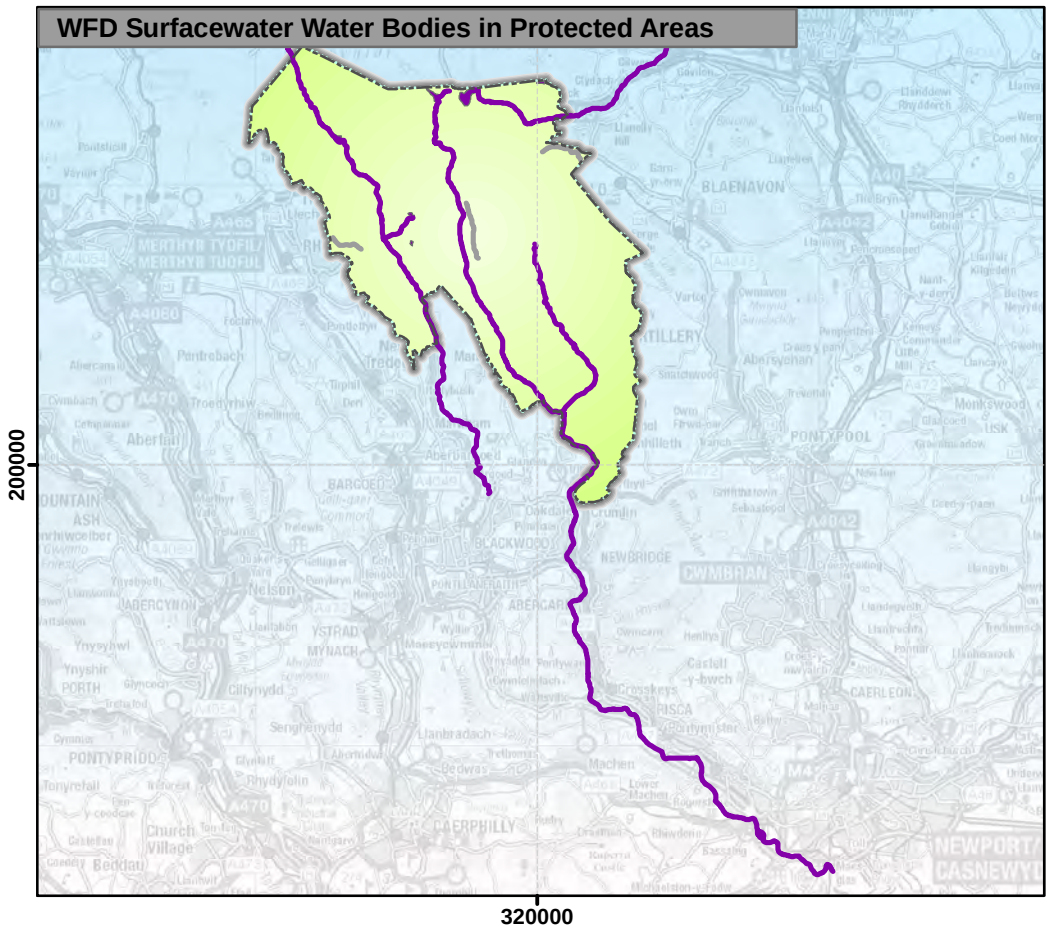
For further information on WFD classification methods see:

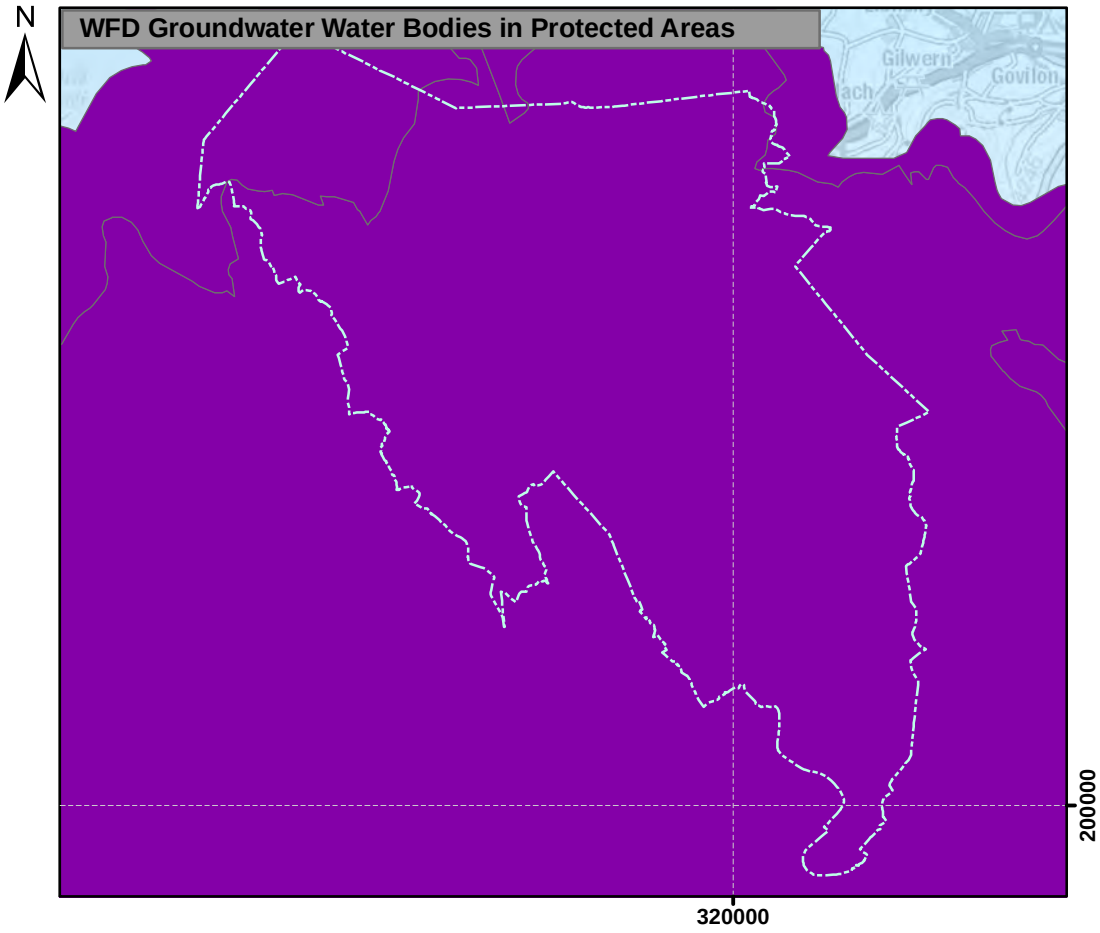
http://www.environment-agency.gov.uk/research/planning/33260.aspx

The chart on the left shows the percentage of groundwater water bodies in each class for the whole of Wales and for the Planning Authority.

The table shows the number of groundwater water bodies in each class for the whole of Wales and for the Planning Authority.

© Environment Agency, 2012.
This information has been developed by the Data, Information and Environmental Assessment Section





Water Framework Directive Water Bodies in Protected Areas

Legend

Protected Area

- No
- Yes

Planning Authority Boundary

Asiantaeth yr Amgylchedd Cymru
Environment Agency Wales

2 1 0 2 Km

© Crown Copyright and database right 2012 Ordnance Survey licence number 100024198. © Hawlfraint a hawliau cronfa ddata'r Goron 2012 Rhif Trwydded yr Arolwg Ordnans 100024198. © Environment Agency 2012.
Based on information supplied by the Centre for Ecology & Hydrology.

Water Framework Directive - Water Bodies Protected Areas Summary (Baseline 2009) for Blaenau Gwent

Water Body Category	Total No. of Water Bodies in a Protected area	Type of Protected Area							
		Bathing Waters	Drinking Water	Fresh Water Fish	Shellfish Waters	Nitrates	Urban Waste Water	Habitats & Species	Wild Birds
Coastal	0								
Groundwater	2		2						
Lake	6		6						
River	5		1	5				1	
Transitional	0								

The table above shows the number of WFD water bodies that are associated with a designated Protected Area.

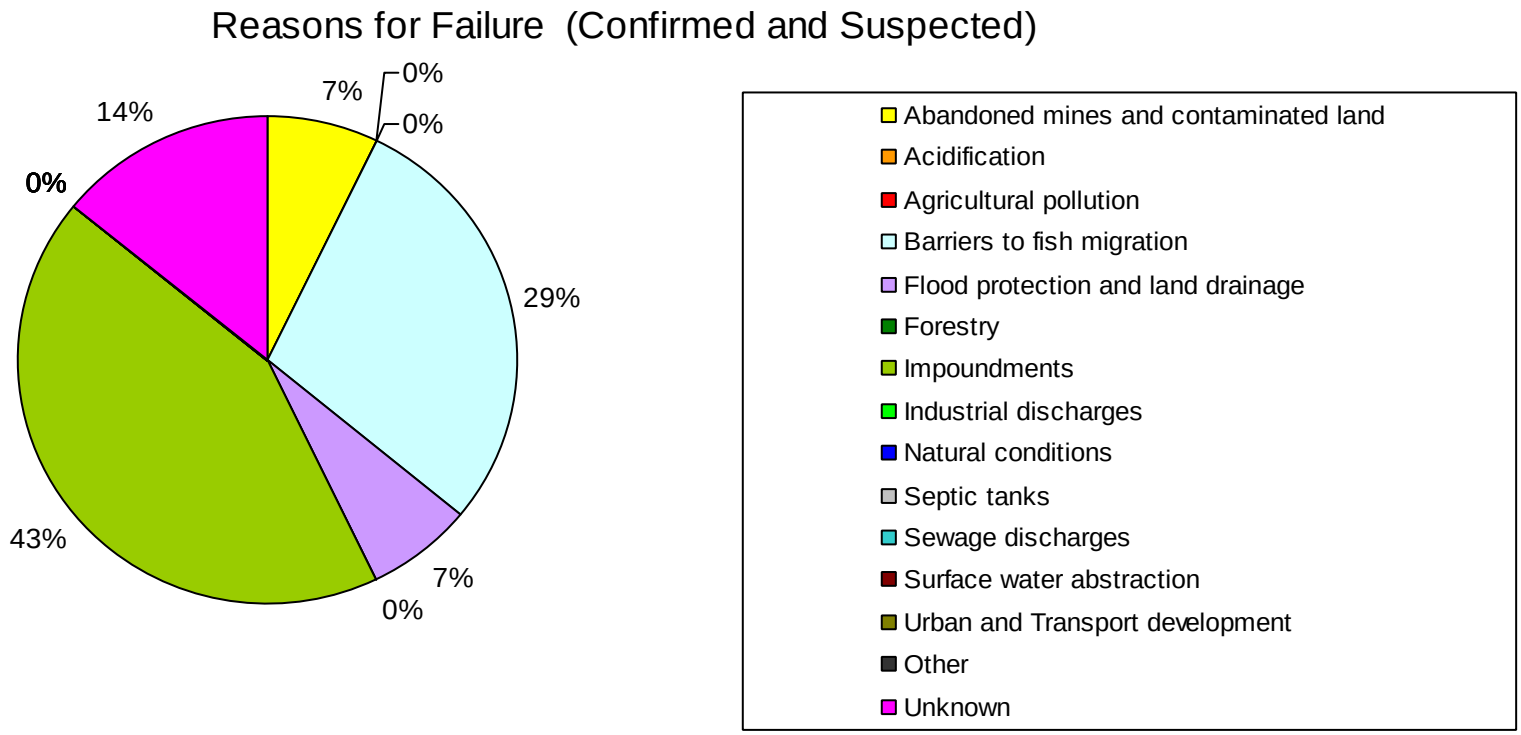
Protected Areas

The Water Framework Directive specifies that areas requiring special protection under other EC Directives and waters used for the abstraction of drinking water are identified as protected areas. These areas have their own objectives and standards.

- areas designated for the abstraction of water for human consumption (Drinking Water Protected Areas);
- areas designated for the protection of economically significant aquatic species (Freshwater Fish and Shellfish);
- bodies of water designated as recreational waters, including areas designated as Bathing Waters;
- nutrient-sensitive areas, including areas identified as Nitrate Vulnerable Zones under the Nitrates Directive or areas designated as sensitive under the Urban Waste Water Treatment Directive (UWWTD);
- areas designated for the protection of habitats or species where the maintenance or improvement of the status of water is an important factor in their protection including relevant Natura 2000 sites.

© Environment Agency, 2012.
This information has been developed by the Data, Information and Environmental Assessment Section

Water Framework Directive: Reasons for Failure for Water Bodies in Blaenau Gwent



Reasons for failure chart and table

This pie chart shows confirmed or suspected reasons for water bodies in the Planning Authority that are failing to meet WFD objectives as in the 2010 classification. It includes all water body types.

This data represents a snapshot of the current understanding of the reasons for failure data at the time of collation (January 2011). We are continuing to collect and record reasons for failure as part of our ongoing programme of investigations. Further collations of reasons for failure will be made annually.

Notes:

- The chart does not show the number of water bodies failing for particular reasons. It shows the number of times each reason for failure has been identified.
- There can be more than one reason for failure for each water body.
- This data is to be viewed as indicative only as it is based on variable amounts and quality of evidence.
- Not all water bodies have been assessed.

This graph was produced using the 2011 RFF data v.16.05.2011.

© Environment Agency, 2012.
This information has been developed by the Data, Information and Environmental Assessment Section

Water Framework Directive: Reasons for Failure for Water Bodies in Blaenau Gwent

We have used all our reasons for failure information to identify the main issues impacting our water environment.

Some failures may be caused by issues upstream (e.g. over abstraction or regulation of flow) or downstream (e.g. a weir or dam will prevent migration of fish). These issues occur across catchments and water bodies. In many cases water bodies fail for more than one reason.

Many different co-deliverers need to take action, including land managers, farms and businesses, water companies, the third sector, local communities, planners and public bodies. Where possible existing mechanisms and measures will be used to engage and deliver sustainable improvements.

Public Authorities are required to deliver their WFD duties and embed the objectives of RBMPs within their strategies and programmes.

The top 5 reasons for failure that Planning Authorities can and should address through the planning process have been identified.

Top 5 reasons for failure for Planning Authorities to address

- Artificial barriers to fish migration
- Abandoned mines & contaminated land
- Sewage discharges
- Flood protection & land drainage
- Urban & transport development

The 6 maps on the following pages show where the 5 top reasons for failure have been identified in the Planning Authority.

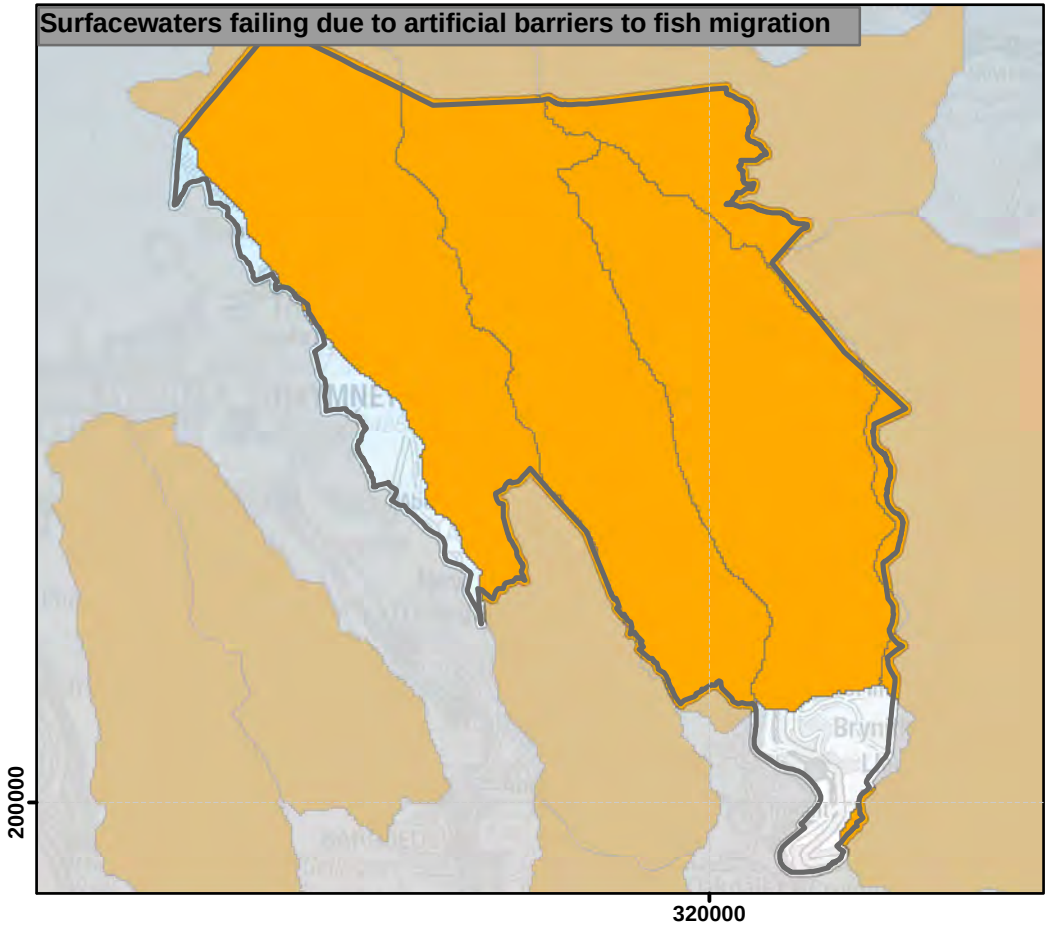
All reasons for failure identified in the Planning Authority

The table below shows all of the reasons for failure that have been identified for water bodies in the Planning Authority. (This is the same data as the pie chart on the previous page.)

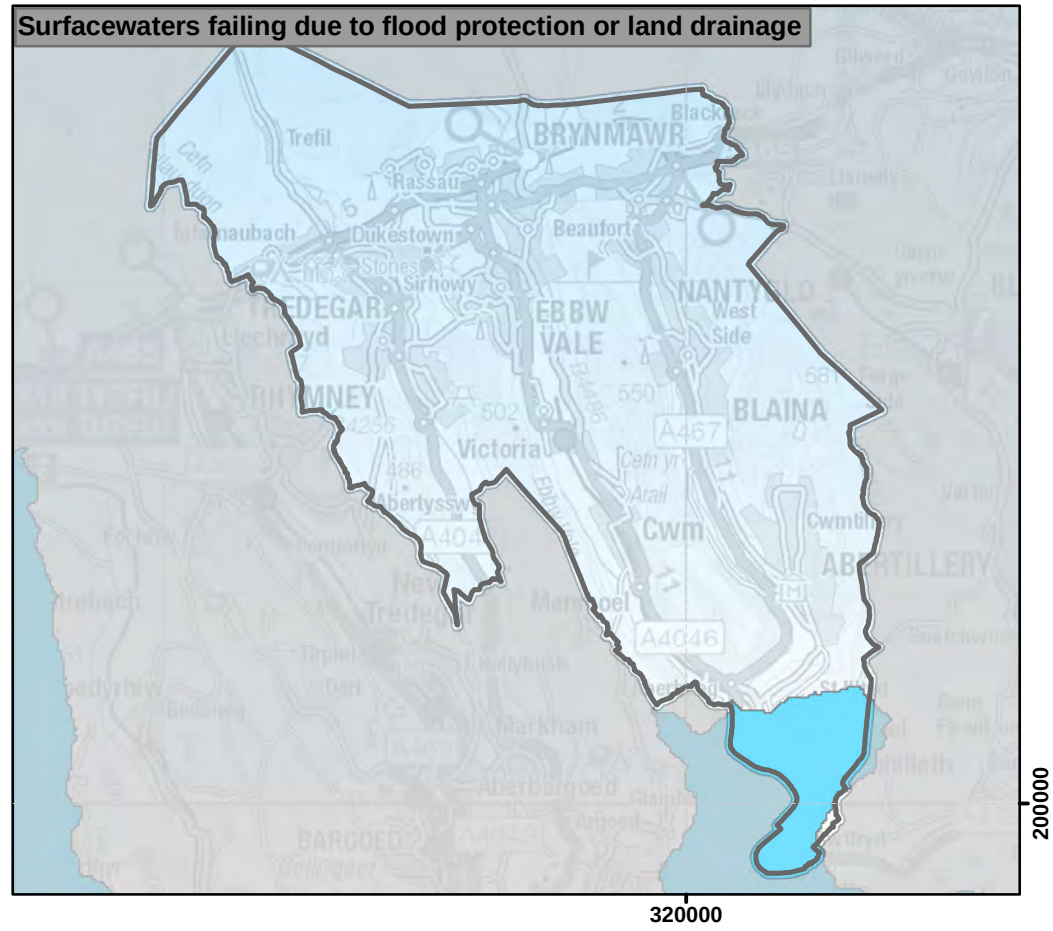
More information on the reasons for failure that are not in the top 5 are available from your Planning Liaison contacts.

Reason for Failure	Number of times reason for failure identified
Abandoned mines and contaminated land	1
Acidification	
Agricultural pollution	
Barriers to fish migration	4
Flood protection and land drainage	1
Forestry	
Impoundments	6
Industrial discharges	
Natural conditions	
Septic tanks	
Sewage discharges	
Surface water abstraction	
Urban and Transport development	
Other	
Unknown	2

© Environment Agency, 2012
This information has been developed by the Data, Information and Environmental Assessment Section



N



Water Framework Directive Reasons for Failure

Barriers to Fish Migration and Flood Protection or Land Drainage

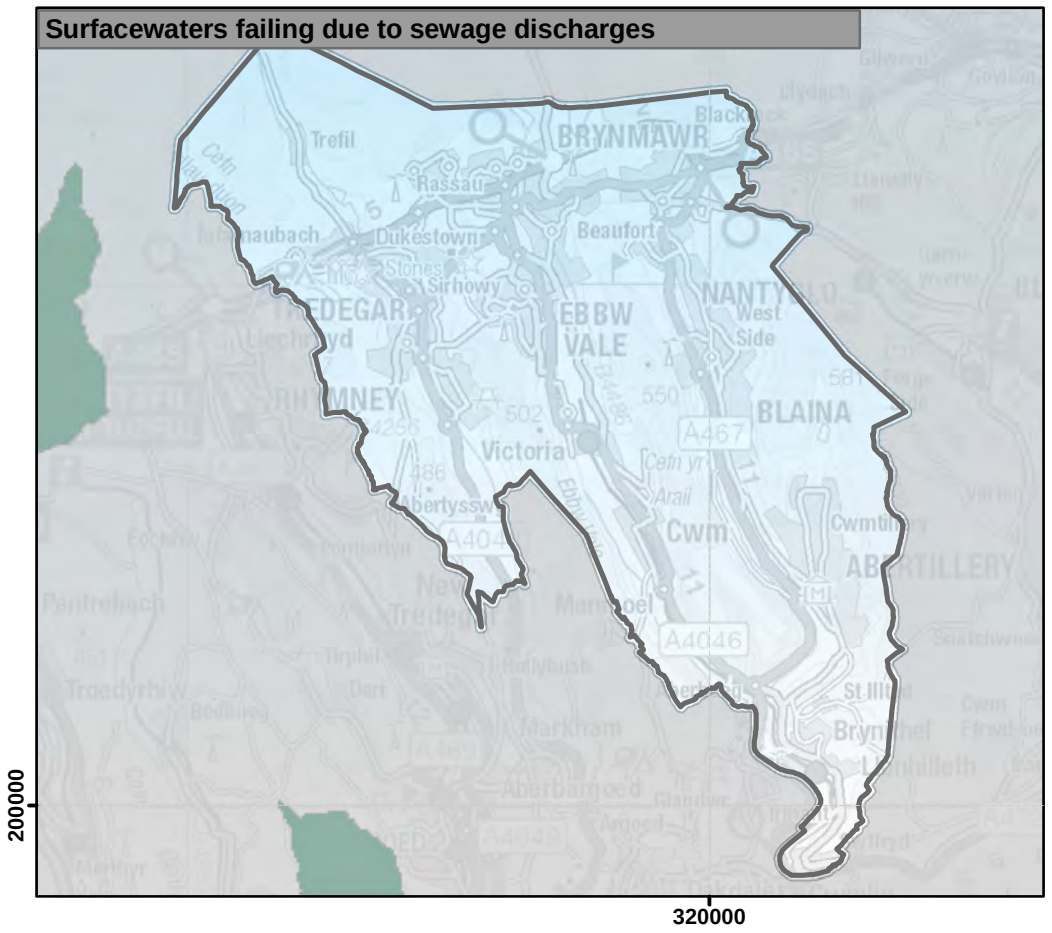
Legend

- Flood Protection or Land Drainage
- Barriers to Fish Migration
- Planning Authority Boundary

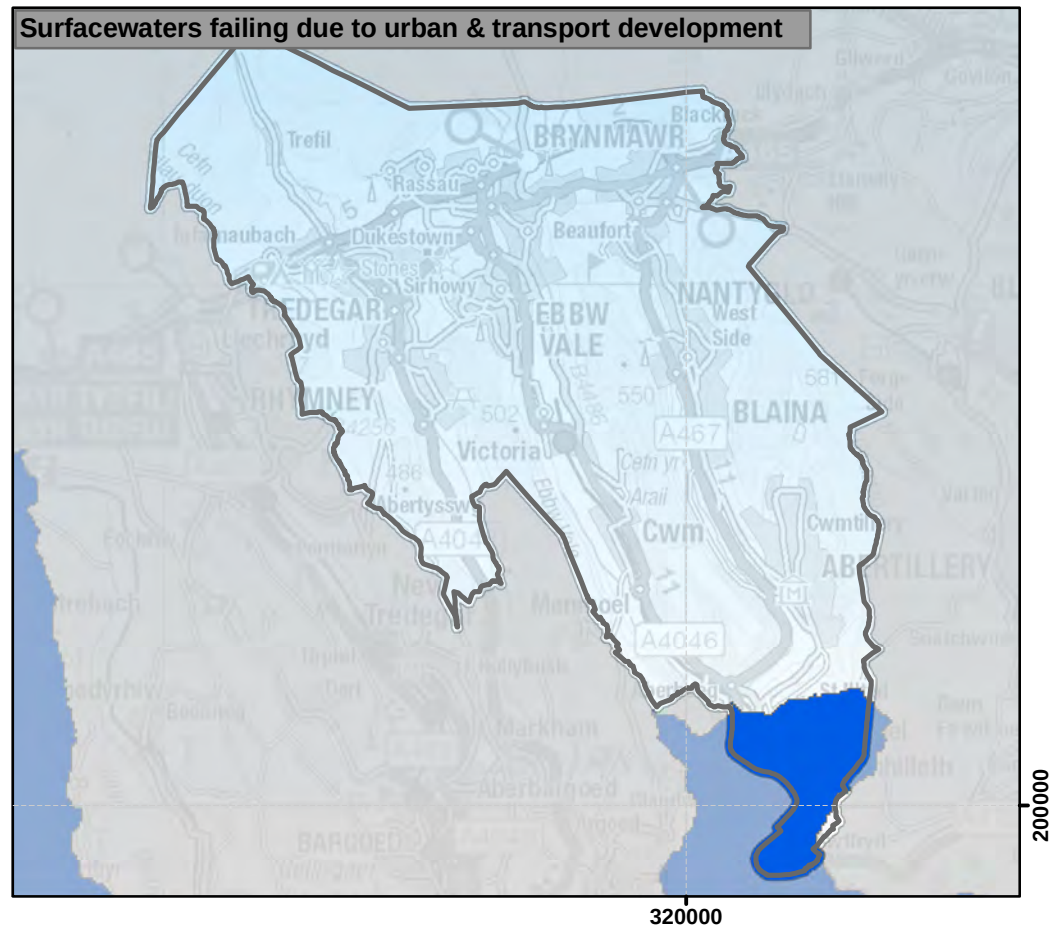
Asiantaeth yr Amgylchedd Cymru
Environment Agency Wales

3 1.5 0 3
km

© Crown Copyright and database right 2012 Ordnance Survey licence number 100024198. © Hawlfraint a hawliau cronfa ddata'r Goron 2012 Rhif Trwydded yr Arolwg Ordnans 100024198. © Environment Agency 2012.
© Environment Agency. Based on information supplied by the Centre for Ecology & Hydrology.



N



Water Framework Directive Reasons for Failure

Sewage Discharges and Urban & Transport Development

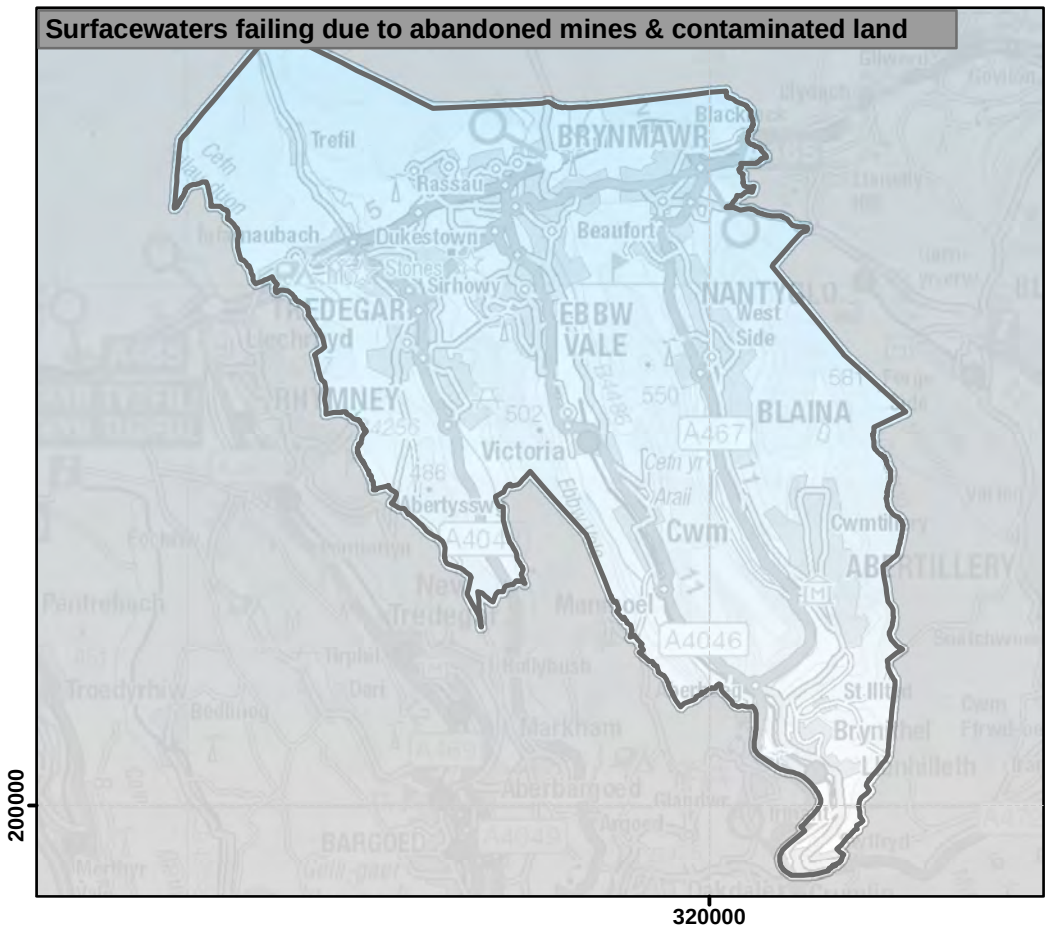
Legend

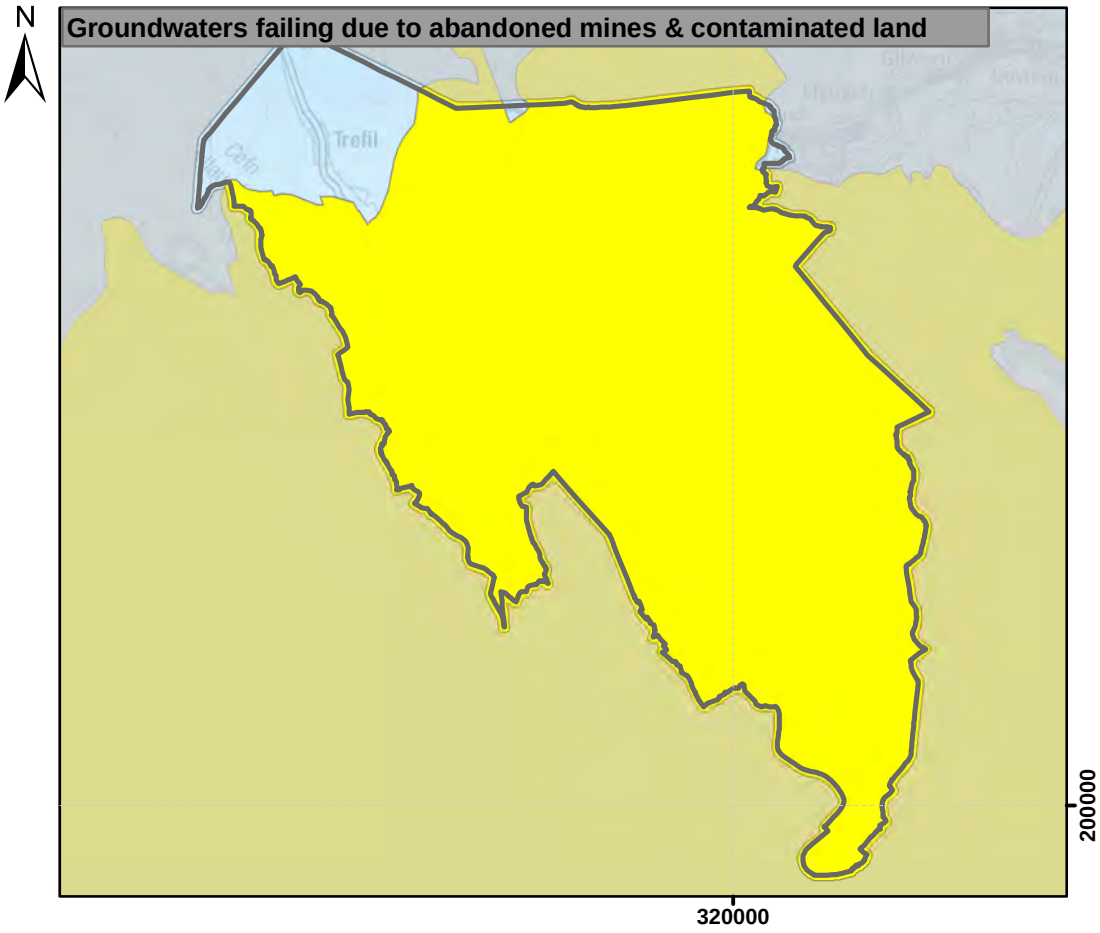
- Urban & Transport Development
- Sewage Discharge
- Planning Authority Boundary

Asiantaeth yr Amgylchedd Cymru
Environment Agency Wales

3 1.5 0 3 km

© Crown Copyright and database right 2012 Ordnance Survey licence number 100024198. © Hawlfraint a hawliau cronfa ddata'r Goron 2012 Rhif Trwydded yr Arolwg Ordnans 100024198. © Environment Agency 2012.
© Environment Agency. Based on information supplied by the Centre for Ecology & Hydrology.





Water Framework Directive Reasons for Failure

Abandoned Mines and Contaminated Land

Legend

Abandoned mines & contaminated land

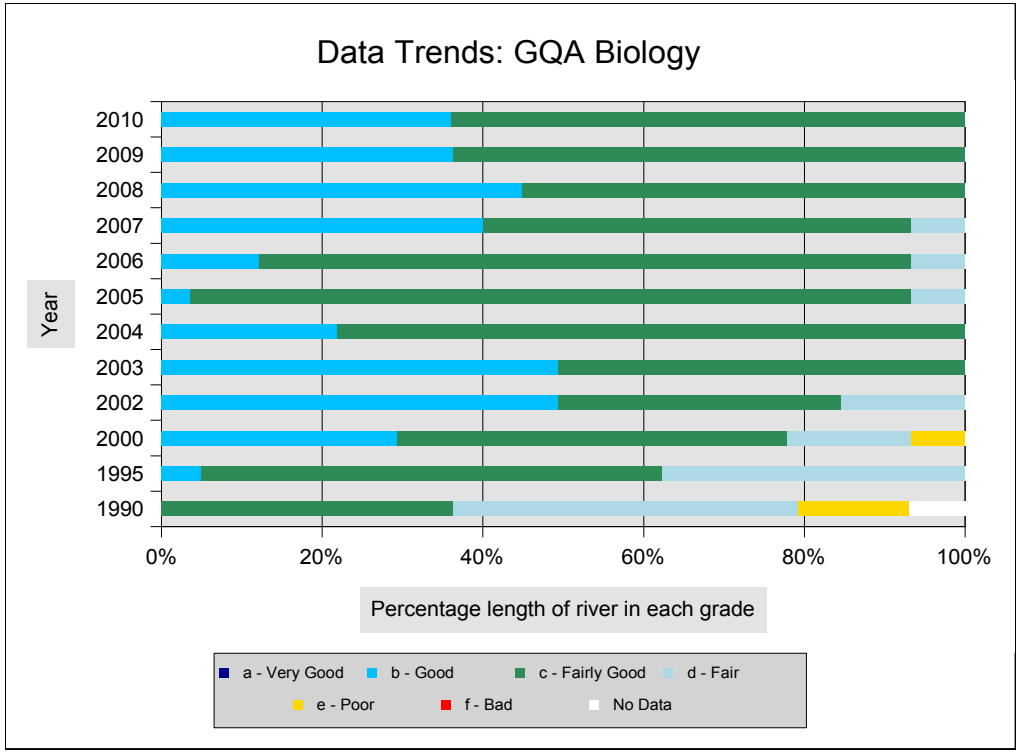
Planning Authority Boundary

Asiantaeth yr Amgylchedd Cymru
Environment Agency Wales

3 1.5 0 3 km

© Crown Copyright and database right 2012 Ordnance Survey licence number 100024198. © Hawlfraint a hawliau cronfa ddata'r Goron 2012 Rhif Trwydded yr Arolwg Ordnans 100024198. © Environment Agency 2012.
© Environment Agency. Based on information supplied by the Centre for Ecology & Hydrology.

GQA Biology Trends in Blaenau Gwent

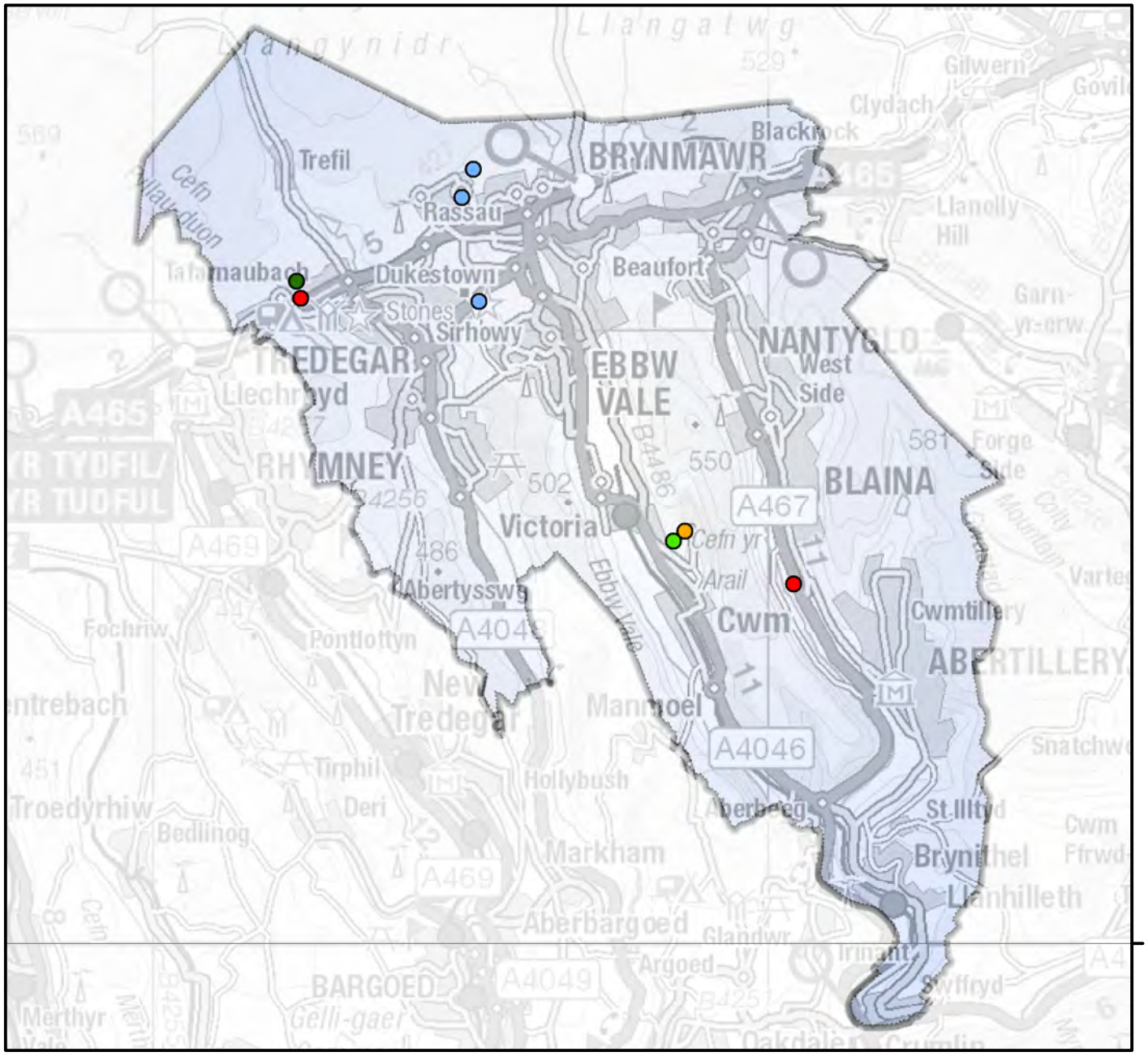


The General Quality Assessment (GQA) scheme was our previous scheme for assessing water quality. GQA has now been superceded by the Water Framework Directive. 2010 was the last year that GQA was reported.

GQA biology historical trends are shown here for reference. This graph shows the percentage length of the classified river network achieving each GQA grade for biology.

Each bar represents 100% of the classified river and canal network for a year. This bar is divided into bands according to the proportion of the length of the network achieving each grade. The bands are stacked from left to right from Grade a (very good) to f (bad) and then No Data (un-graded). A length of river will be un-graded for biology if the channel is unsuitable for the sampling techniques. The un-graded sections will include canals and drainage ditches as well as the deeper, lower sections of some rivers.

© Environment Agency, 2011.
This information has been developed by the Data, Information and Environmental Assessment Section



Permitted Industrial Sites

Legend

Industrial sites

- Other activity

Activity

- Agriculture
- Cement & Minerals
- Chemicals
- Combustion
- Energy from Waste
- Food & Drink
- Landfill
- Metals
- Paper, Pulp & Textiles
- Refineries
- Waste Storage
- Local Authority Boundary

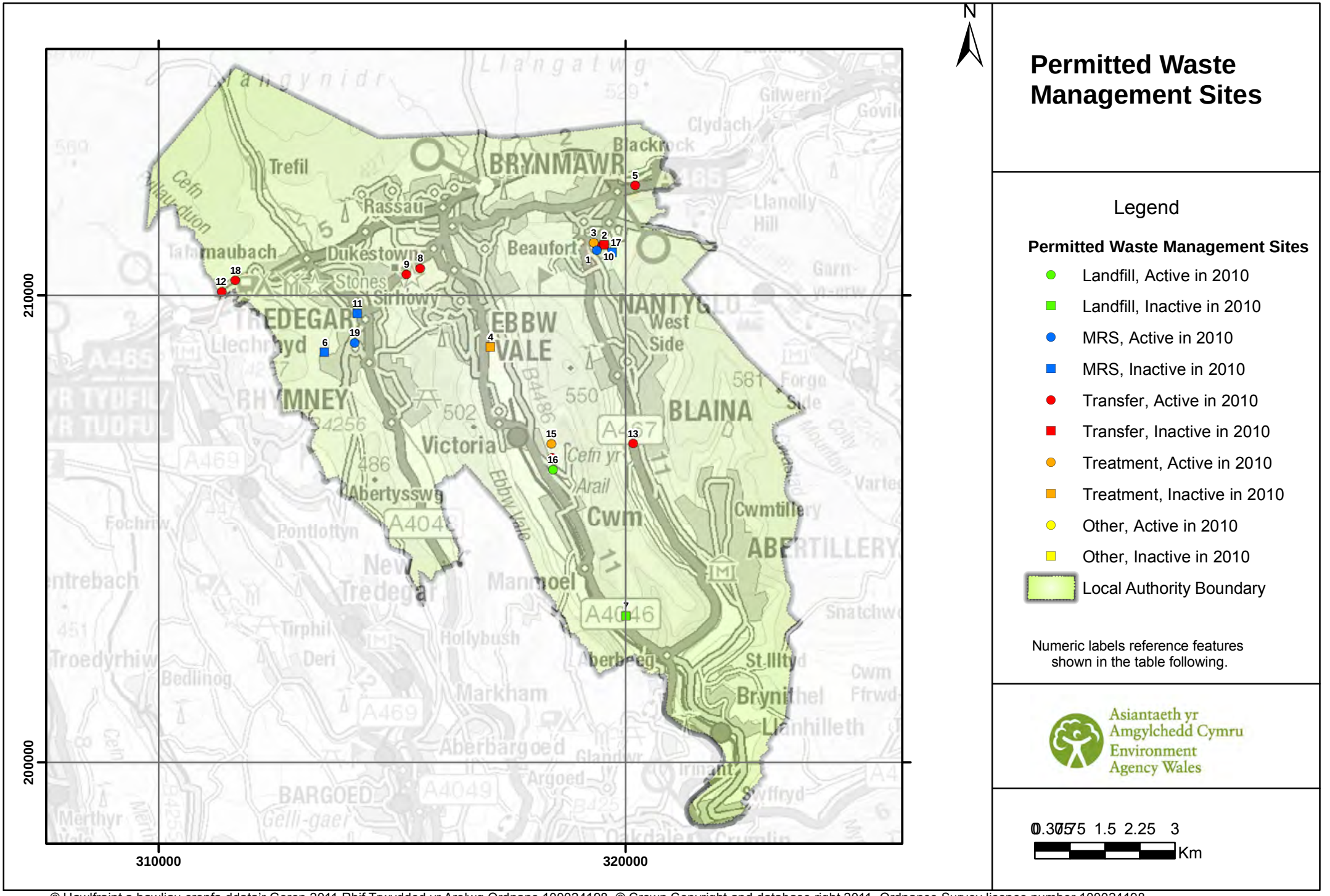
Asiantaeth yr Amgylchedd Cymru
Environment Agency Wales

1 0.5 0 1 Km

© Crown Copyright and database right 2012 Ordnance Survey licence number 100024198. © Hawlfraint a hawliau cronfa ddata'r Goron 2012 Rhif Trwydded yr Arolwg Ordnans 100024198. © Environment Agency 2012.

Permitted Industrial Sites

Original Permit No.	Site Name	Operator	Address	National Grid Reference	Activity
BV5386IX	Rassau Battery Manufacturing Site	Yuasa Battery (UK) Ltd	Unit 22 , Rassau Industrial Estate , Rassau , Ebbw Vale , , NP23 5SD	SO15021214	Metals
BX3376IG	Continental Teves (UK) Ltd	CONTINENTAL TEVES UK LTD	Waun-y-Pound Industrial Estate , , , Ebbw Vale , , NP23 6PL	SO15301045	Metals
EP3230BW	Rassau Recycling Facility	Envirowales Ltd	Plateaux 1 & 2 , Rassau Industrial Estate , Rassau , , Ebbw Vale , NP23 5SD	SO15201260	Metals
GP3337KD	Tafarnaubach Waste Management Facility	Envirowales Ltd	Unit 5 , Tafarnaubach Industrial Estate , , Tafarnaubach , TREDEGAR , NP22 3AA	SO12331078	Waste Storage
MP3835SV	Silent Valley Landfill Site	Silent Valley Waste Services Limited	Beechwood House , , Cwm , , Ebbwvale , NP23 6PZ	SO18460655	Landfill
UP3335SN	Silent Valley Landfill Leachate Treatment and Disposal Facility	Blaenau Gwent County Borough Council	Silent Valley Landfill Site , , Cwm , , Ebbw Vale , NP23 6PZ	SO18640671	Landfill
YP3532KK	Abertillery Battery Plant	Atraverda Ltd	Units A, B & C , Roseheyworth Business Pk North , , Abertillery , , NP13 0SX	SO20410585	Chemicals
YP3835GV	Tredegar Biodiesel	Sundance Renewables (Sustainable Energy Co-Operative) Ltd	Unit 7A , Tafarnaubach Industrial Estate , Tafaraubach , Tredegar , , NP22 3AA	SO12401050	Chemicals
ZP3535SQ	Silent Valley Generation Plant	Novera Energy Generation No 2 Limited	Silent Valley Landfill Site , , Cwm , , Ebbw Vale , NP23 6PZ	SO18640671	Combustion



© Hawlfraint a hawliau cronfa ddata'r Goron 2011 Rhif Trwydded yr Arolwg Ordnans 100024198. © Crown Copyright and database right 2011. Ordnance Survey licence number 100024198.

Permitted Waste Management Sites

Label No.	Permit No.	Site Name	Category	Active in 2010?
1	30309	A Lewis Skip Hire	Transfer	Active
2	30386	Adrian Lewis Waste Paper Collections Ltd	Transfer	Inactive
3	100188	Central Depot	Treatment	Active
4	100084	Former Steelworks Ebbw Vale	Treatment	Inactive
5	30096	Hafod Garage Waste Transfer Station	Transfer	Active
6	30358	Jesmond Dene Stadium	MRS	Inactive
7	30068	Jukes Landfill	Landfill	Inactive
8	30385	New Vale	Transfer	Active
9	101698	New Vale Recycling Centre	Transfer	Active
10	30325	Parfitt Scrapyard	MRS	Active
11	30039	Polar Place Scap Yard	MRS	Inactive
12	30393	Remax Recycling	Transfer	Active
13	30143	Silent Valley Bournville Civic Amenity Site	Transfer	Active
14	30142	Silent Valley Cwm Civic Amenity Site	Transfer	Active
15	30207	Silent Valley Cwm Treatment Plant	Treatment	Active
16	MP3835SV	Silent Valley Landfill Site	Landfill	Active
17	30357	T & H Commercials (dissolved)	MRS	Inactive
18	GP3337KD	Tafarnaubach Waste Management Facility EA/EPR/GP3337KD/A001	Transfer	Active
19	30323	Tredegar Car Dismantlers	MRS	Active

© Environment Agency, 2011.
This information has been developed by the Data, Information and Environmental Assessment Section

Waste Management Sites

Waste Management Licensing was one of the regulatory systems used to regulate the waste management industry. We now regulate waste and other industries under one system, Environmental Permitting Regulations. Operations that previously had a Waste Management Licence (WML) will now have an Environmental Permit.

The Permitted Waste Management Sites map shows the locations of permitted waste management sites as in September 2011. These sites have a current permit for waste management activities, but may not be currently accepting waste. Those waste management sites that received waste during 2010 have been shown as active.

© Environment Agency, 2011.
This information has been developed by the Data, Information and Environmental Assessment Section

Waste: Remaining Landfill Capacity and Landfill Inputs

Landfill Directive site classification

The implementation of the Landfill Directive introduced many new requirements. Under the Directive, landfills were classified into three main types: Hazardous waste; Non-hazardous waste and Inert waste.

Some non-hazardous landfills can also have a separate hazardous waste cell for Stable Non Reactive Hazardous Wastes (SNRHW), e.g. asbestos and gypsum. This cell is usually a very small part of the overall site. There is only one of these in Wales.

There are also detailed restrictions on the waste (i.e. Waste Acceptance Criteria) that each class of landfill can take.

Landfill Inputs

Just over 2.3 million tonnes of waste was landfilled in Wales in 2010. This compares to just under 2.5 million tonnes in 2009, a reduction of 8 per cent. The tonnage of waste landfilled has fallen by 52 per cent since 2001.

In 2010, 81 per cent of waste was landfilled at sites accepting non-hazardous waste; 7 per cent went to inert only sites; and 12 per cent to restricted user sites (consisting of mainly ashes and slags from metal manufacture and power stations).

In 2010 landfill at non-hazardous sites (including those with SNRHW cells) remains steady at 1.9 million tonnes.

Landfill Capacity

There were 37.6 million cubic metres of remaining capacity at permitted landfill sites in Wales at the end of 2010. This would provide 10 years of landfill life for non-hazardous waste at 2010 rates of disposal.

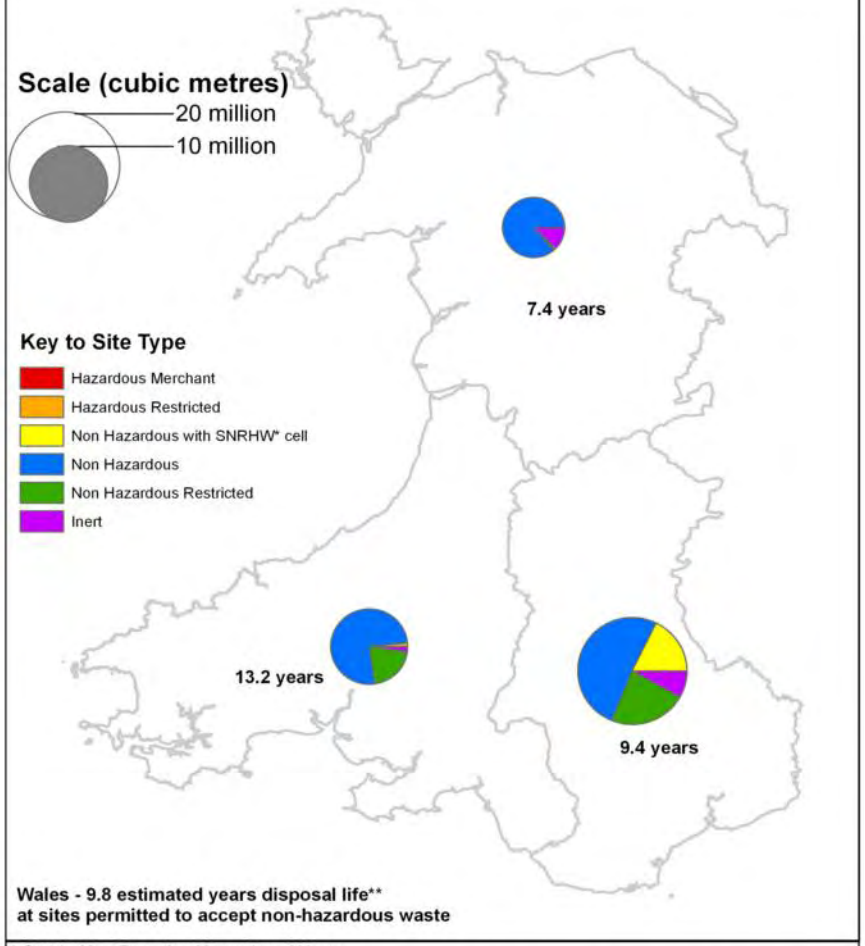
Overall capacity decreased by three per cent compared to 2009. There is no additional permitted capacity this year.

At the end of 2010:

- 7 per cent of capacity was at inert sites
- 74 per cent of capacity was at non-hazardous sites
- 19 per cent of capacity was at restricted user sites (non hazardous and hazardous).

Wales Waste Information 2010
http://www.environment-agency.gov.uk/research/library/data/132641.aspx

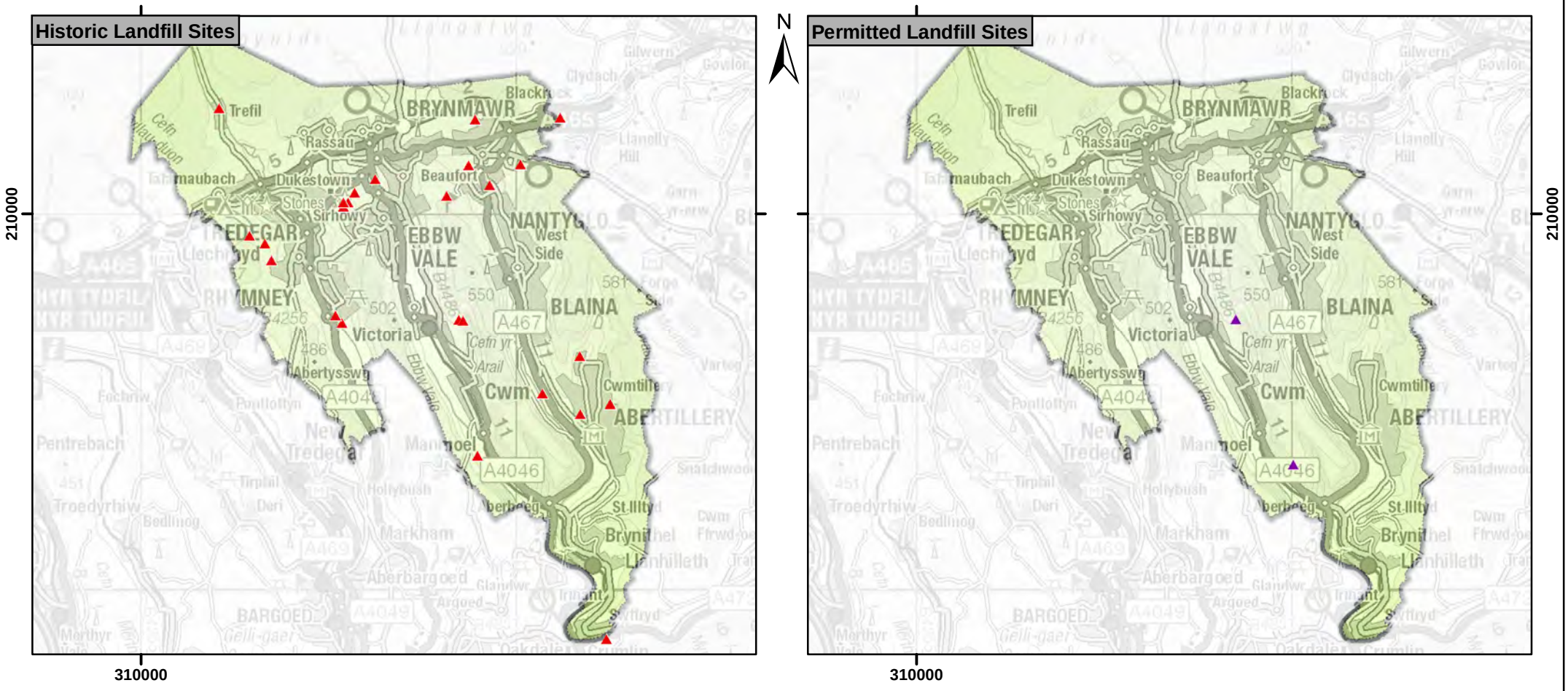
Wales: remaining landfill capacity by sub-region and site type, showing life expectancy 2010 data



* Stable Non Reactive Hazardous Waste

** Estimate is indication only based on dividing regional capacity (void) at non-hazardous landfill sites by site inputs for 2010; for estimation purposes waste density is assumed to be 1.2 tonnes per m^3; engineering and cover are assumed to consume an average of 25% of total void space.

