

## POST-INDUSTRIAL LAND HABITAT STATEMENT

### 1. INTRODUCTION

The types of post-industrial land covered in this habitat statement are:

- **Naturally revegetated colliery spoil**
- **Landscaped colliery spoil**
- **Quarries**
- **Refuse tips**

Although these are not identified as UK BAP priority habitats, they are a significant feature of the South Wales Valleys landscape and so have been included as important local habitats. Caerphilly county borough has, until recently, been dominated by coal mining and other heavy industry, which has wrought extensive change. After 150 years of industrialisation a new environment is emerging in which the underlying natural diversity of the valleys is reasserting itself.

### 2. HABITAT DEFINITIONS

#### 2.1 Naturally revegetated colliery spoil

Coal spoil tips are an industrial and cultural legacy from the south Wales coal industry, which during its hey-day, formed black scars often devoid of vegetation on the valley sides. Over the years many of these spoil tips have been colonised by habitats and species that favour the acidic conditions provided by the tip material and many now support habitats of considerable local biodiversity value. Priority habitats such as acid grassland and heathland, and some areas of scrub and gorse, have gradually colonised the coal spoil of the valleys. On longer established sites, woodland has become established, while wetland often occurs at the foot of some tips. Tips can be important as refuges of coedcae/ffridd and heathland fauna, supporting a variety of butterflies, reptiles and breeding birds, such as lapwing and skylark.

#### 2.2 Landscaped colliery spoil

Many tips in the county borough have undergone restoration in an attempt to blend more naturally into the existing landscape or to create a landform that is more suitable for a future after-use. At first glance, restored tips often appear rather featureless and of little value for nature conservation, but in certain circumstances, they can provide suitable conditions for species that were traditionally found in a more agricultural environment. This is particularly true of sites where wildlife habitats have been designed into the reclamation scheme. However in some circumstances sites not originally intended to benefit wildlife may be colonised by rare or local species. A wide range of habitats can be found on landscaped colliery spoil such as scrub, woodland, species-rich grasslands and wetlands. Even areas of bare soil can be of high value for biodiversity, particularly for pioneer plants, birds, reptiles, butterflies and other invertebrates.

#### 2.3 Quarries

Quarries are artificial exposures of rock occurring throughout Britain and in the South Wales Valleys, usually excavated for building and road construction materials such as sandstone and gravel, crushed rock, limestone and clay. This habitat statement includes both active and disused quarries. Quarrying activities are often associated with the creation and enlargement of areas such as cliff and scree. Studies of the vegetation communities on quarry cliffs have shown

that many are dominated by mosses and liverworts, and have only recently revealed the great diversity of communities found in Britain<sup>2</sup>. Plant and animal communities developed through natural succession are 'semi-natural' and are likely to include some uncommon plant and invertebrate species. Rock exposures and the variable steep topography associated with some disused quarries provide many valuable wildlife habitats, for example nest sites for birds of prey and calcareous grassland habitats around limestone quarries.

#### **2.4 Refuse tips**

This category includes only those refuse tips that are no longer in active use. These refuse tips have been filled to their maximum capacity and then 'capped' with clay, covered with a metre of sub-soil and 9 – 12 inches of topsoil, and then seeded with a grassland mix. No maintenance is carried out on these sites, apart from those bordering farmland and highways, where trimming may be required for road safety or animal health reasons. The undisturbed nature of these tips provides an important refuge for a wide range of plants and animals.

### **3. CURRENT STATUS**

There are over 200 tip sites in the county borough (CCBC Tip Register, **Map 9.1**) but no systematic ecological surveys of these sites have been carried out and there is only anecdotal evidence of their importance for wildlife. This highlights the need for further survey of these sites.

#### **3.1 Naturally Revegetated Colliery Spoil**

Many naturally revegetated tips have a rich flora including species typical of acid grassland and heath. There may be some scrub development, mainly comprising birch, willow and oak. The grassland flora often comprises sweet vernal grass, sheep's fescue, common bent, tufted hair grass, Yorkshire fog, bracken, white clover, creeping cinquefoil, mouse ear hawkweed, ribwort plantain, soft rush, gorse and occasional heather.

