Volume One

Biodiversity

Blue Tit Ivy Owl Dragonfly Iris Vole Elephant Hawkmoth Rabbit Slug Insect Toadstool Yellow Hammer

Action Plan
for Caerphilly County Borough

Overview & Habitat Statements

CAERPHILLY BIODIVERSITY PARTNERSHIP
PARTNERIAETH BIOAMRYWIAETH CAERFFILI

Biodiversity is all living things from the brightly coloured ladybird to the ancient oak tree

BIODIVERSITY ACTION PLAN FOR CAERPHILLY COUNTY BOROUGH
FOREWORD

Last year, my fellow cabinet members joined with me in signing the foreword to the council's draft Local Agenda 21 and Sustainability Strategy. In doing so, we accepted a collective responsibility for the authority's commitment to balancing the demands of our society, economy and environment. We stated our intention that the authority would work to ensure that procedures were adopted to retain the principles of sustainable development at the heart of all our policies and plans, and to encourage other organisations and individuals to do the same.

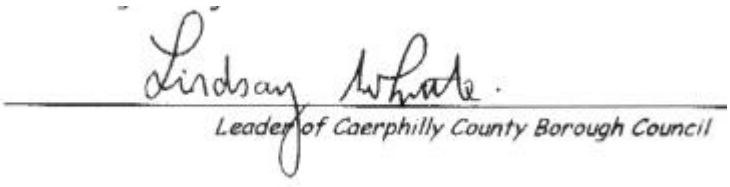
The work leading to the production of this, our Local Biodiversity Action Plan (LBAP), has been undertaken as a direct result of that stated intention; but this was not work carried out by the council alone, and this is not a plan owned by the council alone. This document was produced as the result of a partnership of numerous organisations and individuals, who all gave up their free time to work towards its production.

The need to prepare an LBAP in the county borough arose out of growing international concern about the loss and degradation of the world's natural resources, culminating in over 150 countries, including the UK, signing up to the Convention on Biological Diversity at the Earth Summit, in Rio de Janeiro, 1992. This instigated global efforts to halt the further loss of our diversity of species and habitats, and is being achieved in the UK through the production and implementation of LBAPs.

We are very fortunate; those of us who live in the county borough of Caerphilly see green areas at every turn. At work, at home, in the high street, we only have to lift our eyes to see the surrounding hills and woods, a magnificent backdrop for any community. Fingers of green reach into our towns and villages, along streams and rivers to touch our parks, school grounds and even the gardens of our homes. These green fingers are the embodiment of biodiversity. The animals and plants sharing the areas close to our living space represent a rich source of the variety of life on which we, as an integral part of the world's biological systems, depend for survival.

As we move through the twenty-first century, these animals and plants will also depend upon us for their survival. The actions of the council, and its partners, can have significant effects upon the biodiversity of our county borough. We all need to be aware of the value of places that are special for wildlife and that these special wildlife places also depend upon the *everyday green spaces* in which we live our daily lives.

I would like to thank all the people who have contributed to the production of Caerphilly county borough's LBAP, council officers, members of organised groups and committed individuals, who have been happy to share their expert knowledge. The conservation of biodiversity on a global scale can be considered a daunting task; this plan is only the start of a process that will develop and grow over time. However, by making a commitment locally, through the adoption and implementation of our LBAP, we will be making a small, but significant, contribution to the achievement of a greater goal.

Signed  Lindsay Whittle.

Leader of Caerphilly County Borough Council

BIODIVERSITY ACTION PLAN FOR CAERPHILLY COUNTY BOROUGH

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This plan was prepared by the Caerphilly Biodiversity Partnership and published by Caerphilly County Borough Council, with financial support from the Countryside Council for Wales.

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The species action plan illustrations were kindly drawn and donated by Richard Poole. Amy Rose from Ysgol Gyfun Cwm Rhymni designed the Partnership's logo and Adrian Jones (CCBC Design Studio) designed the front covers for the LBAP, with assistance from Dave Penberthy.

Thanks to Julia Korn (Wales Biodiversity Group) for commenting on the draft, together with Steve Chambers (NAWAD), Justin Cooper (CCBC), Allan Dallimore (CCBC), Adrian Fowles (CCW), Vaughan Grantham (CCC), Barbara Jones (CCW), Jim Latham (CCW), Jerry Lewis (MCC), Jeff Morgan (DC/WW), Rob Nottage (BTO), Nicola Sharpe (BGCBC), Sue Steer (GLWT Caerphilly), David Stevens (CCW), Chris Tucker (FE), Sian Whitehead (CCW), Cllr Robin Woodyatt, Roger Blatchford, Elizabeth Thomas and the Caerphilly Women's Institute.

We are proud to have overseen the production of this plan and wish the Caerphilly Biodiversity Partnership every success in implementing it to conserve and enhance local wildlife and habitats.

Melanie Sutherland, Biodiversity Coordinator

Alison Jones, Chair of the Caerphilly Biodiversity Partnership

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1. INTRODUCTION

Caerphilly county borough is rich in wildlife. This has evolved with changing agricultural and forestry practices, and urban and industrial developments, which have shaped the landscape of the county borough. However, during the last 50 years there has been a dramatic loss in the abundance and variety of species. This decline has occurred locally, nationally and on a worldwide scale, and is linked to the changes in our modern lifestyles and the resultant demand this has had on our natural resources. If action is not taken to halt this decline, many plants and animals familiar to us today will be lost. Our children and grandchildren will only have access to them in museums, or on old film and video clips.

Governments globally agree that efforts must be made to try and halt the worldwide loss of species and habitats. For this to succeed, action needs to be taken at a local level. In response to this need, organisations and individuals in Caerphilly county borough have come together to form a steering group to prepare a Local Biodiversity Action Plan (LBAP) for the area. It will be the implementation of the actions in this plan, which will help us take the first steps towards halting the decline of those species sharing this corner of the South Wales Valleys.

1.1 WHAT IS BIODIVERSITY?

Biodiversity - the Variety of Life

Biodiversity is all living things, from the brightly coloured ladybird to the ancient oak tree. It is seen in every corner of Caerphilly county borough, in gardens and woodlands, quarries and roadsides, fens and commons (*adapted from the Biodiversity Steering Group Report*[48]).

Biodiversity encompasses the whole variety of life on earth, not only all species of plants and animals but also their genetic variation. It is not restricted to just rare or threatened species but includes the whole of the natural world from the common place to the critically endangered. It includes the animals and plants familiar to us all, in the places where we live, work and visit, wherever they might be.

Biodiversity is simply short for **'Biological Diversity'** - it enables us to sum up in one word the variety and abundance of life on Earth.

In a wider context it represents a vital resource important for:

Supporting life and maintaining the environment

Biodiversity includes the entire spectrum of life on land and in the water, ranging from bacteria, fungi, lower plants and flowering plants to insects, amphibians and reptiles, birds and mammals. Without this variety we would not be able to survive. No organism lives in isolation and each has its own way of life, which contributes to the balance of nature. Biodiversity influences climate control, nutrient cycles, and air and water quality. This has taken millions of years to evolve. The inter-dependence of species underpins the complex diversity of life and humanity is only one part. We do not know enough about ecosystem thresholds to say at what point biodiversity loss would lead to a breakdown of the natural systems on which we all depend.

Providing essential goods

Biodiversity (plants and animals) provides us with the food we eat, clothing and raw materials for building and industry. It is therefore vital to maintain biodiversity in order to conserve a

wide range of species for possible future use. Pollination is a good example of how biodiversity saves us money; without bees, and other insects, pollination would have to be carried out artificially and many crops would fail. Other examples of this include natural water filtration, soil stabilisation, drainage, flood defence, and many other processes for which man-made alternatives would be very expensive.

Many of the original sources of medicine are from wild plants and animals. Folklore often refers to 'alternative' cures for various ailments, and many people nowadays turn to herbal remedies. However, we could be losing species with valuable medicinal properties without even knowing about them. Resources like these need to be used in a sustainable way.

Enriching lives

Many people enjoy spending time out of doors, in the countryside or in urban nature areas, for example in sport or other leisure activities, for relaxation or for spiritual reasons. Research has shown that people are healthier and happier if they have contact with the natural environment. Wildlife and landscapes provide inspiration for many artists, writers and poets both past and present. Tourism and recreation are important industries contributing to the rural economy in Wales. They are therefore heavily dependent on biodiversity. This is also linked to the 'Quality of Life' aspect of Sustainable Development.

1.2 LOSS OF BIODIVERSITY

During the last 100 years the UK alone has witnessed the loss of 100 species[48] and the declines in numbers of species observed during the last 50 years indicate that we are likely to see many more extinctions in the immediate future. The loss of habitat is a primary cause of decline in the range and populations of many UK species, through factors such as:

- Development
- Land use change
- Agricultural intensification
- Pollution
- Introduction of non-native species
- Disturbance
- Neglect
- Over-exploitation
- Climate change
- Lack of knowledge

It is not just the large-scale activities such as new settlements or roads that may threaten wildlife, it is also the small things like the filling in of a pond, building too close to a river or everyday actions like driving a car. In isolation these actions may not appear to pose a significant threat, but collectively they may have serious repercussions, leading to the loss of habitat viability and sending some species to the edge of extinction. However, everyone has the ability to make a difference…

1.3 TACKLING THE PROBLEM

1.3.1 The Global Commitment

Growing international concern about the loss and degradation of natural resources led to the largest ever gathering of world leaders at the United Nations Conference on Environment and

Development. This is now known as the 'Earth Summit', and was held in Rio de Janeiro in June 1992. One of the main initiatives stemming from the Earth Summit was the **Convention on Biological Diversity**[10]. This is an international agreement about how to protect the diversity of habitats and species in the world. The UK was one of over 150 signatories who recognised that action must be taken to halt the global loss of animal and plant species and genetic resources, and that each country had the primary responsibility to conserve and enhance biodiversity within its own jurisdiction. At the same time they agreed to develop national strategies, plans and programmes, for the conservation and sustainable use of biological diversity.

The Convention on Biological Diversity is essentially a commitment to conserving and sustaining the variety of life on earth.

1.3.2 The UK Strategy

One of the UK Government responses to the Earth Summit was to produce *Biodiversity – The UK Action Plan*[47] published in 1994, which details the UK natural resources and methods to implement sustainable management. It set out the broad strategy for conserving and enhancing wild species and habitats in the UK over the next 20 years. It also recommended the setting up of a UK Steering Group to prepare detailed proposals for species and habitat conservation within the UK. Shadowing this plan and produced just before it was the voluntary bodies' *Biodiversity Challenge*[58].

The UK Steering Group produced its first report[48] in December 1995, which was endorsed by the Government in 1996. It proposed:

- Developing action plans with costed targets for our most threatened and declining species and habitats;
- Establishing an effective system for handling biological data at both the national and local level;
- Promoting increased public awareness of the importance of biodiversity, and broadening public involvement;
- Promoting Local Biodiversity Action Plans as a means of implementing the national plan.

The report also produced the first of a series of costed national action plans for the most threatened habitats and species in the UK, and subsequent volumes have provided further plans with an intention of producing a total of 431 species action plans and 45 habitat action plans. These are referred to as **UK priority species and habitats.** Their selection was based on a detailed appraisal of the current status of critical species and habitats in the UK, together with the threats to their survival. Caerphilly county borough has 18 of these priority habitats and at least 25 priority species. The fact that national targets and actions have been agreed for each of these habitats and species is of vital importance. It defines clear objectives for the conservation of key species and habitats, and also provides a basis for measuring the future success of these species and habitats in the longer term.

The UK Steering Group argues for broad partnerships involving a wide range of bodies, including those outside the traditional conservation sector, to take responsibility for biodiversity planning and implementation. Through this partnership approach the UK Biodiversity Action Plan (BAP) aims to gain greater public and political commitment to biodiversity at every level. The conservation of species and habitats is not a new concern in the UK, but as a result of the publication of the UK BAP, there is, for the first time, a nationwide commitment towards agreed targets, through the securing and better use of resources.

1.3.3 Local Action

In order for the UK BAP to succeed, however, action needs to be taken at all levels and in all sectors of the community. Annex C of the 1995 UK Steering Group Report[48] recognises that "biodiversity is ultimately lost or conserved at the local level". For most people it is the local environment that catches the attention, the area where they live and spend most of their time.

> Local Biodiversity Action Plans are therefore the principle mechanism by which the national biodiversity strategy can be translated into effective action at the local level.

They are an essential and fundamental part of the global process. It is only through shared local action with partners agreeing a series of local targets that national targets will be achieved. LBAPs (Local Biodiversity Action Plans) have 2 main functions;

1. To ensure that national action plans are translated into effective action at the local level; and
2. To establish targets and actions for characteristic species and habitats of each local area.

LBAPs are intended to focus resources to conserve and enhance biodiversity by taking account of national and local priorities. They differ from former approaches as a way to tackle biodiversity conservation in 2 important ways:

- they are prepared by a wide partnership of interested individuals and organizations; and
- they follow a very disciplined approach to auditing and target setting

They are **"living documents",** capable of evolving as progress is continually made in biodiversity conservation; removing habitats or species as their status improves, or adding them as more come under threat. In order to assist in the preparation of Local Action Plans, a series of guidance notes[50] were produced on behalf of the UK Biodiversity Group, which have guided the preparation of this plan.

1.3.4 Functions of Local Biodiversity Action Plans

The UK guidance identified Local Actions as having seven main functions:

1. To ensure that national targets for species and habitats (as specified in the UK BAP) are translated into effective action at the local level. National priority species and habitats must be identified in the locality and targets should be linked to national priorities.

2. To identify targets for species and habitats appropriate to the local area and reflect the values of the local people. LBAPs provide local people with a means of expressing their views about what is important in their area.

3. To develop effective local partnerships. This will ensure that programmes for biodiversity conservation are maintained in the long-term. The Local Biodiversity Action Plans must be built by consensus, the Plan should be owned by all parties involved in carrying out the actions.

4. To raise awareness of the need for biodiversity conservation. Increasing public awareness and involvement in the local area is crucial for success.

5. To ensure that opportunities for conservation and enhancement of the whole biodiversity resource are fully considered. Plans need to consider appropriate action for different localities within the Plan area, for example opportunities for habitat enhancement and restoration rather than just conservation of existing resources.

6. To identify the resources available for implementing the objectives of the Plan.

7. To provide a basis for monitoring progress. A periodic review of whether targets are being achieved in the local area will assess the effectiveness of the plan and contribute to national monitoring.

Adapted from 'Guidance for Local Biodiversity Action Plans,' UK Local Issues Advisory Group[50]

1.4 ACTION FOR THE UK

Since the production of the UK Steering Group report, the UK Steering Group has been replaced by the UK Biodiversity Group (UKBG) to continue the work of the UK Biodiversity Action Plan and oversee its implementation. This group is made up of representatives from all major interests in biodiversity, including Government Departments, Local Government, statutory agencies, business and commerce, land management and voluntary conservation organizations.

The terms of reference for this group are to:

- Oversee and coordinate the implementation of the UK BAP;
- Monitor and evaluate national biodiversity targets;
- Report on progress towards, and means of overcoming problems to, achieving the Plan's objectives and targets;
- Advise Government on how best to secure progress in achieving the objectives.

The various elements of this group are supported by subgroups for Wales, England, Scotland and Northern Ireland, all reporting back to the UK Biodiversity Group, and help provide information and support biodiversity action within each country area. The Millennium Biodiversity Report (MBR)[44] was launched in March 2001 and contains 76 recommendations for the way forward of the LBAP process. Also launched at the same time was the UK Biodiversity website www.ukbap.org.uk.

1.5 ACTION FOR WALES

Bioamrywiaeth Cymru

Biodiversity Wales

The Wales Biodiversity Group (WBG) was established in 1996. Its role is to promote, monitor and advise the National Assembly for Wales on action to maintain and enhance biodiversity in Wales.

Specifically, the aims of the WBG are to:

- Stimulate action and monitor progress on the implementation of Species and Habitat Action Plans;
- Promote good practice in the preparation and implementation of LBAPs, and monitor progress with local delivery of biodiversity objectives;
- Promote awareness of and involvement in biodiversity, and monitor progress;
- Maintain an overview of the range of biodiversity action by different sectors in Wales and assess its overall contribution to maintaining and enhancing biodiversity;

- Consider how funding might be encouraged from key partners for biodiversity activities in Wales;
- Report to the National Assembly on progress in implementing the UK BAP in Wales, identifying the key policy issues, and advise on the implications for future strategy in Wales; and
- Liaise with the UKBG to report on progress and future plans in Wales and to coordinate approaches to common issues where appropriate.

The WBG has nominated coordinators for the following: **targets and action plans** - Countryside Council of Wales (CCW), **information** - National Museums and Galleries of Wales (NMGW), **local issues** - Welsh Local Government Association (WLGA) and **public awareness and understanding** - Welsh Wildlife Trusts. CCW published *Action for Wildlife*[11] in 1997 as a contribution to the work of WBG, providing an accessible introduction to each of the national action plans relevant to Wales and available at the time.

In 1998 the WBG Local Issues Advisory Group (LIAG) published a supplement to the UK LBAP Guidance Note 3 - *The context for Local Biodiversity Action Plans in Wales*[54]. This dealt with the relationship between LBAPs and specifically Welsh policies (e.g. Planning Guidance, Wales), organisations (e.g. CCW and Welsh Development Agency (WDA)), and methods (e.g. countryside strategies and LANDMAP).

Cyngor Cefn Gwlad Cymru
Countryside Council for Wales

Biodiversity is a core component of the Countryside Council for Wales' (CCW) work, and it employs a range of practical measures to implement action plans; research and survey, monitoring, grant aid, advice, training, habitat rehabilitation and expansion, legislation and licensing.

Action plans for 28 habitats and more than 180 threatened species are relevant to Wales and WBG is working on the provision of indicative targets for Welsh LBAPs.

1.6 ACTION FOR GLAMORGAN AND GWENT

As the need for local action plans grew the unitary authority (UA) areas in the South Wales region began to consider the practicalities of preparing action plans for each unitary area. It became evident that many priority habitats were common to the majority of unitary authority areas in Glamorgan and Gwent, and that by pooling resources and technical expertise, each UA area would benefit from being part of a sub-regional group.

The **Glamorgan Biodiversity Advisory Group (GLBAG)** had their first meeting in October 1997. It is composed of 8 local authorities, statutory and non-statutory nature conservation organisations and land-use and development bodies, which are active in Watsonian Vice-County 41 (Glamorgan). The group is currently producing Habitat Action Plans[26], which include those habitats of importance in the region. Altogether there will be 19 plans each with actions on a regional level and it is hoped to provide further Species Action Plans, as with the Gwent Group, over the next few years.

The **Greater Gwent Biodiversity Action Group (GGBAG)** held its inaugural meeting in July 1998. They decided to produce a sub-regional BAP by combining resources, and to assist the county

and county borough councils to produce their own LBAPs. The *Biodiversity Guidance for Gwent*[27], was produced in November 2000 and covers those habitats that are regarded as having priority in the region of South Wales. It is intended to produce additional Habitat Action Plans and Species Action Plans in the next few years. Caerphilly county borough lies partly within both Glamorgan and Gwent and as a result has played an active role in both of these groups.

1.7 ACTION FOR CAERPHILLY COUNTY BOROUGH

The emphasis in all the guidance for Biodiversity Conservation is on the 'bottom-up" approach. Although achieving local biodiversity is mainly based upon a broad approach, encompassing all sectors of the community; the most significant element of the initiative is to engage the energy, knowledge and commitment of local people to achieve positive conservation in their communities. The concept of biodiversity conservation is inextricably linked to the involvement of the general public from the very beginning, to actively contribute, participate and, where appropriate, lead projects.

To start the local Biodiversity process off, CCBC hosted a 'Biodiversity Day', where representatives of nature conservation and other interested organizations and individuals were invited to discuss biodiversity and initiate a LBAP for the area. The aim and objectives were agreed and the Caerphilly Biodiversity Partnership set up to carry the process forward.

AIM

The overall aim of the Caerphilly Biodiversity Partnership is:

To actively protect, conserve and enhance the biodiversity of Caerphilly county borough on a continuing basis.

OBJECTIVES

The objectives of the Caerphilly Biodiversity Partnership are:

1. To set up a local partnership that is guided and represented by a steering group to coordinate and encourage the local BAP process. **[Set up a partnership]**

2. To examine existing information on habitats and species in the county borough, fill the information gaps and update regularly. **[Find out what we have]**

3. To select species and habitats and write local action plans that reflect the values of local people, and meet regional and national biodiversity priorities.
   [Write action plans for wildlife]

4. To raise awareness and appreciation of habitats and species in the county borough, and encourage their protection and enhancement.
   [Let everyone know what is happening]

5. To encourage all partners to incorporate targeted actions from the local BAP into their policy making processes. **[Incorporate targets]**

6. To measure the effectiveness of our LBAP and to report findings to the public as well as regional and national biodiversity groups.
   [Make sure we are doing it correctly]

7.	To seek ways of adequately resourcing the local BAP process. **[Seek funding]**

Much is already being done for biodiversity conservation in Caerphilly county borough. There is a range of existing projects and initiatives, but the Biodiversity Action Plan process brings a new discipline to all the work. It presents us with an opportunity to review the current activities, identify priorities and set specific targets. It also provides a clear framework for reviewing and monitoring progress. Each organisation involved in conservation work can examine its programme of work against the agreed priorities of the Caerphilly (county borough) Biodiversity Partnership and the national and local targets laid down in the UK BAP. Each habitat statement and species action plan identifies relevant current action and existing plans, and puts them in the context of the overall action required.

Although some organisations with an interest in biodiversity conservation have worked together before, the groups forming the Caerphilly Biodiversity Partnership, and the Greater Gwent and Glamorgan partnerships, are proof of a new approach and understanding. Partners from a variety of sectors, including many different organisations, agencies and individuals, have agreed to a joint responsibility. This coordinated approach to biodiversity should mean a much wider range of action. The production of the LBAP will also serve as a source of information. The species and habitats selected for action have been chosen because of their current state of decline or rarity, and their distinctiveness to the county borough. The Plan informs people of the wealth of local wildlife they may not have previously been aware of and stresses the importance of conserving the environment around them. It will also help to put people in touch with others who are involved in biodiversity conservation "on their doorstep".

1.8 PARTNERSHIP APPROACH AND IMPLEMENTATION

Caerphilly county borough's LBAP seeks to involve all those organisations and individuals whose activities, whether in town or countryside, impact upon biodiversity. It is only by working together as a partnership and agreeing a course of action, that biodiversity targets can be met.

The partners that have been involved in the preparation of Caerphilly county borough's LBAP, making up the *Caerphilly Biodiversity Partnership*, are listed in **Appendix 2**. Additions will be made to this list as the action plan progresses and new partners join the group.

1.8.1 Definition of Lead and Partner Roles

Each Species and Habitat Action Plans are (or will be) broken down into several sections, which summarise their current status; the objectives and targets for their conservation and the actions required to meet these objectives. The actions are presented in a table under headings such as Policy and legislation, Site Safeguard and Management and Advisory. Each action is identified with possible key partners that could be involved in undertaking the action and possible lead partners to coordinate the action (to be agreed).

Lead: the organisation in the most appropriate position to take responsibility for either implementing a particular action or coordinating the implementation of an action, in conjunction with the other partner organisations

Partner: an organisation in a position to contribute to the implementation of the particular action and to work in partnership with the lead organisation

Where possible a target is given which quantifies the conservation objective. These are indicative and should be used as a guide for implementation. The targets will provide a yardstick against which the achievements of the BAP can be measured. Some actions are on-going and will be reviewed accordingly. Prioritisation of the actions could be agreed, for example, through regular sub-group meetings.

The production and analysis of Functional Action Plans (all the actions for one organisation drawn out of the LBAP) should also lead to the prioritisation of actions during the implementation stage. When undertaking this, the focus should be on actions achieving the most benefit, or the most urgent first of all.

1.8.2 Who will use the Caerphilly LBAP?

- Caerphilly county borough council will incorporate recommendations into Development Plans and Community Plans and use the LBAP to inform their policy development. It will also be used as a material consideration when assessing planning applications. Biodiversity Action Planning will therefore have a closer relationship with the planning process.

- Statutory agencies such as CCW, Environment Agency (EA) and both the Forestry Commission (FC) and Forest Enterprise (FE), will incorporate the plans into their own work programmes and identify what activities they can undertake that can contribute to the attainment of targets.

- The National Assembly for Wales Agricultural Department (NAWAD) will use the plans to help target the agri-environment scheme Tir Gofal.

- Voluntary conservation organisations such as the Gwent and Glamorgan Wildlife Trusts (GWT and GLWT) and the Royal Society for the Protection of Birds (RSPB), will use the plan to prioritise their conservation activities (and aspects of Groundwork's activities).

- Countryside advisors such as Farming and Wildlife Advisory Group, Coed Cymru and Forestry Commission officers will use the plan to give direct, appropriate information to land managers and farmers.

- Country Landowners Association (CLA) and National Farmers Union (NFU) will be able to use the plans to inform their members of conservation targets across the county and how they can help.

- Developers, business and industry will be able to ensure that wherever possible their activities contribute to the enhancement of biodiversity.

- Amateur and professional biological recorders and environmental consultants will be able to focus their recording efforts and ensure that environmental assessments address key issues.

- Local communities and individuals will be able to use the plan to ensure that the biodiversity of their local patch is sustained.

1.9 SUSTAINABLE DEVELOPMENT AND BIODIVERSITY

Sustainable Development is about ensuring a better quality of life for everyone, now and for generations to come. To achieve this, Sustainable Development is concerned with achieving higher living standards while protecting and, where possible, enhancing the environment. It is about making sure that economic and environmental benefits and all services are available to everyone, not just to a privileged few. This way of thinking puts environmental, social and economic needs and concerns alongside each other in decision making. It involves:

- Thinking broadly about objectives and about the effects of what we do
- Considering the long term as well as the short term effects
- Assessing indirect as well as direct effects
- Taking particular care when changes brought about by development would be irreversible

1.9.1 Caerphilly's Sustainable Development Policy

CCBC agreed a Sustainable Development Policy with the following overarching principles in 1997:

Conserving resources: *by the efficient management of the world's natural resources, waste minimisation and reducing pollution.*

Safeguarding, enhancing and reinstating the diversity of the local environment: *by valuing and protecting the natural and the built environment and the local culture.*

Encouraging the local availability of services: *by trying to provide services locally, accessible to all, reducing unnecessary travel and encouraging the use of sustainable forms of transport.*

Ensuring the well-being of the community: *by protecting people's health, promoting community safety and meeting basic needs through the provision of suitable housing, affordable heating, a vibrant economy and satisfying work.*

Raising environmental awareness, involving and empowering the community *to enable all the community to take part in the Local Agenda 21 process.*

In December 2000, CCBC published its draft Sustainable Development Strategy. Over 100 organisations and individuals were involved in developing the strategy. The draft Strategy sets out how CCBC and its partners are working towards achieving more sustainable development in in-house activities, across service provision and with partners in the Community Planning process.

1.9.2 Sustainable Development and Biodiversity

Sustainable Development and biodiversity are intimately linked – *biodiversity is a fundamental component of Sustainable Development.* Human life, health and well-being depend on a healthy environment.

Biodiversity is a key test of Sustainable Development because it enhances quality of life (**social**), provides natural assets from which **economic** benefits can be derived, and indicates an **environment** in good health. Any decisions made to meet social, economic and environmental needs should do so without undermining the quality of our natural environment.

Sustainable Development therefore requires the protection of all wildlife and natural features that are important and irreplaceable within practical timescales (for example traditional hay meadows, ancient semi-natural woodlands and unimproved species-rich grasslands). Designated sites (such as SSSIs, SACs) represent only the very best of our biodiversity, they do not encompass all that is irreplaceable and cannot by themselves maintain biodiversity. Even common species and habitats, and urban wildlife and green spaces, are important in maintaining the quality of local areas.

There is also a need to influence what happens in the wider environment. Most uses of land and water together with resource consumption, energy use and transport have some impact on biodiversity. A clear understanding and integration of the principles of Sustainable Development into structure and local planning and policy, and the operation of each economic sector, will help to ensure that biodiversity is protected.

The overall objective must be to maintain and, where possible, enhance the total stock of natural assets for the benefit of people now and in the future.

Some ways of protecting the natural environment would be to:

- Seek to avoid development and land use, which adversely and irreversibly affect irreplaceable natural assets and encourage development which helps to enhance biodiversity.
- Secure sustainable management of designated sites and target action elsewhere to maintain and enhance natural assets.
- Identify and report on a range of indicators which establish biodiversity as a key test of environmental sustainability and take into account Biodiversity Action Plan targets.
- Promote environmental assessment and sustainability appraisal of local, regional and national strategies, policies and programmes.
- Promote the precautionary principle to minimize risk of potentially significant adverse environmental impacts.
- Promote participation and lucidity in decision-making, and provide public information to help an increasingly informed and educated society to make choices that favour long-term sustainability.

1.10 LINKS WITH OTHER PLANS

- **Unitary Development Plan (UDP)**[3]: CCBC, as the local planning authority, is required to produce a Unitary Development Plan to guide planning policy on the future use and development of land. The UDP and its predecessors, the Rhymney Valley District Plan and Islwyn Local Plan, have a crucial role in safeguarding important habitats and species. The Deposit UDP has identified the need for conformity with the LBAP.

- **Planning Policy Guidance** Planning Policy Wales (draft) recognises the importance of biodiversity outside as well as inside statutory designated sites, and encourages the adoption of LBAPs as supplementary planning guidance.

- **Climate Change**: The UK Climate Impact Programme (UKCIP) has developed several different scenarios of the severity of climate change. These are based on different forecasts of increased temperature, rainfall, sea level rise, etc. Overall, each of the scenarios indicates that winters will become milder, wetter and stormier, while summers will become hotter and drier. Further analysis carried out on behalf of the National Assembly for Wales (NAW) and Department of the Environment, Farming and Rural Affairs (DEFRA) attempts to forecast the impacts on vegetation, species-distribution and agriculture, as well as outline the responses that regions should be developing. The LBAP may be the appropriate process for developing and implementing actions to deal with the impacts of climate change, however, this LBAP does not currently contain specific action, but it is an issue that needs to be considered further.

- **Other Regional and Local BAPs** Animals and plants do not respect political boundaries, so it is important that the LBAP process recognises this, and that there is coordination between adjacent LAs. This LBAP is set in a framework of regional plans prepared by the GLBAG and GGBAG; and other LBAPs being produced by Blaenau Gwent, Torfaen, Newport, Cardiff, Rhondda Cynon Taff, Merthyr Tydfil and Brecon Beacons National Park Authorities. Strategic Planning Guidance for South East Wales (2000) recommends cooperation between local authorities.

- **Local Environment Agency Plans (LEAPs)** These are integrated local management plans produced by the EA, which identify, assess, prioritise and resolve local environmental issues related to the statutory functions of the Agency. The EA is a major partner in biodiversity action at both the national and local level. LEAPs identify biodiversity issues and solutions for river catchments and will feed directly into the LBAP process. The Eastern Valleys LEAP covers the catchment areas within Caerphilly county borough[21].

- **LANDMAP** This has been developed by CCW in association with the Wales Landscape Partnership Group. LANDMAP is an evolving process which collects, collates and evaluates information on landscape resources, based on internal and external data, and field work by a number of aspect specialists. The current aspect areas include biodiversity.

- **Business and Biodiversity** Many businesses depend on natural resources for all or part of their business, and the sustainable use of these resources is essential for their continued success. Many businesses may require or generate information on biodiversity and could provide valuable information on species and habitats in the local area. The *Business and Biodiversity* leaflet produced by the UK Round Table on Sustainable Development and Earthwatch discusses case studies and opportunities for businesses to get involved with LBAPs, e.g. through funding or by developing their own company BAPs. For more information visit the Business and Resource Centre website: www.businessandbiodiversity.org.
-
- **Trunk Road Estate Biodiversity Action Plan (TREBAP)** (draft 2001) The NAW Transport Directorate is preparing a plan which will direct the way it carries out activities in relation to biodiversity for the period 2003 – 2013. This will contribute to the conservation and where practical, enhancement of biodiversity on the trunk road networks throughout Wales.

- **Wales Woodland Strategy**

- **The Rural Recovery Plan** promotes integrated tourism, leisure and environmental projects, including the encouragement of wildlife in ways that tourists can appreciate.

- **Community Strategies/Plans** The Government has asked every local authority in the country to establish a Community Plan process in their area. The essential idea is that all agencies should work in partnership with each other and with local communities to agree the priorities and actions to improve the quality of life in their areas, in ways that protect and enhance the environment. In Caerphilly county borough, a Standing Conference of all the key agencies operating in the area was established in November 1999 to develop the Community Plan. The principle of Sustainable Development has underpinned Caerphilly's Community Planning process from the outset. There are 4 cross cutting themes, including *Living Environment*. The LBAP has been identified as an important related document and an example of a good basis for local partnerships to work together.

2. THE BIODIVERSITY OF CAERPHILLY COUNTY BOROUGH

2.1 LOCATION

Caerphilly county borough lies in the South Wales Valleys bounded in the south by the county boroughs of Cardiff and Newport, and by Powys and the Brecon Beacons National Park in the north. It is made up of 3 valleys, the Rhymney, Sirhowy and Ebbw, covering an area of 28,000ha. The county borough has one of the highest populations in Wales of approximately 170,000 (1997 Census), and yet over 75% is used for agriculture and forestry (countryside/rural). It has both an expanding economy and an attractive environment. The area covered by this Local Biodiversity Action Plan is shown on Map (i).