© Environment Agency, 2011.
This information has been developed by the Data, Information and Environmental Assessment Section



Historic and Currently Permitted Landfill Sites

Legend

- Historic Landfill Sites
- Local Authority Boundary
- Permitted Landfill Sites
- Local Authority Boundary

Asiantaeth yr Amgylchedd Cymru
Environment Agency Wales

2 1 0 2
Km

© Crown Copyright and database right 2011 Ordnance Survey licence number 100024198. © Hawlfraint a hawliau cronfa ddata'r Goron 2011 Rhif Trwydded yr Arolwg Ordnans 100024198. © Environment Agency 2011.

Waste Management: Historic and Permitted Landfills

Permitted Landfill Sites

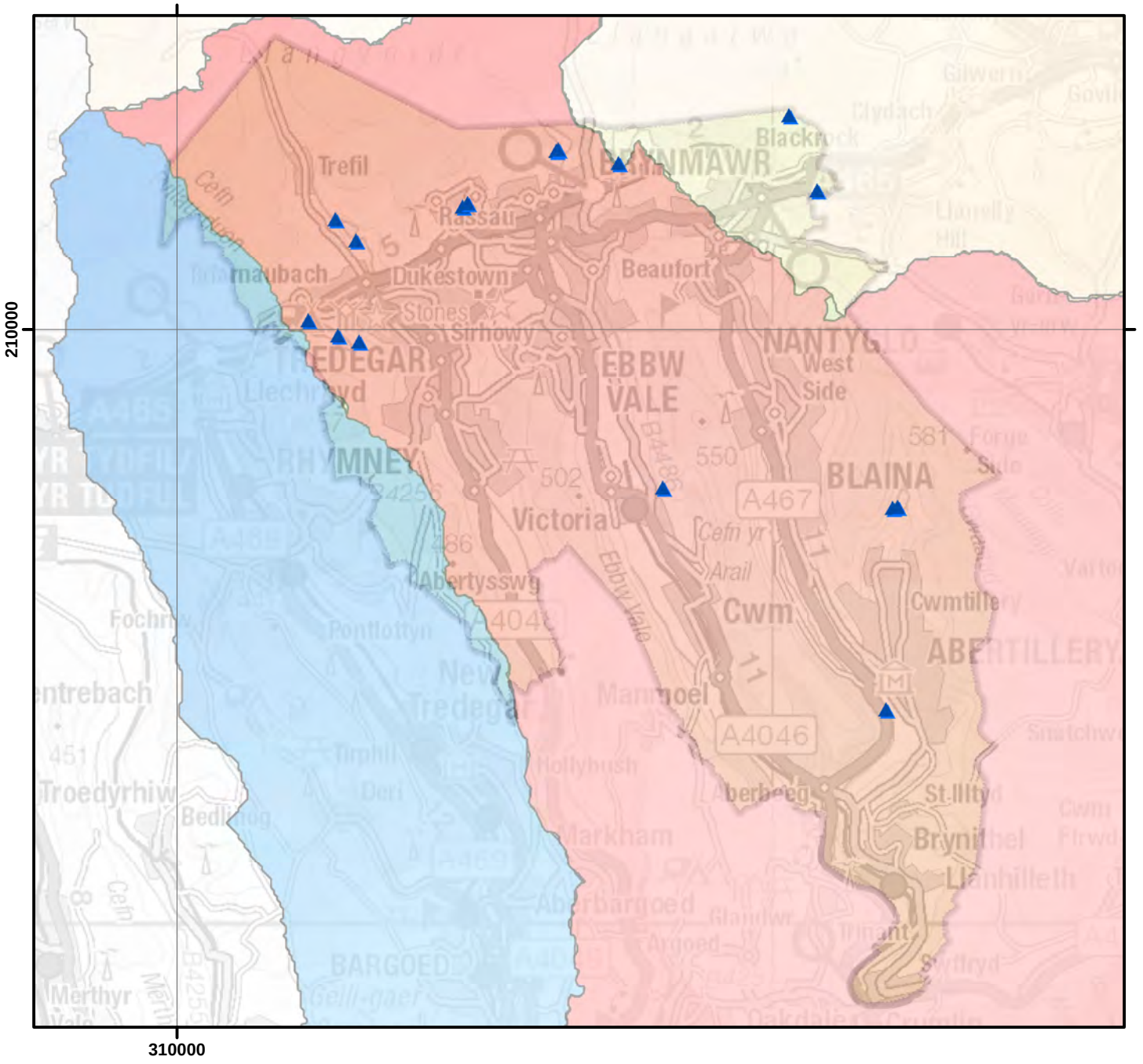
This map shows the location of all operational landfills. Operational landfills are sites with a current permit that are still accepting waste, or are no longer accepting waste but still being actively managed.

Historic Landfill sites

This map shows the location of historic landfills known to EA Wales. Historic landfill sites are locations where there are records of waste being received to be buried but the site is now closed or covered. These landfills do not have a current permit.

The information held has been collated from data held by Local Authorities, the former Department of the Environment, British Geological Survey and Environment Agency suspended authorised landfill licences.

© Environment Agency, 2012.
This information has been developed by the Data, Information and Environmental Assessment Section



CAMS Resource Availability Status

December 2008

Legend

- Active Abstraction Licenses

Resource Availability Status

- No Water Available
- Over Abstracted
- Over Licensed
- Water Available
- Assessment not complete
- Not Assessed
- Not included in LA

Asiantaeth yr Amgylchedd Cymru
Environment Agency Wales

0.9 0.45 0 0.9 1.8
Km

© Crown Copyright and database right 2011 Ordnance Survey licence number 100024198. © Hawlfraint a hawliau cronfa ddata'r Goron 2011 Rhif Trwydded yr Arolwg Ordnans 100024198. © Environment Agency 2011.

Catchment Abstraction Management Strategies (CAMS)

Water Resources

Environment Agency Wales is responsible for managing water resources in Wales. One of the ways that this is done is through licensing water abstraction. We developed Catchment Abstraction Management Strategies (CAMS):

- to inform the public on water resources and licensing practice
- to provide a consistent approach to local water resources management
- to help to balance the needs of water users and the environment

Environment Agency Wales is responsible for managing water resources in Wales. One of the ways that this is done is through licensing water abstraction. CAMS are 6 year plans detailing how water resources in an area will be managed.

CAMS relevant to Blaenau Gwent are:
Ebbw and Lwyd, Rhymney, Usk

Catchment Abstraction Management Strategies (CAMS) have been produced 'to provide a framework for resource availability assessment and produce a licensing strategy which aids the sustainable management of water resources on a catchment scale.'

The current CAMS documents for Wales can be found here:

Catchment Abstraction Management Plans - Wales http://www.environment-agency.gov.uk/business/topics/water/119933.aspx

A new approach to CAMS has been developed to align with the Water Framework Directive (WFD) process. The implementation of the WFD requires further assessments of the water environment that were previously not part of CAMS. Also, the role of CAMS in licensing abstraction and managing time-limiting licences needs to be strengthened. By moving CAMS away from a cyclic review and into the day to day business, in particular its role in managing time-limited licences, we have made the process more flexible. This is important in the light of uncertainties such as climate change.

In June 2010 we published *Managing Water Abstraction* which sets out the national approach and regulatory framework within which we will manage water resources. http://www.environment-agency.gov.uk/business/topics/water/119927.aspx

© Environment Agency, 2011.
This information has been developed by the Data, Information and Environmental Assessment Section

Catchment Abstraction Management Strategies (CAMS)

Catchment Abstraction Management Strategies (CAMS): resource availability status

For all CAMS Areas classified as **'water available'**. (blue)

- Additional water is likely to be available for abstraction even at low flows.
- Larger volumes of water may be available at higher flows or for non-consumptive purposes.
- All new licences will be subject to restrictions that protect the environment and existing water users.
- All licence applications will be assessed on a case by case basis
- Existing Abstraction Licences – There will be no impact on existing abstractors unless their abstraction is causing an adverse impact on a designated site. Action may be needed under the Habitats Directive Review of Consents.

For all CAMS Areas classified as **'no water available'**. (yellow)

- No additional water is available for abstraction at low flows.
- Water may be available at high flows or for non-consumptive purposes.
- All new licences will be subject to restrictions that protect the environment and existing water users.
- All licence applications will be assessed on a case by case basis
- Existing Abstraction Licences – There will be no impact on existing abstractors unless their abstraction is causing an adverse impact on a designated site. Action may be needed under the Habitats Directive Review of Consents.

For all CAMS Areas classified as **'over licensed'**. (orange)

- Most abstractors do not abstract their full licence quantity. If existing licences used their full allocation, they would have the potential to cause unacceptable environmental impact at low flows.
- New licences will only be granted if water is available at higher flows.
- All licence applications will be assessed on a case by case basis.
- Existing Abstraction licences - there will be no impact on existing abstractors unless their abstraction is causing an adverse impact on a designated site. Action may be needed under the Habitats Directive Review of Consents

For all CAMS Areas classified as **'over abstracted'**. (Red)

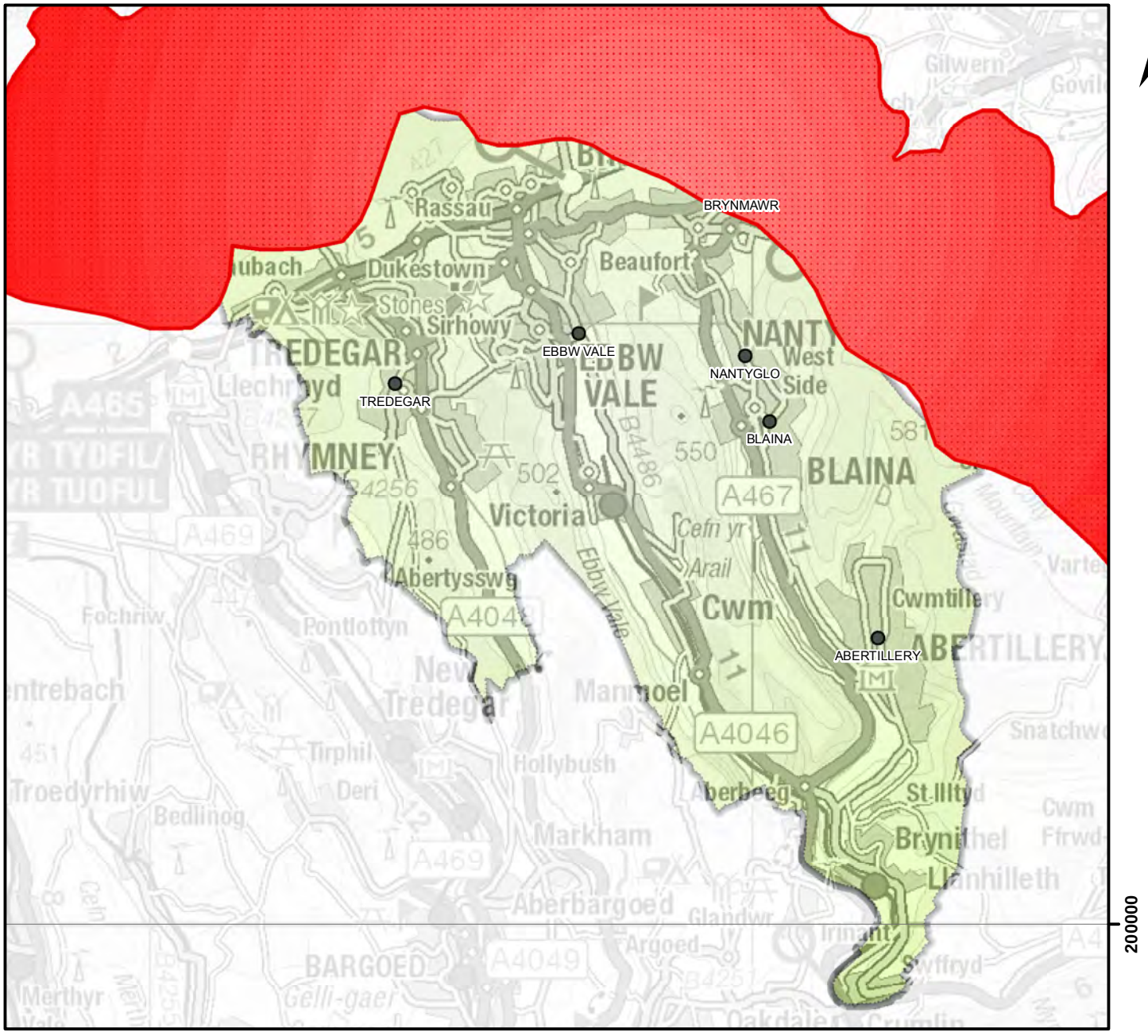
- Existing licences already have the potential to cause unacceptable environmental impact at low flows.
- In some cases new licences will be granted if water is available at higher flows.
- All licence applications will be assessed on a case by case basis.
- Existing Abstraction licences - there will be no impact on existing abstractors unless their abstraction is causing an adverse impact on a designated site. Action may be needed under the Habitats Directive Review of Consents

Not yet assessed (purple) – these areas have not yet been assessed under the CAMS process. This work is on going.

Not assessed (green)

- Not all watercourses are assessed under the CAMS process. Those very small coastal watercourses where abstraction is limited are not included within the classification.
- All licences applied for in these locations will be subject to the same licensing processes as all other applications.
- All licence applications will be assessed on a case by case basis.

© Environment Agency, 2011.
This information has been developed by the Data, Information and Environmental Assessment Section



Groundwater Source Protection Zones (SPZ)

Legend

Source Protection Zones

- Zone 1 - Inner Protection Zone
- Zone 2 - Outer Protection Zone
- Zone 3 - Total Catchment
- Zone of Special Interest
- Local Authority

Asiantaeth yr Amgylchedd Cymru
Environment Agency Wales

2 1 0 2 Km

© Crown Copyright and database right 2012 Ordnance Survey licence number 100024198. © Hawlfraint a hawliau cronfa ddata'r Goron 2012 Rhif Trwydded yr Arolwg Ordnans 100024198.
© Environment Agency copyright and/or database right 2012. All rights reserved © Hawlfraint a/neu hawl cronfa wybodaeth Asiantaeth yr Amgylchedd 2012. Cedwir pob hawl.

Groundwater Source Protection Zones (SPZ) in Blaenau Gwent

Groundwater

Groundwater supplies about one third of drinking water in England and around 3 per cent in Wales. Groundwater also helps to maintain the flow in many of our rivers and wetland ecosystems.

Pollution and increasing demand for water are putting groundwater resources under pressure.

Definitions

Groundwater	water that is below the surface of the ground in the saturation zone (below the water table) and in direct contact with the ground or subsoil
Aquifer	a subsurface layer or layers of rock or other geological strata of sufficient porosity and permeability to allow either a significant flow of groundwater or the abstraction of significant quantities of groundwater
Recharge	water which percolates downward from the surface into groundwater

Links to Further information:

A comprehensive guide on groundwater protection is available on the Environment Agency website: “Groundwater Protection: Policy and Practice” (GP3)

http://www.environment-agency.gov.uk/research/library/publications/40741.aspx

This policy sets out how we manage and protect groundwater resources, and our plans for the future.

“Underground, Under Threat” is our report on the state of groundwater in England and Wales.

http://www.environment-agency.gov.uk/research/library/publications/40741.aspx

Source Protection Zones (SPZs)

We have defined Source Protection Zones (SPZs) for groundwater sources such as wells, boreholes and springs used for public drinking water supply. These zones show the risk of contamination from any activities that might cause pollution in the area. The closer the activity, the greater the risk. The maps show three main zones (inner, outer and total catchment) and a fourth zone of special interest, which we occasionally apply, to a groundwater source.

Zone 1 (Inner protection zone)

Defined as the 50 day travel time from any point below the water table to the source. This zone has a minimum radius of 50 metres.

Zone 2 (Outer protection zone)

Defined by a 400 day travel time from a point below the water table. The previous methodology gave an option to define SPZ2 as the minimum recharge area required to support 25 per cent of the protected yield. This option is no longer available in defining new SPZs and instead this zone has a minimum radius of 250 or 500 metres around the source, depending on the size of the abstraction.

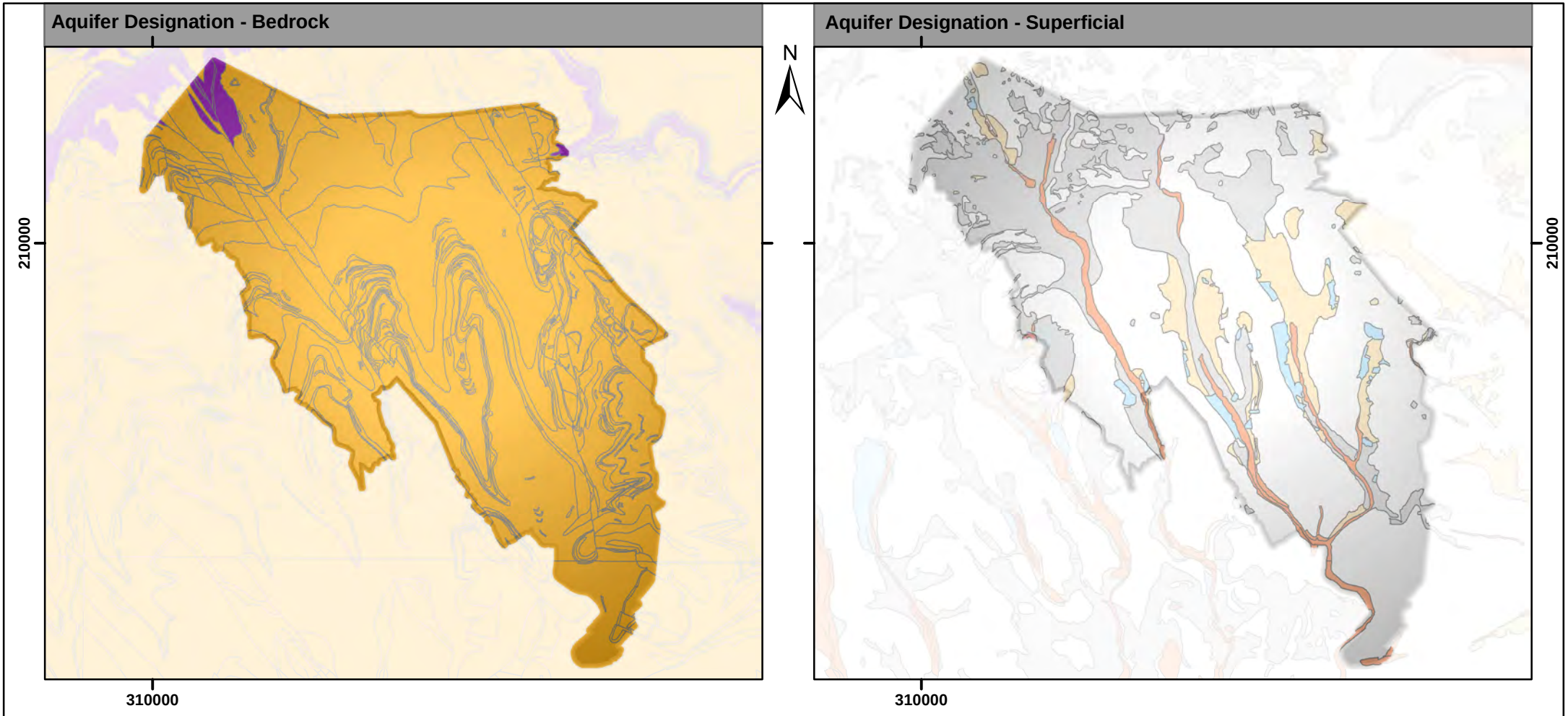
Zone 3 (Total catchment)

Defined as the area around a source within which all groundwater recharge is presumed to be discharged at the source. In confined aquifers, the source catchment may be displaced some distance from the source. For heavily exploited aquifers, the final Source Catchment Protection Zone can be defined as the whole aquifer recharge area where the ratio of groundwater abstraction to aquifer recharge (average recharge multiplied by outcrop area) is >0.75. There is still the need to define individual source protection areas to assist operators in catchment management.

Zone of special interest

A fourth zone SPZ4 or ‘Zone of Special Interest’ was previously defined for some sources. SPZ4 usually represented a surface water catchment which drains into the aquifer feeding the groundwater supply (i.e. catchment draining to a disappearing stream). In the future this zone will be incorporated into one of the other zones, SPZ 1, 2 or 3, whichever is appropriate in the particular case, or become a safeguard zone.

© Environment Agency, 2011.
This information has been developed by the Data, Information and Environmental Assessment Section



Aquifer Designation

Legend

Aquifer Typology - Bedrock

- Principal
- Secondary A
- Secondary B
- Secondary (undifferentiated)
- Unproductive

Aquifer Typology - Superficial

- Principal
- Secondary A
- Secondary B
- Secondary (undifferentiated)
- Unknown (lakes+landslip)
- Unproductive

Asiantaeth yr Amgylchedd Cymru
Environment Agency Wales

2 1 0 2 Km

© Crown Copyright and database right 2012 Ordnance Survey licence number 100024198. © Hawlfraint a hawliau cronfa ddata'r Goron 2012 Rhif Trwydded yr Arolwg Ordnans 100024198. © Environment Agency 2012.
© British Geological Survey

Aquifer Designation Maps

We help to protect groundwater by identifying different types of aquifer - underground layers of water-bearing permeable rock or drift deposits from which groundwater can be extracted.

Our Groundwater Protection Policy now uses aquifer designations that are consistent with the Water Framework Directive. These designations reflect the importance of aquifers in terms of groundwater as a resource (drinking water supply) but also their role in supporting surface water flows and wetland ecosystems.

The aquifer designation data is based on geological mapping provided by the British Geological Survey. It will be updated regularly to reflect their ongoing programme of improvements to these maps. We gratefully acknowledge this assistance.

The maps show two different types of aquifer designation:

Bedrock – solid permeable formations e.g. sandstone, chalk and limestone

Superficial – permeable unconsolidated (loose) deposits e.g. sands and gravels

Note: Some map tiles on the Aquifer Designation – Superficial maps may appear to be missing. These areas were not surveyed because they do not contain significant aquifers and the whole area has been classified as unproductive.

The aquifer designation maps shown on the previous page display the following designations:

Principal Aquifers

These are layers of rock or drift deposits that have high intergranular and/or fracture permeability- meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. In most cases, principal aquifers are aquifers previously designated as major aquifer.

Secondary Aquifers

These include a wide range of rock layers or drift deposits with an equally wide range of water permeability and storage. Secondary aquifers are subdivided into two types:

Secondary A - permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

Secondary B - predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers.

Secondary Undifferentiated - has been assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type.

Unproductive Strata

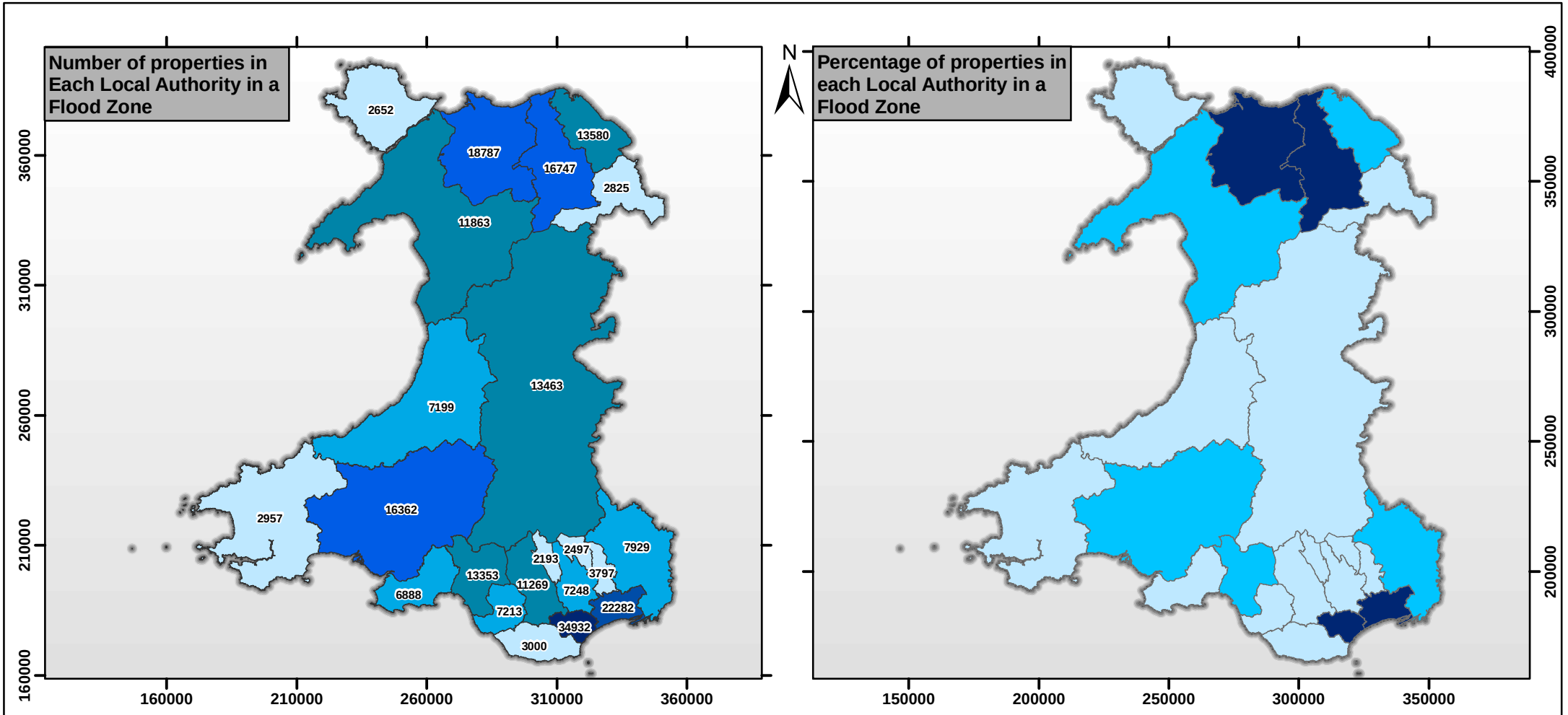
These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.

Note: We are only able to display the principal and secondary aquifers as coloured areas on the maps. All uncoloured areas on the bedrock designation map will be unproductive strata. However, for uncoloured areas on the superficial (drift) designation map you will not be able to distinguish between areas of unproductive strata and areas where no drift is present. To do this you will need to consult the published geological survey maps

Links to further information

Environment Agency website - Aquifer designations

http://www.environment-agency.gov.uk/homeandleisure/117020.aspx



Number and Proportion of Properties in each Local Authority in Wales in a Flood Zone

National Flood Risk Assessment (NaFRA) 2012 Data

Legend

No of properties in a Flood Zone

- 0- 5000
- 5001 - 10000
- 10001 - 15000
- 15001 - 20000
- 20001 - 25000
- 25001 - 35000

% Properties in Flood Zones in each LA

- 0% - 10%
- 10% - 20%
- 20% - 35%

Asiantaeth yr Amgylchedd Cymru
Environment Agency Wales

50 25 0 50
Km

© Crown Copyright and database right 2012 Ordnance Survey licence number 100024198. © Hawlfraint a hawliau cronfa ddata'r Goron 2012 Rhif Trwydded yr Arolwg Ordnans 100024198.
© Environment Agency copyright and/or database right 2012. All rights reserved © Hawlfraint a/neu hawl cronfa wybodaeth Asiantaeth yr Amgylchedd 2012. Cedwir pob hawl.

The impact of flooding on Wales

Floods and coastal erosion are the greatest natural threats to the people, economy and environment of Wales.

Across Wales around 220,000 properties are currently at risk of flooding from rivers and the sea. Around half a million, out of a population of 3 million, live and work on the flood plains in Wales. The potential annual economic risk to residential and business properties and their contents was estimated at £200 million in April 2008. Commercial, industrial and key infrastructure, like power supplies, communication systems, transport links, emergency services and schools are situated on land at risk of flooding and estimated to be worth over £8 billion.

The maps above show the number of properties in each local authority and the proportion of properties in each local authority at risk of flooding.

Climate change is expected to increase river flooding, cause sea level rise and increase the flood and coastal erosion risk. The 2004 Foresight Future Flooding report suggested that the annual economic damages in Wales will rise from £70 million in 2004 to £1,235 million in the 2080s under the most likely scenario. However, as the Stern Report found, taking action now can reduce the longer term total economic damage.

© Environment Agency, 2011.
This information has been developed by the Data, Information and Environmental Assessment Section

Welsh Index of Multiple Deprivation: Flood Risk

The Welsh Index of Multiple Deprivation

The Welsh Index of Multiple Deprivation 2011 (WIMD) is the official measure of deprivation at the small area level in Wales. WIMD was developed for the Welsh Government by the Welsh Government Statistical Directorate and the Local Government Data Unit (Wales).

More information can be found in the Welsh Government's Welsh Index of Multiple Deprivation 2011: Summary Report
http://new.wales.gov.uk/topics/statistics/theme/wimd/wimd2011/

There are eight domains, or kinds, of deprivation included in the overall index of deprivation: Income; Employment; Education; Health; Access to services; Housing; Physical environment and Community safety.

Environment Agency Wales is involved in the production of the physical environment domain index.

The physical environment domain of the WIMD index incorporates four indicators: air quality (concentrations of air pollutants), emissions of air pollutants, flood risk and proximity to regulated sites i.e. waste disposal and industrial sites.

Flood Risk

Those who suffer flooding have a significant lowering of quality of life that can last for a number of years. Homes in areas that suffer increased flood risk will often have significantly higher insurance premiums, potentially leading to higher financial hardship in these areas. It is likely that economically and socially deprived areas will take longer to recover from flood events.

Flood risk calculations and maps were based on the 2009 NAFRA database which includes flood risk, taking into account flood defences where these are known. Different levels of risk were taken into account, as is done with insurance companies, with 3 levels of risk; significant, moderate and low risk. The risk is based on frequency rather than level of damage caused by any flooding.

More information on how the index was produced can be found in Welsh Index of Multiple Deprivation 2008: Technical Report and the Welsh Index of Multiple Deprivation 2011: Summary of Methodological Changes.
http://wales.gov.uk/docs/statistics/2009/090319wimdtechreport09en.pdf
http://wales.gov.uk/topics/statistics/publications/wimd11method/

More information on flood risk assessment and the NAFRA database can be found in Flooding in Wales – National Assessment of Flood Risk (http://www.environment-agency.gov.uk/research/library/publications/108958.aspx) on the Environment Agency website.

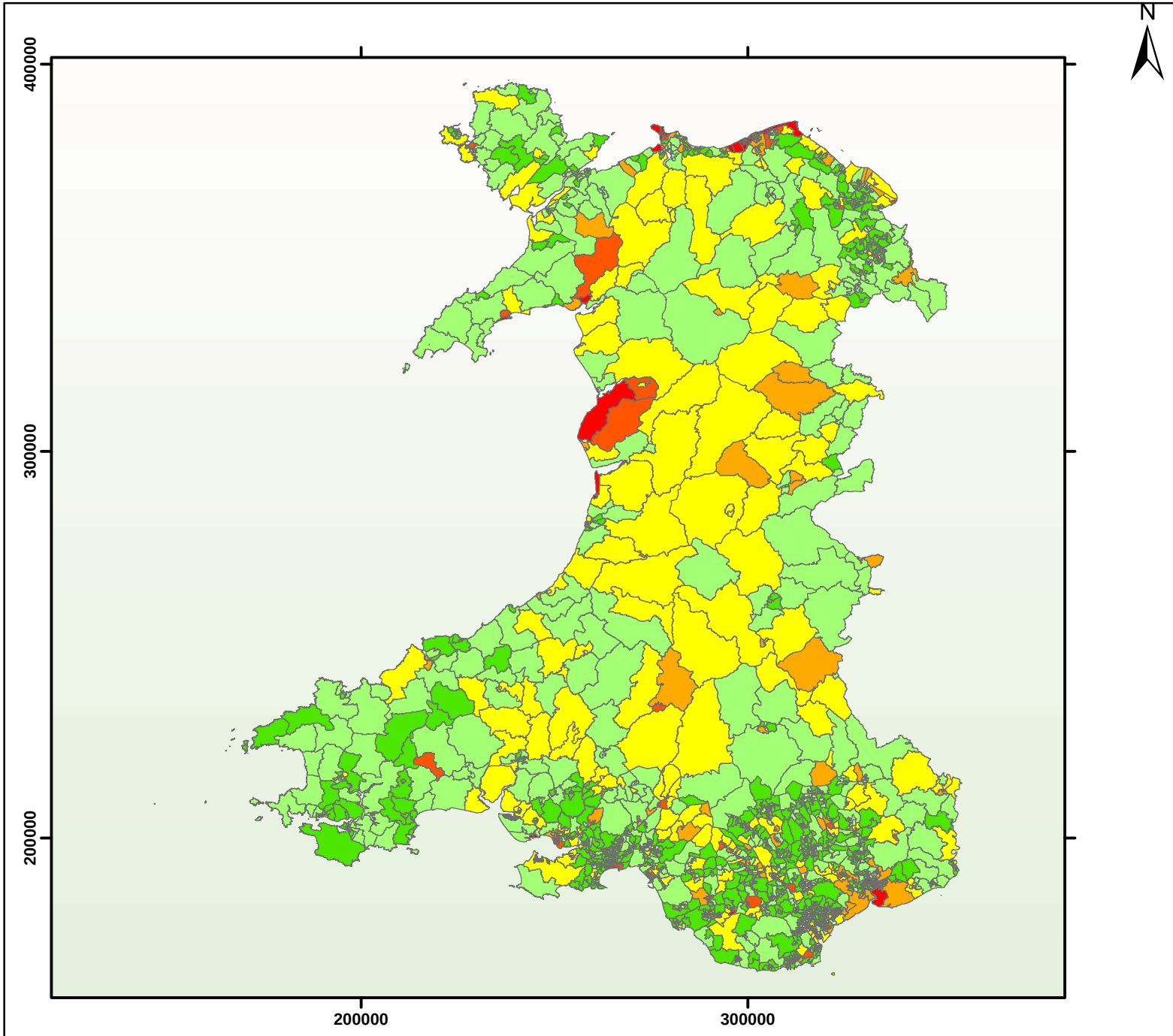
The two maps in the following pages show:

- Lower Layer Super Output Areas (LSOA) in Wales and the position of the LSOA within the index for Flood Risk
- Lower Layer Super Output Areas (LSOA) in the Local Authority and the position of the LSOA within the index for Flood Risk

The areas shown in red have the most significant flood risk in relation to population.

The WIMD: Flood Risk Index by LSOA table after the maps shows how each LSOA in the planning authority is ranked within Wales for flood risk. Low rank corresponds to relatively high flood risk.

© Environment Agency, 2012.
This information has been developed by the Data, Information and Environmental Assessment Section



Welsh Index of Multiple Deprivation (WIMD): Flood Risk Index

WIMD 2011

Legend

Position of LSOA within Index

Percentile

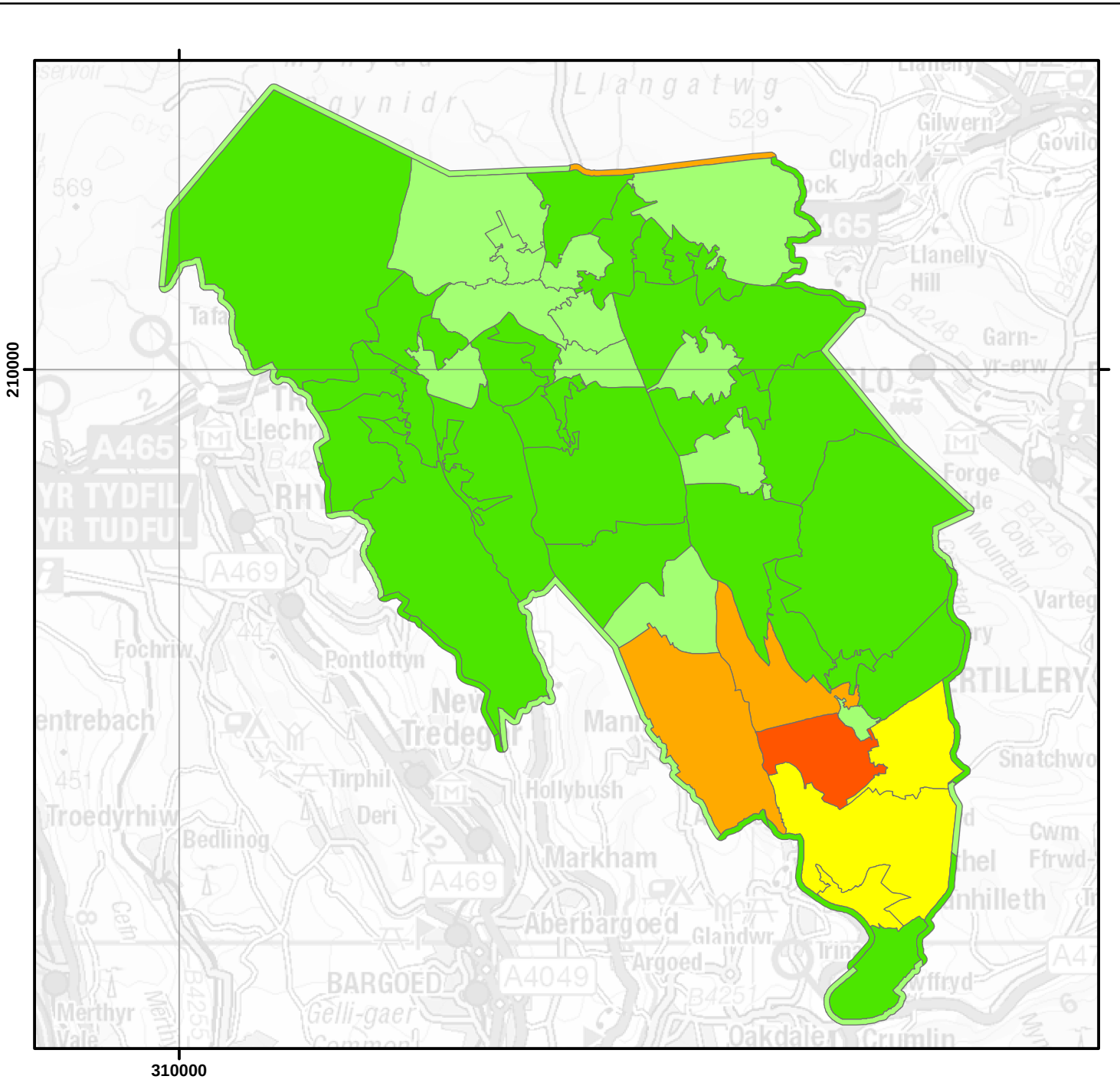
- 2.5 % (most deprived)
- 5 %
- 10 %
- 25 %
- 50 %
- 75 %
- 100 % (least deprived)

Communities with the most significant flood risk in relation to population are shown in red

Asiantaeth yr Amgylchedd Cymru
Environment Agency Wales

0 15 30 60
Km

© Crown Copyright and database right 2012 Ordnance Survey licence number 100024198. © Hawlfraint a hawliau cronfa ddata'r Goron 2012 Rhif Trwydded yr Arolwg Ordnans 100024198. © Environment Agency 2012.



Welsh Index of Multiple Deprivation (WIMD): Flood Risk Index

WIMD 2011

Legend

Position of LSOA within Index

Percentile

- 2.5 % (most deprived)
- 5 %
- 10 %
- 25 %
- 50 %
- 75 %
- 100 % (least deprived)
- Local Authority

Communities with the most significant flood risk in relation to population are shown in red.

Asiantaeth yr Amgylchedd Cymru
Environment Agency Wales

1 0.5 0 1
Km

© Crown Copyright and database right 2012 Ordnance Survey licence number 100024198. © Hawlfraint a hawliau cronfa ddata'r Goron 2012 Rhif Trwydded yr Arolwg Ordnans 100024198. © Environment Agency 2012.

WIMD: Flood Risk Rank by Lower Super Output Area (LSOA)

This table shows how each LSOA in the planning authority is ranked within Wales for flood risk. Low rank corresponds to relatively high risk.

ONS = Office of National Statistics

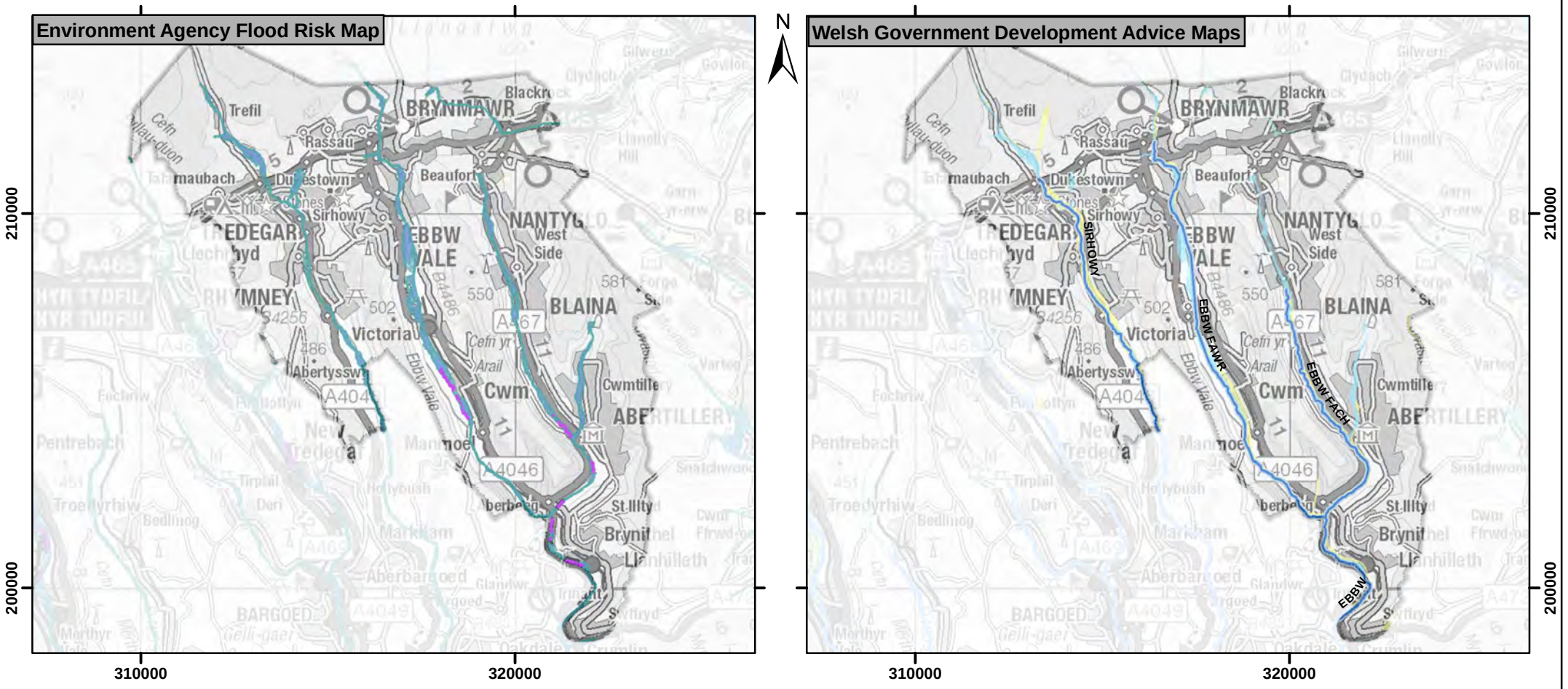
LSOA Code	LSOA Name	ONS LSOA Name	Flood Risk - National Rank
W01001476	Six Bells 1	Blaenau Gwent 009D	74
W01001451	Cwm 2	Blaenau Gwent 007B	106
W01000462	Llangattock	Powys 018C	110
W01001435	Abertillery 1	Blaenau Gwent 008A	175
W01001466	Llanhilleth 3	Blaenau Gwent 009C	230
W01001477	Six Bells 2	Blaenau Gwent 009E	324
W01001465	Llanhilleth 2	Blaenau Gwent 009B	475
W01001442	Beaufort 3	Blaenau Gwent 001C	496
W01000465	Llangynidr	Powys 018E	543
W01001436	Abertillery 2	Blaenau Gwent 008B	569
W01001439	Badminton 2	Blaenau Gwent 004B	613
W01001475	Sirhowy 4	Blaenau Gwent 003D	627
W01001359	Crumlin 4	Caerphilly 006D	717
W01001450	Cwm 1	Blaenau Gwent 007A	719
W01001335	Argoed (Caerphilly) 2	Caerphilly 005B	733
W01001489	Blaenavon 3	Torfaen 001C	736
W01001438	Badminton 1	Blaenau Gwent 004A	745
W01001443	Blaina 1	Blaenau Gwent 005A	750
W01001471	Rassau 2	Blaenau Gwent 001E	789
W01001446	Brynmawr 1	Blaenau Gwent 002A	797
W01001523	Pontnewynydd	Torfaen 004C	804
W01001468	Nantyglo 2	Blaenau Gwent 005E	855
W01001376	Moriah 3	Caerphilly 001C	872
W01001456	Ebbw Vale North 1	Blaenau Gwent 004C	889
W01001429	Twyn Carno 2	Caerphilly 001F	898
W01001482	Abersychan 1	Torfaen 002A	905
W01001470	Rassau 1	Blaenau Gwent 001D	921
W01001452	Cwm 3	Blaenau Gwent 007C	954
W01001541	Wainfelin 2	Torfaen 004F	963
W01001437	Abertillery 3	Blaenau Gwent 008C	969
W01001454	Cwmtillery 2	Blaenau Gwent 008E	979
W01001385	New Tredegar 2	Caerphilly 002D	997
W01001384	New Tredegar 1	Caerphilly 002C	1022
W01001485	Abersychan 4	Torfaen 002D	1030

© Environment Agency, 2012.
This information has been developed by the Data, Information and Environmental Assessment Section

LSOA Code	LSOA Name	ONS LSOA Name	Flood Risk - National Rank
W01001374	Moriah 1	Caerphilly 001A	1050
W01001461	Ebbw Vale South 3	Blaenau Gwent 007F	1058
W01001472	Sirhowy 1	Blaenau Gwent 003A	1073
W01001469	Nantyglo 3	Blaenau Gwent 005F	1075
W01001474	Sirhowy 3	Blaenau Gwent 003C	1080
W01001562	Llanelly Hill 2	Monmouthshire 003B	1089
W01001441	Beaufort 2	Blaenau Gwent 001B	1139
W01001357	Crumlin 2	Caerphilly 006B	1159
W01001428	Twyn Carno 1	Caerphilly 001E	1159
W01001375	Moriah 2	Caerphilly 001B	1159
W01001440	Beaufort 1	Blaenau Gwent 001A	1159
W01001358	Crumlin 3	Caerphilly 006C	1159
W01001460	Ebbw Vale South 2	Blaenau Gwent 007E	1159
W01001481	Tredegar Central and West 4	Blaenau Gwent 006E	1159
W01001480	Tredegar Central and West 3	Blaenau Gwent 003E	1159
W01001479	Tredegar Central and West 2	Blaenau Gwent 006D	1159
W01001478	Tredegar Central and West 1	Blaenau Gwent 006C	1159
W01001473	Sirhowy 2	Blaenau Gwent 003B	1159
W01001467	Nantyglo 1	Blaenau Gwent 005D	1159
W01001464	Llanhilleth 1	Blaenau Gwent 009A	1159
W01001453	Cwmtillery 1	Blaenau Gwent 008D	1159
W01001462	Georgetown 1	Blaenau Gwent 006A	1159
W01001444	Blaina 2	Blaenau Gwent 005B	1159
W01001459	Ebbw Vale South 1	Blaenau Gwent 007D	1159
W01001458	Ebbw Vale North 3	Blaenau Gwent 004E	1159
W01001457	Ebbw Vale North 2	Blaenau Gwent 004D	1159
W01001455	Cwmtillery 3	Blaenau Gwent 008F	1159
W01001449	Brynmawr 4	Blaenau Gwent 002D	1159
W01001448	Brynmawr 3	Blaenau Gwent 002C	1159
W01001447	Brynmawr 2	Blaenau Gwent 002B	1159
W01001445	Blaina 3	Blaenau Gwent 005C	1159
W01001463	Georgetown 2	Blaenau Gwent 006B	1159

ONS = Office of National Statistics

© Environment Agency, 2012.
This information has been developed by the Data, Information and Environmental Assessment Section



Flood Risk

Legend

- Areas benefiting from defences
- Local Authority Boundary
- Flood Storage Areas
- Flood Zone 3
- Flood Zone 2
- Flood Defences
- Local Authority Boundary
- TAN15 DAM Zone C2
- TAN15 DAM Zone C1
- TAN15 DAM Zone B
- Main Rivers

Asiantaeth yr Amgylchedd Cymru
Environment Agency Wales

2.5 1.25 0 2.5
Km

© Crown Copyright and database right 2012 Ordnance Survey licence number 100024198. © Hawlfraint a hawliau cronfa ddata'r Goron 2012 Rhif Trwydded yr Arolwg Ordnans 100024198.
© Environment Agency copyright and/or database right 2012. All rights reserved © Hawlfraint a/neu hawl cronfa wybodaeth Asiantaeth yr Amgylchedd 2012. Cedwir pob hawl. (c) British Geological Survey

Flooding and the Environment Agency

Flood Risk Maps

The Environment Agency produces detailed flood maps (see first map above, left) that show the potential risk of flooding. These flood maps are available on the Environment Agency web pages What's in your backyard?
http://www.environment-agency.gov.uk/homeandleisure/default.aspx

Flood zone 2 – the Agency's best estimate of the areas of land between Zone 3 and the extent of the flood from rivers or the sea with a 1000 to 1 chance of flooding in any year. It includes those areas defined in flood zone 3

Flood zone 3 – the Agency's best estimate of the areas of land with a 100 to 1 chance (or greater) of flooding each year from rivers, or with a 200 to 1 chance (or greater) of flooding each year from the sea.

Flood Storage Area - may also be referred to as a balancing reservoir, storage basin or balancing pond. Its purpose is to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel. It may also delay the timing of a flood peak so that its volume is discharged over a longer interval.

Development Advice Maps

The Welsh Government Technical Advice Note TAN15 Development and Flood Risk gives technical guidance in relation to development and flooding.
http://wales.gov.uk/topics/planning/policy/tans/tan15/?lang=en

TAN15 is supported by Development Advice Maps (DAM). The second map above right shows the main rivers and the flooding zones shown on the Development Advice Maps.

Zone B - Areas known to have been flooded in the past evidenced by sedimentary deposits.
Zone C1 - Areas of the floodplain that are developed and served by significant infrastructure, including flood defences.
Zone C2 - Areas of the floodplain without significant flood defence infrastructure

Main rivers – The watercourses shown as main rivers on the second map above right are designated by Defra. The Environment Agency has permissive powers to carry out flood defence works, maintenance and operational activities for main rivers only.

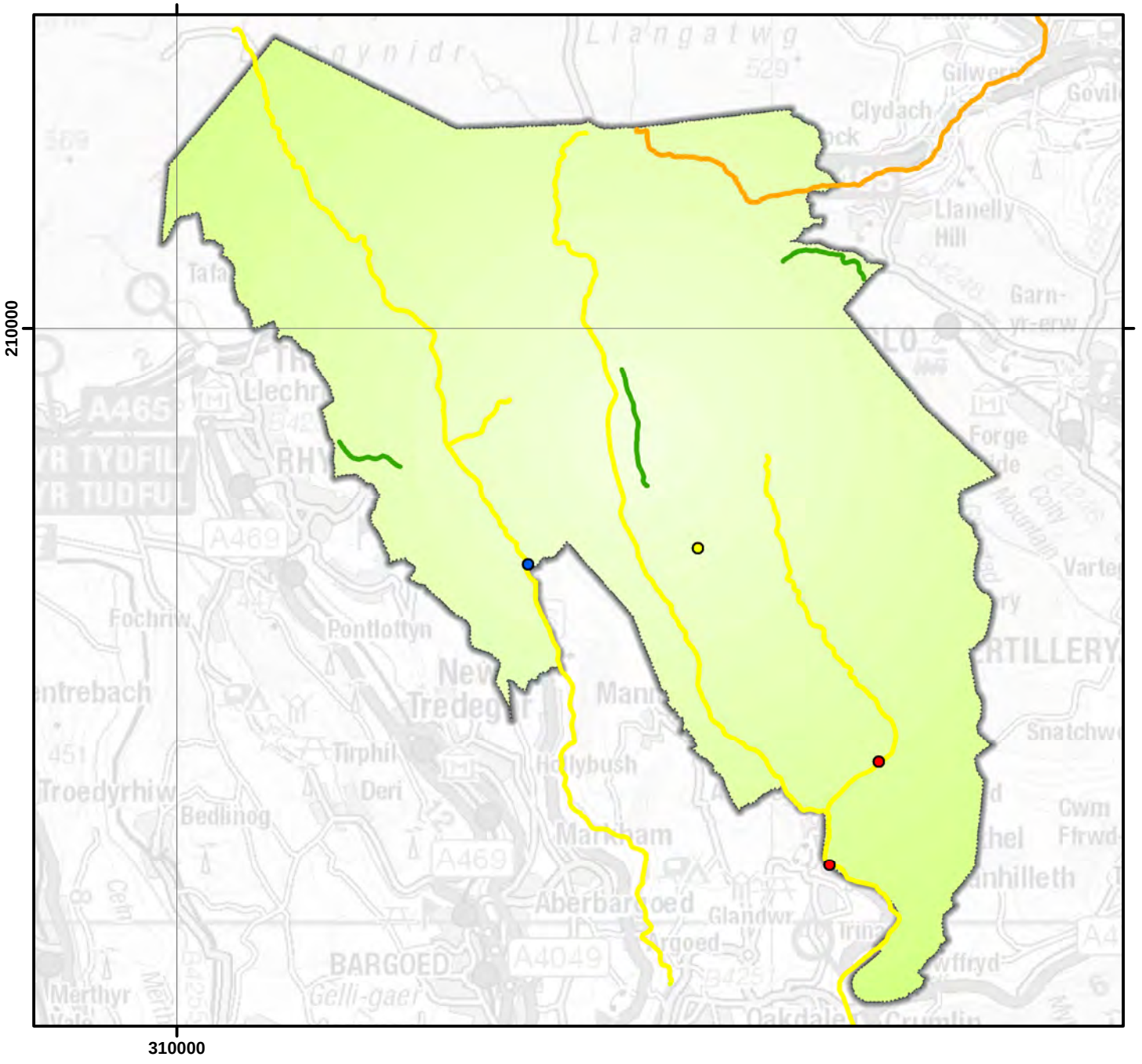
More information and advice on flooding: http://www.environment-agency.gov.uk/subjects/flood/?lang=_e

Use the 'What's in your backyard?' facility to find out if an area is at risk by entering in the postcode.

