

SPECIES-RICH GRASSLANDS HABITAT STATEMENT

1. INTRODUCTION

The majority of grasslands found in the lowlands of the UK generally support poor numbers of grass and wild flower species, the majority having been modified by intensive fertilizing and or re-seeding, and on wetter ground by improved drainage, to make way for more agriculturally productive pastures. The CCW Phase 1 survey for Mid- and South Glamorgan¹³ and Gwent¹⁴ shows much of the grasslands of Caerphilly county borough now support only improved grassland. However, the county borough still supports small quantities of species-rich grassland that can be divided into four main types. These have been afforded priority status in the UK BAP⁴⁹, and are referred to in this habitat statement as:

- **Lowland Neutral Grassland***
- **Lowland Calcareous Grassland***
- **Lowland dry Acid Grassland***
- **Rhos Pasture (Purple Moor-grass and Rush Pasture)***

2. HABITAT DEFINITIONS

2.1 Lowland Neutral Grassland

This grassland type encompasses those occurring on neutral soils in the lowlands and subject to low-intensity management. They cover sites often referred to as 'hay meadows' (the UK BAP⁴⁹ uses the term Lowland Hay Meadows), and some also occur on grazing pasture. In South Wales the great majority of species-rich neutral grassland is old pasture land, grazed by cattle, horse and sometimes sheep. They are permanent grasslands, which although managed traditionally for generations for livestock or hay production, have not received intensive fertiliser (other than manure) or herbicide applications. The relatively low nutrient status of the soil and the traditional management techniques directly facilitates a wide diversity of flowering plants and bryophytes, often with scarce or rare species. This vegetation is often described as "colourful" because the grassland contains a high proportion of flowering plants. Low intensity traditional management is the key to the survival of these floristically diverse grasslands.

There are four neutral grassland types in Caerphilly county borough. The most rare and species-rich is crested dog's-tail-common knapweed grassland, the traditional hay meadow community (although in this area many are now grazed rather than being cut for hay). More widespread but often with species rich swards are the perennial rye grass - crested dog's-tail grassland which are more frequently cut for hay rather than grazed. The tall false oat-grass grassland is often important for small birds and mammals, while the damp grassland Yorkshire fog - Soft rush pasture is of particular value for the invertebrates it supports. These four communities are described in greater detail in appendix 5.1 to this statement.

2.2 Lowland Calcareous Grassland

This grassland type is associated with outcrops of calcareous (carboniferous limestone) rock, and often co-exists with variable amounts of scrub. It is restricted to limestone areas where the rock is exposed, or lies near the surface, and is most developed on shallow soils overlying limestone, or limestone-rich rocks.

In Caerphilly county borough this is restricted to the carboniferous limestone that outcrops in the south and to a lesser extent in the far north. The two main communities that occur in the county borough are sheep's fescue – meadow oat-grass grassland associated with lowland areas, and sheep's fescue – common bent – wild thyme grassland more associated with upland areas. These are described in more detail in appendix 5.1 to this statement. Much of the limestone grassland in Caerphilly county borough, however, is of secondary origin that does not easily fit into a typical grassland type. These include secondary calcareous grassland vegetation that has formed over spoil, old quarries and road/rail cuttings/embankments and are often species rich containing typical limestone grassland species including false brome, yellow oat-grass, glaucous sedge and fairy flax.

2.3 Lowland dry Acid Grassland

This grassland type encompasses a range of plant communities characterised by species able to survive on base-poor, free-draining (often heavily leached) acidic soils, overlying acidic rocks or superficial deposits, such as sands or gravels. They occur in enclosed fields below the enclosure boundary. The vegetation is usually floristically poor, although some forms can be quite species-rich and support rare or scarce plants, invertebrates, birds, reptiles and other species.

These are permanent grasslands and have been traditionally managed for livestock or hay production for many generations. Its diversity is based on low nutrient status and low intensity management. A wide range of communities occur in the UK as a whole, but the most common lowland acid grassland NVC community in Caerphilly county borough is sheep's fescue – common bent – heath bedstraw grassland. This community is described in more detail in the appendix to this statement.