There are many disused colliery sites and associated tips in the Caerphilly Basin, (see **appendix 9.1.1** to this statement), for example, Llanbradach Colliery and Universal Colliery, Senghenydd where the spoil heaps are colonised by fescues, bents and heather. Former spoil tips are found on the upper Sirhowy valley floor and are evident in the western part of Mynydd Maen/Cwmcarn. A large linear spoil tip occupies the high ground of Manmoel Common/Cruglwyn and there are 14 SINC's that include colliery spoil, for example, Maesycwmmwr Meadows<sup>4</sup> (full list in **appendix 9.1.2** to this statement and shown on **Map 9.2**).

The condition of early 20<sup>th</sup> century colliery spoil heaps differs from those worked up until twenty or thirty years ago. Many of the older tips have developed rich lichen and bryophyte communities, for example at **Princetown Meadows SINC**. These older tips and their diverse vegetation communities should be preserved otherwise the process of reclamation would destroy a locally distinctive habitat.

#### **3.2 Landscaped Colliery Spoil**

Younger spoil tips, are often seen as eyesores and land reclamation is recognised as one of the key steps in the regeneration process of the south Wales Valleys. CCBC land reclamation programme, funded by the WDA, is directed at providing new land for development and creating improved environments, while other sources of funding such as ERDF, the Millennium Fund and the Heritage Lottery Fund have also financed the reclamation of sites in the county borough.

Much work has already been undertaken, including the creation of three country parks (Parc Cwm Darran, Parc Penallta, and Bargoed Country Park), reclamation for agriculture on common land, for example at Fochriw and Manmoel, and the creation of industrial plateaux, for example at Oakdale colliery and Tredomen Council Offices.

On several of these sites the creation of wildlife habitats has been the intention at the outset, for example at Penallta, while on other sites wildlife has become established unintentionally, for example the lapwing colony at Fochriw.

Some sites have been identified in the CCBC UDP<sup>3</sup> for possible future reclamation and given the local importance of existing landscape colliery spoil, it will be important to ensure that wildlife requirements are considered at the early stages of any design, to obtain the maximum benefit for biodiversity. **Appendix 9.2.1** to this statement lists the land reclamation sites that occur in Caerphilly county borough and include those identified in the UDP for future reclamation. European legislation requires detailed Environmental Assessments to be carried out before proceeding with reclamation because such sites are often important for wildlife. Those sites with existing local nature conservation value have been designated as SINCS<sup>4</sup> are listed in **appendix 9.2.2 (Map 9.3)**.

### **3.3 Quarries**

In the absence of natural cliffs, quarries provide an important alternative habitat, which would otherwise be absent from the county borough. Both disused and active quarries can be important for wildlife, for example inactive quarries suffer less disturbance from quarrying activities but more disturbance from informal recreation, while the security in place for active quarries deters illegal or anti-social activities that would otherwise damage the wildlife interests of the site.

There are 3 quarries still actively working in Caerphilly county borough; Machen, Hafod, and Bryn quarries; and 6 others which are dormant; Blaengwynlais, Cefn Onn, Cwm Leyshon, Ochr Chwith, Cwm Nant-yr-Odyn, and Caerllwyn (see **appendices 9.3.1 and 9.3.2** to this statement). In addition there are a large number of older quarry sites that have developed wildlife interest through natural colonisation. Woodland has developed in an old quarry at Machen for example, and others contain scrub and grassland habitats. A limestone quarry at Draethen contains woodland herbs including ramsons, dog's mercury and wood anemone, as well as grassland species such as purging flax, and reptiles such as the adder and slowworm have also been found.

One of the most important former extraction sites is Wern Ddu Claypits near Caerphilly town, which contains a variety of woodland and wetland habitats with significant animal life, notably reptiles, amphibians and butterflies. Some of the larger quarry faces provide nest sites for birds of prey that have increased in number in recent years.