Environment Agency - What's in your backyard? (http://www.environment-agency.gov.uk/homeandleisure/37793.aspx)

There is also an early warning system available for people who live in high risk areas called the 'Flood Warning' system.
Ring **0845 988 1188** to see if you can sign up to the free service. Warnings can be delivered by phone, text, email, fax or pager.
http://www.environment-agency.gov.uk/subjects/flood/826674/

© Environment Agency, 2012.
This information has been developed by the Data, Information and Environmental Assessment Section



River Habitat Survey

Habitat Modification Class

Legend

Habitat modification class

- 1 - Near-natural
- 2 - Predominantly unmodified
- 3 - Obviously modified
- 4 - Significantly modified
- 5 - Severely modified

WFD Rivers (Baseline 2009)

Ecological Status

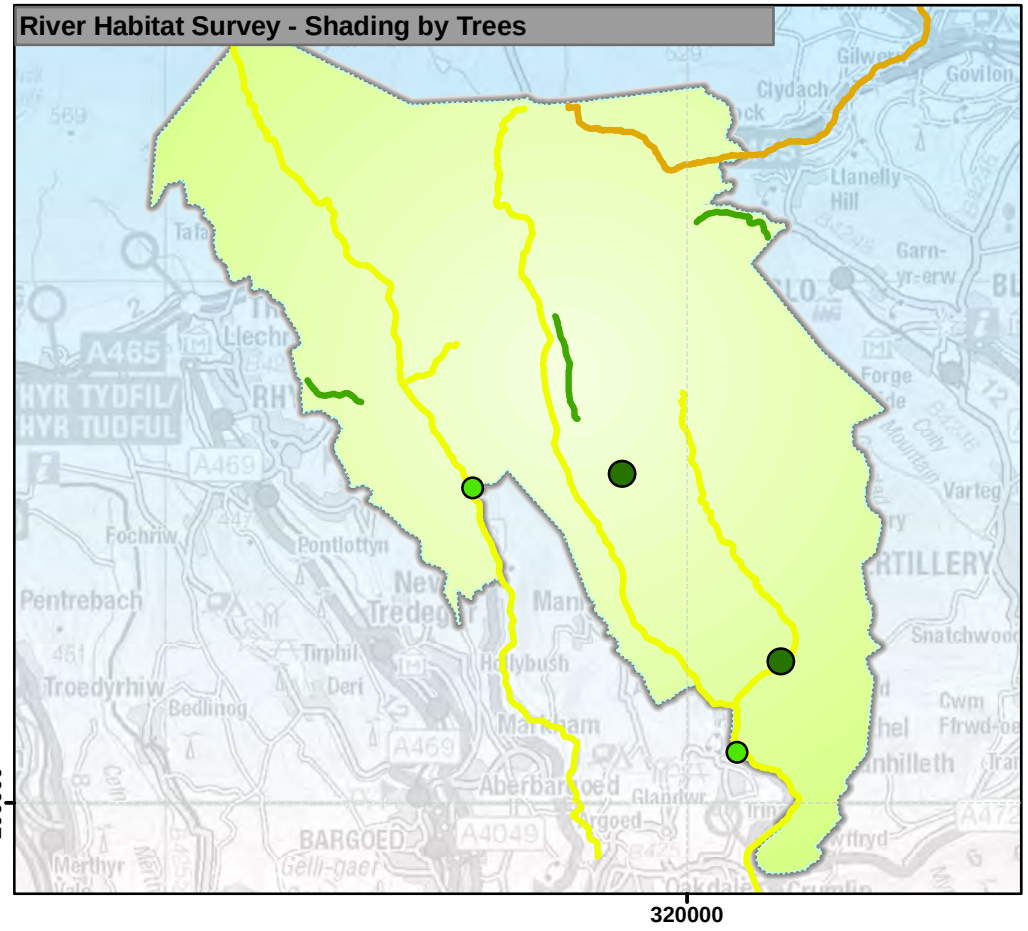
- High
- Good
- Moderate
- Poor
- Bad

Planning Authority Boundary

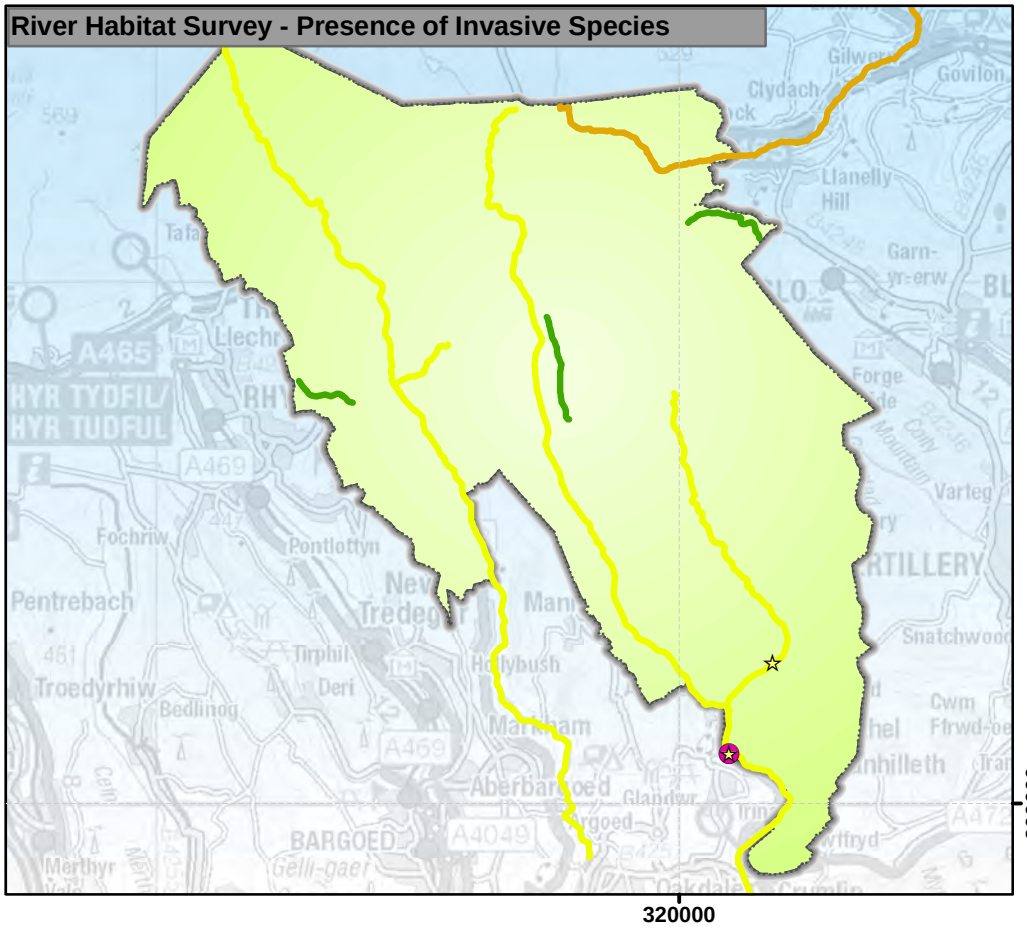
Asiantaeth yr Amgylchedd Cymru
Environment Agency Wales

2.5 1.25 0 2.5
km

© Crown Copyright and database right 2012 Ordnance Survey licence number 100024198. © Hawlfraint a hawliau cronfa ddata'r Goron 2012 Rhif Trwydded yr Arolwg Ordnans 100024198.
© Environment Agency copyright and/or database right 2012. All rights reserved © Hawlfraint a/neu hawl cronfa wybodaeth Asiantaeth yr Amgylchedd 2012. Cedwir pob hawl.



N



River Habitat Survey

Tree Shading and Invasive Species

See table following for details of invasive species found

Legend

River Shading by Trees

- Extensive
- Present
- None

Planning Authority Boundary

WFD rivers (Baseline 2009) Ecological Status

- High
- Good
- Moderate
- Poor
- Bad

Invasive species present

- Himalayan Balsam
- Japanese Knotweed
- Giant Hogweed

Asiantaeth yr Amgylchedd Cymru
Environment Agency Wales

2 1 0 2 Km

© Crown Copyright and database right 2012 Ordnance Survey licence number 100024198. © Hawlfraint a hawliau cronfa ddata'r Goron 2012 Rhif Trwydded yr Arolwg Ordnans 100024198.
© Environment Agency copyright and/or database right 2012. All rights reserved © Hawlfraint a/neu hawl cronfa wybodaeth Asiantaeth yr Amgylchedd 2012. Cedwir pob hawl.

River Habitat Survey Sites

Habitat Modification Class:
1 - Near-natural 2 - Predominantly unmodified 3 - Obviously modified 4 - Significantly modified 5 - Severely modified

E = extensive P = present N = absent Y = present

River	Site Grid Reference	Habitat Modification Class	Tree Shading	Giant Hogweed	Himalayan Balsam	Japanese Knotweed
EBWY FACH	SO2179402704	5	E	N	Y	N
TRIB EBWYS	SO1875506295	3	E	N	N	N
SIRHOWY	SO1590406021	1	P	N	N	N
EBBW	SO2097200962	5	P	N	Y	Y

© Environment Agency, 2011.
This information has been developed by the Data, Information and Environmental Assessment Section

River Habitat Survey

The River Habitat Survey (RHS) baseline survey is a major habitat survey of streams and rivers in England, Wales and the Isle of Man that we carried out, most recently, between May 2006 and September 2008.

The RHS is a standard field survey of 500 metre stretches of river. Data are collected about the physical character of the banks and channel. This includes specific details about the bank and channel structure such as natural features, artificial modifications, land-use and bankside vegetation structure. Other key features and modifications (for example, the extent of tree shading and the presence of invasive species) are recorded as absent, present (up to 33 per cent of the site) or extensive (more than 33 per cent) across the 500m stretch.

Note: The main aim of RHS baseline surveys is to provide an authoritative assessment of the physical character of river habitats and assess changes across the whole of England and Wales. The sample size is not big enough to provide statistically valid summary results at scales smaller than this, but the results are indicative on a site basis.

Habitat Modification Class

The Habitat Modification Class (HMC) is based on an assessment of the presence and extent of artificial modifications: bank and channel resectioning; bank and channel reinforcement; culverts and bridges; fords; weirs, dams and sluices; in-stream deflectors and drainage outfalls; embankments and artificial berms (two-stage channels); bankside trampling by livestock.

Where there are long stretches of reinforcement or resectioning, the river is less likely to be able to offer habitats for wildlife.

Riverside trees and shading

Trees are an important feature of river channel and riparian habitats. They help to protect banks by forming a natural barrier to erosion, due to the binding effect of their roots. Trees also act as habitats in their own right. Exposed roots form suitable shelters for otters, overhanging branches act as perches for kingfishers, and fine roots create shelter for invertebrates and fish. Shading of the channel from riverside trees can be important for regulating the temperature of the water, particularly for smaller headwater streams.

Invasive non-native plants on river banks

RHS collects data on three invasive non-native plants - Himalayan balsam, Japanese knotweed and giant hogweed. These plants can cause problems by displacing the natural plant species and also causing bank erosion when they die in winter. As RHS only records plants growing by the riverside, the results only show their distribution in riparian habitats. All these species are widespread elsewhere in the countryside and in particular along paths and railways. It is important to note that although our data may show these plants are not present at a particular site, this does not necessarily mean that they are not found along the river as a whole.

Himalayan balsam

Himalayan (or Indian) balsam (*Impatiens glandulifera*) grows in dense patches and suppresses the growth of native plants. In winter it dies, providing little shelter and food for wildlife and leaving bare river banks more susceptible to erosion.

Giant hogweed

Giant hogweed (*Heracleum mantegazzianum*) was introduced as an ornamental plant. It has since escaped from gardens and spread across the country, particularly along watercourses. The sap can cause serious blisters and skin irritation.

Japanese knotweed

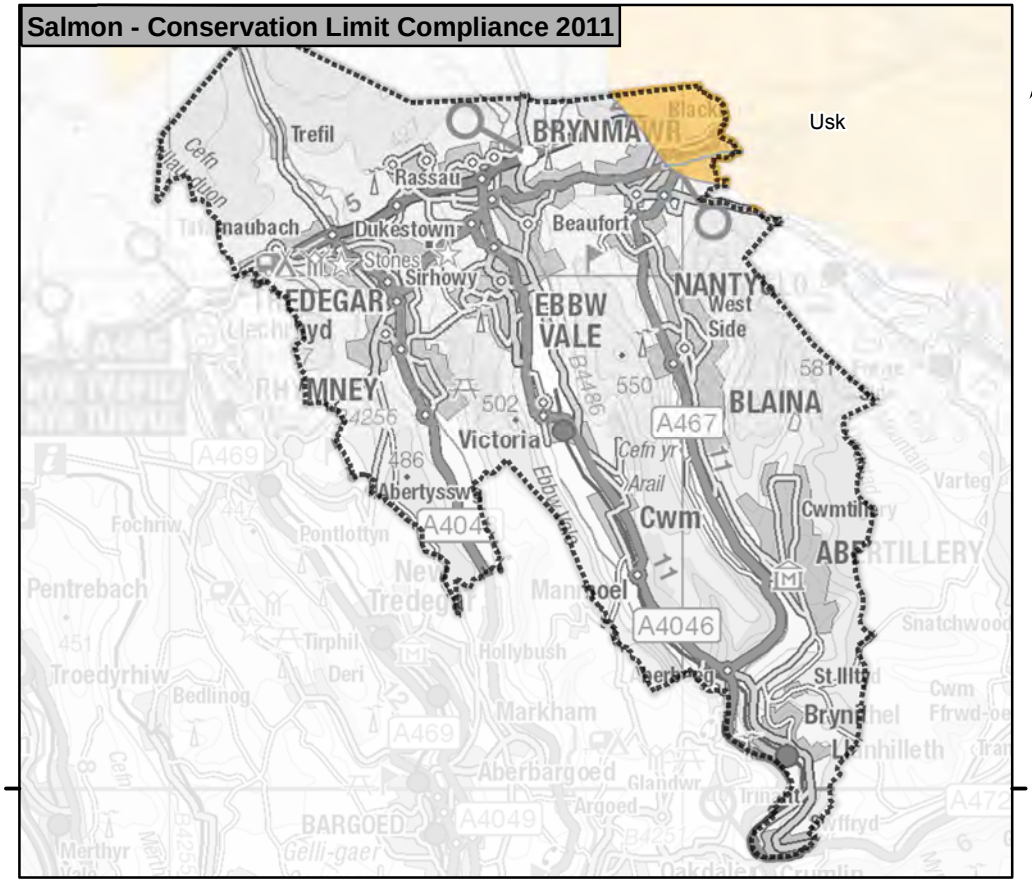
Japanese knotweed (*Fallopia japonica*) was introduced to Britain in the early nineteenth Century and has spread through a range of habitats and along watercourses. It is very fast growing and can penetrate through concrete, causing structural damage to roads and buildings, as well as displacing native species.

Links to further information:

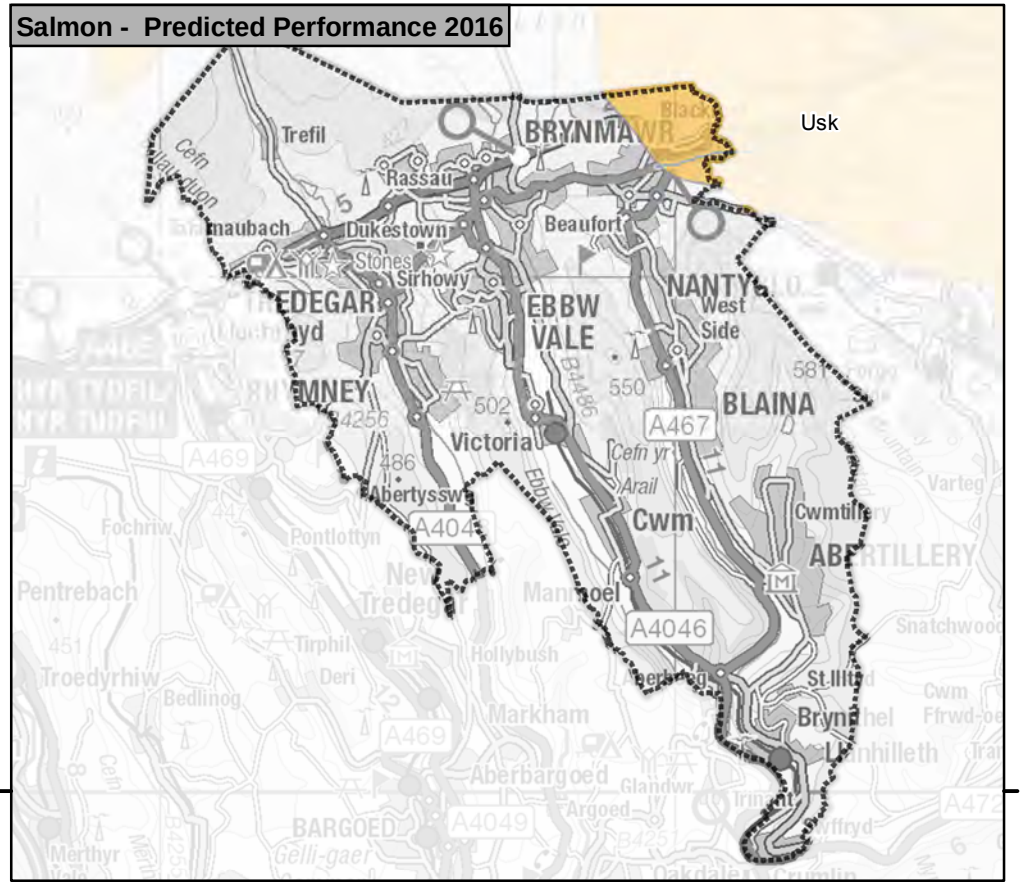
Environment Agency - The state of river habitats in England & Wales
http://www.environment-agency.gov.uk/research/library/publications/123383.aspx

River habitats in Wales: current state and character
http://publications.environment-agency.gov.uk/pdf/GEHO0910BTAJ-E-E.pdf

© Environment Agency, 2011.
This information has been developed by the Data, Information and Environmental Assessment Section



N



Salmon Action Plans

Conservation Limit Compliance and Predicted Performance

Legend

- At risk
- Prob at risk
- Probably not at risk
- Not at risk
- Not assessed
- Local Authority Boundary

Asiantaeth yr Amgylchedd Cymru
Environment Agency Wales

2.5 1.25 0 2.5
Km

© Hawlfraint a hawliau cronfa ddata'r Goron 2012. Rhif Trwydded yr Arolwg Ordnans 100024198. © Crown Copyright and database right 2012. Ordnance Survey licence number 100024198.

Salmon Action Plans

Salmon Action Plans

The two maps on the previous page show current status and five year forecast status for principal salmon rivers indicating level of risk to salmon populations. The main issues for each river are shown in the table following.

Environment Agency Wales has prepared a series of action plans, based on river catchments, setting out what needs to be done to support and restore salmon populations. Salmon Action Plans can be seen here:

http://www.environment-agency.gov.uk/research/library/publications/33967.aspx

The Environment Agency's Salmon Management Strategy concentrates on four main objectives for the management of salmon:

- optimise number of salmon returning to home water fisheries
- maintain and improve fitness and diversity of salmon stocks
- optimise the total economic value of surplus stocks
- ensure necessary costs are met by beneficiaries

Objectives are addressed by means of local Salmon Action Plans (SAPs) – produced annually for each principal salmon river. Each SAP reviews the salmon stock and salmon fisheries on a particular river, and seeks to identify the main issues responsible for limiting performance. In addition, an annual assessment of performance is made and reported.

There are 23 principal salmon rivers in Wales (including the Severn). This list of principal salmon rivers was determined on catch size in the 1990's.

Key Issues Affecting Performance

A number of contributory factors that may constrain or adversely affect salmon stock performance have been identified. These include: exploitation (fishing); water quality; water quantity; river channel structure and siltation; and in-river obstructions to migration. The severity of each of these factors will be different from river to river. Even rivers where the salmon stock is performing well may have factors that are adversely affecting stocks.

Actions to take

- Channel structure and siltation are a key problem in most rivers across Wales. Intensive agriculture, forestry and the downstream impacts of water supply reservoirs impact on some rivers. New developments may give rise to local impacts by modifying channel structure and/or silt loadings.
- Water quality problems affect many rivers, and may be attributed to industrial discharges, agricultural pollution, metal mining, sewerage systems and acidification. Opportunities to improve water quality should be considered.
- Whilst major obstructions are thought to be significant on only a few rivers, their impact can be substantial. The effects are usually associated with historic mills, water supply, hydropower, aquaculture and tidal barrages, although new developments may give rise to new problems.

The annual assessment for principal salmon rivers includes current and forecast stock performance and main factors responsible for suppressing a river's performance.
http://www.environment-agency.gov.uk/research/library/publications/33945.aspx

© Environment Agency, 2012.
This information has been developed by the Data, Information and Environmental Assessment Section

Salmon Action Plans

Key Issues Affecting Performance

River	Exploitation	Water Quality	Water Quantity	Channel Structure and Siltation	Obstructions
Usk	X		X	X	X

© Environment Agency, 2012.
This information has been developed by the Data, Information and Environmental Assessment Section

B. European Sites Characterisations

Information on European Sites

(Source of Appendix A: Enfusion Environmental Planning and Management for Sustainability)

European Sites Information Proforma

Special Areas of Conservation

1. Aberbargoed Grasslands
2. Cym Clydach Woodlands
3. Sugar Loaf Woodlands
4. Usk Bat Sites

All core site specific information unless otherwise stated has been referenced from the Countryside Council for Wales website (Natura 2000 Management Plans) and the Joint Nature Conservation Committee website (Protected Sites).

Special Areas of Conservation

Site Name: Aberbargoed Grasslands **Location Grid Ref: ST163992** **JNCC Site Code: UK0030071** **Size: 39.78** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Site Description	Aberbargoed Grasslands covers an area of 42.5ha and lies on a southwest facing hillside in the Rhymney Valley, 1km east of Bargoed and adjacent to the A4049. A large and relatively isolated population of marsh fritillary butterfly (*Euphydryas aurinia*) is present on a series of damp pastures and heaths in Gwent, representing the species on the eastern edge of its range in Wales. The fields in the south and west of Aberbargoed Grasslands have impeded drainage and contain a mixture of marshy grassland communities. Areas of particular interest are characterised by abundant purple moor grass *Molinia caerulea* and meadow thistle *Cirsium dissectum* with devil's bit scabious *Succisa pratensis* and carnation sedge *Carex panicea*. Other species such as saw-wort *Serratula tinctoria* and lousewort *Pedicularis sylvatica* occur frequently in heavily flushed areas. Associated stands of *Molinia caerulea – Potentilla erecta* mire contain abundant purple moor grass with *tormentil Potentilla erecta*, mat grass *Nardus stricta*, common sedge *Carex nigra* and spotted orchid *Dactylorhiza maculata*. Small stands of rush pasture are scattered across the site, with soft rush *Juncus effuses*, greater bird's foot trefoil *Lotus uliginosus* and marsh bedstraw *Galium palustre*.
Qualifying Features	Annex I Habitats qualifying feature: ▪ Molinia meadows on calcareous, peaty or clayey-silt-laden soils *(Molinion caeruleae)* Annex II Species primary reason for selection: ▪ Marsh fritillary butterfly *Euphydryas (Eurodryas, Hypodryas) aurinia*
Conservation Objectives	**Conservation Objective for Feature 1:** **Marsh fritillary Butterfly *Euphydryas* (*Eurodryas, Hypodryas*) *aurinia***

Site Name: Aberbargoed Grasslands Location Grid Ref: ST163992 JNCC Site Code: UK0030071 Size: 39.78 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ The site will support a sustainable metapopulation of the marsh fritillary in the Aberbargoed area. This will require at least 50ha of suitable habitat, although not all of this will be within the SAC ▪ The population will be viable in the long term, acknowledging the extreme population fluctuations of the species. ▪ Habitats on the site will be in optimal condition to support the metapopulation. ▪ At least 25ha of the total site area will be marshy grassland suitable for supporting marsh fritillary, with *Succisa pratensis* present and only a low cover of scrub. ▪ At least 6.25ha will be good marsh fritillary breeding habitat, dominated by purple moor-grass *Molinia caerulea*, with *S. pratensis* present throughout and a vegetation height of 10-20cm over the winter period. ▪ All factors affecting the achievement of the foregoing conditions are under control. **Conservation Objective for Feature 2:** **Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)** Vision for feature 2 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ *eu-Molinion* marshy grassland will occupy at least 70% of the total site area. ▪ The remainder of the site will be other semi-natural habitat or areas of permanent pasture. ▪ The following plants will be common in the *eu-Molinion* marshy grassland: purple moor-grass *Molinia caerulea*; meadow thistle *Cirsium dissectum*; devil's bit scabious *Succisa pratensis*; carnation sedge *Carex panicea*; saw wort *Serratula tinctoria*; and lousewort *Pedicularis sylvestris*.

Site Name: Aberbargoed Grasslands Location Grid Ref: ST163992 JNCC Site Code: UK0030071 Size: 39.78 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ Cross-leaved heath *Erica tetralix* and common heather *Calluna vulgaris* will also be common in some areas. ▪ Rushes and species indicative of agricultural modification, such as perennial rye grass *Lolium perenne* and white clover *Trifolium repens* will be largely absent from the *eu-Molinion* marshy grassland. ▪ Scrub species such as willow Salix and birch *Betula* will also be largely absent from the *eu-Molinion* marshy grassland. ▪ All factors affecting the achievement of these conditions are under control. Performance indicators for Feature 1 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Aberbargoed Grasslands Management Plan.
Component SSSIs	▪ Aberbargoed Grasslands SSSI The site has been divided into 2 management units of which unit 1 forms the Aberbargoed Grasslands SAC. A map of the management units can be viewed on the CCW website.
Key Environmental Conditions (factors that maintain site integrity	The Marsh fritillary butterfly is dependent on the Molinia meadows and wet heath. ▪ **Livestock grazing** - The *eu-Molinion* marshy grassland needs to be maintained through traditional farming practices. Without an appropriate grazing regime, the grassland will continue to become rank and eventually turn to scrub and woodland. Light grazing by cattle and ponies between April and November each year is essential in maintaining the marshy grassland communities.
SAC Condition Assessment	**Conservation Status of Feature 1:** **Marsh fritillary butterfly *Euphydryas (Eurodryas, Hypodryas) aurinia***

Site Name: Aberbargoed Grasslands Location Grid Ref: ST163992 JNCC Site Code: UK0030071 Size: 39.78 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	The Marsh Fritillary feature at Aberbargoed Grasslands SAC is considered to be in **unfavourable** condition and conservation status (October 2003). Web counts have in recent years been very low, but the species naturally undergoes significant fluctuations in population numbers due to a variety of factors, including cold and wet weather conditions and parasitic attack. **Conservation Status of Feature 2:** **Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)** The SAC report dated October 2003 states that the site is considered to be **Unfavourable** condition and conservation status. This is because the habitat is not in suitable condition for the marsh fritillary. In areas of the site the vegetation is too tall, is dominated by Molinia and does not have sufficient *Succisa*. There is only 2.3ha of good condition habitat and 9.7ha of suitable habitat within the site.
Vulnerabilities (includes existing pressures and trends)	**The marsh fritillary butterfly population is under threat from:** ▪ **Parasites** - Parasitic wasps. **The Molinia meadows is under threat from:** ▪ **Anti-social behaviours** - In previous years anti-social behaviour such as off-roading and burning have occurred at Aberbargoed grasslands. This issues need to be addressed to prevent the *eu-Molinion* habitat from being damaged. CCW states that work has progressed well on the site in the past few years; the site is now stock-proof and a

Site Name: Aberbargoed Grasslands Location Grid Ref: ST163992 JNCC Site Code: UK0030071 Size: 39.78 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	mixture of Welsh Black and Belted Galloways graze the land with a Limousin bull. Scrub clearance and bracken control has begun and flight lines have been cut to improve the connectivity for the butterflies. A programme has been set up to educate the local community to understand why this area is important. A newsletter has been created detailing activities on the grassland and difficulties the site is facing. This and the presence of staff and stock onsite seem to have halted the illegal burning and off-roading.
Landowner/ Management Responsibility	▪ Caerphilly County Borough Council.
HRA/AA Studies undertaken that address this site	HRA Screening of the County Council of the City and County of Cardiff Local Development Plan Preferred Strategy Sept 2007. www.cardiff.gov.uk/ObjView.asp?Object_ID=9788 ▪ The Screening concluded that the only potential significant effects from the Cardiff LDP are likely to occur through atmospheric pollution. A detailed evaluation of air pollution impacts to the Aberbargoed Grasslands SAC will be required before the potential risks to the habitats and species can be properly assessed but according to the Site Issues Briefing for this site, issued by CCW, no potential increases in atmospheric pollution should be tolerated. HRA Screening of the Torfaen Local Development Plan (2006-2021) January 2008. http://www.torfaen.gov.uk/EnvironmentAndPlanning/Planning/ForwardPlanning/Publications/HabitatsRegulationAssessment.pdf ▪ The screening identified airborne pollution as the most likely mechanism for the Preferred Strategy to have a negative impact on this site. The provision of 7000 new homes in Torfaen alongside 60 ha of employment land will have the effect of increasing airborne pollution. It has been identified that acid deposition at Aberbargoed Grasslands already exceeds the critical load factor. In relation to Strategic Housing Sites the LDP, South Sebastopol, Cwmbran lies approximately 10- 15km to the East of the SAC but is likely to accommodate approximately 1200 dwellings on a previously greenfield site. Therefore although the effect of the LDP is unlikely to be 'significant' precautionary approach will be adopted and the potential effect of

Site Name: Aberbargoed Grasslands Location Grid Ref: ST163992 JNCC Site Code: UK0030071 Size: 39.78 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	the Torfaen LDP should warrant further consideration in the next stage of the AA process.

Site Name: Cym Clydach Woodlands **Location Grid Ref: SO207123** **JNCC Site Code: UK0030127** **Size: 28.81** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Site Description	The site is situated on the southern side of the River Clydach valley, approximately 2km east, north east of Brynmawr and is in close proximity to the A465 Heads of the Valley Road. The underlying geology varies across the site, consisting of sedimentary rocks that range from Old Red Sandstone through Carboniferous Limestone into shales and sandstones of the Millstone Grit and Coal Measures. Soils mainly consist of typical brown earths and humo-ferric podsols. Altitude ranges from 170m by the River Clydach to 350m in Cwm Llammarch. Cwm Clydach is of special interest for its stands of broadleaved woodland dominated by beech, intergrading with more open habitats, which together support a number of rare and scarce vascular plants including whitebeams *Sorbus spp*. and soft-leaved sedge *Carex montana*. There are important woodland and grassland fungi assemblages with rare species such as *Squamanita paradoxa*.
Qualifying Features	Annex I Habitats primary reason for selection: ▪ *Asperulo-Fagetum* beech forests Annex I Habitats qualifying feature: ▪ Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (*Quercion robori-petraeae or Ilici-Fagenion*)
Conservation Objectives	**Conservation Objective for Feature 1:** *Asperulo – Fagetum* beech forests Vision for feature 1 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ At least 50% of the canopy-forming trees are beech.

Site Name: Cym Clydach Woodlands Location Grid Ref: SO207123 JNCC Site Code: UK0030127 Size: 28.81 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ The canopy cover is at least 80% (excluding areas of crag) and composed of locally native trees. ▪ The woodland has trees of all age classes with a scattering of standing and fallen dead wood. ▪ Regeneration of trees is sufficient to maintain the woodland cover in the long term. ▪ The shrub layer and ground flora can be quite sparse, but where present consist of locally native plants such as yew, hawthorn, wych elm, ash, hazel, field maple and elder, bramble, dog's mercury, enchanter's-nightshade, lords-and-ladies, woodruff, male fern, sanicle, wood melick, ivy, false brome, violets, herb robert, wood avens, and tufted hair-grass. ▪ Scarcer plants, such as soft-leaved sedge and bird's-nest orchid are locally frequent and, more rarely, yellow bird's-nest orchid can be found. ▪ All factors affecting the achievement of the above conditions are under control. Performance indicators for Feature 1 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Cym Clydach Management Plan. **Conservation Objective for Feature 2:** Atlantic *acidophilous* beech forests with *Ilex* and sometimes also *Taxus* in the shrublayer (*Quercion robori-petraeae* or *Ilici-Fagenion* Vision for feature 2 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: At least 75% of the woodland vegetation meets the criteria for intact acid beech wood, where:

Site Name: Cym Clydach Woodlands Location Grid Ref: SO207123 JNCC Site Code: UK0030127 Size: 28.81 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ At least 10% of the canopy forming trees are beech. ▪ The canopy cover is at least 80% and composed of locally native species. ▪ The woodland has trees of all age classes with a scattering of standing and fallen dead wood. ▪ Regeneration of trees is sufficient to maintain the woodland cover in the long term. ▪ The shrub layer and ground flora can be quite sparse, but where present consist of locally native plants. ▪ All factors affecting the achievement of the above conditions are under control. Performance indicators for Feature 2 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Cym Clydach Management Plan.
Component SSSIs	▪ Cym Clydach SSSI is composed of 5 management units of which numbers 1and 5 comprise to form the Cym Clydach Woodlands SAC. A map of the management units can be viewed on the CCW website.
Key Environmental Conditions (factors that maintain site integrity	▪ **Grazing** - Sufficiently low to allow regeneration in the long term. ▪ **Non-native and invasive species** - No increase in the area of woodland floor that is dominated by invasive species.
SAC Condition Assessment	**Conservation Status of Feature 1** *Asperulo – Fagetum* beech forests The conservation status of this feature within the site is considered to be **Favourable** (2006).

Site Name: Cym Clydach Woodlands Location Grid Ref: SO207123 JNCC Site Code: UK0030127 Size: 28.81 Designation: SAC	**Habitats Regulations Assessment: Data Proforma**
	Conservation Status of Feature 2 Atlantic *acidophilous* beech forests with *Ilex* and sometimes also *Taxus* in the shrublayer (*Quercion robori-petraeae* or *Ilici-Fagenion* The conservation status of this feature within the site is considered to be **Favourable** (2006).
Vulnerabilities (includes existing pressures and trends)	▪ **Woodland management** - Recent changes in management within the locality, a general reduction of sheep numbers and the construction of cycle route through the site may have the potential to adversely effect the grassland areas and the fungi in particular. ▪ **Grazing** - Past grazing has influenced the structure of the woodland, such as the dominance of beech in the canopy. It is therefore likely that occasional light grazing would be beneficial for the woodland habitat, although any increase in grazing pressure could prevent all tree and shrub regeneration and and suppress the woodland ground flora. ▪ **Dumping** - Due to roads passing through the site, parts are accessible to vehicles and the illegal dumping of domestic and commercial waste and abandoned vehicles can be a problem. It is essential that these barriers be maintained to prevent any future occurrences. ▪ **Invasive alien plants** - Japanese knotweed is a problem in parts of the site, usually having been introduced by illegal dumping of waste material, and this species will be controlled as necessary. Airborne acid and nutrient deposition are not a significant threat here as most of the woodland soils are well-buffered and nutrient-rich.
Landowner/ Management Responsibility	▪ Unit 1 is owned by CCW and comprises the bulk of the SAC beech woodland. Most of the acidiophilous beech woodland is found towards the western part of Unit 1.

Site Name: Cym Clydach Woodlands Location Grid Ref: SO207123 JNCC Site Code: UK0030127 Size: 28.81 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ Unit 5 is other land within the SAC not owned by CCW.
HRA/AA Studies undertaken that address this site	HRA Screening of the Torfaen Local Development Plan (2006-2021) January 2008. http://www.torfaen.gov.uk/EnvironmentAndPlanning/Planning/ForwardPlanning/Publications/HabitatsRegulationAssessment.pdf ▪ It is considered that the potential impact from development in Torfaen would be negligible. Taking the precautionary approach the HRA Assessment for the LDP has identified the potential for in-combination effects on 4 SAC sites, which includes Cwm Clydach Woodlands SAC.

Site Name: Sugar Loaf Woodlands Location Grid Ref: SO295166 JNCC Site Code: UK0030072 Size: 173.84 Designation: SAC	Habitats Regulations Assessment: Data Proforma
Site Description	Sugar Loaf Woodlands are the largest example of old sessile oak woods near the south-eastern fringe of the habitat's range in the UK and Europe. The relatively dry situation restricts the development of the Atlantic flora associated with the habitat, but the main floristic components of sessile oak *Quercus petraea* canopy, acidic ground flora (typically of bilberry *Vaccinium myrtillus* and wavy hair-grass *Deschampsia flexuosa*) and extensive fern and bryophyte cover are in place. The woodland is grazed, but regenerates within gaps and at the fringes, where transitions to upland grassland and heath communities occur. The woodland also supports a smaller area of beech woodland and a large colony of red wood ants, which are more commonly found in southern and eastern Britain.
Qualifying Features	Annex I Habitats qualifying feature: ▪ Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles

Site Name: Sugar Loaf Woodlands Location Grid Ref: SO295166 JNCC Site Code: UK0030072 Size: 173.84 Designation: SAC	Habitats Regulations Assessment: Data Proforma
Conservation Objectives	**Conservation Objective for Feature:** **Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles** Vision for feature: The vision for this feature is for it to be in favourable conservation status within the site, as a functioning and regenerating* oak wood, where all of the following conditions are satisfied: ▪ The wooded area is no less than 122 ha; ▪ The remainder of the site is semi-natural acid grassland, heathland, bracken and scrub, often forming a transition zone at the woodland edge; ▪ Saplings of birch betula spp, oak Quercus petraea, alder Alnus glutinosa or holly Ilex aquifolium dominate the tree regeneration; ▪ Young beech Fagus sylvatica and sycamore Acer pseudoplatanus trees are rare; ▪ The woodland ground flora is composed of a range of typical native plants including bilberry Vaccinium myrtillus, wavy-hair grass Deschampsia flexuosa and the mosses Plagiothecium undulatum, Rhytidiadelphus loreus, Dicranum majus. ▪ The liverwort Bazzania trilobata to continue to be present in its core area of Unit 1. ▪ All factors affecting the achievement of these conditions will under control. *A "functioning and regenerating oak woodland" would include all the positive attributes described in the performance indicators. Performance indicators for Feature The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans

Site Name: Sugar Loaf Woodlands Location Grid Ref: SO295166 JNCC Site Code: UK0030072 Size: 173.84 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Sugar Loaf Woodlands Management Plan.
Component SSSIs	▪ Sugar Loaf Woodlands SSSI The site has been divided into 4 management units. A map of these units can be viewed on the CCW website.
Key Environmental Conditions (factors that maintain site integrity	Canopy regeneration is a key attribute for signifying the functioning, habitat quality and sustainability of most woodland types, including sessile oak woods. ▪ **Grazing regime** - The grazing within all 4 units has suppressed the regeneration of native woody species and in combination with past coppicing has resulted in a uniform age structure. The areas of Sugarloaf woodlands not subjected to continuous grazing appear to become densely populated with saplings of all species. This may demonstrate that the main factor restricting natural regeneration of woody species in Sugar Loaf Woodlands is grazing and that current grazing levels are incompatible with sustainable semi-natural woodland at this site. Liaison between owners/commoners is needed to discuss possible means of managing grazing to encourage natural regeneration in the woodland areas, including possible agreements to fence all new and some existing canopy gaps. Most of Unit 4 is already fenced and stock free and regeneration is now taking place, though some periodic grazing may be required to control bramble. ▪ **Manage non-native species** (Tree/shrub) - if necessary control the spread of non-native species (principally beech) through a programme of selective removal of saplings to ensure no further trees get into the canopy. Non-native beech trees can be accepted as part of the canopy in the short to medium term. Consequently, the limits need only be met in 75% of existing woodland. The upper limits are 5% cover of non-native trees in the canopy and no beech (or other invasive non-native shrubs) in the understorey or

Site Name: Sugar Loaf Woodlands Location Grid Ref: SO295166 JNCC Site Code: UK0030072 Size: 173.84 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	shrub layer. The conservation objectives state that the canopy should be composed of locally native trees and, apart from a beech woodland area within Unit 1, the canopy of Sugar Loaf Woodlands is currently dominated by oak throughout. Where beech is present its seedlings tend to dominate the regeneration and without management to control these locally non-native seedlings further parts of the SAC feature will become unfavourable. ▪ **Manage woodland by thinning/small group felling** - Much of the woodland lacks structure due to past woodland management to remove timber. It is likely to be decades before a more natural woodland structure can develop. Trees could be thinned to create a more uneven age structure or open gaps in the canopy when an appropriate means of controlling grazing levels have been identified and all dead/felled timber to be left in situ. This is already taking place in Unit 4 but elsewhere the grazing regime may be unsuitable. ▪ **Increase amounts of deadwood** - Deadwood is present on the site, but much has been removed in the past. In future, the owners should be encouraged to leave as much dead wood as possible. ▪ **Veteran trees** - Retain all veteran trees. ▪ **Manage bracken** - Bracken may require management where it is thought to be hindering successful regeneration, largely in the open areas and gaps. However, this needs to be balanced against the protection bracken offers for young saplings against browsing and its place as a key natural component of acidic woodlands. Together bracken and bramble should cover less than 75% of the woodland floor.
SAC Condition Assessment	**Conservation Status of Feature 1:** **Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles**

Site Name: Sugar Loaf Woodlands Location Grid Ref: SO295166 JNCC Site Code: UK0030072 Size: 173.84 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	Unfavourable (2007), due to: ▪ Grazing having a strong role in preventing some of the canopy regeneration and in creating a sparser ground flora; ▪ Some areas within the SAC/SSSI remain as open areas, especially on the fringe of the site. Whilst having some open areas is beneficial for a range of species, not all these open areas are of benefit to either the SAC or SSSI features; ▪ The even-aged and dense canopy in much of the wooded area. This is creating very densely shaded ground, field and shrub layers and is one of the barriers to regeneration of saplings and ground flora. However, more canopy gaps would be expected in the long term as the canopy trees die, or through storm damage in the more exposed parts of the site;
Vulnerabilities (includes existing pressures and trends)	▪ **Innapropriate grazing regime** - The grazing within all 4 units has suppressed the regeneration of native woody species and in combination with past coppicing has resulted in a uniform age structure. The areas of Sugarloaf woodlands not subjected to continuous grazing appear to become densely populated with saplings of all species. This may demonstrate that the main factor restricting natural regeneration of woody species in Sugar Loaf Woodlands is grazing and that current grazing levels are incompatible with sustainable semi-natural woodland at this site. ▪ **Non-native species** - Where beech is present its seedlings tend to dominate the regeneration and without management to control these locally non-native seedlings further parts of the SAC feature will become unfavourable. ▪ **Bracken encroachment** - can hinder successful regeneration in the open areas and gaps. However the bracken also offers protection for young saplings against browsing and its place as a key natural component of acidic woodlands. The accumulation of bracken litter on the common poses a fire risk in dry weather. Restrictions on public access could be considered, but it would be very difficult to control most

Site Name: Sugar Loaf Woodlands Location Grid Ref: SO295166 JNCC Site Code: UK0030072 Size: 173.84 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	incidents as they appear to be the result of children deliberately setting fires. Control of bracken in a buffer strip at the wood edges may be a more sensible consideration. ▪ **Air pollution*** - Airborne acid and nutrient deposition could be a particular problem for epiphytic lichens on the oak trees. o Acidification. o Eutrophication. o Photochemical oxidants. o Particulate matter.
Landowner/ Management Responsibility	▪ Unit 1 - National Trust (common) ▪ Unit 3 - National Trust (common) ▪ Unit 4 - National Trust (tenanted) The management units have been largely based on the three woodland blocks that make up the SAC and SSSI. The SAC feature is the same for each block of woodland and units 1& 3 are on the same common and so are under broadly the same management, but their geographical isolation from each other gives them the status of separate units. Unit 2 is a small privately owned and enclosed area within Unit 1. Unit 4 is on a farm in the Tir Gofal agri-environment scheme and so is easily separated from the other two units. Unit 3 includes one isolated area of woodland joined to the enclosed Unit 4, but on the common and so potentially under the same management regime as the rest of Unit 3.
HRA/AA Studies undertaken that address this site	HRA Screening of the Torfaen Local Development Plan (2006-2021) January 2008. http://www.torfaen.gov.uk/Environm]entAndPlanning/Planning/ForwardPlanning/Publications/HabitatsRegulationAssessment.pdf

* Air Pollution Information System (APIS). Oak Woodland. Available from: http://www.apis.ac.uk/cgi_bin/habitat_result.pl?habResult=Oak+woodland&choice=allHabs&haborspec=habitat&submit.x=23&submit.y=8

Site Name: Sugar Loaf Woodlands Location Grid Ref: SO295166 JNCC Site Code: UK0030072 Size: 173.84 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ The screening states that the LDP will not have a direct impact on the site; however, it is identified that airborne acid and nutrient deposition may be a problem for this site. It concludes that given the distance of the site from the Torfaen boundary the effect that the LDP could have on the site is negligible.

Site Name: Usk Bat Sites **Location Grid Ref: SO190145** **JNCC Site Code: UK0014784** **Size: 1686.4** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Site Description	The site encompasses a series of lesser horseshoe bat roosts, upland habitats, woodlands and cave systems located around the valley of the River Usk near to Abergavenny. Mynydd Llangatwg is an area of open moorland and bog, with an impressive limestone escarpment along the northeastern edge, and is one of the largest exposures of upland limestone crag in south Wales. The Craig y Cilau National Nature Reserve (NNR) covers a large proportion of this escarpment area, including most of the unquarried scarp, with areas of limestone grassland, scree and quarry spoil, woodland and scrub. A small raised bog (Waun Ddu) bordered by two small streams has developed below the escarpment. An extensive system of caves lies beneath Mynydd Llangatwg and the plateau is peppered with sinkholes. The main reason for the presence of the NNR is to help control and manage access to the cave system to protect the bat roosts and the underground geology and also the surface habitats, which support an outstanding assemblage of plants. Species include large and small-leaved lime, several species of whitebeam (including least whitebeam (*Sorbus minima*) which is unique to this area of Brecknock), limestone fern, endemic hawkweeds and alpine enchanter's-nightshade. The chasmophytic vegetation encompasses the various crevices, nooks and crannies on the cliffs, boulders and partially vegetated unstable slopes of the limestone escarpment. It supports a typical range of ferns, bryophytes and calcareous lichens; these include ferns such as maidenhair spleenwort, mosses like *Tortella tortuosa*, and liverworts like *Scapania aspera*. This site is known to support a number of notable lichen species and provides some of the best examples in the area of calcicolous lichen communities, which include the jelly lichen Collema cristatum and examples of lichen communities like the *Leproplacetum chrysodetae* and *Aspicilion calcarea*. Patches of Tileo-Acerion forest are also scattered along the length of the cliffs on Mynydd Llangatwg and intermixed with beechwood in the Clydach gorge. These areas also support a number of rare whitebeams (*Sorbus* spp.).

Site Name: Usk Bat Sites **Location Grid Ref: SO190145** **JNCC Site Code: UK0014784** **Size: 1686.4** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Qualifying Features	Annex I Habitats qualifying feature: ▪ European dry heaths ▪ Degraded raised bogs still capable of natural regeneration ▪ Blanket bogs* Priority feature ▪ Calcareous rocky slopes with chasmophytic vegetation ▪ Caves not open to the public ▪ Tilio-Acerion forests of slopes, screes and ravines* Priority feature Annex II Species primary reason for selection: ▪ Lesser horseshoe bat *Rhinolophus hipposideros*
Conservation Objectives	**Conservation Objective for Feature 1:** **Lesser Horseshoe Bat *Rhinolophus hipposideros*** Vision for Feature 1 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ The site will support a sustainable population of lesser horseshoe bats in the River Usk area. ▪ The population will viable in the long term, acknowledging the population fluctuations of the species. ▪ Buildings, structures and habitats on the site will be in optimal condition to support the populations. ▪ Sufficient foraging habitat is available, in which factors such as disturbance, interruption to flight lines, and mortality from predation or vehicle collision, changes in habitat management that would reduce the available food source are not at levels which could cause any decline in population size or range ▪ Management of the surrounding habitats is of the appropriate type and sufficiently secure to ensure there is likely to be no reduction in population size or range, nor any decline in the extent or quality of breeding, foraging or hibernating habitat. ▪ There will be no loss or decline in quality of linear features (such as hedgerows and tree lines) which the bats

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	use as flight lines - there will be no loss of foraging habitat use by the bats or decline in its quality, such as due to over-intensive woodland management ▪ All factors affecting the achievement of the above conditions are under control. Performance indicators for Feature 1 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Usk Bat Sites Management Plan. **Conservation Objective for Feature 2:** **Blanket bog** Vision for Feature 2 ▪ The extent, quality and species richness of the blanket bog vegetation is maintained and, where possible, degraded bog is restored to good condition so that this habitat occupies its full potential range within the site. ▪ The bog vegetation is largely a mixture of dwarf shrubs, hare's-tail cottongrass and mosses, including bog-mosses. ▪ Extensive areas of purple moor-grass or hare's-tail cottongrass show signs of recovery towards a more mixed dwarf shrub sward. ▪ The natural hydrological regime is maintained and there is continued peat formation and thus carbon storage. ▪ Areas of bare peat are not extensive and most areas show signs of recovery. ▪ Peat profiles containing important pollen records are maintained. ▪ All factors affecting the achievement of the above conditions are under control. Performance indicators for Feature 2

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Usk Bat Sites Management Plan. **Conservation Objective for Feature 3:** **Tilio-Acerion forests of slopes, screes and ravines** Vision for Feature 3 The vision for this feature is for it to be in favourable conservation status within the site, as a functioning and regenerating ash woodland, where all of the following conditions are satisfied: ▪ There are extensive patches of semi-natural woodland on the cliffs of the Llangatwg escarpment and hillsides in the Clydach gorge. ▪ The woodland canopy is dominated by locally native species, including lime ash Fraxinus excelsior, Tilia spp., pedunculate oak Quercus robur, hazel Corylus avellana, birch Betula spp., whitebeams Sorbus spp. and, in the Clydach gorge, beech Fagus sylvatica. Rare whitebeams are a significant component of the canopy. ▪ Saplings of locally native species dominate the tree regeneration and there is evidence of sufficient regeneration to maintain the canopy in the long term. ▪ There is an accumulation of standing and fallen deadwood as the woodland develops. ▪ The woodland ground flora is composed of a range of typical native plants including enchanters-nightshade Circaea lutetiana, dog's-mercury Mercurialis perennis, wood-sorrel Oxalis acetosella, hart's-tongue Phyllitis scolopendrium and wood sage Teucrium scorodonia. ▪ The populations of rare whitebeams are stable or increasing. ▪ Young sycamore Acer pseudoplatanus trees are rare, as are beech Fagus sylvatica in areas away from the Clydach gorge. ▪ Plants indicating disturbance and nutrient enrichment, such as nettles, cleavers and weeds, are not

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	dominant in the ground flora of the woodland. ▪ All factors affecting the achievement of the above conditions are under control. Performance indicators for Feature 3 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Usk Bat Sites Management Plan. **Conservation Objective for Feature 4:** **Calcareous rocky slopes with chasmophytic vegetation** Vision for Feature 4 ▪ Sufficient vegetation within crevices remains free from disturbance to support typical plants, including mosses, ferns and rare hawkweeds (Hieracium spp.) and allow them to sustain their populations into the future. ▪ Areas accessible to grazing animals should free from being smothered by ivy or heavily shaded by trees. ▪ All factors affecting the achievement of the above conditions are under control. Performance indicators for Feature 4 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Usk Bat Sites Management Plan. **Conservation Objective for Feature 5:** **Caves not open to the public**

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	Vision for Feature 5 ▪ The cave system provides a winter hibernation site for large numbers of lesser horseshoe bats and other bat species, including Brandt's, whiskered, Daubenton's, Natterer's, brown long-eared and, occasionally, greater horseshoe bats. ▪ Numbers of roosting bats are stable or increasing in the system as a whole. ▪ All factors affecting the achievement of the above conditions are under control. Also see the vision for lesser horseshoe bats. As outlined in the JNCC description of this feature, the cavernicolous fauna is considered to be impoverished throughout the UK and this feature is not a primary reason for selection of any SAC in the UK (www.jncc.gov.uk). There is however significant bat interest associated with many of the caves within this SAC, particularly Lesser Horseshoe Bat. Great Horseshoe Bat has also been recorded in very small numbers. Several other bat species are recorded, particularly from the genus Myotis, but their habit of hibernating deep within crevices in the caves (rather than hanging freely from the cave roof, like horseshoe species) makes them extremely difficult to record. Performance indicators for Feature 5 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Usk Bat Sites Management Plan. **Conservation Objective for Feature 6:** **Degraded raised bogs still capable of natural regeneration**

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	Vision for Feature 6 ▪ The extent, quality and diversity of raised bog vegetation is maintained and, where possible, restored to good condition, with active moss and peat growth across the raised bog surface. ▪ The vegetation consists of a mixture of dwarf shrubs, hare's-tail cottongrass, deergrass and bog mosses, grading at the edges into acid and alkaline flushes influenced by acidic water draining from the bog and springs rising in the limestone catchment. ▪ All factors affecting the achievement of the above conditions are under control. Performance indicators for Feature 6 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Usk Bat Sites Management Plan. **Conservation Objective for Feature 7:** **European dry heaths** Vision for Feature 7 ▪ The extent, quality and diversity of heath vegetation within the constituent sites is maintained and, where possible, degraded heath is restored to good condition. ▪ The main heathland areas have a varied age structure with a mosaic of young heath, mature heath and degenerate heath. ▪ All factors affecting the achievement of these conditions are under control. Performance indicators for Feature 7 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	performance indicators can be found within the Usk Bat Sites Management Plan.
Component SSSIs	▪ Mynydd Llangatwg/ Mynydd Llangattock SSSI (units 1 to 15) ▪ Siambre Ddu SSSI (unit 19) ▪ Buckland Coach House & Ice House SSSI (unit 20) ▪ Foxwood SSSI (unit 21) The site has been divided into 21 management units of which units 1 to 15, 19, 20 and 21 comprise to form the Usk Bat Sites SAC. A map of the management units can be viewed on the CCW website.
Key Environmental Conditions (factors that maintain site integrity	**Key environmental conditions for the Lesser Horseshoe Bat:** **Buckland House Maternity Roost** ▪ Site security - Access to the site should be secured against unauthorized access ensuring doors, gates and security fences are in sound condition. ▪ External condition of building - Fabric of building sufficient to maintain roost conditions internally with: o Weatherproof roof. The roof covering materials (slates, tiles etc.) in weatherproof condition with no significant gaps, slippage or damage. o No holes large enough to allow soaking of roof timbers, excessive heat loss or high light levels in the roost area o Walls sound, rainwater goods in adequate condition. o The building is structurally stable. No significant deterioration in overall condition of the building. ▪ Roost entrance -buildings and underground sites: o Unobstructed roost entrance large enough for bats to fly through unimpeded. Normal minima: 300 x 200 mm. o No artificial lights shining on access or associated flight paths. ▪ External Disturbance - Disturbance levels acceptable to bats with: o No increase since previous visit.

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	o Human access to roost controlled and limited. ▪ Internal condition of building/ underground site in roost area: o A vital element of the bats' behaviour involves extensive flight within a roost prior to emergence, which occurs shortly after dusk. Therefore the bats require fairly large open areas within the coach house roof and first floor voids to fly before they emerge. It is important that these areas are unobstructed and that the flying space (volume) is not significantly reduced. Areas used for pre-emergence flight should not be used for storage. o Low light levels with no through draught. o No toxic substances present, which would adversely affect the health of the bats (e.g. chemical timber treatment within inappropriate substances). ▪ Temperature of roost area: o Range of temperatures available to bats with mean temperature in July greater than 20°C ▪ Internal disturbance: o Human access to roost area controlled and limited. o Disturbance is kept to a minimum. **Hibernation Sites** ▪ Site entrance: o Existing entrances should be unobstructed. o No human-influenced new entrances causing a change to ventilation. o No change in size sufficient to affect airflow and internal temperature. ▪ External conditions of site: o Vegetation present close to entrance(s) but not obstructing it (them). o No artificial lights shinning on entrance(s). ▪ Internal conditions: o The temperature should remain constantly cool (8-12°C) and dark, once beyond the entrance zone. o No significant man-induced changes to ventilation or temperature regime. o No toxic substances present (dumping of oil or other substances).

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ Internal disturbance: o Human access to roost area controlled and limited (at Agen Allwedd the number of visitors is already controlled). Lesser horseshoe bats are very sensitive to disturbance and even the presence of a single person in close proximity can cause problems. Cavers and geologists should avoid areas where bats are likely to be disturbed during the winter months. Where there is a risk of disturbance by unauthorised persons, grilling the cave entrances should be considered. Any structures placed at cave entrances to prevent unauthorized access should not hinder the passage of bats. o Disturbance is kept to a minimum. **Foraging areas and links to roosts** ▪ Habitat Quality: o There should be no nett loss of suitable woodland, scrub and hedgerows within the SAC or adjoining areas used by the bats. Lesser horseshoe bats feed on flies (mainly midges), small moths, caddis flies, lacewings, beetles, small wasps and spiders. Suitable foraging habitat includes open broadleaved woodland, scrub, parkland, scrubby wetland and permanent pasture. Lesser horseshoe bats do not normally fly across open land and when foraging, remain close to wooded canopy. The insects they eat, though, may be derived from other unimproved insect rich habitat nearby. Management of foraging habitat should aim to maximise the amount of insect food as well as provide sufficient canopy cover to maximise opportunities for the bats to find their prey. ▪ Connectivity: o Connectivity of woodland, hedgerows, linear habitat and field boundary features should be maintained as lesser horseshoe bats tend to feed in wooded areas and use linear features to navigate their way between roosts and foraging habitat. Some management of woodlands and hedgerows and trees will be necessary to preserve these features in the landscape but such work should be carried out in a sensitive manner, particularly within the SAC itself, so as not to disrupt habitat continuity. Disturbance - Lesser horseshoe bats are very sensitive to disturbance and even the presence of a single person in close proximity can cause problems. Light and noise pollution

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	Habitat fragmentation **Key Environmental Conditions for the Blanket Bog:** ▪ **Drainage** - No new drainage ditches should be dug, and wherever possible old drainage ditches should be allowed to infill naturally. o There should be no evidence of new drains or major clearance of old drains or deepening of bog outlet streams. ▪ **Burning** - blanket bog should not normally be burnt, as burning is likely to damage important plant and animal species, especially bog mosses and invertebrates, and encourage the growth of rank species, like hare's-tail cottongrass; it can also result in erosion of the peat which can then cause water quality problems in cave system and adjacent reservoirs. Past unplanned or uncontrolled burning is likely to be at least partly responsible for the scarcity of bog-mosses in some areas. o No evidence of significant burning (patches larger than 1ha) in any areas of blanket bog. ▪ **Peat Erosion** - There is a natural cycle of peat erosion and deposition but the balance can be upset by burning, heavy grazing, pollution and vehicle damage. o The total extent of active erosion over a 5-year period should not exceed the total extent of areas showing signs of peat accumulation and re-vegetation. ▪ **Air quality** - No exceedence of critical loads for: o Sulphur dioxide – 20µg/m³ o Nitrous Oxides – 30µg/m³ o Ozone – 3000 ppb o ammonia – 1µg/m³ o N – 5-10 kg/ha/yr o acid – 0.35keq/ha/yr

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	Monitoring stations located at grid location: 319097.79 214637.88 **Key Environmental Conditions for the Tilio-Acerion forests of slopes, screes and ravines:** ▪ **Grazing** - The greatest influence on the woodland, and its continued regeneration, is grazing. The present structure and species composition of the northern escarpment woodland, excluding the cliff ledges, is a result of natural regeneration. The cliff ledges are inaccessible to stock, have developed naturally and are not actively managed. In units 1 & 2, the woodland has developed on common land and parts are subject to high grazing levels by sheep. The woodland in units 5, 12 & 13 is now largely un-grazed and the ground flora is noticeably more luxuriant in these areas. o Grazing levels should be sufficient to allow regeneration in the long term. o On the common (units 1 & 2), maintain grazing at or below the current (2007) levels. o Un-grazed areas (unit 5, 12, 13) should remain un-grazed. ▪ **Woodland Management** - Natural ecological processes should be allowed to operate as far as possible. In many areas, these are gradually creating greater structural diversity. Most of the woodland on the site is not actively managed as the woodland occupies cliffs and steeply sloping ground, such that active woodland management is not a practical or desirable option o There should be no evidence of tree felling or coppicing within the past five years. (Tree surgery for safety reasons excluded). o Dead wood should ideally be left where it falls and standing dead trees should be allowed to fall naturally. Movement and cutting/tidying of dead wood should be avoided and/or limited, unless essential for public safety. ▪ **Non-native species** - Beech is at the edge of its range in this part of Wales. In units 5, 12 and 13 the beech wood appears to be natural, but the spread of beech over much of Units 1 & 2 may not be desirable, as it would replace the ash woodland. Limits should be met in 70% of the woodland.

- 5% cover of non-native trees in the canopy.
- No cotoneaster (or other invasive non-native shrubs) in the understorey or shrub layer.

Key Environmental Conditions for the Calcareous rocky slopes with chasmophytic vegetation:

- **Grazing** - Low grazing levels on the more accessible rocky areas in units 1 & 2 in are important in controlling the growth of ground-smothering species such as ivy, which have the potential to smother boulders and cliff faces that are important for their lower plant communities. Tree growth at the base of the cliffs may shade out important calcareous chasmophytic habitat, so should be controlled within limits outside the areas of agreed woodland. Surveillance of grazing levels and type should be maintained so that changes that may influence the features on the site are identified and recorded.
  - Sufficient grazing to prevent the development of scrub or spread of ivy and tall vegetation in units 1 & 2.