2.4 Rhos Pasture

This habitat covers a range of vegetation types in the lowlands dominated by an abundance of purple moor-grass and tall rushes. CCW's Phase 1 Habitat Survey^{13, 14} classified this habitat as marshy grassland, and in many parts of Wales it is referred to as 'rhos' pasture (a vegetation type which can also include areas of wet heath and drier grassland). It includes grasslands of wet, acid to neutral, generally poor-drained and nutrient-poor soils of either peaty gleys or shallow peats. The pasture is mainly found on undulating plateau and hillsides, as well as in stream and river valleys. They are typically managed as rough grazing for cattle, horses, or sometimes sheep.

In South Wales it is a highly distinctive grassland type, consisting of various species-rich types of fen-meadow, mire and rush pasture. Characteristic species are purple moor-grass and soft or sharp-flowered rush, which occur together with other typical mire or fen species, such as tormentil, devil's bit scabious, carnation sedge, marsh bedstraw, velvet bent, and meadow thistle. Depending on its position within the landscape and the local environmental conditions, a variety of types can be recognized, and are described in the appendix 5.1 to this statement.

3. CURRENT STATUS

The extent and distribution of grassland habitats in Wales has been considerably enhanced as a result of the NCC/CCW Phase 1 Habitat Survey (1979-1998). CCW's Phase 2 Lowland Grassland Survey (1987 – ongoing) on selected sites has provided more detailed information on the extent, distribution, and floristic composition of lowland grasslands in Caerphilly county borough. The following accounts for each habitat contain lists of sites known to contain the grassland type in the county borough. However, many sites, in particular SINCs, are mosaics of different

habitats, and often comprise more than one of the grassland types covered in the habitat statement. **Map 5.1** shows sites where this is the case.

3.1 Lowland Neutral Grassland

Although once widespread in lowland Britain, species-rich neutral grasslands are now very rare. It is estimated that between 1930 and 1984 such semi-natural grassland had declined in the UK by 97%. Losses have continued throughout the 1980s and 1990s, being most vulnerable to agricultural improvement, at a rate of between 2-10% per annum. The Habitat Statement in the UK BAP⁴⁹ estimates that <15,000ha of species-rich neutral grassland survives today. Less than 2,000ha are thought to remain in Wales. Around 650ha of this occurs in 208 SSSIs, illustrating the way in which these grasslands are now confined to numerous small, scattered and often isolated fields⁴⁹.

Only 4,000ha of the rare crested dog's-tail – common knapweed grassland community is estimated to occur in the UK, which in global terms is a habitat that is largely confined to the British Isles. Wales supports at least 1,200ha, and CCW's Phase 2 Survey identified 12ha of this community occurring in Caerphilly county borough, which is equivalent to 1% of the total Welsh resource. The conservation of this resource is therefore of national importance.

The perennial rye grass – crested dog's-tail grassland community is more widespread. In biodiversity terms the less modified forms are of greatest significance as they can be floristically rich and support a variety of invertebrates. As such they have also been included in this habitat statement, as they are under threat from agricultural modification and development. In addition they can help to provide links to the most rare fragmented grassland communities and provide possible candidates for the reversion to the rarer grassland types.

Memorial Park Meadows SSSI and **Aberbargoed Grasslands SSSI** support examples of the rare crested dog's-tail – common knapweed grassland community in Caerphilly county borough. Sites, including these and other SINs⁴, are shown on **Map 5.2**, and listed in appendix 5.2.

3.2 Lowland Calcareous Grassland

It is estimated that there are 33,000 - 41,000ha of calcareous grassland in the UK⁴⁹. In Wales roughly 1,000ha has been recorded and it is largely confined to outcrops of carboniferous limestone in the north and south. The CCW Phase 1 Habitat Survey confirms the scarcity of calcareous grasslands, and their conservation is a high priority for nature conservation and biodiversity in the UK, as their continued existence is dependent on appropriate low-intensity management (largely grazing). In Mid and South Glamorgan 55ha of unimproved and 130ha of semi-improved lowland calcareous grassland were recorded in the CCW Phase 1 Habitat Survey¹³; very small areas are often found associated with quarries and road verges. Within Greater Gwent this grassland is a rare habitat, with only 44ha of unimproved grassland and 8ha of semi-improved habitat recorded in the CCW Phase 1 Habitat Survey of Gwent¹⁴.