A total of twelve SINCS in Caerphilly county borough include quarries within their boundaries, (**appendix 9.3.3**), and there are 5 SSSIs designated for their geological interest such as Llanbradach Quarry SSSI, also supporting locally important species, and Wern Ddu Claypits SSSI also designated for its variety of plant and animal life (**Map 9.4**).

### **3.4 Refuse tips**

In Caerphilly county borough there are around 10 completed refuse tips that are monitored (**appendix 9.4 and Map 9.5**) and a larger number of sites over 25 years old no longer requiring regular checks. Many of these sites have overgrown vegetation providing a habitat for a number

of animals and plants. Casual observations have noted a large population of small mammals such as voles and shrews, which in turn provide food for birds such as buzzards, kestrels and owls. However, detailed surveys of these sites have not been carried out, so little is known of their species composition and importance for priority or local species. Goldfinches are often seen at Coed Top Hill where teasel is abundant, the large population of small mammals such as voles and shrews provide good hunting grounds for birds of prey. Badgers, foxes, and other larger animals may also be present. There might also be important bare ground or food plants for many invertebrates, including butterflies and moths.

### 3.5 Associated Species

- **Birds:** *lapwing, skylark\*, peregrine falcon, kestrel, buzzard, barn owl, grey wagtail, little owl* other owls and birds of prey
- **Mammals:** *badger, brown long-eared bat, noctule bat, fox*, including many others dependent on undisturbed areas and those associated with the colonising vegetation/habitat; small mammals such as voles, mice and shrews
- **Reptiles:** *adder, grass snake, slowworm, common lizard*
- **Amphibians:** *great-crested newt\*, palmate newt, smooth newt, common frog, common toad* (associated with wetland features)
- **Invertebrates:** *buttoned snout moth\*, Other moths*, Grasshoppers and crickets
- **Plants:** *bluebell, cowslip, Orchids, yellow rattle* (neutral grassland), heather

### 3.6 Links with Habitats

- *Wetlands*
- *Deciduous Woodlands*
- *Planted Coniferous Woodlands*
- *Species-rich Grasslands*
- *Wildlife Corridors*
- *Heathland*
- *Scrub and gorse*

## 4. CURRENT FACTORS AFFECTING THE HABITAT

- Land reclamation schemes (**naturally revegetated colliery spoil**)
- Older tips are often still rich in usable coal and there is the potential for private developers to acquire coal spoil sites to win the coal reserves as a precursor to future development of the site. This is a major concern in the strategic conservation of well-established, **naturally revegetated colliery spoil** sites.
- Forestry planting (**colliery spoil**)
- Anti-coal spoil sentiment is an obvious problem for the conservation of the resource, because tips are often seen as "eyesores" (**colliery spoil**)
- Vandalism of peregrine falcon nesting sites is an ongoing problem and was particularly bad in 2000 (at least 7 poisoned) and 2001, with many more failures at sites in the rest of the south Wales valleys. (**quarries**)

- Trehir Quarry has been landfilled, and others are in-filled or are threatened by redevelopment and reclamation. (**quarries**)
- Rocks have been quarried for local buildings for centuries, altering the landscape of our countryside. This small-scale quarrying has created some new wildlife habitats, but there remains a threat to some valuable upland habitats from proposals for large-scale quarrying. Where nature conservation interests are high, there should be a presumption against development or extraction of these sites. (**quarries**)
- Natural succession changes have reduced the ecological value of some sites (woodland or scrub replacing important open habitats such as grasslands) (**All**)