- **Rock Climbing** - Intensive rock climbing can dislodge plants and disturb breeding birds. These impacts may be avoided if climbing is subject to specific agreements, which include a code of conduct.
  - No rock climbing in the key areas of units 1 & 2 without agreement.

- **Quarrying** - any quarrying in the key areas of units 1 & 2 would lead to habitat loss.

Key Environmental Conditions for the Degraded raised bogs still capable of natural regeneration:

- **Drainage** - See blanket bog above.

- **Grazing** - A way of reducing the grazing to acceptable levels must be found. A period without grazing will promote recovery, although some light grazing, ideally by cattle or ponies, will be required in the longer term to prevent the development of scrub or the dominating growth of dwarf shrubs or purple moor-grass.
  - Upper limits: Overall grazing pressure of 0.05 livestock units/ha/year on the bog area.

AND:

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	o Minimal winter grazing. AND: o No stock feeding o Lower limit: Sufficient to prevent the establishment of trees and shrubs in the long term. ▪ **Burning** - will damage the feature and could encourage dominance by purple-moor grass if grazing is significantly reduced and result in a decline in the cover of bog mosses. At present there is generally insufficient vegetation to be burnt here. ▪ **Air quality** - See blanket bog above. **Key Environmental Conditions for the European dry heaths:** ▪ **Burning** - can be a useful management tool on the heathlands, provided that it forms part of an appropriate and controlled cycle of management. It is important to ensure that such management does not encourage the spread of bracken. o In areas subject to any burning plan, only a maximum of up to 15% of the total heathland area should be burnt in any one year. ▪ **Erosion/Bare Ground** - Is generally caused by uncontrolled fires (see above) or heavy trampling. o Upper Limit - 10% bare ground ▪ **Air Quality** - Increased cover of grasses and de-generate heather may be symptomatic of air pollution, as there is evidence that pollution makes heather plants more susceptible to damage by frost and heather beetles. The Environment Agency has set critical levels for these pollutants in relation to various types of vegetation. No critical loads are exceeded: o Sulphur dioxide - 20µg/m³ o Nitrous Oxides - 30µg/m³

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	o Ozone - 3000 ppb o Ammonia - 1µg/m³ o N - 10-20 kg/ha/yr o Acid - 0.35keq/ha/yr Monitoring station located at grid location: 319097.79 214637.88
SAC Condition Assessment	**Conservation Status of Feature 1:** **Lesser horseshoe bat *Rhinolophus hipposideros*** The conservation status of this feature within the site is considered to be **Favourable** (2006). Based on annual counts made at all locations between 2000 and 2006, the lesser horseshoe bat feature is considered to be in favourable condition. **Conservation Status of Feature 2:** **Blanket bog** The conservation status of this feature within the site is considered to be **Unfavourable** (2006). Assessment carried out in April 2002 indicated that feature condition was: Unfavourable, no change. In many areas there was little or no bog mosses and the cover of dwarf shrubs exceeded the upper limits defined. In other areas the vegetation was dominated by hare's-tail cottongrass and the cover of bog mosses was limited. Past grazing, burning and drainage activity means that some stands of blanket bog have been damaged by deep drainage. There is also concern that the vegetation is being damaged by atmospheric pollution, due to exceedence of many of the critical loads identified for this feature.

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	Conservation Status of Feature 3: **Tilio-Acerion forests of slopes, screes and ravines** The conservation status of this feature within the site is considered to be **Favourable** (2006). Assessment carried out in August 2004 indicated that feature condition was: Favourable, maintained. All the factors affecting the features appear to be under control. **Conservation Status of Feature 4:** **Calcareous rocky slopes with chasmophytic vegetation** The conservation status of this feature within the site is considered to be **Favourable** (2006). Assessment carried out in August 2004 indicated that feature condition was: Favourable, maintained. All the factors affecting the features appear to be under control. **Conservation Status of Feature 5:** **Caves not open to the public** The conservation status of this feature within the site is considered to be **Favourable** (2006). Based on records of made at all locations between 2000 and 2006, the feature condition is considered to be: Favourable, maintained. All the factors affecting the features appear to be under control. **Conservation Status of Feature 6:** **Degraded raised bogs still capable of natural regeneration**

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	The conservation status of this feature within the site is considered to be **Unfavourable** (2006). Assessment carried out in July 2002 indicated that feature condition was: Unfavourable, declining. The feature is currently (2007) too heavily grazed because the most of it is common land and because it is on the sheltered side of the hill, is subject to high levels of grazing, particularly by sheep. There is also concern that the vegetation is being damaged by atmospheric pollution, due to exceedence of many of the critical loads identified for this feature. **Conservation Status of Feature 7:** **European dry heaths** The conservation status of this feature within the site is considered to be **Unfavourable** (2006). Assessment carried out in April 2002 indicated that feature condition was: Unfavourable, no change. Past grazing and burning activity means that some stands of dry heath have insufficient cover of dwarf shrubs. There is also concern that the vegetation is being damaged by atmospheric pollution, due to exceedence of many of the critical loads identified for this feature.
Vulnerabilities (includes existing pressures and trends)	**Lesser Horseshoe bat:** ▪ **Deterioration of buildings used to roost** - Alterations/neglect to the structure of the buildings could result in the site becoming unsuitable as a nursery roost by causing changes to the internal conditions of the roost. ▪ **Disturbance** - It is important that access to the cave systems and roosts is managed to protect the bats. Lesser horseshoe bats are very sensitive to disturbance, such as light and noise pollution and even the presence of a single person in close proximity can cause problems. Where there is a risk of disturbance by unauthorised persons, grilling the cave entrances should be considered. Any structures placed at cave entrances to prevent unauthorised access should not hinder the passage of bats.

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ **Temperature change** - Underground hibernation roosts should be dark, cool and humid with stable temperature (8 -120C) beyond the entrance zone. However, the boulder roof of the Foxwood cave is gappy and internal temperatures are dependant on external temperatures, unlike the situation in many true caves. The consequence is that declining winter ambient temperature leads to a decline in roost temperature and in the colder winter months roost temperature falls below the required temperature range, triggering departures of bats to other unknown roosts. ▪ **Habitat fragmentation** - Development allocations pressures and transport development could lead to the loss or decline in quality of linear features (such as hedgerows and tree lines) which the bats use as flight lines. Connectivity of woodland, hedgerows, linear habitat and field boundary features are important as lesser horseshoe bats tend to feed in wooded areas and use linear features to navigate their way between roosts and foraging habitat. **Blanket bog**: ▪ **Air pollution** - High levels of air pollution are believed to be damaging and there may be combined effects. Increased cover of hare's-tail cottongrass and flat-topped bog-moss may be symptoms, as could increased levels of peat erosion. Blanket bogs are at risk from*: o Acidification; o Photochemical oxidants; o Direct toxicity; and o Eutrophication. ▪ **Hydrological change** - the blanket bog has been subject to hydrological change as a result of past ditch

* Pollution Information System (APIS). Raised bog and blanket bog. Available from: http://www.apis.ac.uk/cgi_bin/habitat_result.pl?habResult=Raised+bog+and+blanket+bog&choice=allHabs&haborspec=habitat&submit.x=27&submit.y=9

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	construction to supply water to reservoirs. ▪ **Recreational activities** - Unauthorised vehicle use is a threat to the moorland areas. Bog vegetation is easily damaged and may take a long time to recover. Ground nesting birds may be disturbed during the breeding season. Although the common land within the site is subject to a right of public access on foot, such use does not appear to be so intensive as to cause habitat damage or significant disturbance to birdlife. ▪ **Development** - The ground along the existing pipeline routes, which cross the Llangatwg hill, has been disturbed during the engineering phase. Some habitats naturally recover better than others, whilst some will require specific management to restore it to its natural state. Generally, further pipeline construction or other engineering works affecting sensitive habitats within the site should be avoided. Any future engineering or pipeline works would need to show that the SAC features would not be adversely affected and if any licence was approved then there would be a requirement to restore the vegetation to its original character and quality. **Tilio-Acerion forests of slopes, screes and ravines:** ▪ **Grazing** - In the cliff and woodland areas any more than light grazing may prevent tree regeneration and damage the populations of rare and scarce plants that may be accessible to grazing stock. ▪ **Non-native species** - The ash woodland in units 1 & 2 is vulnerable to the introduction of beech. **Calcareous rocky slopes with chasmophytic vegetation:** ▪ **Invasive plants** - Introduced and invasive species such as cotoneaster can smother large areas of grassland and cliff habitats, displacing native species and would need to be controlled. Cotoneaster has spread on the south side of Mynydd Llangatwg above the Clydach gorge and some control is desirable to stop it

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	spreading into feature habitats. ▪ **Recreational activities** - Rare plants, and plants in general, on the cliffs and ledges, may be dislodged by climbers and some breeding birds are particularly sensitive to disturbance during the nesting season. Rock climbing at this site should be restricted to suitable areas and be subject to a suitable code of conduct in order to minimise such damage and disturbance. **Degraded raised bogs still capable of natural regeneration:** ▪ **Air Pollution** - See blanket bog above. ▪ **Hydrological Change** - No new drainage ditches should be dug within the bog and outlet and inflow channels must not be deepened or altered in any way. ▪ **Grazing** - This area of bog has been damaged by heavy grazing in the past and current (2008) grazing levels are still too high to enable the re-generation of the bog habitats. Most of the bog is on commonland and therefore it is difficult to control grazing without agreement and fencing. Supplementary stock feeding can lead to damage of the sward and cause poaching and gradual nutrient enrichment. Feeding should not occur on this habitat. **European dry heaths:** ▪ **Grazing** - levels are believed to be lower than they have been historically but they may still be too high in some parts of the common to enable the heathland to regenerate. It may not be possible to address this problem in unit 1 because the adjoining limestone grassland and rocky habitats require a relatively high stocking rate to maintain their interest. Supplementary stock feeding can lead to localised damage of the sward and cause poaching and gradual nutrient enrichment. Feeding should be confined to acceptable areas off the common, such as agriculturally improved land.

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ **Bracken and scrub encroachment** - Scrub invasion in the open moorland areas can be controlled by the correct combination of grazing and burning. Bracken however can be more problematical. Grazing may not prevent bracken invasion particularly if sheep rather than heavier animals are the main stock-type and burning can encourage the spread of bracken. Bracken control will be considered if there is significant spread within the drier heathy areas. ▪ **Burning in combination with intense grazing** - can result in the loss of those heathland shrub species that give this habitat its characteristic appearance, and which are so important to the value of these moorland habitats. ▪ **Dumping** - The plateau areas at Mynydd Llangatwg are easily accessible from nearby population centres, so the illegal dumping of domestic and commercial waste and abandoned vehicles is a problem. ▪ **Development** - See blanket bog above.
Landowner/ Management Responsibility	▪ N/A
HRA/AA Studies undertaken that address this site	HRA Screening of the Torfaen Local Development Plan (2006-2021) January 2008. http://www.torfaen.gov.uk/EnvironmentAndPlanning/Planning/ForwardPlanning/Publications/HabitatsRegulationAssessment.pdf ▪ The Screening concludes that whilst the LDP will not have a direct impact on this SAC in terms of land take, there is the potential however for development of residential and employment uses to increase airborne pollution in Torfaen which could have an impact on this SAC. The Strategic Ecological Corridor of the Afon Llywd is present in Torfaen, which is an important river riparian habitat. This corridor could potentially be used by lesser horseshoe bats although details of the foraging areas from the Usk Valley sites are not known.

Site Name: River Usk **Location Grid Ref: SO301113** **JNCC Site Code: UK0013007** **Size: 1007.71** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Site Description	The River Usk SAC rises in the Black Mountain range in the west of the Brecon Beacons National Park and flows east and then south, to enter the Severn Estuary at Newport. The overall form of the catchment is long and narrow, with short, generally steep tributaries flowing north from the Black Mountain, Fforest Fawr and Brecon Beacons, and south from Mynydd Epynt and the Black Mountains. The underlying geology consists predominantly of Devonian Old Red Sandstone with a moderate base status, resulting in waters that are generally well buffered against acidity. This geology also produces a generally low to moderate nutrient status, and a moderate base-flow index, intermediate between base-flow dominated rivers and more flashy rivers on less permeable geology. The run-off characteristics and nutrient status are significantly modified by land use in the catchment, which is predominantly pastoral with some woodland and commercial forestry in the headwaters and arable in the lower catchment. The Usk catchment is entirely within Wales. The ecological structure and functions of the site are dependent on hydrological and geomorphological processes (often referred to as hydromorphological processes), as well as the quality of riparian habitats and connectivity of habitats. Animals that move around and sometimes leave the site, such as migratory fish and otters, may also be affected by factors operating outside the site. The River Usk is also important for its population of sea lamprey *Petromyzon marinus*. The site also supports a healthy population of brook lamprey *Lampetra planeri* and river lamprey *Lampetra fluviatilis* and is considered to provide exceptionally good quality habitat likely to ensure the continued survival of the species in this part of the UK. The site supports a range of Annex II fish species, which includes twaite shad *Alosa falla*, salmon *Salmo sala* and bullhead *Cottus gobi*. The River Usk is an important site for otters Lutra lutra in Wales.
Qualifying Features	Annex I Habitats qualifying feature: ▪ Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation Annex II Species primary reason for selection: ▪ Sea lamprey *Petromyzon marinus*

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ Brook lamprey *Lampetra planeri* ▪ River lamprey *Lampetra fluviatilis* ▪ Twaite shad *Alosa fallax* ▪ Atlantic salmon *Salmo salar* ▪ Bullhead *Cottus gobio* ▪ Otter *Lutra lutra* Annex II Species qualifying feature: ▪ Allis shad *Alosa alosa*
Conservation Objectives	**The ecological status of the water course is a major determinant of Favourable Condition Status (FCS) for all features. The required conservation objective for the water course is defined below.** **Conservation Objective for the water course** ▪ The capacity of the habitats in the SAC to support each feature at near-natural population levels, as determined by predominantly unmodified ecological and hydromorphological processes and characteristics, should be maintained as far as possible, or restored where necessary. ▪ The ecological status of the water environment should be sufficient to maintain a stable or increasing population of each feature. This will include elements of water quantity and quality, physical habitat and community composition and structure. It is anticipated that these limits will concur with the relevant standards used by the Review of Consents process given in Annexes 1-3. ▪ Flow regime, water quality and physical habitat should be maintained in, or restored as far as possible to, a near-natural state, in order to support the coherence of ecosystem structure and function across the whole area of the SAC. ▪ All known breeding, spawning and nursery sites of species features should be maintained as suitable habitat as far as possible, except where natural processes cause them to change. ▪ Flows, water quality, substrate quality and quantity at fish spawning sites and nursery areas will not be

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	depleted by abstraction, discharges, engineering or gravel extraction activities or other impacts to the extent that these sites are damaged or destroyed. ▪ The river planform and profile should be predominantly unmodified. Physical modifications having an adverse effect on the integrity of the SAC, including, but not limited to, revetments on active alluvial river banks using stone, concrete or waste materials, unsustainable extraction of gravel, addition or release of excessive quantities of fine sediment, will be avoided. ▪ River habitat SSSI features should be in favourable condition. In the case of the Usk Tributaries SSSI, the SAC habitat is not underpinned by a river habitat SSSI feature. In this case, the target is to maintain the characteristic physical features of the river channel, banks and riparian zone. ▪ Artificial factors impacting on the capability of each species feature to occupy the full extent of its natural range should be modified where necessary to allow passage, eg. weirs, bridge sills, acoustic barriers. ▪ Natural factors such as waterfalls, which may limit the natural range of a species feature or dispersal between naturally isolated populations, should not be modified. ▪ Flows during the normal migration periods of each migratory fish species feature will not be depleted by abstraction to the extent that passage upstream to spawning sites is hindered. ▪ Flow objectives for assessment points in the Usk Catchment Abstraction Management Strategy will be agreed between EA and CCW as necessary. It is anticipated that these limits will concur with the standards used by the Review of Consents process given in Annex 1 of this document. ▪ Levels of nutrients, in particular phosphate, will be agreed between EA and CCW for each Water Framework Directive water body in the Usk SAC, and measures taken to maintain nutrients below these levels. It is anticipated that these limits will concur with the standards used by the Review of Consents process given in Annex 2 of this document. ▪ Levels of water quality parameters that are known to affect the distribution and abundance of SAC features will be agreed between EA and CCW for each Water Framework Directive water body in the Usk SAC, and measures taken to maintain pollution below these levels. It is anticipated that these limits will concur with the standards used by the Review of Consents process given in Annex 3 of this document. ▪ Potential sources of pollution not addressed in the Review of Consents, such as contaminated land, will be considered in assessing plans and projects.

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ Levels of suspended solids will be agreed between EA and CCW for each Water Framework Directive water body in the Usk SAC. Measures including, but not limited to, the control of suspended sediment generated by agriculture, forestry and engineering works, will be taken to maintain suspended solids below these levels. **Conservation Objective for Features 1-5:** - **Sea lamprey** *Petromyzon marinus*; - **Brook lamprey** *Lampetra planeri*; - **River lamprey** *Lampetra fluviatilis*; - **Twaite shad** *Alosa fallax*; - **Allis shad** *Alosa alosa*; - **Atlantic salmon** *Salmo salar*; - **Bullhead** *Cottus gobio*. Vision for features 1-5 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ The conservation objective for the water course as defined in 4.1 above must be met. ▪ The population of the feature in the SAC is stable or increasing over the long term. ▪ The natural range of the feature in the SAC is neither being reduced nor is likely to be reduced for the foreseeable future. The natural range is taken to mean those reaches where predominantly suitable habitat for each life stage exists over the long term. Suitable habitat is defined in terms of near-natural hydrological and geomorphological processes and forms eg. suitable flows to allow upstream migration, depth of water and substrate type at spawning sites, and ecosystem structure and functions eg. food supply. Suitable habitat need not be present throughout the SAC but where present must be secured for the foreseeable future. Natural factors such as waterfalls may limit the natural range of individual species. Existing artificial

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	influences on natural range that cause an adverse effect on site integrity, such as physical barriers to migration, will be assessed in view of the following bullet point. ▪ There is, and will probably continue to be, a sufficiently large habitat to maintain the feature's population in the SAC on a long-term basis. Performance indicators for features 1-5 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the River Usk Management Plan. **Conservation Objective for Feature 6:** **- European otter** *Lutra lutra* Vision for feature 6 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ The population of otters in the SAC is stable or increasing over the long term and reflects the natural carrying capacity of the habitat within the SAC, as determined by natural levels of prey abundance and associated territorial behaviour. ▪ The natural range of otters in the SAC is neither being reduced nor is likely to be reduced for the foreseeable future. The natural range is taken to mean those reaches that are potentially suitable to form part of a breeding territory and/or provide routes between breeding territories. The whole area of the Usk SAC is considered to form potentially suitable breeding habitat for otters. The size of breeding territories may vary depending on prey abundance. The population size should not be limited by the availability of suitable undisturbed breeding sites. Where these are insufficient they should be created through habitat enhancement and where necessary the provision of artificial holts. No otter breeding site should be subject

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	to a level of disturbance that could have an adverse effect on breeding success. Where necessary, potentially harmful levels of disturbance must be managed. ▪ The safe movement and dispersal of individuals around the SAC is facilitated by the provision, where necessary, of suitable riparian habitat, and underpasses, ledges, fencing etc at road bridges and other artificial barriers. Performance indicators for feature 6 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the River Usk Management Plan. **Conservation Objective for Feature 7:** **- Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation** Vision for feature 7 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. ▪ The conservation objectives for the water course as defined above must be met. ▪ The natural range of the plant communities represented within this feature should be stable or increasing in the SAC. The natural range is taken to mean those reaches where predominantly suitable habitat exists over the long term. Suitable habitat and associated plant communities may vary from reach to reach. Suitable habitat is defined in terms of near-natural hydrological and geomorphological processes and forms eg. depth and stability of flow, stability of bed substrate, and ecosystem structure and functions eg. nutrient levels, shade. Suitable habitat for the feature need not be present throughout the SAC but where present must be secured for the foreseeable future, except where natural processes cause it to decline in

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	extent. ▪ The area covered by the feature within its natural range in the SAC should be stable or increasing. ▪ The conservation status of the feature's typical species should be favourable. The typical species are defined with reference to the species composition of the appropriate JNCC river vegetation type for the particular river reach, unless differing from this type due to natural variability when other typical species may be defined as appropriate. Performance indicators for feature 7 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the River Usk Management Plan.
Component SSSIs	▪ River Usk (Upper Usk) SSSI ▪ River Usk (Lower Usk) SSSI ▪ River Usk (Tributaries) SSSI ▪ Penllwyn-yr-hendy SSSI ▪ Coed Dyrysiog SSSI ▪ Coed Nant Menascin SSSI ▪ Coed Ynysfaen SSSI The SAC has been divided into 10 management units: ▪ Units 1 to 3 - River Usk (Lower Usk) SSSI. ▪ Units 4 to 6 - River Usk (Upper Usk) SSSI. ▪ Units 7 to 10 - River Usk (Tributaries) SSSI. A map showing the various management units can be seen within the River Usk Management Plan.

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
Key Environmental Conditions (factors that maintain site integrity	▪ **Hydrological processes**: o **River flow** (level and variability) and **water chemistry**, determine a range of habitat factors of critical importance to the SAC features, including current velocity, water depth, wetted area, substrate quality, dissolved oxygen levels and water temperature. Maintenance of both high 'spate' flows and base-flows is essential. Reduction in flows may reduce the ability of the adults of migratory fish to reach spawning sites. Water-crowfoot vegetation thrives in relatively stable, moderate flows and clean water. The flow regime should be characteristic of the river in order to support the functioning of the river ecosystem. ▪ **Geomorphological processes** - of erosion by water and subsequent deposition of eroded sediments downstream, create the physical structure of the river habitats. Whilst some sections of the river are naturally stable, especially where they flow over bedrock, others undergo constant and at times rapid change through the erosion and deposition of bed and bank sediments as is typical of meandering sections within floodplains (called 'alluvial' rivers). These processes help to sustain the river ecosystem by allowing a continued supply of clean gravels and other important substrates to be transported downstream. In addition, the freshly deposited and eroded surfaces, such as shingle banks and earth cliffs, enable processes of ecological succession to begin again, providing an essential habitat for specialist, early-successional species. Lampreys need clean gravel for spawning, and marginal silt or sand for the burrowing juvenile ammocoetes. Processes at the wider catchment scale generally govern processes of erosion and deposition occurring at the reach scale, although locally, factors such as the effect of grazing levels on riparian vegetation structure may contribute to enhanced erosion rates. In general, management that interferes with natural geomorphological processes, for example preventing bank erosion through the use of hard revetments or removing large amounts of gravel, are likely to be damaging to the coherence of the ecosystem structure and functions. ▪ **Riparian habitats** - including bank sides and habitats on adjacent land, are an integral part of the river ecosystem. Diverse and high quality riparian habitats have a vital role in maintaining the SAC features in a favourable condition. The type and condition of riparian vegetation influences shade and water temperature, nutrient run-off from adjacent land, the availability of woody debris to the channel and inputs

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	of leaf litter and invertebrates to support in-steam consumers. Light, temperature and nutrient levels influence in-stream plant production and habitat suitability for the SAC features. Woody debris is very important as it provides refuge areas from predators, traps sediment to create spawning and juvenile habitat and forms the base of an important aquatic food chain. Otters require sufficient undisturbed riparian habitats as breeding and resting sites. It is important that appropriate amounts of tree cover, in general at least 50% high canopy cover, tall vegetation and other semi-natural habitats are maintained on the riverbanks and in adjacent areas, and that they are properly managed to support the SAC features. This may be achieved, for example, through managing grazing levels, selective coppicing of riparian trees and restoring adjacent wetlands. In the urban sections the focus may be on maintaining the river as a communication corridor but this will still require that sufficient riparian habitat is present and managed to enable the river corridor to function effectively. ▪ **Habitat connectivity** - is an important property of a river ecosystem structure and function. Many of the fish that spawn in the river are migratory, depending on the maintenance of suitable conditions on their migration routes to allow the adults to reach available spawning habitat and juvenile fish to migrate downstream. For resident species, dispersal to new areas, or the prevention of dispersal causing isolated populations to become genetically distinct, may be important factors. Naturally isolated feature populations that are identified as having important genetic distinctiveness should be maintained. Artificial obstructions including weirs and bridge sills can reduce connectivity for some species. In addition, reaches subject to depleted flow levels, pollution, or disturbance due to noise, vibration or light, can all inhibit the movement of sensitive species. The dispersal of semi-terrestrial species such as the otter can be adversely affected by structures such as bridges under certain flow conditions; therefore, these must be designed to allow safe passage. The continuity of riparian habitats enables a wide range of terrestrial species, for example lesser horseshoe bats, to migrate and disperse through the landscape. Connectivity should be maintained or restored where necessary as a means to ensure access for the features to sufficient habitat within the SAC.

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
SAC Condition Assessment	**Conservation status of Feature 1: Sea lamprey *Petromyzon marinus*** Status: **Unfavourable**: Unclassified. Sea lamprey monitoring showed that overall catchment mean ammocoete density considerably exceeded the JNCC target threshold and also complied with targets for spawning site and ammocoete distribution. A caveat on the latter is uncertainty over whether the natural range of sea lamprey extends above Brecon weir: this is assumed not to be the case. Factors leading to an unfavourable assessment are the presence of probable partial barriers further downstream (notably Crickhowell Bridge), and flow depletion resulting from abstractions including Brecon canal and Prioress Mill public water supply abstraction. The latter in particular has been shown to have effects both on a seasonal timescale by reducing spate flows during the migration period and on a diurnal timescale by substantially depleting flows during the night time to the extent that sea lamprey nests and nursery areas are likely to be exposed above the water level. The effect of the Brecon canal abstraction has been shown to comprise a substantial depletion of flows, at least locally, during low flow periods with a resulting reduction in river depth downstream of the off-take weir. **Conservation status of Feature 2: Brook lamprey *Lampetra planeri* and River lamprey *Lampetra fluviatilis*** Status: **Favourable**. Brook/river lamprey monitoring showed that overall catchment mean ammocoete density considerably exceeded the JNCC target threshold and also complied with targets for ammocoete distribution1. It has not been possible to distinguish between these two species during monitoring, due to the reliance on juvenile stages (ammocoetes). Anecdotal evidence suggests that both species are likely to be present in many reaches, though brook lamprey are expected to predominate in the headwaters and river lamprey may be the more abundant species in the main channel and the lower reaches of larger tributaries. More information on the relative abundance of these two species in different parts of the Usk SAC is desirable. Records of spawning adult river lamprey would be particularly useful.

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	Conservation status of Feature 3: Twaite shad *Alosa fallax* and Allis shad *Alosa alosa* Status: **Unfavourable**: Unclassified. Monitoring of these species in the Usk relies on two methods, Kick sampling for eggs provides qualitative information on spawning distribution, Netting for juveniles in the lower river and tidal reaches during late summer/autumn when juveniles drift downstream towards the estuary. These methods do not distinguish between the two species. Allis shad is thought to be rare, with no recent records in the Usk, while twaite shad is relatively common. Kick sampling for eggs is only able to give a broad scale indication of presence or absence at sampled locations. Netting for juveniles gives a quantitative estimate of abundance, though may be subject to a high degree of uncertainty due to sampling error. This uncertainty is likely to be compounded by variation between years in the size of the adult run, spawning success and resulting numbers of juveniles. Poor adult runs are likely to result from unsuitable flows during the March to June migration period, in particular prolonged low flows, while poor survival of eggs and juveniles is related to spate flows in the mid to late summer which can flush them into the estuary prematurely. CSM guidance states that adult run size should comply with an agreed target for each river, with no drop in the annual run greater than would be expected from variations in natural mortality alone. This attribute is not currently assessed in the Usk due to the absence of a fish counter. The current unfavourable status results from a precautionary assessment of feature distribution and abundance, and from the presence of adverse factors, in particular flow depletion and physical barriers to migration. **Conservation status of Feature 4: Atlantic salmon *Salmo salar*** Status: **Unfavourable**: Unclassified. Monitoring of Atlantic salmon in the Usk relies on two methods,

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	1. Estimation of adult run size from angling catch returns, 2. Electro-fishing for juveniles in nursery areas. The estimate of adult numbers is converted into an estimate of numbers of eggs deposited which is compared against an Egg Deposition Target (EDT), calculated by considering the area of suitable spawning habitat within the catchment. The equivalent adult run to achieve the EDT is described in terms of a Conservation Limit, which must be exceeded 4 years in 5 for the Management Target to be considered attained. Electro-fishing for juveniles is either quantitative or semi-quantitative, and estimated juvenile densities are classified in one of six categories A to F. The monitoring guidance produced by the LIFE in UK Rivers project recommends that ideally juvenile densities should be compared to predicted densities for the sample reach using the HABSCORE model6. These targets are calculated and monitored by the Environment Agency as part of the Salmon Action Plan for the Usk. The current unfavourable status results from a precautionary assessment of feature distribution and abundance, in particular the results of juvenile surveys, and from the presence of adverse factors, in particular flow depletion and localised water quality failures. **Conservation status of Feature 5: Bullhead *Cottus gobio*** Status: **Unfavourable**: Unclassified. The current unfavourable status results from the presence of adverse factors, in particular flow depletion and localised water quality failures. Records obtained from juvenile salmon monitoring show that bullhead are widespread in the main river and tributaries. There is a need for quantitative information on bullhead abundance, which will be addressed by targeted monitoring in 2007. **Conservation status of Feature 6: European otter *Lutra lutra*** Status: **Favourable**. The conservation status of otters in the Usk SAC is determined by monitoring their distribution, breeding success, and the condition of potential breeding and feeding habitat outlined in the

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	Performance Indicators. Their current condition can be considered favourable, but with scope for further improvement, if habitat and other natural factors can be maintained and enhanced. **Conservation status of Feature 7: Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation** Status: **Unfavourable**: Unclassified. This feature is not identified as one of the primary reasons for designation of the River Usk SAC; its distribution being apparently limited by the availability of suitable hydromorphological conditions. Important stands have been identified in the lower reaches of the main river below Abergavenny down to the tidal limit, and in the upper reaches of a headwater stream, the Afon Senni. These reaches may represent a sub-type of the feature where large submerged and floating leaved flowering plants, in particular Ranunculus, are dominant. Habitat suitability studies4 suggest that the natural range of the feature may be more widespread within the SAC. More widespread sub-types may consist of communities dominated by aquatic bryophytes. Where necessary, examples of these sub-types may be identified as priorities for management, for example through the management of riparian vegetation to preserve shade and humidity. Further understanding of the distribution and status of this feature and its natural range within the River Usk SAC is required. The present unfavourable status of the feature results from the over-abundance of invasive non-native species of bankside plant communities, which are included within the feature definition. These are predominantly giant hogweed and Himalayan balsam in the lower reaches of the main river.
Vulnerabilities (includes existing pressures and trends)	▪ **Abstraction levels -** Entrainment in water abstractions directly impacts on lamprey population dynamics through reduced recruitment and survival rates. The impact of flow depletion resulting from a small number of major abstractions was highlighted in the Review of Consents process. ▪ **Eutrophication** - factors that are important to the favourable conservation status of this feature include flow, substrate quality and water quality, which in turn influence species composition and abundance. These

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	factors often interact, producing unfavourable conditions by promoting the growth of a range of algae and other species indicative of eutrophication. Under conditions of prolonged low flows and high nutrient status, epiphytic algae may suppress the growth of aquatic flowering plants. ▪ **Diffuse Pollution** - The Atlantic salmon is the focus for much of the management activity carried out on the Usk. The relatively demanding water quality and spawning substrate quality requirements of this feature mean that reduction in diffuse pollution and siltation impacts is a high priority. In the Usk catchment, the most significant sources of diffuse pollution and siltation are from agriculture, including fertiliser run-off, livestock manure, silage effluent and soil erosion from ploughed land. The most intensively used areas such as heavily trampled gateways and tracks can be especially significant sources of polluting run-off. Farm operations should avoid ploughing land which is vulnerable to soil erosion or leaving such areas without crop cover during the winter. Contamination by synthetic pyrethroid sheep dips, which are extremely toxic to aquatic invertebrates, has a devastating impact on crayfish populations and can deprive fish populations of food over large stretches of river. These impacts can arise if recently dipped sheep are allowed access to a stream or hard standing area, which drains into a watercourse. Pollution from organophosphate sheep dips and silage effluent can be very damaging locally. Pollution from slurry and other agricultural and industrial chemicals, including fuels, can kill all forms of aquatic life. All sheep dips and silage, fuel and chemical storage areas should be sited away from watercourses or bunded to contain leakage. Recently dipped sheep should be kept off stream banks. Discharges from sewage treatment works, urban drainage, engineering works such as road improvement schemes, contaminated land, and other domestic and industrial sources can also be significant causes of pollution, and must be managed appropriately. Pollution of rivers with toxic chemicals, such as PCBs, was one of the major factors identified in the widespread decline of otters during the last century. ▪ **Barriers to migration** - There are few barriers to migration for the anadromous species and where barriers exist, investigation is proposed to analyse for potential impacts and remedy them through multi-species fish passes. Crickhowell Bridge is considered to be the most significant barrier to fish migration in the Usk. Management to reduce or remove the effect of this barrier is a high priority for the River Usk SAC. Artificial

Site Name: Usk Bat Sites Location Grid Ref: SO190145 JNCC Site Code: UK0014784 Size: 1686.4 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	physical barriers are probably the single most important factor in the decline of shad in Europe. Impassable obstacles between suitable spawning areas and the sea can eliminate breeding populations of shad. Both species (but particularly allis shad) can make migrations of hundreds of kilometres from the estuary to spawning grounds in the absence of artificial barriers. Existing fish passes designed for salmon are often not effective for shad. ▪ **Development pressure** - in the lower catchment can cause temporary physical, acoustic, chemical and sediment barrier effects that need to be addressed in the assessment of specific plans and projects. Noise/vibration e.g. due to impact piling, drilling, salmon fish counters present within or in close proximity to the river can create a barrier to shad migration. Land on both sides of the river in Newport is potentially highly contaminated. Contamination of the river can arise when this is disturbed e.g. as a result of development. Contamination can also arise from pollution events (which could be shipping or industry related). Barriers resulting from vibration, chemicals, low dissolved oxygen and artificially high sediment levels must be prevented at key times (generally March to June). ▪ **Invasive non-native plants** - are a detrimental impact on the water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation. Giant hogweed, Himalayan balsam and Japanese knotweed should be actively managed to control their spread and hopefully reduce their extent in the SAC. ▪ **Artificially enhanced densities of other fish** - may introduce unacceptable competition or predation pressure and the aim should be to minimise these risks in considering any proposals for stocking. ▪ **External factors** - operating outside the SAC, may also be influential, particularly for the migratory fish and otters. For example, salmon may be affected by barriers to migration in the Severn Estuary, inshore fishing and environmental conditions prevailing in their north Atlantic feeding grounds. Otters may be affected by developments that affect resting and breeding sites outside the SAC boundary.

Site Name: Usk Bat Sites **Location Grid Ref: SO190145** **JNCC Site Code: UK0014784** **Size: 1686.4** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Landowner/ Management Responsibility	▪ N/A
HRA/AA Studies undertaken that address this site	HRA Screening of the County Council of the City and County of Cardiff Local Development Plan Preferred Strategy Sept 2007. www.cardiff.gov.uk/ObjView.asp?Object_ID=9788 ▪ The Screening states that the most likely mechanism for the Preferred Strategy to have a significant effect on this site is through airborne pollution. HRA Screening of the Torfaen Local Development Plan (2006-2021) January 2008. http://www.torfaen.gov.uk/EnvironmentAndPlanning/Planning/ForwardPlanning/Publications/HabitatsRegulationAssessment.pdf ▪ The Screening concludes that there is potential for significant effects on this site through discharge of sewerage, increased surface run-off and an increase in airborne pollutants.

C. Key Environmental Themes identified through the review of relevant plans, policies and programmes

Table C.1 - Broad Environmental Themes and Objectives from PPP review

	Source		
Theme	**International**	**National/Regional**	**Local**
Protect and enhance biodiversity, natural habitats and wild fauna and flora, including international, national and locally designated sites, protected species and species and habitat types identified as priorities for biological conservation	Birds Directive, Habitats Directive, Ramsar Convention on Wetlands of International Importance, EU Biodiversity Strategy to 2020	Wildlife and Countryside Act, Conservation Regulations 2010, PPW, TAN5 – Nature Conservation and Planning, Woodlands for Wales; Wales Spatial Plan; Environment Strategy for Wales, Climate Change Strategy for Wales	Blaenau Gwent Local Biodiversity Action Plan; Ebbw and Lwyd CAMS; Rhymney CAMS, UDP, LDP (emerging), Caerphilly Local Development Plan, Torfaen Local Development Plan, Merthyr Tydfil Local Development Plan
Protect the quality and character of the landscape, including the countryside, the river valleys, upland areas and other green spaces, and enhance where necessary in order to enhance flood alleviation	European Landscape Convention	TAN 5 – Nature Conservation and Planning; Woodlands for Wales; Environmental Strategy for Wales	Ebbw and Lwyd CAMS; Rhymney CAMS, UDP, LDP (emerging), Caerphilly Local Development Plan, Torfaen Local Development Plan, Merthyr Tydfil Local Development Plan
Maximise Opportunities to Carry out Habitat Restoration at a Landscape Scale	EU Biodiversity Strategy to 2020	Water Resources Strategy for England and Wales, PPW; TAN 5 – Nature Conservation and Planning; the Wales Environment Strategy and Action Plan; The Wales Spatial Plan: The Wales Spatial Plan Area Work "Southeast Wales; a Networked City Region"	The Blaenau Gwent LBAP
Reduce the risk of flooding by assessing developments against the precautionary principle, and promote protection of floodplains from inappropriate development	The EU Water Framework Directive, EU Floods Directive	Flood and Water Management Act, Flood Risk Regulations, Water Resources Strategy for England and Wales, PPW, TAN 15 - Development and Flood Risk; National Strategy for Flood Risk and Coastal Erosion in Wales; Environment Strategy for Wales; National Strategy for Flood Risk and Coastal Erosion in Wales, Climate Change Strategy for Wales	Eastern Valleys CFMP, UDP, LDP (emerging), Torfaen County Borough Council Draft Local Flood Risk Management Strategy, Merthyr Tydfil Draft Local Flood Risk Management Strategy, Caerphilly Draft Local Flood Risk Management Strategy, Caerphilly Local Development Plan, Torfaen Local Development Plan
Protect and enhance the valued historic environment and its setting	European Landscape Convention	PPW; Wales Spatial Plan; National Strategy for Flood Risk and Coastal Erosion in Wales	UDP, LDP (emerging), Caerphilly Local Development Plan, Torfaen Local Development Plan, Merthyr Tydfil Local Development Plan
Reduce pollution of water courses, groundwater and improve poor water quality	EU Water Framework Directive, EU Biodiversity Strategy to 2020	Water Resources Strategy for England and Wales, One Wales, One Planet; Dŵr Cymru Welsh Water Revised Draft WRMP	Ebbw and Lwyd CAMS; and Rhymney CAMS, UDP, LDP (emerging), Caerphilly Local Development Plan, Torfaen Local Development Plan
Address the causes of climate change and promote the reduction of greenhouse gas emissions		Environment Strategy for Wales; Wales Spatial Plan; National Strategy for Flood Risk and Coastal Erosion in	UDP, LDP (emerging), Torfaen County Borough Council Draft Local Flood Risk Management Strategy, Merthyr Tydfil Draft Local Flood Risk Management

	Source		
Theme	**International**	**National/Regional**	**Local**
		Wales, Climate Change Strategy for Wales	Strategy, Caerphilly Draft Local Flood Risk Management Strategy, Caerphilly Local Development Plan, Torfaen Local Development Plan, Merthyr Tydfil Local Development Plan
To conserve soil resources, maintain their quality and contribute to groundwater recharge		Environment Strategy for Wales; Wales Spatial Plan	Ebbw and Lwyd CAMS; Rhymney CAMS, UDP, LDP (emerging), Torfaen Local Development Plan
Promote good design in all new development to contribute to a higher quality built and natural environment		Water Resources Strategy for England and Wales, PPW; National Strategy for Flood Risk and Coastal Erosion in Wales	Eastern Valleys CFMP, UDP, LDP (emerging), Torfaen Local Development Plan, Merthyr Tydfil Local Development Plan
Improve the health, social care and well-being of the population and reduce inequalities in health	Countryside Rights of Way Act	Wales Spatial Plan; TAN16 – Sport and Recreation; National Strategy for Flood Risk and Coastal Erosion in Wales	Regeneration Strategy, Community Strategy, Healthier Future 3: Blaenau Gwent Health, Social Care and Well-being Strategy, UDP, LDP (emerging), Torfaen County Borough Council Draft Local Flood Risk Management Strategy, Merthyr Tydfil Draft Local Flood Risk Management Strategy, Caerphilly Draft Local Flood Risk Management Strategy, Caerphilly Local Development Plan, Torfaen Local Development Plan, Merthyr Tydfil Local Development Plan
Enable people to understand flood risk, the consequences, and how to respond		Environment Strategy for Wales; National Strategy for Flood Risk and Coastal Erosion in Wales	Eastern Valleys CFMP, Torfaen County Borough Council Draft Local Flood Risk Management Strategy, Merthyr Tydfil Draft Local Flood Risk Management Strategy, Caerphilly Draft Local Flood Risk Management Strategy
Protect important infrastructure to avoid any secondary impacts associated with flooding including loss of energy, water, telecoms, transport and other public services.		Water Resources Strategy for England and Wales; National Strategy for Flood Risk and Coastal Erosion in Wales	RoWIP, Torfaen County Borough Council Draft Local Flood Risk Management Strategy, Merthyr Tydfil Draft Local Flood Risk Management Strategy, Caerphilly Draft Local Flood Risk Management Strategy
Catchment management is integrated so that impacts on water resources and the water environment are managed together		Water Resources Strategy for England and Wales; Dŵr Cymru Welsh Water Revised Draft WRMP; National Strategy for Flood Risk and Coastal Erosion in Wales	Ebbw and Lwyd CAMS; Rhymney CAMS, Eastern Valleys CFMP

D. Consultation Responses to Scoping Report

Responses to the SEA Scoping Report

Section/ question	Representation	Response	Action
Respondent: Countryside Council For Wales (12/10/12)			
	CCW warmly welcomes the efforts made with respect to this SEA process. We are very encouraged to see recognition of the opportunities to tackle flood risk by working with natural processes, such as landscape-scale habitat restoration, land management to enhance land stability and 'green' sustainable urban drainage systems. There is significant emphasis on an 'ecosystem services' approach, which fits well with the Welsh Government's emerging Living Wales programme. It is also very encouraging to see the links made between delivering human health and economic benefits by protecting and enhancing the natural environment.	Noted with thanks.	No action required.
1.0 Introduction – Local Flood Risk Management Strategy	CCW very much welcomes the recognition that Local Flood Risk Management Strategies provide an opportunity for communities to have greater involvement in decisions around how local flood risk is managed. While we are aware that the Flood and Water Management Act 2010 defines local flood risk as that derived from surface runoff, groundwater and ordinary watercourses, we are extremely encouraged to see that Blaenau Gwent's intention is to consider other sources of flooding insofar as there is the potential for these sources to interact with and/or exacerbate local flood risk.	Noted with thanks.	No action required.
1.0 Introduction – Requirement for SEA	We welcome the determination that the Local Flood Risk Management Strategy requires SEA, as well as the reference to the iterative nature of assessment and the importance that SEA is fully integrated into the development of the Strategy from the earliest stages.	Noted with thanks.	No action required.
1.0 Habitats Regulations Assessment	We will be submitting a separate letter in response to the Habitats Regulations Assessment information contained in this Scoping Report.	Noted.	See table below.
Consultation question 1 – would your organisation like more active involvement?	CCW welcomes any involvement (relevant to our remit) that will support Blaenau Gwent CBC in the development of this Strategy and its' associated assessment processes.	Noted.	No action required.
Consultation question 2 – have all relevant plans and programmes been consulted?	1. Ramsar Convention on Wetlands of International Importance especially as wildfowl habitat (1971) 2. Bern Convention on the Conservation of European Wildlife and Natural Habitats (1979) 3. EU Biodiversity Strategy (EU, 1998) 4. European Landscape Convention 5. Countryside Rights of Way Act (2000)	1. Agreed. 2. To implement the Bern Convention in Europe, the European Community adopted Council Directive 79/409/EEC on the	PPPs added to table.

Section/ question	Representation	Response	Action
	6. Future Biodiversity Action in Wales, The Wales Biodiversity Group (May 2002) 7. Register of Landscapes of Historic Interest 8. Welsh Government Climate Change Strategy and associated Action Plan 9. Welsh Government's emerging 'Living Wales' programme 10. Regional-level plans, such as the South East Wales Regional Transport Plan, Waste Plan, etc 11. We also suggest that it is very important that reference is made to Local Development Plans, Preliminary Flood Risk Assessments and emerging Local Flood Risk Management Strategies for all neighbouring Authorities. Local flood risk in Blaenau Gwent cannot be considered in isolation from surrounding areas.	Conservation of Wild Birds (the EC Birds Directive) in 1979, and Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the EC Habitats Directive) in 1992. Therefore it is considered that there is no need to include the Bern Convention in the review. 3. Agreed. Version added is the EU Biodiversity Strategy to 2020 (2012) 4. Agreed 5. Agreed 6. This is not available on-line and may have been superseded. 7. This is not a plan, policy or programme but a baseline data source. Relevant information is already reflected in the report. 8. Agreed. 9. Agreed. 10. It is considered that these plans are not directly relevant to the LFRMS. 11. Agreed. However, PFRAs provide data and are not PPPs.	

Section/ question	Representation	Response	Action
		Therefore, these will not be included in the themes table.	
	In addition, reference should be made to actions within the Actions Database that relate both to Blaenau Gwent and to other adjacent areas which might be affected by the LFRMS. The Actions Database is a planning tool for organisations, including Local Authorities, involved with delivering the Wales Environment Strategy target to bring designated sites into favourable condition. Please contact CCW if we can help with further information about the Actions Database.	Noted with thanks.	Data to be considered once received.
Table 3.2 Environmental themes derived from the review of Policies, Plans and Programmes	Biodiversity – this theme also covers geodiversity; as well as protecting habitats and species, it is important that connectivity is protected; flooding can spread non-native invasive species which can also affect biodiversity; we very much welcome the reference to ecosystem services.	Noted with thanks.	No action required.
	Landscape – tranquillity and light pollution are also relevant to this theme.	Noted. It is not made clear how this relates to the LFRMS. As such, it is suggested that tranquillity and light pollution are not aspects which can directly be influenced by flood risk management.	No action taken.
	Habitat restoration – we are encouraged to see reference to opportunities for habitat restoration at a landscape scale and measures to reduce habitat fragmentation.	Noted with thanks.	No action required.
	Address the causes of climate change – we very much support the ecosystem service approach presented here.	Noted with thanks.	No action required.
	Soil – as well as maintaining soil resources and their quality, it is important that soil function is retained.	The functional support of soil to agriculture and water quality is mentioned in the implications column. It is not made clear how the comment should be implemented within the report above what is already included. It is considered that maintaining the quality of soils will	No action taken.

Section/ question	Representation	Response	Action
		ensure that their function is also retained. The SA Objective already reads: *"Protect and conserve soils and soil function, and increase resilience to degradation"*	
	Good design in all new development – we very much welcome the recognition of the opportunities for sustainable drainage systems and how these can play a role as functional urban green space.	Noted with thanks.	No action required.
	Health, social care and well-being – a further factor to be considered is flooding affecting access to green space, which has an indirect effect for health and well-being.	Agreed.	Text added to table and indicator added to SAF.
	Catchment management – we are very encouraged to see reference to the potential for synergy between biodiversity outcomes and WFD.	Noted with thanks.	No action required.
Consultation question 3 – are any significant environmental data missing or misrepresented?	As well as considering landscape designations, reference could be made to LANDMAP for wider landscape characterisation.	Agreed.	Text added to table.
	Energy generation and consumption is considered – it is not clear whether this includes consideration of energy transmission infrastructure.	It is not clear what this comment is aiming to do, or how it relates to local flood risk management.	No action taken.
	If available, information about soils in the County Borough (for example, distribution of peat soils) may be helpful.	Agreed. General data relating to this is provided in the appendices, but has not been brought forward to the main report as a key issue was not identified. Outcrops of peat are located in the northern extent of the study area, to the north of Tredegar and Ebbw Vale.	Information to be considered in the assessments where appropriate.
	CCW is happy to provide data (where it exists) to help with reference to the data gap on the 'condition of SSSI's'.	Data requested by BGCBC.	Data to be added when received.
Consultation	CCW is aware that the key strategic development area within the LDP is centred on	This is addressed within the	No further action

Section/ question	Representation	Response	Action
question 4 – are there any additional environmental problems/ opportunities?	Ebbw Vale. The high concentration of development in a targeted area may have flood risk implications that require mitigation, for example through a SuDS approach. Other significant developments include the proposed Rassau Motor Technology Park, just to the north of the existing Rassau Industrial Estate.	LFRMS under the following preferred options: PRV2.1; PRV2.2; PRV2.3; PRV3.4; PRV4.1; PRV4.2; PRV4.3; PRV5.1; PRV5.2; PRV5.3	required at this stage.
Table 5.1 Key environmental issues	Risk to human health – in seeking to 'improve the natural environment', this issue also has relevance to the SEA topic 'Biodiversity'. It is very encouraging to see the links made between reducing flood risk and delivering human health benefits through improvement to the natural environment.	Noted with thanks.	Biodiversity added to column.
	Protection of natural resources – we very much welcome the emphasis given here to links between protecting biodiversity, wider economic regeneration and tourism. We also warmly welcome the stated opportunities for using SuDS to create habitat. A further issue is that flooding can spread non-native invasive species and have indirect effects on biodiversity.	Noted with thanks.	Consideration of the indirect effect of the spreading of non-native species added to key issues table. It is considered that this will be encompassed within SA objective 4.
	Landscape enhancement – as well as recognising specific landscape designations, it is important that the general landscape distinctiveness of the County Borough is protected.	Agreed. This has been added to the table based on comment above.	No further action required.
6.0 Setting the Framework for Assessment	We welcome the thorough approach taken to proposing a draft SEA Framework, revisiting the Sustainability Appraisal Report of the Local Development Plan and the national FCERM Strategy. We note and support the decision to scope the topic 'Air' out the SEA Framework.	Noted with thanks.	No action required.
Consultation question 5 – do you agree with the proposed SEA Framework?	We suggest the following additions/amendments:-		
	SEA objective 3 (infrastructure) – key infrastructure listed should also include flood plains themselves, as well as agricultural land (perhaps encompassed under 'food').	It is not considered that the flooding of a flood plain is infrastructure that could be considered 'at risk', unless infrastructure that were critical to the functioning of the community were to be built upon it. The list is	Agricultural land added to flood infrastructure bullet.

Section/ question	Representation	Response	Action
		supposed to encompass the infrastructure that would affect the functioning of the community, should it be flooded. Accordingly, it is agreed that agricultural land (under food) should be added.	
	SEA objective 4 (biodiversity) – we suggest including an indicator for 'Measures in place to reduce the risk of spread of non-native invasive species due to flooding'. An indicator for geodiversity interest could also be included.	It is considered that measures to reduce the risk of flooding across the county borough will enable the risk of the spread of non-native species, in accordance with the SA objective to protect biodiversity. It is unclear what measures might be put in place to specifically target reducing the risk of the spread of non-native species above other measures to reduce flood risk. Sites identified within LANDMAP as having 'outstanding' value for geoconservation reasons will be included as a geodiversity indicator. There are no formally designated sites for geodiversity within BG.	Geodiversity indicator added to SAF. It is considered that this will be encompassed within SA objective 4.
	SEA objective 7 (soil) – we suggest additional indicators for 'Number of new developments with Soil Management Plans/practices in place' and 'Amount of land/soil lost to sealing'.	It is considered that the indicator 'Number of development projects implementing soil creation	No action taken.

Section/ question	Representation	Response	Action
		and conservation techniques' encompasses the relevant points relating to soil management and flood risk. Wider soil management is not within the remit of the LFRMS. It is considered that the second point is encompassed within the amount of greenfield land lost to development indicator.	
Remaining Stages of the SEA – Habitats Regulations Assessment	We welcome and support the intention to undertake a Habitats Regulations Assessment of the LFRM Strategy. However, in CCW's opinion, it is not best practice for the HRA process to be reported on within the SEA Environment Report. The HRA process needs to be undertaken in accordance with the process set out in the Annex to TAN 5 and in accordance with CCW guidance on the HRA of plans which can be found at:- http://www.ccw.gov.uk/landscape--wildlife/managing-land-and-sea/environmentalassessment/habitats-regulations-assessmen.aspx?lang=en We will be submitting a separate letter in response to the Habitats Regulations Assessment information contained in this Scoping Report.	Noted.	See table below.
Appendices	Page 3 - Buskland should read Buckland	Noted.	Report updated.
Respondent: Environment Agency Wales (07/09/12)			
Question 1 – Would your organisation like more active involvement than has been suggested within the report?	We welcome opportunities to comment on the Draft Environmental and LFRMS reports at the earliest opportunity.	Noted with thanks.	No action required.
Question 2 – Have	The Flood & Water Management Act 2010 (this is indicated as 2011 and should be	Noted.	Report amended.

Section/ question	Representation	Response	Action
all relevant plans and programmes been consulted?	amended accordingly in the report where referred to) Reference should be made to the PFRA reports produced in your neighbouring Authorities.		
Question 3 – Are there any significant environmental data missing or misrepresented?	Table 3.1 - We recommend the addition of: NERC Act, Wildlife and Countryside Act and the Environment Act under Wales Plans & Programmes.	NERC is considered in Table 5.1.	
	Table 3.2 - Environmental Themes, we recommend the inclusion of a theme linked to No deterioration and naturalness linked to maximising opportunities to carry out habitat restoration at a landscape scale.	The themes identified derive from an assessment of the key objectives of the PPPs and is not intended to cover the entirety of potential issues. Without a source document, this theme will not be added to the table.	No action at this stage.
	Table 3.2 - In the context of the LFRMS, the words '...to make sure that waterbodies achieve WFD objectives' in the final row (implications column) are not realistic. We suggest amending to '...to assist waterbodies...'	Agreed.	Table amended.
	Section 4 – Data Limitations; with reference to the "updated information on chemical and biological water quality" we consider there is no data gap here. We attach a copy of your Authority's Local Evidence Pack, of which you will need to source the latest and relevant WFD data and any subsequent updates to this which are done annually.	Agreed	Data added.
	Appendix A (A22) - the references to WFD have been thoroughly covered in your scoping report. We are very surprised that the WQ data given in this appendix was taken from 1999-2005 (GQA data). This data set needs updating as a priority and we suggest you use the Local Evidence Pack as referred to above to obtain the 2009 and 2010 data on good status.	Agreed	Data added.
Question 4 – Are there any additional environmental problems or opportunities in the Blaenau Gwent area that need to be considered in	We welcome the statement that FRM measures can present opportunities for habitat creation and enhancement. This objective should be carried through the LFRM, integrated into policies through the principles of ecosystem services. There is particular reference and the objective to use SUDs, which we support. We also recommend the inclusion or reference to the use of bio-engineering or soft engineering options within the objectives or issues text. Soft engineering options allows continuity of habitat, maintenance of biodiversity landscape and aesthetic value and contributes to achieving the WFD objectives such as no deterioration and improving naturalness. These options can be structurally sound and should always be assessed as an option in FRM duties.	It is considered that soft engineering options are already considered within the text, for example the use of planting under the landscape issues. The LFRMS preferred option include measures for soft engineering including	No further action at this stage.

Section/ question	Representation	Response	Action
the development of the LFRMS?	We therefore recommend inclusion of these throughout the document, particularly in the following sections:	integration with natural environment management (PRV1 and PRV3)	
	Table 5.1 Key environmental issues. Protection of natural recourses and biodiversity value (pg. 30) under implications we recommend reference to soft engineering or bioengineering along with SUDS and Habitat Creation.	It is considered that soft engineering options are already considered within the text, for example the use of planting under the landscape issues. The LFRMS preferred option include measures for soft engineering including integration with natural environment management (PRV1 and PRV3)	No further action at this stage.
	Table 5.1 Key environmental issues. Landscape enhancement (pg. 31), we recommend inclusion of the issue of protecting watercourses “naturalness” through soft engineering options for flood alleviation or protection schemes, this will maintain watercourses as more natural features of landscapes, while also maintaining good biodiversity value and water cycle.	It is considered that soft engineering options are already considered within the text, for example the use of planting under the landscape issues. The LFRMS preferred option include measures for soft engineering including integration with natural environment management (PRV1 and PRV3)	No further action at this stage.
	Table 5.1 The key issues in the final paragraph of the “Risk to Water Quality from Flooding” section are given but these are issues are not then considered in the adjacent column on 'implications/opportunities'. These need to be covered or they are in danger of getting omitted.	The implications for the LFRMS column is intended to document how the LFRMS could address flood risk issues. It is considered that the methods to reduce the risk to water quality are covered in the implications column.	No action proposed.
	Table 6.3 SEA Framework, potential indicators (1) and (3) – is there data available for	It is unclear as to which	No actions proposed

Section/ question	Representation	Response	Action
	those indicators listed under these SEA Objectives?	indicators the comment relates. The text preceding the SA Framework explains that indicators have been derived to capture the change likely to arise from the implementation of the LFRMS and will play a role in the assessment itself. Where appropriate, locally relevant indicators have been proposed based on the review of local plans and programmes, the evolving baseline, and from developing the analysis of the key sustainability issues. However, indicators derived for wider sources, such as national and international policy guidance has also been used. As at this stage the indicators are used to direct the assessment, they should be reflective of the wider policy context where necessary to ensure sustainable development. Where appropriate, existing data sources and indicators which are already monitored in the County Borough have been used. In some cases, specific new indicators will require monitoring by relevant	at this stage.