Calcareous (or limestone) grassland is very rare in Caerphilly county borough (area figures yet to be calculated), being largely confined to the fragments along the southern edge of the county. A number of calcareous grasslands in Caerphilly county borough are secondary in nature colonising around the periphery of limestone quarry operations, but still supporting the characteristic species associated with unimproved calcareous grassland. The main grassland that occurs is the sheep's fescue - meadow oat-grass grassland (see appendix 5.1), and modified versions of this.

Mynydd Machen and **Cefn Onn Ridge** SINC⁴ are two examples of lowland calcareous grasslands in Caerphilly county borough (appendix 5.2 for full list) and **Map 5.3** shows the distribution of calcareous grasslands in the borough.

3.3 Lowland dry Acid Grassland

The UK BAP costed habitat action plan estimates <30,000ha of lowland acid grassland away from the upland fringes remains in the UK⁴⁹. It is therefore a priority for nature conservation in the UK, having been subject to a substantial decline during the 20th century. The specific scale of habitat loss is unrecorded, but known to be mainly due to agricultural intensification, and in South Wales by the over-grazing of sheep and in places from agricultural abandonment. In much of Wales lowland acidic grassland occurs on the upland fringe, however, less than 2,000 ha occur at lower altitudes. The Glamorgan and Gwent Biodiversity Action Groups' areas have 2,348ha of unimproved acid grassland^{13, 14} and as in other parts of Wales, the majority actually occurs on the upland fringes.

There are still large areas of acid grassland located throughout Caerphilly county borough, although much is in association with unenclosed commons (and therefore qualifies as upland acidic grassland), or as a mosaic amongst other habitats on the upland fringe or ffridd (a separate habitat statement has been prepared for this habitat). Acid grassland of enclosed land is less frequent, particularly in the lowlands and area figures for the lowland areas of Caerphilly county borough are currently unavailable.

The conservation importance of lowland acid grassland has often been overlooked, but they provide a significant habitat for a range of scarce species, particularly for invertebrates and birds.

Examples of lowland acid grassland sites include **Cwm Llwydrew Meadows** SINC and LNR⁴ (see appendix 5.2 for full list and **Map 5.4**).

3.4 Rhos Pasture

This habitat is restricted to the Atlantic coastline of Europe where rainfall is high and winters are mild. The British Isles supports a substantial amount of the world's resource, and it represents one of the most significant biodiversity resources in South Wales; Glamorgan supports 16% (5,500ha) of the Welsh resource with Gwent supporting a smaller 1.2% (420ha)¹². Caerphilly county borough contributes to 1.4% (481ha) of the Welsh resource (35,000ha)¹².

The EC Habitats and Species Directive includes certain types of 'Rhos' pasture as an Annex 1 Habitat for which favourable conservation status should be maintained²³. The conservation of this resource is therefore of both national and international importance.

The habitat supports a diverse invertebrate fauna, including the UK BAP priority species, the marsh fritillary butterfly. The soft/sharp-flowered rush – marsh bedstraw rush pasture and the purple-moor grass – tormentil mire communities are the most prevalent types of this grassland in Wales, and although rare, the purple moor-grass – meadow thistle fen-meadow is the most diverse and valuable community (see appendix 5.1).

The nature conservation significance of this habitat has only recently been recognised and considerable areas have been lost since the 1960s, and many of the remaining areas are fragmented. In agriculturally productive areas they have been drained, in-filled and treated

(improved). Although it is still a very important part of South Wales' biodiversity, action is required to maintain the wider resource outside of statutorily protected sites.

Purple moor grass pasture occurs on a large number of sites in Caerphilly county borough including **Aberbargoed Grasslands SSSI/cSAC**, **Penllwyn Grasslands SSSI**, **Ty'r sais** and **Nant Gwrhay** (part of Pen-y-fan Pond and Meadows SINc), **Twyn Gwyn** (part of Cwm Dows Valley SINc), **Y Graig Mire**, **Nant Cae-Dudwg Mire**, (see appendix 5.2 for full list and **Map 5.5**).

3.5 Associated Species

- **Birds:** *buzzard, curlew, skylark**, *grey partridge**, *song thrush**, *yellowhammer, kestrel, curlew, tree sparrow**, *green woodpecker, barn owl, lapwing*
- **Mammals:** *brown hare**, *pipistrelle bat**, *badger, greater horseshoe bat**
- **Amphibians:** *common toad, common frog, great-crested newt**
- **Invertebrates:** *bordered gothic moth**, *double line moth**, **Grasshoppers and crickets**, *high brown fritillary**, *marsh fritillary**, *pearl-bordered fritillary**,
- **Plants:** *yellow rattle, Orchids, Cornish moneywort*

The lowland neutral grassland HAP will include actions for the **yellow rattle**, a species considered to be of local value and distinctive of neutral grasslands in Caerphilly county borough.