2.2 BIODIVERSITY

2.2.1 Habitats and Wildlife

The habitats of the county borough are varied, ranging from the upland moorland of Pen March and the open commons of Gelligaer and Mynydd Maen to the dramatic steep-sided valley slopes of the Ebbw, Sirhowy and Rhymney rivers. In the north these valley sides are dominated by bracken with occasional heath and upland woodland, while in the east of the county these are replaced by conifer plantations. To the south is a softer landscape covering the more traditional patchwork of agricultural fields of the Mynyddislwyn plateau, divided by hedgerows and stone walls, and the mixed agricultural and woodland landscape of the Machen and Rudry areas.

The dereliction left behind by the decline of heavy industry, which gave South Wales it's initial prosperity and brought work in the iron and coal industries, has largely been transformed, with the creation of several country parks and new sites for industry. Several of the remaining tips have developed either valuable plant communities or provide habitats for breeding bird and invertebrate species. Wildlife has no respect for (man-made) boundaries and whilst the greatest diversity will continue to be found in rural areas, important habitats can also be found in towns and villages, on derelict land, former mine workings, redundant railway lines and even in individual buildings.

Those areas that have escaped the industrial activities and agricultural improvements of the last Century have left a network of species rich unimproved meadows, wet pasture and ancient woodlands scattered throughout the county borough.

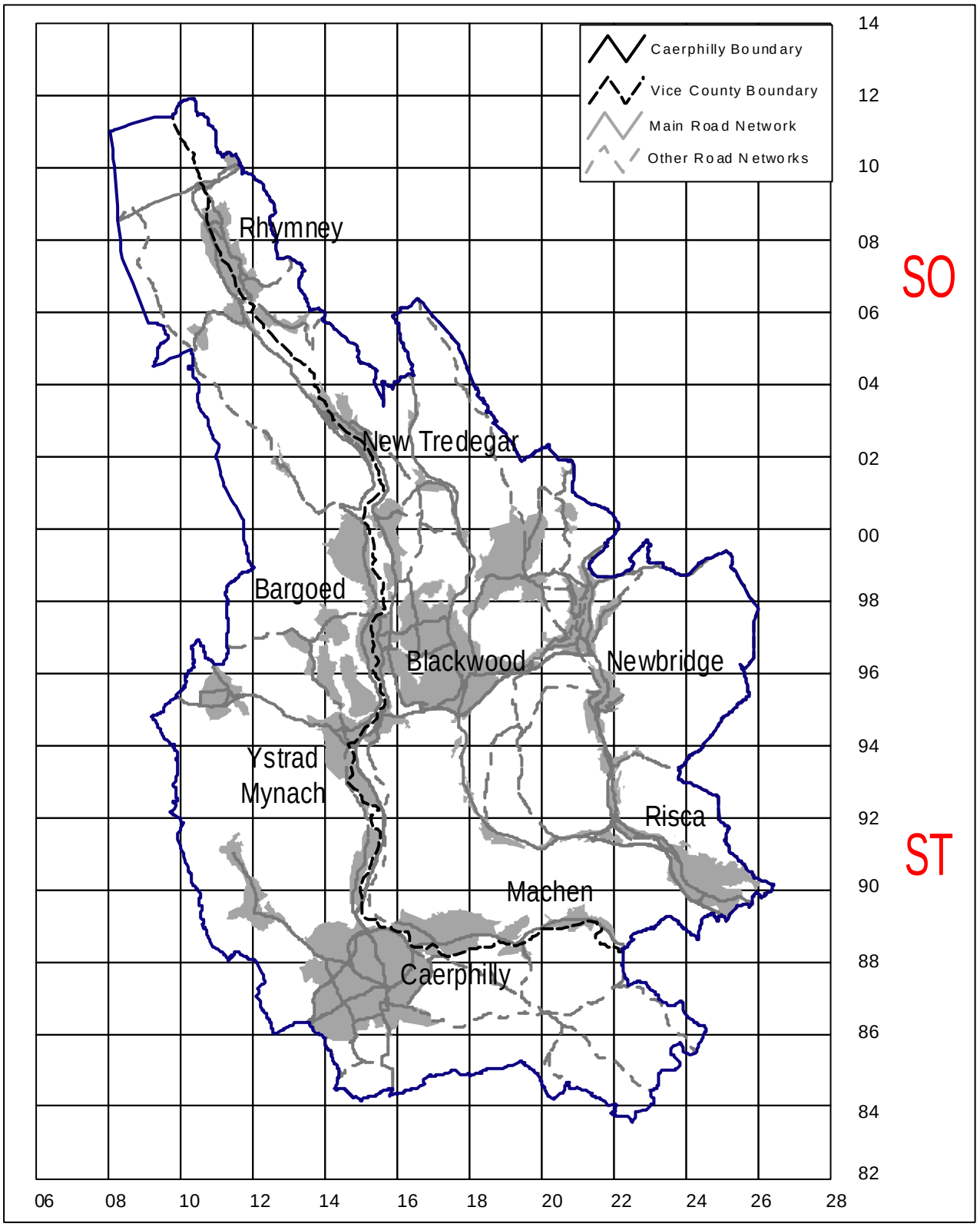
2.2.2 Local Threats

Caerphilly county borough's wildlife is threatened by many human activities, but the two key threats are from development and changes in land management. The demand for new housing, roads, industrial and business developments, landfill and mineral extraction, has in the past resulted in extensive losses in wildlife in the county. Loss of ancient woodlands, unimproved grasslands, moorland and hedgerows and the draining of wet meadows and marshes, together with indirect impacts from pollution, disturbance, isolation and fragmentation of habitats, are all particular concerns.

2.2.3 Designated Sites (Maps ii & iii)

Caerphilly county borough supports one site of European importance, a candidate Special Area of Conservation (cSAC) identified for its population of marsh fritillary butterflies. The county borough also has 10 nationally important sites, Sites of Special Scientific Interest (SSSIs), of

MAP (i) - CAERPHILLY COUNTY BOROUGH AREA



which 6 have been designated for their biological interest and the remaining 4 of geological interest. This LBAP sets out in more detail how the habitats and species associated with these important sites of nature conservation value will be protected, and where appropriate, enhanced.

There are 4 Local Nature Reserves (LNRs) and, 188 Sites of Interest for Nature Conservation (SINC), in the county borough. LNRs and SINCs identify areas which are of local conservation interest and in some cases contain habitats and species of national significance. They include a variety of habitats ranging from ancient woodlands, wetlands, unimproved species-rich grasslands, to rock outcrops.

Special Landscape Areas (SLAs), Green Wedges and Tree Preservation Orders (TPOs) are all landscape designations. Although their purpose is for the protection of the whole landscape and to prevent coalescence of urban areas, they also inadvertently protect the habitats and species within them.

2.2.4 Country Parks

Caerphilly county borough council runs five country parks, Parc Cwm Darran, Pen-y-fan Pond Country Park, Sirhowy Valley Country Park, Bargoed Country Park and Parc Penallta. Therefore a wide variety of habitats are accessible to the general public. For instance, two of the Local Nature Reserves occur within Sirhowy Valley Country Park; Flatwoods Meadow which comprises ancient grassland and wetland; and Graig Goch with an ancient semi-natural oak/beech woodland that is being conserved to protect the trees and to encourage the return of wildlife. Parc Cwm Darran with a large freshwater lake, coniferous and deciduous woodlands, grasslands and moorland, accommodates a wide variety of plant, bird and animal life.

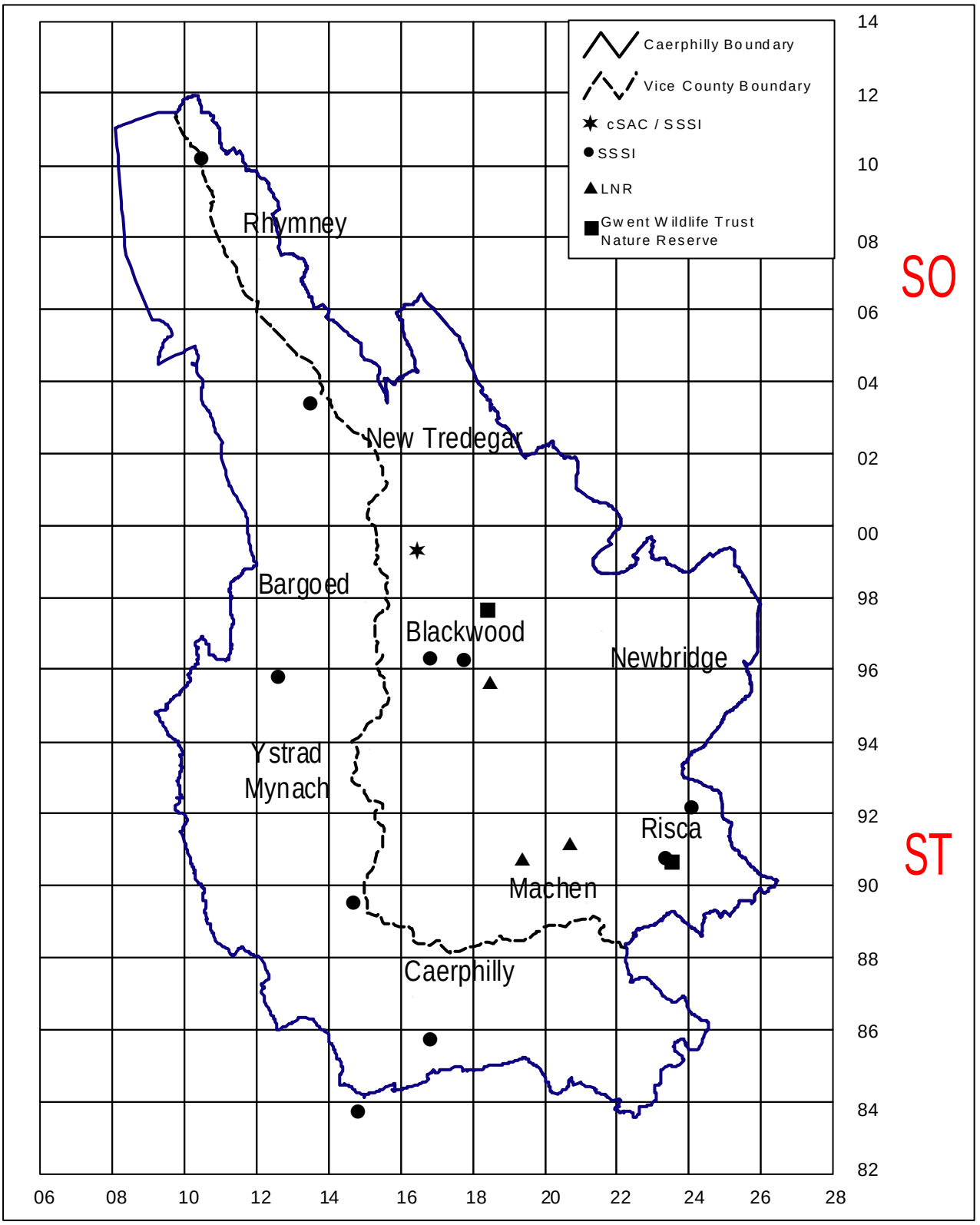
2.2.5 Nature Reserves

There are a number of nature reserves in the county borough which have been identified by a variety of organisations.

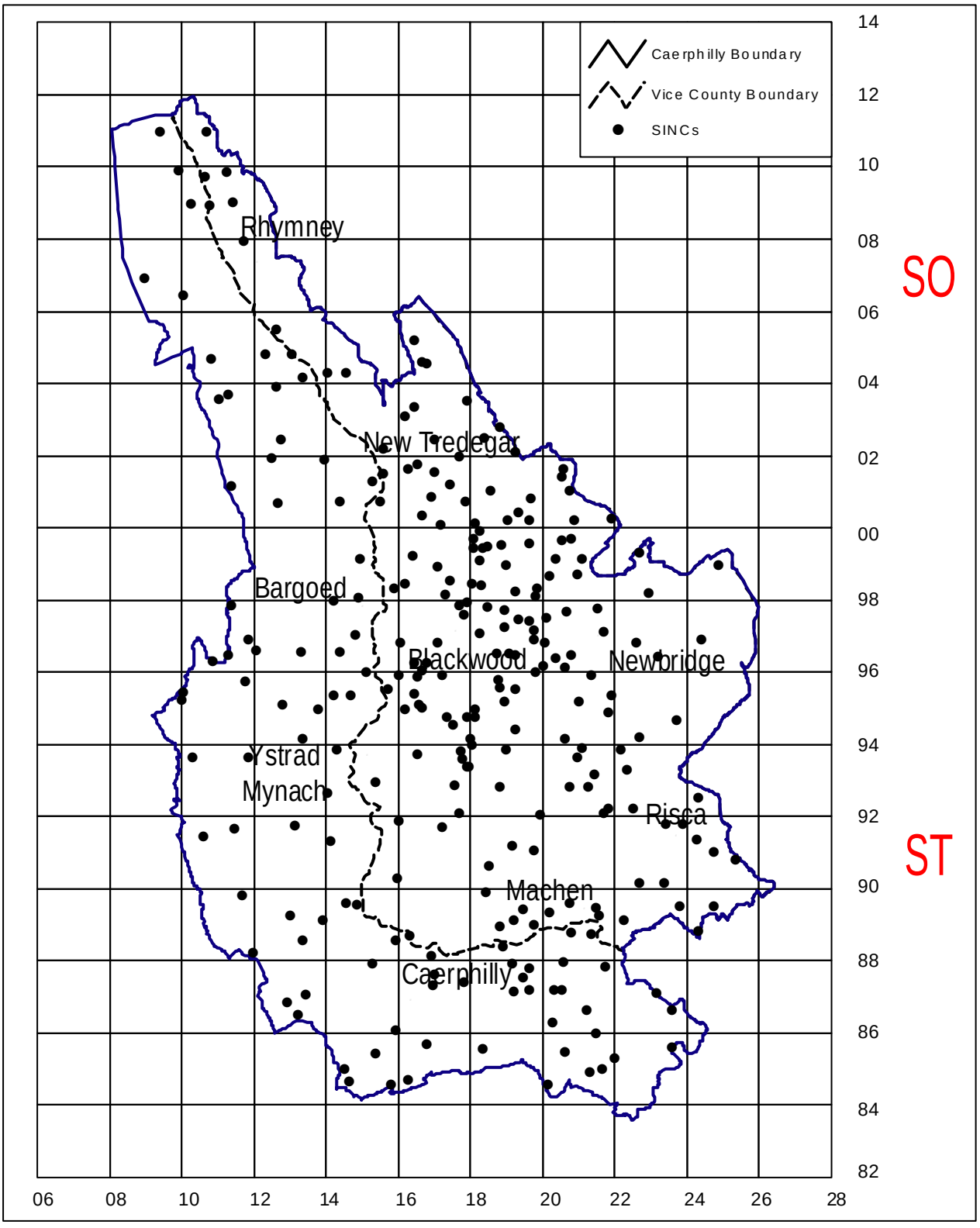
The Gwent Wildlife Trust has 2 nature reserves that are managed for wildlife. A number of schools have nature reserves within their school grounds such as Risca Comprehensive, Blackwood Comprehensive and Nelson Primary School.

Businesses such as Valentec have a nature reserve adjacent to their factory, while Scandinavian Design have agreed to allow some land in their ownership to be managed to benefit the marsh fritillary butterfly.

MAP (ii) - DESIGNATED AREAS IN CAERPHILLY COUNTY BOROUGH



MAP (iii) - SITES OF IMPORTANCE FOR NATURE CONSERVATION (SINC's) IN CAERPHILLY COUNTY BOROUGH



3. GENERAL ISSUES AFFECTING BIODIVERSITY

The conservation of biodiversity is not only dependent on direct action for habitats and species, there are many wider issues that have a great influence on the welfare of wild plants and animals.

3.1 AGRICULTURE AND FORESTRY

3.1.1 Agriculture

Over 75% of Caerphilly county borough's land is used for farming on both enclosed and unenclosed land. Agriculture has therefore a major influence on Caerphilly's biodiversity and farmers and landowners play a vitally important role in ensuring that existing biodiversity is maintained and enhanced. Changes in agriculture over the past 50 years have led to an increase in treated (improved) grassland at the expense of species rich untreated (unimproved) pasture. However, while other parts of the UK has witnessed major changes in agricultural practices, the pastoral nature of the county borough and its topography has ensured that agricultural changes in the county borough have been less marked. The major influences on habitats within the county have been related to the change over from hay production to silage, increased drainage and increased grass productivity from artificial fertilisers and reseeding. Higher stocking rates have also contributed to a decline in biodiversity in many areas. However, many types of habitat have become fragmented and if these remaining habitats are to flourish, new approaches are needed which combine farming practices that are sympathetic to biodiversity with the economic requirements for food production.

3.1.2 Forestry

Forestry is a major land use that has a great effect on biodiversity. Broadleaved woodlands throughout Wales have suffered from lack of management for decades due to changing markets and the reduced economic viability of woodland products. In the past, over-grazing, replacement of native broadleaved woodland with conifers and the cessation of traditional forms of management such as coppicing and pollarding have all led to a reduction in biodiversity. The Government has set out its approach to sustainable forestry in the *UK Forestry Standard 1998*. This provides a framework for protecting and managing woodland in the future and gives specific attention to biodiversity.

3.1.3 Incentives for Favourable Land Management

The balance between agricultural production and environment protection and enhancement has in the past been encouraged by the introduction of financial incentives to encourage farming practices more sympathetic to wildlife. Such agri-environment schemes that apply to Caerphilly county borough are administered by CCW, FC, NAWAD, National Parks and other public bodies, and include:

- Tir Gofal
- Organic Aid/Organic Farming Scheme
- Forestry Commission Woodland Grant Scheme
- National Park Discretionary Grants and Agreements

3.1.4 Tir Gofal

Tir Gofal was introduced by the NAW in 1999 and is administered by CCW. It replaced and expanded a number of existing schemes including Tir Cymen, Environmentally Sensitive Areas (ESAs), the Habitat Scheme, Hedgerow Renovation Scheme and many others. Tir Gofal is an all-

Wales, whole-farm scheme, that provides payments for farmers to manage existing valuable habitats on their farms to benefit nature conservation with voluntary options for managing, creating or improving other habitats.

3.1.5 Woodland Improvement Grants

In 1996 the Forestry Commission introduced Woodland Improvement Grants under its Woodland Grant Scheme, specifically targeting biodiversity conservation. Grants are available for under-managed woods, including funding for the restoration of coppice and for woodland biodiversity. Supplements are available for new woodland on agricultural land, including the National assembly Agriculture Department's Farm Woodland Premium Scheme. The Woodland Improvement Grant can particularly assist work which supports the achievement of habitat action plan targets in native woodlands. Payments may be on a one-off basis or as annual management grants. Recent years have seen a more specific targeting of grants, including competitive bidding under the Challenge Fund system. Challenge have already targeted new native woodlands, productive planting on bracken land and management of upland oak woods. More will follow the launch of the Wales Woodland Strategy, 2001. This new, targeted approach will greatly assist biodiversity conservation.

3.1.6 Advice

Advice to landowners on how to manage land for biodiversity is very important. While the CLA, the NFU and the Farmers Union of Wales (FUW) are all active in promoting environmentally sensitive farming, the availability of on-the-ground advice from advisors with a strong agricultural and environmental background is essential. Conserving biodiversity within the agricultural sector is a particular challenge and one that involves a wide partnership, from delivery of national and local incentive schemes and advice to forecasting change and influencing policy. The NFU, FUW, CLA and the Glamorgan Farming and Wildlife Advisory Group (FWAG) have a continuing important role to play within this partnership. Coed Cymru, a multi-agency partnership working in Caerphilly county borough, has been set up to encourage farmers and landowners to bring neglected woodlands into management for timber production, wildlife and landscape benefits.

The aim of Caerphilly county borough's LBAP will be to inform both owners and advisers and to influence their actions. Action stemming from the plan therefore will have to be clearly relevant to the farmers and landowners who manage a large proportion of our countryside.

3.2 PLANNING AND DEVELOPMENT

The need for land for development purposes has resulted in inevitable conflicts with wildlife in the county borough. Housing, industrial and business development; roads, waste disposal and mineral extraction have been especially significant, resulting not only in direct loss, but also a whole variety of indirect impacts on nature conservation such as pollution, modification of water quality and flow, disturbance to sites in close proximity to development, and isolation and fragmentation of remaining habitats. The demand for new development continues, but at the same time the important role of planning for nature conservation is beginning to be recognised.

3.2.1 Relevant Legislation and Guidance

Various pieces of national and European legislation provide the legal framework to support biodiversity objectives, including the Wildlife and Countryside Act (WCA) 1981 and amendments 1985, the Conservation Regulations 1994, and the Countryside and Rights of Way Act (CROW Act) 2000. Planning guidance provided by the NAW gives advice to ensure that planning matters

take account of this legislation. Planning Guidance (Wales) 1999 states that biodiversity is an essential element of sustainable development and the planning system has an important part in countering decline in biodiversity[56]. It also places an onus on the local authority to address biodiversity issues, as they relate to planning, in their development plan. A new draft Planning Policy Wales (March 2001) expands on the importance of biodiversity stating that the UKBAP objectives should be taken into account in all land use planning activities, and reflected in both development plans and development control decisions. The Royal Town Planning Institute have produced a document entitled *Planning for Biodiversity a Good Practice Guide*[40], which provides advice on including biodiversity as an integral part of all stages of the planning process.

3.2.2 Sustainable Development

In 1994 the UK Government produced a document entitled Sustainable Development: the UK Strategy[46], which describes sustainable as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs', and the UK Government has adopted this as a key approach to planning. Biodiversity conservation forms a major component of sustainable development and if this approach is adopted successfully it should ensure that valuable habitats and species are not sacrificed for short-term gain. In some instances scientific knowledge may be unable to confirm the effects of a development on a particular species or habitat. In these cases the precautionary principle should be applied, until scientific advances enable the effects to be properly determined, which may require in some instances the refusal of a planning permission.

3.2.3 Unitary Development Plan

The important role of planning for nature conservation is being increasingly recognised and understood. To maintain and enhance biodiversity at a local level the Unitary Development Plan should take into account the nature conservation resource and the capacity of the area concerned to accommodate development. Caerphilly county borough 's Unitary Development Plan[3] has been produced prior to the production of this LBAP. However it recognises the importance of the LBAP and the need for the UDP to be in conformity with it. Policies are included within the plan for the protection of designated sites, for example Policy C9 for Sites of Special Scientific Interest and Policy C10 for Local Nature Reserves and Sites of Importance for Nature Conservation, while other policies such as Policy DC1 protect habitats and species that occur outside these designated areas.

3.3 RECREATION AND TOURISM

3.3.1 Access to the countryside

There is an increasing trend towards countryside recreation. Most visits to the countryside are within a five-mile radius from home, so access to open space near to where people live is significant. Appropriate access to nature reserves and other wildlife areas is consistent with the conservation of biodiversity. Access helps to increase public awareness and understanding of nature, thus contributing to biodiversity protection. However, visitor pressures can be detrimental, especially at heavily used sites. Sensitive species and habitats may be damaged, and noisy, disruptive and damaging activities should be prevented or very carefully controlled.

3.3.2 Green Tourism

Green, or sustainable, tourism is now much encouraged by tourism authorities keen to minimise the impact of that industry on the environment. There is a strong demand for imaginative, enjoyable and informative visitor attractions that enable people to appreciate the countryside with ease. Benefits may be derived from wildlife trails and events on farms, open days at nature

reserves, working holidays on conservation projects, school group stays, etc. It is essential, however, that projects manage visitor pressures so that damage to the wildlife resource is at an acceptably low, or sustainable, level.

Visitors to Caerphilly county borough could help to increase the information we hold on wildlife in the area if they had the opportunity to pass on that information before they left the area. One possible method of obtaining this information could be to encourage hoteliers and guesthouse owners to keep wildlife comments books alongside their visitor guest books.

3.4 FRESHWATER MANAGEMENT

3.4.1 Water Use

The use of water affects biodiversity in a number of ways:

- Excessive water abstraction from watercourses and groundwater sources can lead to rivers, lakes and wetlands being severely depleted. This could have the added effect of a reduction in quality of the remaining supplies and of the wildlife that depends on them.
- Inappropriate watercourse management and surface drainage can reduce the naturalness, variety and extent of wildlife habitat along watercourses.
- Past river engineering and associated land drainage has led to a dramatic loss of wetland habitats.
- The demand for water needs to be carefully managed to protect biodiversity.
- Pollution from industrial processes, mine-water discharges and from farm run off can result in a decline or absence of species that cannot tolerate these conditions

3.4.2 Environment Agency

The Environment Agency has both regulatory and managerial duties relating to industrial pollution, contaminated land, waste material river and stream quality, the proper use of water resources, flood defence and fisheries. They have produced Local Environment Agency Plans (LEAPs) for the river catchments that occur in the county borough. Biodiversity forms an important element in these plans. They are dealt with in more detail in the wetlands habitat statement (the Eastern Valleys LEAP[21] covers the Caerphilly county borough catchment area).

3.5 MINERALS

Mineral extraction can have both negative and positive effects on the environment. The mineral industry has an important part to play in conserving the county boroughs biodiversity, particularly in relation to the last remaining limestone grassland habitats, and provision of safe sites for cliff nesting birds. Operations need to be carefully planned in order to minimise adverse effects on biodiversity and maximise positive ones. There is often scope to create new wildlife habitats under long term strategic environmental planning. *Biodiversity and Minerals: Extracting the benefits for wildlife*[20] available from English Nature provides additional information on this subject.

3.6 TRANSPORT

There are both direct and indirect impacts on biodiversity from transport. The growth of roads is particularly significant: road construction can damage, fragment or result in the complete loss of habitats, and also act as barriers to species movement. Extraction from gravel pits and quarries for aggregates and development adjacent to roads also can have significant effects on wildlife. Car travel has increased dramatically in recent decades and is forecast to continue

growing. Upgrading of the road network has the potential to adversely effect wildlife and it is important that each project does not damage important habitats. Transport also makes a substantial contribution to greenhouse gas emissions and acid rain.

Caerphilly county borough council has produced a Local Transport Plan (August 2000)[5] to address some of the transport issues referred to above. It also sets out a policy to manage roadside verges to sustain wildlife.

3.7 CLIMATE CHANGE

The emissions of greenhouse gases are contributing to global warming. Even small changes to the earth's temperature can have a major effect on biodiversity. Some predicted changes include a rise in sea level and a general warming of temperate regions. These changes will result in shifts in the composition of aquatic and terrestrial communities, and changes in wildlife behaviour in habitats. The less mobile species on the edges of their geographical ranges are likely to be most vulnerable to extinctions. Monitoring of vulnerable species and habitats will become an essential element in understanding and monitoring the effect of climate change on our local biodiversity. The long-term nature of climate change highlights the need for a long-term local strategy to maintain biodiversity.

3.8 AWARENESS

Many people are familiar with the terms "wildlife" and "diversity", but relatively new terms such as "biodiversity", "sustainability" and "Agenda 21" are little understood. However, this vocabulary has been adopted at an official level, and is becoming more widely used. Except for the well known endangered species, the case for biodiversity is still difficult to convey, compared with, for example, the conservation of historic buildings. Biodiversity is a key indicator for sustainability, and without a high level of public support, biodiversity conservation measures are unlikely to receive the priority and resources necessary if targets are to be achieved. Biodiversity conservation involves many sectors of society and although many people are aware of the need to conserve wildlife and their surroundings, they may not always understand or appreciate that it concerns them directly; that their actions can make a difference.

Raising the level of awareness may be achieved mainly at a national level, through the media, via school curricula, and by campaigns of organisations such as the RSPB and Government agencies, but as with biodiversity action planning and agenda 21 generally, national efforts may fail without "grassroots" activity as well. A central aim of LBAPs is to increase local understanding and support for biodiversity. This involves key sectors of society; farmers and land managers, all levels of government, business and industry, media and education and local communities. Messages are often best conveyed with reference to local examples and personal experience, and local action can be the best way of increasing awareness as well as reaching LBAP targets. Participation in the biodiversity process is achievable at the local level, and such involvement will have real benefits which actually impact on people's lives. Successful implementation of this LBAP will depend on widespread understanding, from influential groups through to the individual.

3.9 COMMON LAND

Common Land is crucially important to many farmers in Caerphilly county borough, for without the right to graze animals on the land many farm holdings would not be viable. Much of

Caerphilly county borough's landscape consists in part of common land, with its mosaic of habitats, including acid grassland, wet and dry heath, blanket bog and ffridd/coedcae, important for many upland birds, a variety of small mammals and the brown hare (see Habitat Statements for description of habitats). Despite its value for biodiversity, common land is under threat from a number of areas including overgrazing, uncontrolled burning, bracken encroachment, motorcycle and 4-wheel drive enthusiasts. These issues have affected the biodiversity of commons for many years.

3.10 INTRODUCED AND INVASIVE SPECIES

Large numbers of non-native species already occur within and around urban areas in Caerphilly county borough. In some cases these threaten biodiversity where they result in:

- damage to or degradation of semi-natural habitats;
- direct competition with native species;
- predation of native species;
- threat to genetic integrity of native plants and animals; and
- introduction of disease organisms, parasites or other associated problems

The Berne Convention, Habitats and Species Directive and the Biodiversity Convention include articles requiring the UK to regulate or prohibit the introduction into the wild of species likely to have a detrimental effect on wildlife or natural biodiversity. These requirements are reflected in the WCA 1981 and the CROW Act 2000.

Examples of established populations of introduced species currently threatening native biodiversity include:

- **American mink** – affecting the water vole and ground nesting birds
- **Japanese knotweed**, **Giant hogweed**, **Himalayan Balsam** – threatening riparian habitats and linear habitats such as roadside verges, railway lines (wildlife corridors)
- **Grey squirrel** – affecting nesting birds

Ragwort is a native invasive plant species which is deadly to horses. Under the Weeds Act (1959) all landowners have a legal responsibility to prevent its spread.

Other possible threats could come from non-native species that are not currently established in Caerphilly county borough, including non-native crayfish carriers of a plague which can decimate the native crayfish.

It is important that this LBAP recognises this potential threat and proposes necessary actions where relevant. This should cover all introduced genetic stock of alien species to the area.

4. STATEMENTS AND ACTION PLANS

4.1 SELECTION OF HABITATS AND SPECIES

One of the first tasks of the Caerphilly Biodiversity Partnership was to select species and habitats for which local action plans would be prepared. Locally valued species and habitats were identified at Caerphilly's Biodiversity Day in December 1999 and additions were made at subsequent partnership meetings to produce a final list. All UK priority habitats and species that are known to occur in Caerphilly county borough are represented in this plan, but also included are those which are considered locally important, for example colliery spoil and common land, and the badger, yellowhammer and Cornish moneywort.

It was decided that Species and Habitat Action Plans would be written for all species and habitats on the list. However, because of the large number of species and habitats, it was decided to initially prepare **Habitat Statements** for 10 broad habitat groups with a view to preparing habitat actions plans for individual habitats at a later date. However, for species it was decided that **Species Action Plans** were needed as no regional species action plans (in Glamorgan or Gwent) had yet been prepared.

4.2 FUTURE ACTION PLANS

The Greater Gwent Biodiversity Action Group (GGBAG) have prepared a species audit from which a list of species that should be included in LBAPs is being prepared in consultation with local recorders. Any additional species occurring in Caerphilly county borough that are identified on this list will need to be added to the LBAP at a later date. **Additional species action plans** are likely to come from the following groups, from which species of particular concern in Caerphilly county borough will be selected as information is gathered, for example from survey work:

- Beetles
- Grasshoppers and Crickets, Butterflies and various other invertebrate groups
- Plants, Fungi, Lichen, Liverworts and Mosses

The following locally valued species, have also been identified by the Caerphilly Biodiversity Partnership, and action plans will be prepared at a later date:

- Hedgehog
- Redstart, Water Rail, Hawfinch, Whinchat
- Autumn Gentian, Adder's Tongue Fern, Royal Fern
- Olive-Green Earth-Tongue fungus, *Microglossum olivaceum* (*UK priority species)

Generic Action Plans such as the Dragonflies and Damselflies SAP within the LBAP will help to identify those species which are significant and therefore in need of their own species action plan for a more active approach.

The Habitat Statements will provide the framework for the more detailed Habitat Action Plans and will include the following habitats (those marked with a * are UK priorities, with national action plans): Rivers and Streams*
Ponds
Fens*
Reedbeds*

Blanket Bog*
Lowland Raised Bog*
Lakes and Reservoirs (standing open waters*)
Swamps
Canals
Wet Woodlands*
Upland Oak Woods*
Upland Mixed Ash Woods*
Lowland Beech and Yew Woodlands*
Lowland Wood Pasture and Parkland*
Planted Coniferous Woodland
Ancient and/or Species-rich Hedgerows*
Roadside Verges
Railway Lines and Cycleways
Stone Walls
Lowland Neutral Grassland*
Lowland Acid Grassland*
Lowland Calcareous Grassland*
Rhos Pasture*
Common Land
Ffridd/Coedcae
Lowland Heath*
Upland Heath*
Naturally Revegetated Colliery Spoil
Landscaped Colliery Spoil
Quarries
Refuse Tips
Domestic Gardens
Old Buildings
Unused Urban/Industrial Land
Allotments
Public Parks

4.3 LINKING SPECIES AND HABITATS

4.3.1 Inter-relationships between species and habitats

At present there are a total of 51 Species Action Plans (including 25 priority species) in this LBAP. Working with such a large number of species, each with their own habitat requirements may result in conflicting needs. To prevent one species or habitat being managed to the detriment of another, a system for integrating actions is needed. If each species is tackled individually there is the potential to:

- duplicate efforts on similar species
- provide conflicting advice for different species on the same site or locality
- undertake work on one species that may harm another

We need to look out for opportunities to benefit as many species as possible through habitat management or advisory work. We also need to make sure that management work for one species is not detrimental to another, or if it is, to mitigate for it. A more integrated approach toward species conservation will reflect the natural inter-relationships existing between species and habitats, and therefore achieve greater gains for biodiversity. Coordination between

organisations and landowners for management and funding will be a particularly important function of the LBAP and its key partners.