Section/ question	Representation	Response	Action
		bodies should significant effects relating to the SA objectives concerned be identified as part of the assessment of effects during SA Stage B. It is therefore likely that there will be a shortened list of indicators in the sustainability monitoring programme for the LDP. Developing a good balance of appropriate and reliable indicators across the set of SA objectives will be crucial in the development of an effective but also practical monitoring programme.	
	Table 6.3 SEA Framework, potential indicators (2) Reduce surface water flooding – Use of SUDS or bioengineering solutions as an indicator, with a target to "increase"	A SUDS indicator is already included under objective 8. It is the intention that the framework is considered as a whole, so the repeating of indicators is unnecessary.	No action proposed.
	Table 6.3 SEA Framework, potential indicators (9) Protect and improve the water environment, in terms of water quality, quantity and hydromorphological function – we suggest an indicator including length of improved watercourse, no deterioration or no WFD Section 4.2.	The comment is not entirely clear as to what the recommendation is.	Length of improved watercourse (target: increase) added to the SA Framework.
	Table 6.3 SEA Framework, potential indicators and targets (9) – we recommend these are simplified, for example; Indicator = percentage of waterbodies at good ecological status Target = Increase	Agreed.	SA Framework updated.
	We consider that the recommended scoping captures the key biodiversity issues of the area, but there is also an opportunity here to give a few examples of the species relevant to the area including European Protected Species such as otters, Atlantic salmon, eel, bullhead, Lapwing and marsh fritillary butterflies. These are protected species and are important species within Blaenau Gwent and are particularly sensitive	Considerations/mitigations to prevent harm to species might include; no barriers to migration, use of	Examples added to key issues table. Potential measures added to implications for the

Section/ question	Representation	Response	Action
	to the potential impacts form the LMRF. There is reference to habitat connectivity network which we welcome as this is an important principle in the LFRM process.	bioengineering/soft engineering options, working outside of spawning/migration periods, working away from spawning sites and ensuring works don't alter flows in spawning areas.	plan.
	We also recommend that reference is made to the management to prevent the spread of Invasive Non-Native Species such as Japanese Knotweed and Himalayan Balsam as an environmental factor which impacts upon biodiversity, landscape, water quality (through diffuse pollution, erosion) and water environment hydromorphology and WFD high ecological status.	It is unclear what measures might be put in place to specifically target reducing the risk of the spread of non-native species above other measures to reduce flood risk.	Consideration of the indirect effect of the spreading of non-native species added to key issues table. It is considered that this will be encompassed within SA objective 4.
Are the objectives, targets and indicators suggested appropriate and relevant to the LFRMS?	We are pleased to see that your Authority has adopted the SEA framework and follows the WG FRM objectives in the guidance, recognising biodiversity and environmental issues. It is particularly good to see that WFD and HRA have been considered throughout the scoping report from the beginning of the SEA process. WFD is referenced and incorporated throughout the report. Therefore, we consider this to be a thorough and integrated LFRM scoping report with regards to biodiversity issues. The WG FRM Environmental objectives identify the key requirements and we feel that the scoping report has covered these issues, even though we have some recommendations to further include the FRM objective to "improve naturalness (reduce modification of Channels)".	Noted with thanks.	No action required.

E. Options Appraisal

SEA Objectives

1. To reduce health inequalities and promote community health, social care and well-being
2. To reduce the risk of surface, groundwater and sewer flooding taking account of climate change

3. To protect key infrastructure from adverse effects associated with flooding
4. To protect and enhance biodiversity across Blaenau Gwent

5. To protect the quality and character of the landscape and enhance where necessary
6. To conserve the heritage assets of Blaenau Gwent and their settings
7. Protect and conserve soils and soil function, and increase resilience to degradation
8. To promote the use of sustainable design
9. Protect and improve the water environment, in terms of water quality, quantity and hydromorphological function

☹	conflict with SEA objectives - action is likely to have a negative effect on the SEA objective
😐	may / may not be compatible with SEA objectives - action may have a positive nor negative effect on the SEA objective depending on implementation
☺	compatible with SEA objectives - action is likely to have a positive effect on the SEA objective
n/a	not applicable or not relevant to the SEA objective
neutral	no effect

Measures to prevent an event from occurring

Measure	Sub Measure	Option	1	2	3	4	5	6	7	8	9	Summary of Assessment
PRV1 - We will make more use of our natural environment	PRV1.1	Do Nothing	😐	😐	😐	😐	😐	😐	😐	n/a	😐	The do nothing options would lead to biodiversity actions being developed without consideration for flood risk. This could have negative effects on biodiversity objectives, depending on implementation, as increased flood risk may occur in areas designated for other biodiversity uses, leading to the loss of important habitats. Not
		Maintain	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Do-More	😐	☺	neutral	☺	☺	neutral	☺	☺	☺	
	PRV1.2	Do Nothing	😐	😐	😐	😐	😐	😐	😐	n/a	😐	

		Maintain	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	considering flood risk management when developing biodiversity action may also overlook potential for complementary/synergistic actions where biodiversity actions may also benefit flood risk management e.g. in the designation/management of areas that are important for flood storage. The preferred option could reduce the potential for reducing overall flood risk in the county borough and thus the effects on the other SEA Objectives would be dependent on implementation. The do more option could widen the potential for flood risk management in the county borough, thus reducing overall flood risk whilst improving biodiversity and leading to potential beneficial effects against the majority of SEA objectives. There are additional costs associated with the do more option. This would go beyond the HAP requirements and may not deliver good value for money.
		Do-More	😐	🙂	neutral	😐	🙂	neutral	🙂	n/a	🙂	
	PRV1.3	Do Nothing	😐	😐	😐	😐	😐	😐	😐	n/a	😐	
		Maintain	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Do-More	😐	🙂	😐	🙂	🙂	neutral	🙂	n/a	🙂	
	PRV1.4	Do Nothing	😐	😐	😐	😐	😐	😐	😐	n/a	😐	
		Maintain	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Do-More	neutral	neutral	neutral	neutral	neutral	neutral	neutral	n/a	neutral	
	PRV1.5	Do Nothing	😐	😐	😐	😐	😐	😐	😐	n/a	😐	
		Maintain	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Do-More	🙂	neutral	neutral	😐	😐	neutral	😐	neutral	neutral	

Measure	Sub Measure	Option	1	2	3	4	5	6	7	8	9	Summary of Assessment
PRV2: We will avoid inappropriate development in flood risk areas	PRV2.1	Do Nothing	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	The LDP was adopted by the Council in November 2012. Therefore, options under PRV2.1 and PRV2.2 are no longer relevant. Specific mitigation measures required for the LDP should be implemented as determined by the environmental assessments for the LDP. Policy SP7 relates to all flood risk areas not just those identified in the SFCA in particular. The do nothing option for PRV2.3 could have negative effects on SEA Objectives, as development that doesn't consider flood risk could lead to significant negative consequences. The maintain option could lead to either positive or negative consequences; depending on the frequency of the ad hoc discussions and how the needs are identified. This approach may not capture all flood risk effects as a holistic approach to flood risk management may not be taken. The do-more option could lead to some indirect positive effects against the SEA Objectives. Internal Member training could lead to direct improvements against SEA Objectives relating to the reduction of flood risk. The implementation of enhancement measures or sustainable design as a result of new development will be dependent on the nature and implementation of the training provided.
		Maintain	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Do-More	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	PRV2.2	Do Nothing	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Maintain	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Do-More	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	PRV2.3	Do Nothing	☹	☹	☹	☹	☹	☹	☹	☹	☹	
		Maintain	😐	😐	😐	😐	😐	😐	😐	😐	😐	
		Do-More	😐	🙂	🙂	🙂	😐	🙂	🙂	😐	😐	

Measure	Sub Measure	Option	1	2	3	4	5	6	7	8	9	Summary of Assessment
PRV3: We will increase approaches that utilise the natural environment, like adopting soft engineering in place of traditional solutions, managing of the land to reduce storm runoff, creating more wetlands to store water	PRV3.1	Do Nothing	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	The do-more option under PRV3.1 could lead to benefits against SEA Objectives 2, 4 and 7, through reducing flood risk, with a particular focus on woodland run-off through the sustainable management of forestry areas. The option could have indirect positive benefits against other SEA Objectives that seek to reduce flood risk on particular assets and improve well being. Awareness of the policies and strategy could lead to some benefits against the SEA Objectives, depending on implementation. However, without taking an holistic approach to integrate the opportunities within the management of flood risk, these may be minimal. PRV3.2 is designed to minimise the effects of flooding, by managing the spread of invasive species within watercourses. A do nothing option could lead to negative effects against SEA Objectives 4, 5 and 9 as water resources and biodiversity could be harmed in flood events or by operational activities to manage flood assets, such as culvert clearing. The management of invasive species could have benefits for landscape considerations. Conversely, positive effects could be experienced against these objectives, through the management of invasive species. The maintain option only related to clearing of areas relating to access to particular assets. Therefore, this option is regarded as unrelated to the SEA Objectives, except potentially Objective 3. Under PRV3.3, the do nothing option would lead to biodiversity improvement actions being developed without consideration for flood risk management or water quality improvements. This is likely to lead to neutral effects against the majority of SEA Objectives. Not considering flood risk management when developing biodiversity action may also overlook potential for complementary/synergistic actions where biodiversity actions may also benefit flood risk management e.g. in the designation/management of areas that are important for flood storage. The do more option could lead to benefits against SEA Objectives 2, 4 and 9 directly, through the consideration of the WFD in
		Maintain	neutral	😐	neutral	😐	😐	neutral	😐	n/a	neutral	
		Do-More	n/a	☺	☺	☺	☺	☺	☺	n/a	☺	
	PRV3.2	Do Nothing	n/a	n/a	☹	☹	☹	n/a	n/a	n/a	☹	
		Maintain	n/a	n/a	😐	n/a	n/a	n/a	n/a	n/a	n/a	
		Do-More	n/a	n/a	😐	☺	☺	n/a	n/a	n/a	☺	
	PRV3.3	Do Nothing	neutral	neutral	neutral	☺	neutral	neutral	neutral	n/a	neutral	
		Maintain	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Do-More	😐	☺	😐	☺	😐	😐	😐	n/a	☺	

	PRV3.4	Do Nothing	☹	☹	☹	😐	😐	☹	😐	☹	😐	the management of LNRs. This could lead to wider benefits on flood risk objectives, depending on implementation. Under measure PRV3.4 the do nothing option is likely to have negative long term effects, as flood risk could increase over time through the effects of climate change and increased development. Adopted LDP policy DM1 requires that *"surface water run off through minimising an increase in impermeable surfaces and using Sustainable Drainage systems, where appropriate"* for new development proposals. Part of such a scheme may include tree planting. An SPG entitled "Trees and Development: A Guide to Incorporating Trees, Woodlands & Hedgerows into Development Proposals" already exists. However, the revision of such SPG could potentially provide further guidance in relation to flood risk and tree planting. Under PRV3.5, the do nothing option could potentially lead to an increase in flood risk to people, property and assets, depending on the nature of the increased flood risk as a result of the banks collapsing. An increase in potential pollution to the watercourse is likely to have negative effects against objectives 4 and 9. Reducing potential effects could have neutral effects on the SEA objectives, as the maintenance of the banks will ensure that the existing flood risk is maintained. The protection of biodiversity, soil, water quality and landscape assets could be achieved through the stabilisation measures.
		Maintain	☺	☺	😐	😐	😐	😐	☺	☺	😐	
		Do-More	☺	☺	☺	☺	☺	😐	☺	☺	☺	
	PRV3.5	Do Nothing	😐	😐	😐	☹	😐	😐	😐	n/a	☹	
		Maintain	neutral	neutral	neutral	☺	☺	neutral	☺	n/a	☺	
		Do-More	neutral	neutral	neutral	☺	☺	neutral	☺	n/a	☺	

Measure	Sub Measure	Option	1	2	3	4	5	6	7	8	9	Summary of Assessment
PRV4: deploying the sustainable drainage systems (SuDS) approach for surface water management for both new and existing developments	PRV4.1	Do Nothing	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	The LDP was adopted by the Council in November 2012. Therefore the options under PRV4.1 are considered to no longer be relevant. The implementation of DM1 should ensure the implementation in the use of SuDS. SuDS should be discussed as part of all applications for planning permission. Therefore, the options under PRV4.2 and PRV4.3 are considered to no longer be relevant. However, the link to the LDP policy and any specific SuDS that may be suitable for particular areas could be included within the LFRMS. Specific mitigation measures required for the LDP should be implemented as determined by the environmental assessments for the LDP.
		Maintain	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Do-More	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	PRV4.2	Do Nothing	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Maintain	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Do-More	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	PRV4.3	Do Nothing	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Maintain	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Do-More	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	

Measure	Sub Measure	Option	1	2	3	4	5	6	7	8	9	Summary of Assessment

PRV5: Incorporate greater resilience into the design of developments (houses, buildings, roads and paved areas)	PRV5.1	Do Nothing	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	The LDP was adopted by the Council in November 2012. Therefore the options included under PRV5.1 are considered to no longer be relevant. Specific mitigation measures required for the LDP should be implemented as determined by the environmental assessments for the LDP. The implementation of SP7 will ensure that development is directed away from areas of high flood risk, and that measures to reduce flood risk are implemented through design and construction. It is considered that this policy will require a discussion on all applications with regards to the design of site levels, creation of high grounds and setting floor levels. Therefore, it is considered that the do nothing and maintain options are not considered to be relevant. However, the do-more option relating to the potential creation of SPG highlighting further guidance for developers in relation to this aspect, could provide further benefits, particularly against objective 8 but also objectives 1, 2 and 3. With regards to the options under PRV5.3, the do nothing option could have negative effects against objective 3. Effects against other options will be dependent on the nature of the increase in flooding and the location of the flood events. It is considered that the maintain option will have similar effects, as flood risk increases as a result of climate change, and existing methods do not seek to reduce flood risk effects. The do-more option could help to reduce flood risk through the use of improved technology in materials. The potential effects on the SEA Objectives will be dependent on the effectiveness and location of implementation. However, positive effects are likely against SEA objectives 3 and 8. Care should be taken in implementing PRV5.3 that improvements to road flooding resilience do not have negative consequences to other objectives by adversely affecting flood risk in surrounding/adjacent areas. - this should be considered at a project level through relevant environmental assessment.
		Maintain	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Do-More	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	PRV5.2	Do Nothing	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Maintain	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Do-More	☺	☺	☺	n/a	n/a	😐	n/a	☺	n/a	
	PRV5.3	Do Nothing	😐	😐	☹	neutral	neutral	neutral	neutral	☹	😐	
		Maintain	😐	😐	☹	neutral	neutral	neutral	neutral	☹	😐	
		Do-More	😐	😐	☺	neutral	neutral	neutral	neutral	☺	😐	

Measures to protect individuals, communities and the environment against the consequences of flooding

Measure	Sub Measure	Option	1	2	3	4	5	6	7	8	9	Summary of Assessment
PRT1: Develop maintenance regimes for culverts & drains and identify priority areas	PRT1.1	Do Nothing	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	The options put forward under PRT1.1 relate to the recording of details of flood events at the time of incidents. PRT1.2 seeks to maintain a register of flood assets. Both options under the do-more scenarios require the sharing of information between LLFRAs. These options are designed to inform the development of a maintenance record as proposed under the do more option under PRT1.3. These three measures lead on to the development of a risk assessment, to highlight critical culverts and flood assets, and the preparation of an action plan to address any unacceptable risks identified. The do nothing option under PRT1.4 is not applicable as it is a requirement of the Flood Risk Regulations. It is considered that the maintain and do-more options under PRT1.4 are likely to lead to positive effects against the SEA Objectives, as a result of the implementation of the preceding measures. Taken individually, measures PRT1.1, PRT1.2 and PRT1.3 are not considered to be directly related to the SEA Objectives. Potential impacts from PRT1.4 depend on the results of the risk assessment and actions proposed as a result of the assessment. In developing the actions, regard should be taken to potential impacts to the environment, which are not possible to determine at this stage. The need for environmental assessment of specific projects / works should be considered. The findings of any assessments should be taken into account when delivering the projects/works. This should include use of materials that are appropriate for use in/near water, taking account of relevant advice from EA and CCW in relation to these matters
		Maintain	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Do-More	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	PRT1.2	Do Nothing	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Maintain	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Do-More	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	PRT1.3	Do Nothing	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Maintain	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Do-More	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	PRT1.4	Do Nothing	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Maintain	☺	☺	☺	😐	😐	☺	☺	😐	😐	
		Do-More	☺	☺	☺	😐	😐	☺	☺	😐	😐	

Measure	Sub Measure	Option	1	2	3	4	5	6	7	8	9	Summary of Assessment
PRT2: Identifying and protecting areas suitable for inundation	PRT2.1	Do Nothing	😐	☹	😐	😐	☹	😐	☹	😐	😐	Measure PRT2.1 includes the option to maintain, which sets out that the action would require the adoption of the policies as set out within the LDP, and subsequently areas identified for inundation and water storage through assessment of flood plans. It is unclear which policies in

and water storage to prevent flooding elsewhere		Maintain	😐	😐	😐	😐	😐	😐	😐	😐	😐	the LDP are referred to in this instance. However, the allocation of sites for the storage of water during flood events could lead to reduced flood risk. This could lead to benefits against a number of SEA objectives, depending on implementation and the areas protected. Further, conflicts could arise, for example through the inundation of areas that are used for recreational green space or the contain important habitats, however, as flood storage is only during flood events, losses would be temporary and the identification of flood storage areas should take account of potential impacts to important habitats. The do nothing option would lead to negative effects against a number of objectives, through flood risk to people and property. The significance of effects will be dependent on the location of flood risk areas and the type of development proposed. The do-more option would have similar effects to the maintain option, although may not be as effective as the land identified may not be assessed thoroughly through the flood plans. The protection of flood storage areas could help to improve the management of flood risk. The effects of such protection will be dependent on implementation. In identifying flood storage areas, regard should be given to potential impacts to the environment, which are not possible to determine at this stage. The need for environmental assessment of identifying areas for inundation should be considered. The findings of any assessments should be taken into account when delivering the projects/works. It is considered that the do nothing option could lead to negative effects.
		Do-More	😐	😐	😐	😐	😐	😐	😐	😐	😐	
	PRT2.2	Do Nothing	😐	☹	😐	😐	😐	😐	😐	n/a	😐	
		Maintain	😐	😐	😐	😐	😐	😐	😐	n/a	😐	
		Do-More	😐	😐	😐	😐	😐	😐	😐	n/a	😐	

Measure	Sub Measure	Option	1	2	3	4	5	6	7	8	9	Summary of Assessment
PRT3: Enable those at risk of flooding to play a proactive role in shaping the flood risk management service they receive	PRT3.1	Do Nothing	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	PRT3.1 is a legislative/policy requirement, so options are not provided as they do not apply. The consultation on the LFRMS could lead to benefits against SEA Objective 1, as it could increase awareness of flood risk in the local population. Similarly, the do-more option under measure PRT3.2 could help communities to help themselves and increase wellbeing. The do nothing option could have negative effects against SEA Objective 1. Similar effects are predicted as a result of the options under PTR3.3.
		Maintain	☺	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Do-More	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	PRT3.2	Do Nothing	☹	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Maintain	😐	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Do-More	☺	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	

	PRT3.3	Do Nothing	☹	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Maintain	☺	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Do-More	☺	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	

Measure	Sub Measure	Option	1	2	3	4	5	6	7	8	9	Summary of Assessment
PRT4: Improve the response to flooding incidents by the emergency response organisations, as well as individuals and businesses	PRT4.1	Do Nothing	☹	☹	☹	😐	😐	😐	😐	n/a	😐	PRT4.1 and PRT4.2 could help to reduce the risk of people and property and risk of flooding over time, through an increase in awareness of needs and risk levels. The do nothing options could therefore lead to negative effects against a number of the SEA Objectives. The maintain and do-more options under PRT4.1 could lead to benefits against objectives 1 to 3. The do-more option under PRT4.2 is likely to have similar effects. However, the provision of ad-hoc training is unlikely to lead to benefits. Effects will be dependent on implementation. Changes to flood risk response activities as a result of the review in PRT4.2 are not possible to determine at this stage. Any changes to flood response activities should take account of the potential effects on the environment. These effects should be taken into account when developing flood response actions.
		Maintain	☺	☺	☺	😐	😐	😐	😐	n/a	😐	
		Do-More	☺	☺	☺	😐	😐	😐	😐	n/a	😐	
	PRT4.2	Do Nothing	☹	☹	☹	😐	😐	😐	😐	n/a	😐	
		Maintain	😐	😐	😐	😐	😐	😐	😐	n/a	😐	
		Do-More	☺	☺	☺	😐	😐	😐	😐	n/a	😐	

Measure	Sub Measure	Option	1	2	3	4	5	6	7	8	9	Summary of Assessment
PRT5: Ensure effective recovery arrangements are in place and supported by all relevant parties	PRT5.1	Do Nothing	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Under measure PRT5.1, the option to 'do nothing' is considered to be irrelevant, as there is a legislative requirement for involvement in multi agency flood recovery planning. Recovery activity seeks to enable communities and businesses to recover after a flood event. Recovery is more than simply the replacement of what has been destroyed and the rehabilitation of those affected. It is a complex social and developmental process rather than just a remedial process. The manner in which recovery processes are undertaken is critical to their success. Recovery is best achieved when the

		Maintain	☹	n/a	☹	😐	n/a	n/a	n/a	n/a	😐
		Do-More	☺	n/a	☺	😐	n/a	n/a	n/a	n/a	😐

affected community is able to exercise a high degree of self-determination. The importance of a multi-agency response will ensure that all parties are working towards common objectives. Therefore, it is considered important that the plans are tested for suitability and adopted by all parties. The maintain option would see a plan that isn't adopted by Emergency Planning, and its effectiveness would not be tested. This could lead to negative effects against SEA Objective 1 as it could have negative effects on the wellbeing of the population. The do-more option would see the recovery plans adopted and tested. This is likely to lead to improvements in implementation, which could lead to positive effects on health and wellbeing. Amendments to recovery activities as a result of testing could have further benefit to other objectives. Common issues addressed in recovery plans include the repair of key infrastructure. Therefore the do-more option is predicted to have positive effects against SEA Objective 3. The maintain option could lead to negative effects on key infrastructure, as it may not be repaired as part of recovery. Effects against other SEA Objectives will be dependent on the nature of the environmental clean-up measures employed.

Measures to arrange for forecasting and warning

Measure	Sub Measure	Option	1	2	3	4	5	6	7	8	9	Summary of Assessment
FC1: Develop better flood forecasting and warning systems	FC1.1	Do Nothing	☹	n/a	😐	😐	n/a	😐	n/a	n/a	😐	Under measure FC1.1, improvements to a warning system could have beneficial effects against SEA Objective 1. More accurate systems are likely to lead to the most significant benefits; however, it is not clear if more accurate systems than those in current use are available. Consideration should be given to upgrading as improved warning systems are developed. The maintain option could have mixed effects, depending on the accuracy of predictions on a case by case basis and the effectiveness of communicating warnings to those at risk. Material and environmental assets will remain at the same risk of flooding, as these cannot be moved following warning of a flood event. However, warning systems could lead to the protection of some assets, depending on implementation, for example through measures such as sand bags or demountable defences.
		Maintain	😐	n/a	😐	😐	n/a	😐	n/a	n/a	😐	
		Do-More	☺	n/a	😐	😐	n/a	😐	n/a	n/a	😐	
	FC1.2	Do Nothing	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Maintain	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	

		Do-More	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Under the do nothing option for measure FC1.2, the approach to recording flood events and flood assets is a requirement under the Flood and Water Management Act, so is not applicable. Further, it is considered that, alone, the logging and registering of incidents and sharing of flood asset information is not directly applicable to the SEA Objectives. FC1.3 could help communities to be more aware of flood risk. The do-more option could lead to benefits against SEA Objective 1. Under the do more option, the preparation of a Community Flood Plan could also help to protect key infrastructure from flooding, depending on the measures included. It is unlikely that the plan would include protection for environmental assets.
	FC1.3	Do Nothing	☹	n/a	☹	neutral	n/a	neutral	n/a	n/a	neutral	
		Maintain	😐	n/a	😐	neutral	n/a	neutral	n/a	n/a	neutral	
		Do-More	☺	n/a	😐	neutral	n/a	neutral	n/a	n/a	neutral	

Measure	**Sub Measure**	**Option**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**Summary of Assessment**
FC2: Developing a consistent approach to recording of flood events and flood assets	FC2.1	Do Nothing	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	The do nothing option under measure FC2.1 is a duty; so is not considered to be a viable option. Further, it is considered that measures FC2.1 and FC2.2 are not directly applicable to the SEA Objectives alone, although they support the implementation of measure FC2.3. Under this measure, the do nothing option could lead to the lack of investment in identified areas of high risk and lead to a subsequent increase in flood risk. This could lead to negative effects against a number of the SEA Objectives. The maintain option could lead to some beneficial effects, although this will be dependent on the implementation of the ad-hoc measures. The action under the do-more option specifies that the priority areas would prioritise the greatest community and environmental benefits. This could lead to benefits across the majority of the SEA Objectives.
		Maintain	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Do-More	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	FC2.2	Do Nothing	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Maintain	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		Do-More	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	FC2.3	Do Nothing	☹	☹	☹	☹	n/a	☹	☹	n/a	☹	
		Maintain	😐	😐	😐	😐	n/a	😐	😐	n/a	😐	
		Do-More	☺	☺	☺	☺	😐	☺	☺	n/a	😐	

Measure	**Sub Measure**	**Option**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**Summary of Assessment**
FC3: Improve communication and support to residents, businesses and communities	FC3.1	Do Nothing	☹	n/a	n/a	neutral	n/a	neutral	n/a	n/a	neutral	The effects under this measure are similar to those under FC1.3. The do-more option could lead to benefits against SEA Objective 1 and also objectives 2 and 3. Under the do more option, the preparation of a Community Flood Plan could also help to protect key infrastructure from flooding, depending on the measures included. It is unlikely that the plan would include protection for environmental assets. This could also be experienced under the maintain option, depending on the implementation of the ad-hoc measures.
		Maintain	😐	n/a	😐	neutral	n/a	neutral	n/a	n/a	neutral	
		Do-More	☺	n/a	😐	neutral	n/a	neutral	n/a	n/a	neutral	

F. Preferred Options Assessment

SEA Objectives

1. To reduce health inequalities and promote community health, social care and well-being
2. To reduce the risk of surface, groundwater and sewer flooding taking account of climate change

3. To protect key infrastructure from adverse effects associated with flooding
4. To protect and enhance biodiversity across Blaenau Gwent

5. To protect the quality and character of the landscape and enhance where necessary
6. To conserve the heritage assets of Blaenau Gwent and their settings
7. Protect and conserve soils and soil function, and increase resilience to degradation
8. To promote the use of sustainable design
9. Protect and improve the water environment, in terms of water quality, quantity and hydromorphological function

☹	conflict with SEA objectives - action is likely to have a negative effect on the SEA objective
😐	may / may not be compatible with SEA objectives - action may have a positive nor negative effect on the SEA objective depending on implementation
☺	compatible with SEA objectives - action is likely to have a positive effect on the SEA objective
n/a	not applicable or not relevant to the SEA objective
neutral	no effect

Measures to prevent an event from occurring

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
MEASURE PRV1: We will make more use of our natural environment													

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
PRV1.1: Delivery of the Blaenau Gwent Local Biodiversity Action Plan (LBAP), specifically HAP1, Wet woodlands, HAP4, Wetlands and HAP 5 Rivers and Streams.	Include consideration of flood risk within review of the LBAP. Raise internal awareness of flood risk / biodiversity synergies	Yes	Short	😐	☺	neutral	☺	☺	neutral	☺	☺	☺	Habitat Action Plan (HAP) 1 includes management objectives for wet woodlands including seeking to maintain 9ha, improve the condition of 4.5ha, restore 0.5ha and expand by 0.5ha. HAP 4 relates to wetlands. Targets and actions from the LBAP are reproduced in note 1. Targets for HAP 5 Rivers and Streams are also included within note 1. The measures may have positive effects on access to green space, through the management of habitat. Effects could be negative should an area of open space become a flood alleviation area, reducing access to green space at times of flooding., however, this would be a short term impact. The measure could have positive effects on the implementation of objective 2, through an increase in flood storage capacity. The measure does not specifically target the protection of key infrastructure at risk of flooding but could have either a neutral or positive effect if improvements to flood storage areas reduce the risks from flooding to infrastructure, however, it is not possible to say with any certainty what the effects could be, so has been assessed as having a neutral effect. The measure is likely to have a significant positive effect on objective 4, as it specifically seeks to improve biodiversity whilst reducing flood risk. The measure could have indirect benefits for landscape quality but is unlikely to have an effect on

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
													heritage assets. Peat reserves are likely to benefit through measures to protect wetlands and wet woodlands. This could provide positive effects against objective 7. The measure could lead to the increase of habitat as a result of development proposals, leading to positive effects on objective 8. Objective 9 is also likely to see positive environmental effects, through the implementation of LBAP actions for rivers and streams. The raising of internal awareness of flood risk and biodiversity strategies could improve implementation and improve the significance of beneficial effects.

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
PRV1.2: Consider/ Review the designation and management of Local Nature Reserves where they assist in flood prevention.	Include consideration of flood risk within review of how Nature Reserves are managed. Raise internal awareness of flood risk / biodiversity synergies	Yes	Short	😐	☺	neutral	😐	☺	neutral	☺	n/a	😐	It is unclear as to what exactly is intended by the measure. Should it mean that new LNRs will be designated for the purposes of flood risk management and be allowed to flood, this could reduce accessibility to green space, at least temporarily. Should it mean the creation of new LNRs or their management to alleviate flood risk elsewhere, e.g. through upland planting, this could increase the amount of green spaces designated and protected, increasing the potential for green space accessibility and leading to benefits against objective 1. It is recommended that this is made more specific within the measure/action, to aid implementation. The measure could lead to indirect benefits for reducing the risk to property, through the creation of additional flood risk management measures. The measure does not specifically target the protection of key infrastructure at risk of flooding so will not have an effect on objective 3. It is possible that a positive effect could be achieved if improvements to flood storage areas reduce the risks from flooding to infrastructure; however, it is not possible to say with any certainty what the effects could be, and has been assessed as having a neutral effect. Depending on the intention of the measure as above, either positive or negative effects on objective 4 could arise. Positive effects could result,

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
													should the management of LNRs be improved or additional areas designated and protected from development. However, should existing LNRs be encouraged to flood or areas are planted with species that do not contribute to the biodiversity of the area (and are purely planted for flood retention purposes), negative effects could result. In relation to objective 5, an increase in management of LNRs could improve landscape quality. However, should the measure relate to existing LNRs, the effect could be neutral. The measure is unlikely to have an effect on heritage assets as protected through objective 6, although potential for similar knock-on benefits to those that could accrue to objective 3 may be possible. Positive effects on objective 7 could result, should the measure lead to an increase in planting or an improvement in land management or stability. The measure is not considered relevant to objective 8. It is recommended that detail within the measure includes reference to the use of soil conservation or creation techniques. Effects on objective 9 are unclear, but could be positive should the LNR encompass a watercourse or waterbody. The protection of LNRs is likely to protect groundwater quality.
PRV1.3: Consider planning	Negotiate via conditions or S106	Yes	Short	😐	☺	😐	☺	☺	neutral	☺	n/a	☺	The implementation of this measure would only be appropriate for developments that may have an impact on flood risk or wetland

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
requirements for wetland habitat creation as part of the Development Management Process.	agreement, and review need for Supplementary Planning Guidance												habitats or where new wetland habitats could be successfully created and maintained. This may be considered to be a repeat of at least part of measure PRV1.5. Should the measure lead to the creation of wetland habitat where areas of accessible green space are currently located, this could lead to negative effects against objective 1. However, should the wetlands be managed as an accessible resource, benefits against objective 1 could arise. Should the measure lead to an increase in wetlands relating to the management of flood risk as a result of new development, benefits against objective 2 could result. If the measure is linked to development management decisions, it could be ensured that key infrastructure is protected as part of this process, leading to benefits against this objective. It is recommended that a requirement to protect key infrastructure as part of development management decisions is built into the measure and any subsequent s106 agreements. The creation of new habitat is likely to have benefits for biodiversity, leading to benefits against objective 4. The creation of new wetland habitat is likely to have benefits for landscape quality but is unlikely to have either a positive or negative effects on heritage assets unless they are in the area of the development and would be included within the sphere of influence of the

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
													benefits (objectives 5 and 6). Benefits may be achieved against objective 7, as wetlands could help to preserve peat reserves and may benefit soil function through increase water availability and reducing fast run off/erosion of soils. Positive effects could be realised against SEA objective 9 as wetlands can recharge aquifers and protect water quality by storing sediment and processing nutrients.
PRV1.4: Consider the designation and management of existing wetland areas where they assist in flood prevention.	Review areas which can directly assist with the management of flood risk	Yes	Short	neutral	neutral	neutral	neutral	neutral	neutral	neutral	n/a	neutral	It is not clear to what the 'designation' of wetland areas relates i.e. how they would be designated, as what (LNR, SSSI, etc.) or under what legislative/protective means. The designation of existing wetland areas for flood risk management is unlikely to have a positive effect if it relates to applying a designation to an existing area, unless the designation is accompanied by active management of the site to improve its condition. The designation alone will not increase the benefits delivered by a site and may only decrease the likelihood of future negative effects by protecting it from future development / damage. Active management of designated sites could contribute to all objectives (except 8, which is not relevant to this measure).

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
PRV1.5: BGCBC will encourage developers to incorporate wetland and other natural attenuation schemes in new development through guidance, policies and pre-application discussions with Planning Control case officers.	Review need for Supplementary Planning Guidance, and raise awareness of Planning Staff in advance of BGCBC taking on required duty as SuDS Approval Body	Yes	Short	☺	neutral	neutral	😐	😐	neutral	😐	neutral	neutral	There is some overlap with measure PRV1.3. The measure should include what may be included within 'other natural attenuation schemes' to aid discussions between the planning officers and developers. Further detail of the type of guidance to be developed should be specified. This will help to improve the potential for positive effects against the SEA objectives. It is likely that flood alleviation measures implemented through the development control process will need to be related to the development in question. Therefore, it is possible that the measure could lead to beneficial effects against objective 1. Similarly, it is possible that new development could be required to reduce overall flood risk, not just flood risk relating specifically to the development, which could lead to benefits against objective 2. However, effects against this objective are likely to be neutral, as it is likely that the planning requirement would be that the development has no impact on increasing flood risk. This could be made clearer through actions to implement the measures. It is likely that planning requirements would include the need to protect key infrastructure (objective 3) and heritage assets (objective 6) from flood risk as a result of new development. Therefore, positive effects may arise against objective 3 should this be specified as part of the detail to be included within guidance for

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
													developers/pre-application discussions. Should guidance require the inclusion of wetlands as part of mitigation, this could lead to benefits for biodiversity (objective 4), landscape quality (objective 5) and soil quality (objective 7). The guidance could also specify measures for the sustainable design of developments to help to reduce flood risk, which could lead to benefits against objective 8. Planning guidance should also ensure that new development is within areas where there is adequate sewerage capacity to address surface water runoff increases if natural attenuation measures do not provide for all additional capacity.
MEASURE PRV2: We will avoid inappropriate development in flood risk areas													
PRV2.1: Adopt the Local Development Plan as all allocations included in the Plan have been subject to a Strategic Flood Consequence Assessment	LDP to be adopted by end 2012	n/a	Short	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	The LDP was adopted by the Council in November 2012. Therefore, options under PRV2.1 and PRV2.2 are no longer relevant.

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
PRV2.2: Adopt the Local Development Plan and implement Policy SP7 which directs new development away from high flood risk areas	Adopt the Local Development Plan and implement Policy SP7 which directs new development away from high flood risk areas review SP7 to account for local flood risk areas and not just those considered within the SFCA	n/a	Short	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	The LDP was adopted by the Council in November 2012. Therefore, options under PRV2.1 and PRV2.2 are no longer relevant. Policy SP7 relates to all flood risk areas not just those identified in the SFCA in particular.
PRV2.3: Raise awareness in Planning Committees when developments potentially impact on flood risk areas.	Include as specific topic within Council Member Planning Training. Carry out internal officer awareness	Yes	Short	😐	☺	☺	☺	😐	☺	☺	😐	😐	The measure could lead to some indirect positive effects against the SEA Objectives. Internal Member training could lead to direct improvements against SEA Objectives relating to the reduction of flood risk, although effects may only relate to applications that go to committee. The implementation of enhancement measures or sustainable design as a result of new development will be dependent on the nature and implementation of the training provided.

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
	raising exercise at the same time												It is recommended that specific training on flood risk issues includes not only the need to protect people and property from flood risk, but also the need to protect valuable biodiversity, heritage and landscape assets as well as water and soil quality, the interaction between flood risk management and management of other receptors and the need for increase resilience in structures and communities.
MEASURE PRV3: We will increase approaches that utilise the natural environment, like adopting soft engineering in place of traditional solutions, managing of the land to reduce storm runoff, creating more wetlands to store water													
PRV3.1: Identify contributions to delivery of the Woodlands for Wales Strategy (Welsh Gov) e.g. Shelter belt planting opportunities.	Through the County Ecologist identify opportunities to manage flood risk, especially from woodland run-off through sustainable management of forestry areas	Yes	Short /Med	n/a	☺	☺	☺	☺	☺	☺	n/a	☺	Measure PRV3.1 could lead to benefits against SEA Objectives 2, 4 and 7, through reducing flood risk, with a particular focus on woodland run-off through the sustainable management of forestry areas. The option could have indirect positive benefits against other SEA Objectives that seek to reduce flood risk on particular assets. Management of forestry to reduce run off could result in a change in harvesting / cutting patterns, which may benefit biodiversity (objective 4), although any changes in forestry management practices should consider how they could affect environmental receptors before being implemented.

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
PRV3.2: Review the existing management of ordinary water courses in regard to controlling invasive weeds	We continue to clear areas which affect access to any related assets and review if other management options are available in partnership with other bodies	Yes	Short	n/a	n/a	😑	☺	☺	n/a	n/a	n/a	☺	PRV3.2 is designed to minimise the effects of flooding, by reducing the potential for spreading invasive species within / by watercourses. The management of invasive species could have benefits for landscape considerations as well as biodiversity and water quality. The measure also seeks to clear areas directly affecting assets, which could be interpreted as including the protection of key infrastructure. Whether or not this is the case should be made clearer in the measure. Activities to clear invasive species should be carried out in a way that does not itself increase the risk of spread and appropriate bio security measures should be taken by personnel involved in these activities if equipment may be used in other areas. Advice should be sought from EAW/ CCW.
PRV3.3: Review the existing management plans for Local Nature Reserves which assist in storing and filtering water.	Include consideration of water quality to improve WFD classification within review of how Nature Reserves are managed. Raise	Yes	Short	😐	☺	😐	☺	😐	😐	😐	n/a	☺	Under PRV3.3, the measure could lead to benefits against SEA Objectives 2, 4 and 9 directly, through the consideration of the WFD in the management of LNRs. This could lead to wider benefits on flood risk objectives, depending on implementation. For example, should the management methods include increased planting for biodiversity, this could also lead to benefits for soil and landscape quality. Should the measures lead to a reduction in overall flood risk, this could have benefits for objectives 1 and 3. Benefits to human health under

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
	internal awareness of flood risk / biodiversity synergies												Objective 1 may also result indirectly from improvements to water quality and biodiversity.
PRV3.4: When designing streetscape works consideration will be given to incorporating a greater area of tree planting and permeable areas.	Revise internal policy guidance and SPG to account for evidence that the options have been considered and acceptable justification where these have not been included in final layouts	Yes	Short	☺	☺	☺	☺	☺	😐	☺	☺	☺	Adopted LDP policy DM1 requires that *"surface water run off through minimising an increase in impermeable surfaces and using Sustainable Drainage systems, where appropriate"* for new development proposals. Part of such a scheme may include tree planting. An SPG entitled "Trees and Development: A Guide to Incorporating Trees, Woodlands & Hedgerows into Development Proposals" already exists. However, the revision of such SPG could potentially provide further guidance in relation to flood risk and tree planting. Tree planting may have negative effects on flood risk management if leaves/debris from trees block drains / culverts. The revision should include guidance on species to avoid as well as those which may improve flood risk management and appropriate / inappropriate circumstances for use of trees. The implementation of improvements to permeable surfacing and tree planting within the streetscape could lead to beneficial effects for SEA Objective 1, as it could reduce the risk of flooding in highly populated areas, as well as improve the local street scene, which could have mental health

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
													benefits. A reduction in overall flood risk could have direct benefits against SEA Objective 2, through potential reducing the amount of property at risk of flooding. Potential benefits are likely against SEA Objectives 4 and 5, as an increase in tree planting could improve overall local biodiversity, water quality, soil quality and landscape value. These measures could also improve the setting of heritage assets, depending on location. The measure is likely to improve the implementation of SUDS, which could lead to benefits against SEA Objective 8. Potential effects for the protection of key infrastructure are likely to be positive, as streetscapes under consideration would include public areas around key facilities such as schools and hospitals.
PRV3.5: Identify opportunities for planting to stabilise river banks.	Where identified as posing a high-risk of causing flooding or damage we work with the riparian owner to stabilise the river bank. If necessary we will carry	M and D-M same score	Short	neutral	neutral	neutral	☺	☺	neutral	☺	n/a	☺	Reducing potential effects could have neutral effects on the SEA objectives, as the maintenance of the banks will ensure that the existing flood risk levels are maintained. The protection of biodiversity, soil, water quality and landscape assets could be achieved through the stabilisation measures, however, as there is the potential for a reduction in existing erosion levels. Increased planting could enhance biodiversity and landscape considerations, as well as improve water quality through increased filtration of run off entering the watercourse from the surrounding area. Bank stabilisation works

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
	out emergency works to stabilise the bank												should be undertaken in a manner that does not have adverse effects to water quality or biodiversity, taking account of issues such as fish spawning times / locations, nesting birds, aquatic mammals, bio security to reduce the spread of invasive species and use of appropriate procedures and materials for use in / near water. Before undertaken such works, EAW and CCW advice should be sought.
MEASURE PRV4: deploying the sustainable drainage systems (SuDS) approach for surface water management for both new and existing developments													
PRV4.1: Adopt the Local Development Plan and implement Policy DM1 which requires proposals to reduce surface water run off through minimising an increase in impermeable surfaces and using Sustainable Drainage systems,	Review if Policy DM1 needs amending to account for Local Flood Risk and raise awareness in advance of BGCBC taking on required duty as SuDS Approval Body	n/a	Short	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	The LDP was adopted by the Council in November 2012. Therefore PRV4.1 is considered to no longer be relevant.

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
where appropriate.													
PRV4.2: Encourage developers through pre-application discussions to use sustainable drainage systems pending the introduction of the new SUDS regime	Discussions undertaken on all applications. Raise awareness in advance of BGCBC taking on required duty as SuDS Approval Body	n/a	Short	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	The implementation of DM1 should ensure the implementation in the use of SuDS. SuDS should be discussed as part of all applications for planning permission. Therefore PRV4.2 and PRV4.3 are considered to no longer be relevant. However, the link to the LDP policy and any specific SuDS that may be suitable for particular areas could be included within the LFRMS.
PRV4.3: Specify greater use of SuDS systems for new developments as conditions of planning consent.	Discussions undertaken on all applications. Raise awareness in advance of BGCBC taking on required duty as SuDS	n/a	Short	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	The implementation of DM1 should ensure the implementation in the use of SuDS. SuDS should be discussed as part of all applications for planning permission. Therefore PRV4.2 and PRV4.3 are considered to no longer be relevant. However, the link to the LDP policy and any specific SuDS that may be suitable for particular areas could be included within the LFRMS.

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
	Approval Body												
MEASURE PRV5: Incorporate greater resilience into the design of developments (houses, buildings, roads and paved areas)													
PRV5.1: Adopt the Local Development Plan and implement Policy SP7 which includes a requirement to incorporate measures in design and construction to reduce the effects of flooding. This will ensure buildings are designed to reduce the effects of flooding	LDP to be adopted by end of 2012	n/a	Short	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	The LDP was adopted by the Council in November 2012. Therefore PRV5.1 is considered to no longer be relevant.
PRV5.2: Promote appropriately designed developments in relation to site levels,	Discussions undertaken on all applications, review if further Supplementa	Yes	Short	☺	☺	☺	n/a	n/a	😐	n/a	☺	n/a	The implementation of SP7 will ensure that development is directed away from areas of high flood risk, and that measures to reduce flood risk are implemented through design and construction. It is considered that this policy will require a discussion on all applications with regards to the design of site

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
creation of high ground and setting floor levels	ry Planning Guidance is required.												levels, creation of high grounds and setting floor levels. However, measure relates to the potential creation of SPG highlighting further guidance for developers in relation to this aspect, could provide further benefits, particularly against objective 8.
PRV5.3: Increase approaches in road schemes to utilise materials which provide more resilience to flooding incidents where they are likely to occur.	Review with WG / adjacent Highway Authorities / Suppliers potential advances in materials and design which will provide greater resilience to flooding	Yes	Short	☺	☺	☺	neu tral	neu tral	neu tral	neu tral	☺	☺	The measure could help to reduce flood risk through the use of improved technology in materials. The potential effects on the SEA Objectives will be dependent on the effectiveness and location of implementation. However, positive effects are likely against SEA objectives 3 and 8 as the measures will necessarily protect key infrastructure through the use of sustainable design methods. Care should be taken in implementation to ensure that improvements to road flooding resilience do not have negative consequences to other objectives by adversely affecting flood risk in surrounding/adjacent areas. - this should be considered at a project level through relevant environmental assessment.
Measures to protect individuals, communities and the environment against the consequences of flooding													
MEASURE PRT1: Develop maintenance regimes for culverts & drains and identify priority areas													
PRT1.1: Develop reporting system to register details of events at the time of	Recording software purchased to enable efficient logging of flooding	n/a	Short	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Taken individually, measures PRT1.1, PRT1.2 and PRT1.3 are not considered to be directly related to the SEA Objectives.

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
flooding incidents.	events. Collaboration with other LLFRA's to share flooding incident information												
PRT1.2: Develop and maintain a register of flood assets.	Recording software purchased to enable efficient logging and registering of incidents. Collaboration with adjacent Authorities underway to share flood asset information	n/a	Short	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Taken individually, measures PRT1.1, PRT1.2 and PRT1.3 are not considered to be directly related to the SEA Objectives.
PRT1.3: Develop a maintenance recording system and ensure these are informed by the register of flooding	Recording software purchased to enable efficient logging of asset (namely culvert,	n/a	Short	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Taken individually, measures PRT1.1, PRT1.2 and PRT1.3 are not considered to be directly related to the SEA Objectives.

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
incidents.	highway gully, watercourse) inspections. Officer responsible is currently familiarising himself with the system												
PRT1.4: Carry out a risk assessment of all critical culverts and flood assets, as identified through the register of flooding incidents, maintenance records or flood assets, and prepare an action plan to address any unacceptable risks as a result of the review.	PFRA completed - identified high-risk areas Hazard Maps being prepared by the EA for high-risk areas by June 2013 BGCBC to prepare Flood Plans by Dec 2015	M and D-M same score	Short	☺	☺	☺	😐	😐	☺	☺	😐	😐	PRT1.1 relates to the recording of details of flood events at the time of incidents. PRT1.2 seeks to maintain a register of flood assets. Both measures require the sharing of information between LLFRAs. These are designed to inform the development of a maintenance record as proposed under the do more option under PRT1.3. These three measures lead on to the development of a risk assessment, to highlight critical culverts and flood assets, and the preparation of an action plan to address any unacceptable risks identified. It is considered that PRT1.4 is likely to lead to positive effects against the SEA Objectives, as a result of the implementation of the preceding measures. Taken individually, measures PRT1.1, PRT1.2 and PRT1.3 are not considered to be directly related to the SEA Objectives. The highlighted unacceptable risks should seek to ensure that the risks to key environmental assets such as recreational areas, areas

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
													protected for nature conservation, areas protected for landscape or heritage value, or watercourses, and key infrastructure should be included alongside the consideration of the risk to people and property. Potential impacts from PRT1.4 depend on the results of the risk assessment and actions proposed as a result of the assessment. In developing the actions, regard should be taken to potential impacts to the environment, which are not possible to determine at this stage. The need for environmental assessment of specific projects/works should be considered. The findings of any assessments should be taken into account when delivering the projects/works. This should include use of materials that are appropriate for use in/near water, taking account of relevant advice from EA and CCW in relation to these matters
MEASURE PRT2: Identifying and protecting areas suitable for inundation and water storage to prevent flooding elsewhere													
PRT2.1: Identify areas suitable for inundation and water storage.	Adoption of policies as set out within the LDP, and subsequently areas identified through assessment of the Flood Plans	M and D-M same score	Short	😐	😐	😐	😐	😐	😐	😐	😐	😐	Measure PRT2.1 sets out that the action would require the adoption of the policies as set out within the LDP, and subsequently areas identified for inundation and water storage through assessment of flood plans. It is unclear which policies in the LDP are referred to in this instance and this should be specified within the measure. However, the allocation of sites for the storage of water during flood events could lead to reduced flood risk. This could lead to benefits against

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
													a number of SEA objectives, depending on implementation and the areas protected. Further, conflicts could arise, for example through the inundation of areas that were previously used for recreational green space or the loss of important habitats, however, as flood storage is only during flood events, losses would be temporary and the identification of flood storage areas should take account of potential impacts to important habitats. The significance of effects will be dependent on the location of flood risk areas and the type of development proposed. In identifying flood storage areas, regard should be given to potential impacts to the environment, which are not possible to determine at this stage. The need for environmental assessment of identifying areas for inundation should be considered.
PRT2.2: Consider how any identified flood storage areas can be protected through changes to existing procedures, policy, legislation etc.	Continue to contribute to Consultations and discussion with WG through the WLGA and attendance at suitable events	M and D-M same score	Short	😐	😐	😐	😐	😐	😐	😐	n/a	😐	The protection of flood storage areas could help to improve the management of flood risk and give greater weight to the protection of flood risk areas in development management decisions. The effects of such protection will be dependent on implementation.

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
MEASURE PRT3: Enable those at risk of flooding to play a proactive role in shaping the flood risk management service they receive													
PRT3.1: Communities in flood risk areas to be consulted on the flood strategy and changes to service	Consultation of the Local Flood Risk Strategy, and the previous PFRA provides communities with the opportunity to influence any change	Yes	Short	☺	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	PRT3.1 is a legislative/policy requirement. The consultation on the LFRMS could lead to benefits against SEA Objective 1, as it could increase awareness of flood risk in the local population.
PRT3.2: Develop community resilience schemes for areas at risk of flooding	Help communities prepare and Community Flood Plan. Encourage self-help / awareness through better understanding and awareness raising working with all internal BGCBC Depts. and	Yes	Short	☺	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Measure PRT3.2 could help communities to help themselves and increase wellbeing.

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
	the EA Flood Awareness Wales team												
PRT3.3: Ensuring wider awareness of individual risk to increase levels of preparedness and planning for flooding events	Include session within new Member training, as well as review and update of available information. Review identified high-risk areas and working with all internal BGCBC Depts. and the EA Flood Awareness Wales team develop rolling programme of events	Yes	Short	☺	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Measure PRT3.3 could help communities to help themselves and increase wellbeing.
MEASURE PRT4: Improve the response to flooding incidents by the emergency response organisations, as well as individuals and businesses													

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
PRT4.1: Ensure lessons from flooding incidents in this and other areas are captured	Event de-brief meetings are carried out to capture lessons of what went well and bad. Where applicable actions are subject to Scrutiny Review	M and D-M same score	Short	☺	☺	☺	😐	😐	😐	😐	n/a	😐	The measure could help to reduce the risk of people and property and risk of flooding over time, through an increase in awareness of needs and risk levels. Positive effects are predicted against SEA objectives to improve health and wellbeing, as the measure could reduce the risk of flooding to people and increase flood warnings. Similarly, lessons and emergency procedures are likely to focus on key infrastructure and reducing the risk of flooding to people an property, which could lead to benefits against SEA Objectives 2 and 3. Effects on the remaining objectives, with the exception of Objective 8, will be dependent on how flooding events are recorded, and whether or not this includes wider environmental assets and the subsequent effects of flooding, such as pollution to watercourses. These aspects should be considered within this measure and the recording of flood incidents in order to enable learning and subsequent actions. Changes to flood risk response activities as a result of the review in PRT4.2 are not possible to determine at this stage. Any changes to flood response activities should take account of the potential effects on the environment. These effects should be taken into account when developing flood response actions.

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
PRT4.2: Training for those involved in flood response to ensure awareness of roles, responsibilities and an effective response	Review of the training need across the Authority and include flood risk awareness as part of all new staff inductions	Yes	Short	☺	☺	☺	😐	😐	😐	😐	n/a	😐	See PRT4.1.
MEASURE PRT5: Ensure effective recovery arrangements are in place and supported by all relevant parties													
PRT5.1: Involvement in multi agency flood recovery planning, ensuring plans are fit for purpose	Recovery plan in plans and adopted by Emergency Panning. Test exercise required involving all service areas and outside key agencies	Yes	Short	☺	n/a	☺	😐	n/a	n/a	n/a	n/a	😐	Recovery activity seeks to enable communities and businesses to recover after a flood event. Recovery is more than simply the replacement of what has been destroyed and the rehabilitation of those affected. It is a complex social and developmental process rather than just a remedial process. The manner in which recovery processes are undertaken is critical to their success. Recovery is best achieved when the affected community is able to exercise a high degree of self-determination. The importance of a multi-agency response will ensure that all parties are working towards common objectives. Therefore, it is considered important that the plans are tested for suitability and adopted by all parties. The measure would see the recovery plans adopted and tested. This is likely to lead to

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
													improvements in implementation, which could lead to positive effects on health and wellbeing. Common issues addressed in recovery plans include the repair of key infrastructure. Therefore the measure is predicted to have positive effects against SEA Objective 3. Effects against other SEA Objectives will be dependent on the nature of the environmental cleanup measures employed. Amendments to recovery activities as a result of testing could have further benefit to other objectives.
Measures to arrange for forecasting and warning													
MEASURE FC1: Develop better flood forecasting and warning systems													
FC1.1: Review current flood forecasting and warning systems and identify potential improvements to allow as much warning as possible of potential flooding events.	Met office / EA forecasting received for pan-Wales and local weather forecasting contract in place	No	Short	😐	n/a	😐	😐	n/a	😐	n/a	n/a	😐	Under measure FC1.1, improvements to a warning system could have beneficial effects against SEA Objective 1. More accurate systems are likely to lead to the most significant benefits. However, it is not clear if more accurate systems than those in current use are available. Consideration should be given to upgrading as improved warning systems are developed.. The flood warning systems are unlikely to actual flood risk directly. Material and environmental assets will remain at the same risk of flooding, as these cannot be moved following warning of a flood event. However, warning systems could lead to the protection of some assets, depending on implementation, for example through measures such as sand bags and demountable defences.

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
FC1.2: Developing a consistent approach to recording of flood events and flood assets.	Recording software purchased to enable efficient logging and registering of incidents. Collaboration with adjacent Authorities underway to share flood asset information	n/a	Short	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	It is considered that, alone, the logging and registering of incidents and sharing of flood asset information is not directly applicable to the SEA Objectives.
FC1.3: Develop a communication strategy so that any recognised risks that cannot be immediately reduced are communicated to the Emergency Planning Team and affected businesses or residents.	Help communities prepare and Community Flood Plan. Encourage self-help / awareness through better understanding and awareness raising working with all internal BGCBC	Yes	Short	☺	n/a	😐	neutral	n/a	neutral	n/a	n/a	neutral	FC1.3 could help communities to be more aware of flood risk. The measure could lead to benefits against SEA Objective 1. The preparation of a Community Flood Plan could also help to protect key infrastructure from flooding, depending on the measures included. It is unlikely that the plan would include protection for environmental assets. It is recommended that this is specified within the plan if it is within the scope.

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
	Depts. and the EA Flood Awareness Wales team												
MEASURE FC2: Improve monitoring and data recording													
FC2.1: Ensuring flood events are recorded in line with the form identified in PRFA	Recording software purchased to enable efficient logging of flooding events. Collaboration with other LLFRA's to share flooding incident information	n/a	Short	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Further, it is considered that measures FC2.1 and FC2.2 are not directly applicable to the SEA Objectives alone, although they support the implementation of measure FC2.3.
FC2.2: Implementing a geographical database of flood events to inform future mapping of flood risk areas	PFRA completed - identified high-risk areas Hazard Maps being prepared by the EA for high-risk areas by June 2013	n/a	Short	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Further, it is considered that measures FC2.1 and FC2.2 are not directly applicable to the SEA Objectives alone, although they support the implementation of measure FC2.3.

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
	BGCBC to review and update following future events												
FC2.3: Utilise new software to enable identification of priority areas.	Develop prioritisation criteria to account for reduction in flood risk and greatest community and environmental benefit. Using available GIS packages Council held information, and Hazard Maps (after June 2013) assess areas for prioritisation of needs	Yes	Short	☺	☺	☺	☺	😐	☺	☺	n/a	😐	Under this measure, the action specifies that the priority areas would prioritise the greatest community and environmental benefits. This could lead to benefits across the majority of the SEA Objectives. It is recommended that more specific detail is added to this measure, to ensure that the areas for priority in protection are specified, using the SEA Objectives as a basis.
MEASURE FC3: Improve communication and support to residents, businesses and communities													
FC3.1: Set up a "Flood Risk Community	Help communities prepare and	Yes	Short	☺	n/a	😐	neutral	n/a	neutral	n/a	n/a	neutral	The effects under this measure are similar to those under FC1.3. The measure could lead to benefits against SEA Objective 1. The

Specific Measures	Proposed Action	Preferred Option (SEA)?	Timescale	1	2	3	4	5	6	7	8	9	Comments/ Recommendations
Engagement Group" to help communicate flooding and flood risk to residents, businesses, community etc.	Community Flood Plan. Encourage self-help / awareness through better understanding and awareness raising working with all internal BGCBC Depts. and the EA Flood Awareness Wales team												preparation of a Community Flood Plan could also help to protect key infrastructure from flooding, depending on the measures included. It is unlikely that the plan would include protection for environmental assets. It is recommended that this is specified within the plan if it is within the scope.

Note 1 - targets and actions for wetlands from BG LBAP

Summary of Targets for Wetlands to be achieved by 2015

Priority Habitat	Maintain Extent (ha)	Achieve Condition (ha)	Restore (ha)	Expand (ha)
Blanket Bog	83	41.5	4.1	4.1
Lowland Raised Bog	86	43	4.3	4.3
Upland Flushes, Fens and Swamp	95	47.5	4.75	4.75
Mesotrophic Lakes	40	20	2	2
Ponds	55 (ponds)	55	5	5

Summary of Targets for Rivers and Streams to be achieved by 2015

Priority Habitat	Maintain Extent (km)	Achieve Condition (ha)	Restore (ha)	Expand (ha)
Rivers and Streams	44km	50%	5%	5%

G. Habitats Regulations Assessment

Introduction

G.1 The EU Habitats (92/43/EEC) and Birds (2009/147/EEC) Directives aim to protect European birds and species and the habitats that support them, while the Ramsar Convention on Wetlands of International Importance aims to protect internationally important wetlands, of particular importance to migratory bird species. The Directives are transposed into UK law through The Conservation of Habitats and Species Regulations 2010 (as amended) (SI 2010/490), referred to as the Habitats Regulations.