## 5. CURRENT ACTION

- 5.1 A number of coal spoil sites are identified as SINCs, either as individual sites or as larger coedcae/ffridd designations. 5 quarries are designated as SSSI's, all for their geological interest, and one also for its biological interest<sup>4</sup>.
- 5.2 Land reclamation schemes and quarry extensions now require ecological assessments to be undertaken, and if necessary mitigation to be employed.
- 5.3 Fochriw tip is home to the largest lapwing colony in south Wales. There are some 20 nesting pairs now, and the RSPB in cooperation with CCBC are looking to increase numbers through the creation of scrapes, harrowing the soil and planting rush clumps for sheltering chicks during 2001-02.
- 5.4 Parc Penallta has been reclaimed for wildlife and as a Country Park. Lapwings are being encouraged to breed here as well.
- 5.5 A ringing survey is planned in Bargoed Country Park to assess the resident and migrant populations as a baseline for monitoring population changes as the park matures.
- 5.6 The South Wales Peregrine Watch group monitor peregrine nest sites in the county borough (quarries).

## 6. CONSERVATION DIRECTION

- 6.1 **Main objectives** for Post-Industrial Land habitats will be to:
- **Survey** colliery tips, quarries and refuse tips fully to identify the extent and quality of sites in the county borough, for habitat types and associated species
  - **Protect** sites of importance through designations and ensuring appropriate management.
  - **Promote** the importance of these habitats for nature and biodiversity conservation to the landowners, quarry workers and the general public.
  - **Carry out** detailed ecological surveys on sites which are proposed for re-development or land reclamation schemes, as well as looking at the historical and biodiversity aspects of the area.

**6.2 Possible actions to consider are:**

- Carry out a county borough-wide ecological survey of all known tip sites to identify those important for biodiversity conservation (e.g. the presence of LBAP habitats and species), and possible measures for their protection and management.
- Produce a register of tips (colliery tips, quarries and refuse tips) important for biodiversity conservation requiring protection and/or possible management. Early investigation has revealed some 900 post-industrial sites within the county borough.
- Where opportunities arise re-create wildlife habitats on former colliery sites, refuse tips and disused quarries.
- All quarries of significant geological and ecological value should be retained.
- Where quarry or excavations are taking place, explore opportunities for the creation of new exposures suitable for nesting birds and create areas suitable for the establishment of secondary calcareous grassland.
- Raise awareness of the importance and value of significant quarry cliffs for geology and wildlife.
- Protect nesting sites, for e.g. those of the peregrine falcon.
- As part of the redevelopment of the pithead buildings at the old Penallta colliery by Groundwork Caerphilly and the Phoenix Trust, ensure that a full ecological survey is undertaken to protect the existing interests (e.g. barn owls) and ensure that biodiversity of the site is safeguarded in the long term.
- Continue to designate important sites as SSSI or SIN C and protect habitats and species identified as significant (particularly those in the LBAP).

**APPENDIX 9.1 – NATURALLY REVEGETATED COLLIERY SPOIL**

**9.1.1 Caerphilly Basin Colliery Tips**

Bedwas Colliery  
 Llanbradach Colliery  
 Windsor Colliery, Abertridwr  
 Universal Colliery, Senghenydd.  
 Rudry Colliery, Rudry

**9.1.2 SINCs**

- 27: **Coed Argoed**, east of Bedwellty; part is a coal tip with well established vegetation
- 28: **Markham Tips**; colonised spoil with acidic grassland and bracken
- 40: **Pen-y-Fan-Fach Grassland**; one part of the SIN C is an old coal tip
- 44: **Princetown Meadows**; a small spoil tip on part of the SIN C has become colonised with species-rich acidic grassland, with a variety of lichens and bryophytes
- 52: **Cefn Hengoed Hillside**; at the centre of the site is an area of colliery spoil with small area of heath
- 63: **Blackwood Riverside Woodlands**; part of which is on coal spoil, re-colonised by oak, birch and ash with ancient woodland indicator plant species, an area of mixed woodland and an area of species-rich neutral grassland
- 65: **Pen-Rhiw Bengi Marsh**; part of spoil tip
- 117: **Nant Cae'r-Moel Swamp and Woodland**; a narrow strip of mire vegetation at the base of a colliery tip, with purple moor-grass, meadowsweet and angelica
- 125: **Nant Owen Field**; on coal spoil, with semi-improved acid grassland and small patches of neutral grassland