4.3.2 Habitat Mosaics

Some species are able to exist within one particular habitat type, but many species depend on a range of habitats, each habitat fulfilling a different requirement for its life and reproductive cycle. The presence of the correct habitats in appropriate proportions and relative proximity within the landscape is essential for maintaining viable populations of a wide range of species. An understanding of the habitat requirements of different groups of species can help inform species composition in landscape design and habitat creation schemes.

4.3.3 Identifying the Links

Most species in this LBAP have action plans written for them because none currently exist on a regional level. Some species have been combined into one action plan because they are associated with the same habitats, for example wetland birds and native wild fish. However to make the links between all the species and habitats in this LBAP, the following tables have been prepared:

Table i: Links between Habitat Statements and Species - systematically identifies all the species associated with each broad habitat type (**Appendix 3**).

Table ii: Links between Species Action Plans and Habitats - lists all the species in this Plan and highlights the broad habitat types, and other habitat associations, for each (**Appendix 4**).

4.4 FRAMEWORK FOR HABITAT STATEMENTS

The following framework was used in the preparation of the ten habitat statements in Part II:

HABITAT STATEMENT

1. INTRODUCTION

This is a general paragraph to say why we have selected the broad habitat group. Reasons may include priority status in the UK BAP, international or national conservation concern, and/or habitats of particular significance in Caerphilly county borough.

2. HABITAT DEFINITIONS

In many action plans the definitions of the different types of habitats are not always made clear, resulting in different interpretations of what the general habitat group includes. This may cause problems later at the reporting stages of any targeted actions. It is therefore important to state what our interpretation of the habitat covers, and where possible reference is made to the relevant National Vegetation Classification (NVC) communities (included in an appendix to the Habitat Statement).

3. CURRENT STATUS

The distribution and extent of the habitat is described in a national (e.g. UKBAP), Welsh (CCW), sub-regional (Gwent and Glamorgan) and local (Caerphilly county borough) context. Reference is made to areas currently protected under existing legislation (site designation), national, regional and local losses and any gaps in information available.

Associated Species The characteristic species associated with the habitat are listed in this section, but especially species with Action Plans in this LBAP (in *italics*). These SAPs need to be

considered in conjunction with the habitat statement. If the habitat statement is covering a key species, for example the house sparrow in the Urban Habitat Statement, then there is a separate paragraph identifying why the species is important and what its habitat requirements are.

Links with other Habitats Many habitats have a close association with other habitats that may or may not have statements written for them. These are listed here, with the statements already prepared in *italics,* which should be considered in conjunction with this habitat statement.

4. CURRENT FACTORS AFFECTING THE HABITAT(S)
Factors that are currently causing loss, reduction, damage, or threatening the habitats are listed here. Many of the general factors listed in the UK BAP are often applicable, but local factors are also included where relevant.

5. CURRENT ACTION
Current actions being undertaken are listed in this section. This includes national actions, Welsh actions and existing local actions, for example, site and species protection, habitat management, survey, research and monitoring, and actions for species closely associated with the habitat statement.

6. CONSERVATION DIRECTION
The main objective for habitat conservation, restoration, enhancement and expansion is stated, and then possible actions to consider are listed which may be necessary in order to achieve the objective.

4.5 FRAMEWORK FOR SPECIES ACTION PLANS

The following format was used for the preparation of species action plans detailed in Volume 2:

SPECIES ACTION PLAN

1. INTRODUCTION
This is a general paragraph to say why we have selected this species, for example because of its status as a priority species in the UK BAP, a species of international or national conservation concern, and/or a species of particular importance in Caerphilly county borough. Relevant wildlife legislation and species status categories are included in a table for easy reference.

2. CURRENT STATUS
This describes the ecology and habitat requirements of the species; i.e. the habitats (in Caerphilly county borough) in which it is found, whether breeding, feeding or over-wintering, etc, and its particular/specific ecological requirements. The current status (distribution and extent) of the species is then described in a national (UK BAP), Welsh (CCW), sub-regional (Gwent and Glamorgan) and Caerphilly county borough context. Reference is made to the decline of the species on national, regional and local levels; and gaps in the information available.

Links with Habitats The habitats (Habitat Statements) associated with the species are listed and should be considered in conjunction with actions for the species. The main habitat association(s) is highlighted in **bold**, and Habitat Statements in *italics*.

3. CURRENT FACTORS AFFECTING THE SPECIES

The factors currently affecting the species, causing loss or decline in population and distribution are given as a list, some of the UK BAP threats will be applicable, but local factors have been identified where relevant.

4. CURRENT ACTION

Action currently being undertaken for the species is listed in this section. It includes national, regional, local actions, for example, site and species legislation (protection), site/habitat management work and special projects, survey, research and monitoring (audits, research into habitat requirements and restoration techniques).

5. OBJECTIVES AND TARGETS

A summary of the UK objectives and targets is given where applicable, and then a number of objectives and targets for the LBAP in Caerphilly county borough. This will include objectives to maintain and enhance species populations and distribution in the area, taking into account the UK targets, and setting preliminary local targets for completion of objectives.

6. ACTION AND KEY PARTNERS

Actions are listed in a table under the following headings:

6.1 Policy and Legislation
6.2 Site Safeguard and Management
6.3 Species Management and Protection
6.4 Advisory
6.5 Future Research and Monitoring
6.6 Communications and Publicity

Example of the table:

Action	Key Partners		Year for action to be complete or in place by								
	Lead	Partners	2003	4	5	6	7	8	9	10	11
6.1 Policy and Legislation											
6.1.1 Seek to designate all ancient woodland bluebell sites over 2 ha as SINC.	CCBC	-									✓

A timescale for action is given to target and prioritise individual actions. A tick mark stipulates that an action must be in place in that year, but if it is on-going there will be a tick in each year. The current timescale parallels that in the CCBC UDP[3].

These actions translate how the local objectives will be delivered, and by whom. Practical tasks and actions that could or should be done in order to conserve, protect and enhance the species population and distribution in the county borough are proposed.

5. INFORMATION AND DATA

"If you don't know you've got it, why conserve it?" is the fundamental question for the conservation of flora and fauna, not only locally but nationally and globally.

Up-to-date accessible information is an essential starting point for the implementation of a Biodiversity Action Plan. Without accurate, reliable knowledge about the location, quality and quantity of different habitats and species, both now and in the past, declines cannot be detected and conservation management cannot be focused to where it is urgently required. Therefore, a basic essential element of each Habitat Statement and Species Action Plan (SAP) in this LBAP is the need to have a starting point on which to base progress. However, it is widely appreciated that information, particularly on species, is scarce. Action needs to be taken to update the current data held. Survey work and information collection are therefore prominent actions in many of the plans, and a full audit of all the species and habitats occurring in Caerphilly county borough is still required, however a draft audit is included in **Appendix 5**. This identifies the occurrence of species and habitats in the former Glamorgan and Gwent sides of the county borough and provides sources of, or comments on, information available, and identifies if further survey work is required.

The Gwent Recorders Day organised by the Greater Gwent Biodiversity Action Group (GGBAG) has provided lots of additional information on species, but has also clarified where there are gaps in the data. Sources of new information were discussed at Caerphilly's Biodiversity Day, and particular gaps in data in the Caerphilly county borough area were noted as being: fungi and lichen; water voles, otters and crayfish, birds, various invertebrate groups (very specialist species) and habitats, such as colliery tips, which have not been fully surveyed for wildlife. The involvement of recorders in the local and regional biodiversity processes is very important.

There is a confirmed need for a Local Record Centre in South Wales so that information can be brought together in one place and made readily available to those requiring it. Nationally, work is under way to establish the **National Biodiversity Network (NBN)**[34]; a partnership of local and national custodians of wildlife information will provide access to information for all interested parties within a framework of established standards. A key objective of the NBN is to develop a fully functional national network of **Local Record Centres (LRCs)**. In Wales, however, there is only one pilot LRC which covers Powys and the Brecon Beacons National Park. No record centre currently covers the Caerphilly county borough area, and the Glamorgan Biodiversity Advisory Group and GGBAG are looking at the feasibility of establishing a South East Wales Local Record Centre.

In order for the Biodiversity Action Plan process to succeed it is essential to undertake the periodic monitoring of the habitats and species in the action plan. We will not know if the plans are working unless there is a way of identifying change. Monitoring will inform us if the actions undertaken are meeting our objectives, or if, despite our actions, the habitats and species are found to be continuing to decline, then the plan will need to be reviewed and adjusted. Information is the key to success in restoring the wildlife diversity of the county borough and the UK as a whole.

6. MONITORING AND RECORDING

6.1 The Need for Monitoring and Reporting

One of the objectives for the Caerphilly Biodiversity Partnership is:

To measure the effectiveness of our Local Biodiversity Action Plan and to report findings to the public as well as regional and national biodiversity groups.
[Make sure we are doing it right]

The LBAP must be a 'living document', meaning that it should be flexible so that it can be amended and updated on a regular basis. As new information becomes available, actions may need to be changed in existing plans, and new Species and Habitat Action Plans may need to be added.

With such a large scale undertaking as the Caerphilly county borough LBAP, with around 40 organisations working towards many specific objectives and targets through a programme of hundreds of actions, there is a need for a clear straightforward framework which provides a context in which people can work. Without this there is considerable potential for duplication of effort, and excessive pressure on people's time. A reporting and review system therefore needs to be set up to ensure that information on progress in meeting our objectives is easily available to all partners.

The reporting and monitoring process also needs to feed local progress up to the national level. The links between the National and Local Biodiversity Action Plans are still being developed and the mechanisms for this reporting will develop fully over the next few years. A reporting proforma is being piloted by 5 LBAPs in England at the moment (2001) and 3 Welsh groups are expected to join soon. Information will then be recorded in a consistent manner across the UK.

It should be borne in mind that reporting is not the same as species or habitat status monitoring. The latter is an important element of many of the action plans and will increasingly become a focus for biological recording. Reporting is only about what we have and haven't been able to achieve towards the targets set out in the Biodiversity Action Plan.

An example reporting form for the Caerphilly county borough LBAP, to be completed by the Lead Partner for an action plan, follows.

CAERPHILLY COUNTY BOROUGH LBAP REPORT FORM (draft example)

This form provides information that facilitates reporting and review of the Caerphilly LBAP. It has been designed to be quick and simple to complete. Wherever possible be quantitative and brief in your information. Please complete and return to the address below as soon as possible.

1. GENERAL

Name of Plan:	Plan Co-ordinator (Lead Partner):
	Year Ending:

2. PROGRESS AGAINST TARGETS

Target	Complete	Much Progress	Some Progress	No Progress

3. SUCCESSES

Please note areas of work that have facilitated progress towards targets

4. PROBLEMS

Please note the main reasons for areas of little or no progress

5. POSSIBLE SOLUTIONS TO THESE PROBLEMS

6. OPPORTUNITIES

Please note any current opportunities that should be a focus for new work

7. EXAMPLES OF ACTIONS IN PROGRESS

Subject Area	Examples
Policy and Legislation	
Site Safeguard and Management	
Species Protection and Management	
Advisory	
Research and Monitoring	
Communications and Publicity	

Form completed by: _____

Date: ____/____/____

7. BIODIVERSITY AWARENESS ACTION PLAN

7.1 INTRODUCTION

Caerphilly county borough's natural environment is widely appreciated, but there is often a lack of understanding of the diversity of habitats and species, and the vulnerability of our richest habitats that were once widespread. More importantly however is the need to help people understand why biodiversity is important and why conservation is necessary. Many people might change their actions if they realised the impact they were having.

Increased understanding of the need for proactive and planned conservation, restoration and enhancement of biodiversity is essential among decision-makers, land managers and the general public. The provision of clear, consistent advice and biodiversity awareness materials and events throughout different sectors is important in the LBAP process.

The **Caerphilly Biodiversity Partnership** must work towards ensuring that the whole community is made aware of biodiversity issues. People need to be provided with recent and reliable information so that they can then make informed decisions at home, school and work. There is also a need to encourage and support action to improve biodiversity at the local level. It is public opinion and pressure that will ultimately determine to what extent biodiversity is conserved and enhanced, and although the promotion of access to the more sensitive wildlife sites may not be appropriate, there are many less–sensitive sites where access to biodiversity should be positively promoted, to increase public understanding and social well-being.

This **Biodiversity Awareness Action Plan** presents the local activities of the LBAP partners in an attempt to assess resources, plan their efficient use and monitor the outcome. With a regular review over future years this will lead to the projection of a clear, consistent message, and the creation of a support network for local action and communication. Ideally we need to identify key sectors and groups to target for action, examine current levels of understanding, and identify appropriate mechanisms for raising awareness of biodiversity.

7.2 CURRENT ACTION IN CAERPHILLY COUNTY BOROUGH

- The CCBC Biodiversity Display is an interactive display designed to raise awareness of biodiversity and to encourage people to say where they have seen wildlife, or where they like to go in the countryside. This is being circulated around the county borough in public libraries and other public places and is available for public events in the locality.

- Several organisations hold raising-awareness events, such as the CCBC Biodiversity Day, the Penallta Festival, guided walks, talks, and nature reserve open days. CCBC resident artists contribute to these events by encouraging young children in art/craft activities.

- Interpretative materials such as leaflets and information boards, for example at Local Nature Reserves and Country Parks, provide information to the people visiting them.

- CCW funds and approves projects to improve understanding and access to the countryside.

- CCW staff provide talks to targeted audiences and articles for the CCW Newsletter 'Adain-y-ddraig'.

- Local branches of the Gwent and Glamorgan Wildlife Trusts organise programmes of talks and events aimed at raising awareness of wildlife and conservation issues for members and non-members.

- CCBC, often in partnership with other organisations and councils, organises outdoor walk programmes for example: "Walks for Everyone" is a series of guided walks in the Caerphilly Mountain Countryside Service area (CCBC, CCC and RCT), such as 'Wildlife Walk' and 'Common Birds', etc. Most of the walks start near public transport facilities, and are led by experienced local walkers, and experts, as well as Countryside Service staff. There are also 'Conservation Days' which give people the chance to carry out some practical conservation work and learn about the countryside.

- CCBC and Groundwork Caerphilly provide advice and practical assistance to schools on biodiversity enhancement of school grounds.

- CCBC Countryside and Landscape Services are involved in environmental education, including work in Parc Cwm Darran, Sirhowy Valley Country Park and Caerphilly Mountain Countryside Service; e.g. pond dipping, insect surveys, INSET training for teachers (from early years to A-level). An educational resource pack is available from Full Moon Cottage Visitor Centre and Ynys Hywel Countryside Centre, Sirhowy Valley Country Park, which contains on-site activities aimed at secondary schools. Ynys Hywel is a working farm visited by school groups in the Sirhowy Valley, where they learn about the animals on the farm and the surrounding environment, for example, ancient woodland, hedgerows and dry stone walls.

- Junior rangers/wardens at Parc Cwm Darran, Caerphilly Mountain Countryside Service and Sirhwy Valley Country Park, and other volunteer opportunities ensure that local people are given an opportunity to become involved.

- Environmental education and community action forms part of the Caerphilly county borough Sustainable Development process (LA21). CCBC is progressing its own Sustainable Development Strategy, of which maintaining biodiversity is a fundamental component. A *School Grounds and Sustainable Development – A Guide for Teachers* pack has been produced which gives ideas for what the school, and the children, could do in relation to sustainable development. A part of this is to do with biodiversity and there are ideas for projects; for example planting trees or creating wildlife gardens, or carrying out wildlife surveys to monitor populations. It gives examples of what other schools have done and contacts, what sites to visit, other people to talk to and some useful publications. A questionnaire was sent out to schools so that they could say whether they are promoting biodiversity or would like to in the future.

- The National Curriculum includes science as a compulsory subject, comprising the following general topics; *Living Processes*; *Humans and other Animals*; *Green Plants*; *Variation and Classification*; and *Living Things in their Environment*. Children are taught about the environment and why it needs to be protected. Sustainable Development and environmental change are covered in Geography, teaching how the environment can be improved and managed sustainably for the future (see www.nc.uk.net), and giving opportunities to take part in initiatives, e.g. local conservation projects.

- The Environmental Education Council for Wales has produced a draft environmental education strategy which seeks to improve the status of environmental education in schools (see www.caaneecw.org).

- CCW statement on environmental education on a national level (March 1999) - some of the actions identified will be implemented at a local level in partnership with other organisations.

- NGO education programmes promote biodiversity awareness amongst school children through curriculum studies. For example, The Wildlife Trusts' WATCH groups are an important outlet to educate young people about biodiversity and their local wildlife in fun and imaginative ways.

- Community projects: successful projects include Keep Wales Tidy and their Clean Rivers project, setting up local river-care groups; Groundwork Caerphilly; and Caerphilly Adventure Group, which all promote awareness of biodiversity among the local community. Local people have been actively engaged in nature conservation through these projects.

- Many people in the county have the opportunity to become actively involved in nature conservation as volunteers through organisations such as BTCV, Gwent and Glamorgan Wildlife Trusts, RSPB, WWT, and the National Trust.

- Organisations such as FWAG, LEAF and The Wildlife Trusts promote sensitive land management to benefit biodiversity.

- Local and visiting naturalists give illustrated talks to local interest groups, for example local Women's Institutes.

- Media opportunities are taken as they arise. These include newspaper and magazine articles, television news items and radio interviews.

- Development of links with business: an article on Business and Biodiversity in Caerphilly county borough has been sent to all Businesses in the area (in *Business Line*).

All these initiatives play an important role in raising public awareness but there are still many gaps and a great range of opportunities for building and coordinating biodiversity awareness initiatives in Caerphilly county borough.

7.3 OBJECTIVES

7.3.1 Improve biodiversity awareness within the county borough, ensuring that everyone who lives, works or visits the area is made aware of local biodiversity issues, and why conservation is necessary.

7.3.2 Encourage people to take action to protect local and global biodiversity.

Aim to achieve these objectives through the following:

- o Ensure that environmental education is targeted to all sectors of the community;
- o Target sectors and decision makers to inform and influence their actions;

- o Improve the biodiversity content of both formal and informal interpretation media in Caerphilly county borough;
- o Utilise all forms of media, to raise awareness of biodiversity and biodiversity action, and to publicise the Partnership's work;
- o Develop partnerships and work with and supply other groups to implement biodiversity action in Caerphilly county borough;
- o Form communication networks to share and spread information, generate decisions and enable all to influence the LBAP; and
- o Ensure that the LBAP is incorporated into Sustainable Development (LA21) and the Community Strategy/Plan.

7.4 PROPOSED ACTIONS

7.4.1 Key Sectors

PLANNERS

- Raise the profile of Biodiversity as an integral part of Sustainable Development.
- Actively support and promote measures that will raise the profile of biodiversity and help to deliver LBAP actions.
- Ensure that Biodiversity receives an appropriate profile in the Unitary Development Plan (UDP).
- Support projects which deliver biodiversity targets.
- Continue professional development for planners on the range of planning issues affecting biodiversity.
- Promote 'Best Practice'.

Partners: Caerphilly Biodiversity Partnership (CCBC, CCW)

LANDOWNERS AND FARMERS

- Work as a partnership with landowners and farmers to conserve and enhance biodiversity.
- Produce and disseminate clear practical advice for farmers and landowners.
- Promote awareness-raising events on farmland.

Partners: NAWAD, CCW, CLA, NFU, GWT, GLWT, RSPB, Farmers and Landowners, Commoners Associations

BUSINESSES AND DEVELOPERS

- Promote integration of Biodiversity as part of business' Environmental Management Systems.
- Encourage Businesses to join the Caerphilly Biodiversity Partnership
- Business and Biodiversity seminars/events.
- Produce/disseminate clear practical advice to businesses/ developers about how they can contribute to and minimise impacts on biodiversity (list environmental consultants who can provide good advice on Environmental Management Systems and Environmental Impact Assessment).
- Promote 'Corporate Champions' for LBAP species and habitats.
- Promote sensitive management of landholding for biodiversity.

Partners: Caerphilly Biodiversity Partnership (CCBC, Businesses, Developers)

TRANSPORT SECTOR

- Promote Best Practice for transport planners and managers (local authorities, and road management contractors, railway maintenance firms) so that biodiversity is fully considered through both day to day maintenance and long term plans.

Partners: CCBC, GWT, GLWT

LEISURE INDUSTRY

- Encourage the tourist industry to view biodiversity as an asset that can assist in the development of environmentally sensitive local tourism initiatives.
- Provide biodiversity information for the local tourism industry.
- Identify activities which impact on biodiversity and seek to resolve any problems with the groups involved.
- Maximise opportunities in tourism and leisure to promote biodiversity awareness.
- Promote best practice training for managers of Parks and Urban green spaces.

Partners Caerphilly Biodiversity Partnership

CAERPHILLY COUNTY BOROUGH COUNCIL

- Promote best practice in conserving, restoring, and enhancing habitats, and in mitigation measures.
- Ensure that contractors or staff involved in grounds maintenance have received full training for management of natural habitats and impacts on biodiversity.
- Provide training and discussion sessions for education and centre staff, wardens, and volunteers, so that biodiversity can be included in events and education programmes. Invite staff and volunteers from other organizations to attend training sessions.
- Promote biodiversity awareness among Councillors.

Partners: CCBC, Business/Industry, Schools, GWT, GLWT

EDUCATION

- Use existing links with education providers to promote biodiversity; continue to offer and develop a programme of biodiversity awareness to schools.
- Develop biodiversity education as part of *Educating for Sustainable Development* in schools.
- Set up Schools Biodiversity Awareness Subgroup.
- Provide advice/support for Biodiversity Projects in schools and for student research projects.
- Promote biodiversity in a direct and enjoyable way for children, to offset curriculum trend towards second-hand experience and knowledge.
- Promote good practice in developing and using natural areas in school grounds.
- Provide In-service training for teachers.
- Promote county borough database for school biodiversity audits
- Inform relevant departments of secondary schools and higher education colleges of the CCB Biodiversity Action Plan.

Partners: CCBC, GWT, GLWT, KWT, Groundwork Caerphilly

TOWN AND COMMUNITY COUNCILS

- Equip Community Councils with the skills necessary to set up community based biodiversity initiatives; give illustrated talks to councils on biodiversity.

Partners: CCBC, Town and Community Councils Liaison Cttee, GLWT, GWT

7.4.2 Specific Initiatives

PROMOTIONAL MATERIALS

- Ensure relevant promotional materials refer to the Biodiversity Action Plan and to the Caerphilly Biodiversity Partnership.
- Use an indicator species or habitat as a "logo" for leaflets, etc, so that biodiversity information is easily recognisable.
- Circulate promotional media at suitable events and public access points.
- Produce a promotional Biodiversity video or CD-ROM to introduce the idea and raise awareness at certain events and places (perhaps to adjoin the Biodiversity Display)
- Use Biodiversity as a key indicator of the state of the environment.

Partners: Caerphilly Biodiversity Partnership

WEBSITE

- Produce LBAP in a format that can be emailed.
- Produce a Biodiversity website.
- Publish the LBAP on the website.

Partners: Caerphilly Biodiversity Partnership (CCBC)

CAMPAIGNS

- Plan a programme of topics for release to the media highlighting specific BAP habitats, species or activities that contribute towards biodiversity

Partners: Caerphilly Biodiversity Partnership

TALKS

- Maintain a varied programme of talks to raise awareness and understanding of biodiversity.

Partners: Caerphilly Biodiversity Partnership

EVENTS

- Promote and organise outdoor events with a biodiversity focus for adults and families in Nature reserves, Urban Greenspace, Farmland, Wetland, etc. such as Reserve Activities, Trails, Information days; Family Fun Days; Farm walks and family activity days; Community events.
- Liaise with groups whose activities relate to landscape, sustainability, natural world, local distinctiveness, gardening etc. Provide support, guidance and practical advice for such groups (e.g. RGS, RIGS, WI, Ramblers, Health, Gardening clubs)
- Encourage local membership of wildlife organizations.

Partners: Caerphilly Biodiversity Partnership (CCBC, FE, GWT, GLWT, RSPB, NT, CLA, NFU, FUW)

BIODIVERSITY FOR CHILDREN

- Develop and promote clubs such as Wildlife Watch, Young Ornithologists Club, and Woodcraft Folk.
- Develop urban and rural community projects which encourage children's contact with and active involvement in the natural world.
- Promote and organise events suitable for families.

Partners: Caerphilly Biodiversity Partnership (CCBC, G/GLWT, Community Councils, etc.)

PUBLIC PARTICIPATION SURVEYS

- Where appropriate promote surveys or wildlife audits to increase public awareness, preferably for habitats/species where people can usefully contribute and provide useful data, i.e. easily recognisable plants and animals, such as garden birds or the bluebell (flagship species).
- Use the Biodiversity website for on-line surveys, for example, Garden Birds.

Partners: RSPB, GWT, GLWT, Naturalists, CCBC, BTO, GBC, GOS

ACCESS FOR EVERYONE

- Provide opportunities for access to natural areas and direct contact with habitats and species for everyone, including the needs of all users, especially disability groups.

Partners: Caerphilly Biodiversity Partnership (Access Forum)

VOLUNTEER PROGRAMMES

- Ensure volunteering programmes are well-organised, enjoyable and meet the needs of volunteers.
- Offer training days in Partnership for local habitats and species.

Partners: GWT, GLWT, RSPB, BTCV, NT

COMMUNITY PROJECTS

- Maintain and develop existing community projects and promote similar community based projects (both urban and rural) elsewhere in the county.
- Promote practical guidance for local communities, e.g. surveying local wildlife features (ponds, veteran trees, hedgerows, verges), wildlife gardening.

Partners: CCBC, GWT, GLWT

COMMUNICATION

- Caerphilly Biodiversity Partnership Newsletter (including logo).
- Biodiversity Website including links to partner organisations.
- Maintain subgroups for the implementation of Habitat and Species Action Plans.

Partners: Caerphilly Biodiversity Partnership

7.4.3 Monitoring Success

- ❖ Develop a monitoring strategy to assess the impact of the LBAP on Awareness of biodiversity in Caerphilly county borough.

Partners: Caerphilly Biodiversity Partnership

8. APPENDICES

8.1 ABBREVIATIONS/ACRONYMS

ADAS	Agricultural Development and Advisory Service
BAP	Biodiversity Action Plan
BBNP	Brecon Beacons National Park
BC	Butterfly Conservation
BDS	British Dragonfly Society
BSBI	Botanical Society of the British Isles
BTCV	British Trust for Conservation Volunteers
BTO	British Trust for Ornithology
BW	British Waterways
CADW	CADW Welsh Historic Monuments
CBP	Caerphilly Biodiversity Partnership
CCB	Caerphilly county borough
CCBC	Caerphilly county borough council
CCW	Countryside Council for Wales
CROWA	Countryside and Rights of Way Act (2000)
Gwk	Caerphilly Groundwork
CMCS	Caerphilly Mountain Countryside Service
DETR	Department of the Environment, Transport and the Regions (now DEFRA)
DEFRA	Department of the Environment, Farming and Rural Affairs)
EA	Environment Agency (Wales)
EN	English Nature
FC	Forestry Commission
FE	Forest Enterprise
FEI	Forest Education Initiative
FUW	Farmers Union of Wales
GBC	Glamorgan Bird Club
GBG	Gwent Bat Group
GBgG	Gwent Badger Group
GGBAG	Greater Gwent Biodiversity Action Group
GLBG	Glamorgan Bat Group
GLBAG	Glamorgan Biodiversity Advisory Group (or **GlamBAG**)
GLBgG	Glamorgan Badger Group
GLWT	Glamorgan Wildlife Trust
GMRG	Glamorgan Moth Recording Group
GOS	Gwent Ornithological Society
GWT	Gwent Wildlife Trust
HAP	Habitat Action Plan
HS	Habitat Statement
IUCN	International Union for the Conservation of Nature and Natural Resources (World Conservation Union)
JNCC	Joint Nature Conservation Committee
KWT	Keep Wales Tidy Campaign
LA21	Local Agenda 21
LANDMAP	Landscape Assessment and Decision Making Process
LBAP	Local Biodiversity Action Plan

LEAP	Local Environment Agency Plan
LNR	Local Nature Reserve
LRC	Local Records Centre
MBMG	Monmouthshire Butterfly and Moth Group
NAW	National Assembly for Wales
NAWAD	National Assembly for Wales Agriculture Department
NBN	National Biodiversity Network
NFU	National Farmers Union
NMWC	National Museum of Wales, Cardiff
NT	National Trust
NVC	National Vegetation Classification
RCT	Ruperra Conservation Trust
RDB	Red Data Book
RIGS	Regionally Important Geological Sites
RSPB	Royal Society for the Protection of Birds
RSPCA	Royal Society for the Protection of Animals
SAC	Special Area of Conservation (**cSAC** candidate Special Area of Conservation)
SAP	Species Action Plan
SCW	Sports Council for Wales
SINC	Site of Importance for Nature Conservation
SLA	Special Landscape Area
SNH	Scottish Natural Heritage
SSSI	Site of Special Scientific Interest
SWPW	South Wales Peregrine Watch
TPO	Tree Preservation Order
UA	Unitary Authority
UDP	Unitary Development Plan
UKBAP	United Kingdom Biodiversity Action Plan
UKBG	United Kingdom Biodiversity Group
UKLIAG	United Kingdom Local Issues Advisory Group
VWT	Vincent Wildlife Trust
WCA	Wildlife and Countryside Act (1981)
WDA	Welsh Development Agency
WT	Woodland Trust
WOWLS	Welsh Owl and Wildlife Sanctuary
WW/DC	Welsh Water/Dwr Cymru

8.2 CAERPHILLY BIODIVERSITY PARTNERSHIP

1.	Martin Anthoney	Gwent Wildlife Trust, Butterfly Conservation
2.	Simon Beacham	CCBC Parks Services
3.	John Bell	Keep Wales Tidy Campaign, Clean Rivers Project
4.	Roger Blatchford	Local volunteer (CMCS)
5.	Richard Evans	NAWAD Senior Ecologist
6.	Richard Clarke	Gwent Ornithological Society
7.	Erica Colkett	Countryside Council for Wales
8.	Dave Cooksey	Gwent Badger Group, Welsh Owl and Wildlife Sanctuary
9.	Cllr Jim Criddle	Town and Community Council Liaison Committee
10.	Michael Cullen	South Wales Peregrine Watch
11.	Lorraine Czaja	Local resident
12.	John Edwards	Gwent Wildlife Trust
13.	Tony Edwards	Troed-y-Rhiw Environmental Project
14.	Lindsey Evans	Caerphilly Commoners and Brinkers Association
15.	Trevor Evans	BSBI (Gwent)
16.	Geri Foster-Thomas	Glamorgan Bird Club, Glamorgan Moth Recording Group
17.	Helena Fox	Groundwork Caerphilly
18.	Angela Gascoine	Charter Housing, Newport
19.	Angela Giddings	Farmers Union of Wales
20.	Simon Greenfield	Caerphilly Mountain and Countryside Service
21.	Vernon Gwynne	Local resident
22.	Dai Hale	Caerphilly Mountain and Countryside Service
23.	Stan Hanson	Royal Oak Angling Club, River Care Groups
24.	Lee Hawker	Redrow Homes, Cardiff
25.	Nicola Hawkeswood	Gwent Wildlife Trust
26.	John Higgs	Caerphilly CB Access Group
27.	Jon Hole	Parc Cwm Darran
28.	Lorraine Howells	Farmers Union of Wales
29.	Cllr Mary Hughes	CCBC
30.	Stuart Huntley	Mynydd Eglwysilan and Mynydd Maio Brinkers
31.	Alison Jones	CCBC Ecologist and Chair
32.	Derrick Jones	Ruperra Conservation Trust
33.	Geoff Jones	Groundwork Caerphilly volunteer
34.	Judith Jones	Gelligaer and Merthyr Commoners Association
35.	Ross Jones	Bargoed Country Park, Warden
36.	Roy Jones	Glamorgan Wildlife Trust
37.	Teg Jones	Environment Agency Wales
38.	Bob Keep	CCBC, Caerphilly Adventure Group
39.	Peter Lewis	Groundwork Caerphilly
40.	Mr P.T Long	Local resident
41.	Peter Martin	Gwent Bat Group, Swan Rescue South Wales
42.	Jeff Morgan	Welsh Water/Dwr Cymru (Environment and Education)
43.	Kenvyn Morgan	Local resident
44.	John Owen	Glamorgan Wildlife Trust
45.	Derek Packer	Bargoed Rotary Club, Ecologist
46.	Cllr Malcolm Parker	Rhiw 2 Mill River Care Group
47.	Cllr Ann Parsons	A.C.E
48.	John Poole	Local resident