G.2 The Habitats and Birds Directives require 'competent authorities' to undertake an 'appropriate assessment' of plans, projects and strategies that are unconnected to the management of the site and that may have a significant effect on the site. In the UK, it is UK and Welsh Government policy to apply the same process to relation to sites designated under the Ramsar Convention (known as Ramsar sites).

G.3 Information to inform a Habitats Regulations Assessment (HRA) has been included within this report, due to the location of both EU and Ramsar sites in the area of the Blaenau Gwent LRFMS and the potential for the Blaenau Gwent LFRMS to affect these sites.

G.4 There are four distinct stages in a Habitats Regulations Assessment (HRA):

- Stage 1: Screening – the process which initially identifies the likely potential impacts upon a Natura 2000 / Ramsar site of a plan or project, either alone or in combination with other plans or projects, and considers whether these potential impacts are likely to be significant.
- Stage 2: Appropriate Assessment – the detailed consideration of the impact on the integrity of the Nature 2000 / Ramsar site of the plan or project, with respect to the site's conservation objectives and its structure and function. This is to determine whether there will be adverse effects on the integrity of the site.
- Stage 3: Assessment of alternative solutions – the process which examines alternative ways of achieving the objectives of the plans or projects that avoid adverse potential impacts on the integrity of the Natura 2000 / Ramsar site.
- Stage 4: Assessment where no alternative solutions exist and where adverse potential impacts remain – an assessment of whether the development is necessary for imperative reasons of overriding public interest (IROPI) and, if so, of the compensatory measures needed to maintain the overall coherence of the Natura 2000 network.

G.5 There is no specific guidance on the HRA process for Local Flood Risk Management Strategies, however, in undertaking this assessment the following guidance documents have been used:

G.6 Assessment of plans and projects significantly affecting Natura 2000 sites, Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, 2001, DG Environment, European Commission

G.7 Guidance For Plan Making Authorities In Wales - The Appraisal Of Plans Under The Habitats Directive, 2009 (revised Apr 2010 & Sept 2012), David Tyldesley and Associates, prepared for the Countryside Council for Wales, http://www.ccgc.gov.uk/landscape--wildlife/managing-land-and-sea/environmentalassessment/habitats-regulations-assessmen.aspx

Purpose of a Local Flood Risk Management Strategy

G.8 The Flood and Water Management Act (FWMA) 2010 places a responsibility upon Local Authorities, to develop, maintain, apply and monitor a strategy for local flood risk management (Local Strategy). Under the FWMA, Local Authorities are designated as Lead Local Flood Authorities (LLFAs).

G.9 The Blaenau Gwent LFRMS will form the framework within which communities have a greater say in local flood risk management decisions. In combination with the National Strategy, the Local Strategy will encourage more effective risk management by enabling people, communities, business and the public sector to work together to:

- Ensure there is a clear understanding of the risks of flooding and erosion, nationally and locally, so that investment in risk management can be prioritised more effectively;
- Set out clear and consistent plans for risk management so that communities and businesses can make informed decisions about the management of the remaining, residual risk;
- Encourage innovative management of flood and coastal erosion risks, taking account of the needs of communities and the environment;
- Form links between the local flood risk management strategy and local spatial planning;
- Ensure that emergency plans and responses to flood incidents are effective and that communities are able to respond properly to flood warnings; and
- Help communities to recover more quickly and effectively after incidents.

G.10 A "local flood risk" is defined within the Flood and Water Management Act as a flood risk from:

- Surface runoff;
- Groundwater; and
- Ordinary watercourses – this include any lake, pond or other area of water that flows into an ordinary watercourse3.

G.11 The LFRMS is only required to address local flood risks, as defined by the Flood and Water Management Act, however, it should take account of the interactions with other potential sources of flood risk, such as coastal flooding.

Internationally Designated sites included in the HRA

G.12 The initial stage of the HRA requires identifying the likely potential impacts of the plan or project, either alone or in combination with other plans or projects, on Natura 2000 sites. This must first identify all potential sites that may be affected by the plan or project.

G.13 The Blaenau Gwent LFRMS focuses on local flood risk, considering actions within Blaenau Gwent County Borough Council's geographic area. There are no European designated sites either wholly or partly within the area of the LFRMS and that could potentially be affected by the strategy.

G.14 As indicated in section 1, there are no European Sites within Blaenau Gwent. Table 1 includes the nearest EU sites in neighbouring counties that are within 15km of the Blaenau Gwent County Borough boundary and that could potentially be affected by the LFRMS4 and require consideration in the HRA.

Table 1– European Sites that may be affected by the LFRMS

European Sites within Search Area Buffer Zone	Designation	Distance from Plan Area Boundary (km, approx.)
Cwm Clydach Woodlands	SAC	Adjacent
Usk Bat Site	SAC	Adjacent
River Usk	SAC	3.94
Aberbargoed Grassland	SAC	4.37
Sugar Loaf Woodlands	SAC	7.88
Brecon Beacons	SAC	10.13
Llangorse Lake/ Llyn Syfaddan	SAC	10.13
Coed Y Cerrig	SAC	11.61
Cwm Cadlan	SAC	12.87
Severn Estuary	SAC, SPA, Ramsar	25

[3] Section 10(3) of the Flood and Water Management Act 2010:
[4] Source: HRA for the LDP, which used a 15km buffer

Cwm Clydach Woodlands

G.15 Cwm Clydach Woodlands SAC lies on the southern side of the River Clydach valley, approximately 2km east, north east of Brynmawr on the south side of the A465. It is just outside the local authority boundary of Blaenau Gwent. The SAC is underpinned by Cwm Clydach Site of Special Scientific Interest (SSSI), although the area covered by the SSSI is larger than that of the SAC. The SSSI is notified for both biological and geological features (CCW, 2008).

G.16 The SAC has been designated for the Asperulo-Fagetum beech forests which are close to the northern-western limit of their UK and European range and at relatively high altitude. The main wood is on a steep valley side, comprising a mature canopy of large trees with abundant dead wood. Transitions occur to more acidic beech woodland. Rare and characteristic plant species at the site include the whitebeam Sorbus porrigentiformis, mountain sedge Carex montana, yellow bird's-nest Monotropa hypopitys and bird's-nest orchid Neottia nidus-avis. Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion are also part of the designation5.

G.17 Management of the woodland is generally minimum intervention (excepting safety considerations). Japanese knotweed is a problem in parts of the site, including along the river corridor. This is thought to have usually been introduced by illegal dumping of waste material and may pose a threat to the woodland habitat and will need to be controlled as necessary.

G.18 The management plan does not identify any specific management actions needed for the site, or any risks associated with water or flood management. Works along the river bank upstream of the site could have potential to spread Japanese knotweed to the site, although this is not considered to be a significant threat to the site as a whole.

G.19 The Cwm Clydach Woodlands SAC is not considered further in this assessment.

The Usk Bat Sites SAC

G.20 The Usk Bat Sites SAC is a composite site comprising four component SSSIs:

- Mynydd Llangatwg / Mynydd Llangattock SSSI
- Siambre Ddu SSSI
- Buckland Coach House & Ice House SSSI
- Foxwood SSSI

G.21 The site has been designated primarily for Lesser Horseshoe Bat (Rhinolophus hipposideros). Annex I habitats that are present, but are not a primary reason for selection of the site, but are qualifying features, are:

- Blanket bog
- *Tilio-Acerion* forests of slopes, screes and ravines
- Calcareous rocky slopes with chasmophytic vegetation
- Caves not open to the public
- Degraded raised bogs still capable of natural regeneration
- European dry heaths

G.22 Only one of the underlying SSSI sites falls partially within Blaenau Gwent's boundary - Mynydd Llangatwg SSSI, which lays to the north of and adjacent to the Cwm Clydach Woodlands SAC.

G.23 Mynydd Llangatwg is an area of open moorland and bog, with a limestone escarpment along the northeastern edge, and containing a system of caves which act as roosts for the bats, as well as foraging habitat. The site is mostly common land, generally used for sheep grazing. Much of the caving in the important bat caves is controlled and managed by the Mynydd Llangatwg Cave Management Committee, with some cave entrances gated and locked to control the numbers of visitors.

5 JNCC website, http://jncc.defra.gov.uk/ProtectedSites/SACselection/sac.asp?EUCode=UK0030127

G.24 Buckland Coach House & Ice House SSSI is approximately 10 miles northwest of boundary of Blaenau Gwent and provides maternity and hibernation sites for the bats. Foxwood SSSI is approximately 10 miles northeast of the unitary boundary of Blaenau Gwent. Siambre Ddu SSSI is approximately 2 miles east, outside the local authority area. The caves at both these sites provide hibernation sites for the bats and the surrounding habitats provide foraging areas for the bats.

G.25 The Blaenau Gwent LFRMS is unlikely to affect bat roosts outside of the local authority area, as activities connected with the LFRMS will be local in nature. The LFRMS is, therefore unlikely to affect the roosts at the Buckland Coach House & Ice House site, the Foxwood site or the Siambre Ddu site.

G.26 The Buckland Coach House & Ice House SSSI and Foxwood SSSI are not within any of the river catchments that are partially or wholly within the Blaenau Gwent LFRMS area and would, therefore, be unlikely to be affected by any activities within the LFRMS.

G.27 The Siambre Ddu SSSI and parts of the Mynydd Llangatwg SSSI are within river catchments that are within the Blaenau Gwent LFRMS area (River Clydach source to confluence with the River Usk and Ebbw River to confluence with the River Ebbw Fach catchments). Habitats that support features of the Usk Bat Sites SAC could, therefore, be affected by activities under the Blaenau Gwent LFRMS. Areas of the Mynydd Llangatwg SSSI that are within Blaenau Gwent could also be affected by activities under the Blaenau Gwent LFRMS.

River Usk SAC

G.28 The River Usk SAC is designated for several species of fish (Sea lamprey *Petromyzon marinus*, Brook lamprey *Lampetra planeri*, River Lamprey *Lampetra fluviatilis*, Twaite shad *Alosa fallax*, Atlantic salmon *Salmo salar,* Allis shad *Alosa* alosa, and Bullhead *Cottus gobio*), otter (*Lutra lutra*), and the habitat '*Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation*'.

G.29 The overall form of the catchment is long and narrow, with short, generally steep tributaries flowing north from the Black Mountain, Fforest Fawr and Brecon Beacons, and south from Mynydd Epynt and the Black Mountains. The site crosses several local authority boundaries.

G.30 The area of the Blaenau Gwent LFRMS lies within the ***Severn RBMP*** area. Most of the area of the Blaenau Gwent LFRMS is in the ***South East Valleys*** catchment. A small area to the north east of Blaenau Gwent is within the ***Usk*** catchment.

G.31 The HRA for the Blaenau Gwent Local Development Plan (LDP) determined that the River Usk SAC is not a part of the natural drainage area defined by the physical boundary of the LDP (i.e. the Blaenau Gwent local authority boundary). It is not a natural receptor or sink for natural surface water runoff, overland outflow and discharge from drainage outfalls and there are no direct natural hydrological linkages. However, the River Usk SAC was included within the LDP HRA on the advice of CCW because there was a remote, theoretical possibility that any new development within the LDP area, which could potentially make additional demands on water resources, could conceivably impact on the River Usk (Capita Symonds, 2011). Similarly, actions within the LFRMS that could affect water resources, water quality or species using waterbodies within the Blaenau Gwent LFRMS that flow into the River Usk could affect features within the River Usk SAC.

Aberbargoed Grasslands SAC

G.32 The Aberbargoed Grasslands SAC is approximately 5 miles from Blaenau Gwent's boundary. Although the SAC contains marshy grassland with impeded drainage, it is considered to be too distant from Blaenau Gwent for the LFRMS to adversely affect the site. More local management issues (livestock grazing, vehicular access, unauthorised/uncontrolled fires) are limiting/damaging factors in the site's management. The Aberbargoed Grasslands SAC is, therefore, not considered further in this assessment.

Sugar Loaf Woodlands SAC

G.33 Sugar Loaf Woodlands SAC is less than 10 miles from Blaenau Gwent's boundary. The SAC is comprised of three blocks of oak woodland:

- St. Mary's Vale
- The Park
- The Deri

G.34 The site is designated for the Annex I habitat 'Old sessile oak woods with *Ilex* and *Blechnum'* and also as a SSSI for ancient semi-natural woodland.

G.35 Several springs arise in and around the woodlands. The Afon Cibi runs through The Park and along part of the Deri, while the Nant Iago arises in springs north of St. Mary's Vale and runs through the woodland. Neither of these watercourses appears to be connected to any watercourse that arises in the Blaenau Gwent LFRMS area. None of the WFD river catchments within the Blaenau Gwent LFRMS area overlap with the area of the Sugar Loaf Woodlands SAC. The area is considered too distant to be affected by actions within the Blaenau Gwent LFRMS and there is no hydrological connection. The Sugar Loaf Woodlands SAC is, therefore, not considered further in this assessment.

Brecon Beacons SAC

G.36 The Brecon Beacons SAC is approximately 10 miles from Blaenau Gwent it is contained within the Brecon Beacons SSSI and the Brecon Beacons National Park. The SAC interests comprise the chasmophytic and ledge vegetation on the most extensive areas of cliff and associated heathland, while the SSSI is notified for a wider range of features, including geological features.

G.37 The site is of particular interest for the arctic-alpine plants and plant communities growing on the sandstone rocks and ledges on its precipitous mostly north and east facing cliffs. The designated Annex I features are:

- Calcareous rocky slopes with chasmophytic vegetation - primary reason for selection
- Siliceous rocky slopes with chasmophytic vegetation - primary reason for selection
- European dry heaths - qualifying feature, but not a primary reason for selection
- Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels - qualifying feature, but not a primary reason for selection

G.38 All areas of the Brecon Beacons SAC are upstream of all the river catchments partly or wholly within the Blaenau Gwent LFRMS. The features of the SAC are unlikely to be affected by any actions to control local flood risk within the Blaenau Gwent LFRMS. The Brecon Beacons SAC is, therefore, not considered further in this assessment.

Llangorse Lake/ Llyn Syfaddan SAC

G.39 Llangorse Lake is over 10 miles directly north of Blaenau Gwent. The SAC is designated for the Annex I habitat 'Natural Eutrophic Lakes with Magnopotamion or Hydrochariton – type vegetation'. The SAC is underpinned by Llyn Syfaddan (Llangorse Lake) (SSSI). The SSSI is notified for its aquatic and terrestrial habitats, together with important population of plants and invertebrates.

G.40 Several small tributaries feed the lake, however, none of these are connected to any of the river catchments within the Blaenau Gwent LFRMS or watercourses that the catchments or watercourses could affect directly or indirectly. The LFRMS will not affect land management around the SAC as it is outside of Blaenau Gwent's local authority area. Llangorse Lake/ Llyn Syfaddan SAC is, therefore, not considered further in this assessment.

Coed y Cerrig SAC

G.41 Coed y Cerrig SAC is over 10 miles north east of Blaenau Gwent. The site is designated for the Annex I habitat 'Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incarnae, Salicion albae*)'. The site sits within a larger SSSI, which includes dry woodland,

marshy grassland and fen and the rare fern *Thelypteris palustris.* The Coed y Cerrig National Nature Reserve (NNR) overlaps with parts of both the SAC and SSSI.

G.42 The SAC is several miles outside of the river catchments partly or wholly within the Blaenau Gwent LFRMS such that activities within the area of the Blaenau Gwent LFRMS would not affect the waterbodies that are important for maintaining the water dependent features of the Coed y Cerrig SAC. The features of the SAC are unlikely to be affected by any actions to control local flood risk within the Blaenau Gwent LFRMS. The Coed y Cerrig SAC is, therefore, not considered further in this assessment.

Cwm Cadlan SAC

G.43 Cwm Cadlan SAC is over 12 miles west of Blaenau Gwent. The SAC incorporates the Cwm Cadlan SSSI and Glyn-Perfedd Meadow SSSI. Part of the site is overlaps with part of the site of an NNR. The SAC is designated for the following Annex I habitats, which are the primary reason for selection and are considered to be one of the best areas in the UK:

- *Molinia* meadows on calcareous, peaty or clayey-siltladen soils (*Molinion caeruleae*)
- Alkaline fen

G.44 Drainage and land management have the potential to affect the features of the site, however, the Blaenau Gwent LFRMS will not affect land management around the SAC, as it is outside of Blaenau Gwent's local authority area. Although groundwater quality and quantity strongly influence features of the site, actions within the Blaenau Gwent LFRMS area are unlikely to significantly adversely affect the extremely large groundwater catchments in South Wales ('South East Valleys Carboniferous Coal Measures' and 'South East Valleys Carboniferous Limestone' groundwater waterbodies). The features of the SAC are unlikely to be affected by any actions to control local flood risk within the Blaenau Gwent LFRMS. The Cwm Cadlan SAC is, therefore, not considered further in this assessment.

Severn Estuary SAC, SPA, Ramsar

G.45 The Severn Estuary SAC, SPA and Ramsar sites cover a significant area of the Severn Estuary and extend well beyond the borders of the Cardiff LFRMS.

G.46 The Severn Estuary SAC includes an overarching 'estuaries' feature within which subtidal sandbanks, intertidal mudflats and sandflats, Altlantic salt meadows and reefs (of *Sabellaria alveolata*) and three species of migratory fish are defined as both features in their own right and as sub-features of the estuary feature. Hard substrate habitats, fish and bird assemblages are an intrinsic part of the estuary ecosystem and are part of the 'estuaries' feature of the SAC.

G.47 The Severn Estuary SPA has been designated for internationally important populations of bird species under Annex I and Annex II of the Birds Directive, as well as internationally important assemblages of waterfowl. The qualifying interest features of the Severn Estuary Ramsar Site overlap with those of the Severn Estuary SPA and SAC.

G.48 Advice from CCW suggested that the Severn Estuary should be included in the HRA screening, particularly in reference to certain migrating fish species. The Severn Estuary Ramsar site includes the European eel (*Anguilla anguilla*) and the sea trout/ sewin (*Salmo trutta*) as features under criterion 4. These species (at different stages of their lifecycle) are migratory upstream via the Severn Estuary into the River Usk and downstream via the estuary to the sea and the development of any direct or indirect flood measures might compromise the ability of either species to migrate freely.

G.49 As outlined in the River Usk section above, there no direct natural hydrological linkages between Blaenau Gwent and the River Usk SAC. This would also mean there are no direct linkages to the Severn Estuary along which fish could migrate. The inclusion of the River Usk SAC in the LDP HRA was based on the theoretical possibility that additional demands on water resources could impact on the River Usk, however, any such impacts on the Severn Estuary are not considered even remotely possible. The Severn Estuary SAC, SPA and Ramsar sites are, therefore, not considered further in this assessment.

Sites identified for further assessment

G.50 The table below summarises the screening of the above sites and whether they are included / excluded from further assessment.

Table 2 – Summary of European Sites that are included / excluded from further assessment

European Sites within Search Area Buffer Zone	Designation	Included / excluded from further assessment
Cwm Clydach Woodlands	SAC	Excluded
Usk Bat Site	SAC	Included
River Usk	SAC	Included
Aberbargoed Grassland	SAC	Excluded
Sugar Loaf Woodlands	SAC	Excluded
Brecon Beacons	SAC	Excluded
Llangorse Lake/ Llyn Syfaddan	SAC	Excluded
Coed Y Cerrig	SAC	Excluded
Cwm Cadlan	SAC	Excluded
Severn Estuary	SAC, SPA, Ramsar	Excluded

G.51 The following tables set out the features of the sites included in the assessment.

Table 3 – Usk Bat Sites SAC Features

Feature	Quality and importance
Annex I habitats that are a primary reason for selection	
n/a	
Annex I habitats present as a qualifying feature (but not a primary reason for selection)	
Blanket Bog	Considered to support a significant presence
Tilio-Acerion forests of slopes, screes and ravines	Considered to support a significant presence
Calcareous rocky slopes with chasmophytic vegetation	Considered to be rare as its total extent in the United Kingdom is estimated to be less than 1,000 hectares Considered to support a significant presence
Caves not open to the public	Considered to support a significant presence
Degraded raised bogs still capable of natural regeneration	Considered to support a significant presence
European dry heaths	Considered to support a significant presence
Annex II species that are a primary reason for selection	
Lesser Horseshoe Bat (*Rhinolophus hipposideros*)	Considered to be one of the best areas in the UK
Annex II species present as a qualifying feature (but not a primary reason for selection)	
n/a	

Source: Natura 2000 Data Form

Table 4 – River Usk SAC features

Feature	Quality and importance
Annex I habitats that are a primary reason for selection	
n/a	
Annex I habitats present as a qualifying feature (but not a primary reason for selection)	
Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation	Considered to support a significant presence
Annex II species that are a primary reason for selection	
Sea lamprey (*Petromyzon marinus*)	Considered to be one of the best areas in the UK
Brook lamprey (Lampetra planeri)	Considered to be one of the best areas in the UK
River lamprey (*Lampetra fluviatilis*)	Considered to be one of the best areas in the UK
Twaite shad (*Alosa fallax*)	Considered to be one of the best areas in the UK
Atlantic salmon (*Salmo salar*)	Considered to be one of the best areas in the UK
Bullhead (*Cottus gobio*)	Considered to be one of the best areas in the UK

Otter (*Lutra lutra*)	Considered to be one of the best areas in the UK
Annex II species present as a qualifying feature (but not a primary reason for selection)	
Allis shad (*Alosa alosa*)	Considered to support a significant presence

Source: Natura 2000 Data Form

Conservation Objectives of the Sites

G.52 The conservation objectives for a European marine site are intended to represent the aims of the Habitats and Birds Directives in relation to that site. CCW provide advice on the conservation objectives and operations that may cause deterioration of the habitats or species, or disturbance of the species for which sites have been designated. This advice is in the form of 'Regulation 35 advice' for marine SACs (i.e. SACs with a marine component) or 'management plans' for terrestrial sites.

G.53 Measures taken under the Habitats Directive should be designed to maintain or restore habitats and species of European Community importance at / to "favourable conservation status" (FCS). The conservation objectives for a site set the standards which must be met if the features of the site (habitats and species) are to be at FCS.

G.54 FCS is defined in Article 1 of the Habitats Directive as:

(e) conservation status of a natural habitat *means the sum of the influences acting on a natural habitat and its typical species that may affect its long-term natural distribution, structure and functions as well as the long-term survival of its typical species within the territory referred to in Article 2.*

The conservation status of a natural habitat will be taken as 'favourable' when:

- *its natural range and the areas it covers within that range are stable or increasing, and*
- *the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and*
- *the conservation status of typical species is favourable as defined in [Article 1] (i).*

(i) ***conservation status of a species*** *means the sum of the influences acting on the species concerned that may affect the long-term natural distribution and abundance of its populations within the territory referred to in Article 2;*

The conservation status will be taken as 'favourable' when:

- *population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and*
- *the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and*
- *there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis*

G.55 The conservation objectives recognise and acknowledge that the features are part of a complex, dynamic, multi-dimensional environment which human activity has already modified and continues to modify in various ways, to varying degrees and at varying spatial and temporal scales, either acutely or chronically.

G.56 The conservation objectives do not aim to prevent all change to the habitat and species features, or to achieve an indefinable, abstract natural or pristine state, since these would be unrealistic and unattainable aspirations. Rather, they seek to prevent further negative modification of the extent, structure and function of natural habitats and species' populations by human activity and to ensure that degradation and damage to the features that is attributable to human activities or actions is prevented. The conservation objectives, therefore, seek to:

- Encompass inherent dynamism rather than to work against it;
- Safeguard features and natural processes from those impacts of human activity that cause damage to the features through the degradation of their range, extent, structure, function or typical species;

- Facilitate, where necessary, restoration of features or components of features that are currently damaged or degraded and in unfavourable condition.

G.57 The overarching vision statements for the sites and their features and the specific conservation objectives for the sites that could be affected by the Blaenau Gwent LFRMS are set out below.

The Usk Bat Sites SAC

Conservation Objective for Feature 1: Lesser Horseshoe Bat *Rhinolophus hipposideros*

G.58 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied:

- The site will support a sustainable population of lesser horseshoe bats in the River Usk area.
- The population will viable in the long term, acknowledging the population fluctuations of the species.
- Buildings, structures and habitats on the site will be in optimal condition to support the populations.
- Sufficient foraging habitat is available, in which factors such as disturbance, interruption to flight lines, and mortality from predation or vehicle collision, changes in habitat management that would reduce the available food source are not at levels which could cause any decline in population size or range
- Management of the surrounding habitats is of the appropriate type and sufficiently secure to ensure there is likely to be no reduction in population size or range, nor any decline in the extent or quality of breeding, foraging or hibernating habitat.
- There will be no loss or decline in quality of linear features (such as hedgerows and tree lines) which the bats use as flight lines - there will be no loss of foraging habitat use by the bats or decline in its quality, such as due to over-intensive woodland management
- All factors affecting the achievement of the above conditions are under control.

Conservation Objective for Feature 2: Blanket Bog

G.59 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied:

- The extent, quality and species richness of the blanket bog vegetation is maintained and, where possible, degraded bog is restored to good condition so that this habitat occupies its full potential range within the site.
- The bog vegetation is largely a mixture of dwarf shrubs, hare's-tail cottongrass and mosses, including bog-mosses.
- Extensive areas of purple moor-grass or hare's-tail cottongrass show signs of recovery towards a more mixed dwarf shrub sward.
- The natural hydrological regime is maintained and there is continued peat formation and thus carbon storage.
- Areas of bare peat are not extensive and most areas show signs of recovery.
- Peat profiles containing important pollen records are maintained.
- All factors affecting the achievement of the above conditions are under control.

Conservation Objective for Feature 3: Tilio-Acerion forests of slopes, screes and ravines

G.60 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied:

- There are extensive patches of semi-natural woodland on the cliffs of the Llangatwg escarpment and hillsides in the Clydach gorge.

- The woodland canopy is dominated by locally native species, including lime ash *Fraxinus excelsior, Tilia* spp., pedunculate oak *Quercus robur*, hazel *Corylus avellana*, birch *Betula* spp., whitebeams *Sorbus* spp. and, in the Clydach gorge, beech Fagus sylvatica. Rare whitebeams are a significant component of the canopy.
- Saplings of locally native species dominate the tree regeneration and there is evidence of sufficient regeneration to maintain the canopy in the long term.
- There is an accumulation of standing and fallen deadwood as the woodland develops.
- The woodland ground flora is composed of a range of typical native plants including enchanters-nightshade *Circaea lutetiana*, dog's-mercury *Mercurialis perennis*, wood-sorrel *Oxalis acetosella*, hart's-tongue *Phyllitis scolopendrium* and wood sage *Teucrium scorodonia.*
- The populations of rare whitebeams are stable or increasing.
- Young sycamore Acer pseudoplatanus trees are rare, as are beech *Fagus sylvatica* in areas away from the Clydach gorge.
- Plants indicating disturbance and nutrient enrichment, such as nettles, cleavers and weeds, are not dominant in the ground flora of the woodland.
- All factors affecting the achievement of the above conditions are under control.

Conservation Objective for Feature 4: Calcareous rocky slopes with chasmophytic vegetation

- Sufficient vegetation within crevices remains free from disturbance to support typical plants, including mosses, ferns and rare hawkweeds (*Hieracium* spp.) and allow them to sustain their populations into the future.
- Areas accessible to grazing animals should free from being smothered by ivy or heavily shaded by trees.
- All factors affecting the achievement of the above conditions are under control.

Conservation Objective for Feature 5: Caves not open to the public

- The cave system provides a winter hibernation site for large numbers of lesser horseshoe bats and other bat species, including Brandt's, whiskered, Daubenton's, Natterer's, brown longeared and, occasionally, greater horseshoe bats.
- Numbers of roosting bats are stable or increasing in the system as a whole.
- All factors affecting the achievement of the above conditions are under control.

Also see the vision for lesser horseshoe bats.

Conservation Objective for Feature 6: Degraded raised bogs still capable of natural regeneration

- The extent, quality and diversity of raised bog vegetation is maintained and, where possible, restored to good condition, with active moss and peat growth across the raised bog surface.
- The vegetation consists of a mixture of dwarf shrubs, hare's-tail cottongrass, deergrass and bog mosses, grading at the edges into acid and alkaline flushes influenced by acidic water draining from the bog and springs rising in the limestone catchment.
- All factors affecting the achievement of the above conditions are under control.

Conservation Objective for Feature 7: European dry heaths

- The extent, quality and diversity of heath vegetation within the constituent sites is maintained and, where possible, degraded heath is restored to good condition.
- The main heathland areas have a varied age structure with a mosaic of young heath, mature heath and degenerate heath.
- All factors affecting the achievement of these conditions are under control.

Performance indicators for features

Attribute	Limits
SAC interest feature 1: Lesser Horseshoe Bat *Rhinolophus hipposideros*	
A.1 Preparturition population in the maternity roost The is the target for the number of adult bats required each year during early summer, when females gather to give birth and numbers are likely to be at their highest. The figure of 320 bats is based on the lowest number of bats at Buckland between 2000 and 2006.	On at least one occasion between 29th May and 17th June of every year, there will be: - 320 or more bats at Buckland Coach House and 600 bats to be recorded at Buckland Coach House in at least one year during the six year monitoring cycle
A.2 Population in hibernation roost There are a large number of hibernation sites within the SAC, and also a number outside the SAC, which all contribute towards maintaining the SAC population of lesser horseshoe bats. For the performance indicators for the SAC, counts will therefore be undertaken at five key sites. Buckland Ice House, closely associated with the maternity roost, is the easiest site to count. The numbers in the performance indicators are based on maximum counts between 2000 and 2006, and have been devised using the same rationale as for the maternity site. However, there are some difficulties in timing of counts at Buckland Ice House. The site is used by large numbers of bats during relatively mild winters. In cold weather the ice house becomes unsuitable, and the bats relocate to another site not within the SAC, (Ogof Cynnes). For this reason counts for this hibernaculum will be accepted between 1st November and 28th February. Counts at cave sites are technically very difficult. Bats are often difficult to see and also frequently move hibernation site, within the cave and between caves. They may use parts of the cave inaccessible to humans. There are also specific problems at the Usk Bat Sites hibernation sites. Agen Allwedd is a large cave system with a number of passages. One section particularly favoured by bats is known as Angel's Roost. However, it is occasionally impossible to survey this section, because bats are hibernating in the passage to it, and it cannot be reached without disturbing these bats. The Clydach Gorge sites consist of more than 10 caves, not all of which are continually used, but which collectively support a significant part of the wintering bat population. Foxwood is a drift cave with holes in the cave roof. This allows warm air in the cave to escape during the winter. As a result, bats frequently leave this site when it becomes too cold. The internal temperature when the site is surveyed is therefore critical to gaining an accurate picture of the importance of this site for lesser horseshoe bats. The numbers of bats expected at each site have been calculated using the same rationale as that used for the maternity site. An alternative lower number is provided for situations in which the Angel's Roost section of Agen Allwedd cannot be accessed. This count should not be used in years when Angel's Roost is accessible. Siambre Ddu is another large roost. Data recently collected from this site requires further examination in order to devise population limits. It is expected that the lower limit would be in the region of several 10s of bats. The performance indicator for this site at present requires only that bats be present. Droppings will not be used to make assumptions about bats using the site.	During at least one surveillance visit between 1st January and 28th February of every year, there will be: - 270 or more lesser horseshoe bats at Agen Allwedd cave, and 500 (this figure may need revising as 500 is close to the maximum recorded, although current trends show an increasing population) or more present at least once during the six year monitoring cycle **OR** 220 or more lesser horseshoe bats at Agen Allwedd Cave excluding the Angel's roost section (see rationale below), **AND** - A total of 18 or more lesser horseshoe bats at the Clydach Gorge cave sites, and 47 to be recorded at least once during the six year monitoring cycle, **AND** During at least one surveillance visit between 1st November and 28th February of each year, - 280 or more lesser horseshoe bats at Buckland Ice House and 470 to be recorded at least once during the six year monitoring cycle **AND** During at least one surveillance visit between 1st November and 28th February of each year, when the internal temperature of the cave is 6°C or above there will be: - 60 lesser horseshoe bats at Foxwood cave **AND** There is continued use by lesser horseshoe bats at Siambre Ddu (data collected from this site requires further examination in order to devise population limits).

Attribute	Limits
Once more data is collected, it is possible that a moving (6yearly) average could be calculated, such that a fall in numbers of say 10% could flag up a potential decline in health of the population.	
Performance indicators for factors affecting the feature	
Buckland House Maternity Roost (may also apply to other non-SAC maternity roosts)	
F.1 Site security Derived from Common standards Monitoring advice.	Access to the site under the control of the owner/occupier or site secured against unauthorised access. Doors, gates or security fences in sound condition and able to resist unauthorised access attempts.
F.2 External condition of building Derived from Common standards Monitoring advice.	Fabric of building sufficient to maintain roost conditions internally with: - Weatherproof roof. The roof covering materials (slates, tiles etc.) in weatherproof condition with no significant gaps, slippage or damage. - No holes large enough to allow soaking of roof timbers, excessive heat loss or high light levels in the roost area - Walls sound, rainwater goods in adequate condition. The building is structurally stable. No significant deterioration in overall condition of the building
F.3 Roost entrance – buildings and underground sites Derived from Common standards Monitoring advice.	- Unobstructed roost entrance large enough for bats to fly through unimpeded. Normal minima: 300 x 200 mm No artificial lights shining on access or associated flight paths
F.4 External Disturbance Derived from Common standards Monitoring advice.	Disturbance levels acceptable to bats with: - No increase since previous visit Human access to roost controlled and limited
F.5 Internal condition of building/ underground site in roost area Derived from Common standards Monitoring advice.	- Low light levels with no through draught. No toxic substances present, which would adversely affect the health of the bats (e.g. chemical timber treatment within inappropriate substances).
F.6 Temperature of roost area Derived from Common standards Monitoring advice.	- Range of temperatures available to bats with mean temperature in July greater than 20°C
F.7 Internal disturbance Derived from Common standards Monitoring advice.	- Human access to roost area controlled and limited Disturbance is kept to a minimum
Hibernation Sites	
F.8 Site entrance Derived from Common standards Monitoring advice.	- Existing entrances unobstructed. - No human-influenced new entrances causing a change to ventilation. No change in size sufficient to affect airflow and internal temperature.
F.9 External condition of site Derived from Common standards Monitoring advice.	- Vegetation present close to entrance (s) but not obstructing it (them). No artificial lights shining on entrance(s).
F.10 Internal conditions Derived from Common standards Monitoring advice.	- The temperature should remain constantly cool (8-12°C) and dark, once beyond the entrance zone - No significant man-induced changes to ventilation or temperature regime. No toxic substances present (dumping of oil or other substances).
F.11 Internal disturbance Derived from Common standards Monitoring advice.	- Human access to roost area controlled and limited (at Agen Allwedd the number of visitors is already controlled)

Attribute	Limits
	Disturbance is kept to a minimum.
Foraging areas and links to roosts	
F.12 Habitat Quality The bats mainly feed along the edges of woodland, large hedges and tree-lined rivers within and around the SAC areas and land situated between the SSSIs in the Usk valley area between Llangorse and Abergavenny.	There should be no nett loss of suitable woodland, scrub and hedgerows within the SAC or adjoining areas used by the bats.
F.13 Connectivity The bats appear to prefer not to like crossing large areas of open ground and therefore retaining or providing new cover would be beneficial. Links between foraging areas, maternity roosts and hibernacula, are provided by hedgerows, woodland, scrub and lines of trees. There are quite a few maternity roosts in buildings in the Usk valley area that are not within in the SAC, so connectivity is important here too.	Major gaps in the continuity of these habitats should not be created. See also F12 above.
The extent of these habitats shown on aerial photographs taken in 2006 forms a baseline to measure habitat cover.	
SAC interest feature 2: Blanket Bog	
A1. Extent There have been past losses and degradation, so it is essential to maintain the current (2003) extent of the habitat and to restore degraded areas where possible.	Upper limit: 280 ha, constrained by site topography and hydrology. Lower limits: 150 ha (c 90% of extent as measured in 2003).
A2. Quality of the blanket bog The key attributes are presence and frequency of positive (listed below) and negative indicator species and the lack of significant grazing damage to the dwarf shrubs (where present). These conditions should be met in 90% of the blanket bog.	Upper Limits: No more than 75% cover of purple moor-grass, hare's-tail cottongrass, deergrass or common haircap moss (*Polytrichum commune*). **AND**: Less than 1/3 of shoots of all dwarf shrub species collectively showing signs of browsing. **AND**: Lower limits: 6 positive indicator species present. **AND**: 50% of vegetation cover comprising 3 or more of the positive indicators. **AND**: Flat-topped bog-moss (*Sphagnum fallax*) should not be the only bogmoss present. Ideally *S. capillifolium* and other true 'bog' species would be present. (further work required to elucidate the species present or likely to be present at this locality).
Performance indicators for factors affecting the feature	
F1. Peat Erosion There is a natural cycle of peat erosion and deposition but the balance can be upset by burning, heavy grazing, pollution and vehicle damage. The process is best measured across the whole plan area using aerial photography, backed by ground checks, where necessary.	Upper limit: The total extent of active erosion over a 5-year period should not exceed the total extent of areas showing signs of peat accumulation and re-vegetation. Lower limit: There are always some areas of bare peat present as a result of natural erosive processes.
F2. Burning Blanket bog is adversely affected by burning, which leads to surface drying and the replacement of bog-mosses by purple moor-grass and common haircap.	Upper limit: No evidence of significant burning (patches larger than 1ha) in any areas of blanket bog. Lower limit: N/A.
F3.Drainage Significant new drains within the bog areas could cause surface drying and peat erosion. Most old drains are now blocked with peat.	Upper Limit: No evidence of new drains or major clearance of old drains or deepening of bog outlet streams. Lower limit: N/A.
F4.Air quality High levels of air pollution are believed to be damaging and there may be combined effects. Increased cover of hare's-tail cottongrass and flat-topped bog-moss may be symptoms, as could increased levels of peat erosion. The	Upper limits: No exceedence of critical loads for Sulphur dioxide – 20µg/m³ Nitrous Oxides – 30µg/m³ Ozone – 3000 ppb ammonia – 1µg/m³

Attribute	Limits
Environment Agency has set critical levels for these pollutants in relation to various types of vegetation (Refer to the APIS database at www.airquality.co.uk). Monitoring stations located at grid location: 319097.79 214637.88	N – 5-10 kg/ha/yr acid – 0.35keq/ha/yr Lower limits: None.
Positive indicators for blanket bog quality: Bog rosemary (*Andromeda polifolia*); heather (*Calluna vulgaris*); round-leaved sundew (Drosera rotundifolia); cross-leaved heath (*Erica tetralix*); crowberry (*Empetrum nigrum*); common cottongrass (*Eriophorum angustifolium*); hare's-tail cottongrass (*E. vaginatum*); bog asphodel (*Narthecium ossifragrum*); non-crust-forming lichens (count together); other mosses (count together as one); bogmosses (*Sphagnum* spp. – count each species*); deergrass (*Trichophorum cespitosum*); bilberry (*Vaccinium myrtillus*); cowberry (*V. vitus-idaea*). * flat-topped bog-moss only counts if at least other species (further survey required) of bog-moss is present.	
Definition of blanket bog vegetation: Generally occurs where the peat is deeper than half a metre and conforms with National Vegetation Classification types M17, M19 & M20b.	
SAC interest feature 3: Tilio-Acerion forests of slopes, screes and ravines	
A1. Extent of and distribution To be assessed using aerial photography and ground checking. The total area of broadleaved semi-natural woodland, screes and ravines has been mapped as a baseline but extent of ash dominated types has been estimated as they can be intermixed with other types. Tilio-Acerion forests of slopes, screes and ravines is defined as: any area where there is a more-or-less continuous cover of shrubs over 3 metres tall, with or without woodland canopy trees such as ash. In the longterm, when a better woodland community has developed, then these objectives will need to be revisited.	Lower limit: 13.5 ha, of which units 1 & 2 support at least 10 ha and unit 5 supports at least 3.5 ha. Small areas are also present in units 12 & 13. Upper limit: N/A
A2. Canopy cover The woodland is scattered over the lower slopes of Craig y Cilau and extends onto the cliff areas. The latter is secure from the effects of grazing and is probably more or less self-sustaining. The remaining woodland on the grazed slopes has been developing for sometime, and at present it is assumed that this development will continue, provided that the grazing is at a level to permit gradual regeneration. In the long-term (at least 50 years hence), when a better woodland community has developed, then these objectives will need to be revisited.	Upper limits: 90% canopy cover OR: 60% on the south-west facing slopes of unit 1 Lower limits: 75% canopy cover OR: 30% on the south-west facing slopes of unit 1
Attributes A3 –A7 below apply to the main woodland stands in units 1, 2 & 5	
A3. Regeneration In the Clydach gorge on the southern slopes of Mynydd Llangatwg there are stands of ungrazed woodland, which are unlikely to ever be grazed. Therefore the same performance indicators can be applied to all areas. Regeneration to be met in at least 50% of significant gaps in canopy. Such gaps should be recorded at each monitoring visit.	Upper limit: N/A Lower limit: Canopy forming shrubs, trees or coppice re-growth at least 1.5m high present (should be evident in at least one location within each woodland block).
A4. Woodland structure A functioning woodland system will have trees of all ages present. Veteran trees provide particularly important habitat for birds and invertebrates. 75% of the woodland should meet the criteria for an understorey.	Upper limit: N/A Lower limits: An understorey at a height of 2–5m over at least 20% of the stand, composed of locally native species, such as yew, wych elm, whitebeams, hawthorn, limes, rowan, hazel and ash. **AND:** In grazed areas there should be evidence of an understorey developing.
A5. Canopy composition In some areas non-native trees, such as sycamore, will be tolerated, as long as they are not freely re-generating to form large saplings in the understorey, which would likely	Upper limit: None Lower limit: 95% of tree cover is composed of locally native species, such as ash, whitebeams, wych elm,

Attribute	Limits
change the canopy composition over time. Consequently, only 70% of the woodland need comply with the limits set.	rowan, field maple, hazel, or beech.
A6. Ground flora The ground flora is naturally quite sparse in the rocky areas of units 1 and 2, but a few typical ash woodland plants should be evident in all areas. Brambles and ivy can be locally abundant in ungrazed ash woodland but other indicators of disturbance and nutrient enrichment should not be. Limits should be met for 80% of the woodland.	Upper limit: The cover of nettles should not exceed 10%. Lower limit: Typical ground flora species (see list below) should be evident throughout the woodland.
A7. Deadwood Deadwood will be retained. The limits given here should be met in at least 50% of existing woodland.	Upper limit: None Lower limit: Presence of standing and/or fallen deadwood
Performance indicators for factors affecting the feature	
F1. Grazing The present structure and species composition of the northern escarpment woodland, excluding the cliff ledges, is a result of natural regeneration. The cliff ledges are inaccessible to stock, have developed naturally and are not actively managed. The greatest influence on the woodland, and its continued regeneration, is grazing. In units 1 & 2, the woodland has developed on common land and parts are subject to high grazing levels by sheep. The woodland in units 5, 12 & 13 is now largely un-grazed and the ground flora is noticeably more luxuriant in these areas.	Upper limit: Sufficient to allow regeneration in the long term, as defined by the regeneration attribute above. Lower limit: None required.
F2. Non-native species Beech is at the edge of its range in this part of Wales. In units 5, 12 and 13 the beech wood appears to be natural, but the spread of beech over much of Units 1 & 2 may not be desirable, as it would replace the ash woodland. Limits should be met in 70% of the woodland.	Upper limits: 5% cover of non-native trees in the canopy. **AND:** No cotoneaster (or other invasive non-native shrubs) in the understorey or shrub layer. Lower limit: None.
F.3 Woodland Management Natural ecological processes should be allowed to operate as far as possible. In many areas, these are gradually creating greater structural diversity. Most of the woodland on the site is not actively managed (indeed much occurs on cliffs and will never have been managed).	There should be no evidence of tree felling or coppicing within the past five years. (Tree surgery for safety reasons excluded).
SAC interest feature 4: Calcareous rocky slopes with chasmophytic vegetation	
A1. Extent of and distribution The distribution of calcareous rocks (including old quarries) as been mapped as a baseline. However, it has not been possible to accurately map or measure the extent of the chasmophytic vegetation itself. Calcareous rocky slopes with chasmophytic vegetation is defined as: plant species capable of colonising cracks and fissures of rock faces, and the type of plant community depends on the base-status of the rock face.	Lower limit: 11ha of suitably open cliffs and scree and old quarry faces, mainly located in units 1 & 2, with outliers in unit 13.
A2. Condition Many of the cliff areas are inaccessible to grazing stock, and therefore it is reasonably certain that the communities are self-sustaining, assuming that they are not at risk from ivy growing up from below. The species composition is beyond the influence of management, so all that is required is to assume the habitat is not threatened by land use of changes in management.	Upper limits: Alien species should be absent, especially cotoneasters. **AND:** Brambles, nettles, bracken, ivy and shrubs should remain scattered and subdued by grazing, where accessible to livestock. Lower limits: Chasmophytic and ledge vegetation should be diverse and abundant in available crevices and ledges. **AND:**

Attribute	Limits
Condition attributes should apply to the key areas of open rocky ground in units 1 & 2, as shown on the maps in Annex 1 of the management plan.	Crevices support a mixture of mosses and higher plants.
Performance indicators for factors affecting the feature	
F1. Grazing Low grazing levels are important in controlling the growth of groundsmothering species such as ivy, which have the potential to smother boulders and cliff faces that are important for their lower plant communities. Tree growth at the base of the cliffs may shade out important calcareous chasmophytic habitat, so should be controlled within limits outside the areas of agreed woodland. Surveillance of grazing levels and type should be maintained so that changes that may influence the features on the site are identified and recorded.	Upper limit: To be set in relation to the requirements of the limestone grassland. Lower limits: Sufficient to prevent the development of scrub or spread of ivy and tall vegetation. NB. Limits apply to the key areas in units 1 & 2.
F1. Quarrying Any quarrying in the key areas would lead to habitat loss.	No quarrying in the key areas as shown on the maps in Annex 1 of the management plan.
F1. Rock climbing Intensive use can dislodge plants and disturb breeding birds. These impacts may be avoided if climbing is subject to specific agreements, which include a code of conduct.	No rock climbing in the key areas of units 1 & 2 without agreement.
SAC interest feature 5: Caves not open to the public	
A1. Extent of and distribution of habitat Within Mynydd Llangatwg SSSI, many of the same cave passages used by lesser horseshoe bats are also used by other hibernating bat species.	No loss of suitable bat hibernating areas in units 1, 2, 5, 12, 13 and 19.
A2. Species of bat using the caves Records of other bats using the caves in total at least seven species. These have included Lesser Horseshoe, Greater Horseshoe, Brandt's, Whiskered, Natterer's, Daubentons and Brown Long-eared.	Upper Limit: N/A Lower limit: At least 6 of the species listed are recorded as using the caves as hibernation site in Unit 1. **AND:** At least 3 of the species listed are recorded as using the caves as hibernation site in Unit 2.
Performance indicators for factors affecting the feature	
F1. Condition of the habitat It is assumed that the condition of the hibernating areas should be much the same for all bat species, although most of the myotid species require less open space as the hibernate in small crevices.	See factors F1-F13 for lesser horseshoe bats in 4.1 above.
SAC interest feature 6: Degraded raised bogs still capable of natural regeneration	
A1. Extent Monitoring is likely to be a map-based exercise. The area of degraded raised bog will be mapped as a baseline extent and the total area measured. Repeat monitoring will either re-map the site or review the baseline map in the field.	Upper Limit: None, constrained by governed by site topography. Lower limit: 3.4 ha
A2. Condition The important attributes for degraded raised bog on this site are considered to be: • Ericaceous shrub cover • Species compliment • Height of vegetation • Cover of bog-mosses, grass cover and bare ground • Indicators of grazing pressure The invasion of trees and scrub is not an issue on the site. Consequently, no performance indicator is required for this element. If this becomes a problem in the future then this can be addressed by adding additional performance indicators. At least 80% of the feature must fall within the limits.	Upper Limit: The total cover of grasses is less than 50% **AND:** Dwarf shrub cover is less than 70% **AND:** Cover of bare peat is less than 10% Lower limits: Cover of hummock forming bog-mosses is at least 10% **AND:** Vegetation must support at least 5 of the following plants: Heather, sundews, cross-leaved heath, common cottongrass, hare's-tail cottongrass, bog asphodel, non-crustose lichens, bog-mosses, deer-grass and bilberry. **AND:** Vegetation is at least 10cm high
Performance indicators for factors affecting the feature	

Attribute	Limits
F1. Grazing This area of bog has been damaged by heavy grazing in the past and current (2008) grazing levels are still to high to enable the re-generation of the bog habitats. Most of the bog is on commonland and therefore it is difficult to control grazing without agreement and fencing.	Upper limits: Overall grazing pressure of 0.05 livestock units/ha/year on the bog area. **AND:** Minimal winter grazing. **AND:** no stock feeding Lower limit: Sufficient to prevent the establishment of trees and shrubs in the long term
F2. Burning Burning will damage the feature and could encourage dominance by purplemoor grass if grazing is significantly reduced and result in a decline in the cover of bog mosses. At present there is generally insufficient vegetation to be burnt here.	There should be no evidence of recent burning.
F3.Drainage See Blanket Bog above	See Blanket Bog above
SAC interest feature 7: European dry heaths	
A1.Extent and Distribution The area of European dry heaths has been mapped as a baseline extent and the total area measured (based on the latest habitat survey information from 2003). Repeat monitoring will either re-map the site or review the baseline map in the field. There should be no discernable decline in extent from those areas defined above.	Upper limit: N/A, constrained by site topography and hydrology. Lower limits: 385 ha, largely confined to the drier areas of unit 2 and the top of the escarpment in unit 1.
A2.Quality of the habitat Based on the presence and cover of typical heathland plants and 'negative indicator' species. At least 90% of the dry heath within unit 2 should fall within the specified limits. Unit 1 should be managed primarily to suit its other habitats. Recently burnt areas should be avoided when sampling but see also F1 below. The invasion of trees and scrub is not an issue on the site. Consequently, no performance indicator is required for this element. If this becomes a problem in the future then this can be addressed.	Upper Limits: Cover of Western gorse Ulex gallii no more than 50 %. AND: Cover of non-native plants and/or agricultural weeds is less than 1%. AND: cover of Bracken is less than 10%. AND: Less than 1/3 of shoots of all mature dwarf shrub plants collectively showing signs of browsing. OR: Less than 2/3 of young pioneer plants collectively showing signs of browsing. Lower limits: At least 50% of vegetation cover made up of at least 2 dwarf shrub species and the height of the shrub canopy is at least 15cm. AND: 1 species of moss, liverwort or noncrustose lichen present (excluding haircap mosses and Campylopus mosses - associated with burning).
Performance indicators for factors affecting the feature	
F1. Burning Areas burnt may be measured by aerial photography.	Upper limits: In areas subject to any burning plan, only a maximum of up to 15% of the total heathland area should be burnt in any one year. Lower limit: N/A.
F2. Erosion / Bare ground Is generally caused by uncontrolled fires (see above) or heavy trampling. Assessments should not be made in areas that have been recently been subject to planned burning.	Upper Limit: 10% bare ground Lower limit: N/A.
F3. Air Quality Increased cover of grasses and degenerate heather may be symptomatic of air pollution, as there is evidence that pollution makes heather plants more susceptible to damage by frost and heather beetles. The Environment Agency has set critical levels for these pollutants in relation to various types of vegetation.	Upper limits: No critical loads are exceeded. Sulphur dioxide – 20µg/m³ Nitrous Oxides – 30µg/m³ Ozone – 3000 ppb ammonia – 1µg/m³ N – 10-20 kg/ha/yr

Attribute	Limits
Monitoring station located at grid location: 319097.79 214637.88	acid – 0.35keq/ha/yr Lower limits: None required.
Dwarf shrub species are: Heather (*Calluna vulgaris*); crowberry (*Empetrum nigrum*); bilberry (Vaccinium myrtillus); cowberry (*V. vitus-idaea*);	
Definition of dry heath vegetation: Generally occurs over thin peat on hilltops or mineral soils and conforms with National Vegetation Classification types H8, H10, H12& H18. Can occur intermixed with dense bracken stands, rock and scree but these areas should be avoided when sampling for vegetation condition.	

River Usk SAC

Vision Statement and Conservation objectives

G.61 The ecological status of the water course is a major determinant of FCS for all features. The required conservation objective for the water course is defined below.

- The capacity of the habitats in the SAC to support each feature at near-natural population levels, as determined by predominantly unmodified ecological and hydromorphological processes and characteristics, should be maintained as far as possible, or restored where necessary.
- The ecological status of the water environment should be sufficient to maintain a stable or increasing population of each feature. This will include elements of water quantity and quality, physical habitat and community composition and structure. It is anticipated that these limits will concur with the relevant standards used by the Review of Consents process given in Annexes 1-3 of the management plan.
- Flow regime, water quality and physical habitat should be maintained in, or restored as far as possible to, a near-natural state, in order to support the coherence of ecosystem structure and function across the whole area of the SAC.
- All known breeding, spawning and nursery sites of species features should be maintained as suitable habitat as far as possible, except where natural processes cause them to change.
- Flows, water quality, substrate quality and quantity at fish spawning sites and nursery areas will not be depleted by abstraction, discharges, engineering or gravel extraction activities or other impacts to the extent that these sites are damaged or destroyed.
- The river platform and profile should be predominantly unmodified. Physical modifications having an adverse effect on the integrity of the SAC, including, but not limited to, revetments on active alluvial river banks using stone, concrete or waste materials, unsustainable extraction of gravel, addition or release of excessive quantities of fine sediment, will be avoided.
- River habitat SSSI features should be in favourable condition. In the case of the Usk Tributaries SSSI, the SAC habitat is not underpinned by a river habitat SSSI feature. In this case, the target is to maintain the characteristic physical features of the river channel, banks and riparian zone.
- Artificial factors impacting on the capability of each species feature to occupy the full extent of its natural range should be modified where necessary to allow passage, e.g. weirs, bridge sills, acoustic barriers.
- Natural factors such as waterfalls, which may limit the natural range of a species feature or dispersal between naturally isolated populations, should not be modified.
- Flows during the normal migration periods of each migratory fish species feature will not be depleted by abstraction to the extent that passage upstream to spawning sites is hindered.
- Flow objectives for assessment points in the Usk Catchment Abstraction Management Strategy will be agreed between EA and CCW as necessary. It is anticipated that these limits will concur with the standards used by the Review of Consents process given in Annex 1 of the management plan.
- Levels of nutrients, in particular phosphate, will be agreed between EA and CCW for each Water Framework Directive water body in the Usk SAC, and measures taken to maintain nutrients below these levels. It is anticipated that these limits will concur with the standards used by the Review of Consents process given in Annex 2 of the management plan.

- Levels of water quality parameters that are known to affect the distribution and abundance of SAC features will be agreed between EA and CCW for each Water Framework Directive water body in the Usk SAC, and measures taken to maintain pollution below these levels. It is anticipated that these limits will concur with the standards used by the Review of Consents process given in Annex 3 of the management plan.
- Potential sources of pollution not addressed in the Review of Consents, such as contaminated land, will be considered in assessing plans and projects.
- Levels of suspended solids will be agreed between EA and CCW for each Water Framework Directive water body in the Usk SAC. Measures including, but not limited to, the control of suspended sediment generated by agriculture, forestry and engineering works, will be taken to maintain suspended solids below these levels.