3.6 Links with other Habitats

- *Wetlands (fen)*
- *Wildlife Corridors* (ancient and/or species-rich hedgerows)
- *Common Land*
- *Ffridd/Coedcae*
- *Heathland*

Grassland habitats often occur as mosaics with other grasslands or with scrub, heath or bracken. Purple moor-grass and rush pasture and acid grassland in general cover a wide altitudinal range and often occur in complex community mosaics, especially in upland areas in association with blanket mire and wet heath. The upland mosaics are covered in the **Common Land Habitat Statement** and the upland fringe habitats are covered in the **Ffridd Habitat Statement**. Some purple moor-grass pastures are situated on the periphery of fens, within heathland sites or on inland floodplains (**Wetland** and **Heathland Habitat Statements**), but will also be reported in the context of this plan.

4. CURRENT FACTORS AFFECTING THE HABITAT

Considerable areas of species-rich grasslands have been lost since the 1930s, and remaining areas are now fragmented. Specific factors and threats relating to grassland habitat decline include:

- Industrial and residential development (including sites which are currently proposed for development in the unitary development plan / have long term development allocations in Local Plans and stand to be lost in the next 5 years (**All**))

- Agricultural 'improvements', including, re-seeding and heavy applications of fertiliser and other chemicals (**All**); draining and infilling (**rhos pasture**); application of lime (**neutral and acid grassland**); and agricultural change, e.g. from hay to silage production (**neutral grassland**) or spring/summer grazing (**All**)
- Lack of appropriate management, particularly over-grazing, under-grazing and cessation of grazing (neglect or abandonment which allows onset of scrub or secondary woodland), and also irregular or inappropriate timing of mowing/hay cutting (**All**)
- There is a trend towards horse and pony grazing on upland fringe and adjacent to urban areas which can lead to a decline in grassland habitats (**All**)
- Destruction, fragmentation and disturbance of habitats as a result of residential, industrial and road developments. (**All**)
- Limited availability of agri-environment grants, in particular specific financial incentives for management. (**All**)
- Limited awareness of the nature conservation value of these habitats, particularly on the part of planning authorities, landowners/managers, and national or local government bodies (**All**)
- Commercial forestry and grant-aided woodland planting (**All**)
- Lack of biological information relating to these grasslands and their associations with other habitats and species (**All**)
- Unsympathetic management of road verges and other manmade sites, particularly through mowing regimes on local authority owned sites (**neutral, acid and calcareous grasslands**)
- Opencast coal mining can have a major impact on grassland habitats (**rhos pasture, neutral and acid grasslands**)
- Planning developments which affect Species-rich Grasslands are increasingly being supported by unproven 'habitat translocation' proposals. This is a very serious problem for nature conservation in South Wales (**All**)
- Land reclamation schemes (particularly in the valleys), where spoil heaps which are actually often part of a mosaic including grassland, are often referred to as 'waste land' (**All**)
- There is a lack of readily available information on the extent and nature conservation status of purple moor-grass and rush pasture; and problems with differentiating between species-poor upland fringe and the more vulnerable species-rich priority lowland pastures (**rhos pasture**)
- Quarrying operations (**calcareous grassland**)
- A number of the existing calcareous grassland sites are 'man made', occurring on, for example, old railway lines, or pathways; in such instances the vegetation is vulnerable to 'highway improvement' through the application of tarmac, etc (**calcareous grassland**)