- 126: **Maescwmmwr Meadows**; 3ha woodland scrub and damp grassland; spoil heap largely covered by birch, gorse and oak scrub with local heather. Adjacent mature oak woodland with bramble and bluebells and an area of unimproved damp grassland
- 183: **Coed Cefn-Pwll-Du**, south of Machen; western parcel of land is partly ancient woodland with recolonised woodland on colliery spoil

## APPENDIX 9.2 – LANDSCAPED COLLIERY SPOIL SITES

### 9.2.1 Land Reclamation Sites

Site	OS Grid Ref
• Aberbargoed Tip - UDP policy D1(14)	SO162000
• Abercarn Swimming Pool	ST2195NE
• Bargoed Colliery, Bargoed Colliery Tips - UDP policy D1(13)	ST1598SE
• Bedwas Colliery- UDP policy D1(23)	ST1791
• Bedwas to Machen Cycleway	ST1888
• Berthgron Quarry - UDP policy D1(11)	ST110945
• Black Vein Tip	
• Blackwood Railway Land - UDP policy D1(16)	
• Britannia Tips, Britannia Colliery Phase 1/2, Britannia Colliery Site	ST1597
• Brookland Terrace	ST2293SW
• Bryngwyn, Bedwas	ST1689
• Caerphilly Road Tips, Nelson	ST1195NE
• Caerphilly Tar Plant - UDP policy D1(28)	ST1686
• Cefn Brithdir Tip - UDP policy D1(6)	SO1402
• Coed Waun Fawr	
• Coed y Moeth - UDP policy D1(7)	SO165021
• Concrete Yard, Deri - UDP policy D1(8)	SO1201SE
• Craig -yr-Hufen - UDP policy D1(27)	ST1191
• Crumlin Railway and Treowen	ST2197
• Cwmcarn Railway Embankment	ST2293
• Cwmcarno/Blaencarno - UDP policy D1(1)	SO0908
• Cwmfelinfach Derelict Buildings	
• Cwmgeli, Blackwood	
• Cwm Mawr 3	SO1008
• Elliots Colliery Baths- UDP policy D1(4)	SO1403
• Fochriw, Rhymney Valley - UDP policy D1(2) (Raslas Pond)	SO1005
• Former All Metals and British Rail Sidings - UDP policy D1(27)	ST1686NW
• George Tip - UDP policy D1(5)	SO150024
• Groesfaen Remedial Works (Landslip)	SO1300
• Hafod yr Ynys	ST2398 & 2498
• Harold Wilson Estate	ST1686
• Kendon Road Buildings, Crumlin	
• Llanbradach Ropeway Tips- UDP policy D1(27)	ST138915
• Llanhilleth Top Tips	
• McClaren Colliery	SO1304
• Mill road Caerphilly – UDP policy D1(26)	ST150877
• Navigation Colliery - UDP policy D1(15)	
• Oakdale Colliery and Tips - UDP policy D1(12)	SO18550 & 98959

<b>SITE</b>	<b>OS GRID REF</b>
• Ogilvie and Groesfaen	ST1103NE
• Penallta Colliery- UDP policy D1(18)	ST1395
• Pengam Old Colliery and Tip	ST1597SE
• Penylan Road Tip, Argoed	SO175005
• Pontymister Foundry	
• Pontymister Gas Works	ST248897
• Presbyterian Church, Gilfach	ST1598SW
• Rhymney Constitutional Club	SO1107SE
• Rhymney Memorial Park	
• Risca Colliery Site	ST2191NW
• Risca Colliery Tips (Lands)	
• Risca Railway Station	
• Risca Tip - UDP policy D1(25)	ST213904
• South Celynen, Newbridge	
• St. Teilo's Church	SO1304NW
• Tredomen Offices, Ystrad Mynach - UDP policy D1(20)	ST1394NE
• Tredomen Tip - UDP policy D1(10)	ST128951
• Trinant Tip	SO2000SE
• Ty Llwyd - UDP policy D1(21)	ST183936
• Tynewydd, Pontlottyn - UDP policy D1(31)	SO1205
• Victoria road - UDP policy D1(19)	ST157950
• Windsor Colliery	ST1189
• Wyllie Colliery	ST1793