Attribute	Limits
SAC interest features 1 - 5: Sea lamprey *Petromyzon marinus*, Brook lamprey *Lampetra planeri*, River Lamprey *Lampetra fluviatilis*, Twaite shad *Alosa fallax*, Allis shad *Alosa alosa*, Atlantic salmon *Salmo salar*, Bullhead *Cottus gobio*	
Vision - The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied:	
The conservation objective for the water course as defined in 4.1 of the management plan must be met	
The population of the feature in the SAC is stable or increasing over the long term.	Entrainment in water abstractions directly impacts on population dynamics through reduced recruitment and survival rates. Fish stocking can adversely affect population dynamics through competition, predation, and alteration of population genetics and introduction of disease.
The natural range of the feature in the SAC is neither being reduced nor is likely to be reduced for the foreseeable future. The natural range is taken to mean those reaches where predominantly suitable habitat for each life stage exists over the long term. Suitable habitat is defined in terms of near-natural hydrological and geomorphological processes and forms e.g. Suitable flows to allow upstream migration, depth of water and substrate type at spawning sites, and ecosystem structure and functions e.g. Food supply (as described in sections 2.2 and 5). Suitable habitat need not be present throughout the SAC but where present must be secured for the foreseeable future. Natural factors such as waterfalls may limit the natural range of individual species. Existing artificial influences on natural range that cause an adverse effect on site integrity, such as physical barriers to migration, will be assessed in view of 4.2.4	Some reaches of the Usk SAC are more suitable for some features than others e.g. the Senni has important populations of brook/river lamprey and salmon but is not used by shad due to its small size and distance from the estuary. These differences influence the management priorities for individual reaches and are used to define the site units described in section 3.2. Further details of feature habitat suitability are given in section 5. In general, management for one feature is likely to be sympathetic for the other features present in the river, provided that the components of favourable conservation status for the water course given in section 4.1 are secured. The characteristic channel morphology provides the diversity of water depths, current velocities and substrate types necessary to fulfil the habitat requirements of the features. The close proximity of different habitats facilitates movement of fish to new preferred habitats with age. The presence of hard bank revetments in a number of active alluvial reaches e.g. through Brecon and upstream of Abergavenny, adversely affects the processes that maintain suitable habitat for the SAC features. Hydrological processes in the Usk are currently affected by large abstractions, especially at Prioress Mill and Brecon Weir. However, there are many smaller abstractions not considered to cause a problem at present. Shad and salmon migration can be affected by acoustic barriers and by high sediment loads, which can originate from a number of sources including construction works.
There is, and will probably continue to be, a sufficiently large habitat to maintain the feature's population in the SAC on a long-term basis.	Allis and twaite shad are affected by range contraction due to artificial barriers to migration in the Usk. It is likely that this loss of habitat affects their maintenance in the SAC on a long-term basis.
Performance indicators for features 1 – 5	
Sea lamprey *Petromyzon marinus*	
Distribution within catchment	Suitable habitat adjacent to or downstream of known spawning sites should contain *Petromyzon ammocoetes*.
Ammocoete density	Ammocoetes should be present in at least four sampling sites each not less than 5km apart. Overall catchment mean >0.1m-2 (Harvey & Cowx 2003)
Brook lamprey *Lampetra planeri* and River lamprey *Lampetra fluviatilis*	
Age/size structure of ammocoete population	Samples < 50 ammocoetes ~ 2 size classes Samples > 50 ammocoetes ~ at least 3 size classes
Distribution of ammocoetes within catchment	Present at not less that 2/3 of sites surveyed within natural range No reduction in distribution of ammocoetes
Ammocoete density	Optimal habitat: >10m-2 Overall catchment mean: >5m-2
Twaite shad *Alosa fallax* and Allis shad *Alosa alosa*	

Attribute	Limits
Spawning distribution	No decline in spawning distribution
Flow	Targets are set in relation to river/reach type(s)
Atlantic salmon *Salmo salar*	
Adult run size	Conservation Limit complied with at least four years in five
Juvenile densities	Expected densities for each sample site using HABSCORE
Water quality Biological quality Chemical quality	 Biological GQA class A RE1
Hydromorphology Flow	 Targets are set in relation to river/reach type(s)
Bullhead *Cottus gobio*	
Adult densities	No less than 0.2 m-2 in sampled reaches
Distribution	Bullheads should be present in all suitable reaches. As a minimum, no decline in distribution from current
Reproduction / age structure	Young-of year fish should occur at densities at least equal to adults
SAC interest features : Otter *Lutra lutra*	
Vision - The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied:	
The population of otters in the SAC is stable or increasing over the long term and reflects the natural carrying capacity of the habitat within the SAC, as determined by natural levels of prey abundance and associated territorial behaviour.	Refer to section 5.9 of Core Plan for current assessment of feature population
The natural range of otters in the SAC is neither being reduced nor is likely to be reduced for the foreseeable future. The natural range is taken to mean those reaches that are potentially suitable to form part of a breeding territory and/or provide routes between breeding territories. The whole area of the Usk SAC is considered to form potentially suitable breeding habitat for otters. The size of breeding territories may vary depending on prey abundance. The population size should not be limited by the availability of suitable undisturbed breeding sites. Where these are insufficient they should be created through habitat enhancement and where necessary the provision of artificial holts. No otter breeding site should be subject to a level of disturbance that could have an adverse effect on breeding success. Where necessary, potentially harmful levels of disturbance must be managed.	Survey information shows that otters are widely distributed in the Usk catchment. While the breeding population in the Usk is not currently considered to limited by the availability of suitable breeding sites, there is some uncertainty over the number of breeding territories which the SAC is capable of supporting given near-natural levels of prey abundance. The decline in eel populations may be having an adverse effect on the population of otters in the Usk.
The safe movement and dispersal of individuals around the SAC is facilitated by the provision, where necessary, of suitable riparian habitat, and underpasses, ledges, fencing etc at road bridges and other artificial barriers.	Restrictions on the movement of otters around the SAC, and between adjoining sites are currently a particular concern in the reach through Newport as a result of a continued decrease in undisturbed suitable riparian habitat.
Performance indicators for feature 6* - Otter *Lutra lutra	
Distribution	Otter signs present at 90% of Otter Survey of Wales sites
Breeding activity	2 reports of cub/family sightings at least 1 year in 6
Actual and potential breeding sites	No decline in number and quality of mapped breeding sites in sub-catchments
SAC interest feature 7: Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation	
The conservation objective for the water course as defined in 4.1 of the management plan must be met	

Attribute	Limits
The natural range of the plant communities represented within this feature should be stable or increasing in the SAC. The natural range is taken to mean those reaches where predominantly suitable habitat exists over the long term. Suitable habitat and associated plant communities may vary from reach to reach. Suitable habitat is defined in terms of near-natural hydrological and geomorphological processes and forms eg. depth and stability of flow, stability of bed substrate, and ecosystem structure and functions e.g. nutrient levels, shade (as described in section 2.4). Suitable habitat for the feature need not be present throughout the SAC but where present must be secured for the foreseeable future, except where natural processes cause it to decline in extent.	More information is required on the natural range and distribution of this feature in the Usk. Important examples of the feature may be present outside currently known locations. Sympathetic management will be promoted wherever the feature is present. Species indicative of unfavourable condition for this feature e.g. filamentous algae associated with eutrophication, invasive non-native species, should be maintained or restored below an acceptable threshold level, indicative of high ecological status, within the SAC.
The area covered by the feature within its natural range in the SAC should be stable or increasing.	Important stands of the feature are known to occur within site management unit nos. 2, 3 & 10. Management to maintain or increase the feature within these units will be a priority. Adverse factors may include elevated nutrient levels, shading or altered flow and/or sediment transport regimes.
The conservation status of the feature's typical species should be favourable. The typical species are defined with reference to the species composition of the appropriate JNCC river vegetation type for the particular river reach, unless differing from this type due to natural variability when other typical species	More information on the typical species expected to be found with each management unit in the SAC is required.
Performance indicators for feature 7 - Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	
Distribution within catchment Distribution within site units 2,3 & 10	*Ranunculus* spp. will be present with an MTR species cover score of at least 5 in: Any three representative sample 100m stretches of suitable habitat between Usk Town bridge and the bridge at Newbridge-on-Usk: **AND** In one representative sample 100m stretch of suitable habitat along the Senni
Typical species	Species list for reference vegetation type: Should conform to appropriate JNCC type or other list for site unit as appropriate. Details to be confirmed
Negative indicators Native species - Cover of indicators of eutrophication maintained below threshold over the medium to long term Alien / introduced species	Algae indicative of eutrophication (*Enteromorpha* spp., *Cladophora* spp. and *Vaucheria* spp.) should not have an MTR cover value of greater than 5 (ie.10%) in 3 consecutive years in: Any three representative sample 100m stretches of suitable habitat between Usk Town bridge and the bridge at Newbridge-on-Usk: **AND** In one representative sample 100m stretch of suitable habitat along the Senni No impact on native biota from alien or introduced species

Potential impacts of the Blaenau Gwent LFRMS on protected sites and features

G.62 Human activities have the potential to impose stresses on a habitat's structure and function in many ways that result in acute, chronic or permanent impacts at different spatial scales. Species may also be affected at many levels e.g. physiological, genetic, single organism, population and groups of species. Activities that have a detrimental effect on a feature result in degradation. The magnitude of any degradation is dependent on the longevity and scale of the impact and the conservation importance of the species or habitats on which the impact occurs. This is influenced by:

- The type of human action, its nature, location, timing, frequency, duration and intensity,
- The species or habitats, and their intolerance and recoverability

G.63 Outcomes arising from human action that are likely to be considered detrimental include effects such as:

- Permanent and long-term change of distribution or reduction in extent of a feature or feature component, or temporary modification or reduction sufficiently significant to negatively impact on biota or ecological processes;
- Reduction in ecological function caused by loss, reduction or modification of habitat structural integrity;
- Interference in or restriction of the range, variety or dynamism of structural, functional or ecological processes, e.g.: alteration of habitat structure, obstruction of tidal streams, chronic or acute thermal, salinity or suspended sediment elevations or reductions;
- Hypertrophication or eutrophication;
- Contamination by biologically deleterious substances;
- Reduction in structure, function and abundance of species populations;
- Change in reproductive capacity, success or recruitment of species populations;
- Reduction in feeding opportunities of species populations;
- Reduction of health to a sub-optimal level, or injury, rendering the population less fit for, inter alia, breeding, foraging, social behaviour, or more susceptible to disease;
- Increase in abundance and range of opportunist species through the unnatural generation of preferential conditions (e.g. organic enrichment), at the expense of existing species and communities;
- Increase in abundance and range of non-native species

G.64 The EU site management plans identify a number of pressures and factors that can lead to unfavourable condition of the features of sites and the sites as a whole. This helps to relate general advice to specific interest features and relates to the vulnerability of features to current activities/uses that take place in the site area that could have an effect on the site features.

G.65 The measures within the Blaenau Gwent LFRMS have been examined to determine the types of impacts that could arise. Some of these impacts are similar to pressures and factors identified in site management plans as potentially able of leading to unfavourable condition of the features and the sites identified in the section headed ***'Internationally Designated sites included in the HRA'***. The potential impacts that could arise from the Blaenau Gwent LFRMS are generally considered to be:

- Disturbance of features by factors such as noise, light, presence of machinery/workers, etc. - due to any works in or near sites or watercourses in order to improve, repair, upgrade or alter flood management assets
- Loss of habitat area, quality and connectivity – from works to flood risk management assets, drainage, etc.
- Changes to the flow regime and sediment characteristics – from works to or within watercourses
- Changes in drainage characteristics / water management – from works to or within watercourses, drainage systems, maintenance and upkeep works/schedules, land management practices, changes in planning policy, design guidance, etc.
- Deterioration of water quality, pollution and changes in the nutrient loads of receiving waters – as a result of works in or near watercourses, drainage and land management, etc.

- Physical or hydrological barriers in watercourses
- Introduction / spread of non-native species

G.66 An assessment of the potential effects of the Blaenau Gwent LFRMS has been carried out, applying the following approach. Each of the features of the sites identified as potentially capable of being affected by the Blaenau Gwent LFRMS has been assessed against each of the potential effect that the LFRMS may produce to determine if these effects are likely to have a significant effect on the protected features of the sites.

G.67 If it is not possible to rule out the possibility of significant effects arising as a result of the Blaenau Gwent LFRMS, mitigation measures have been set out to remove these effects.

G.68 In some cases, it has not been possible to determine if effects will arise at the level of the LFRMS, as specific actions/activities will dependent on particular projects taken forward at a later date. In these cases, mitigation measures are proposed, but there will also be a requirement for each of these projects to determine any effects to protected features at a project level, via the EIA and HRA processes.

G.69 The results of the assessment are set out in ***Table 5***.

Table 5 – Assessment of potential effects of the Blaenau Gwent LFRMS on protected features

Feature	Possible impacts from the LFRMS	Will the impacts affect the feature? (Alone or in-combination)	Is the effect likely to be significant?	Comments / Mitigation measures	Likely significant residual effect?
Usk Bat Sites SAC					
SAC interest feature 1: Lesser Horseshoe Bat *Rhinolophus hipposideros*					
A.1 Preparturition population in the maternity roost					
	Disturbance	No – maternity roosts are well outside of the BG LFRMS area	n/a	-	n/a
	Loss of habitat area, quality and connectivity	No	n/a	-	n/a
	Changes to the flow regime and sediment characteristics	No	n/a	-	n/a
	Changes in drainage characteristics / water management	No	n/a	-	n/a
	Deterioration of water quality, pollution and changes in the nutrient loads of receiving waters	No – maternity roosts are well outside of the BG LFRMS area and not within area where watercourses that could be affected are located	n/a	-	n/a
	Physical or hydrological barriers in watercourses	No	n/a	-	n/a
	Introduction / spread of non-native species	Maybe – non native species may affect food supply	Maybe	Standard Operating Procedures and Emergency Procedures should be reviewed to ensure biosecurity issues are included and addressed. Clearance of areas with invasive species should be carried out in accordance with best practice and advice from EA, CCW. Staff to be made aware of need for biosecurity and reducing the risk of spreading non-native species. Equipment, clothing, vehicles and vessels to be appropriately cleaned before being used in other watercourses in/outside BG.	No
A.2 Population in hibernation roost					
	Disturbance	Maybe – works/activity in the area of the Siambre Ddu site could disturb hibernating roosts. The LFRMS does not include activities outside of BG.	Maybe	The BG LFRMS does not identify any works in the area of the Siambre Ddu site. Any activity should be scheduled to avoid disturbing hibernation and disturbance levels acceptable to bats. Access to/from the roost entrance should be unobstructed and large enough for bats to fly through unimpeded. No artificial lights shining on access or associated	No

Feature	Possible impacts from the LFRMS	Will the impacts affect the feature? (Alone or in-combination)	Is the effect likely to be significant?	Comments / Mitigation measures	Likely significant residual effect?
				flight paths. Appropriate levels of vegetation should be maintained close to entrance (s) but not obstructing it (them). EIA and HRA should be carried out for each scheme to identify project-specific risks and mitigation.	
	Loss of habitat area, quality and connectivity	Maybe – works may require clearance of vegetation	Maybe	The BG LFRMS does not identify any works in the area of the bat sites. Any works should ensure there is no net loss of suitable woodland, scrub and hedgerows in the areas used by bats. Any vegetation clearance should not create any major gaps in the continuity of these habitats. EIA and HRA should be carried out for each scheme to identify project-specific risks and mitigation.	No
	Changes to the flow regime and sediment characteristics	No	n/a	-	n/a
	Changes in drainage characteristics / water management	No	n/a	-	n/a
	Deterioration of water quality, pollution and changes in the nutrient loads of receiving waters	Maybe – works may affect water quality	Maybe	EIA and HRA should be carried out for each scheme to identify project-specific risks and mitigation. This should include use of materials that are appropriate for use in/near water, taking account of relevant advice from EA and CCW in relation to these matters.	No
	Physical or hydrological barriers in watercourses	No	n/a	-	n/a
	Introduction / spread of non-native species	Maybe – non native species may affect food supply	Maybe	Standard Operating Procedures and Emergency Procedures should be reviewed to ensure biosecurity issues are included and addressed. Clearance of areas with invasive species should be carried out in accordance with best practice and advice from EA, CCW. Staff to be made aware of need for biosecurity and reducing the risk of spreading non-native species. Equipment, clothing, vehicles and vessels to be appropriately cleaned before being used in other watercourses in/outside BG.	No
SAC interest feature 2: Blanket Bog					

Feature	Possible impacts from the LFRMS	Will the impacts affect the feature? (Alone or in-combination)	Is the effect likely to be significant?	Comments / Mitigation measures	Likely significant residual effect?
A1. Extent ***A2. Quality of the blanket bog***					
	Disturbance	No	n/a	-	n/a
	Loss of habitat area, quality and connectivity	Maybe - works may require clearance of vegetation, while other changes could affect the extent of habitat area (see other impacts)	Maybe	The BG LFRMS does not identify any works in the areas where blanket bogs are situated. The BG LFRMS also promotes the delivery of the Blaenau Gwent LBAP, which includes bog habitat (HAP4). Any works not connected to the LBAP or SAC should ensure there is no net loss of habitat. Changes to SPG or other guidance should take account of potential impacts to bog habitat and may contribute to maintaining and expanding bog habitat. EIA and HRA should be carried out for each scheme to identify project-specific risks and mitigation.	No
	Changes to the flow regime and sediment characteristics	Maybe – changes to flow regime and sediment characteristics may affect water retention / drainage of surrounding areas	Maybe	The BG LFRMS does not identify any specific works that could affect river flow regimes or sediment characteristics. Changes to SPG or other guidance should take account of potential changes to flow and sediment characteristics. EIA and HRA should be carried out for each scheme to identify project-specific risks and mitigation.	No
	Changes in drainage characteristics / water management	Maybe – works or changes to land management, planning policy, design guidance etc. may affect drainage quality	Maybe	The BG LFRMS does not identify any specific works that could affect drainage in / near blanket bog areas. The BG LFRMS also promotes the delivery of the Blaenau Gwent LBAP, which includes bog habitat (HAP4). Any works not connected to the LBAP or SAC should take account of potential effects to drainage / water management of bog areas. No new drains or major clearance of old drains or deepening of bog outlet streams should be undertaken. Changes to SPG or other guidance should take account of potential changes to drainage characteristics / water management, particularly increased use of SUDS, permeable surfaces and identification of flood storage areas. Such	No

Feature	Possible impacts from the LFRMS	Will the impacts affect the feature? (Alone or in-combination)	Is the effect likely to be significant?	Comments / Mitigation measures	Likely significant residual effect?
				changes are likely to have a beneficial effect but should be assessed when policies are developed/changed and individual projects are taken forward. EIA and HRA should be carried out for each scheme to identify project-specific risks and mitigation.	
	Deterioration of water quality, pollution and changes in the nutrient loads of receiving waters	Maybe – works may affect water quality	Maybe	EIA and HRA should be carried out for each scheme to identify project-specific risks and mitigation. This should include use of materials that are appropriate for use in/near water, taking account of relevant advice from EA and CCW in relation to these matters.	No
	Physical or hydrological barriers in watercourses	No – the BG LFRMS is unlikely to lead to such barriers	No	The does not identify any specific works that could create a physical or hydrological barriers in watercourses and is unlikely to lead to such barriers. However, EIA and HRA should be carried out for individual schemes to determine if barriers are possible and identify project-specific risks and mitigation.	No
	Introduction / spread of non-native species	Maybe – non native species may compete with indigenous species	Maybe	Standard Operating Procedures and Emergency Procedures should be reviewed to ensure biosecurity issues are included and addressed. Clearance of areas with invasive species should be carried out in accordance with best practice and advice from EA, CCW. Staff to be made aware of need for biosecurity and reducing the risk of spreading non-native species. Equipment, clothing, vehicles and vessels to be appropriately cleaned before being used in other watercourses in/outside BG.	No
SAC interest feature 3: Tilio-Acerion forests of slopes, screes and ravines					
A1. Extent of and distribution ***A2. Canopy cover*** ***A3. Regeneration*** ***A4. Woodland structure*** ***A5. Canopy composition*** ***A6. Ground flora*** ***A7. Deadwood*** Attributes A3 –A7 apply to the main woodland stands in units 1, 2 & 5					
	Disturbance	No	n/a	-	n/a
	Loss of habitat area, quality	Maybe - works may require	Maybe	The BG LFRMS does not identify any specific	No

Feature	Possible impacts from the LFRMS	Will the impacts affect the feature? (Alone or in-combination)	Is the effect likely to be significant?	Comments / Mitigation measures	Likely significant residual effect?
	and connectivity	clearance of vegetation.		works that would require clearance of Tilio-Acerion forest. The LFRMS does not influence/affect woodland management practices or grazing. The BG LFRMS also promotes the delivery of the Blaenau Gwent LBAP, which includes woodland habitat (HAP1). Any works not connected to the LBAP or SAC should ensure there is no net loss of habitat or unnecessary clearance of vegetation. EIA and HRA should be carried out for each scheme to identify project-specific risks and mitigation.	
	Changes to the flow regime and sediment characteristics	Maybe – changes to flow regime and sediment characteristics may affect water retention / drainage of surrounding areas. The feature is not highly dependent on water flow regime.	Maybe	The BG LFRMS does not identify any specific works that could affect river flow regimes or sediment characteristics. Changes to SPG or other guidance should take account of potential changes to flow and sediment characteristics. EIA and HRA should be carried out for each scheme to identify project-specific risks and mitigation.	No
	Changes in drainage characteristics / water management	Maybe – works or changes to land management, planning policy, design guidance etc. may affect drainage quality. The feature is not highly vulnerable to changes in drainage characteristics / water management.	Maybe	The BG LFRMS does not identify any specific works that could affect drainage in / near blanket bog areas. The BG LFRMS also promotes the delivery of the Blaenau Gwent LBAP, which includes woodland habitat (HAP1). Any works not connected to the LBAP or SAC should take account of potential effects to drainage / water management. Changes to SPG or other guidance should take account of potential changes to drainage characteristics / water management, particularly increased use of SUDS, permeable surfaces and identification of flood storage areas. Such changes are likely to have a beneficial effect but should be assessed when policies are developed/changed and individual projects are taken forward. EIA and HRA should be carried out for each scheme to identify project-specific risks and mitigation.	No
	Deterioration of water quality,	Maybe – works may affect water	Maybe	EIA and HRA should be carried out for each	No

Feature	Possible impacts from the LFRMS	Will the impacts affect the feature? (Alone or in-combination)	Is the effect likely to be significant?	Comments / Mitigation measures	Likely significant residual effect?
	pollution and changes in the nutrient loads of receiving waters	quality		scheme to identify project-specific risks and mitigation. This should include use of materials that are appropriate for use in/near water, taking account of relevant advice from EA and CCW in relation to these matters.	
	Physical or hydrological barriers in watercourses	No – the BG LFRMS is unlikely to lead to such barriers	No	The does not identify any specific works that could create a physical or hydrological barriers in watercourses and is unlikely to lead to such barriers. However, EIA and HRA should be carried out for individual schemes to determine if barriers are possible and identify project-specific risks and mitigation.	No
	Introduction / spread of non-native species	Maybe – non native species may compete with indigenous species	Maybe	Standard Operating Procedures and Emergency Procedures should be reviewed to ensure biosecurity issues are included and addressed. Clearance of areas with invasive species should be carried out in accordance with best practice and advice from EA, CCW. Staff to be made aware of need for biosecurity and reducing the risk of spreading non-native species. Equipment, clothing, vehicles and vessels to be appropriately cleaned before being used in other watercourses in/outside BG.	No
SAC interest feature 4: Calcareous rocky slopes with chasmophytic vegetation					
A1. Extent of and distribution ***A2. Condition***					
	Disturbance	No	n/a	The LFRMS is unlikely to affect this interest feature due to its location away from areas of water or development. Flood risk management measures are unlikely to be needed in these areas.	n/a
	Loss of habitat area, quality and connectivity	No	n/a	The LFRMS is unlikely to affect this interest feature due to its location away from areas of water or development. Flood risk management measures are unlikely to be needed in these areas.	n/a
	Changes to the flow regime and sediment characteristics	No	n/a	The LFRMS is unlikely to affect this interest feature due to its location away from areas of water or development. Flood risk management measures are unlikely to be needed in these areas.	n/a
	Changes in drainage	No	n/a	The LFRMS is unlikely to affect this interest	n/a

Feature	Possible impacts from the LFRMS	Will the impacts affect the feature? (Alone or in-combination)	Is the effect likely to be significant?	Comments / Mitigation measures	Likely significant residual effect?
	characteristics / water management			feature due to its location away from areas of water or development. Flood risk management measures are unlikely to be needed in these areas.	
	Deterioration of water quality, pollution and changes in the nutrient loads of receiving waters	No	n/a	The LFRMS is unlikely to affect this interest feature due to its location away from areas of water or development. Flood risk management measures are unlikely to be needed in these areas.	n/a
	Physical or hydrological barriers in watercourses	No	n/a	The LFRMS is unlikely to affect this interest feature due to its location away from areas of water or development. Flood risk management measures are unlikely to be needed in these areas.	n/a
	Introduction / spread of non-native species	No	n/a	The LFRMS is unlikely to affect this interest feature due to its location away from areas of water or development. Flood risk management measures are unlikely to be needed in these areas.	n/a
SAC interest feature 5: Caves not open to the public					
A1. Extent of and distribution of habitat ***A2. Species of bat using the caves***					
	Disturbance	Maybe – works/activity in the area of caves could disturb bats.	Maybe	The BG LFRMS does not identify any specific works in the areas of bat use. Any activity should be scheduled to avoid disturbing hibernation and disturbance levels acceptable to bats. Access to/from the roost entrance should be unobstructed and large enough for bats to fly through unimpeded. No artificial lights shining on access or associated flight paths. Appropriate levels of vegetation should be maintained close to entrance (s) but not obstructing it (them). EIA and HRA should be carried out for each scheme to identify project-specific risks and mitigation.	No
	Loss of habitat area, quality and connectivity	Maybe – works may require clearance of vegetation	Maybe	The BG LFRMS does not identify any works in the area of the bat sites. Any works should ensure there is no net loss of suitable woodland, scrub and hedgerows in the areas used by bats. Any vegetation clearance	No

Feature	Possible impacts from the LFRMS	Will the impacts affect the feature? (Alone or in-combination)	Is the effect likely to be significant?	Comments / Mitigation measures	Likely significant residual effect?
				should not create any major gaps in the continuity of these habitats. EIA and HRA should be carried out for each scheme to identify project-specific risks and mitigation.	
	Changes to the flow regime and sediment characteristics	No	n/a	-	n/a
	Changes in drainage characteristics / water management	No	n/a	-	n/a
	Deterioration of water quality, pollution and changes in the nutrient loads of receiving waters	Maybe – works may affect water quality	Maybe	EIA and HRA should be carried out for each scheme to identify project-specific risks and mitigation. This should include use of materials that are appropriate for use in/near water, taking account of relevant advice from EA and CCW in relation to these matters.	No
	Physical or hydrological barriers in watercourses	No	n/a	-	n/a
	Introduction / spread of non-native species	Maybe – non native species may affect food supply	Maybe	Standard Operating Procedures and Emergency Procedures should be reviewed to ensure biosecurity issues are included and addressed. Clearance of areas with invasive species should be carried out in accordance with best practice and advice from EA, CCW. Staff to be made aware of need for biosecurity and reducing the risk of spreading non-native species. Equipment, clothing, vehicles and vessels to be appropriately cleaned before being used in other watercourses in/outside BG.	No
SAC interest feature 6: Degraded raised bogs still capable of natural regeneration					
A1. Extent ***A2. Condition***					
	Disturbance	No	n/a	-	n/a
	Loss of habitat area, quality and connectivity	Maybe - works may require clearance of vegetation, while other changes could affect the extent of habitat area (see other impacts)	Maybe	The BG LFRMS does not identify any specific works in the areas where bogs are situated. The BG LFRMS also promotes the delivery of the Blaenau Gwent LBAP, which includes bog habitat (HAP4). Any works not connected to the LBAP or SAC should ensure there is no net loss of habitat. Changes to SPG or other guidance should take	No

Feature	Possible impacts from the LFRMS	Will the impacts affect the feature? (Alone or in-combination)	Is the effect likely to be significant?	Comments / Mitigation measures	Likely significant residual effect?
				account of potential impacts to bog habitat and may contribute to maintaining and expanding bog habitat. EIA and HRA should be carried out for each scheme to identify project-specific risks and mitigation.	
	Changes to the flow regime and sediment characteristics	Maybe – changes to flow regime and sediment characteristics may affect water retention / drainage of surrounding areas	Maybe	The BG LFRMS does not identify any specific works that could affect river flow regimes or sediment characteristics. Changes to SPG or other guidance should take account of potential changes to flow and sediment characteristics. EIA and HRA should be carried out for each scheme to identify project-specific risks and mitigation.	No
	Changes in drainage characteristics / water management	Maybe – works or changes to land management, planning policy, design guidance etc. may affect drainage	Maybe	The BG LFRMS does not identify any specific works that could affect drainage in / near bog areas. The BG LFRMS also promotes the delivery of the Blaenau Gwent LBAP, which includes bog habitat (HAP4). Any works not connected to the LBAP or SAC should take account of potential effects to drainage / water management of bog areas. No new drains or major clearance of old drains or deepening of bog outlet streams should be undertaken. Changes to SPG or other guidance should take account of potential changes to drainage characteristics / water management, particularly increased use of SUDS, permeable surfaces and identification of flood storage areas. Such changes are likely to have a beneficial effect but should be assessed when policies are developed/changed and individual projects are taken forward. EIA and HRA should be carried out for each scheme to identify project-specific risks and mitigation.	No
	Deterioration of water quality, pollution and changes in the nutrient loads of receiving waters	Maybe – works may affect water quality	Maybe	EIA and HRA should be carried out for each scheme to identify project-specific risks and mitigation. This should include use of materials that are appropriate for use in/near water, taking	No

Feature	Possible impacts from the LFRMS	Will the impacts affect the feature? (Alone or in-combination)	Is the effect likely to be significant?	Comments / Mitigation measures	Likely significant residual effect?
				account of relevant advice from EA and CCW in relation to these matters.	
	Physical or hydrological barriers in watercourses	No – the BG LFRMS is unlikely to lead to such barriers	No	The does not identify any specific works that could create a physical or hydrological barriers in watercourses and is unlikely to lead to such barriers. However, EIA and HRA should be carried out for individual schemes to determine if barriers are possible and identify project-specific risks and mitigation.	No
	Introduction / spread of non-native species	Maybe – non native species may compete with indigenous species	Maybe	Standard Operating Procedures and Emergency Procedures should be reviewed to ensure biosecurity issues are included and addressed. Clearance of areas with invasive species should be carried out in accordance with best practice and advice from EA, CCW. Staff to be made aware of need for biosecurity and reducing the risk of spreading non-native species. Equipment, clothing, vehicles and vessels to be appropriately cleaned before being used in other watercourses in/outside BG.	No
SAC interest feature 7: European dry heaths					
A1.Extent and Distribution ***A2.Quality of the habitat***					
	Disturbance	No	n/a		n/a
	Loss of habitat area, quality and connectivity	Maybe - works may require clearance of vegetation, while other changes could affect the extent of habitat area (see other impacts)	Maybe	The BG LFRMS does not identify any specific works in the areas where heathland is situated. The BG LFRMS also promotes the delivery of the Blaenau Gwent LBAP, which includes heathland (HAP3). Any works not connected to the LBAP or SAC should ensure there is no net loss of habitat. Changes to SPG or other guidance should take account of potential impacts to heathland and may contribute to maintaining and expanding heathland. EIA and HRA should be carried out for each scheme to identify project-specific risks and mitigation.	No
	Changes to the flow regime and sediment characteristics	Maybe – changes to flow regime and sediment characteristics may affect water retention / drainage of surrounding areas	Maybe	The BG LFRMS does not identify any specific works that could affect river flow regimes or sediment characteristics. Changes to SPG or other guidance should take	No

Feature	Possible impacts from the LFRMS	Will the impacts affect the feature? (Alone or in-combination)	Is the effect likely to be significant?	Comments / Mitigation measures	Likely significant residual effect?
				account of potential changes to flow and sediment characteristics. EIA and HRA should be carried out for each scheme to identify project-specific risks and mitigation.	
	Changes in drainage characteristics / water management	Maybe – works or changes to land management, planning policy, design guidance etc. may affect drainage	Maybe	The BG LFRMS does not identify any specific works that could affect drainage in / near heathland areas. The BG LFRMS also promotes the delivery of the Blaenau Gwent LBAP, which includes heathland (HAP3). Any works not connected to the LBAP or SAC should take account of potential effects to drainage / water management of heathland areas. Changes to SPG or other guidance should take account of potential changes to drainage characteristics / water management, particularly increased use of SUDS, permeable surfaces and identification of flood storage areas. Such changes are likely to have a beneficial effect but should be assessed when policies are developed/changed and individual projects are taken forward. EIA and HRA should be carried out for each scheme to identify project-specific risks and mitigation.	No
	Deterioration of water quality, pollution and changes in the nutrient loads of receiving waters	Maybe – works may affect water quality	Maybe	EIA and HRA should be carried out for each scheme to identify project-specific risks and mitigation. This should include use of materials that are appropriate for use in/near water, taking account of relevant advice from EA and CCW in relation to these matters.	No
	Physical or hydrological barriers in watercourses	No – the BG LFRMS is unlikely to lead to such barriers	No	The does not identify any specific works that could create a physical or hydrological barriers in watercourses and is unlikely to lead to such barriers. However, EIA and HRA should be carried out for individual schemes to determine if barriers are possible and identify project-specific risks and mitigation.	No
	Introduction / spread of non-native species	Maybe – non native species may compete with indigenous species	Maybe	Standard Operating Procedures and Emergency Procedures should be reviewed to ensure biosecurity issues are included and addressed. Clearance of areas with invasive species should	No

Feature	Possible impacts from the LFRMS	Will the impacts affect the feature? (Alone or in-combination)	Is the effect likely to be significant?	Comments / Mitigation measures	Likely significant residual effect?
				be carried out in accordance with best practice and advice from EA, CCW. Staff to be made aware of need for biosecurity and reducing the risk of spreading non-native species. Equipment, clothing, vehicles and vessels to be appropriately cleaned before being used in other watercourses in/outside BG.	
River Usk SAC					
SAC interest features 1 - 5: Sea lamprey *Petromyzon marinus*, Brook lamprey *Lampetra planeri*, River Lamprey *Lampetra fluviatilis*, Twaite shad *Alosa fallax*, Allis shad *Alosa alosa*, Atlantic salmon *Salmo salar*, Bullhead *Cottus gobio*					
	Disturbance	No	n/a	-	n/a
	Loss of habitat area, quality and connectivity	No	n/a	The site/features are not a part of the natural drainage area of the BG LFRMS and it is not a natural receptor or sink for natural surface water runoff, overland outflow and discharge from drainage outfalls and there are no direct natural hydrological linkages.	n/a
	Changes to the flow regime and sediment characteristics	No	n/a	The site/features are not a part of the natural drainage area of the BG LFRMS and it is not a natural receptor or sink for natural surface water runoff, overland outflow and discharge from drainage outfalls and there are no direct natural hydrological linkages.	n/a
	Changes in drainage characteristics / water management	No	n/a	The site/features are not a part of the natural drainage area of the BG LFRMS and it is not a natural receptor or sink for natural surface water runoff, overland outflow and discharge from drainage outfalls and there are no direct natural hydrological linkages.	n/a
	Deterioration of water quality, pollution and changes in the nutrient loads of receiving waters	No	n/a	The site/features are not a part of the natural drainage area of the BG LFRMS and it is not a natural receptor or sink for natural surface water runoff, overland outflow and discharge from drainage outfalls and there are no direct natural hydrological linkages.	n/a
	Physical or hydrological barriers in watercourses	No – the BG LFRMS is unlikely to lead to such barriers	n/a	-	n/a
	Introduction / spread of non-native species	Maybe – non-native invasive species could be spread through collaborative works with other LAs and flood risk management	Maybe	Standard Operating Procedures and Emergency Procedures should be reviewed to ensure biosecurity issues are included and addressed. Staff to be made aware of need for biosecurity and	No

Feature	Possible impacts from the LFRMS	Will the impacts affect the feature? (Alone or in-combination)	Is the effect likely to be significant?	Comments / Mitigation measures	Likely significant residual effect?
		authorities		reducing the risk of spreading non-native species. Equipment, clothing, vehicles and vessels to be appropriately cleaned before being used in other watercourses in/outside BG.	
SAC interest features : Otter *Lutra lutra*					
	Disturbance	No	n/a	-	n/a
	Loss of habitat area, quality and connectivity	No	n/a	The site/features are not a part of the natural drainage area of the BG LFRMS and is not likely to be affected.	n/a
	Changes to the flow regime and sediment characteristics	No	n/a	The site/features are not a part of the natural drainage area of the BG LFRMS and it is not a natural receptor or sink for natural surface water runoff, overland outflow and discharge from drainage outfalls and there are no direct natural hydrological linkages.	n/a
	Changes in drainage characteristics / water management	No	n/a	The site/features are not a part of the natural drainage area of the BG LFRMS and it is not a natural receptor or sink for natural surface water runoff, overland outflow and discharge from drainage outfalls and there are no direct natural hydrological linkages.	n/a
	Deterioration of water quality, pollution and changes in the nutrient loads of receiving waters	No	n/a	The site/features are not a part of the natural drainage area of the BG LFRMS and it is not a natural receptor or sink for natural surface water runoff, overland outflow and discharge from drainage outfalls and there are no direct natural hydrological linkages.	n/a
	Physical or hydrological barriers in watercourses	No – the BG LFRMS is unlikely to lead to such barriers	n/a	-	n/a
	Introduction / spread of non-native species	No	n/a		n/a
SAC interest feature 7: Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation					
	Disturbance	No	n/a	-	n/a
	Loss of habitat area, quality and connectivity	No	n/a	The site/features are not a part of the natural drainage area of the BG LFRMS and it is not a natural receptor or sink for natural surface water runoff, overland outflow and discharge from drainage outfalls and there are no direct natural hydrological linkages.	n/a
	Changes to the flow regime and sediment characteristics	No	n/a	The site/features are not a part of the natural drainage area of the BG LFRMS and it is not a	n/a

Feature	Possible impacts from the LFRMS	Will the impacts affect the feature? (Alone or in-combination)	Is the effect likely to be significant?	Comments / Mitigation measures	Likely significant residual effect?
				natural receptor or sink for natural surface water runoff, overland outflow and discharge from drainage outfalls and there are no direct natural hydrological linkages.	
	Changes in drainage characteristics / water management	No	n/a	The site/features are not a part of the natural drainage area of the BG LFRMS and it is not a natural receptor or sink for natural surface water runoff, overland outflow and discharge from drainage outfalls and there are no direct natural hydrological linkages.	n/a
	Deterioration of water quality, pollution and changes in the nutrient loads of receiving waters	No	n/a	The site/features are not a part of the natural drainage area of the BG LFRMS and it is not a natural receptor or sink for natural surface water runoff, overland outflow and discharge from drainage outfalls and there are no direct natural hydrological linkages.	n/a
	Physical or hydrological barriers in watercourses	No – the BG LFRMS is unlikely to lead to such barriers	n/a	-	n/a
	Introduction / spread of non-native species	Maybe – non-native invasive species could be spread through collaborative works with other LAs and flood risk management authorities	Maybe	Standard Operating Procedures and Emergency Procedures should be reviewed to ensure biosecurity issues are included and addressed. Staff to be made aware of need for biosecurity and reducing the risk of spreading non-native species. Equipment, clothing, vehicles and vessels to be appropriately cleaned before being used in other watercourses in/outside BG.	No

In combination effects

G.70 There are a large number of other plans and projects that could act in combination with the potential effects of the Blaenau Gwent LFRMS. Plans, policies, legislation and programmes were reviewed as part of the SEA process. Those most likely to act in combination with the Blaenau Gwent LFRMS to affect the sites identified in this assessment are those concerned with development that may take place in Blaenau Gwent and those that deal with the management of water and flood and erosion risk:

- Eastern Valleys Catchment Flood Management Plan (CFMP)
- Blaenau Gwent Local Development Plan (LDP)
- Severn River Basin Management Plan (RBMP)
- Blaenau Gwent Local Biodiversity Action Plan (LBAP)
- Management Plans for European protected sites

G.71 It is possible that these large scale plans could potentially have adverse impact on the designated features – when considered without the effects of mitigation. These plans have been subject to their own environmental assessments, including HRA, and have incorporated into each of them mitigation measures/features to reduce their potential environmental impacts. It is unlikely that there will be any adverse in-combination effect of these plans with the Blaenau Gwent LFRMS.

G.72 The majority of large scale development areas for all types are included within the Blaenau Gwent LFRMS. One significant development project is the Circuit of Wales proposal for the area north of Ebbw Vale close to the Rassau Industrial Estate. The development will span 830 acres and include the main race circuit, a Karting Track, two Motocross tracks, a motor sports race academy and training facility, a technology park, industrial area and hotel, leisure and retail facilities. The scale of this development means that it could affect flood risk management assets and approaches and may interact with the Blaenau Gwent LFRMS, potentially affecting EU protected sites.

G.73 There are currently no detailed plans on the development, making it difficult to determine if there are any specific effects that could operate in combination with the Blaenau Gwent LFRMS, although the Heads of the Valleys Development Company states that it '*will ensure that its partners incorporate the latest technology and construction techniques to minimise our environmental impact and showcase a sustainable approach to major infrastructure development*'[6]. The development of the Circuit of Wales will be subject to environmental assessments through EIA and HRA processes. These should take account of any potential effects arising from the development, including specific interactions with other plans and projects, including the LFRMS. The development should incorporate mitigation measures/features to reduce their potential environmental impacts and should be in accordance with the Blaenau Gwent LFRMS and any planning and development guidance in relation to flood risk management.

Conclusion

G.74 The LFRMS may result in operations capable of causing deterioration or disturbance to the features of the sites assessed. It has not been possible to say with certainty that these operations will not have a significant effect on the features. It has, however, been possibly to identify mitigation measures that, if implemented, would remove these effects.

G.75 In some cases it has not been possible to rule out the possibility of significant effects due to the strategic nature of the LFRMS and it is deemed more appropriate to determine the possibility of significant effects at a project level. It has, however, been possible to identify mitigation actions that should be taken in order to reduce the potential for such projects to have a significant effect on site features, namely:

- Ensure that an EIA/HRA is undertaken at the project level

[6] Circuit of Wales website, accessed 17/12/12, http://circuitofwales.com/plans/sustainability.html

- Time works to minimise disturbance to features of the sites e.g. hibernating bats
- Access to/from roost entrances should be unobstructed and large enough for bats to fly through unimpeded
- No artificial lights shining on access or associated flight paths
- Appropriate levels of vegetation should be maintained close to entrance (s) but not obstructing it (them)
- Any works should ensure there is no net loss of suitable woodland, scrub and hedgerows in the areas used by bats and any vegetation clearance should not create any major gaps in the continuity of these habitats
- Use of materials that are appropriate for use in/near water, taking account of relevant advice from EA and CCW in relation to these matters
- Seek opportunities to improve the condition of the natural environment, where practical
- Standard Operating Procedures and Emergency Procedures should be reviewed to ensure biosecurity issues are included and addressed and clearance of areas with invasive species should be carried out in accordance with best practice and advice from EA, CCW. Equipment, clothing, vehicles and vessels to be appropriately cleaned before being used in other watercourses in/outside BG
- Changes to SPG or other guidance should take account of potential impacts to protected habitats and aim to contribute to maintaining and expanding protected habitats in line with HAPs and EU protected site management plans.

G.76 With these mitigation measures in place, it is concluded that the proposals are not likely to have a significant adverse impact on any designated features or sites either alone or in combination with other plans or projects.

References

- Capita Symonds, 2011, Blaenau Gwent County Borough Council Deposit Local Development Plan Habitats Regulations Assessments (Appropriate Assessment) (amended January 2012 following comments received at the Deposit Plan Stage), report prepared for Blaenau Gwent County Borough Council
- CCW, 2008, Core Management Plan (including Conservation Objectives) for River Usk Special Area of Conservation (SAC), Countryside Council for Wales, Bangor
- CCW, 2008, Core Management Plan (including Conservation Objectives) for Aberbargoed Grasslands Special Area of Conservation (SAC), Countryside Council for Wales, Bangor
- CCW, 2008, Core Management Plan (including Conservation Objectives) for Cardiff Beech Woods Special Area of Conservation (SAC) (underpinned by Garth Woods SSSI, Castell Coch Woodlands and Road Section SSSI and Fforestganol a Chwm Nofydd SSSI), Countryside Council for Wales, Bangor
- CCW & NE, 2009, The Severn Estuary / Môr Hafren European Marine Site comprising : The Severn Estuary / Môr Hafren Special Area of Conservation (SAC), The Severn Estuary Special Protection Area (SPA), The Severn Estuary / Môr Hafren Ramsar Site Natural England & the Countryside Council for Wales' advice given under Regulation 33(2)(a) of the Conservation (Natural Habitats, &c.) Regulations 1994, as amended, Countryside Council for Wales and Natural England
- CCW, 2008, Core Management Plan (including Conservation Objectives) for Mynydd Llangatwg (Mynydd Llangattock) Site of Special Scientific Interest (SSSI), Siambre Ddu SSSI, Buckland Coach House and Ice House SSSI and Foxwood SSSI, which together comprise Usk Bat Sites Special Area of Conservation (SAC), Countryside Council for Wales, Bangor
- CCW, 2008, Core Management Plan (including Conservation Objectives) for Sugar Loaf Woodlands SAC/SSSI, Countryside Council for Wales, Bangor
- CCW, 2008, Core Management Plan (including Conservation Objectives) for Brecon Beacons Site of Special Scientific Interest (SSSI) incorporating Brecon Beacons / Bannau Brycheiniog Special Area of Conservation (SAC), Countryside Council for Wales, Bangor
- CCW, 2008, Core Management Plan (including Conservation Objectives) for Llangorse Lake/ Llyn Syfaddan Site of Special Scientific Interest (SSSI)/ Special Area of Conservation (SAC), Countryside Council for Wales, Bangor
- CCW, 2008, Core Management Plan (including Conservation Objectives) for Coed y Cerrig Site of Special Scientific Interest (SSSI) including Coed y Cerrig Special Area of Conservation (SAC), Countryside Council for Wales, Bangor
- CCW, 2008, Core Management Plan (including Conservation Objectives) for Cwm Cadlan Site Special Area of Conservation (SAC), Countryside Council for Wales, Bangor
- David Tyldesley and Associates, 2009 (revised Apr 2010 & Sept 2012), Guidance For Plan Making Authorities In Wales - The Appraisal Of Plans Under The Habitats Directive, prepared for the Countryside Council for Wales, Bangor, http://www.ccgc.gov.uk/landscape--wildlife/managing-land-and-sea/environmentalassessment/habitats-regulations-assessmen.aspx
- DG Environment, 2001, Assessment of plans and projects significantly affecting Natura 2000 sites, Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, European Commission, Brussels

H. Water Framework Directive Assessment

Introduction

Overview

H.1 This document contains a ***Water Framework Directive (WFD) assessment of the Draft Blaenau Gwent Local Flood Risk Management Strategy (LFRMS).***

H.2 The EU Council Directive 2000/60/EC '*establishing a framework for the Community action in the field of water* policy' is designed to improve and integrate the way bodies of water are managed throughout Europe. It is commonly known as the ***Water Framework Directive (WFD)***. The WFD was transposed into law in England and Wales by the Water Environment (Water Framework Directive) (England and Wales) Regulations 2003. The aim of the WFD is for all inland and coastal waters in the EU to be in 'good' condition by 2015.

Purpose of a Local Flood Risk Management Strategy

H.3 The Flood and Water Management Act (FWMA) 2010 places a responsibility upon Local Authorities, to develop, maintain, apply and monitor a strategy for local flood risk management (Local Strategy). Under the FWMA, Local Authorities are designated as ***Lead Local Flood Authorities (LLFAs)***.

H.4 The Blaenau Gwent LFRMS will form the framework within which communities have a greater say in local flood risk management decisions. In combination with the National Strategy, the Local Strategy will encourage more effective risk management by enabling people, communities, business and the public sector to work together to:

- Ensure there is a clear understanding of the risks of flooding and erosion, nationally and locally, so that investment in risk management can be prioritised more effectively;
- Set out clear and consistent plans for risk management so that communities and businesses can make informed decisions about the management of the remaining, residual risk;
- Encourage innovative management of flood and coastal erosion risks, taking account of the needs of communities and the environment;
- Form links between the local flood risk management strategy and local spatial planning;
- Ensure that emergency plans and responses to flood incidents are effective and that communities are able to respond properly to flood warnings; and
- Help communities to recover more quickly and effectively after incidents.

H.5 A "local flood risk" is defined within the Flood and Water Management Act as a flood risk from:

- Surface runoff;
- Groundwater; and
- Ordinary watercourses – this include any lake, pond or other area of water that flows into an ordinary watercourse[7].

Requirement for a Water Framework Directive (WFD) Assessment

H.6 The Water Framework Directive 2000[8] requires all natural water bodies to achieve both good chemical status (GCS) and good ecological status (GES). River Basin Management Plans (RBMPs) outline the actions required to enable natural water bodies to achieve GES. Artificial waterbodies (AWBs) and heavily modified waterbodies (HMWBs) may be prevented from reaching GES due to the modifications necessary to maintain their function. They are, however, required to achieve good ecological potential (GEP), through implementation of a series of mitigation measures outlined in the applicable RBMP.

H.7 New activities and schemes that affect the water environment may adversely impact biological, hydromorphological, physico-chemical and/or chemical quality elements (WFD quality elements), leading to deterioration in waterbody status. They may also render proposed improvement measures ineffective, leading to the waterbody failing to meet its WFD objectives

[7] Section 10(3) of the Flood and Water Management Act 2010:
[8] Water Framework Directive (Directive 2000/60/EC), implemented in England and Wales by the Water Environment (Water Framework Directive) Regulations (SI 3242/2003).

for GES/GEP. Under the WFD, activities must not cause deterioration in waterbody status or prevent a waterbody from meeting GES/GEP by invalidating improvement measures.

H.8 The overall ecological status of a waterbody is primarily based on consideration of its biological quality elements and determined by the lowest scoring of these. These biological elements are, however, in turn supported by the physio-chemical and hydromorphological quality elements. Assessment of hydromorphological quality is not explicitly required for a waterbody to achieve moderate ecological status or lower. However, in order to achieve the overall WFD aim of GES or higher, hydromorphological quality must be considered within the classification assessment.

H.9 In addition, in order to achieve the overall WFD aim of GES, a waterbody must pass a separate chemical status assessment, relating to pass/fail checks on the concentrations of various identified priority/dangerous substances. A summary of key WFD concepts is set out in Figure 1.

H.10 The requirements of the Water Framework Directive (WFD) and actions to achieve GES need to be taken into account in the planning of all new activities, plans or strategies that could affect the water environment. Many of the aims of the WFD are relevant to the preparation of the LFRMS and the LFRMS has the potential to help deliver some of the actions identified in the RBMPs. The Environment Agency (the competent authority in England and Wales responsible for delivering the Directive) has recommended that all Local Flood Risk Management Strategies (LFRMSs) undergo an assessment to take account of the requirements of the WFD and ensure that the LFRMS does not conflict with the relevant local River Basin Management Plan (RBMP) or undermine the aims of the WFD.

H.11 The aims of this document are to:

- Collate information on the draft Blaenau Gwent LFRMS and relevant water bodies,
- Provide a baseline understanding of the waterbodies in the study area, within the context of the WFD;
- Provide an assessment of the potential for the draft Blaenau Gwent LFRMS to cause deterioration in the WFD status of any waterbody directly or indirectly affected by the strategy;
- Provide an assessment of the potential impacts on waterbody improvement measures and ability to meet WFD objectives;
- Identify the need for actions to remove or mitigate any potential impacts, if required.

WFD Objectives

The Water Framework Directive (WFD) is a European Directive which introduces a new strategic planning process for the purposes of managing, protecting and improving the water environment. The main objectives of the WFD are to:

- Prevent deterioration in the status of aquatic ecosystems, protect them and improve the ecological condition of waters;
- Aim to achieve at least 'Good Status' for all waters by 2015 (2021 or 2027) where fully justified within an extended deadline under Article 4.4;
- Promote sustainable use of water;
- Conserve habitats and species that depend directly on water;
- Progressively reduce or phase out the release of individual pollutants or groups of pollutants that present a significant threat to the aquatic environment;
- Progressively reduce the pollution of groundwater and prevent or limit the entry of pollutants; and
- Help reduce the effects of floods and droughts.

The Environment Agency is the Government's lead agency for implementing the WFD and already monitors, advises and manages many aspects of the water environment though regulating discharges, abstractions and processing environmental permits and licenses. The Environment Agency is committed to implementing environmental improvements by reducing the physical impacts of flood risk management activities (within artificial or heavily modified waterbodies).

WFD Classification

The WFD classification for a defined waterbody is produced by assessment of a wide variety of different 'elements' which includes:

- '*biological elements'* such as fish, invertebrates, phytobenthos (which includes plants, macro-algae, phytoplankton);
- '*supporting elements*' that include chemical measurements such as ammonia, dissolved oxygen, pH, phosphate, copper, zinc and temperature; and
- '*supporting conditions*' (sometimes referred to as hydromorphology) that assess the physical attributes of the waterbody such as 'quantity and dynamics of flow' and 'morphology'.

The assessment given for each element is also accompanied by a measure of certainty in the result. The status classification is published in the RBMP and provides a baseline condition against which compliance and future improvements can be measured.

WFD Compliance

There are four key objectives against which the impacts of proposed works on a waterbody need to be assessed to determine compliance with the overarching objectives of the WFD:

- Objective 1: The proposed scheme does not cause deterioration in the status of the biological elements of the waterbody;
- Objective 2: The proposed scheme does not compromise the ability of the waterbody to meet its WFD status objectives;
- Objective 3: The proposed scheme does not cause a permanent exclusion or compromise achieving the WFD objectives in other bodies of water within the same RBD; and
- Objective 4: The proposed scheme contributes to the delivery of the WFD objectives.

The first three obligations must be met to avoid infraction of the WFD. The delivery of the forth objective is central to the Environment Agency's implementation of the WFD, where it can be supported through its operational activities. If it is considered that the scheme is likely to cause deterioration in waterbody status or prevent a waterbody from meeting its ecological objectives then an assessment would be made against the conditions listed in Article 4.7 of the WFD. Article 4.7 can be invoked if; 'new modifications' are of overriding public interest and/or the environmental and social benefits of achieving the WFD objectives are outweighed by the benefits of the new modifications to human health, safety and sustainable development; there are no significantly better environmental options that are technically feasible or not disproportionately costly; and all practicable steps for mitigation have been taken.

Artificial or Heavily Modified Water Bodies

These water bodies cannot achieve GES due to substantial modification, e.g. for flood risk management. Instead, they are required to reach GEP. The presence or absence of a set list of mitigation measures is used as a proxy for biological indicators. If all mitigation measures have been taken, the waterbody is assigned a preliminary tag of 'GEP or better'. Good chemical status is a prerequisite for GEP. 'Moderate or worse' is used if some mitigation measures are yet to be implemented. HMWBs may therefore have an element rated 'poor' but not be considered 'poor' in overall status.

Hydromorphology

Hydromorphology is a term used in the WFD to describe the processes operating within, and the physical form of, a waterbody. The term encompasses both hydrological and geomorphological characteristics that, in combination, help support a healthy ecology. Hydromorphology is a supporting condition unless a waterbody is classified as being of 'high' ecological status. In these cases, hydromorphological elements contribute towards status classification.

Figure 1. – Key WFD concepts

The Study Area

H.12 Blaenau Gwent is situated in the north east of industrial South Wales and includes some land that falls within the boundary of the Brecon Beacons National Park. Land within the national park is the responsibility of the Brecon Beacons National Park Authority (NPA) for development control activities.

H.13 Blaenau Gwent has witnessed steady population loss over recent years. The most recent figures suggest that there are 69,800 people living in the study area (Census 2011). This is less than 70,064 in 2001 and 72,254 in 1991 (Censuses). Blaenau Gwent is the smallest of all the Welsh local authorities at about 10,900 hectares. In Blaenau Gwent there are three distinctive valleys supporting the key centres of population of Tredegar, Ebbw Vale, Brynmawr, Nantyglo and Blaina and Abertillery.

H.14 Blaenau Gwent is within the *South East – The Capital Network* area of the Wales Spatial Plan (Welsh Government, 2004). Part of the area falls within the Heads of the Valleys Plus area - An area set in superb natural surroundings, comprising the upper valleys of the Capital Region facing very considerable social challenges created by economic restructuring of the late 20th century. Other parts of the region fall within the Connections Corridor that connects the Heads of the Valleys with the coastal zones. This area is increasingly under pressure for economic and housing development spilling out of the cities and city fringes (Welsh Government, 2008).

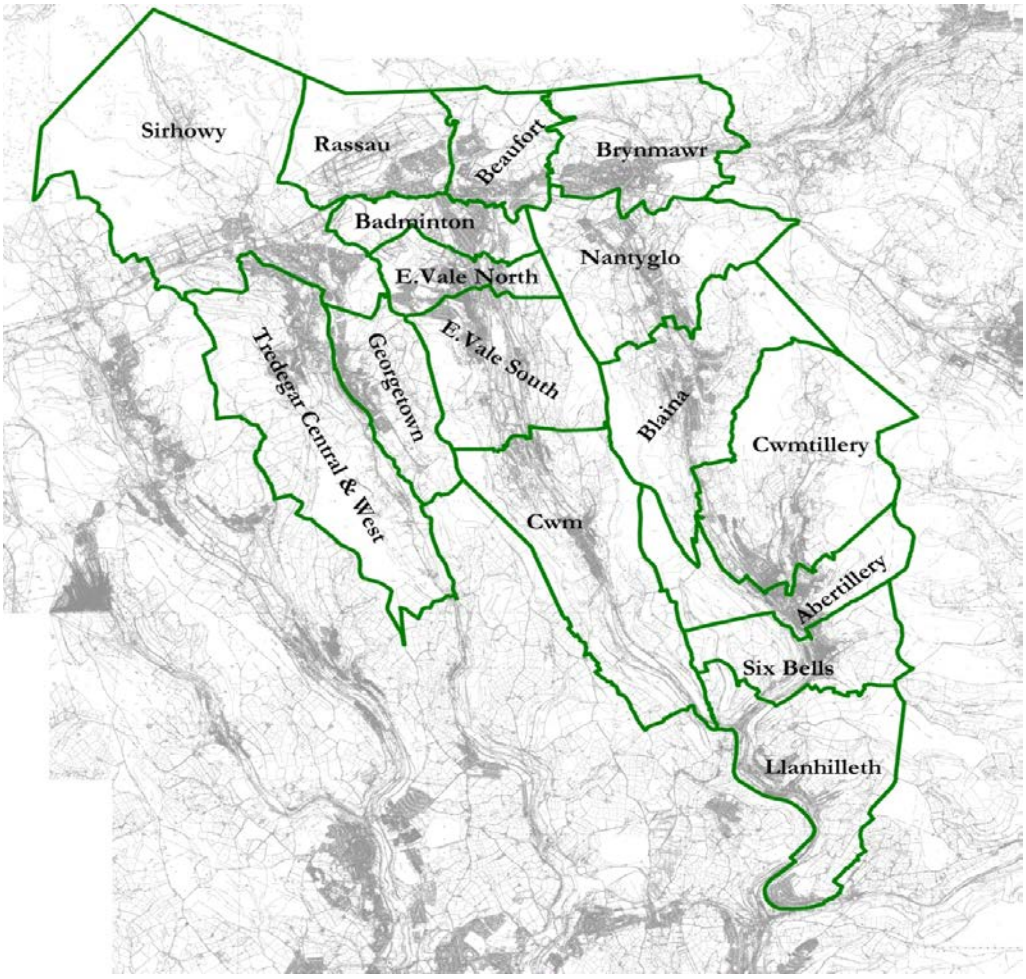


Figure 2. Blaenau Gwent administrative area,

Timescale

H.15 The Blaenau Gwent LFRMS that is being developed is the first such plan to address local sources of flooding in a strategic manner. The legislation that requires the LFRMS is new and is driven by the EU Floods Directive.

H.16 The LFRMS will cover the period 2013 - 2015. It is likely that a review of the LFRMS should take place in 2015 to tie in with the delivery of a Flood Risk Management Plans as part of the Flood Risk Regulations. After that the strategy would continue to be reviewed in line with the Flood Risk Regulations, at 6 yearly intervals, with the next review in 2021.

WFD Baseline

H.17 The area of the Blaenau Gwent LFRMS lies within the ***Severn RBMP*** area. There 10 catchments and 859 waterbodies within the Severn RBMP. Most of the area of the Blaenau Gwent LFRMS is in the ***South East Valleys*** catchment. A small area to the north east of Blaenau Gwent is within the ***Usk*** catchment.