5. CURRENT ACTION

- 5.1 A small number of sites have been notified as SSSIs in Caerphilly county borough for their grassland habitat. These include **Aberbargoed Fields SSSI** (and a cSAC for its marsh fritillary population) containing purple moor-grass pasture, neutral and acid grassland habitats, **Memorial Park Meadows SSSI** and LNR for its neutral grassland and **Penllwyn Grasslands SSSI** containing rhos pasture. Owners and tenants of these sites are able to enter into management agreements with CCW to manage SSSI land.
- 5.2 The agri-environment scheme Tir Gofal offers grant aid on a whole farm basis, and encourages farm management practices which are sympathetic to, or encourage the maintenance of, lowland species-rich grasslands. However, good habitat quality is not the sole selection criteria for this scheme, and confidence is currently low with regards to its relevance for achieving biodiversity targets. It also provides very limited support for small, isolated areas of species-rich grasslands.
- 5.3 CCW have completed a Phase 1 Habitat Survey for Glamorgan¹³ and Gwent¹⁴ and Phase 2 lowland grassland survey of the better quality sites.
- 5.4 Caerphilly county borough council has identified many grassland sites as SINCs⁴, a non-statutory designation for sites of interest within a county context and includes policies for their protection in the UDP³. These sites are not protected from activities that do not require planning permission.
- 5.5 The Countryside Strategy produced by CCBC includes some evaluation of the resource of species-rich grasslands and offers proposals for their protection.
- 5.6 Management Plans have been prepared for Memorial Park Meadows SSSI, Aberbargoed Fields SSSI, and Cwm Llwydrew Meadows SINC/LNR.
- 5.7 Ongoing research, such as LANDMAP and this LBAP, will enhance current knowledge regarding the extent and condition of lowland grasslands within the county borough.
- 5.8 The CCBC Local Transport Plan⁵ has made a commitment to manage verges of roads actively to sustain wildlife provided highway safety is not compromised.

6. CONSERVATION DIRECTION

- 6.1 **Main objectives** for the conservation of species-rich grasslands will be to:
- **Prevent** further loss of existing habitats, through statutory protection and local designations,
 - **Manage** existing stands through appropriate management,
 - **Rehabilitate** damaged stands to favourable condition through habitat management,
 - **Expand** the habitat to increase patch size and link remnant fragments.
- 6.2 **Possible actions:**
- A larger number of grassland sites meeting SSSI selection criteria should be designated within the Caerphilly county borough area. New species rich sites that are discovered should be considered for selection as a SINC or designated as local nature reserves. Where opportunities arise, sources of funding and support should

be given to the acquisition and management of valuable grassland sites by conservation organizations or local communities.

- Review and use where appropriate existing measures such as Tir Gofal to encourage appropriate management. Review other alternative sources of funding for sympathetic management of grassland sites. Encourage environmentally sensitive management of species-rich grasslands including appropriate livestock grazing and hay cutting to conserve the habitats. Complete and implement management plans for all grassland SSSIs.
- Restore habitats adjacent to important or vulnerable sites. Develop a fuller understanding of restoration techniques with the aim of expanding remnant patches of species-rich grasslands.
- Continued monitoring and surveying of sites in Caerphilly county borough to assess habitat value for flora and fauna species.
- Prepare and maintain a complete record of species-rich grasslands in Caerphilly county borough.
- Raise awareness of the nature conservation value of species-rich grasslands, and their vulnerability to habitat loss and disturbance; in all sectors of the community, including agriculture, business, developers, government (local, Welsh and national levels), and the general public.

APPENDIX 5.1 - NVC Grassland Communities

Neutral Grassland

MG5: Crested dog's tail - common knapweed grassland

Cynosurus cristatus - *Centaurea nigra* grassland

The species-rich traditionally managed grassland of South Wales. In the Greater Gwent area this is frequently managed as pasture in the west (Caerphilly county borough). The species-rich vegetation is characterised by common knapweed, common bent, sweet vernal-grass, red clover, bird's foot trefoil, crested dog's tail and sometimes a variety of orchid species (including the green-winged orchid).

MG6: Perennial rye-grass - crested dog's tail grassland

Lolium perenne - *Cynosurus cristatus* grassland

This is a less species-rich community, covering a wide range of semi-improved dry neutral grasslands; and has been subject to an increasing amount of agricultural improvement. It is mainly managed as hay meadow and concentrated in the east of the region (Gwent). The vegetation is characterised by perennial rye grass, white clover, crested dog's tail and ribwort plantain and daisy. It can, however, include species-rich stands which, although evidently modified by some fertiliser application, still support a variety of herbaceous species.

MG1: False oat-grass grassland

Arrhenatherum elatius grassland

Species-rich examples of this rank grassland community (often in association with roadside verges) are particularly important for small birds and mammals

MG10: Yorkshire fog - soft rush pasture

Holcus lanatus - *Juncus effusus* pasture

This wet grassland community is important as breeding bird and invertebrate habitat. This type of grassland is often found on the periphery between purple moor-grass and rush pasture and drier grassland types.