### 9.2.2 SINC

- 8: **Mynydd Manmoel**; southern part contains reclaimed colliery spoil and supports a breeding lapwing population
- 9: **Cefn Gelligaer**; part of which is reclaimed spoil supporting breeding lapwing, and together with a series of ponds it is important for a wide range of species including dragonflies
- 88: **Brittania Wood**; grades into Brittania Colliery Reclamation Site

## APPENDIX 9.3 - QUARRIES

### 9.3.1 Working Quarries

- Machen limestone quarry located on the northeast side of the A468 Newport to Caerphilly road, just to the southeast of Machen, is situated along the southwestern spur of a clearly distinguishable ridge feature between the Rhymney and Sirhowy river valleys. The quarry has now been working continuously since the 1920s and is set within a SLA (C11.14) and 2 SINC's about the southwestern corner (156 **Mynydd Machen**) and the western boundary (181 **Coed Pen-Llyn**).
- Hafod sandstone quarry produces material for surfaces of runways and motorways. It has been working for some time since 1960 and is situated in a deep, narrow valley north of Abercarn. On the mountain top immediately adjoining the northwestern boundary is the restored spoil tip associated with past workings at South Celynen Colliery. Cwm Hafod is still an attractive wooded valley and contributes to the general attractiveness of the whole Cil-

Lonydd/Mynydd Llwyd area, used for walking and pony trekking. Much of the mountain top is an SLA (C11.9), and a SIN C (108 **Cwm Hafod-Fach Woodlands**) abuts the northern boundary of the quarry.

- Bryn quarry is a small sandstone quarry based at Gelliargwellt Uchaf Farm, to the southwest of northeast of Nelson. Quarrying commenced in 1993 to supply stone to the Lower Rhymney Valley Relief Road scheme. Since then it has supplied stone for ornamental and monumental use and some general aggregate for fill. It is close to Parc Penallta to the south/southeast.

### 9.3.2 Disused Quarries

- Blaengwynlais quarry is situated on the eastern side of Rhiwbina Hill to the north of the Cardiff suburbs. The majority of the substantial disused reserves lie within Caerphilly CB. It has been working since the 1970s, but is currently inactive. The **Blaengwynlais Meadows** SIN C (185) comprises species-rich unimproved grassland and abuts the northern boundary of the quarry.
- Cefn Onn limestone quarry is situated in a remote location on Cefn Onn Ridge (east to west) that forms a prominent feature between Caerphilly and Cardiff. Quarrying is believed to have commenced in the 1930s and ceased in the 1960s. It lies within the Caerphilly Mountain Countryside Service recreational area and is part of the Rhymney Valley Ridgeway Walk. It is also the centre of an important network of bridleways used by local riders. The woodland occupying the steep southern slopes below the quarry is ancient semi-natural woodland as described in the 'Inventory of Ancient Woodland', 1986 (former Nature Conservancy Council). Much of the woodland to the west and northwest consists of young developing mixed broadleaved woodland. It is also a Special Landscape Area (C11.17) and includes the **Cefn Onn Ridge** SIN C (170).
- Cwm Leyshon limestone quarry is situated on the northern slope of the Nant-y-Draethen in an attractive rural area to the east of Caerphilly. Quarrying commenced at least 80 years ago and continued until 1985. It is again part of the CMCS recreational area, and within an SLA (C11.16). There are extensive horse riding trails and public footpaths around the quarry, including one that crosses it directly. Only half of the permitted area has been worked and the undisturbed land retains much of its woodland. **Disused quarry, Draethen; 0.5ha scrub woodland and calcareous grassland. Disused limestone quarry colonised by purging flax and wood anemone; records of adder and slow worm.**
- Ochr Chwith limestone quarry is located on the north-facing slope of Mynydd Machen to the southeast of Pontymister. The quarry was worked from 1954 and is now disused. It is evident that no workings have taken place for some considerable time. The quarry faces are weathered and natural re-vegetation is taking place.
- Cwm Nant-yr-Odyn sandstone quarry on the eastern outskirts of Pontllanfraith within the hamlet of Cwm Nant-yr-Odyn. It lies adjacent to the Newbridge – Maesycwmmmer bypass (A472) and quarrying was last carried out in the early 1960s. Since then it has been used as a coal distribution depot. The quarry floor is currently used as a vehicle dismantler's yard. The un-worked strip extending to the southeast of the ancient semi-natural woodland. The woodland has been identified as a SIN C (78 **Nant -Yr-Odyn** (ancient woodland)) and the quarry is situated in an SLA (C11.10).