49.	Richard Poole	BTO, United Utilities Operational Services Ltd (Welsh Water), Salmon and Trout Association
50.	Martin Rickard	Green Doorstep Environmental Group, Caerphilly
51.	Theresa Risby	Soroptimists International Pontypridd and District
52.	Judith Smallwood	Soroptimists International Pontypridd and District
53.	Richard Smith	Butterfly Conservation South Wales branch
54.	Sue Steer	Glamorgan Wildlife Trust, Caerphilly branch
55.	Jim A. Stockdale	BTCV Cymru
56.	Melanie Sutherland	CCBC Biodiversity Officer
57.	PC. Vince Thomas	Wildlife Liaison Officer (Gwent Police)
58.	Jan Walsh	Groundwork Caerphilly
59.	Stan Weston	A.C.E
60.	Andrew Winslade	Caerphilly Angling Club
61.	H. G. Williams	Ramblers Association
62.	Kevin Williams	Llanbradach and Pwllypant Revival Strategy 2000
63.	Gerard Withey	RSPB Member/Local resident
64.	Margaret Withey	RSPB Member/Local resident
65.	Lawrence Workman	Rudry Commoners Association
66.	Karen Yates	National Farmers Union

8.3 TABLE i HABITAT STATEMENTS AND ASSOCIATED SPECIES

KEY			
W	*Wetlands*	CL	Common Land
DW	Deciduous Woodlands	FF	Ffridd/Coedcae
CW	*Planted Coniferous Woodland*	H	Heathland
WC	Wildlife Corridors	PL	Post-Industrial Land
SG	Species-rich Grasslands	UR	Urban Habitats

[= UK priority species]*

Common Name	Scientific Name	Other Habitats
1. WETLANDS		
Brook lamprey	*Lampetra planeri*	(rivers)
*Bullfinch	**Pyrrhula pyrrhula*	DW, WC, UR
Bullhead	*Cottus gobio*	(rivers)
Common eel	*Anguilla anguilla*	(rivers)
Common frog	*Rana temporaria*	DW, WC, SG, CL, PL, UR
Common reed	*Phragmites australis*	(reedbed, swamp, fen)
Common toad	*Bufo bufo*	DW, WC, SG, CL, PL, UR
Curlew	*Numerius arquata*	SG, H, CL, FF
Daubentons bat	*Myotis daubentonii*	(rivers, ponds, lakes) CL, PL, UR
Dipper	*Cinclus cinclus*	(rivers) (bridges) WC, CL
Dragonflies and damselflies	various species	DW, WC, CL, PL
*European otter	**Lutra lutra lutra*	(rivers) DW
Grass snake	*Natrix natrix*	CW, WC, SG, H, CL, PL, UR
*Great-crested newt	**Triturus cristatus*	DW, WC, SG, CL, H, PL, UR
*Greater horseshoe bat	**Rhinolophus ferrumequinum*	(near water) WC, SG, CL, UR
Green woodpecker	*Picus viridus*	DW, WC, SG, FF, H, CL
Grey wagtail	*Motacilla cinerea*	(rivers, lakes) (bridges) CL, PL
Kingfisher	*Alcedo atthis*	(rivers, lakes) CL
Native brown trout	*Salmo trutta*	(rivers)
Natterers bat	*Myotis nattereri*	DW, WC, CL
Noctule bat	*Nyctalus noctula*	DW, CW, SG, CL, PL, UR
Orchids	various species	DW, WC, SG, CL, H, PL
Palmate newt	*Triturus helveticus*	DW, WC, SG, CL, PL, UR
*Pipistrelle bat	**Pipistrellus pipistrellus*	DW, WC, SG, CL, UR
*Reed bunting	**Emberiza schoeniculus*	DW, CL
Salmon	*Salmo salar*	(rivers)
Sea trout	*Salmo trutta*	(rivers)
Smooth newt	*Triturus vulgaris*	DW, WC, SG, CL, PL, UR
Stone loach	*Noemachelius barbatulus*	(rivers)
Three-spined stickleback	*Gasterosteus aculeatus*	(rivers)
*Water vole	**Arvicola terrestris*	(rivers, fen, reedbed, swamp)
Whiskered/brandts bat	*Myotis mystacinus/M. brandtii*	(wet areas) DW, CL, UR
*White-clawed crayfish	**Austropotamobius pallipes*	(slow-moving rivers, canal)
2. DECIDUOUS WOODLANDS		
Badger	*Meles meles*	CW, WC, SG, CL, PL
Barn owl	*Tyto alba*	WC, SG, CL, PL, UR
Bluebell	*Hyacinthoides non-scripta*	WC, CL, FF, PL, UR
*Bordered gothic moth	**Heliophobus reticulata*	SG
*Brown hare	**Lepus europaeus*	SG, H, CL
Brown long-eared bat	*Plecotus auritis*	(open woods) WC, PL, CL, UR

*Bullfinch	**Pyrrhula pyrrhula*	W, WC, UR
Buzzard	*Buteo buteo*	WC, SG, CL, PL
Common frog	*Rana temporaria*	W, WC, SG, CL, PL, UR
Common toad	*Bufo bufo*	W, WC, SG, CL, PL, UR
Cornish moneywort	*Sibthorpia europaea*	(wet woodland)
*Dormouse	**Muscardinus avellanaris*	CW, WC
*Double line moth	**Mythimna turca*	(rides/glades) SG
Dragonflies and damselflies	various species	(glades) W, WC, CL, PL, UR
*European otter	**Lutra lutra lutra*	(wet woodland) W
*Great crested newt	**Triturus cristatus*	W, WC, SG, CL, H, PL, UR
*Greater horseshoe bat	**Rhinolophus ferrumequinum*	(W), WC, SG, CL
Green woodpecker	*Picus viridus*	(upland oak, mixed ash) W, WC, SG, CL, FF, H
Goshawk	*Accipiter gentilis*	(clearings/rides/glades) CW
*High brown fritillary	**Argynnis adippe*	SG, FF, CL, H
Kestrel	*Falco tinnunculus*	CW, WC, SG, PL, UR
*Lesser horseshoe bat	**Rhinolophus hipposideros*	CW, WC, CL, UR
Little owl	*Athena noctua*	CL, PL, UR
Long-eared owl	*Asio otus*	(clearings/rides/glades) CW
Natterers bat	*Myotis nattereri*	W, WC, CL
*Nightjar	**Caprimulgus europaeus*	(wood pasture) CW, CL, H, UR
Noctule bat	*Nyctalus noctula*	CW, SG, CL, PL, UR
Orchids	various species	W, WC, SG, CL, H, PL
Other moths	various species	(wet woodland) (rides/glades) WC, H, PL, UR
Palmate newt	*Triturus helveticus*	W, WC, SG, CL, PL, UR
*Pipistrelle bat	**Pipistrellus pipistrellus*	W, WC, SG, CL, UR
*Red wood ant	**Formica rufa*	(lowland beech and yew)
*Reed bunting	**Emberiza schoeniculus*	(wet woods) W, CL
Smooth newt	*Triturus vulgaris*	W, WC, SG, CL, PL, UR
*Song thrush	**Turdus philomelos*	WC, SG, UR
*Spotted flycatcher	**Muscicapa striata*	WC, UR
*Tree sparrow	**Passer montanus*	(wood pasture) WC
*Waved carpet moth	**Hydrelia sylvata*	(lowland beech and yew) (coppice)
Whiskered/brandts bat	*Myotis mystacinus/M. brandtii*	(W)
Yellowhammer	*Emberiza citrinella*	WC, FF, H (gorse stands)
Yellow-necked mouse	*Apodemus flavicollis*	(lowland beech and yew) (coppice)

3. PLANTED CONIFEROUS WOODLANDS

Adder	*Viper berus*	(mixed) WC, SG, CL, H, PL, UR
Badger	*Meles meles*	DW, WC, SG, CL, PL
Common lizard	*Lacerta vivipara*	(mixed) WC, SG, H, CL, PL, UR
*Dormouse	**Muscardinus avellanarius*	DW, WC
Goshawk	*Accipiter gentilis*	(clearings) DW
Grass snake	*Natrix natrix*	(mixed) W, WC, SG, H, CL, PL, UR
Kestrel	*Falco tinnunculus*	DW, WC, SG, PL, UR
*Lesser horseshoe bat	**Rhinolophus hipposideros*	DW, WC, CL, UR
Long-eared owl	*Asio otus*	DW
*Nightjar	**Caprimulgus europaeus*	(early-growth/clearfell) DW, CL, H, UR
Noctule bat	*Nyctalus noctula*	(forest edges) W, DW, SG, PL, CL, UR
Slow-worm	*Anguis fragilis*	(mixed) WC, SG, H, CL, PL, UR

Orchids	various species	(mixed) W, DW, WC, CL, H, PL, UR

4. WILDLIFE CORRIDORS

Adder	*Viper berus*	(hedgerows, railways, stone walls) CW, SG, CL, H, PL, UR
Badger	*Meles meles*	DW, CW, SG, CL, PL
Barn owl	*Tyto alba*	DW, SG, CL, PL, UR
Bluebell	*Hyacinthoides non-scripta*	DW, FF, CL, PL, UR
Brown long-eared bat	*Plecotus auritus*	DW, CL, PL, UR
*Bullfinch	**Pyrrhula pyrrhula*	W, DW, UR
Buzzard	*Buteo buteo*	DW, SG, CL, PL
Common frog	*Rana temporaria*	W, DW, SG, CL, PL, UR
Common lizard	*Lacerta vivipara*	(hedgerows, railways, stone walls) CW, SG, H, CL, PL, UR
Common toad	*Bufo bufo*	W, DW, SG, CL, PL, UR
Cowslip	*Primula veris*	(hedgerows, railways, roadside verges) CL, PL, UR
Dipper	*Cinclus cinclus*	W, CL
*Dormouse	**Muscardinus avellanarius*	DW, CW
Dragonflies and damselflies	various species	W, DW, CL, H, UR
Grass snake	*Natrix natrix*	(hedgerows, railways, stone walls) W, CW, SG, H, CL, PL, UR
*Great crested newt	**Triturus cristatus*	W, DW, SG, CL, H, PL, UR
*Greater horseshoe bat	**Rhinolophus ferrumequinum*	(hedgerows) (W), DW, SG, CL
Green woodpecker	*Picus viridus*	W, DW, SG, FF, H, CL
Grey partridge	*Perdix perdix*	SG, FF, H
Kestrel	*Falco tinnunculus*	DW, CW, SG, CL, PL, UR
*Lesser horseshoe bat	**Rhinolophus hipposideros*	(hedgerows) DW, CW, CL, UR
*Linnet	**Carduelis cannabina*	FF, H, CL
Natterers bat	*Myotis nattereri*	W, DW, CL
Orchids	various species	W, DW, SG, CL, H, PL
Other Moths	various species	DW, H, PL, UR
Palmate newt	*Triturus helveticus*	W, DW, SG, CL, PL, UR
*Pipistrelle bat	**Pipistrellus pipistrellus*	W, DW, SG, CL, UR
Slow-worm	*Anguis fragilis*	(hedgerows, railways, stone walls) CW, SG, H, CL, PL, UR
Smooth newt	*Triturus vulgaris*	W, DW, SG, CL, PL, UR
*Song thrush	**Turdus philomelos*	DW, SG, UR
*Spotted flycatcher	**Muscicapa striata*	DW, UR
*Tree sparrow	**Passer montanus*	DW
Yellowhammer	*Emberiza citrinella*	DW, FF, H (gorse)

5. SPECIES-RICH GRASSLANDS

Adder	*Viper berus*	CW, WC, CL, H, PL, UR
Badger	*Meles meles*	DW, CL, PL
Barn owl	*Tyto alba*	DW, WC, CL, PL, UR
*Bordered gothic moth	**Heliophobus reticulata*	(rhos pasture) DW
*Brown hare	**Lepus europaeus*	DW, H, CL
Buzzard	*Buteo buteo*	DW, WC, CL, PL
Common frog	*Rana temporaria*	W, DW, WC, CL, PL, UR
Common toad	*Bufo bufo*	W, DW, WC, CL, PL, UR
Curlew	*Numerius arquata*	(rhos pasture) W, CL, FF, H
*Double line moth	**Mythimna turca*	(rhos pasture) DW
Grass snake	*Natrix natrix*	W, CW, WC, H, CL, PL, UR

*Great crested newt	**Triturus cristatus*	W, DW, WC, CL, H, PL, UR
*Greater horseshoe bat	**Rhinolophus ferrumequinum*	(W), DW, WC, CL
Green woodpecker	*Picus viridus*	W, DW, WC, CL, FF, H
*Grey partridge	**Perdix perdix*	WC, FF, H
*High brown fritillary	**Argynnis adippe*	DW, FF, CL, H
Kestrel	*Falco tinnunculus*	DW, CW, WC, CL, PL, UR
Lapwing	*Vanellus vanellus*	CL, PL
*Marsh fritillary	**Eurodryas aurinia*	(rhos pasture) H
Orchids	various species	W, DW, WC, CL, H, PL
Palmate newt	*Triturus helveticus*	W, DW, WC, CL, PL, UR
*Pearl-bordered fritillary	**Boloria euphrosyne*	(acid grassland) FF, CL, H
*Pipistrelle bat	**Pipistrellus pipistrellus*	W, DW, WC, CL, UR
*Skylark	**Alauda arvensis*	(neutral grassland, rhos pasture) H, FF, CL, PL
Slow-worm	*Anguis fragilis*	CW, WC, H, CL, PL, UR
Smooth newt	*Triturus vulgaris*	W, DW, WC, CL, PL, UR
*Song thrush	**Turdus philomelos*	DW, WC, UR
Yellow rattle	*Rhianthus minor*	(neutral grassland) CL, PL

6. COMMON LAND

Adder	*Viper berus*	CW, WC, SG, H, PL, UR
Badger	*Meles meles*	DW, CW, WC, SG, PL
Barn owl	*Tyto alba*	DW, WC, SG, PL, UR
Bluebell	*Hyacinthoides non-scripta*	DW, WC, FF, PL, UR
*Brown hare	**Lepus europaeus*	DW, SG, H
Brown long-eared bat	*Plecotus auritus*	DW, WC, PL, UR
Buzzard	*Buteo buteo*	DW, WC, SG, PL
Common frog	*Rana temporaria*	W, DW, WC, SG, PL, UR
Common lizard	*Lacerta vivipara*	CW, WC, SG, H, PL, UR
Common toad	*Bufo bufo*	W, DW, WC, SG, PL, UR
Cowslip	*Primula veris*	WC, PL, UR
Curlew	*Numerius arquata*	W, SG, FF, H
Daubentons bat	*Myotis daubentonii*	W, PL, UR
Dipper	*Cinclus cinclus*	W, WC
Dragonflies and damselflies	various species	W, DW, WC, PL, UR
Grass snake	*Natrix natrix*	W, CW, WC, SG, H, PL, UR
*Great crested newt	**Triturus cristatus*	W, DW, WC, SG, H, PL, UR
*Greater horseshoe bat	**Rhinolophus ferrumequinum*	(W), DW, WC, SG
Green woodpecker	*Picus viridus*	W, DW, WC, SG, FF, H
Grey wagtail	*Motacilla cinerea*	W, PL
*High brown fritillary	**Argynnis adippe*	DW, SG, FF, H
Kestrel	*Falco tinnunculus*	DW, CW, WC, SG, PL, UR
Kingfisher	*Alcedo atthis*	W
Lapwing	*Vanellus vanellus*	SG, PL
*Lesser horseshoe bat	**Rhinolophus hipposideros*	DW, CW, WC, UR
*Linnet	**Carduelis cannabina*	WC, FF, H
Little owl	*Athena noctua*	DW, PL, UR
Natterers bat	*Myotis nattereri*	W, DW, WC
*Nightjar	**Caprimulgus europaeus*	DW, CW, H, UR
Noctule bat	*Nyctalus noctula*	DW, CW, SG, PL, UR
Orchids	various species	W, DW, WC, SG, H, PL
Palmate newt	*Triturus helveticus*	W, DW, WC, SG, PL, UR
*Pearl-bordered fritillary	**Boloria euphrosyne*	SG, FF, H

Peregrine falcon	*Falco peregrinus*	PL, UR
*Pipistrelle bat	**Pipistrellus pipistrellus*	W, DW, WC, SG, UR
*Reed bunting	**Emberiza schoeniculus*	W, DW
*Skylark	**Alauda arvensis*	SG, FF, H, PL
Slow-worm	*Anguis fragilis*	CW, WC, SG, H, PL, UR
Smooth newt	*Triturus vulgaris*	W, DW, WC, SG, PL, UR
Yellow rattle	*Rhianthus minor*	(neutral grassland) SG, PL

7. FFRIDD/COEDCAE

Bluebell	*Hyacinthoides non-scripta*	DW, WC, CL, PL, UR
Curlew	*Numerius arquata*	W, SG, H, CL
Green woodpecker	*Picus viridus*	W, DW, WC, SG, H, CL
*Grey partridge	**Perdix perdix*	WC, SG, H
*High brown fritillary	**Argynnis adippe*	DW, SG, H
*Linnet	**Carduelis cannabina*	WC, CL, H
*Pearl-bordered fritillary	**Boloria euphrosyne*	SG, CL, H
*Skylark	**Alauda arvensis*	SG, CL, H, PL
Yellowhammer	*Emberiza citrinella*	DW, WC, H (gorse)

8. HEATHLAND

Adder	*Viper berus*	CW, WC, SG, CL, PL, UR
*Brown hare	**Lepus europaeus*	DW, SG, CL
Common lizard	*Lacerta vivipara*	CW, WC, SG, CL, PL, UR
Curlew	*Numerius arquata*	W, SG, FF, CL
Grass snake	*Natrix natrix*	W, CW, WC, SG, CL, PL, UR
*Great crested newt	8*Triturus cristatus*	W, DW, WC, SG, CL, PL, UR
Green woodpecker	*Picus viridus*	W, DW, WC, SG, CL, FF
*Grey partridge	**Perdix perdix*	WC, SG, FF
*High brown fritillary	**Argynnis adippe*	DW, SG, FF
*Linnet	**Carduelis cannabina*	WC, FF, CL
*Marsh fritillary	**Eurodryas aurinia*	(wet heath) SG
*Nightjar	**Caprimulgus europaeus*	DW, CW, CL, UR
Orchids	various species	W, DW, WC, SG, CL, PL
Other Moths	various species	DW, WC, PL, UR
*Pearl-bordered fritillary	**Boloria euphrosyne*	SG, CL, FF
*Skylark	**Alauda arvensis*	SG, FF, CL, PL
Slow-worm	*Anguis fragilis*	CW, WC, SG, CL, PL, UR
*Song thrush	**Turdus philomelos*	DW, WC, SG, UR
Yellowhammer	*Emberiza citrinella*	DW, WC, FF (gorse)

9. POST-INDUSTRIAL LAND

Adder	*Viper berus*	CW, WC, SG, H, CL, UR
Badger	*Meles meles*	DW, CW, WC, SG, CL
Barn owl	*Tyto alba*	DW, WC, SG, CL, UR
Bluebell	*Hyacinthoides non-scripta*	DW, WC, FF, CL, UR
Brown long-eared bat	*Plecotus auritus*	DW, WC, CL, UR
*Buttoned snout moth	**Hypena rostralis*	UR
Buzzard	*Buteo buteo*	DW, WC, SG, CL
Common frog	*Rana temporaria*	W, DW, WC, SG, CL, UR
Common lizard	*Lacerta vivipara*	CW, WC, SG, H, CL, UR
Common toad	*Bufo bufo*	W, DW, WC, SG, CL, UR
Cowslip	*Primula veris*	WC, CL, UR
Daubentons bat	*Myotis daubentonii*	W, CL, UR
Dragonflies and damselflies	various species	W, DW, WC, CL, UR
Grass snake	*Natrix natrix*	W, CW, WC, SG, H, CL, UR

*Great crested newt	**Triturus cristatus*	W, DW, WC, SG, CL, H, UR
Grey wagtail	*Motacilla cinerea*	W, CL
Kestrel	*Falco tinnunculus*	DW, CW, WC, SG, CL, UR
Lapwing	*Vanellus vanellus*	(revegetated colliery spoil) SG, CL
Little owl	*Athena noctua*	DW, CL, UR
Noctule bat	*Nyctalus noctula*	W, DW, CW, SG, CL, UR
Orchids	various species	W, DW, WC, SG, CL, H
Other Moths	various species	DW, WC, H, UR
Palmate newt	*Triturus helveticus*	W, DW, WC, SG, CL, UR
Peregrine falcon	*Falco peregrinus*	(quarries) CL, UR
*Skylark	**Alauda arvensis*	SG, FF, H, CL
Slow-worm	*Anguis fragilis*	CW, WC, SG, H, CL, UR
Smooth newt	*Triturus vulgaris*	W, DW, WC, SG, CL, UR
Yellow rattle	*Rhianthus minor*	(areas of neutral grassland) SG, CL

10. URBAN HABITATS

Adder	*Viper berus*	CW, WC, SG, H, CL, PL
Barn owl	*Tyto alba*	DW, WC, SG, CL, PL
Bluebell	*Hyacinthoides non-scripta*	DW, WC, FF, CL, PL
Brown long-eared bat	*Plecotus auritus*	DW, WC, CL, PL
*Bullfinch	**Pyrrhula pyrrhula*	W, DW, WC
*Buttoned snout moth	**Hypena rostralis*	PL
Common frog	*Rana temporaria*	W, DW, WC, SG, CL, PL
Common lizard	*Lacerta vivipara*	CW, WC, SG, H, CL, PL
Common toad	*Bufo bufo*	W, DW, WC, SG, CL, PL
Cowslip	*Primula veris*	WC, CL, PL
Daubentons bat	*Myotis daubentonii*	W, CL, PL
Dragonflies and damselflies	various species	W, DW, WC, CL, PL
Grass snake	*Natrix natrix*	W, CW, WC, SG, H, CL, PL
*Great crested newt	**Triturus cristatus*	W, DW, WC, SG, CL, H, PL
House sparrow	*Passer domesticus*	(most urban habitats)
Kestrel	*Falco tinnunculus*	DW, CW, WC, SG, CL, PL
*Lesser horseshoe bat	**Rhinolophus hipposideros*	DW, CW, WC, CL
Little owl	*Athena noctua*	DW, CL, PL
*Nightjar	**Caprimulgus europaeus*	(gardens) DW, CW, CL, H
Noctule bat	*Nyctalus noctula*	W, DW, CW, SG, CL, PL
Orchids	Various species	W, CW, DW, WC, CL, H, PL
Other Moths	various species	DW, WC, H, PL
Palmate newt	*Triturus helveticus*	W, DW, WC, SG, CL, PL
Peregrine falcon	*Falco peregrinus*	CL, PL
*Pipistrelle bat	**Pipistrellus pipistrellus*	W, DW, WC, SG, CL
Slow-worm	*Anguis fragilis*	CW, WC, SG, H, CL, PL
Smooth newt	*Triturus vulgaris*	W, DW, WC, SG, CL, PL
*Song thrush	**Turdus philomelos*	DW, WC, SG
*Spotted flycatcher	**Muscicapa striata*	DW, WC

8.4 TABLE ii LINKS BETWEEN SPECIES AND HABITATS

HABITAT KEY			
W	Wetlands	CL	Common Land
DW	Deciduous Woodlands	FF	Ffridd/Coedcae
CW	Planted Coniferous Woodland	H	Heathland
WC	Wildlife Corridors	PL	Post-Industrial Land
SG	Species-rich Grasslands	UR	Urban Habitats

Common Name	Scientific Name	Broad Habitat Type	Other Habitats
1. AMPHIBIANS			
Common frog	*Rana temporaria*	Wetlands (mosaic of habitats)	DW, WC, SG, CL, PL, UR
Common toad	*Bufo bufo*	Wetlands (mosaic of habitats)	DW, WC, SG, CL, PL, UR
*Great crested newt	**Triturus cristatus*	Wetlands (mosaic of habitats)	DW, WC, SG, H, CL, PL, UR
Palmate newt	*Triturus helveticus*	Wetlands (mosaic of habitats)	DW, WC, SG, CL, PL, UR
Smooth newt	*Triturus vulgaris*	Wetlands (mosaic of habitats)	DW, WC, SG, CL, PL, UR
2. BIRDS			
Barn owl	*Tyto alba*	mosaic of habitats	DW, WC, SG, CL, PL, UR
*Bullfinch	**Pyrrhula pyrrhula*	Deciduous Woodlands	W, WC, UR
Buzzard	*Buteo buteo*	Species-rich Grasslands	DW, WC, CL, PL
Curlew	*Numerius arquata*	Species-rich Grasslands	CL, FF, H
Dipper	*Cinclus cinclus*	Wetlands	WC, CL
Goshawk	*Accipiter gentilis*	Planted Coniferous Woodlands	DW (clearings)
Green woodpecker	*Picus viridis*	Deciduous Woodlands	W, WC, SG, CL, FF, H
*Grey partridge	**Perdix perdix*	Species-rich Grasslands	WC, FF, H
Grey wagtail	*Motacilla cinerea*	Wetlands	CL, PL
House sparrow	*Passer domesticus*	Urban Habitats	
Kestrel	*Falco tinnunculus*	mosaic of habitats	DW, CW, WC, SG, CL, PL, UR
Kingfisher	*Alcedo atthis*	Wetlands	CL
Lapwing	*Vanellus vanellus*	Post-Industrial Land	SG, CL (industrial landscaping and arable farmland)
*Linnet	**Carduelis cannabina*	Heathland, Ffridd	WC, CL
Little owl	*Athena noctua*	mosaic (open habitats)	DW, WC (hedgerows), CL, PL, UR
Long-eared owl	*Asio otus*	Deciduous Woodlands	(rides and edges); CW
*Nightjar	**Caprimulgus europaeus*	Planted Coniferous Woodlands	(early growth, clearfell); DW CL, H, UR
Peregrine falcon	*Falco peregrinus*	Post-Industrial Land	(quarries) CL, UR
*Reed bunting	**Emberiza schoenichlus*	Wetlands	DW, CL
*Skylark	**Alauda arvensis*	Species-rich Grasslands	CL, FF, H, PL
*Song thrush	**Turdus philomelos*	Deciduous Woodlands	WC, SG, UR
*Spotted flycatcher	**Musciapa striata*	Deciduous Woodlands	WC, UR
*Tree sparrow	**Passer montanus*	Deciduous Woodlands	WC
Yellowhammer	*Emberiza citrinella*	Ffridd/Coedcae	WC, DW, H (gorse stands)

3. NATIVE WILD FISH			
brook lamprey	*Lampetra planeri*	Wetlands	(rivers and streams)
bullhead	*Cottus gobio*		
common eel	*Anguilla anguilla*		
native brown trout	*Salmo trutta*		
salmon	*Salmo salar*		
sea trout	*Salmo trutta*		
stone loach	*Noemachelius barbatulus*		
3-spined stickleback	*Gasterosteus aculeatus*		
4. MAMMALS			
Badger	*Meles meles*	Deciduous Woodlands	CW, WC, SG, CL, PL
*Brown hare	**Lepus europaeus*	Species-rich Grasslands	DW, CL, H
Brown long-eared bat	*Plecotus auritis*	Deciduous Woodlands	WC, CL, PL, UR (open woods)
Daubentons bat	*Myotis daubentonii*	Wetlands	CL, PL, UR
*Dormouse	**Muscardinus avellanaris*	Deciduous Woodlands	CW, WC
*European otter	**Lutra lutra lutra*	Wetlands	DW (wet woodland)
*Greater horseshoe bat	**Rhinolophus ferrumequinum*	mosaic	(W), WC, SG, CL
*Lesser horseshoe bat	**Rhinolophus hipposideros*	Woodland	DW, CW, WC, CL, UR
Natterers bat	*Myotis nattereri*	mosaic	W, WC, CL
Noctule bat	*Nyctalus noctula*	mosaic	W, DW, (CW), SG, CL, PL, UR
*Pipistrelle bat	**Pipistrellus pipistrellus*	mosaic	W, DW, WC, SG, CL, UR
Whiskered/brandts bat	*Myotis mystacinus / M. brandtii*	mosaic	W (some wet areas); DW, CL, UR
*Water vole	**Arvicola terrestris*	Wetlands	(rivers, fen, reedbed, swamp)
Yellow-necked mouse	*Apodemus flavicollis*	Deciduous Woodland	(beech and yew woodland) (mixed coppice woods)
5. REPTILES			
Adder	*Viper berus*	mosaic	(CW), WC, SG, CL, H, PL, UR
Common lizard	*Lacerta vivipara*	mosaic	(CW), WC, SG, CL, H, PL, UR
Grass snake	*Natrix natrix*	mosaic	W, (CW), WC, SG, CL, H, PL, UR
Slow worm	*Anguis fragilis*	mosaic	(CW) WC, SG, CL, H, PL, UR
6. BEETLES			
7. BEES, WASPS AND ANTS			
*Red wood ant	**Formica rufa*	Deciduous Woodlands	(lowland beech and yew woodland)
8. BUTTERFLIES AND MOTHS			
*Bordered gothic moth	**Heliophobus reticulata*	Species-rich Grasslands	(rhos pasture); DW
*Buttoned snout moth	**Hypena rostralis*	Urban Habitats	PL
*Double line moth	**Mythimna turca*	Species-rich Grasslands	(rhos pasture); DW (rides/glades)
*High brown fritillary	**Argynnis adippe*	Ffridd/Coedcae	DW, SG, CL, H
*Marsh fritillary	**Eurodryas aurinia*	Species-rich Grasslands	(rhos pasture); H (wet heath)

*Pearl-bordered fritillary	**Boloria euphrosyne*	Ffridd/Coedcae	SG, CL, H (bracken areas)
Other Moths	Various species	mosaic of habitats	DW (wet woodland) (rides/glades); WC, H, PL, UR
*Waved carpet moth	**Hydrelia sylvata*	Deciduous Woodlands	(lowland beech and yew woodland) (coppice)
9. CRUSTACEA			
*White clawed crayfish	**Austropotamobius pallipes*	Wetlands	(rivers and streams, canal)
10. DRAGONFLIES AND DAMSELFLIES			
Dragonflies/ Damselflies	various species	Wetlands	DW (rides/glades), WC, CL, PL, UR
11. GRASSHOPPERS AND CRICKETS			
12. SNAILS AND SLUGS			
13. SPIDERS			
14. FUNGI			
15. LICHEN AND LIVERWORTS			
16. VASCULAR PLANTS			
Bluebell	*Hyacinthoides non-scripta*	Deciduous Woodlands	WC, CL, FF, PL, UR
Common reed	*Phragmites australis*	Wetlands	(reedbeds, swamp, fen)
Cornish moneywort	*Sibthorpia europea*	Wet Woodland	(wet/damp habitats)
Cowslip	*Primula veris*	Wildlife Corridors	CL, PL, UR
Orchids	various species	Species-rich Grasslands	W, CW, DW, WC, CL, H, PL, UR
Yellow rattle	*Rhianthus minor*	Species-rich Grasslands	(neutral grassland); CL, PL

8.5 BIODIVERSITY AUDIT

8.5.1 Key

HEADINGS AND SYMBOLS

Present in CCB	=	present in Caerphilly county borough
CCB/VC41 (Glamorgan)	=	present in Caerphilly county borough west (Glamorgan)
CCB/VC35 (Gwent)	=	present in Caerphilly county borough east (Gwent)
✓	=	present
*	=	UKBAP priority habitats and species

SOURCES/COMMENTS

Biodiversity Day	-	held in December 1999 by CCBC; identified important habitats and species in the area (as a starting point)
LBAP Meeting	-	first meeting of the Caerphilly Biodiversity Partnership to agree a list of habitats and species for the LBAP (and subsequent meetings)
GGBAG or GlamBAG	-	regional biodiversity groups (Greater Gwent Biodiversity Action Group (GGBAG) and the Glamorgan Biodiversity Advisory Group (GlamBAG)) – Habitat Action Plans
GGBAG	-	species list produced in consultation with recorders and any additional information (Greater Gwent Biodiversity Action Group 'Recorders Day')
CCW	-	Countryside Council for Wales records and information, e.g. Phase 1 Habitat Survey, species records
LBAP Target Guide[12]	-	Draft CCW document information (e.g. habitat figures) from: NCC/CCW Upland Vegetation Survey (1979-89) for Upland heathland and Blanket Bog; NCC/CCW Phase 1; Habitat Survey (1987-98) for Blanket Bog; NCC/CCW; Phase 1 Habitat Survey (1979-98) for Lowland heathland
Initials	-	records from recorders and wildlife groups

CJ	Chris Jones	**NO**	Neil Owen	**CT**	Colin Titcombe
NP	Nigel Powell	**DC**	Dave Cooksey	**PS**	Peter Smith
DH	Dai Hale	**RP**	Richard Poole	**GFT**	Geri Foster-Thomas
RS	Richard Smith	**JB**	John Bell	**SB**	Simon Beacham
JH	Jon Hole	**SBt**	Sam Bosanquet	**MA**	Martin Anthoney
SG	Simon Greenfield	**MC**	Mike Cullen	**TE**	Trevor Evans
VG	Vaughan Grantham				