Calcareous Grassland

CG10: Sheep's fescue - common bent - wild thyme grassland

Festuca ovina - *Agrostis capillaris* - *Thymus praecox* grassland

Typically associated with base-rich substrates in the uplands, although in Greater Gwent it is also found in enclosed areas fringing the true unenclosed uplands. It is characterised by common bent and sheep's fescue together with wild thyme, heath bedstraw, bird's foot trefoil, and occasionally, carline thistle, mouse-ear hawkweed, and spring sedge.

CG2: Sheep's fescue - meadow oat-grass

Festuca ovina - *Avena pratensis*

A classic calcareous grassland vegetation in the few lowland areas of Caerphilly county borough where thin soils overlay the Carboniferous limestone. Characteristic species include sheep's fescue, common rockrose, wild thyme, and autumn gentian.

Acid Grassland

U4: Sheep's fescue - common bent - heath bedstraw grassland

Festuca ovina - *Agrostis capillaris* - *Galium saxatile* grassland

This, in its classic lowland form, is a species-rich, diverse grassland of very high biodiversity significance. It is dominated by a closed grass turf, typically with sheep's fescue and common bent, sweet vernal-grass, field wood-rush and heath bedstraw. There are four sub-communities of U4 in South Wales; three of which occur in the lowlands; U4b (*Holcus lanatus* - *Trifolium repens* subcommunity) is the most frequent lowland form. U4 is managed predominantly as rough grazing. In the lowlands there is often an element of base-enrichment, where herbs more typical of neutral grasslands occur, such as bird's foot trefoil and common knapweed. Some areas also grade into calcareous grasslands, with quaking grass and wild thyme occurring. Common dog and early dog violets are often abundant in unimproved acid grasslands, often in association with bracken.

The other species-rich acid grassland community types that may be found are:

U1: Sheep's fescue - common bent - sheep's sorrel grassland

Festuca ovina - *Agrostis capillaris* - *Rumex acetosella* grassland

U2: Wavy hair-grass grassland

Deschampsia flexuosa grassland

Rhos Pasture

M23: Soft/Sharp-flowered rush - marsh bedstraw rush pasture

Juncus effusus/acutiflorus - *Galium palustre* rush pasture

The most commonly occurring community, frequently in association with flushes. It is variable in species-richness, but is typically characterised by a predominance of tall rushes, together with purple moor-grass and a few poor-fen species, such as greater bird's foot-trefoil, marsh bedstraw and lesser spearwort.

M25: Purple moor-grass - tormentil mire

Molinia caerulea - *Potentilla erecta* mire

This is a typical community of unenclosed uplands or upland fringe areas; grazed sites have a high species diversity, although unmanaged areas are dominated by large tussocks of purple moor-grass with few other species prevailing, but associated species include tormentil, sharp-flowered rush and cross-leaved heath.

M24: Purple moor-grass - meadow thistle fen-meadow

Molinia caerulea - *Cirsium dissectum* fen-meadow

A nationally scarce fen-meadow, this community occurs in a few small sites, typically on base-rich soils in lowland areas. It is characterised by a dominance of purple moor-grass, in association with meadow thistle, and often also devil's bit scabious and carnation sedge.

CCW phase 2 surveys have identified the following areas of purple moor-grass and rush pasture in Caerphilly county borough¹²: M23A (4ha); M23B (3ha); M24B (1ha); M24BC (7ha); M24C (3ha); M25A (7ha); M25B (14ha); M25C (1ha) and M25SP (5ha). **Total: 45ha.**