- Caerllwyn sandstone quarry lies in an elevated position on the eastern side of the Sirhowy Valley and between Ynsyddu and Springfield. Quarrying has been sporadic and on a very small scale, the most recent working taking place in the early 1990s. It is located within the Mynyddislwyn SLA (C11.10) and to the south of the quarry lies a contaminated quarry site which, together with surrounding land, is the subject of a continuing scheme to convert it to woodland.

### 9.3.3 SINC

- 7: **Coed Cefn Brithdir**; disused quarry workings provide major breeding site for a number of bird species
- 140: **Coedcae Newydd**; southwest of the site is a deep pond in a flooded quarry.
- 146: **Mynydd y Lan Woodlands**; quarry in the west is a good habitat for birds and supports heather, bilberry and young birch trees
- 148: **Cwm Gofapi Woods**; a quarry to the northwest is overgrown with heather, wood sage, and various grasses, scattered oak, birch and hawthorn trees
- 149: **Cwmcarn Slopes**; quarry region contains heather, bracken, gorse and young birch, with a mature birch woodland dominated by bilberry above
- 150: **Coed Mam-Gu**; gorse, bilberry and heather on quarry spoil
- 153: **Risca Quarry**
- 158: **Ty'n-y-Parc**; acidic grassland, bracken and scrub associated with an old quarry
- 162: **Coed y Brain**; 50ha broadleaved woodland with associated scrub, bracken and quarry habitats (cliffs, pools, marsh and scrub); the quarry is a geological SSSI (Llanbradach) with botanical, ornithological and other wildlife interests, but it is threatened by bracken invasion and with urban pressures
- 165: **Wernddu Woodlands**; these woodlands contain abandoned collieries and brickworks at Wernddu (OS ref: 168862). The collieries date from 1849, worked intermittently under several owners. In early 20<sup>th</sup> century (up to 1950s) Powell Duffryn used the root earth clays of the coal measures to manufacture bricks. Two large Claypits were opened up but have returned to nature. An isolated site with a mixture of habitats in a mature planted conifer woodland. The Claypits are designated as an SSSI for its carboniferous strata and for its interesting range of plant and animal species
- 169: **Warren Drive Meadow**; developing woodland and scrub in an old quarry with ash, hazel, pignut and lesser celandine
- 182: **Tudor Gardens**; disused quarry at Machen with 4ha broadleaved woodland, it is naturally colonised, with associated pedunculate oak woodland containing ash, alder, birch and a well-developed shrub layer. Rich ground flora containing bluebells, wood anemone, dog's mercury, golden saxifrage, and lesser celandine. Threatened by minor tipping and road construction
- 190: **Thornhill Quarries**; broadleaved woodland and scrub; semi-natural woodland and scrub associated with old quarries. Threatened with livestock grazing and tipping

### APPENDIX 9.4 - REFUSE TIP SITES

Wattsville	Woodfieldside, Blackwood
Hafodryns	Dan y Graig Quarry, Risca
Trinant	Fernlea
Coed Top Hill	Old Trehir
Old Coed y Brain	Aberbargoed