8.5.2 Species

Common Name	Scientific Name	Present in CCB	Present in CCB/VC41 Glamorgan	Present in CCB/VC35 Gwent	Sources/Comments	Species Action Plan
VERTEBRATES						
1. AMPHIBIANS						
Common frog	*Rana temporaria*	✓	✓	✓	Biodiversity Day; GGBAG (CT)	amphibians
Common toad	*Bufo bufo*	✓	✓	✓	Amphibians subgroup (DH); GGBAG (CT)	
*Great crested newt	**Triturus cristatus*	✓	✓	✓	Glan Shon Farm (GWT); Wyllie, Fleur de Lis; more survey (CCW); GGBAG	✓
Palmate newt	*Triturus helveticus*	✓	✓	✓	Biodiversity Day; GGBAG	amphibians
Smooth newt	*Triturus vulgaris*	✓	✓	✓	Amphibians subgroup (DH); GGBAG	
2. BIRDS						
Arctic tern	*Sterna paradisaea*	✓			historical records (GGBAG); regular offshore passage visitor (uncommon)	
Barn owl	*Tyto alba*	✓	✓	✓	Biodiversity Day; GOS (CJ); present all year round and breeding (GGBAG)	✓
Blackbird	*Turdus merula*	✓	✓	✓	common and widespread breeding resident	
Blackcap	*Sylvia atricapilla*	✓	✓		breeding summer migrant (GGBAG)	
Black redstart	*Phoenicurus ochruros*	✓	✓		post-1970 records (not of regular occurrence) (GGBAG)	
Blue tit	*Parus caeruleus*	✓	✓	✓	present all year round and breeding (GGBAG); common and widespread	
Brambling	*Fringilaa montifringilla*	✓	✓		winter visitor (GGBAG)	
*Bullfinch	**Pyrrhula pyrrhula*	✓	✓	✓	Biodiversity Day; present all year; breeding (GGBAG); locally common	✓
Buzzard	*Buteo buteo*	✓	✓	✓	Birds of prey sub-group (MC); present all year round and breeding (GGBAG)	✓
Canada Goose	*Branta canadensis*	✓	✓		introduced common resident; Caerphilly Castle Moat	
Carrion Crow	*Corvus corone*	✓	✓	✓	common and widespread breeding resident	
Chaffinch	*Fringilla coelebs*	✓	✓	✓	common and widespread breeding resident	
Chiffchaff	*Phylloscopus collybita*	✓	✓	✓	breeding summer migrant (GGBAG)	
Coal tit	*Parus ater*	✓	✓	✓	present all year round and breeding (GGBAG)	
Common crossbill	*Loxia curvirostra*	✓	✓		present all year round and breeding (GGBAG)	
Common gull	*Larus canus*	✓			post-1970 records (not of regular occurrence) (GGBAG)	
*Common scoter	**Melanitta nigra*	✓			passing migrant; only a few records (GGBAG)	
Common tern	*Sterna hirundo*	✓			historical records (GGBAG)	
Cormorant	*Phalacrocorax carbo*	✓			post 1970 record (not of regular occurrence) (GGBAG)	
Curlew	*Numerius arquata*	✓	✓	✓	Biodiversity Day; declining (GOS); breeding summer migrant GGBAG	✓
Dipper	*Cinclus cinclus*	✓	✓	✓	Biodiversity Day; present all year round and breeding (GGBAG)	wetland birds

Common Name	Scientific Name	Present in CCB	Present in CCB/VC41 Glamorgan	Present in CCB/VC35 Gwent	Sources/Comments	Species Action Plan
Dunnock	*Prunella modularis*	✓	✓		present all year round and breeding (GGBAG)	
Fieldfare	*Turdus pilaris*	✓	✓		regular winter visitor (GGBAG)	
Garden warbler	*Sylvia borin*	✓	✓	✓	breeding summer migrant (GGBAG)	
Goldcrest	*Regulus regulus*	✓	✓	✓	present all year round and breeding (GGBAG); widespread and gen. common	
Goldfinch	*Carduelis carduelis*	✓	✓	✓	present all year round and breeding (GGBAG); common and widespread	
Goosander	*Mergus merganser*	✓			post-1970 records (not of regular occurrence) (GGBAG)	
Grasshopper warbler	*Locustella naevia*	✓			breeding summer migrant (GGBAG)	
Great black-backed gull	*Larus marinus*	✓			post-1970 records (not of regular occurrence) (GGBAG)	
Great northern diver	*Gavia immer*	✓			post-1970 records (not of regular occurrence) (GGBAG)	
Great spotted woodpecker	*Dendrocopus major*	✓			present all year round and breeding (GGBAG)	
Great tit	*Parus major*	✓	✓	✓	present all year round and breeding (GGBAG)	
Greenfinch	*Carduelis chloris*	✓	✓	✓	present all year round and breeding (GGBAG)	
Green woodpecker	*Picus viridis*	✓	✓	✓	present all year and breeding (GGBAG); Gwent is a Welsh stronghold; widespread (GOS)	✓
*Grey partridge	**Perdix perdix*	✓	✓	✓	Biodiversity Day; present all year round and breeding (GGBAG)	✓
Grey wagtail	*Motacilla cinerea*	✓	✓	✓	Biodiversity Day; present all year round and breeding (GGBAG)	wetland birds
Goldeneye	*Bucephala clangula*	✓			post-1970 records (not of regular occurrence) (winter visitor) (GGBAG)	
Goshawk	*Accipiter gentilis*	✓	✓		LBAP Meeting, Bird of prey subgroup (MC); GGBAG	✓
Hawfinch	*Coccothraustes coccothraustes*	✓	✓		scarce and local breeding resident	
Herring gull	*Larus argentatus*	✓			winter visitor (GGBAG)	
Hobby	*Falco subbuteo*	✓			post 1970 records (not of regular occurrence) (GGBAG)	
Honey buzzard	*Pernis apivorus*	✓			post-1970 records (not of regular occurrence) (GGBAG)	
House martin	*Delichon urbica*	✓	✓	✓	breeding summer migrant (GGBAG)	
House sparrow	*Passer domesticus*	✓	✓	✓	Biodiversity Day; declining in urban areas (RSPB); present all year and breeding (GGBAG)	✓
Jackdaw	*Corvus monedula*	✓	✓	✓	common, widely distributed breeding resident; forms large winter roosts	
Jack snipe	*Lymnocryptes minimus*	✓			post-1970 records (not of regular occurrence) (GGBAG)	
Jay	*Garrulus glandarius*	✓	✓	✓	common and widespread breeding resident	
Kestrel	*Falco tinnunculus*	✓	✓	✓	Birds subgroup (MC); declining (GOS); present all year/breeding (GGBAG)	✓
Kingfisher	*Alcedo atthis*	✓	✓	✓	Biodiversity Day; declining (GOS); present all year/breeding (GGBAG)	wetland birds

Common Name	Scientific Name	Present in CCB	Present in CCB/VC41 Glamorgan	Present in CCB/VC35 Gwent	Sources/Comments	Species Action Plan
Lapwing	*Vanellus vanellus*	✓	✓	✓	Biodiversity Day; Fochriw 2nd largest site in Wales; scarce/declining (GOS); present all year/breeding (GGBAG); large hard-weather flocks	✓
Lesser black-headed gull	*Larus fuscus*	✓			passing migrant (GGBAG)	
Lesser redpoll	*Carduelis flammea*	✓	✓		present all year/breeding (GGBAG); locally common, widespread in winter	
Lesser spotted woodpecker	*Dendrocopus minor*	✓	✓	✓	post 1970 record (not of regular occurrence) (GGBAG)	
Lesser whitethroat	*Sylvia curruca*	✓	✓		breeding summer migrant (GGBAG)	
*Linnet	**Carduelis cannabia*	✓	✓	✓	Biodiversity Day; GGBAG; GBC; common and widespread breeding resident	✓
Little owl	*Athene noctua*	✓	✓	✓	WOWLS (DC)	✓
Long-eared owl	*Asio otus*	✓	✓	✓	LBAP Meeting, WOWLS (DC); post-1970 records (not regular) (GGBAG)	✓
Long-tailed tit	*Aegithalos caudatus*	✓	✓	✓	locally common breeding resident	
Magpie	*Pica pica*	✓	✓	✓	common and widespread breeding resident	
Mallard	*Anas platyrhynchos*	✓	✓	✓	present all year round and breeding (GGBAG)	
Marsh tit	*Parus palustris*	✓	✓		present all year/breeding (GGBAG); locally common, thinly distributed	
Meadow pipit	*Anthus pratensis*	✓			present all year round and breeding (GGBAG)	
Merlin	*Falco columbarius*	✓			present all year round and breeds (GGBAG)	
Mistle thrush	*Turdus viscivorus*	✓	✓		common and widespread breeding resident; passage movement in autumn	
Mute swan	*Cygnus olor*	✓	✓		historical records (GGBAG); Caerphilly Castle Moat	
*Nightjar	**Caprimulgus europaeus*	✓	✓	✓	Biodiversity Day; breeding summer migrant (GGBAG)	✓
Nuthatch	*Sitta europea*	✓	✓		present all year round and breeding (GGBAG); common and widespread	
Osprey	*Pandion haliaetus*	✓			post-1970 records (not of regular occurrence) (GGBAG)	
Peregrine falcon	*Falco peregrinus*	✓	✓	✓	Biodiversity Day; SWPW (MC); RSPB Annual Report; persecuted locally; present all year/breeding (GGBAG); scarce	✓
Pied flycatcher	*Ficedula hypoleuca*	✓			breeding summer migrant (GGBAG)	
Pied wagtail	*Motacilla alba*	✓	✓	✓	present all year round and breeding (GGBAG)	
Pochard	*Aythya ferina*	✓			post-1970 records (not of regular occurrence) (GGBAG)	
Raven	*Corvus corax*	✓	✓		present all year round and breeding (GGBAG); locally distributed	
Red kite	*Milvus milvus*	✓			post-1970 records (not of regular occurrence) (GGBAG)	
Redstart	*Phoenicurus phoenicurus*	✓	✓	✓	Biodiversity Day; declining (GOS); breeding summer migrant (GGBAG)	
Red-throated diver	*Gavia stellata*	✓			post-1970 records (not of regular occurrence) (GGBAG)	
Redwing	*Turdus iliacus*	✓			winter visitor (GGBAG)	
*Reed bunting	**Emberiza shoeniculus*	✓	✓	✓	present all year round and breeding (GGBAG)	✓

Common Name	Scientific Name	Present in CCB	Present in CCB/VC41 Glamorgan	Present in CCB/VC35 Gwent	Sources/Comments	Species Action Plan
Reed warbler	*Acrocephalus scirpaceus*	✓	✓		GGBAG; locally common breeding summer visitor	
Ringed plover	*Charadrius hiaticula*	✓			post 1970 records (GGBAG)	
Ring ouzel	*Turdus torquata*	✓			post 1970 record (not of regular occurrence) (GGBAG)	
Robin	*Erithacus rubecula*	✓	✓	✓	common and widespread breeding resident; small movements in autumn	
Rook	*Corvus frugilegus*	✓	✓		common breeding resident; locally distributed	
Sand martin	*Riparia riparia*	✓			breeding summer migrant (GGBAG)	
Sedge warbler	*Acrocephalus schoenobaenus*	✓	✓		breeding summer migrant (GGBAG); locally common	
Siskin	*Carduelis spinus*	✓	✓		present all year round and breeding (GGBAG)	
*Skylark	**Alauda arvensis*	✓	✓	✓	Biodiversity Day; present all round and breeding (GGBAG)	✓
Snipe	*Gallinago gallinago*	✓			present all year round and breeding (GGBAG)	
*Song thrush	**Turdus philomelos*	✓	✓	✓	Biodiversity Day; present all year/breeding (GGBAG); common/widespread	✓
Sparrowhawk	*Accipiter nisus*	✓	✓	✓	GGBAG; common and widespread breeding resident	
*Spotted flycatcher	**Muscicapa striata*	✓	✓	✓	breeding summer migrant (GGBAG)	✓
Starling	*Sturnus vulgaris*	✓	✓	✓	present all year round and breeding (GGBAG); common and widespread	
Stock dove	*Columbo oenas*	✓			present all year round and breeding (GGBAG)	
Stonechat	*Saxicola torquata*	✓	✓	✓	present all year round and breeding (GGBAG); locally common	
Swallow	*Hirundo rustica*	✓	✓	✓	breeding summer migrant (GGBAG)	
Swift (common)	*Apus apus*	✓	✓	✓	breeding summer migrant (GGBAG)	
Tawny owl	*Strix aluco*	✓	✓		present all year round and breeding (GGBAG)	
Teal	*Anas crecca*	✓			post-1970 records (not of regular occurrence) (GGBAG)	
Treecreeper	*Certhia familiaris*	✓	✓		present all year round and breeding (GGBAG); common and widespread	
Tree pipit	*Anthus trivalis*	✓			breeding summer migrant (GGBAG)	
*Tree sparrow	**Passer montanus*	✓	✓	✓	Biodiversity Day; present all year round and breeding (GGBAG)	✓
Tufted duck	*Aythya fuligula*	✓			present all year round and breeding (GGBAG)	
*Turtle dove	**Streptopelia turtur*	✓			passage migrant (GGBAG)	
Water rail	*Rallus aquaticus*	✓	✓	✓	Nelson Bog SSSI; scarce and local breeding resident; large nos. in winter	
Wheatear	*Oenanthe oenanthe*	✓	✓		breeding summer migrant (GGBAG); locally common	
Whinchat	*Saxicola rubetra*	✓	✓	✓	breeding summer migrant (GGBAG); uncommon	
Whitethroat	*Sylvia communis*	✓	✓		breeding summer migrant (GGBAG)	
Whooper swan	*Cygnus cygnus*	✓			post-1970 records (not of regular occurrence) (GGBAG)	

Common Name	Scientific Name	Present in CCB	Present in CCB/VC41 Glamorgan	Present in CCB/VC35 Gwent	Sources/Comments	Species Action Plan
Willow tit	*Parus montanus*	✓	✓	✓	present all year/breeding (GGBAG); locally common; most nos. in E. Glam.	
Willow warbler	*Phylloscopus trochilus*	✓	✓		common and widespread breeding summer visitor; also recorded on passage	
Woodcock	*Scolopax rusticola*	✓	✓		present all year/breeding (GGBAG); scarce and local	
*Woodlark	**Lullula arborea*	?			historical records (GGBAG)	
Wood warbler	*Phylloscopus sibilatrix*	✓			breeding summer migrant (GGBAG)	
Wren	*Troglodytes troglodytes*	✓	✓	✓	common and widespread breeding resident	
Yellowhammer	*Emberiza citrinella*	✓	✓	✓	present all year/breeding (GGBAG); declining (GOS)	✓
Yellow wagtail	*Numenius phaeopus*	✓			post 1970 record (not of regular occurrence) (GGBAG)	
3. NATIVE WILD FISH						
Brook lamprey	*Lampetra planeri*	✓	✓	✓	LBAP Meeting; Anglers	native wild fish
Bullhead	*Cottus gobio*	✓	✓	✓	Biodiversity Day; LBAP Meeting; anglers; Rhymney, Sirhowy and Ebbw (EA)	
Common eel	*Anguilla anguilla*	✓	✓	✓	LBAP Meeting; anglers; all rivers draining into Severn Estuary (EA)	
Grayling	*Thymallus thymallus*	✓	✓	✓	River Rhymney (KWT Clean Rivers Project (JB) and GGBAG (EA)	
Native brown trout	*Salmo trutta*	✓	✓	✓	LBAP Meeting; anglers; widespread in Rhymney, Sirhowy and Ebbw (EA)	
Salmon	*Salmo salar*	✓	✓	✓	Fish subgroup (RP); Rhymney, Sirhowy and Ebbw (EA)	
Sea trout	*Salmo trutta*	✓	✓	✓	Fish subgroup (RP)	
Stone loach	*Noemacheilus barbatulus*	✓	✓	✓	LBAP Meeting; anglers	
Three-spined stickleback	*Gasterosteus aculeatus*	✓	✓	✓	LBAP Meeting; anglers	
4. MAMMALS						
Badger	*Meles meles*	✓	✓	✓	Biodiversity Day; locally persecuted	✓
*Brown hare	**Lepus europaeus*	✓	✓		Locations not known, but declining; Biodiversity Day; GGBAG	✓
Brown long-eared bat	*Plecotus auritus*	✓	✓	✓	LBAP Meeting; CCW; probably quite common, survey required	bats
Common shrew	*Sorex araneus*	✓	✓	✓	throughout Gwent (GGBAG)	
Daubentons bat	*Myotis daubentonii*	✓			CCW; more detailed survey required	bats
*Dormouse	**Muscardinus avellanarius*	✓	✓	✓?	Biodiversity Day; CCW, 1996; 3 sites in 1993 National Dormouse Survey	✓
*European otter	**Lutra lutra lutra*	✓	✓	✓	declining (EA); little/no evidence of breeding; Biodiversity Day; GGBAG; Rhymney area survey work (JH)	✓
Fox	*Vulpes vulpes*	✓	✓	✓	common	
*Greater horseshoe bat	**Rhinolophus ferrumequinum*	✓	✓		CCW/GBG; more roosts may be found, none confirmed; Biodiversity Day	bats
Grey squirrel	*Sciurus carolinensis*	✓	✓	✓	common	
Hedgehog	*Erinaceus europaeus*	✓	✓	✓	LBAP Meeting; road-kill records for CCB	

Common Name	Scientific Name	Present in CCB	Present in CCB/VC41 Glamorgan	Present in CCB/VC35 Gwent	Sources/Comments	Species Action Plan
*Lesser horseshoe bat	**Rhinolophus hipposideros*	✓	✓		Biodiversity Day	bats
Natterer's bat	*Myotis nattereri*	✓			CCW; presence recorded, but little else known	
Noctule bat	*Nyctalus noctula*	✓		✓	CCW	
*Pipistrelle bat	**Pipistrellus pipistrellus*	✓	✓	✓	CCW/GBG; probably widespread; Biodiversity Day; GGBAG	
Polecat	*Mustela putorius*	✓	✓		under-recorded (JK) (GGBAG)	
Pygmy shrew	*Sorex minutus*	✓			historical records (GGBAG)	
Stoat	*Mustela erminea*	✓	✓	✓	under-recorded (JK) (GGBAG)	
*Water vole	**Arvicola terrestris*	✓	✓	✓	declining; Biodiversity Day; GGBAG; surveys; Hawtin Park Planning Application	✓
Water shrew	*Neomys fodiens*	?			historical records (GGBAG); under-recorded (JK)	
Weasel	*Mustela nivalis*	✓	✓	✓	under-recorded (JK) (GGBAG)	
Whiskered/Brandts bat	*Myotis mystacinus/Myotis brandtii*	✓			CCW; no confirmed breeding or hibernation sites	bats
Yellow-necked mouse	*Apodemus flavicollis*	✓		✓	LBAP Meeting (DC); restricted in the UK; Gwent stronghold (GGBAG (PS))	✓
5. REPTILES						
Adder	*Viper berus*	✓	✓	✓	Amphibians/Reptiles subgroup (DH)	✓
Common lizard	*Lacerta vivipara*	✓	✓	✓	Biodiversity Day; LBAP Meeting	✓
Grass snake	*Natrix natrix*	✓	✓	✓	Amphibians/Reptiles subgroup (DH)	✓
Slow worm	*Anguis fragilis*	✓	✓	✓	Amphibians/Reptiles subgroup (DH)	✓
INVERTEBRATES						
6. BEETLES						
a ground beetle	*Aepus marinus*	?	?	?	historical record for the River Rhymney, but no exact location; intertidal zone coastal sp, poss. occur in Newport CB (Luff, 1998; GGBAG)	
Various species	-	-	-	-	To add at a later date; Recorders Day	
7. WASPS, BEES AND ANTS						
Red wood ant*	*Formica rufa**	✓		✓	Adrian Fowles' report (CCW, 1994 and 2001 data) ; probably fairly widespread in Gwent (GGBAG)	✓
8. BUTTERFLIES AND MOTHS						
Bleached pug moth	*Eupithecia expallidata*	✓	✓	✓	Nb species; under-recorded (MA); Risca, 1985 (Horton, 1994) (GGBAG)	moths
Blomer's rivulet moth	*Discoloxia blomeri*	✓	✓	✓	Nb species; well-established (MA)	moths
*Bordered gothic moth	**Heliophobus reticulata*	✓	✓		stronghold in Glamorgan; 2 Gwent records; prob. under-recorded in both	✓
Broom-tip moth	*Chesias rufata*	✓		✓	Nb species; declining due to loss of habitat (MA)	moths
*Buttoned snout moth	**Hypena rostralis*	✓		✓	Risca, 1999 (MA); low density of records; GGBAG	✓

Common Name	Scientific Name	Present in CCB	Present in CCB/VC41 Glamorgan	Present in CCB/VC35 Gwent	Sources/Comments	Species Action Plan
Cloaked carpet moth	*Euphyia biangulata*	✓		✓	Nb species	moths
Comma butterfly	*Polygonia c-album*	✓	✓	✓	common in woods and gardens	
Devon carpet moth	*Lampropteryx otregiata*	✓	✓		Nb species	moths
Dingy skipper butterfly	*Erynnis tages*	✓		✓	more common in the west (Gwent) where seems to be increasing (GGBAG)	
*Double line moth	**Mythimna turca*	✓	✓		stronghold in Glamorgan and 3 Gwent records	✓
Grayling butterfly	*Hipparchia semele*	✓	✓	✓	coastal, but post-industrial land, quarries, spoil heaps, woodland rides, embankments inland; Mynyddislwyn, Machen and Abercarn (Horton, 1994)	
Great oak beauty moth	*Boarmia roboraria*	?			Nb species	moths
Grizzled skipper butterfly	*Pyrgus malvae*	?			historical records; mainly coastal and on calcareous grasslands and scrub (GGBAG)	
*High brown fritillary	**Argynnis adippe*	?			Biodiversity Day; Brynawel, 1989-1992 (MA); further survey a priority	✓
Little thorn moth	*Cepphis advenaria*	✓	✓	✓	Nb species; declining (MA); Risca, 1983 (Horton, 1994) (GGBAG)	moths
Lead-coloured pug moth	*Eupithecia plumbeolata*	✓		✓	Nb species; Penwllyn Grasslands SSSI (MA); 1987 (GGBAG)	moths
*Marsh fritillary	**Eurodryas aurinia*	✓	✓	✓	Biodiversity Day; Penllwyn '85-'97/2000, Aberbargoed (MA); CCW '99	✓
Meadow brown butterfly	*Maniola jurtina*	✓	✓	✓	common in grassland habitats and woodland rides throughout Britain	
Northern drab moth	*Orthosia opima*	✓		✓	Local and medium priority in Wales (MA)	moths
Orange tip	*Anthocharis cardamines*	✓	✓	✓	damp meadows	
Painted lady butterfly	*Cynthia cardui*	✓	✓	✓	a regular immigrant; usually common throughout lowland England and Wales	
Peacock butterfly	*Inachis io*	✓	✓	✓	common in gardens (nettles for egg-laying)	
*Pearl-bordered fritillary	**Boloria euphrosyne*	?			Biodiversity Day; disappeared since '80s (RS); last record in 1986 (Cwm Merdogg), not found, 1997 (GGBAG); may still be present (CCW)	✓
Red admiral butterfly	*Vanessa atlanta*	✓	✓	✓	common in gardens (nettles for egg-laying)	
Satin lutestring moth	*Tetheella fluctuosa*	✓	✓	✓	Local and medium priority in Wales (MA)	moths
Silver-washed fritillary	*Argynnis paphia*	✓	✓		Draethen, 2001 (VG)	
Small pearl-bordered fritillary	*Boloria selene*	✓	✓	✓	Butterfly Conservation (RS); declining in woodland habitats (GGBAG)	
Small tortoiseshell butterfly	*Aglais urticae*	✓	✓	✓	common in gardens (nettles for egg-laying)	
Thyme pug moth	*Eupithecia distinctaria*	✓		✓	Nb species; Risca, 1992 (Horton, 1994) (GGBAG)	moths
*Waved carpet moth	**Hydrelia sylvata*	✓	✓		Not recorded in Gwent since 1990 (MA); under-recorded	✓
White-marked moth	*Cerastis leucographa*	✓		✓	local and medium priority in Wales; UK stronghold S. Wales (MA); GGBAG	moths
9. CRUSTACEA						
*White-clawed crayfish	**Austropotamobius pallipes*	✓?			EA - no recent records; GGBAG	✓

Common Name	Scientific Name	Present in CCB	Present in CCB/VC41 Glamorgan	Present in CCB/VC35 Gwent	Sources/Comments	Species Action Plan
10. DRAGONFLIES AND DAMSELFLIES						
Azure damselfly	*Coenagrion puella*	✓	✓	✓	General dragonflies group identified on Biodiversity Day; widespread (SG)	Dragonflies and Damselflies
Banded demoiselle	*Calopteryx splendens*	✓	✓	✓	Biodiversity Day (generic dragonflies); widespread (SG)	
Beautiful demoiselle	*Calopteryx virgo*	✓			Biodiversity Day (generic dragonflies) restricted distribution (SG)	
Black darter	*Sympetrum danae*	✓			Biodiversity Day (generic dragonflies); restricted distribution (SG)	
Black-tailed skimmer	*Orthetrum cancelatum*	✓			Biodiversity Day (generic dragonflies); restricted distribution (SG)	
Blue-tailed damselfly	*Ischnura elegans*	✓	✓	✓	Biodiversity Day (generic dragonflies); widespread (SG)	
Broad-bodied chaser	*Libellula depressa*	✓	✓	✓	Biodiversity Day (generic dragonflies); widespread (SG)	
Common blue damselfly	*Enallagma cyathigerum*	✓	✓	✓	Biodiversity Day (generic dragonflies); widespread (SG)	
Common darter	*Sympetrum striolatum*	✓	✓	✓	Biodiversity Day (generic dragonflies); widespread (SG)	
Common hawker	*Aeshna juncea*	✓	✓	✓	Biodiversity Day (generic dragonflies); widespread (SG)	
Emerald damselfly	*Lestes sponsa*	✓	✓	✓	Biodiversity Day (generic dragonflies); widespread (SG)	
Emperor	*Anax imperator*	✓	✓	✓	Biodiversity Day (generic dragonflies); widespread (SG)	
Four-spotted chaser	*Libellula quadrimaculata*	✓			Biodiversity Day (generic dragonflies); restricted distribution (SG)	
Golden-ringed dragonfly	*Cordulegaster boltonii*	✓	✓	✓	Biodiversity Day (generic dragonflies); widespread (SG)	
Hairy dragonfly	*Brachytron pratense*	✓			Biodiversity Day (generic dragonflies); restricted distribution (SG)	
Keeled skimmer	*Orthetrum coerulescens*	✓			Biodiversity Day (generic dragonflies); restricted distribution (SG)	
Large red damselfly	*Pyrrhosoma nymphula*	✓	✓	✓	Biodiversity Day (generic dragonflies); widespread (SG)	
Migrant hawker	*Aeshna mixta*	✓			Biodiversity Day (generic dragonflies); restricted distribution (SG)	
Ruddy darter	*Sympetrum sanguineum*	✓			Biodiversity Day (generic dragonflies); restricted distribution (SG)	
Scarce blue-tailed damselfly	*Ischnura pumilio*	✓			Biodiversity Day (generic dragonflies); restricted distribution (SG)	
Southern hawker	*Aeshna cyanea*	✓	✓	✓	Biodiversity Day (generic dragonflies); widespread (SG)	
11. GRASSHOPPERS AND CRICKETS						
Various species	-	-	-	-	To add at a later date; Recorders Day/GGBAG	
MILLIPEDES						
a millipede	*Nanogona polydesmoides*	?			historical records; occurring throughout Gwent (GGBAG)	
12. SNAILS AND SLUGS						
Various species	-	-	-	-	To add at a later date; Recorders Day/GGBAG	
13. SPIDERS						
Various species	-	-	-	-		

Common Name	Scientific Name	Present in CCB	Present in CCB/VC41 Glamorgan	Present in CCB/VC35 Gwent	Sources/Comments	Species Action Plan
PLANTS, FUNGI AND LICHEN						
14. FUNGI						
*Olive-green earth-tongue	**Microglossum olivaceum*	✓	✓		2 records on Cefn Onn (CCW)	
various species	-	-	-	-	To add at a later date; Recorders Day	
15. LICHEN AND LIVERWORTS						
various lichen species	-	-	-	-	To add at a later date; Recorders Day	
Bog earwort	*Scapania paludicola*	?			historical records; GGBAG (SBt)	
Bog pawwort	*Barbilophozia kunzeana*	?			historical records; GGBAG (SBt)	
Fragrant crestwort	*Lophocolea fragrans*	?			GGBAG (SBt)	
a liverwort (Western pouncewort)	*Lejeunea lamacerina*	?			historical records (GGBAG); occurs on moist/wet rocks (SBt)	
16. VASCULAR PLANTS						
Adder's tongue fern	*Ophioglossum vulgatum*	✓			Scarce; loss of pastures and damp grasslands	
Autumn gentian	*Gentiana amarella*	✓			Rare; loss of calcareous grasslands	
Bee orchid	*Ophrys apifera*	✓		✓	Few records; recently seen at Pontymister industrial estate (TE)	orchids
Bluebell	*Hyacinthoides non-scripta*	✓	✓	✓	Biodiversity Day; Widespread (BSBI)	✓
Common spotted-orchid	*Dactylorhiza fuchsii*	✓	✓	✓	Biodiversity Day (orchids in general)	orchids
Common reed	*Phragmites australis*	✓	✓	✓	Biodiversity Day - reedbeds	statement
*Cornflower	**Centaurea cyanus*	?			historical records (GGBAG)	
Cornish moneywort	*Sibthorpia europaea*	✓		✓	BSBI (TE); very locally frequent in S. Wales; 1 site in Gwent (in CCB)	✓
Cowslip	*Primula veris*	✓		✓	Biodiversity Day; very few recent records; BSBI	✓
Early purple-orchid	*Orchis mascula*	✓	✓	✓	Biodiversity Day (orchids in general); BSBI data	orchids
Frog orchid	*Coeloglossum viride*	✓			Biodiversity Day (orchids in general); no recent records	orchids
Green spleenwort	*Asplenium trichomanes-ramosum (A. viride)*	✓		✓	only 3 sites for this species in VC35; one inlcudes the former lead-workings, Draethen (most southerly in Wales) (TE, 1972)	
Green-winged orchid	*Orchis morio*	✓			Biodiversity Day (orchids in general); no recent records	orchids
a Hawkweed	*Hieracium umbellatum* spp. *Bichlorophyllum*	✓		✓	occurs in only 4 VC35 sites; only 1 in CCB (roadside bank NE of Mynyddislwyn) (TE)	
Heath spotted-orchid	*Dactylorhiza maculata*	✓	✓	✓	Biodiversity Day (orchids in general); BSBI data	orchids
Leafy rush	*Juncus foliosus*	✓		✓	only one VC35 site; Ty'r sais farm, SW of Pen-y-fan Pond (TE)	
Marsh St John's wort	*Hypericum elodes*	✓		✓	wet heath or wet acid bog conditions; found in small nos; habitat scarce (draining/conifer planting); acid flush at Pont Gwaithyrhaearn (TE)	

Common Name	Scientific Name	Present in CCB	Present in CCB/VC41 Glamorgan	Present in CCB/VC35 Gwent	Sources/Comments	Species Action Plan
Meadow thistle	*Cirsium dissectum*	✓		✓	declined over past 25 years; Heol Ddu and Pontllanfraith (acid heath) (TE)	
*Pennyroyal	**Mentha pulegium*	?			historical records (GGBAG)	
Petty whin (needle whin)	*Genista anglica*	✓		✓	formerly 14 sites VC35; Pontllanfraith, Oakdale, Aberbargoed Grasslands, Heol Ddu, Twyn, Crumlin (acid heath//bog/marshy grassland) (TE)	
Purple ramping-fumitory	*Fumaria purpurea*	?			historical records (GGBAG)	
Pyramidal orchid	*Anacamptis pyramidalis*	✓			Biodiversity Day (orchids in general); no recent records	orchids
*Red hemp-nettle	**Galeopsis angustifolia*	?			Historical records (GGBAG)	
Royal fern	*Osmunda regalis*	✓			Rare; loss of heathland, ditches and bogs	
*Shepherd's needle	**Scandix pectenveneris*	?			historical records (GGBAG)	
*Small flowered catchfly	**Silene gallica*	?			historical records (GGBAG)	
Southern marsh-orchid	*Dactylorhiza praetermissa*	✓	✓	✓	Biodiversity Day (orchids in general); BSBI data	orchids
Wood bitter-vetch	*Vicia orobus*	✓		✓	12 VC35 sites; small numbers; Mynyddislwyn, Pengam grassland, St. Saunan's Churchyard, Bedwellty, wet heath in Pontllanfraith (TE)	
Yellow rattle	*Rhianthus minor*	✓	✓	✓	Biodiversity Day – neutral grasslands	statement

8.5.3 Habitats

Habitat	Present in CCB	Present CCB/VC41 Glamorgan	Present CCB/VC35 Gwent	Sources/Comments	Habitat Action Plan
1. WETLANDS					Habitat Statement
Rivers and Streams	✓	✓	✓	Biodiversity Day; LBAP Meeting; GlamBAG; including floodplains	
Ponds	✓	✓	✓	Biodiversity Day; LBAP Meeting	
*Fens	✓	✓	✓	LBAP Targets Guide (35.1ha); LBAP Meeting; GlamBAG; Nelson Bog	
*Reedbeds	✓	✓	✓	Biodiversity Day; LBAP Meeting; GGBAG; GlamBAG	
*Blanket Bog	✓	✓		LBAP Targets Guide (<0.01 ha/km); LBAP Meeting	
*Lowland Raised Bog	✓	✓		LBAP Meeting	
*Lakes and Reservoirs	✓	✓	✓	LBAP Targets Guide (Pen-y-fan pond = Mesotrophic Lake); LBAP Meeting	
*Swamp	✓	✓	?	LBAP Meeting	
Canals	✓	-	✓	LBAP Meeting; Mon-Brecon Canal Survey, 1998 (Crumlin Arm)	
2. DECIDUOUS WOODLANDS					Habitat Statement
*Wet woodland	✓	✓	✓	Biodiversity Day; LBAP Meeting; GGBAG; (GlamBAG)	
*Upland oak woodland	✓	✓	✓	LBAP Meeting; GGBAG and GlamBAG	

*Upland mixed ash woodland	✓	✓	✓	LBAP Meeting; GGBAG; (GlamBAG)	
*Lowland beech and yew woodland	?	✓	✓	LBAP Meeting; GGBAG; (GlamBAG)	
*Lowland wood pasture and parkland	✓	✓	✓	LBAP Meeting; GGBAG; (GlamBAG)	
3. PLANTED CONIFEROUS WOODLANDS					Habitat Statement
Planted coniferous woodlands	✓	✓	✓	Biodiversity Day; LBAP Meeting	
4. WILDLIFE CORRIDORS					Habitat Statement
*Ancient and/or species-rich hedgerows	✓	✓	✓	exact distribution unknown (CCW); Biodiversity Day; LBAP Meeting; GGBAG and GlamBAG; *Flora and Fauna of the Rhymney Valley* report[37]	
Roadside verges	✓	✓	✓	Biodiversity Day; LBAP Meeting; *Flora and Fauna of the Rhymney Valley* report[37]	
Railway lines and cycleways	✓	✓	✓	CCBC Biodiversity Day; LBAP Meeting; *Flora and Fauna of the Rhymney Valley* report[37]	
Stone walls	✓	?	?	LBAP Meeting; *Flora and Fauna of the Rhymney Valley* report[37]; the Islwyn and Rhymney Valley Landscape Strategies	
5. SPECIES-RICH GRASSLANDS					Habitat Statement
*Lowland neutral grassland	✓	✓	✓	LBAP Meeting; GGBAG; (GlamBAG)	
*Lowland acid grassland	✓	✓	✓	LBAP Meeting; GGBAG; (GlamBAG)	
*Lowland calcareous grassland	✓	✓	?	LBAP Meeting; GGBAG; (GlamBAG)	
*Rhos pasture (purple moor-grass)	✓	✓	✓	Biodiversity Day; LBAP Meeting; GGBAG; GlamBAG	
6. COMMON LAND					Habitat Statement
Common Land	✓	✓	✓	CCBC Biodiversity Day; LBAP Meeting	
7. FFRIDD/COEDCAE					Habitat Statement
Ffridd/Coedcae	✓	✓	✓	LBAP Meeting	
8. HEATHLAND					Habitat Statement
Upland Heath*	✓	✓	✓	LBAP Targets Guide (890ha); GGBAG and LBAP Meeting	
Lowland Heath*	✓	✓	✓	LBAP Targets Guide (179ha); LBAP Meeting; GGBAG and GlamBAG	
9. POST-INDUSTRIAL LAND					Habitat Statement
Naturally Revegetated Colliery Spoil	✓	✓	✓	Biodiversity Day; LBAP Meeting; CCBC Tip Register	
Landscaped Colliery Spoil	✓	?	?	Biodiversity Day; LBAP Meeting; Lands Reclamation Sites ownership record	
Quarries	✓	✓	✓	LBAP Meeting	
Refuse Tips	✓	✓	✓	CCBC completed refuse tips; many overgrown, casual bird sightings (NO)	
10. URBAN HABITATS					Habitat Statement
Domestic Gardens	✓	✓	✓	Biodiversity Day; LBAP Meeting	
Old Buildings	✓	✓	✓	Biodiversity Day; LBAP Meeting	
Unused urban/industrial land	✓	✓	✓	Biodiversity Day; LBAP Meeting	
Allotments	✓	✓	✓	LBAP Meeting; (NP, CCBC Leisure Dept.)	
Public Parks	✓	✓	✓	LBAP Meeting (SB)	

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PART II: HABITAT STATEMENT INDEX

FRAMEWORK FOR HABITAT STATEMENTS

1. INTRODUCTION

An introductory paragraph including information to explain why the habitats are important and have been selected for this Biodiversity Action Plan (BAP).