APPENDIX 5.2 - Grassland Sites

Map 5.1: Grassland Mosaics

1 Traed y Milwyr, Llechryd; 4 Rhymney Grasslands; 9 Cefn Gelligaer; 10 Craig Ysgwydd-Gwyn; 12 Cwm Llydrew Meadows; 14 Ysgwynydd-Gwyn-I saf Valley; 17 Cwm Syfiog Woodland; 18 Troed-Rhiw'r-Fuwch; 20 Coed Waun-Bleiddion; 24 Pen-y-fan Pond and Meadows; 31 Coed y Moeth and Cwmsyfiog Hillside; 32 Pen yr Heol Meadows; 35 Pen y Waun; 37 Nant-Cwm-Crach; 38 Tir y Ferch Gryno; 43 Pentwyn Fields; 44 Princetown Meadows; 49 Gelligaer Court Meadows; 50 Tir Jack Slopes; 53 Penallta Meadows; 54 Waun Rhydd; 58 Coed Gelliau'r-Gwellt; 61 Valentec Nature Reserve; 66 Nant Philkins Field; 68 Cwm Dows Valley; 69 Coed Cwm Philkins; 75 Ton y Pistell Meadows; 76 Chapel Meadows; 77 Ty'n-Llwry Pastures; 80 School Grassland, Pontllanfraith; 82 Crown Estate Meadows; 86 Victoria Road Slopes; 94 Penwllyn Grasslands SSSI; 96 Pant-Glas Meadow; 101 Pant-Ysgawen Fields; 103 Tir-Goppi Meadows; 119 Tai'r-Waun Meadows; 120 Nant Cae-Dudwg Mire; 122 Tir-Twyn Woodlands; 125 Nant Owen Field; 130 Mynydd y Grug; 132 Sirhowy Country Park Meadows; 136 Ty Bach Marsh; 137 Pontgam Terrace Meadows; 151 Twmbarlwm; 158 Ty'n y Parc, Abertridwr; 159 Craig y Fedw; 167 Churchill Meadows; 185 Blaengwynlais Meadows

Map 5.2: Neutral Grassland SINCs

21 Manmoel Meadows; 34 Pen-Rhiw'r-Eglwys; 39 Cwmsyfiog River Meadow; 57 Llancaiach Fawr Meadows; 62 Caeau Cwm-Corrwg; 63 Blackwood Riverside Woodlands; 67 Remploy Factory

Compound; 71 Pentwyn-lsaf Woodlands; 73 Greenlands Meadow; 83 Trelyn Woodland and Meadow; 85 Bryn Ysafan Meadow; 93 Aberbargoed Fields SSSI /cSAC; 102 Pennar-Ganol; 123 Coedcae Mawr; 155 Ty-sign Meadows; 161 Cwarran-Mawr; 169 Warren Drive Meadow; 179 Ochryth Grasslands; 183 Coed-Cefn-Pwll-Ddu

Map 5.3: Acid Grassland SINCs

3 Tair Carreg Moor; 5 Cefn y Brithdir; 7 Coed Caefn-Rychdir; 8 Mynydd Manmoel; 16 Pont Caradog and Nant Llan Woodlands; 22 Twyn y Bleiddiad; 23 Mynydd Pen-y-Fan; 25 Hafrodisclawadd; 27 Coed Argoed; 28 Markham Tips; 29 Hollybush; 40 Pen-y-fan Fach Grassland; 95 Crumlin Old Farm Meadows; 111 Pontbren; 114 Gwyddon Valley and Mynydd Maen; 116 Mynydd Eglwysilan; 118 Glawant Fields; 121 Coed Penallta and Railway Line; 129 Mynydd Dimalith and Cwm y Bwch; 134 Nant-y-Draenog; 144 Sychpant Farm; 145 Cil-Fynydd; 150 Coed Marn-Gu; 168 Caerphilly Common; 171 Mynydd Rudry Common; 178 Graig y Rhacca Grasslands

Map 5.4: Calcareous Grassland SINCs

153 Risca Quarry; 156 Mynydd Machen; 170 Cefn Onn Ridge

Map 5.5: Rhos Pasture SINCs

2 Nant y Gaseg Moor; 15 Coed Deri-Newydd; 46 Cwm Afon; 51 Pottery Road Woods; 55 Nelson Bog SSSI; 56 rooklands Marsh; 65 Pen-rhiw Bengi Marsh; 72 Glan-Bryndr Woodlands; 74 Nelson Ponds; 84 Crown Roundabout Marsh; 87 Upper Trelyn Marsh; 89 Ty'n y Pwll Wood and Tip; 126 Maesycwmmmer Meadows; 127 Mynydd Bach Slopes; 139 Heol Ddu Woodlands; 163 Mynydd Meio; 164 Gypsy Lane Wetland; 173 Caerphilly - Machen Disused Railway; 188 Cwm Crynant Woodland; 189 Ty-Melyn Coppice; 191 Nant Fawn