H.18 All waterbodies were identified from the RBMPs and Blaenau Gwent local authority boundaries. The waterbodies within the Blaenau Gwent LFRMS area are set out in ***Table 2.1***. Waterbodies within the Usk catchment are marked ([#]).

H.19 There are 19 WFD waterbodies in Blaenau Gwent. Seven of these are river waterbodies. Other surface water waterbodies include six reservoirs (lake waterbodies), three artificial waterbodies and two groundwater waterbodies. Blaenau Gwent has no coast, so does not contain any coastal or transitional waterbodies.

H.20 ***Table 1*** shows the waterbodies wholly or partially within Blaenau Gwent that could be affected by the Blaenau Gwent LFRMS. The most recent WFD status (2011) is also shown in the table. Maps showing the location of these waterbodies are in ***Annex A***.

Table 1 – Waterbodies wholly or partially within the Blaenau Gwent LFRMS area

Name	Waterbody ID	Ecological Status 2011	Overall risk category	Failing elements	Protected area?
Lakes					
Cairn Mound Reservoir[#]	GB30940626	Good	At risk	Expert judgement*	Yes - Drinking Water
Carno Reservoir	GB30940635	Moderate	At risk	Expert Judgement*, Mitigation Measures Assessment	Yes - Drinking Water
Blaen-y-cwm Reservoir[#]	GB30940636	Good	Probably at risk	Expert judgement*	Yes - Drinking Water
Shon-Sheffreys Reservoir	GB30940712	Moderate	At risk	Expert Judgement*, Mitigation Measures Assessment	Yes - Drinking Water
Scotch Peters Reservoir	GB30940869	Good	Probably at risk	Expert judgement*	Yes - Drinking Water
St James Reservoir	GB30940941	Good	Probably at risk	Expert judgement*	Yes - Drinking Water
Rivers					
Ebbw Fach R - source to conf Ebbw R	GB109056032880	Moderate	Probably at risk	Fish - Morphology	Yes - Freshwater Fish Directive
Ebbw R - conf Ebbw Fach R to Maes-glas	GB109056026910	Moderate	At risk	Mitigation Measures Assessment, Benzo (ghi) perelyene and indeno (123-cd) pyrene	Yes - Freshwater Fish Directive

Name	Waterbody ID	Ecological Status 2011	Overall risk category	Failing elements	Protected area?
Ebbw R - source to conf Ebbw Fach R	GB109056032900	Moderate	At risk	Fish - Morphology	Yes - Freshwater Fish Directive
R Clydach - source to conf R Usk[#]	GB109056033090	Poor	At risk	Fish - Unknown, Fish	Yes - Freshwater Fish Directive - Habitats & Birds Directive
Sirhowy R - source to Rock Villas	GB109056032891	Moderate	At risk	Fish - Morphology	Yes - Drinking Water Directive
Rhymney R - source to conf Nant Bargod Rhymni	GB109057033130	Moderate	At risk		Yes - Freshwater Fish Directive - Drinking Water Directive
Afon Lwyd - source to conf Dowlais Bk	GB109056032910	Poor	At risk		Yes - Freshwater Fish Directive - Drinking Water Directive
unknown	GB809100035	Good	Not assessed		No
unknown	GB809100020	Good	Not assessed		No
unknown	GB809100019	Good	Not assessed		No

* Expert judgement has been used in classifying water bodies with no monitoring data
[#] Waterbodies within the Usk catchment
Source: EA External relations

Name	Waterbody ID	Overall risk category	Quantitative Status	Chemical Status	Failing elements
Groundwater					
SE Valleys Carboniferous Coal Measures	GB40902G20190	At risk	Good	Poor	Impact On Surface Waters
SE Valleys Carboniferous Limestone	GB40901G203600	Probably at risk	Good	Good	n/a
SE Valleys Southern Devonian Old Red Sandstone & Triassic Mercia Mudstone	GB40902G201500	Probably at risk	Good	Good	n/a

Source: EA External relations

WFD Assessment

Introduction

H.21 There is no specific guidance that relates to how a WFD assessment for a Local Flood Risk Management Strategy should be carried out. This assessment has, therefore, been developed based on the knowledge and understanding of the WFD assessment process as applied to specific development projects and the authors' experience of assessments carried out on other large scale strategies, specifically Shoreline Management Plans (SMPs).

H.22 For the purposes of large-scale strategies the consideration of the requirements of the WFD when setting and selecting policies of necessity must be carried out at a high level, while taking account of the fact that the strategy sets the framework for future delivery of smaller-scale plans or schemes.

H.23 WFD assessments of SMP2s and of the National Strategy were carried out post-development, whereas this WFD assessment has been undertaken alongside the development of the Blaenau Gwent LFRMS.

WFD Objectives

H.24 The WFD sets out in Article 4 the default environmental objectives that we should aim to meet for all surface waters and groundwaters. These objectives are:

H.25 In relation to surface waters:

- Prevent deterioration in the status of water bodies;
- By 2015 achieve good ecological and chemical status in all water bodies other than those which are artificial or heavily modified;
- By 2015 achieve good ecological potential and surface water chemical status for artificial and heavily modified water bodies;
- By 2015, achieve the objectives and comply with the standards for protected areas;
- Reduce pollution from priority substances and cease discharges, emissions and losses of priority hazardous substances.

H.26 In relation to groundwaters:

- Prevent deterioration in status;
- Take all measures necessary to prevent the input of hazardous substances into groundwater and to limit the input of other pollutants to groundwater;
- By 2015 achieve good quantitative and chemical status;
- Reverse any significant and sustained upward trend in the concentration of pollutants resulting from human activities;
- By 2015, comply with objectives and standards for protected areas.

H.27 These objectives have been used to develop objectives against which the Blaenau Gwent LFRMS objectives, measures and actions will be tested as part of the WFD assessment (see ***Table 2***).

Table 2 - WFD assessment objectives

Objective	Description
WFD1	Prevent deterioration in status
WFD2	Achieve Good Ecological Status / Good Ecological Potential (surface waters)
WFD3	Achieve Good Chemical Status (surface waters and groundwater)
WFD4	Achieve Good quantitative status (groundwater)
WFD5	Comply with the standards for protected areas
WFD6	Reduce pollution of surface waters and groundwater

Testing the LFRMS against WFD Objectives

H.28 An initial high level assessment of the Blaenau Gwent LFRMS measures and sub-measures against the WFD objectives was carried out to determine if the LFRMS measures/sub-measures are compatible with the WFD aims. Three levels of effort in implementing the measures/sub-measures were considered:

- **Do-Nothing** – Stop any related existing actions and/or expenditure. This provides a baseline position against which to measure any benefit that an increase in effort provides
- **Maintain the current approach** – This considers a continuation of current actions in the future. Levels of expenditure would be retained with the chance that the flood risk may increase in the future due to further expansion of the local area or climate change.
- **Do-more** – These measures identify new actions that the Council could or will have to undertake due to new legislative duties. The increased level of effort could vary depending on the type of action measure being considered, and the considered benefit of providing the additional resource.

H.29 The Blaenau Gwent LFRMS has developed eight **primary local flood risk management objectives**:

Social	Reduce the number of people exposed to flooding risk. Reduce the number of residential, community, heritage assets and commercial properties exposed to flooding risk. Reduce the number of people exposed to (depth x velocity of flow) flooding risk Reduce disruption to key infrastructure (Roads, Hospitals, Power Sub Stations etc.)
Economic	Reduce economic damage (e.g. Annual Average Damages AAD) Reduce the cost of flood management
Environmental	Reduce the number of important habitats (including those protected by international, national or local designations) exposed to flooding risk Prioritise natural solutions, where practicable, when considering flood risk reduction measures.

H.30 Measures have been developed under **three approaches** to manage local flood risk and achieve the eight primary local flood risk management objectives.

- **Prevention** - Measures to prevent an event from occurring
  - making more use of the natural environment, like wetlands
  - avoiding inappropriate development in flood risk areas
  - increasing approaches that utilise the natural environment, like adopting soft engineering in place of traditional solutions, managing of the land to reduce storm runoff, creating more wetlands to store water
  - encourage the sustainable drainage systems (SuDS) approach for surface water management for both new and existing developments

  - incorporating greater resilience into the design of developments (houses, buildings, roads and paved areas)

- **Protect** - Measures to protect individuals, communities and the environment against the consequences of flooding

  - develop robust maintenance regimes of culverts & drains and identify priority areas
  - Identifying and protecting areas suitable for inundation and water storage to prevent flooding elsewhere
  - enabling those at risk of flooding to play a proactive role in shaping the flood risk management service they receive
  - improving the response to flooding incidents by the emergency response organisations, as well as individuals and businesses
  - ensuring effective recovery arrangements are in place and supported by all relevant parties
- **Forecast** - Measures to arrange for forecasting and warning

  - developing better flood forecasting and warning systems
  - improve monitoring and data recording
  - improve communication and support to residents, businesses and communities

H.31 The results of the high level assessment of the measures against the WFD objectives are set out ***Table 3***.

H.32 At this high level, the assessment provides only a very general indication in relation to the likely possible effects on WFD objectives. Several of the measures/sub-measures could result in either positive or negative effects on the WFD objectives, depending on the way in which the measures/sub-measures are delivered.

H.33 The assessment does, however, clearly show that even at this high level of assessment a 'do nothing' option in relation to all of the 'Prevention' and one of the 'Protect' sub-measures is not compatible with WFD objectives. Doing more to prevent inappropriate development in flood risk areas is compatible with WFD objectives and may actively contribute to achieving some of the objectives. The 'Forecast' measure/sub-measures have been assessed as having a neutral effect on WFD objectives at this high level.

H.34 It is important to note that this is only a high level assessment and that the assessment of the more detailed measures to deliver these three main measures could be different to this high level assessment. The more detailed assessment of specific measures is shown in the following sections.

Table 3 - High level WFD assessment

☹	Conflict with WFD objectives - action is likely to have a negative effect on the WFD objective
😐	May / may not be compatible with WFD objectives - the action may have a positive nor negative effect on the WFD objective depending on implementation
☺	Compatible with WFD objectives - action is likely to have a positive effect on the WFD objective
neutral	No effect

Measure	Sub Measure	Level of implementation	Prevent deterioration in status	Achieve Good Ecological Status / Good Ecological Potential (surface waters)	Achieve Good Chemical Status (surface waters and groundwater)	Achieve Good quantitative status (groundwater)	Comply with the standards for protected areas	Reduce pollution of surface waters and groundwater
			WFD 1	WFD 2	WFD 3	WFD 4	WFD 5	WFD 6
Prevention - Measures to prevent an event from occurring	PRV1 - We will make more use of our natural environment	Do-Nothing	☹	☹	☹	☹	☹	☹
		Maintain	😐	😐	😐	😐	😐	😐
		Do More	😐	😐	😐	😐	😐	😐
	PRV2: We will avoid inappropriate development in flood risk areas	Do-Nothing	☹	☹	☹	☹	☹	☹
		Maintain	😐	😐	😐	😐	😐	😐
		Do More	☺	☺	☺	☺	☺	☺
	PRV3: We will increase approaches that utilise the natural environment, like adopting soft engineering in place of traditional solutions, managing of the land to reduce storm runoff, creating more wetlands to store water	Do-Nothing	☹	☹	☹	☹	☹	☹
		Maintain	😐	😐	😐	😐	😐	😐
		Do More	😐	😐	😐	😐	😐	😐
	PRV4: deploying the sustainable drainage systems (SuDS) approach for surface water management for both new and existing developments	Do-Nothing	☹	☹	☹	☹	☹	☹
		Maintain	😐	😐	😐	😐	😐	😐
		Do More	😐	😐	😐	😐	😐	😐
	PRV5: Incorporate greater resilience into the design of developments (houses, buildings, roads and paved areas)	Do-Nothing	neutral	neutral	neutral	neutral	neutral	neutral
		Maintain	neutral	neutral	neutral	neutral	neutral	neutral
		Do More	neutral	neutral	neutral	neutral	neutral	neutral

Measure	Sub Measure	Level of implementation	Prevent deterioration in status	Achieve Good Ecological Status / Good Ecological Potential (surface waters)	Achieve Good Chemical Status (surface waters and groundwater)	Achieve Good quantitative status (groundwater)	Comply with the standards for protected areas	Reduce pollution of surface waters and groundwater
			WFD 1	WFD 2	WFD 3	WFD 4	WFD 5	WFD 6
Protect - Measures to protect individuals, communities and the environment against the consequences of flooding	PRT1: Develop maintenance regimes for culverts & drains and identify priority areas	Do-Nothing	☹	☹	☹	☹	☹	☹
		Maintain	😐	😐	😐	😐	😐	😐
		Do More	😐	😐	😐	😐	😐	😐
	PRT2: Identifying and protecting areas suitable for inundation and water storage to prevent flooding elsewhere	Do-Nothing	☹	☹	☹	☹	☹	☹
		Maintain	😐	😐	😐	😐	😐	😐
		Do More	😐	😐	😐	😐	😐	😐
	PRT3: Enable those at risk of flooding to play a proactive role in shaping the flood risk management service they receive	Do-Nothing	neutral	neutral	neutral	neutral	neutral	neutral
		Maintain	neutral	neutral	neutral	neutral	neutral	neutral
		Do More	neutral	neutral	neutral	neutral	neutral	neutral
	PRT4: Improve the response to flooding incidents by the emergency response organisations, as well as individuals and businesses	Do-Nothing	😐	😐	😐	😐	😐	😐
		Maintain	😐	😐	😐	😐	😐	😐
		Do More	😐	😐	😐	😐	😐	😐
	PRT5: Ensure effective recovery arrangements are in place and supported by all relevant parties	Do-Nothing	😐	😐	😐	😐	😐	😐
		Maintain	😐	😐	😐	😐	😐	😐
		Do More	😐	😐	😐	😐	😐	😐
Forecast - Measures to arrange for forecasting and warning	FC1: Develop better flood forecasting and warning systems	Do-Nothing	neutral	neutral	neutral	neutral	neutral	neutral
		Maintain	neutral	neutral	neutral	neutral	neutral	neutral
		Do More	neutral	neutral	neutral	neutral	neutral	neutral
	FC2: Improve monitoring and data recording	Do-Nothing	neutral	neutral	neutral	neutral	neutral	neutral
		Maintain	neutral	neutral	neutral	neutral	neutral	neutral
		Do More	neutral	neutral	neutral	neutral	neutral	neutral
	FC3: Improve communication and support to residents, businesses and communities	Do-Nothing	neutral	neutral	neutral	neutral	neutral	neutral
		Maintain	neutral	neutral	neutral	neutral	neutral	neutral
		Do More	neutral	neutral	neutral	neutral	neutral	neutral

Pressures on the water environment

H.35 The Severn RBMP identifies several pressures affecting the water environment in the Severn River Basin District (RBD), as set out in ***Table 4*** (EAW, 2009)

Table 4 - Pressures on the water environment in the Severn RBMP area

WFD Pressures	Specific pressures
Point source pollution	• Organic pollution† - including ammonia and biochemical oxygen demand • Chemicals - including priority hazardous substances†, priority substances, specific pollutants, chlorinated solvents† • Other Pollutants - faecal indicator organisms†, metals† • Acidification† • Nutrients - nitrate, phosphorus • Mines and minewaters†
Diffuse source pollution	• Chemicals - including priority hazardous substances†, priority substances, specific pollutants (including pesticides*), chlorinated solvents† • Oil and hydrocarbons • Sediments • Organic pollution† - including ammonia and biochemical oxygen demand • Other Pollutants - faecal indicator organisms†, metals† • Acidification • Nutrients – nitrate*, phosphorus* • Mines and minewaters†
Pressures on the quantitative status of water	• Abstraction and other artificial flow pressures* • Physical modification* - morphology
Other impacts on the status of water	• Physical modification* - morphology • Invasive non-native species* • Biological pressures - including fish stocking, biota removal, commercial fishing† • Sediments* • “Emerging” substances such as endocrine disrupters • Urban and transport pressures/pollution* • Recreation† (e.g. boating, fishing) • Saline intrusion into groundwater bodies (resulting from abstraction pressures)

* specific pressures in the Severn RBD identified as significant water management issues
† Pressures that were found **not** to represent significant water management issues at a district level, but may still have a significant effect at local level

H.36 The WFD requires the management of risk to the environment caused by anthropogenic (manmade) pressures, not just their impacts. Managing impact is 'reactive', whereas managing risk is 'proactive', requiring the ability to identify where an impact might occur (or is occurring) and prevent it from happening in the future.

H.37 Measures and actions within the Blaenau Gwent LFRMS may affect these pressures, increasing or decreasing them. Any increase in pressure may contribute to a waterbody/waterbodies not meeting their WFD target, or achieving good ecological status/potential. Other measures and actions may contribute to reducing pressures and, therefore, help in the achievement of WFD targets.

H.38 Most of the measures / actions set out within the Blaenau Gwent LFRMS apply across the whole of the county area and, therefore, have the potential to affect all of the waterbodies within the area covered by the LFRMS. Some measures / actions are more locally specific, affecting only one or a few waterbodies.

H.39 The assessment of the Blaenau Gwent LFRMS has considered how each of the proposed specific measures may affect the pressures that have been identified as acting on the water environment in the Severn RBMP area.

H.40 As for the high level assessment, three levels of effort in implementing the measures and actions were considered – 'do nothing', 'maintain the current approach' and 'do more'. ***Table 5*** summarises the assessment of the preferred approach for each specific measure. The three different options for implementation of each measure are set out in ***Annex C***, while the detailed assessment of all three levels of implementation is set out in ***Annex D***.

H.41 Blaenau Gwent LFRMS measures are set out below.

PROTECT - Measures to prevent an event from occurring

SPECIFIC MEASURES	
MEASURE PRV1: We will make more use of our natural environment	
PRV 1.1	Delivery of the Blaenau Gwent Local Biodiversity Action Plan (LBAP), specifically HAP1, Wet woodlands, HAP4, Wetlands and HAP 5 Rivers and Streams.
PRV 1.2	Consider/Review the designation and management of Local Nature reserves where they assist in flood prevention.
PRV 1.3	Consider planning requirements for wetland habitat creation as part of the Development Management Process.
PRV 1.4	Consider the designation and management of existing wetland areas where they assist in flood prevention.
PRV 1.5	BGCBC will encourage developers to incorporate wetland and other natural attenuation schemes in new development through guidance, policies and pre-application discussions with Planning Control case officers.
MEASURE PRV2: We will avoid inappropriate development in flood risk areas	
PRV 2.1	Adopt the Local Development Plan as all allocations included in the Plan have been subject to a Strategic Flood Consequence Assessment
PRV 2.2	Adopt the Local Development Plan and implement Policy SP7 which directs new development away from high flood risk areas
PRV 2.3	Raise awareness in Planning Committees when developments potentially impact on flood risk areas.
MEASURE PRV3: We will increase approaches that utilise the natural environment, like adopting soft engineering in place of traditional solutions, managing of the land to reduce storm runoff, creating more wetlands to store water	
PRV 3.1	Identify contributions to delivery of the Woodlands for Wales Strategy (Welsh Gov) e.g. Shelter belt planting opportunities.
PRV 3.2	Review the existing management of ordinary water courses in regard to controlling invasive weeds
PRV 3.3	Review the existing management plans for Local Nature Reserves which assist in storing and filtering water.
PRV 3.4	When designing streetscape works consideration will be given to incorporating a greater area of tree planting and permeable areas.
PRV 3.5	Identify opportunities for planting to stabilise river banks.
MEASURE PRV4: deploying the sustainable drainage systems (SuDS) approach for surface water management for both new and existing developments	
PRV 4.1	Adopt the Local Development Plan and implement Policy DM1 which requires proposals to reduce surface water run off through minimising an increase in impermeable surfaces and using Sustainable Drainage systems, where appropriate.

PRV 4.2	Encourage developers through pre-application discussions to use sustainable drainage systems pending the introduction of the new SuDS regime
PRV 4.3	Specify greater use of SuDS systems for new developments as conditions of planning consent.
MEASURE PRV5: Incorporate greater resilience into the design of developments (houses, buildings, roads and paved areas)	
PRV 5.1	Adopt the Local Development Plan and implement Policy SP7 which includes a requirement to incorporate measures in design and construction to reduce the effects of flooding. This will ensure buildings are designed to reduce the effects of flooding
PRV 5.2	Promote appropriately designed developments in relation to site levels, creation of high ground and setting floor levels
PRV 5.3	Increase approaches in road schemes to utilise materials which provide more resilience to flooding incidents where they are likely to occur.

PREVENT - Measures to protect individuals, communities and the environment against the consequences of flooding

SPECIFIC MEASURES	
MEASURE PRT1: Develop maintenance regimes for culverts & drains and identify priority areas	
PRT 1.1	Develop reporting system to register details of events at the time of flooding incidents.
PRT 1.2	Develop and maintain a register of flood assets.
PRT 1.3	Develop a maintenance recording system and ensure these are informed by the register of flooding incidents.
PRT 1.4	Carry out a risk assessment of all critical culverts and flood assets, as identified through the register of flooding incidents, maintenance records or flood assets, and prepare an action plan to address any unacceptable risks as a result of the review.
MEASURE PRT2: Identifying and protecting areas suitable for inundation and water storage to prevent flooding elsewhere	
PRT 2.1	Identify areas suitable for inundation and water storage.
PRT 2.2	Consider how any identified flood storage areas can be protected through changes to existing procedures, policy, legislation etc.
MEASURE PRT3: Enable those at risk of flooding to play a proactive role in shaping the flood risk management service they receive	
PRT 3.1	Communities in flood risk areas to be consulted on the flood strategy and changes to service
PRT 3.2	Develop community resilience schemes for areas at risk of flooding
PRT 3.3	Ensuring wider awareness of individual risk to increase levels of preparedness and planning for flooding events
MEASURE PRT4: Improve the response to flooding incidents by the emergency response organisations, as well as individuals and businesses	
PRT 4.1	Ensure lessons from flooding incidents in this and other areas are captured
PRT 4.2	Training for those involved in flood response to ensure awareness of roles, responsibilities and an effective response
MEASURE PRT5: Ensure effective recovery arrangements are in place and supported by all relevant parties	
PRT 5.1	Involvement in multi agency flood recovery planning, ensuring plans are tested for suitability

FORECAST - Measures to arrange for forecasting and warning

SPECIFIC MEASURES	
MEASURE FC1: Develop better flood forecasting and warning systems	
FC 1.1	Review current flood forecasting and warning systems and identify potential improvements to allow as much warning as possible of potential flooding events.
FC 1.2	Developing a consistent approach to recording of flood events and flood assets.
FC 1.3	Develop a communication strategy to recognise that risks that cannot be immediately reduced are communicated to the Emergency Planning Team and affected businesses or residents.
MEASURE FC2: Improve monitoring and data recording	
FC 2.1	Ensuring flood events are recorded in line with the form identified in PRFA
FC 2.2	Implementing a geographical database of flood events to inform future mapping of flood risk areas
FC 2.3	Utilise new software to enable identification of priority areas.
MEASURE FC3: Improve communication and support to residents, businesses and communities	
FC 3.1	Set up a "Flood Risk Community Engagement Group" to help communicate flooding and flood risk to

SPECIFIC MEASURES	
	residents, businesses, community etc.

Table 5 - Assessment of Cardiff LFRMS measures/actions

☹	Action is likely to have a negative effect i.e. INCREASE the pressure
😐	Action may / may not affect the pressure depending on implementation
☺	Action is likely to have a positive effect i.e. DECREASE the pressure
neutral	No effect

	Point source pollution						Diffuse source pollution							Pressures on the quantitative status of water		Other impacts on the status of water						
Measure No.	**Organic pollution**	**Chemicals**	**Pollutants - faecal indicator organisms**	**Acidification**	**Nutrients (N, P)**	**Mines / minewaters**	**Chemicals**	**Oil and hydrocarbons**	**Sediments**	**Organic pollution**	**Pollutants - faecal indicator organisms**	**Acidification**	**Nutrients (N, P)**	**Mines / minewaters**	**Abstraction and other artificial flow pressures**	**Physical modification - morphology**	**Physical modification - morphology**	**Invasive non-native species**	**Sediments**	**"Emerging" substances**	**Urban and transport pressures**	**Recreation**	**Saline intrusion to groundwater**
PREVENT – MEASURES TO PREVENT AN EVENT FROM OCCURRING																							
MEASURE PRV1: We will make more use of our natural environment																							
PRV1.1	neutral	neutral	neutral	☹	neutral	neutral	neutral	neutral	neutral	neutral	neutral	☹	neutral	neutral	☺	☺	☺	☺	neutral	neutral	neutral	☺	neutral
PRV1.2	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	☺	☺	☺	neutral	neutral	neutral	neutral	neutral	neutral
PRV1.3	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	☺	☺	☺	neutral	neutral	neutral	neutral	neutral	neutral
PRV1.4	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	☺	☺	☺	neutral	neutral	neutral	neutral	neutral	neutral
PRV1.5	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	☺	☺	☺	neutral	neutral	neutral	neutral	neutral	neutral
MEASURE PRV2: We will avoid inappropriate development in flood risk areas																							

Measure No.	Point source pollution						Diffuse source pollution								Pressures on the quantitative status of water		Other impacts on the status of water						
	Organic pollution	Chemicals	Pollutants - faecal indicator organisms	Acidification	Nutrients (N, P)	Mines / minewaters	Chemicals	Oil and hydrocarbons	Sediments	Organic pollution	Pollutants - faecal indicator organisms	Acidification	Nutrients (N, P)	Mines / minewaters	Abstraction and other artificial flow pressures	Physical modification - morphology	Physical modification - morphology	Invasive non-native species	Sediments	"Emerging" substances	Urban and transport pressures	Recreation	Saline intrusion to groundwater
PRV2.1	😐	😐	😐	😐	😐	neutral	😐	😐	😐	😐	😐	😐	😐	neutral	😐	😐	😐	😐	😐	😐	😐	😐	😐
PRV2.2	😐	😐	😐	😐	😐	neutral	😐	😐	😐	😐	😐	😐	😐	neutral	😐	😐	😐	😐	😐	😐	😐	😐	😐
PRV2.3	☺	☺	☺	☺	☺	neutral	☺	☺	☺	☺	☺	☺	☺	neutral	☺	☺	☺	☺	☺	☺	☺	☺	☺
MEASURE PRV3: We will increase approaches that utilise the natural environment, like adopting soft engineering in place of traditional solutions, managing of the land to reduce storm runoff, creating more wetlands to store water																							
PRV3.1	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	☺	☺	☺	😐	😐	😐	😐	😐	😐
PRV3.2	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	☺	neutral	neutral	neutral	neutral	neutral
PRV3.3	neutral	neutral	neutral	neutral	neutral	neutral	☺	☺	☺	☺	☺	☺	☺	neutral	☺	☺	☺	neutral	☺	☺	neutral	neutral	neutral
PRV3.4	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	☺	☺	neutral	neutral	neutral	neutral	neutral	neutral
PRV3.5	😐	neutral	neutral	neutral	neutral	neutral	😐	neutral	😐	neutral	neutral	neutral	neutral	neutral	neutral	😐	😐	😐	😐	neutral	neutral	neutral	neutral
MEASURE PRV4: deploying the sustainable drainage systems (SuDS) approach for surface water management for both new and existing developments																							

Measure No.	Point source pollution						Diffuse source pollution								Pressures on the quantitative status of water		Other impacts on the status of water						
	Organic pollution	Chemicals	Pollutants - faecal indicator organisms	Acidification	Nutrients (N, P)	Mines / minewaters	Chemicals	Oil and hydrocarbons	Sediments	Organic pollution	Pollutants - faecal indicator organisms	Acidification	Nutrients (N, P)	Mines / minewaters	Abstraction and other artificial flow pressures	Physical modification - morphology	Physical modification - morphology	Invasive non-native species	Sediments	"Emerging" substances	Urban and transport pressures	Recreation	Saline intrusion to groundwater
PRV4.1	neutral	neutral	neutral	neutral	neutral	neutral	😐	😐	😐	😐	neutral	neutral	neutral	neutral	😐	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral
PRV4.2	neutral	neutral	neutral	neutral	neutral	neutral	☺	☺	☺	☺	neutral	neutral	neutral	neutral	☺	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral
PRV4.3	neutral	neutral	neutral	neutral	neutral	neutral	☺	☺	☺	☺	neutral	neutral	neutral	neutral	☺	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral
MEASURE PRV5: Incorporate greater resilience into the design of developments (houses, buildings, roads and paved areas)																							
PRV5.1	😐	😐	😐	😐	😐	neutral	😐	😐	😐	😐	😐	😐	😐	neutral	😐	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral
PRV5.2	☺	☺	☺	☺	☺	neutral	☺	☺	☺	☺	☺	☺	☺	neutral	☺	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral
PRV5.3	☺	☺	☺	☺	☺	neutral	☺	☺	☺	☺	☺	☺	☺	neutral	☺	neutral	neutral	neutral	neutral	neutral	☺	neutral	neutral
PROTECT – MEASURES TO PROTECT INDIVIDUALS, COMMMUNITIES AND THE ENVIRONEMENT AGAINST THE CONSEQUENCES OF FLOODING																							
MEASURE PRT1: Develop maintenance regimes for culverts & drains and identify priority areas																							
PRT1.1	☺	☺	☺	☺	☺	neutral	☺	☺	☺	☺	☺	☺	☺	neutral	☺	neutral	neutral	☺	☺	☺	☺	neutral	neutral

	Point source pollution						Diffuse source pollution								Pressures on the quantitative status of water		Other impacts on the status of water						
Measure No.	**Organic pollution**	**Chemicals**	**Pollutants - faecal indicator organisms**	**Acidification**	**Nutrients (N, P)**	**Mines / minewaters**	**Chemicals**	**Oil and hydrocarbons**	**Sediments**	**Organic pollution**	**Pollutants - faecal indicator organisms**	**Acidification**	**Nutrients (N, P)**	**Mines / minewaters**	**Abstraction and other artificial flow pressures**	**Physical modification - morphology**	**Physical modification - morphology**	**Invasive non-native species**	**Sediments**	**"Emerging" substances**	**Urban and transport pressures**	**Recreation**	**Saline intrusion to groundwater**
PRT1.2	☺	☺	☺	☺	☺	neutral	☺	☺	☺	☺	☺	☺	☺	neutral	☺	neutral	neutral	☺	☺	☺	☺	neutral	neutral
PRT1.3	☺	☺	☺	☺	☺	neutral	☺	☺	☺	☺	☺	☺	☺	neutral	☺	☺	☺	☺	☺	☺	☺	☺	neutral
PRT1.4	😐	😐	😐	😐	😐	neutral	😐	😐	😐	😐	😐	😐	😐	neutral	😐	😐	😐	😐	😐	😐	😐	😐	neutral
MEASURE PRT2: Identifying and protecting areas suitable for inundation and water storage to prevent flooding elsewhere																							
PRT2.1	neutral	neutral	neutral	neutral	neutral	neutral	😐	😐	😐	😐	😐	neutral	😐	neutral	😐	😐	😐	neutral	neutral	neutral	😐	neutral	neutral
PRT2.2	neutral	neutral	neutral	neutral	neutral	neutral	😐	😐	😐	😐	😐	neutral	😐	neutral	😐	😐	😐	neutral	neutral	neutral	😐	neutral	neutral
MEASURE PRT3: Enable those at risk of flooding to play a proactive role in shaping the flood risk management service they receive																							
PRT3.1	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral
PRT3.2	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral

	Point source pollution						Diffuse source pollution								Pressures on the quantitative status of water		Other impacts on the status of water						
Measure No.	**Organic pollution**	**Chemicals**	**Pollutants - faecal indicator organisms**	**Acidification**	**Nutrients (N, P)**	**Mines / minewaters**	**Chemicals**	**Oil and hydrocarbons**	**Sediments**	**Organic pollution**	**Pollutants - faecal indicator organisms**	**Acidification**	**Nutrients (N, P)**	**Mines / minewaters**	**Abstraction and other artificial flow pressures**	**Physical modification - morphology**	**Physical modification - morphology**	**Invasive non-native species**	**Sediments**	**"Emerging" substances**	**Urban and transport pressures**	**Recreation**	**Saline intrusion to groundwater**
PRT3.3	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral
MEASURE PRT4: Improve the response to flooding incidents by the emergency response organisations, as well as individuals and businesses																							
PRT4.1	☹	☹	☹	☹	☹	neutral	☹	☹	☹	☹	☹	☹	☹	neutral	☹	☹	☹	☹	☹	☹	☹	☹	neutral
PRT4.2	☺	☺	☺	☺	☺	neutral	☺	☺	☺	☺	☺	☺	☺	neutral	☺	☺	☺	☺	☺	☺	☺	☺	neutral
MEASURE PRT5: Ensure effective recovery arrangements are in place and supported by all relevant parties																							
PRT5.1	☺	☺	☺	☺	☺	neutral	☺	☺	☺	☺	☺	☺	☺	neutral	☺	☺	☺	☺	☺	☺	☺	☺	neutral
FORECAST – MEASURES TO ARRANGE FOR FORECASTING AND WARNING																							
MEASURE FC1: Develop better flood forecasting and warning systems																							
FC1.1	☹	☹	☹	☹	☹	neutral	☹	☹	☹	☹	☹	☹	☹	neutral	neutral	neutral	neutral	☹	☹	☹	☹	☹	neutral
FC1.2	☺	☺	☺	☺	☺	neutral	☺	☺	☺	☺	☺	☺	☺	neutral	☺	neutral	neutral	☺	☺	☺	☺	neutral	neutral
FC1.3	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral

Measure No.	Point source pollution						Diffuse source pollution								Pressures on the quantitative status of water		Other impacts on the status of water						
	Organic pollution	Chemicals	Pollutants - faecal indicator organisms	Acidification	Nutrients (N, P)	Mines / minewaters	Chemicals	Oil and hydrocarbons	Sediments	Organic pollution	Pollutants - faecal indicator organisms	Acidification	Nutrients (N, P)	Mines / minewaters	Abstraction and other artificial flow pressures	Physical modification - morphology	Physical modification - morphology	Invasive non-native species	Sediments	"Emerging" substances	Urban and transport pressures	Recreation	Saline intrusion to groundwater
MEASURE FC2: Improve monitoring and data recording																							
FC2.1	☺	☺	☺	☺	☺	neutral	☺	☺	☺	☺	☺	☺	☺	neutral	☺	neutral	neutral	☺	☺	☺	☺	neutral	neutral
FC2.2	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	😐	😐	neutral	neutral	neutral	neutral	neutral	neutral
FC2.3	☺	☺	☺	☺	☺	neutral	☺	☺	☺	☺	☺	☺	☺	neutral	☺	☺	☺	☺	☺	☺	☺	☺	neutral
MEASURE FC3: Improve communication and support to residents, businesses and communities																							
FC3.1	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral	neutral

H.42 The measures set out within the Blaenau Gwent LFRMS apply across the whole of the county area and, therefore, have the potential to affect all of the waterbodies within the area covered by the LFRMS.

H.43 As ***Table 5*** shows, many of the preferred options for measures / actions in the Blaenau Gwent LFRMS have been assessed as having no effect on most or all of the WFD pressures identified as a particular issue within the Severn RBD. Five of the preferred options are considered to have no effect on any of the WFD pressures.

H.44 One of the preferred options has been assessed as having a potentially negative effect on acidification (PRV1.1 - Delivery of the Blaenau Gwent Local Biodiversity Action Plan (LBAP), specifically HAP1, Wet woodlands, HAP4, Wetlands and HAP 5 Rivers and Streams). This is due to the target to maintain, improve and increase the extent of bog habitat. These habitats are very locally specific and any increase in acidification is likely to be very localised and not significantly affect waterbodies as a whole or the achievement of GES. The improvement and increase of BAP habitats may also have positive effects on achieving WFD objectives.

H.45 12 of the preferred options would have an overall positive effect, acting to reduce WFD pressures. These measures cover a wide range of activities from reviewing the management plans of nature reserves, promoting flood resilient design, increasing awareness and improving maintenance and recording of assets and flood events.

H.46 Seven of the preferred options could have either a positive or negative effect on WFD pressures, depending on their implementation. These measures are not geographically specific to certain waterbodies and could, potentially affect all waterbodies within the Blaenau Gwent LFRMS area. For these options that could have either a positive or negative effect, specific actions should be integrated into the measure in order to reduce the potential for negative effects and increase beneficial effects. These actions are set out in the next section.

Achieving Objectives for EU protected sites

H.47 Article 4.9 of the WFD requires that steps are taken to ensure that at least the same level of protection as that given by existing community legislation is maintained. This is of particular relevance to schemes, activities or strategies that are in or adjacent to sites designated under the Habitats and Birds Directives (i.e. Natura 2000 sites).

Habitats and Birds Directives

H.48 Sites that are designated under the EU Habitats and Birds Directives or the Ramsar Convention have been subject to a Habitats Regulation Assessment (HRA) to determine if the proposals under the Blaenau Gwent LFRMS might affect the species, birds or habitat features for which these sites have been designated.

H.49 There are no European designated sites either wholly or partly within the area of the LFRMS and that could potentially be affected by the strategy.

H.50 There are several sites within 15km of the County Borough boundary that could potentially be affected by the Blaenau Gwent LFRMS. A review of the Blaenau Gwent LFRMS measures and the protected sites in the area has identified the following sites where it has not been possible to rule out the possibility of any significant effects:

- Usk Bat Sites SAC
- River Usk SAC

H.51 A separate Habitats Regulation Assessment (HRA) has been carried out on the Blaenau Gwent LFRMS (see ***Appendix G***). This has concluded that the LFRMS may result in operations capable of causing deterioration or disturbance to the features of protected sites. It has not been possible to say with certainty that these operations will not have a significant effect on the features. It has, however, been possibly to identify mitigation measures that, if implemented, would remove these effects.

H.52 In some cases it has not been possible to rule out the possibility of significant effects due to the strategic nature of the LFRMS and it is deemed more appropriate to determine the possibility of

significant effects at a project level. It has, however, been possible to identify mitigation actions that should be taken in order to reduce the potential for such projects to have a significant effect on site features. With these mitigation measures in place, it is concluded that the proposals are not likely to have a significant adverse impact on any designated features or sites either alone or in combination with other plans or projects.

Freshwater Fish Directive

H.53 The Freshwater Fish Directive is designed to protect and improve the quality of rivers and lakes to encourage healthy fish populations. It sets water quality standards and monitoring requirements for areas of water which are chosen, or 'designated' by Defra and the Welsh Government. These designated areas of water are selected because they are significant bodies of water which are capable of supporting fish populations. The Directive will be repealed in 2013 and waters protected under the Freshwater Fish Directive will become protected areas under the WFD.

H.54 Some of the measures/actions within the Blaenau Gwent LFRMS could have a positive or negative effect on Freshwater Fish Directive areas, through, for example potentially adverse effects to water quality or migration routes. Mitigation measures set out in the HRA assessment, SEA assessment and within this WFD assessment (following section) would remove potentially adverse effects and increase beneficial effects.

Drinking Water Directive

H.55 The aim of the Drinking Water Directive is to protect the health of the consumers in the EU and to make sure the water is wholesome and clean, healthy and tasty. It sets quality standards for drinking water quality at the tap and requires regular monitoring of drinking water quality and to provide to consumers adequate and up-to-date information on their drinking water quality. A total of 48 microbiological and chemical parameters must be monitored and tested regularly.

H.56 Some of the measures/actions within the Blaenau Gwent LFRMS could have a positive or negative effect on Drinking Water Directive areas, through, for potentially adverse effects to water quality. Mitigation measures set out in the HRA assessment, SEA assessment and within this WFD assessment (following section) would remove potentially adverse effects and increase beneficial effects.

Mitigation measures

H.57 PRV1.1 could have localised potentially negative effects on WFD, while other measures within the Blaenau Gwent LFRMS could have a positive or negative effect on the WFD. In order to ensure negative effects are removed and positive effects are maximised for each of the preferred options, the following mitigation actions are recommended.

H.58 The Severn RBMP sets out a number of agreed actions for different sectors to deliver WFD objectives for the Severn RBD (EAW, 2009). A series of actions are set out for local authorities within the Severn RBD. Some of these actions are relevant to and are measures/actions within the Blaenau Gwent LFRMS. These actions are set out in ***Table 6.*** As these actions have been identified in the Severn RBMP to contribute to achieving GES and other WFD objectives, they are not considered to have an adverse effect on the achievement of WFD objectives.

H.59 In addition to the actions in ***Table 6***, mitigation measures for those Blaenau Gwent LFRMS measures that have been assessed as having a negative effect or either a positive or negative effect on WFD pressures have been proposed. These mitigation measures are set out in ***Table 7***. With these measures in place/implemented, it is considered that the Blaenau Gwent LFRMS will not adversely affect the WFD aims and objectives or achieving the WFD aims and objectives.

Table 6 - Actions common to both the Severn RBMP and the Blaenau Gwent LFRMS

	Description of the action			
Pressures	**What will happen**	**Where it will happen**	**Date**	**Lead organisation & partners**
Abstraction and other artificial flow pressures; direct biological pressures; nutrients; physical modification; sediments (as a direct pollutant)	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through other competent authority functions	Severn RBD	2012	British Waterways, CCW, EA, Forestry Commission Wales, Local Authorities
Abstraction and other artificial flow pressures; physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through undertaking a remediation programme for flood risk and drainage impacts	Severn RBD	2012	EA, Local Authorities; Welsh Government
Abstraction and other artificial flow pressures; physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through enforcement or revocation of planning permission to address public access, drainage, hydrology and navigation pressures	Severn RBD	2010	Local Authorities
Abstraction and other artificial flow pressures	Assess opportunities for surface water storage areas on new development sites as a potential source for re-use in the development and to reduce the need for abstraction	Severn RBD	2012	Local Authorities
Abstraction	Ensure the need for appropriate Water Cycle Strategies are included in regional and local plans, particularly in growth or high risk areas	Severn RBD	2012	Defra; EA Ofwat; Regional Development Agencies; Water companies; Local Authorities
Abstraction and other artificial flow pressures	Include strong water efficiency policies in Spatial Strategies and Local Development Plans / Frameworks	Severn RBD	Implemented	Local Authorities; Regional Assemblies; Welsh Government
Physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through agreed mitigation within shoreline management plan (SMP)	Severn RBD	2010	EA, Local Authorities
Physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through Flood Management Programme	Severn RBD	2010	EA, Local Authorities
Physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through enforcement (S34 Road Traffic Act) to address erosion pressures	Severn RBD	2010	Local Authorities
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Promote the wide scale use of sustainable drainage systems (SUDS) and provide guidance for integrating development and water planning	South East Valleys, Usk and Wye Catchments	2012	Welsh Government; Local Authorities
Organic pollutants; Nutrients; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Microbiology; Sediments (as a direct pollutant)	Influence Town and Country Planning Act authorisation process to help minimise risk of diffuse pollution from new developments (e.g. implement sustainable drainage systems (SUDs) and use of Water Resource Act Planning Guidance)	Severn RBD	Implemented	Local Authorities

	Description of the action			
Pressures	**What will happen**	**Where it will happen**	**Date**	**Lead organisation & partners**
Sediments (as a direct pollutant); Nutrients; Priority Hazardous Substances, Priority Substances and Specific Pollutants	Reduce diffuse pollution and overland flood flows by undertaking woodland planting, including wet and dry woodland, and hedgerow restoration work	Severn RBD	2012	Local Authorities
Sediments (as a direct pollutant); chemicals – metals; Organic pollutants	Reduce diffuse pollution by developing examples and promoting awareness of best practice use of Sustainable Drainage Systems (SUDS)	Severn RBD	Implemented	EA, Local Authorities

Table 7 - Mitigation measures for Blaenau Gwent LFRMS measures

Measure No.	Measure	Preferred option	Proposed actions	Affected waterbody	Comments / Mitigation measures
PRV1.1	Delivery of the Blaenau Gwent Local Biodiversity Action Plan (LBAP), specifically HAP1, Wet woodlands, HAP4, Wetlands and HAP 5 Rivers and Streams.	Do more	Include consideration of flood risk within review of the LBAP. Raise internal awareness of flood risk / bio-diversity synergies	All	Actions to maintain, improve and increase the extent of bog habitat may increase acidity locally but have larger, positive benefits to BAP habitats, WFD objectives and other environmental targets. Actions to maintain, improve and increase the extent of bog habitat should consider any potential effects to the achievement of GES and remove any potentially significant adverse effects, while maximising positive effects. BG should seek advice from CCW and EAW on such activities.
PRV2.1	Adopt the Local Development Plan as all allocations included in the Plan have been subject to a Strategic Flood Consequence Assessment	Maintain	LDP to be adopted by end of 2012	All	Environmental assessment is part of the development of the LDP and should determine the likely effects of the LDP on WFD aims and objectives. Actions within the LDP that could affect waterbodies or water environment have been subject to their own environmental assessments. In order to ensure the LDP does not adversely affect the environment, the mitigation measures set out in the LDP should be implemented.
PRV2.2	Adopt the Local Development Plan and implement Policy SP7 which directs new development away from high flood risk areas	Do-More	LDP to be adopted by end of 2012	All	Environmental assessment is part of the development of the LDP and should determine the likely effects of the LDP on WFD aims and objectives. Actions within the LDP that could affect waterbodies or water environment have been subject to their own environmental assessments. In order to ensure the LDP does not adversely affect the environment, the mitigation measures set out in the LDP should be implemented.

Measure No.	Measure	Preferred option	Proposed actions	Affected waterbody	Comments / Mitigation measures
PRV3.1	Identify contributions to delivery of the Woodlands for Wales Strategy (Welsh Gov) e.g. Shelter belt planting opportunities.	Do-More	Through the County Ecologist identify opportunities to manage flood risk, especially from woodland run-off through sustainable management of forestry areas	All	Delivery of the Woodlands for Wales Strategy is unlikely to have an adverse effect on waterbodies or WFD indicators, however, specific actions for BG are not clear. Individual projects and changes to woodland management practices should be assessed to determine their effects on water quality and WFD indicators.
PRV5.1	Adopt the Local Development Plan and implement Policy SP7 which includes a requirement to incorporate measures in design and construction to reduce the effects of flooding. This will ensure buildings are designed to reduce the effects of flooding	Maintain	LDP to be adopted by end of 2012	All	Environmental assessment is part of the development of the LDP and should determine the likely effects of the LDP on WFD aims and objectives. Actions within the LDP that could affect waterbodies or water environment have been subject to their own environmental assessments. In order to ensure the LDP does not adversely affect the environment, the mitigation measures set out in the LDP should be implemented
PRT1.4	Carry out a risk assessment of all critical culverts and flood assets, as identified through the register of flooding incidents, maintenance records or flood assets, and prepare an action plan to address any unacceptable risks as a result of the review.	Maintain	PFRA completed - identified high-risk areas Hazard Maps being prepared by the EA for high-risk areas by June 2013 BGCBC to prepare Flood Plans by Dec 2015	All	Solutions should be developed taking account of potential impacts to WFD objectives. The need for a WFD assessment of specific projects / works should be considered. The findings of any assessments should be taken into account when delivering the projects/works. This should include use of materials that are appropriate for use in/near water, taking account of relevant advice from EA and CCW in relation to these matters.
PRT4.1	Ensure lessons from flooding incidents in this and other areas are captured	Maintain	Event de-brief meetings are carried out to capture lessons of what went well and bad. Where applicable actions are subject to Scrutiny Review	All	Capturing lessons learned is unlikely to affect WFD objectives, rather it is how those lessons are utilised and implemented that may have effects. Changes to flood response activities should take account of the potential effects on WFD and wider environmental receptors
FC1.1	Review current flood forecasting and warning systems and identify potential improvements to allow as much warning as possible of potential flooding events.	Maintain	Met office / EA forecasting received for pan-Wales and local weather forecasting contract in place	All	The review alones is unlikely to affect WFD objectives, rather how any changes are implemented that may have effects. Changes to flood forecasting and warning activities should take account of the potential effects on WFD and wider environmental receptors, putting in place appropriate mitigation measures

Conclusion

H.60 Through the WFD compliance assessment it has been identified that the strategy has the potential to affect all the WFD waterbodies within the Blaenau Gwent LFRMS area.

H.61 One of the actions has the potential to adversely affect WFD objectives by potentially increasing the acidity of water in bog habitat areas. These effects are likely to be very localised and are not expected to significantly affect the waterbody as a whole. Maintaining, improving and increasing the extent of bog habitat is expected to have benefits for other environmental receptors, including delivering the goals of HAP4 and the LBAP. In taking actions to maintain, improve and increase the extent of bog habitat Blaenau Gwent should consider any potential effects to the achievement of GES and remove any potentially significant adverse effects, while maximising positive effects. BG should seek advice from CCW and EAW.

H.62 Several other actions may have positive or negative effects by increasing or decreasing the specific WFD pressures identified in the RBMP, depending on their implementation. Mitigation measures are set out to reduce the negative effects and increase the positive effects of these actions (see preceding section).

H.63 Several of the actions identified in the Blaenau Gwent LFRMS are the same as, or contribute towards actions to deliver WFD objectives in the Severn RBMP (EAW, 2009). In delivering these actions, the Blaenau Gwent LFRMS will positively contribute towards the achievement of WFD aims and objectives. Actions within the Blaenau Gwent LFRMS also contribute and support the delivery of other environmental plans, such as the LBAP and the Woodlands for Wales Strategy.

H.64 In summary, this assessment concludes that implementation of the Blaenau Gwent LFRMS preferred options is not expected to cause deterioration in the status of any of the water bodies or prevent them from achieving their objectives, provided that mitigation measures are implemented.

H.65 As set out above, the strategy is not likely to affect any European protected sites and it is considered that the strategy is compliant with Article 4.9, providing that mitigation measures are implemented.

H.66 More detailed assessment at a project level should be carried out during design and implementation of any schemes to ensure continued compliance with the WFD. During the assessment the following mitigation measures should be considered for inclusion in schemes arising from the strategy:

- Ensure that an EIA/HRA is undertaken at the project level
- Use of materials that are appropriate for use in/near water, taking account of relevant advice from EA and CCW in relation to these matters
- Standard Operating Procedures and Emergency Procedures should be reviewed to ensure biosecurity issues are included and addressed and clearance of areas with invasive species should be carried out in accordance with best practice and advice from EA, CCW. Equipment, clothing, vehicles and vessels to be appropriately cleaned before being used in other watercourses in/outside BG

References

EAW. (2009). *Water for life and livelihoods River Basin Management Plan Severn River Basin District Annex C: Actions to Deliver Objectives.* Environment Agency.

EAW. (2009). *Water for life and livlihoods River Basin Management Plan Severn River Basin District Annex G: Pressures and Risks.* Environment Agency Wales.

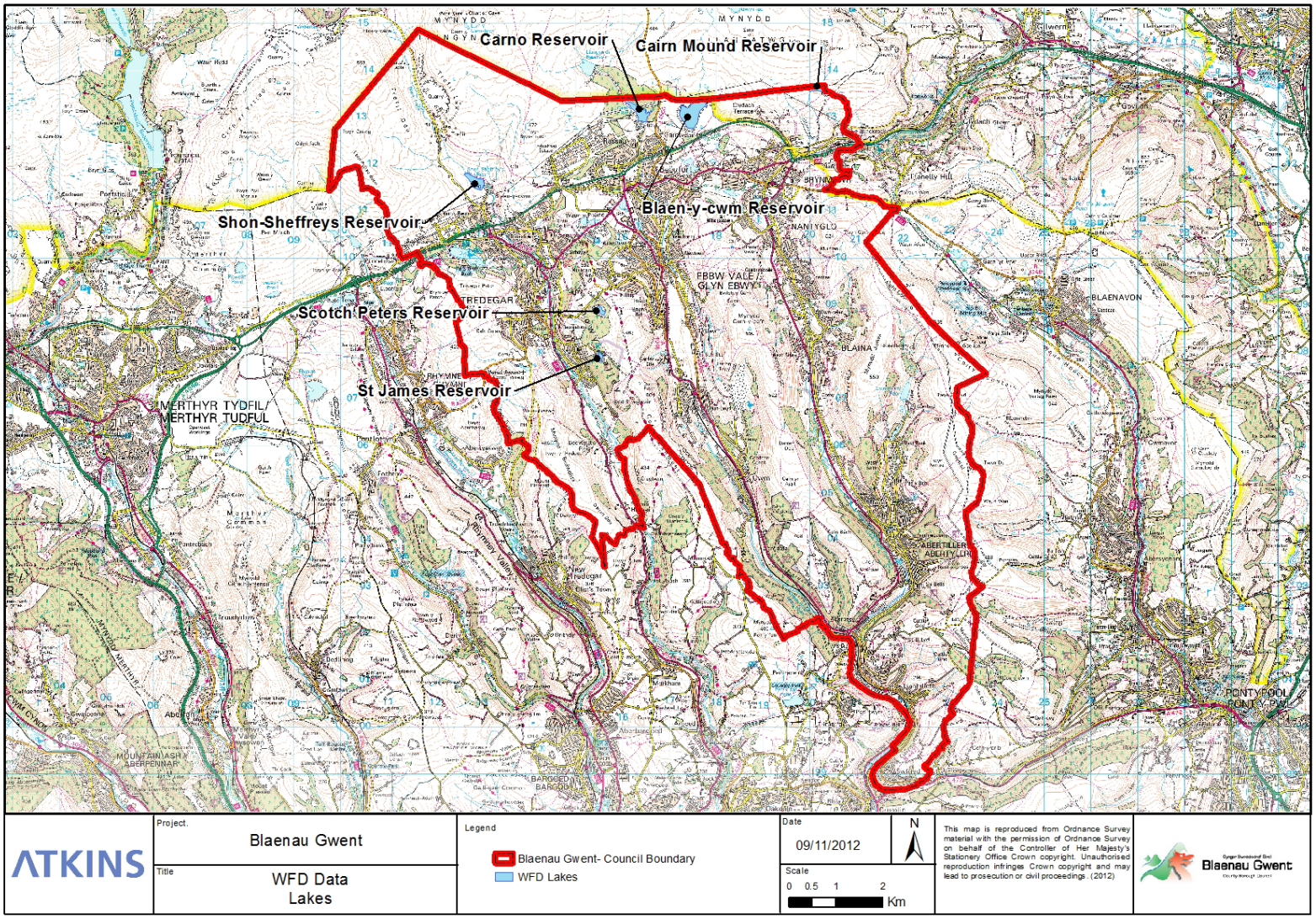
SECG. (2010). *Severn Estuary Shoreline Management Plan Review (SMP2); report prepared by Atkins Ltd. for SECG, http://www.severnestuary.net/secg/smpr.html .* Severn Estuary Coastal Group.

Welsh Government. (2008). *People, Places, Futures The Wales Spatial Plan Update 2008.* Cardiff: Welsh Government.

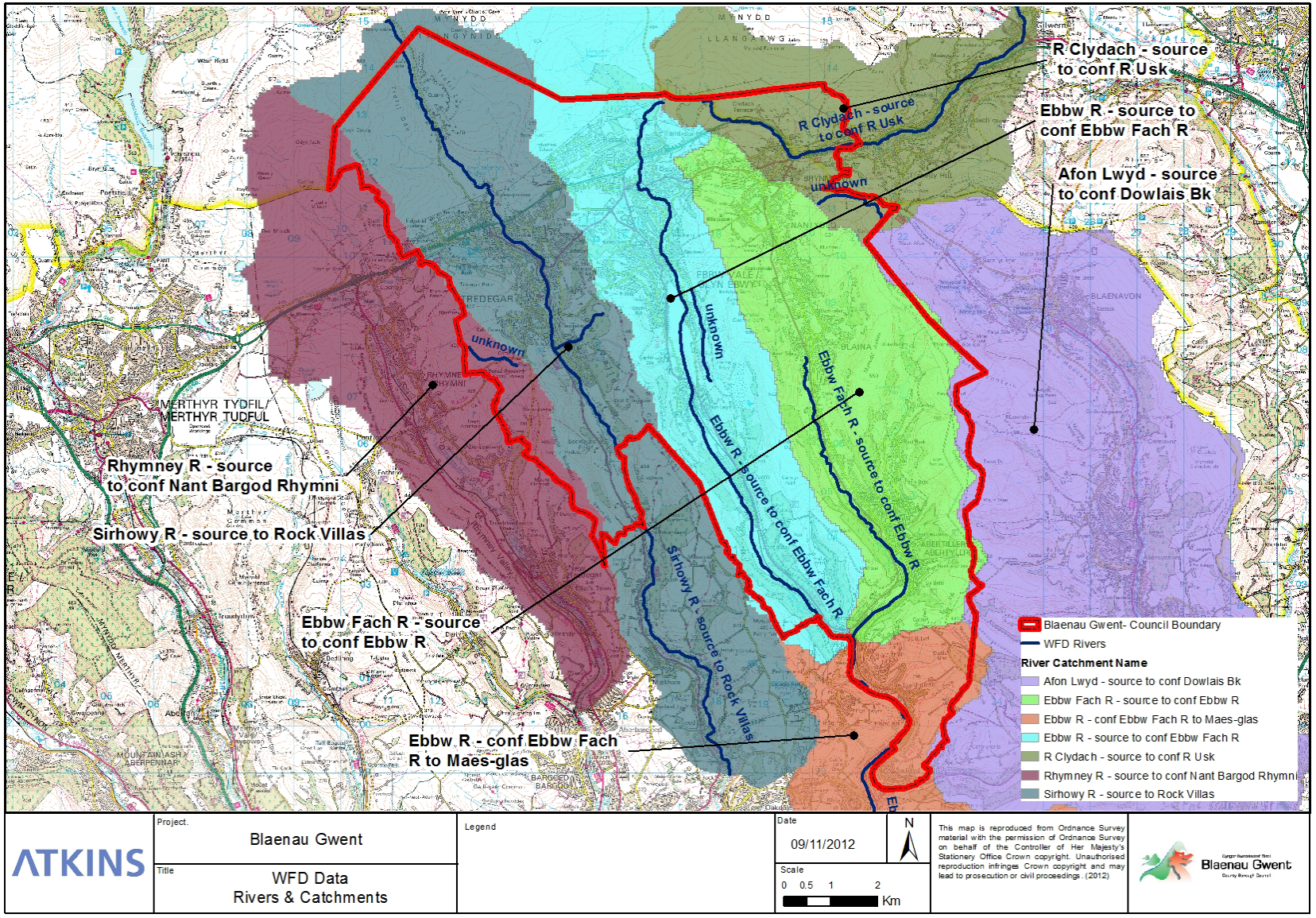
Welsh Government. (2004). *People, Places, Futures, The Wales Spatial Plan.* Welsh Government.

Annex

Annex A – WFD Waterbodies wholly or partially within Blaenau Gwent



WFD Lake waterbodies



WFD River Catchments and waterbodies