2. HABITAT DEFINITIONS

Defines the different types of habitats included in the broad group.

3. CURRENT STATUS

Describes the distribution and extent of the habitats in the UK, Wales, Glamorgan/Gwent and Caerphilly county borough.

Associated Species
Lists characteristic species associated with the habitats. Key species having a primary association with the habitat are highlighted in bold; actions for these will be included within Habitat Action Plans. Species with action plans in the LBAP are in *italics* and UK priority species are indicated by a star (*).

Links with other Habitats
Lists habitats in close association with those included in the statement. Main habitats are highlighted in bold, those covered by a statement in this LBAP are in *italics* and a star highlights UK priorities (*).

4. CURRENT FACTORS AFFECTING THE HABITAT

Lists factors currently causing loss/damage or threatening the habitats.

5. CURRENT ACTION

Lists current actions being undertaken for the habitats.

6. CONSERVATION DIRECTION

Identifies the main objectives for habitat conservation and possible actions (for writing HAPs).

WETLANDS HABITAT STATEMENT

1. INTRODUCTION

Wetlands, like many other habitats in the UK, have been subjected to degradation by the past influence of humans. The majority of wetland areas have either been lost due to land drainage for agriculture, industry, urban sprawl, or physically modified for flood protection schemes. A wide range of environmental factors influence wetlands and their communities. The local geology will have an effect on the chemistry of the water, also the source and quality of the water.

Wetlands play an important role within Caerphilly county borough, providing essential habitats for a diverse range of animals and plants. The numerous ponds, rivers and fens support nationally important species such as water vole and otter. Wetlands are an important habitat type and consequently have been selected for inclusion in this LBAP. Some have been identified in the UK BAP[49], and are marked with a *, but others such as ponds are significant for biodiversity conservation locally. The habitats included in this Habitat Statement are:

- **Rivers, Streams and Floodplains**
- **Ponds**
- **Fens***
- **Reedbeds***
- **Blanket Bog***
- **Lowland Raised Bog***
- **Lakes and Reservoirs** (standing open water*)
- **Swamps**
- **Canals**

2. HABITAT DEFINITIONS

Where applicable National Vegetation Classification (NVC) Communities are listed in the appendix to this habitat statement.

2.1 Rivers, Streams and Floodplains

In their natural state rivers are dynamic systems, continually modifying their form. Many rivers in the UK have been physically modified by humans, for example through flood defence structures and impoundments, but such rivers still represent a very valuable biodiversity resource.

The mosaic of features found in rivers and streams support a diverse range of plants and animals, from the truly aquatic species such as the stickleback and fresh water shrimp to those that spend part of their life cycle in the water, such as mayflies and damselflies. A wide range of habitats are associated with rivers and streams from the steep fast flowing conditions in the upper reaches of catchment areas, to meanders, shingle beds and sand bars in the mid to lower reaches.

All rivers and streams in the county borough are covered in this statement, including the adjacent floodplains and grazing marsh. The river often acts as a wildlife corridor link between fragmented habitats in farmed areas. With extensive ditches, banks and other habitats they provide important transitional zones to the floodplain. River floodplains often include grazing marsh in some catchment areas; these are grasslands that are periodically flooded due to their

low-lying position near the coast or in river floodplains. Unimproved sites are very rich areas for wildlife, often supporting rare plant and invertebrate communities and offering good habitat for breeding waders such as lapwing and curlew. However, the majority are improved and/or drained in order to provide for more intensive grazing, resulting in low biodiversity. The drainage ditches, though, can contain important populations of rare plants and invertebrates even where the diversity of the surrounding pastures is low.

2.2 Ponds

The definition by the Pond Conservation Group[35] defines a pond as "an area 1 metre to up to 2 ha which holds water for at least 4 months." The majority of ponds will hold water for 12 months of the year, but where they dry out (usually in high summer) they are known as seasonal ponds. Artificially constructed ponds, such as settlement ponds created to collect silt from run-off (e.g. from roads and land reclamation sites) and garden ponds for aesthetic, ornamental and wildlife reasons, are also included in this category.

2.3 Fens

Fens are peatlands which receive water and nutrients from surface and ground water as well as from rainfall, and they are usually found on peat that is more than 0.5m deep. The water table is at or just below the surface.

The species composition of fens is dependent on the mineral content of the water feeding it, derived from the rocks beneath or adjacent to the fen. The most diverse fens are fed by calcareous waters, but the one fen in Caerphilly county borough is fed with water from base-poor rocks such as shales and sandstones and it is therefore called a 'poor fen'.

2.4 Reedbeds

Reedbeds are characterised by stands of tall, emergent vegetation dominated by the common reed *Phragmites australis,* where the water table is at or above ground level for most of the year. These include areas such as open water fringe habitats at the edges of lakes, and riverine and estuarine watercourses. They can be either freshwater reedbeds or brackish reedbeds in tidal reaches, although Caerphilly has only examples of the former. The common reed can grow up to 3m tall and often forms dense, almost impenetrable stands with a thick ground layer of decaying stem and leaf litter. Areas of open water and ditches are also associated with reedbeds, and small areas of wet grassland (rhos pasture) and wet woodland (carr) may also occur. Key controlling factors that govern the type, composition and zonation of communities present at a site include hydrology (mean water level and seasonal range), water quality (pH, base and nutrient content), soil fertility, successional history, site context and past management (grazing, peat-cutting, burning, etc). Although common reed is always the dominant species other plant species can be found amongst the reed, but when other tall herbs make up a large component it would no longer be classed as a reedbed.

Reedbed includes several NVC communities (see appendix). Several of the larger secluded reedbeds in Wales provide an important habitat for scarce or declining birds such as the bittern and Cetti's warbler. A bittern was last recorded in Caerphilly in 1970. They also support rare and scarce plants and invertebrates.

2.5 Blanket Bog

Blanket bog is a general term used for peat-forming ecosystems where the ground is periodically or permanently waterlogged by high rainfall, poor drainage and a high water table. Peat forms not only in wet hollows but also over large expanses of the undulating land surface,

usually between 250 – 700 m. They are seldom found on slopes of up to 30% hence the descriptive name blanket bog. Rainfall is the sole supply of water and the dominant supply of nutrients to the peat vegetation. The vegetation is dominated by heather (*Calluna vulgaris*), cross-leaved heath (*Erica tetralix*), deer grass (*Scirpus cespitosus*), cotton grasses (*Eriophorum vaginatum* and *E. angustifolium*) and purple moor-grass (*Molinia caerulea*). These species are found in various combinations and dominance depending on the altitude and the degree of water logging and drainage. Blanket bog often occurs in a mosaic with rock outcrops, acid grassland and upland dry heath.

The presence of hard, acidic rock and base deficient soils favours the development of surface, acid loving plant communities in which *Sphagnum* is abundant. The drainage is usually diffuse and undisturbed blanket bog often shows a hummock-and-hollow structure, with *Sphagnum*-rich pools in the hollows.

2.6 Lowland Raised Bog

Lowland raised bogs are peatland ecosystems, which develop primarily, but not exclusively, in lowland areas such as on estuarine floodplains, along river flood plains and in topographic depressions. In such locations drainage may be impeded and the resultant water-logging provides anaerobic conditions which slow down the decomposition of plant material, leading to an accumulation of peat. The continued accumulation of peat elevates the bog surface above groundwater levels in the surrounding area to form a gently curving dome, from which the term 'raised' bog is derived. The thickness of the peat varies considerably, but is known to exceed 12 metres in some areas.

2.7 Lakes and Reservoirs

Lakes are defined as natural permanent water bodies of 1ha or more[12]. Reservoirs are also permanent bodies of water, but have been constructed artificially. Three different types of lakes and reservoirs are described below.

2.7.1 Oligotrophic lakes and reservoirs

Oligotrophic waters are nutrient poor and typically found in the northern and western parts of Britain. Waters tends to be clear with a low biomass of plankton, and have restricted aquatic plant growth and invertebrate populations. These lakes and reservoirs are important for invertebrate groups such as mayflies and caddis, and usually support reasonable numbers of native brown trout (*Salmo trutta*), minnow (*Phoxinus phoxinus*) and stickleback (*Gasterosteus aculeatus*). Water is generally very clear with a rocky or sandy substrate and usually has a pH of less than 7. Discolouration may occasionally occur due to the presence of acids derived from peat within the catchment area.

2.7.2 Mesotrophic lakes and reservoirs

Mesotrophic lakes and reservoirs are generally found between the nutrient-poor mountain lakes and the more nutrient-rich lakes in the lowlands. They are capable of sustaining the highest diversity of flora and fauna, but are particularly sensitive to disturbance from a range of activities which stimulate nutrient supply. The water is sometimes discoloured by phytoplankton, and has a pH usually around or slightly below neutral. Approximately 600 known or potentially mesotrophic lakes have been identified within the UK, 33 of these being within Wales. Further work is being carried out to confirm the status of these waters, as samples have to be taken on a quarterly basis to establish an average nutrient level.

2.7.3 Eutrophic lakes and reservoirs

These are the end result of the process of nutrient enrichment. They are rich in plant nutrients, particularly phosphates, and support large populations of both plants and animals. Indeed, many are nationally important wintering sites for large numbers of wildfowl. Water is generally clouded with algae, pH is usually over 7 and substrates tends to be highly organic mud and silt. Eutrophic waters also contain large populations of coarse fish, particularly Roach (*Rutilus rutilus*), Bream (*Abramis brama*) and Pike (*Esox lucius*).

2.8 Swamps

This habitat is defined as emergent or frequently inundated vegetation, occurring over peat or mineral soils. Swamp contains tall emergent vegetation typical of the transition between open water and exposed land. Swamps are generally standing water for a large part of the year, and the species typically include both mixed and single-species stands of bulrush *(Typha* spp), common reed, *(Phragmites australis),* reed canary-grass *(Phalaris arundinacea),* reed sweet-grass *(Glyceria maxima),* tussock sedge *(Carex paniculata),* lesser pond sedge *(C. acutiformis),* bottle sedge *(C. rostrata)* or other tall sedge. Single-species stands are mainly found in deeper water (single stands of common reed have been described separately in section 2.4).

2.9 Canals

Canals can be very important for wildlife and often support highly diverse assemblages of plants and animals, particularly those that no longer carry heavy boat traffic. The aquatic habitats together with the margins, towpath and hedge, or other boundary features provide shelter and/or emergence sites for aquatic, semi-aquatic and terrestrial animals. Canal tunnels and bridges may provide important roosting and breeding sites for bats. The associated habitats are themselves often species-rich, and some are relicts from formerly widespread habitats such as unimproved grassland, marsh and wet woodland/carr. Canals can also provide important linear corridors for the movement of species.

3. CURRENT STATUS

3.1 Rivers and Streams

Caerphilly county borough covers two main river catchments: the Ebbw and Rhymney, within which the rivers Ebbw, Rhymney and Sirhowy flow, along with their tributaries and streams **(Map 1.1).** Ancient and semi-natural woodlands, heathland, wet marshy grassland areas (rhos pasture), and other species-rich grasslands are often found alongside rivers in the county borough.

The **River Rhymney** rises above the town of Rhymney. It is a deep cutting river, passing southwards through a relatively wide valley for approximately 58km, before discharging into the Severn Estuary at Cardiff. The total catchment area is 233km^2 with 275km of rivers and streams within it. The river passes through the towns of Rhymney, New Tredegar, Bargoed, Ystrad Mynach and Caerphilly[25]. Important habitats on the **Nant Bargoed Rhymney**, for example, include a wet marshland, with frequent broadleaved woodlands on the middle and lower reaches, and good habitats containing species poor, rush dominated, semi-improved grassland. Improvements to water quality, has given rise to the return of otters to the Rhymney River. Fish species found in the **Rhymney** include salmon, sea, brown and rainbow trout, stickleback, chub, dace, roach, minnow, common eel and grayling.

The **River Ebbw Fawr** starts at several small streams north of Carno Reservoir in the Brecon Beacons. The actual **River Ebbw** forms at the confluence of the Ebbw Fawr and Ebbw Fach at

Aberbeeg, north of Crumlin. From the source of the Ebbw Fawr to the River Usk the river travels 47km. The River Ebbw passes through main settlements of Crumlin, Newbridge, Abercarn, Crosskeys and Risca, and finally passes into Newport[25]. It has been greatly modified by successive periods of industrialisation over many years. Activities such as mining have caused many changes to the channel and associated flora. Since much of the industrial activity has ceased many of the natural features associated with rivers have started to return, e.g. berms riffles and pools within previously modified channels. Signs of otters have been recorded in the lower Ebbw.

The source of the **River Sirhowy** can be found to the west of Shon-Sheffrey's Reservoir below Trefil in Blaenau Gwent county borough. From its source it travels 32.6km before entering the river Ebbw north of Risca. The catchment area is 76.1 km^2. The river passes through Tredegar, Blackwood, Pontllanfraith, Ynysddu, Cwmfelinfach and into Crosskeys[25]. Ancient woodland bank flora is quite common on this river, including species such as wavy hair grass *Deschampsia flexuosa*, remote sedge *Carex remota*, wood sorrel *Oxalis acetosella* and fern *Dryopteris* spp. Such communities occur frequently where the valley side ancient woodland is adjacent to the channel.

The rivers of Caerphilly county borough like many other valley rivers have suffered due to past industrial practices and urban development. More recently extensive flood alleviation schemes have resulted in loss of floodplain habitat, and have also altered the course and nature of the riverbed and bank. Erosion of banks has also been caused by canalisation and the removal of tree cover in historic times. Eutrophication is a major problem in more recent times and can have a detrimental effect on the floodplain habitat that still retains some connection with the main stream.

Since the decline of coal mining and other traditional heavy industry the quality of watercourses in Caerphilly county borough has greatly improved. Wildlife is returning and the rivers, tributaries and flood plains are fast becoming significant contributors to the biodiversity of the county borough. We are now witnessing the return of the otter, dipper and grey wagtail. However, several areas of the catchment are suffering pollution from sewage and metaliferous mine waters and extensive littering of windblown and fly-tipped materials.

The following Sites of Importance for Nature Conservation (SINC) contain rivers or streams within their boundaries[4]: **(Map 1.1)**

10: **Craig Ysgwydd-Gwyn**; several small streams run through site
11: **Cwm-Llydrew Wood**; ancient oak wood alongside stream
15: **Coed Deri-Newydd**; stream flows through site
19: **Y-Graig Mire**; stream issues on site
37: **Nant Cwm-Crach**; part of site is an alder lined stream
39: **Cwmsyfiog River Meadow**; alongside the River Rhymney
43: **Pentwyn Fields**; small stream and pond
44: **Princetown Meadows**; a number of streams run through site
62: **Caenau Cwm-Corrwg**; River Sirhowy flows through site
70: **Cyncoed Fields**; stream through part of site
88: **Brittania Woods**; various streams running through the woodland
110: **Cwm Gawni Woodland**; with stream
117: **Nant Cae'r-Moel Swamp and Woodland**; stream through woodland
149: **Cwmcarn Slopes**; Nant Carn provides an important stream habitat with a range of riffles, pools and undercut banks

157: **Coed y Mochyn, Risca**; river runs through woodland
167: **Churchill Meadows**; 2 minor streams run through site, water cress is abundant

The total area of coastal and floodplain grazing marsh in Wales has been estimated at 80,000 ha. This amounts to 3.9% of the total area of Wales, and 17% of the habitat within the UK. In Caerphilly county borough, floodplain grazing marsh is limited to small areas adjacent to the main rivers as identified on Map 1.1.

3.2 Ponds

Current figures for England and Wales indicate that 63% of ponds have been lost over the past 100 years, and are continuing to be lost in Britain as a whole at a rate of 9,000 per year[35]. Ponds are considered wildlife havens, for half of Britain's wetland plants and 300 Red Data Book species are associated with ponds. Research data collected on behalf of the EA and the DETR suggests that ponds are as important a wildlife habitat as rivers. The research identified 431 species of invertebrates in 200 best ponds in Britain, compared to 377 species in the 600 best rivers. Ponds were found to contain 78 'Nationally Notable' species, compared with 41 in rivers; and there were also 26 Red Data Book species found in ponds, twice the number found in rivers[32]. Ponds are also significant habitat for common species which may become endangered if there is further pond loss, for example the common frog *Rana temporaria,* or smooth newt *Triturus vulgaris.* Article 10 of the EU Habitats and Species Directive[23] identifies ponds, among other habitats, as stepping-stones that "are essential for the migration, dispersal and genetic exchange of wide ranging species".

There are a large number of potential ponds in Caerphilly county borough, but as yet there has been no systematic survey to identify their presence and importance for wildlife. For example, settlement ponds are found at Penallta Community Park, and there are several quarry ponds, e.g. on Mynydd-y-Grug and Llanbradach Quarry SSSI and several ponds occur in Aberbargoed Fields SAC. There are also likely to be a large number of garden ponds in the county borough, and a community survey of these is required.

The following Sites of Importance for Nature Conservation (SINC) contain ponds within their boundaries[4]: **(Map 1.2)**

3: **Tair Carreg Moor**; contains 4 ponds
6: **Mile End Pond**, Abertysswg
9: **Cefn Gelligaer**; series of ponds on part of site
25: **Hafrodrissclawdd**, east of Markham; includes a small artificial pond
43: **Pentwyn Fields**; pond as part of site
44: **Princetown Meadows**; a number of ponds add to the diversity of this site
52: **Cefn Hengoed Hillside**; pond in the eastern part of site
61: **Valentec Nature Reserve**
74: **Nelson Ponds**, Tredomen
87: **Upper Trelyn Marsh**; small pond on site
101: **Pant-Ysgawen Fields**, Tredomen; 2 small ponds provide additional habitat on part of site
115: **Pwllgwinau**, east of Newbridge; deep pond on site (all 3 species of newt present)
126: **Maesycwmmer Meadows**; includes a farm pond on part of site
131: **Twyn Yr Oerfel**; upland mire and pond
140: **Coedcae Newydd**; deep pond in flooded quarry
151: **Twmbarlwm**; several seasonal ponds near road
162: **Coed y Brain**, Penyrheol; pond in the Llanbradach quarry
183: **Coed Cefn-Pwll-Du**; area of colliery spoil and associated pond

3.3 Fens

The UK is thought to host a large proportion of the fen surviving in the EU. As in other parts of Europe fen vegetation has declined dramatically in the past century. Generally fens in intensively farmed lowland areas occur less frequently, are smaller in size and more isolated than in other parts of the UK. Fens are dynamic semi-natural systems and in general, management is required to maintain open-fen communities and their associated species-richness. Without appropriate management (e.g. mowing, grazing, burning, peat-cutting, scrub clearance), natural succession will lead to the formation of scrub and woodland.

CCW's Phase 1 Habitat Survey recorded a total of 2728 ha of fen (basin, valley and floodplain mire). The LBAP Target Guide (CCW)[12] currently in preparation gives a figure of 10 ha of valley mire in Caerphilly county borough, and a total of fen and flush (soligenous fen) at 26 ha. In the county borough, **Nelson Bog SSSI** (SINC 55) **(Map 1.3)** supports the only significant example of fen, but there are likely to be small fragments of fen that occur in other sites.

3.4 Reedbeds

Reedbed remains a rare habitat in the UK with only an estimated 5000ha, and of the 900 or so sites contributing to this total, only about 50 are greater than 20ha, and these comprise a significant proportion of the total area. CCW's Phase 1 Habitat Survey identified 48 ha of single-species swamp that includes reedbeds as a component, but the report did not quantify the extent and distribution of reedbeds in the Gwent and Glamorgan regions.

Many reedbeds are small in size with critically small populations of associated species. Most of the large areas of reedbed have been lost as a result of land drainage and water abstraction, and the predicted rise in sea level could also destroy many important coastal examples.

In Caerphilly county borough the main area known for reedbed is **Nelson Bog SSSI** (SINC 55), **(Map 1.4)** in association with its fen habitat[4]. This site is significant for its population of breeding birds, in particular the reed bunting and water rail. There are also water vole and (perhaps) otter at this important local wetland area. However, there is a lot of overlap between reedbed, swamp and fen habitats, with these often having a small component of reedbed. Management proposals should therefore ensure that all wetland features are retained.

3.5 Blanket Bog

The British Isles has between 10-15% of the total world resource of blanket bog (approximately 1.48 million hectares) and a major part of the total resource of blanket bog in the EU occurs in the UK[12]. Scotland has by far the largest proportion of this, approximately 1,060,000 ha, with Wales supporting around 70,000 ha (4.7% of the UK total) and England some 215,000ha. Significant proportions of peat soil, probably in excess of 10%, no longer support blanket bog vegetation. Comprehensive figures for changes to the total UK resource are not known, but studies carried out in Scotland suggest a 21% reduction in the extent of blanket mire between the 1940s and 1980s. This has mainly been attributed to afforestation, and substantial losses to forestry are reported in Wales. Further losses can be put down to drainage and heavy grazing, peat cutting and atmospheric pollution, resulting in significant habitat change in, for example, mid and south Wales and the Pennines. The Welsh resource has particular biogeographical significance as blanket mire is absent across much of this latitudinal range in England, disappearing south of the Pennines until Dartmoor in the south-west. Welsh examples also encompass much of the core range of ecological variation of this habitat in Britain. Much is above 250m where the annual precipitation exceeds 1200mm, and in Upland areas. However, an

estimated 540ha of blanket bog occurs at elevations below the general upper limit of agricultural enclosure in Wales.

The presence and variety of associated plants, birds, invertebrates and lower plants, particularly species of bog moss (*Sphagnum* spp.), are important indicators of this habitat's quality. Notable species include bog rosemary (*Andromeda polifolia*), hen harrier (*Circus cyaneus*), merlin (*Falco columbarius*), skylark (*Alauda arvensis*), golden plover (*Pluvialis apricaria*), short-eared owl (*Asio flammeus*) and the nationally scarce large heath butterfly (*Coenonympha tullia*) which is confined to this habitat.

In Caerphilly county borough all blanket bog appears to have been modified in both upland and lowland areas, and occurs on the following SINCs[4]: **(Map 1.5)**

1: **Traed y Milwyr, Llechryd** (on peat)
54: **Waun Rydd, Gelligaer** (on peat)
175: **Nant Gwaunybara Mire** (on peat)

3.6 Lowland Raised Bog

In the UK lowland raised bogs are a particular feature of cool, rather humid regions such as the north-west lowlands of England, the central and north-east lowlands of Scotland, Wales and Northern Ireland. Remnants also occur in some southern and eastern localities, such as Somerset, South Yorkshire and Fenland. As elsewhere across NW Europe there has been a dramatic decline in the area of lowland raised bog habitat since around the start of the nineteenth century. The area of lowland raised bog in the UK retaining a largely undisturbed surface is estimated to have diminished by around 94% from an original c.95,000 ha to c6,000 ha at the present day, with a reduction from 4,000 ha to 800 ha in Wales (England: 37,500 ha to 500ha; Scotland: 28,000 ha to 2,500 ha, Northern Ireland 25,000 ha to 2,000 ha)[49]. Historically, the greatest decline has occurred through agricultural intensification, afforestation, and commercial peat extraction. Future decline may result from the gradual desiccation of bogs damaged by a range of drainage activities and/or a general lowering of groundwater tables.

Lowland raised bogs support a distinctive range of animals including a variety of breeding waders and wildfowl, and invertebrates. The raised bog surface may support a patterned mosaic of pools, hummocks and lawns, a micro-topography created in part by plant growth. This provides a range of water regimes supporting different species assemblages. Plant accumulation preserves a unique and irreplaceable record of plant and animal remains and some atmospheric deposits from which it is possible to assess historical patterns of vegetation, climate change and human land use.

Caerphilly county borough supports only one known example of a raised bog at **Nelson Bog SSSI**[4] (SINC 55) **(Map 1.6).** The majority of the bog however was lost in the 1970s as a result of tipping colliery spoil, and the remaining area is heavily modified from drying out and heavy grazing.

3.7 Lakes and reservoirs

Lakes and reservoirs within the county borough tend to be restricted to the upland areas of common land, or in the case of the Rhymney reservoir, in the valley area north of the A469 constituting an impoundment of the catchment area of the river Rhymney. Very few areas of open standing water are found along the valley floors or near urban developments. There are a

small number of exceptions, however, these being Caerphilly castle moat and the lakes at Parc Cwm Darran.

During the past ten years, an increasing number of smaller areas of open water have been constructed as commercial fisheries, but the nature conservation value of these is limited. Almost all lakes and reservoirs within the county borough are nutrient poor (oligotrophic) with the exception of Pen-y-fan pond. This is the only example of moderately nutrient rich (mesotrophic) water in the area, and one of only 33 in Wales.

Lakes and reservoirs within the county borough are all privately owned, (with the exception of Caerphilly Moat, Pen-y-fan pond and Parc Cwm Darran lake) either by industrial organisations such as Chorus (British Steel) and British Coal or Dwr Cymru/Welsh Water. All are man made and no examples of natural lakes occur in the county borough. They provide a variety of functions including water supply for drinking, or as a cooling agent. Former mine and canal feeder ponds are now leased to angling clubs or syndicates. The following lakes or reservoirs occur in Caerphilly county borough: **(Map 1.7)**

Oligotrophic Examples:
Rhymney reservoirs; SO 103103 and SO 098105
Butetown pond; SO 101091
Rhaslas pond; SO 095072
Nant y Draenog reservoir; ST 189935
Jepsons pond SO 085093
SINC 147: Distillery Pond, Abercarn (reservoir)[4]

Mesotrophic Examples: Pen-y-fan pond SO 006198 (Pen-y-Fan Pond and Meadows SINC); this is an unusual example of a mesotrophic lake in the county borough, because its geographical location generally corresponds with typical oligotrophic water. Situated in an upland area, between the Ebbw and Sirhowy valleys, it receives its water from a single rain-fed stream emerging from Mynydd Pen-y-fan, an area of acidic habitats.

Eutrophic Examples: There are no documented cases of eutrophic waters within the county borough, although waters such as Parc Cwm Darren, Caerphilly castle moat and Fochriw feeder pond are potential cases due to the activities of coarse fish that have been stocked into these very shallow waters. Nutrients released into the water column by bottom feeding, the quantity of anglers baits and feed introduced into the water combined with the reduction in light penetration, due to suspended solids, produce a similar effect to that of dense algal blooms. Further work is required to assess the exact status of these waters.

3.8 Swamps

CCW's Phase 1 Habitat Survey recorded a total of 1802 ha of swamp in Wales, but it did not distinguish between reedbed and other types of swamp. Swamps are often found in association with fen and reedbed, and only a few fragments of swamp are known in the county borough, in particular Nelson Bog, Llanbradach Swamp and Crown Roundabout Marsh. The CCW LBAP Target Guide draft[12] identifies 9.2 ha of swamp in the county borough. The following Sites of Importance for Nature Conservation contain swamp communities[4]: **(Map 1.8)**

55: **Nelson Bog SSSI**
84: **Crown Roundabout Marsh, Pontllanfraith**
117: **Nant Cae'r-Moel Swamp and Woodland**
126: **Maesycwmmer Meadows**; some areas of mire

131: **Twyn Yr Oerfel**; upland mire and pond
162: **Coed y Brain**, Penyrheol (Llanbradach swamp)

3.9 Canals

Construction of canals in the UK took place predominantly between 1750 and 1830, although some were built much earlier and others later. The main concentration of canal construction was in the Midlands linking it to London. Outlying areas often only had local canals. British Waterways currently owns 2,012 miles (including some river navigation) of canals, representing 52% of the canal network in Britain.

The western arm of the Monmouthshire - Brecon Canal lies within Caerphilly county borough, known as 'The Crumlin Arm'. The canal was first opened in 1796 and within Caerphilly county borough runs from Pontywaun, past Crosskeys, through the centre of Risca to the Newport/Caerphilly county borough boundary between Risca and Rogerstone[15]. At present the canal can no longer be used for navigation along it's entire length, as it has been traversed by a number of developments. It is now a series of short linear water bodies connected mainly by pipes beneath roads. There is only very light boat usage on certain lengths and these provide a valuable wildlife resource. The canal contains open water habitats and swamp communities along its edges including stands of reed sweet grass and in places more diverse communities such as water cress, water mint and reedmace, yellow flag and gipsywort[15]. Its margins, towpaths, hedges and tunnels are of high value to wildlife providing a mixture of terrestrial and wetland habitats.

The canal is of importance as a wildlife corridor, for species that use its aquatic and terrestrial habitats, however, it is broken up by roads crossing the canal and so is not as effective as it could be. Some bank stabilisation works have severely reduced the wildlife value in some areas, restricting the colonisation of bank side flora and fauna, but in other areas a more natural margin has developed enabling the establishment of emergent vegetation. Moorhen are breeding in several areas along the canal where reed sweet-grass is dominant, and the water vole and otter may also be attracted to certain areas of the canal, especially where it is in close proximity to the River Ebbw, noted for its otter population[15]. Many species of invertebrates are found on the canal, including a number of dragonflies and damselflies, and could support crayfish, although no survey work has been undertaken to confirm this. **Map 1.9** shows the location of the canal in the county borough.

3.10 Associated Species

- **Birds**: Breeding: ***reed bunting****, ***kingfisher***, ***dipper***, ***grey wagtail***, curlew,* water rail, common sandpiper, black headed gull, mallard, little ringed plover, mallard, heron, teal; Other species: *bullfinch*, green woodpecker,* sparrowhawk, common scoter, goosander, sand martin (feeding area), swallow (feeding area), swift (feeding area), divers, cormorant
- **Mammals**: ***water vole****, ***European otter****, *daubentons, natterers, noctule, pipistrelle*, lesser horseshoe* bats*
- **Amphibians**: ***great-crested newt****, ***palmate newt***, ***smooth newt***, ***common toad***, ***common frog***
- **Reptiles**: *grass snake*
- **Fish:** ***common eel***, ***bullhead***, ***three-spined stickleback***, ***brook lamprey***,

stone loach, ***native brown trout***, ***salmon*** *and* ***sea trout***, bream, pike, roach and various other fish species

- **Invertebrates:** ***dragonflies and damselflies***
- **Crustacean**: ***freshwater white-clawed crayfish****
- **Plants**: ***common reed***, *Orchids*

3.11 Links with Other Habitats

- *Deciduous Woodlands* (wet woodland, e.g. willow and alder carr)
- *Wildlife Corridors* (hedgerows)
- *Species-rich Grasslands* (rhos pasture)
- *Common Land* (mosaic of wetland habitats)
- *Urban*

4. CURRENT FACTORS AFFECTING THE HABITATS

- Nutrient Enrichment: Nutrient enrichment stimulates the growth of algae that rapidly utilise excess phosphorous and nitrogen dissolved in the water column. Algal blooms, particularly blue green, are thus a common indicator of nutrient enrichment. **(All open water habitats)**. Wetlands are very sensitive to change, particularly where nutrient levels are affected by:
    - the discharge of effluents;
    - leaching and erosion of nutrients from agricultural land and forestry,
    - the liberation of nutrients from lake sediments by bottom feeding coarse fish, and
    - alterations in agricultural management practices and industrial or land development strategies within the catchment areas of lakes and reservoirs can quickly alter the chemical balance of a water body, particularly if shallow and relatively small in size. Oligotrophic waters can become eutrophic within a matter of years. **(lakes and reservoirs)**;

- Climate Change: potential threats from sea level rise and global warming **(All)**

- Inappropriate Management and Neglect: heavy grazing by sheep, cattle and horses and uncontrolled burning which can lead to increased erosion and the loss of characteristic wetland species **(blanket and raised bog)**; lack or inappropriate management of existing wetlands leading to drying, scrub encroachment and succession to woodland **(All)**

- Development: many forms of development can have an effect on wetland habitats, both directly by removing or altering the habitat and indirectly for example by altering surface and ground water movements**(All)**

- Drainage: **(fen, reedbeds, raised bog)**; physical modification and management for drainage, flood prevention and navigation **(rivers, streams and floodplains)**;

- Agriculture: agricultural improvements including drainage and fertiliser application **(blanket bog)**; conversion to intensive agriculture **(fen, reedbeds and ponds)**; use of adjoining land for intensive agriculture, leading to pollution and increased rates **(rivers, streams and floodplains)**;

- Water Abstraction: over abstraction from groundwater or river resulting in low water flows **(rivers and streams)**; and drying out of other wetland habitats; water abstraction for industrial use creates greatly fluctuating water levels, particularly amongst those water bodies feeding the Ebbw Vale tin plate works. This creates unstable marginal and aquatic habitats, loss or reduction of marginal and emergent flora with knock-on effects to higher order species and a resultant decrease in biodiversity **(lakes and reservoirs)**; abstraction from underlying aquifers may limit the re-wetting potential of certain sites. **(raised bog)**

- Pollution: indirect (diffuse) or direct (point source) pollution, increase in mine water discharge, domestic sewage, agricultural run off, industrial run off, litter and fly-tipping **(rivers, streams and floodplains and reedbeds)**; pollution from sulphate and nitrate deposition, and acidification from atmospheric deposition **(blanket bog)**; contamination from adjacent landfill, opencast, or agricultural drainage. Current deposition of atmospheric pollutants. **(raised bog)**; two stroke oil emissions from boats also cause water borne pollution leading to degradation of water quality and damage to aquatic life **(lakes and reservoirs)**

- Invasive Species: threat from invasion of non-native species such as Japanese Knotweed, mink, North American crayfish **(rivers, streams and canals)**; canals are also prone to alien invasion such as *(New Zealand pigmyweed)*

- Forestry: previous planting of trees, mainly non-native species over extensive tracts of bog and also on adjacent tracts of land can affect hydrology. Aerial spraying of fertilisers and pesticides can drift onto bogs; impacts of existing and new plantations on neighbouring areas can dry out adjacent bogs and act as an invasive seed source **(raised and blanket bog)**

- Natural erosion process **(blanket bog, raised bog)**

- Natural succession: wetlands are dynamic, and unless actively managed can revert to woodland **(All except rivers and streams)**

- Human Activities: wake and wash damage from certain forms of powered watersports can cause significant damage to emergent vegetation, this results in a loss of cover for other species, and a reduction in biodiversity. **(lakes and reservoirs and canals)** towpath use has been increased as part of the National Cycleway; light boat use, walking and angling **(canals)**

- Overstocking: of coarse fish species, particularly carp in to small and shallow still-waters, can result in a degradation of water quality through their feeding habits. Increased silt levels within the water column results in an almost total blocking of sunlight and loss of aquatic plant and invertebrate species. **(lakes and reservoirs)**

- Size: small total area of habitat and critically small population sizes of several key species dependent on this habitat. **(reedbeds)**

- Lack of Knowledge amongst planners, farmers and landowners of the value of wetlands for wildlife **(reedbeds, swamps and bogs)**

- Design of Garden Ponds: the location, size, shape, materials and introduced plants and animals are all important considerations when constructing a garden pond. In particular the introduction of non-native species which can become invasive and can spread out into the surrounding area, especially when inadvertently put into more natural ponds.

5. CURRENT ACTION

5.1 The Environment Agency and water companies have a statutory duty to further the conservation value of the sites they own or manage (Water Resources Act 1991). The EA also has a statutory responsibility for pollution.

5.2 The duty to further conservation applies to the water management functions of the EA from 1996, while the pollution control functions of the Agency must regard the desirability of conserving and enhancing features of special interest.

5.3 Where possible, the Environment Agency carries out maintenance work on watercourses in such a way as to enhance the conservation value of the site.

5.4 The Environment Agency has prepared a Local Environment Action Plan (LEAPs) for the area; the Eastern Valleys LEAP[21].

5.5 The EA has commenced a programme of Catchment Abstraction Management Strategies (CAMS) which will assess the current water resources and current abstraction to determine whether the catchment is under- or over-utilised. This will be based on the ecological requirements for each catchment (physical, fish, macrophytes, invertebrate populations). The Rhymney catchment is to be assessed during 2001/2002.

5.6 Dwr Cymru/Welsh Water actively raise awareness of river management and biodiversity at their Environmental Education Centre at Cilfynydd.

5.7 The statutory conservation agencies are funding several lake research projects. These include the CCW Lake Survey and palaeolimnological studies funded by CCW and EN. CCW have also produced a draft guide identifying potentially or confirmed mesotrophic lakes and reservoirs within Wales as part of their LBAP Target Guide (document in preparation).

5.8 The EA regularly monitor the quality of all open standing waters, checking for pollution and indicators of nutrient enrichment. Advice should, therefore, be sought from the EA and CCW before management plans are drawn up for any particular area of open standing water.

5.9 British Waterways has produced an environmental code of practice designed to instigate more sympathetic operating procedures and to protect and enhance wildlife habitat on canals and has produced its own 'corporate' biodiversity action plan.

5.10 CCBC is looking at long-term maintenance issues along the Monmouthshire – Brecon canal.

5.11 CCBC Parks Services have carried out long term weed control on the Monmouthshire - Brecon canal.

5.12 Local angling clubs/voluntary groups carry out litter picks and vegetation management.

5.13 Keep Wales Tidy Campaign, through its Afonydd Glan/Clean Rivers Project, have 8 voluntary river care groups who actively carry out a variety of environmental projects throughout the county borough.

5.14 The Forestry Commission has produced 'Forests and Water Guidelines' giving details of best forest practice around watercourses.

5.15 An estimate of the blanket bog resource in Great Britain is being carried out through the National Peatlands Resource Inventory (NPRI) resourced by SNH, and work undertaken by DoE (now DEFRA). The NPRI maps and assesses the peatland resource using satellite imagery and soil map information, backed up by field validation.

5.16 The Tir Gofal agri-environment scheme in Wales includes blanket bog as a component of moorland and includes specific guidelines for the management of bogs. It also contains provisions which may benefit management of coastal and floodplain grazing marsh in the future.

5.17 Conservation bodies in the UK have also received funding from the EU, through the EC LIFE (Nature) Programme, for projects that develop techniques for the management and restoration of peat bogs.

5.18 Under the Wildlife and Countryside Act 1981 (as amended) the unlicensed release into the wild of non-native animals, some established alien species (including the European pond terrapin and certain species of amphibia, fish and crayfish) and some plants is prohibited.

5.19 Many wetland sites within Caerphilly county borough have been designated as SSSI and/or SINC which offers them some protection, for example Nelson Bog SSSI comprising a mosaic of various wetland habitats, Llanbradach Quarry SSSI, and a large number of SINCs.

6. CONSERVATION DIRECTION

6.1 Main Objectives for wetland habitats are to:

- **Survey** to identify the distribution, extent and condition of wetlands in the county borough.
- **Maintain** and improve the quality, state, structure and conservation interest of wetlands, through the use of integrated management plans and the sensitive management of adjacent land.
- **Create/restore** wetland features or areas of maximum wildlife benefit, wherever possible.
- **Promote** the importance of wetlands to all sectors of the community to raise awareness of their significance for biodiversity and the local environment.

6.2 Possible actions:

- Carry out Environmental Assessments of developments which will have an impact on wetlands and their associated habitats.
- Promote the importance of all wetland habitats and floodplains to the general public, water companies and other organisations, businesses and individuals involved with wetland features and watercourses.
- Develop a local inventory and agree a framework for identifying the extent and quality of the wetland resource, the factors affecting the habitats and action required for conservation.

- Encourage and promote the appropriate management (grazing, burning, etc) of all wetland areas in the county borough.
- Continue survey and monitoring work for habitats and associated species in wetland areas to identify the extent and quality of the existing resource and opportunities for restoration/re-creation.
- Enhance existing river corridors and wetland habitats (e.g. EA, CCW, CCBC).
- Seek alternative uses that are compatable with wildlife interests to prevent draw-down of redundant reservoirs and subsequent loss of open water habitats.
- Rehabilitate areas of damaged blanket bogs where the hydrological integrity is suitable for restoration (e.g. drain blocking).
- Protect blanket bogs from inappropriate uses by identifying them in local authority plans, and in Forest Indicative Strategies.
- Promote alternatives to peat for use in horticulture.
- Secure cross-sector Government Department policies for sustainable utilisation of extensive peatland resources, based on principles of conservation.
- Carry out a Pond Survey throughout the county borough to include all types of pond, including a garden pond survey where the involvement of the local communities may be possible.

APPENDIX - NVC Communities

Fens

Information on NVC fen communities present in Caerphilly county borough is not available because the Phase 2 Habitat Survey has not been carried out by CCW. However the main fen community at Nelson Bog is likely to be: S27: *Carex rostrata – Potentilla palustris* tall herb fen.

Reedbeds

- S4: Common reed swamp and reedbeds
  Phragmites australis swamp and reedbeds
  = areas of reed-swamp that retain some water throughout the year.

- S25: Common reed – hemp agrimony fen
  Phragmites australis – Eupatorium cannabinum fen
- S26: Common reed – common nettle fen
  Phragmites australis – Urtica dioica fen
  = reed –fens which become dry in summer

Canals

- S5: Reed Sweet-grass swamp
  Glyceria maxima swamp

This community is dominated by reed sweet-grass, usually with few other species except on the margins. It is characteristic of eutrophic conditions; nutrient-rich waters. It is a lowland community and has a restricted distribution in Wales.

DECIDUOUS WOODLANDS HABITAT STATEMENT

1. INTRODUCTION

Deciduous woodlands are important habitats for biodiversity, representing in the case of Ancient Semi-natural Woodlands continuous tree cover stretching back over centuries. However, despite this length of time, man to a greater or lesser extent has affected all deciduous woodlands. The following five types of deciduous woodland that occur in Caerphilly county borough have been identified as priority habitats in the UK Biodiversity Action Plan[42]:

- **Upland Oak Woodland***
- **Upland Mixed Ash Woodland***
- **Lowland Beech and Yew Woodland***
- **Wet Woodland***
- **Lowland Wood Pasture and Parkland***

2. HABITAT DEFINITIONS

2.1 Upland Oak Woodland

Upland oak woods occur on base-poor to acidic soils under conditions of high rainfall. "Upland" is used in a UK sense rather than as a direct reference to elevation, although typically they are found covering the steep valley sides. These woodlands are one of four National Vegetation Classification (NVC) types that are outlined in the appendix to this statement.

The main tree species is sessile oak (*Quercus petraea*), but birch (*Betula* spp.*)* and an understorey of hazel (*Corylus avellana*), rowan (*Sorbus aucuparia*) and holly (*Ilex aquifolium*) are common. Epiphytic lichens, mosses and liverworts thrive in the clean humid air of upland oak woods providing a suitable habitat for many internationally rare species. A patchwork of other woodland types may be present where there are different soil conditions, for example, soils flushed with water may support ash (*Fraxinus excelsior*), elm (*Ulmus* spp.) and hazel, and boggy hollows supporting alder (*Alnus glutinosa*). Soil fertility, drainage conditions and the extent of grazing are major factors in determining the composition of the ground flora of upland oak woods. Bluebell (*Hyacinthoides non-scriptus*), bramble (*Rubus* spp.) and ferns are the most common on the richer soils, whilst heather (*Calluna vulgaris*), bilberry (*Vaccinium myrtillus*) and mosses are more prominent on the acid and nutrient poor soils.

Animals are well represented in these valuable habitats. Distinctive breeding birds such as pied flycatcher (*Ficedula hypoleuca*), redstart (*Phoenicurus phoenicurus*) and wood warbler (*Phylloscopus sibilatrix*) can be found as well as a range of deadwood invertebrates.

2.2 Upland Mixed Ash Woodland

Upland mixed ash woodlands are found on base-rich soils under conditions of high rainfall. The distinction between upland and lowland ash woodland in Caerphilly county borough is not clear, and for the purpose of this plan, all the NVC communities for ash woodland have been included (see appendix to this statement). Classification can also be difficult as upland mixed ash woodlands may merge into lowland beech or wet woodland. Ash is always the major species, although oak, elm, birch and sycamore can all be locally abundant. Hazel is very common as an understorey species, occasionally forming the canopy. Some rare native trees may be found in these woodlands, notably large-leaved lime *(Tilia platyphyllos)* and various whitebeams *(Sorbus*

spp.) Despite variations in the canopy composition ground flora remains broadly similar and particularly rich for an upland habitat. Bright displays of flowers can be found such as bluebell, primrose *(Primula vulgaris)*, wood cranesbill *(Geranium sylvaticum)* and wild garlic *(Allium ursinum)*.

Upland ash woodlands can support a rich invertebrate fauna with uncommon or declining species and the dense and varied understorey of these woodlands can also provide suitable habitats for dormice (*Muscardinus avellanarius*), and an important lichen flora.

2.3 Lowland Beech and Yew Woodland

Lowland beech and yew woodland comprise three NVC types reflecting different soil and topographical conditions (see appendix). "Lowland" is used in its UK context, but Welsh beech stands of any altitude are included in this Habitat Statement. Beech woodlands tend to be found as high forest structure and often in a mosaic with other woodland communities.

Calcareous beech woods form around 40% of the total lowland beech and yew woodland habitat. The canopy can include mixtures of beech, ash, sycamore, yew *(Taxus baccata)* and whitebeam. Oak is less common than in other types of beech wood. Characteristic uncommon or rare plants include box *(Buxus sempervirens)*, red helleborine *(Cephalanthara rubra)*, coralroot bitter-cress *(Cardamine bulbifera)* and bird's nest orchid *(Neottia nidus-avis)*.

Beech woodland on neutral, slightly acidic soils comprises about 45% of the habitat. It is found on heavier soils, often where the drainage is poor or impeded. Stands tend to be dominated by beech, but oak is commonly associated and bramble forms a characteristic ground layer. Although a shrub layer is often lacking, holly, and occasionally yew, can form a second layer. Mosaics with oak-bracken-bramble woodland are common and it can be found colonising western oak woods.

The remaining 15% of the habitat comprises acidic beech woodland (pH 3.5 - 4.5). Holly is the main understorey species and oak a common canopy associate. It is not uncommon for it to form mosaics with oak-birch-wavy-hair grass communities. It also has spread into western oak woods.

2.4 Wet Woodland

Wet woodland occurs on poorly drained or seasonally wet soils. They usually have alder, willows or birch as their main species and comprise a wide range of NVC types (see appendix). There are three main situations in which wet woodland can be found:

1. Successional developments on wetlands such as mires, fens, bogs, wet meadows and lake margins. The flora of these stands is highly variable.

2. Alder stands on seepages and spring lines on valley sides. They are frequently part of mosaics with upland oak woods or upland mixed ash woodland. If unmanaged or undisturbed the alder component may decline and drier examples may succeed to upland mixed ash woodland.

3. On floodplains and along river edge. If well developed they can be extremely diverse both biologically and structurally. The wettest areas may hold carr vegetation, poorly drained areas, alder and willow, and free-draining areas mature stands of oak or ash.

2.5 Lowland Wood Pasture and Parkland

Lowland wood pasture and parkland, often with veteran trees, are present today largely due to historic land management systems and represent a vegetation structure as opposed to a plant community. Sites often consist of grazed woodlands and open grown or forest trees, many reaching veteran age. Today these habitats often survive in the form of golf courses, deer parks, ancient orchards and landscaped parkland. Trees specific to each site influence the variety of invertebrates and lichens. Typical tree species found in wood pasture, parkland and veteran tree habitats include oak, ash and beech; mature trees can occur as either maidens or pollards. Due to the variety of structure and composition they can be difficult to classify under NVC communities although they are most commonly associated with four woodland types (appendix). Additionally, the more open wood pastures and parkland may include various scrub, heathland, and improved and unimproved grassland communities.

3. CURRENT STATUS

Although around 60 Sites of Nature Conservation Importance (SINC) have been declared by Caerphilly county borough council for their woodland habitat[4], only a small percentage have been classified under NVC types and can be identified as belonging to the five habitats within this Habitat Statement. The remainder of the SINC woodlands are unclassified at present but may reveal further information about the current status of these priority habitats.

3.1 Upland Oak Woodland

Upland oak woods are restricted to the oceanic fringe of Western Europe, with the UK having the most extensive and best-developed examples. There is, therefore, a significant international responsibility to this habitat and it is recognised as a UK BAP priority habitat. The total UK area of upland oak woods is estimated to be around 80,000 to 110,000 hectares[12] of which Wales has some 40% (39,000ha). The highest cover within Wales occurs in a zone covering most of Snowdonia, the borders of Powys and Ceredigion, northern Camarthenshire and north Pembrokeshire. In Wales, upland oak woods account for nearly half the semi-natural woodland cover. Regionally, upland oak woods cover an estimated 327ha in Glamorgan and 610ha in Gwent. The Gwent woodlands are found at some of the habitat's eastern-most limit in the UK.

Within Caerphilly county borough there are six SINC woodlands recorded as having examples of upland oak wood habitat, **Coed Deri Newydd** (NVC type: W16), **Craig Ysgwydd-gwyn** (W11), **Troed-rhiw'r-fuwuch** (W17), **Cwm-llydrew Wood** (W11), **Coed Gelliau'r-Gwellt** (W10, W11) and **Blackwood Riverside Woodlands** (W11)[4] (see **Map 2.1**).

3.2 Upland Mixed Ash Woodland

Although its exact distribution is not clear, upland mixed ash woodland occurs throughout the Western seaboard of Europe with its range restricted by climatic requirements. The UK has a significant international responsibility for this habitat and it is recognised as a UK BAP priority habitat. The UK estimate for the total area of upland mixed ash woodland is 67,500 hectares[12], occurring mainly in southwest England, Wales, northern England and Scotland. Wales has approximately 25% (17,000 ha) of the UK total with the largest concentrations on the limestone areas of Clwyd, Monmouthshire, South and West Glamorgan and central Camarthenshire. Across Wales upland mixed ash woodlands make up about 20% of the total area of semi-natural woodland. Glamorgan has an estimated 3,200ha and Gwent 2,100ha.

Within Caerphilly county borough upland mixed ash woodlands can be found at SINC sites such as **Cwm Syfiog Woodland** (W8), **Penmaen Woodlands** (W8), **Cwm Dows Valley** (W9), **Cwm**

Pennar (W9), **Nant y Draenog** (W9)[4] (see **Map 2.2**). Other SINC sites may prove to contain upland mixed ash woodland habitat but difficulties exist as upland mixed ash and lowland mixed woodlands form an ecological continuum. They may also merge with lowland beech woods on base rich soils.

3.3 Lowland Beech and Yew Woodland

In the UK beech is considered native only in southern England and southern Wales. It is likely that it would have spread naturally to other areas had forest fragmentation not impeded its progress. The UK estimate for this habitat type is between 15,000 and 25,000ha with Wales having around 3,700ha[12]. These figures increase if recent beech woodland is included. In Wales the native range is generally accepted to be Gwent and the eastern halves of Mid- and South Glamorgan. Gwent has approximately 1,500ha and Glamorgan 680ha. Lowland beech and yew woodland found within Caerphilly county borough is important within a Welsh context. SINCs: **Cwm Syfiog Woodland** (W14) and **Blackwood Riverside Woodlands** (W14)[4] (see **Map 2.3**).

3.4 Wet Woodland

Wet woodlands on floodplains are associated with most river systems but are usually small and fragmented due to the high agricultural productivity of the floodplain. Alder stands on valley sides can be found throughout most of the central upland zone often in association with upland oak woods and upland mixed ash woodland. Successional sites tend to have a more scattered distribution with a series of wetland sites in West Gwynedd and Anglesey, bog complexes in mid-Wales and sand dunes in South Wales. An estimated 70,000ha of wet woodland can be found in the UK[12]. Wales has between 8,500 - 10,000ha, with 310ha found in Gwent and 1,100ha in Glamorgan.

SINC sites within Caerphilly county borough that contain wet woodland include **Troed-rhiw'r fuwuch** (W7) **Pottery Road Woods** (W6), **Coed Gellia'r-Gwellt** (W7) and **Blackwood Riverside Woodlands** (W7)[4] (see **Map 2.4**).

3.5 Lowland Wood Pasture and Parkland

Preliminary estimates by CCW indicate approximately 6,500 – 7,500ha of parkland (excluding other wood pasture) is found in Wales out of the 10,000 – 20,000ha estimated to be in good condition in the UK[12]. Many sites are of historic, cultural and landscape importance. The descriptions of designated SINC sites within Caerphilly county borough suggest that there are several examples of this habitat within the county borough[4]. However, as lowland wood pasture and parkland NVC types are similar to some of the other woodland communities further examination of these sites is necessary.

3.6 Associated Species

- **Birds:** ***spotted flycatcher**, **song thrush**, **bullfinch**, **tree sparrow**, **green woodpecker**, **long-eared owl**, barn owl, nightjar*, linnet*, buzzard, kestrel,* redstart
- **Mammals**: ***dormouse**, **brown long-eared bat**, **badger**, **yellow-necked mouse**, greater horseshoe bat*, lesser horseshoe bat*, pipistrelle bat*, brown hare*;* and *otter** (wet woodland)
- **Amphibians**: *great-crested newt*, common frog* and *toad, palmate* and *smooth newt*
- **Invertebrates**: ***red wood ant**, **waved carpet moth**, buttoned snout moth**, netted carpet moth*, violet click beetle, stag beetle*, bark beetle (*Emoporus tiliae)*; beetle (*Gastrallus immarginatus),* heart moth

- **Plants:** ***bluebell**, Cornish moneywort*, *Orchids,* devil's bolete fungus, hedgehog fungus, knothole moss, orange-fruited elm lichen, Lichens (*Bacidia incompata, Enterographa sorediata,* and *Schismatomma graphidiodies*); Royal bolete fungus, oak polypore

3.7 Links with other Habitats

Many of the woodlands within Caerphilly county borough contain a mix of NVC types. For example, wet woodlands may be found within upland oak woods or upland mixed ash woodlands. Similarly, upland mixed ash woodland can form a continuum with lowland beech and yew woodland. Therefore, this Deciduous Woodland Habitat Statement should be read in its entirety rather than as specific woodland habitat types. Links with habitats other than woodland include:

- *Wetlands*
- *Species-rich Grasslands*
- *Wildlife Corridors* (hedgerows)
- *Post-Industrial Land*
- *Urban Habitats*

4. CURRENT FACTORS AFFECTING THE HABITAT

- Overgrazing leading to changes in structure, ground flora impoverishment and difficulties for regeneration **(All)**
- Invasion by sycamore and other species not generally native to these woods **(All)**
- Development pressures such as new roads and quarrying **(All)**
- Until the early 1980s replacement of deciduous woodlands with conifers **(All)**
- Changing agricultural practices leading to increased ecological isolation **(All)**
- Cessation of traditional management practices such as coppicing or unsympathetic forest management **(All)**
- Climate change and atmospheric pollution **(All)**
- Dutch Elm disease **(upland mixed ash woodlands)**
- Grey squirrel damage to young trees **(lowland beech and yew woodland)**
- A predominance of older age classes **(lowland beech and yew woodland)**
- Loss of habitat due to the restoration of other, particularly wetland, habitats **(wet woodland)**
- Unsympathetic management of pollarding and grazing **(lowland wood pasture and parkland)**
- The perception that sites should be left 'clean and tidy' by removing felled timber and dead wood at sites with high amenity use **(lowland wood pasture and parkland)**

- Conversion to arable land resulting in the loss of pasture and damage to trees **(lowland wood pasture and parkland)**

- Lack of management where ancient trees fail to be replaced **(lowland wood pasture and parkland)**

- Remote factors such as changing groundwater levels, water abstraction, drought, climate change and disease **(lowland wood pasture and parkland)**

5. CURRENT ACTION

5.1 The Forestry Commission (FC) has a presumption against clearance of native woodland for conifer planting or agricultural use and all woodland is expected to be managed according to the UK Forestry Standard. Felling licences from the FC are normally required when the woods are not being managed under a plan approved by them.

5.2 FC operates the Woodland Grant Scheme to promote the sympathetic management of woodlands.

5.3 FC is preparing a Welsh Forestry Strategy that will form the basis for future woodlands incentives policies.

5.4 Forest Enterprise (FE) has produced management plans for upland oak woods based on their Action Plan for the habitat.

5.5 FE is currently surveying all ancient woodland sites within the FE estate in Wales to determine the condition and NVC types of all ancient semi-natural woodland and replanted ancient woodland. This information will then be used to guide the restoration of plantations on ancient woodland sites to native tree species. The NVC types of ancient semi-natural woodlands will help in the production of further FE Habitat Action Plans. Survey work is expected to be complete in October 2001.

5.6 CCW has set targets of 10% expansion and 10% restoration in the various woodland habitat types with a ranking system for each LBAP area as to which woodland type is of greater importance. Within Caerphilly county borough upland mixed ash woodland and lowland beech and yew woodland are ranked of greater importance than the other types within this statement.

5.7 CCW identifies Sites of Special Scientific Interest (SSSI) and promotes the proper management of ancient semi-natural woodlands. Future management will be considered against a framework that is being drawn up for the whole of Wales. No SSSIs have been designated for woodland in Caerphilly county borough.

5.8 Coed Cymru, through its Caerphilly/Blaenau Gwent/Torfaen county borough woodland officer, is able to offer advice on management and the development of local markets for woodland products that can provide an impetus to the management of these woodlands.

5.9 Tir Gofal, the Welsh agri-environment scheme, offers grant aid on a whole farm basis and encourages the sympathetic management of deciduous woodlands.

5.10 Promotion and identification of actions for native woodland through the South East Wales Woodland Group.

5.11 Caerphilly county borough council has declared **Graig Coch**, an oak – beech - birch woodland, a Local Nature Reserve.

5.12 Caerphilly county borough council has drawn up a list of Sites of Interest for Nature Conservation (SINC) including many woodland sites[4].

5.13 CCBC Countryside Strategy includes a commitment to the preparation of a Woodland Strategy.

6. CONSERVATION DIRECTION

6.1 The Main Objectives for this habitat are to:

- **Prevent** the further loss of existing habitats
- **Manage** existing woodlands through appropriate management
- **Rehabilitate** damaged woodlands to favourable condition through habitat management, and to expand, where appropriate, the habitat.

The 10% targets set by CCW for restoration and expansion are pro-rata across all woodland habitat types and across all of Wales. The ranking system means that upland mixed ash woodland and lowland beech and yew woodland are currently considered of more importance than the other woodland types in this statement.

6.2 Possible actions:

- Encourage surveys to identify further woodlands that comprise these woodland habitat types. Where they meet SSSI selection criteria they should be designated as such.
- Woodland SINC sites within Caerphilly county borough should be evaluated to ensure that they are properly classified. Other woodlands should be considered for selection as SINCs.
- Ensure that woodlands within the ownership of CCBC and other conservation bodies are appropriately managed.
- Ensure that management plans and appropriate management regimes are in place for all designated sites.
- Promote management advice and support the development of markets for sustainable woodland products through Coed Cymru to woodland owners.
- Produce CCBC Woodland Strategy.
- Encourage the reversion of conifer plantations on ancient woodland sites back to a native woodland character.
- Raise awareness of the nature conservation value of deciduous woodlands in all sectors of the community, including agriculture, business, developers, government and the general public.
- Identify sites that can be used to expand the woodland types in this habitat statement.

APPENDIX: NVC COMMUNITIES

1. Upland Oak Woods

W17: *Quercus petraea - Betula pubescens - Dicranum majus* woodland
(Sessile oak - Downy birch - *Dicranum majus* (fern) woodland)

W16b: *Quercus* spp. - *Betula* spp.- *Deschampsia flexuosa* woodland with *Vaccinium myrtillis – Dropteris dilatata* sub-community
(Oak – Birch – Wavy hair-grass woodland with Bilberry - Broad buckler fern sub-community)

W11: *Quercus petraea - Betula pubescens - Oxalis acetosella* woodland
(Sessile oak - Downy birch – Wood sorrel woodland)

W10e: *Quercus robur – Pteridium aquilinum – Rubus fruticosus* woodland
(Pedunculate oak - Bracken - Bramble woodland)

2. Upland Mixed Ash Woodlands

W8: *Fraxinus excelsior – Acer campestre – Mercurialis perennis* woodland
(Ash – Field maple – Dog's mercury woodland)
(d) *Hedera helix* (Ivy);
(e) *Geranium robertianum* (Herb Robert);
(f) *Allium ursinum* (Wild garlic)
(g) *Teucrium scorodonia* (Wood sage)

W9: *Fraxinus excelsior – Sorbus aucuparia – Mercurialis perennis* woodland
(Ash – Rowan – Dog's mercury woodland)

W8 (a-c), W7c and W13 *Taxus baccata* woodlands may be found in mosaic with the above. Also upland mixed ash woodlands that merge into beech woods (W12 and W14) may be difficult to place in either upland mixed ash woodlands or lowland beech and yew classifications.

3. Lowland Beech and Yew Woodlands

W12: *Fagus sylvatica – Mercurialis perennis* woodland (base-rich soils)
(Beech – Dog's mercury woodland)

W14: *Fagus sylvatica – Rubus fruticosus* woodland (mesotrophic soils)
(Beech – Bramble woodland)

W15: *Fagus sylvatica – Deschampsia flexuosa* woodland (acidic soils)
(Beech - Wavy hairgrass woodland)

W13: *Taxus baccata* woodland (Yew stands)

4. Wet Woodland

W1: *Salix cinerea – Galium palustre* woodland
(Grey willow – Common marsh bedstraw woodland)

W2: *Salix cinerea – Betula pubescens – Phragmites australis* woodland
(Grey willow – Downy birch – Common reed woodland)

W3: *Salix pentandra – Carex rostrata* woodland
(Bay willow – Bottle sedge woodland)

W4: *Betula pubescens – Molinia caerulea* woodland
(Downy birch – Purple moor-grass woodland)

W5: *Alnus glutinosa – Carex paniculata* woodland
(Alder – Greater tussock sedge woodland)

W6: *Alnus glutinosa – Urtica diocia* woodland
(Alder – Common nettle woodland)

W7: *Alnus glutinosa – Fraxinus excelsior – Lysimachia nemorum* woodland
(Alder – Ash – Yellow pimpernel woodland)

Some birch stands classified as W4 (a and b) are relatively dry, and if they occur in association with upland oak woods they are best treated as a phase of that habitat rather than as distinct wet woodland.

The driest sections of the floodplain woodlands may also contain "dry" NVC communities, most commonly W8: *Fraxinus excelsior – Acer campestre – Mercurialis perennis* woodland.

5. Lowland wood-pasture and parkland

W10: *Quercus robur – Pteridium aquilinum – Rubus fruticosus* woodland
(Pedunculate oak – Bracken - Bramble woodland)

W14: *Fagus sylvatica – Rubus fruticosus* woodland
(Beech – Bramble woodland)

W15: *Fagus sylvatica – Deschampsia flexuosa* woodland
(Beech – Wavy hairgrass woodland)

W16: *Quercus spp. – Betula spp. - Deschampsia flexuosa* woodland
(Oak – Birch – Wavy hairgrass woodland)

In more open wood pasture and parkland various scrub, heathland, improved and unimproved grassland NVC communities may occur.

PLANTED CONIFEROUS WOODLAND HABITAT STATEMENT

1. INTRODUCTION

Though the natural woodland in the majority of Britain is broadleaved/deciduous woodland, many woods contain conifer species, both native and introduced, that have been planted on otherwise open habitats. Although not a priority habitat in the UK BAP, existing conifer plantations have some biodiversity value, and the Planted Coniferous Woodlands Habitat Statement in the UK BAP[49] identifies conservation needs.

2. HABITAT DEFINITION

Woodlands composed wholly or mainly of conifer species, both native and introduced, have been planted throughout Britain and there are many to be found in the region of South Wales. The commonest species planted are larch (*Larix spp.),* douglas fir (*Pseudotsuga menziesii)* and spruce (*Picea abies* and *P. sitchensis)*, with smaller amounts of other species such as western hemlock (*Tsuga heterophylla)* and Corsican pine (*Pinus nigra* subsp. *laricio*). Conifer plantations often consist of blocks of even-aged crop trees and may include recently felled and recently planted areas, both of which may be invaded by birch, bracken and bramble, adding diversity to an otherwise uniform habitat.

There are two types of coniferous plantations, the Private Woodland, planted on many private estates, and what may be called the State Woodland administered by the Forestry Commission, with the majority planted as a result of the timber shortage in World War I.

3. CURRENT STATUS

3.1 UK and Wales

Approximately 7%, (1,516,000ha), of Great Britain is covered by conifer woodlands. The stands are usually of a single species, with approximately 40% being Sitka Spruce. However, at the forest scale, species composition is normally mixed; in thinned older stands and at edges and in glades, a variety of native trees and shrubs develop as an understorey. FE manages 775,000ha and 741,000ha are privately owned. The CCW Phase 1 survey results indicate that there is 8,138ha of coniferous plantation in Gwent and 24,696ha in Glamorgan[8].

When the trees reach harvesting age there are opportunities for restructuring the habitat, which will lead to diversification of the plant and animal communities they contain. Second rotation forests are more likely therefore to take account of the nature conservation needs through creating internal forest diversity, in tree and stand age. Many forests also have a number of associated features and habitats that are important for wildlife. Woodland rides and glades can be important for vascular plants and many invertebrates. They can also provide areas for targeting limited restoration of semi-natural habitat in conifer plantations. Old stands with dead or dying trees, understorey vegetation and open canopies are also important for a variety of species. A number of GB Red Data Book bird species may occur in plantations, including goshawk, and in clearfell or the early growth stage, nightjar and woodlark can be found.

3.2 Caerphilly County Borough

The ridges forming the southern crop of the coalfield have a mixture of private and state woodland. In the interior of the county borough most is state woodland. Prior to 1939 there was

not much forestry in the county borough, an exception was the Ruperra woodland, which was replanted with conifers following a disastrous storm in 1916. Post-1945 saw the growth of planted coniferous woodland throughout Caerphilly county borough.

There are two types of coniferous plantation in this area. The first is along the border ridges south of Caerphilly town, where historically the ancient woodland has been partially replaced by coniferous plantation by the landowners as part of an existing forest management system. Some ancient woodland remains and so this area is more varied than the conventional view of the planted woodland. Due to its history the habitats range from mature trees, clearfell sites, streams, ponds, abandoned clay and coal workings. The Clay Pits support breeding frogs, and grey heron and mallard have been known to roost there. The mature trees offer feeding and nesting sites for sparrowhawks, coal tits, goldcrests and treecreepers, seasonal visitors include cuckoos, tree pipits, and warblers. The nightjar has been seen in the clear-fell areas in Wern Ddu. Many species of plant are found in the forest, including yellow pimpernel, century, common spotted-orchid, and water mint. Several species of butterfly are also found and around 55 species of moth. The grass snake, adder, slowworm and common lizard represent reptiles, and mammals such as foxes, rabbits and grey squirrels are also common.

The second type is the large commercial conifer plantation that has grown up in the last 60 years, for example those managed by Forest Enterprise. Typical of these are the woodlands on both banks of the river Ebbw, especially on the eastern tributaries in the vicinity of Abercarn and Crosskeys. Other areas are on the southern slopes of Mynydd Machen and at Bryn Owen, above Llanbradach. Most of this is managed woodland on agriculturally poor land. Surveys in other areas have shown that this type of woodland can support a wide range of species including birds such as the nightjar, crossbill, and siskin, and mammals like the fox, rabbit, grey squirrel and the dormouse. In the north of the county borough in the Darren Valley, a conifer plantation supports a colony of breeding herons.

Elsewhere, however, there is a lack of knowledge regarding the biodiversity of coniferous woodlands.

SINC sites[4]: (Map 3.1)

16: **Pont Caradog and Nant Ilan Woodlands** (part)
92: **Cwm Gelli Wood and Meadow** (part)
99: **Coed Goferau** (part spruce plantation)
104: **Cwm Pennar** part to the north)
112: **Coed Cil-Lonydd** (part)
113: **Coedcae Watkin Dafydd**
114: **Gwyddon Valley and Mynydd Maen** (some areas)
165: **Wern Ddu Woodlands** (notable for population of dormice)

Coniferous plantations found adjacent to the following:

106: **Tyle-Coch Wood**,
108: **Cwm Hafod-Fach Woodlands**
133: **Craig y Prisiad Woodlands** (the plantation separates two oak woods)

3.3 Associated Species

- **Birds**: ***goshawk***, ***nightjar****, *linnet**, *kestrel, long-eared owl, green woodpecker,*

woodlark*, crossbill, siskin, cuckoo, tree pipit, warblers, (mallard and grey heron on unplanted clay pits within the forest)

- **Mammals**: *dormouse**, *badger*, *lesser horseshoe bat**, *noctule bat*, fox, rabbit, grey
- **Reptiles:** *adder, grass snake, slow worm* and *common lizard*
- **Invertebrates:** butterflies and moths
- **Plants:** *bluebell, common spotted-orchid,* rosebay willowherb, water mint, bracken, bramble, sheep's fescue, yellow pimpernel, century, western hemlock, holly, silver birch, beech, pine, sessile oak, spruce, larch, star moss

3.4 Links with Habitats

-
- Woodland rides and glades (e.g. clearfell sites): can have patches of ***Acid Grassland*** or ***Heathland*** in open areas where light reaches the ground;
- *Deciduous Woodlands* (mixed in with conifers)
- *Wetlands* (ponds, rivers and streams);
- Mature trees, deadwood and scrub

4. CURRENT FACTORS AFFECTING THE HABITAT

There is no particular threat to conifer plantations as a whole. However, the end of the coal industry and the closure of downstream hardboard manufacturing plants had local implications for soft wood production.

- Many of the species listed in 3.3 are dependent on a particular age of timber and therefore a clear-felling cycle. The moves towards continuous cover would be detrimental to these species, in particular nightjar and woodlark.

Other threats have been identified as:

- Lack of appropriate management, leading to decreases in structural diversity of stands and forests
- Lack of regeneration due to grazing of woods
- Felling without replanting
- Clear-felling and replanting that disrupts other elements of the forest ecosystem, eg, through erosion or effects on water bodies.
- Invasion of species such as Rhododendron, Japanese Knotweed
- Re-conversion to agricultural land

5. CURRENT ACTION

5.1 The overall UK policy aims are set out in *Sustainable Forestry: The UK Programme* (1994) and *Biodiversity in Britain's Forests* (1993).

5.2 The UK also signed up to Resolution for the Conservation of Biodiversity of European Forests, as agreed in Helsinki in 1993. This provides for the enhancement of biodiversity as part of the sustainable forest management programme by integrating the requirements of native, natural and managed woodlands.

5.3 There is a strong emphasis on wildlife conservation management in licences and grants administered by the FC. Through its Regional Advisory Committees and Environmental Panels, FC consults conservation specialists on its activities.

5.4 FE manages publicly owned plantations on behalf of the National Assembly for Wales.

5.5 FE is preparing Forest Design Plans with local conservation experts, which are subject to Forestry Commission approval. These plans are a major means of delivering biodiversity gains in FE forests through promoting structural diversity and populations of key species.

5.6 FC has also produced the documents *Forest and Water Guidelines* (1993), *Nature Conservation Guidelines* (1990) and *Landscaping Guidelines* (1989) which are used as a basis for prescribing management for wildlife conservation. The FC is working to draw these together, along with other environmental guidelines, to produce standards for enhancing biodiversity of planted forests. These will reflect the functional and structural elements of the forests as well as the species interest.

6. CONSERVATION DIRECTION

6.1 Main Objective is to:

- **Maintain** and **enhance** the wildlife potential of the existing conifer resource through continued restructuring and diversification.

6.2 Possible actions:

- o Maintenance of areas of existing planted coniferous woodland, and where appropriate enhancement of their wildlife value.
- o All semi-natural woodland should be buffered, and, along with planted woodland or native broadleaved woodlands, increased in size by natural regeneration and/or planting of local provenance stock.
- o The production of long term appropriate management plans for semi-natural and planted woodland sites should be agreed with owners and managers.
- o The provision of advice, information and training on grants, management schemes, enhancement techniques and the planting of new woodland, to owners and managers.
- o Species and habitat surveys in planted woodlands; require species and habitat surveys for all planning applications affecting conifer plantations.
- o Development of systems for monitoring the biodiversity conservation value of planted conifer woodlands, for eg, by assessing critical habitat features and selected key or indicator species.
- o Promotion of forestry management which enhances the conservation value of plantations through restructuring and diversification among landowners and managers, but also highlight the significance of coniferous woodlands for plants and animals to the general public.
- o Encouragement of sympathetic woodland ride management that benefits biodiversity.

WILDLIFE CORRIDORS HABITAT STATEMENT

1. INTRODUCTION

The Wildlife Corridors referred to in this habitat statement are:

- **Ancient and/or Species-Rich Hedgerows***
- **Roadside Verges**
- **Railway Lines and Cycle-ways**
- **Stone Walls**

Three main types of boundary feature are recognised in the UK BAP[49], but it is only ancient and/or species-rich hedgerows that have been identified as a UK priority habitat*. Stone walls, railway lines (some with cycleways) and roadside verges are considered to be important for biodiversity conservation locally. River and canal corridors are included in the *Wetlands Habitat Statement.*

2. HABITAT DEFINITIONS

2.1 Wildlife Corridors

Boundary features, as described in the UK BAP[49], are an important biological characteristic of the British landscape, and many can be described as "Wildlife Corridors"; for example lines of trees and shrubs, grassland, other semi-natural habitats. These are usually linear habitats and often occur on agricultural land and alongside roads and railway lines. Wildlife corridors are often said to act as a means of dispersal for many species by linking isolated habitats such as woodland and grassland, allowing the movement of species through otherwise open terrain. They are also important in the dispersal of plants, acting as a linear habitat for the dispersal of seeds, and attracting insects for pollination. They contain a large part of the countryside's biodiversity, but are also considered important for agricultural, cultural and archaeological reasons. This is in keeping with available guidance such as the Planning Guidance Wales[56], which recognises the need for wildlife corridors in maintaining viable populations that would otherwise suffer as a result of fragmentation and isolation.

2.2 Ancient and/or Species-rich Hedgerows

Hedgerows form a distinctive and highly attractive part of the landscape of much of Britain. Ancient hedgerows are defined as those that were in existence before the Enclosure Acts (1720 - 1840) in Britain. It is these that tend to support the greatest diversity of plants and animals, but species-rich hedgerows are taken as those containing 5 or more native woody species on average in a 30 metre length, or 4 or more in upland Wales. Hedges containing fewer woody species but support species-rich ground flora of herbaceous plants should also be included, but the practical criteria to identify them have yet to be agreed by the national steering group. Planted species-rich hedges have been included recently[49]. The definition for this statement covers boundary lines of woody vegetation, including associated features such as banks, ditches, and standard trees which form part of the hedgerow. Hedgerows often resemble woodland edge habitat with the most important rich in relicts of ancient woodland. A well-maintained hedge with a good variety of trees and shrubs will provide a year-round supply of food, shelter for winter hibernation, and shelter and cover for small mammals, which then provide food for owls and other predators. Insects such as butterflies are attracted to the flowers and the nectar, and in turn provide food for insectivores such as hedgehogs, shrews and birds.

2.3 Roadside Verges

Many thousands of miles of roads occur throughout Britain. Many of these include verges, banks or hedgerows, which represent small areas of semi-natural habitat, and are an important collective biodiversity resource. Road verges can often support species-rich, long-established neutral grassland vegetation, diverse calcareous grassland, heath vegetation, mixed scrub or emerging woodland. They are therefore also important for many animal and invertebrate species, often providing a refuge where many uncommon species can still survive. The conservation value of road verges has long been recognised, they are important in linking fragmented habitats such as woodland, grassland and wetland areas, allowing animals to travel between isolated areas of habitat. They also provide food and shelter for a wide range of wildlife, from badgers and foxes to small mammals such as voles and bats, to invertebrates such as butterflies and moths. Verges can, if managed properly, represent a valuable and under-utilised resource[36], with some potential for habitat enhancement and creation.

2.4 Railway Lines and Cycle-ways

Disused railways have developed wildlife interest through natural colonisation. Old railway lines often now form well-established, specialised habitat in an area of upheaval and disturbance caused by industrialisation. The materials used on railways, for example railway ballast, also provide suitable habitats for some specific species types. Calcicoles sometimes grow where basic steel slag or limestone chippings have been used as ballast. A few moderate calcicoles also grow on some old basic slag-heaps, for example wild thyme (*Thymus praecox*)[52]. These calcareous grassland communities are a priority habitat. Some disused railways are often used for walking and cycling, and some have been made into cycle-ways. These still retain adjacent habitats and are an important corridor for wildlife. They also provide an opportunity for many people to enjoy the countryside, and become more aware of the importance of biodiversity. But it is not just disused railways that are important for wildlife, the active railway system also supports well-established semi-natural vegetation on embankments and cutting slopes, and are contiguous with important woodland sites and other habitats.

2.5 Stone Walls

Dry stone walls are most typically found in areas of enclosed upland pastures, where they provide a boundary to sheep and other grazing animals. They are an important component of the landscape and have become an attractive addition to new homes and gardens in many areas where the traditional skill is still implemented. Traditional techniques and local varieties of stone make the walls very unique to the area and contribute to local identity. They also provide important habitats for a wide range of flowering plants, ferns, mosses and lichens adapted to rock habitats, plus a wide range of invertebrates, reptiles, birds and mammals which use them for feeding, breeding or as shelter.

3. CURRENT STATUS

3.1 Ancient and/or Species-rich Hedgerows

In Europe, ancient hedged landscapes are found only in parts of France, northern Italy, the Austrian Alps, Greece and the Republic of Ireland and the UK. The current UK total is estimated at 450,000km, and in 1993 it was estimated that about 49,000km of hedgerow remained in Wales[1]. Some 42% of British hedges or about 154,000km (20,600km in Wales) are ancient and/or species-rich[49]. These are concentrated in the southwest of England and southern Wales, and are closely related to landscape history, varying significantly at the local level. However, many continue to decline through lack of survey work or sympathetic management of the adjacent land as well as the hedgerow and hedgerow trees. Between 1984 and 1990, the

overall loss of hedgerow length in Wales was estimated at 25%[11]. Hedges are an important component of the Welsh lowland landscape where they are an irreplaceable historical record of how land was divided and managed in the past.

Hedgerows still remain a strong feature in many parts of the Caerphilly county borough landscape, but it is not possible at this time to estimate the length or the proportion that is species-rich. The CCW Phase 1 Habitat Survey did not record the presence or condition of hedgerows in the county borough, but they do give broad estimates for Gwent (4,000km or 8% of the total Welsh resource) and Glamorgan (6,000km or 12%)[8]. In the county borough hedges are characteristic features of the slopes between the valley floor and the open hilltops, but the current condition of hedges is very variable. The interconnected network of hedges and hedgerow trees in the area is a valuable feature for biodiversity conservation, with a wide variety of woody species including beech, hazel, hawthorn, sycamore, oak, field maple, holly, dog rose and field rose, willow and blackthorn. Although there may be few 'ancient' hedgerows, the majority of those that remain can be considered species-rich and/or locally distinctive, distinguishing the landscape in different parts of the borough and representing a feature that people may use to define local areas of countryside. Ancient and species-rich hedgerows, along with hedgerow trees, are disappearing, and many of those in the county borough are gappy and defunct. Those on farmland are often neglected, leading to the shading out of ground flora and arable crops. Without appropriate management and/or restoration they will continue to deteriorate. Roadside and 'country lane' hedgerows are regularly cut, but no hedge-laying is undertaken on Council hedgerows, except on specific projects, for example, a programme of hedgerow restoration was introduced to the Sir Harold Finch Memorial Park, Pontllanfraith (SSSI), and at Ynys Hywel Farm and Llancaiach Fawr[9].

SINC sites[4]: 57 **Llancaiach Fawr Meadows**, 79 **Penmaen Carr**, 121 **Coed Penallta and Railway Line** (*Penallta Community Park*), 159 **Craig y Fedw**, 164 **Gypsy Lane Wetland** and 165 **Wern Ddu Woodlands** (see **Map 4.1**).

General regions: Mynydd Islwyn, Mynydd Maen, Cwmcarn, Penmaen, Pen-y-fan and Manmoel and Argoed/Markham uplands.

There are over 600 plant, 1,500 insect, 65 bird and 20 mammal species known to live, feed or breed in hedgerows, especially butterflies and moths, farmland birds, bats and dormice. In a typical hawthorn hedge there can be as many as 34 species of breeding birds in a 1,000m section, and almost 30 species of mammal regularly use hedgerows either as cover, for food or as hunting grounds[55]. The hedgerows around Wern Ddu support populations of dormice.

3.2 Roadside Verges

In the 1970s it was estimated that there were some 180,000ha of roadside habitat in England and Wales, of which about 100,000ha was actively managed grass verge habitat[55]. There is 1,050km of road in Caerphilly county borough and a variety of adjacent habitats are found in both urban and rural areas. The majority comprise grassland habitats with some heathland communities and scrub, and associated features such as a hedgerow, bank, ditch, fence, trees and/or small woodland. On the mountain roads there is often a hedgerow on top of a grass bank made up of mixed soil and stone. There are also a number of examples of wooded roadside verges; a typical example is the stretch of the A4048 between Pontllanfraith and Ynysddu. The essential cutting back of woody species benefits the ground flora by opening up areas and increasing the available light. The density of bluebells at this site indicates that it has been wooded for many years, as they are typically slow to colonise[16]. Road verges are important in

linking fragmented habitats such as woodland, grassland and wetland areas in the county borough, allowing animals to travel between isolated areas of habitat.

The majority of roadsides in the county borough are maintained for highway safety reasons. Maintenance regimes vary for different types of roadside verge, and the Council recognises eight types; for example the "Highway Verge" is a one metre wide strip that is cut three times a year, and is managed mainly as a pedestrian refuge. The minimum cut of any verge is once a year, but verges and roundabouts in urban areas are managed more regularly in order to prevent them causing an obstruction to traffic. Roadside verges are not currently managed to sustain wildlife, but there is a policy in the Local Transport Plan for the future consideration of wildlife[5]. New roads also contribute to this network of linear habitats, and the associated planting of local native species will attract wildlife as existing roadsides do. The main type of habitat planted is woodland, using native tree and shrub species. This has been done in large-scale road construction schemes and means that relatively little management is required during the establishment years. An example of well-established woodland is on the Risca – Rogerstone Bypass, planted in 1986.

SINC sites[4]: 86 **Victoria Road Slopes** (an area of roadside verge of botanical interest);
Other sites: 'Heads of the Valleys' Road (A465), Llechryd (2ha of unimproved grassland) where the roadside verge was reported important for its calcareous grassland with purging flax, lady's mantle, yellow rattle and other plants[37]; **roadside verge near Maesycwmmer**; 1ha of neutral grassland, with some unusual plants including harebell and salad burnet; **road near the "Rowan Tree", Nelson**; hedgerow on road verge with good botanical interest[37]; and **Heol Ddu, Bargoed**; roadside verge in an urban area[37] (see **Map 4.2**).

3.3 Railway Lines and Cycle-ways

Woodland, scrub, grasslands and heathland communities often colonise **disused railway cuttings and embankments**, providing an important habitat in much the same way as roadside verges, linking fragmented habitat areas and providing food and shelter. There are 47,478 metres of disused railway in Caerphilly county borough, and much of this is continually under threat from development of pipelines and restoration for transport. Many plant species are found on disused railway lines in the county borough, for example, pearly everlasting (*Anaphalis margaritacea)*, which is an important local species as it is found only in Monmouthshire and Glamorgan, in particular in the Rhymney Valley[52].

The 40,335m of **active railway** in Caerphilly county borough also represents a significant wildlife habitat, for example the extensive Coed Llanbradach woodland, Coed y Brain and Llanbradach Quarry SSSI, which are adjacent to the active Cardiff - Rhymney railway line. Without some form of management, however, invasive species will colonise the railway line rapidly, to the detriment of the important vegetation including species such as pearly everlasting, rosebay willowherb and nettles which provide food and breeding opportunities for butterflies, birds, bats, and other animals. Management also curtails natural succession of vegetation, which would otherwise result in the formation of woodland and scrub, and the loss of open habitat, in particular butterfly rides and areas for reptiles to bask in the sun.

The 34,412m of **cycleway on former railway lines** is of similar biodiversity value as the corridor and its adjacent habitats remain largely unaffected, and the leisure aspect ensures regular management and local people's enjoyment of the countryside. The old drainage ditches that were part of the railway system are also managed, there still being a need to divert excess water. These represent an additional habitat for plants and animals, including frogs, toads and

newts. In some instances the mature trees lining the railway are unaffected by the construction of the cycleway and retain their importance as feeding corridors for bats. Bridges found along railways and cycleways also add to the diverse nature of these areas. They are often quite damp, moist places attracting lichen, liverworts, mosses and ferns. Cycleways are an ideal starting point to encourage local people to visit the countryside.

Map 4.3 shows the extent of railways and cycleways in Caerphilly county borough, and SINCs associated with them[4]:

- Disused railway lines
  Crosskeys – Markham (SINC 33)
  Crumlin – Pentwynmawr
  Blackwood – Tredegar; Maesycwmmer – Machen
  Maesycwmmer – Fleur de Lys

- Cycleways on disused railway lines
  Sirhowy Valley Country Park Cycleway
  Parc Cwm Darran Cycleway (SINC 12)
  Aberbargoed – New Tredegar – Abertysswg
  Pontllanfraith – Nelson (SINC 121)
  Penyrheol (Caerphilly) – Abertridwr (cycleway on up to Senghenydd)

- Sites of Importance for Nature Conservation (SINCs)[4]
  12: Cwm-Llydrew Meadows
  33: Markham Railway Line
  45: Cwm Afon Railway Line
  121: Coed Penallta and Railway Line (cycleway)
  173: Caerphilly/Machen Disused Railway

- Active railway lines
  Newport – Ebbw Vale
  Cardiff – Rhymney

3.4 Stone Walls

In Caerphilly county borough these mainly occur in the enclosed rough upland grazing areas, replacing hedgerows as boundaries to grazing livestock. There are quite a number of such walls with the majority in good condition, however there are a number in need of repair. They are important habitats for reptiles, for example lizards; amphibians for example, great crested newt, and many types of lichen, moss and fern. However, the lack of survey work means that the quality of the walls and their value for wildlife is unknown. The creation of new walls is negligible countywide, but some have been built in Penallta Community Park. It is a labour-intensive, costly and time-consuming operation for many landowners, but in the long term, by using local stone and traditional techniques, they are much more sustainable than temporary boundaries or fencing. The following sites contain examples of dry stone walls: (see **Map 4.4**)

SINC sites: 158 **Ty'n-y-Parc**; old walls colonised by spleenworts; 121 **Coed Penallta and Railway Line** (*Penallta Community Park*);
General regions: Mynydd Islwyn; Mynydd Maen and Cwmcarn; Pen-y-fan and Manmoel; Manmoel Common/Cruglwyn (dry stone walls in disrepair)

3.5 Associated Species

- **Birds**: *linnet*, tree sparrow*, grey partridge*, bullfinch*, song thrush*,* redstart, *green woodpecker, barn owl, buzzard, kestrel,* chaffinch
- **Mammals**: *pipistrelle*, brown long-eared, greater horseshoe** and *lesser horseshoe* bats, dormouse*, badger,* stoat, weasel, fox, wood mouse, harvest mouse, field vole, common and pygmy shrews
- **Amphibians**: *great-crested**, *palmate* and *smooth newts, common frog, common toad*
- **Reptiles**: *common lizard, slow worm, grass snake, adder*
- **Invertebrates**: *dragonflies, moths* (*buttoned snout*) and butterflies*
- **Plants**: ***cowslip***, *early purple orchid, southern marsh orchid*, *bluebell*, *yellow rattle,* many other flowering plants, lichens and ferns

3.6 Associated Habitats

- *Wetlands* (rivers and streams, canal corridors)
- *Deciduous Woodlands* (lowland wood pasture and parkland)
- *Species-rich Grasslands* (neutral, calcareous and acid communities)
- *Common Land* (agricultural land; upland pasture and enclosed land)
- *Coedcae* (often forms linear habitat on ridges in the Uplands alongside Common Land)
- *Heathland* (communities on roadsides, and as linear corridors adjacent to Common Land)
- Ancient/mature trees, banks, and ditches, scrub

4. CURRENT FACTORS AFFECTING THE HABITATS

- Neglect - development of gaps; encroachment of scrub and woodland, the eventual collapse of *stone walls,* reflecting modern high labour costs, the loss of traditional skills and, often, non-intervention in the belief that no management is beneficial (**All**)

- Poor management - too frequent or wrongly timed, leading to poor habitat conditions, development of gaps, probable species change, disturbance in the breeding/fertilising months (**All**)

- Loss of hedgerow trees - senescence or felling, and no replacement (**hedgerows**)

- Use of herbicides, pesticides and fertilisers - often used up to the base/bank; leads to nutrient enrichment and decline in species-diversity; spray drift and run-off also major problems (**hedgerows, roadside verges**)

- Increased stocking rates and traffic - erodes the feature, and can be replaced with fencing which then reduces the necessity for maintenance (**hedgerows, stone walls**, **roadside verges**)

- Deliberate removal - often carried out for agricultural or development purposes (**hedgerows, stone walls)**

- Development - housing, industry and road construction and widening are the main threats to wildlife corridors (**All**)

- Planting - of trees and shrubs on existing corridors increases the possibility of woodland and scrub encroachment; inappropriate use of non-native species in planting schemes is also a problem (**roadside verges, railway lines, cycle-ways, hedgerows**)

- Increasing disturbance - from maintenance of services such as gas, electricity, and telecommunications (**roadside verges**)

- Road features - widening and alignment results in direct loss of traditional boundaries and verges; the provision of features such as pavements and lay-bys may conflict with roadside habitats (**roadside verges, hedgerows**)

- Infilling and reclamation - for example a railway at Maesycwmmer has been infilled; others have disappeared or are threatened by redevelopment and reclamation. (**disused railway lines**)

- Invasive Species - Japanese knotweed and ragwort threaten native plant species by competing for space and light (**All**)

- Gritting - necessary on roads when conditions threaten highway safety, but salt can affect vegetation (**roadside verges**)

- Theft of stone from local walls (**stone walls**)

5. CURRENT ACTION

5.1 The Conservation (Natural Habitats, etc) Regulations 1994 recognise that linear features are essential for the migration, dispersal and genetic exchange of wild species.

5.2 Article 10 of the EC Habitats Directive[23] requires Member States to encourage management of hedgerows in their land use planning and development policies. Deterioration of individual hedgerows also leads to the fragmentation of the important habitat corridors.

5.3 Hedgerow management advice available from many sources, such as NAWAD, GlamWT, GWT, BTCV.

5.4 Grant aid available for positive management; the CCW Hedgerow Renovation Scheme is now superseded by Tir Gofal; this new agricultural scheme requires agreement holders to maintain existing stockproof boundaries, including capital payments for hedgerow restoration, and it is a condition of set-aside payments to protect adjacent features such as hedgerows.

5.5 Positive use of countryside designations to attract relevant funds and initiatives.

5.6 Implementation of legislation (Hedgerow Regulations, 1997[18]) to protect wildlife corridors, and UDP[3] policies for Nature Conservation includes hedgerow and hedgerow trees.

5.7 Ongoing research such as LANDMAP projects and WDA landscape studies.

5.8 The use of Tree Preservation Orders (TPOs) protects a number of hedgerows and roadside verges.

5.9 Highways Authorities have a role to play in managing roadside verges, roadside hedgerows and other features. The CCBC Local Transport Plan[5] recognises the importance of roadside verges and states - "verges of roads will be managed actively to sustain wildlife, provided highway safety is not compromised".

5.10 The Local Transport Plan[5] also identifies the need for progress on the National Cycle network, 2 routes already exist (numbers 4 and 47), but CCBC are in the process of identifying additional areas of interest, most will have links with disused railway lines.

5.11 CCBC SINC selection criteria[4] identifies hedgerows and scrub habitats where they form linkages with habitats of higher value or where they support rare species, and where they form part of a habitat mosaic[7].

5.13 Planting alongside new roads in construction schemes usually involves planting native trees and shrubs to establish species-rich woodland, with suitable funding.

5.14 Cycleways are managed by appropriate methods to conserve the diversity of habitats and species. Country park management plans involve work on the cycleway and adjacent habitats. A cycleway is usually 2-3m wide, and must be maintained to prevent encroachment alongside and above (canopy). Public use of existing cycleways (eg, Penallta to Nelson) is high and CCBC are currently in the process of formally adopting existing cycleways as 'highways', which will ensure regular management.

6. CONSERVATION DIRECTION

6.1 Main objectives for Wildlife Corridors will be to:

- **Survey** to identify the extent and quality of wildlife corridors in the county borough for both habitats and species;
- **Halt** the loss of any species-rich and good quality examples identified, and maintain and enhance important wildlife corridors, protecting features of conservation value and bringing derelict features into appropriate management;
- **Promote** the biodiversity value of wildlife corridors to landowners, land managers and the general public, and provide education and training where necessary.

6.2 Possible actions:

- Develop methodologies for the identification and management of important wildlife corridors.
- Survey and compile a register of hedgerows, together with a register of hedgerow trees, in order to establish base line data.
- Undertake a road verge assessment, and ask the general public to report potentially interesting roadside verges (using indicator species), and follow-up with survey/assessment work. Produce a 'first tranche' register of important roadside verges in Caerphilly county borough.
- Protect all wildlife corridors from damage and destruction through the implementation of Hedgerow regulations and the Local Transport Plan policy TE4 to manage road verges. Designate wildlife corridors as SSSI, SINC, etc.

- Encourage and support farmers, landowners and managers in their efforts to use measures such as Tir Gofal and the Hedgerow Scheme to manage wildlife corridors sensitively. Also apply positive management on Council owned land.
- Extend wildlife corridors to increase cover and connect isolated habitat fragments, encourage the planting of hedgerows and building of stone walls in new developments, road improvement projects and restoration schemes. Apply sound ecological principles by planting mixtures of native species rather than single species.
- Promote the importance of hedgerows and other wildlife corridors to the farming community and the general public. Provide advice and training on traditional techniques such as hedgelaying, and sources for possible funding/grants.
- Educate the general public, farming and landowning communities, and council staff about the conservation value of wildlife corridors. Perhaps set-up community-based projects, hold training days for council staff and contractors on traditional techniques such as hedge-laying and dry stone walling.
- Continue to monitor, after initial survey work, the populations of associated priority and local species.
- Continue work on hedgerow enhancement in the Caerphilly Mountain Countryside Service area, and research the possibility of similar work elsewhere.

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 Glamorgan[13] and Gwent[14] 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 BAP[49], 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 BAP[49] 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 BAP[49] 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 fields[49].

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 SINCs[4], 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 UK[49]. 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 Survey[13]; 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 Gwent[14].

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** SINCs[4] 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 UK[49]. 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 LNR[4] (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 maintained[23]. 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 Glamorgan[13] and Gwent[14] and Phase 2 lowland grassland survey of the better quality sites.

5.4 Caerphilly county borough council has identified many grassland sites as SINCs[4], a non-statutory designation for sites of interest within a county context and includes policies for their protection in the UDP[3]. 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 Plan[5] 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:

o 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.

- o 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.
- o 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.
- o Continued monitoring and surveying of sites in Caerphilly county borough to assess habitat value for flora and fauna species.
- o Prepare and maintain a complete record of species-rich grasslands in Caerphilly county borough.
- o 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 borough[12]: 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-Isaf 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-Isaf 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 Ochrwyth 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 Maesycwmmer 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

COMMON LAND HABITAT STATEMENT

1. INTRODUCTION

There are some 550,000 hectares of common land in England and Wales. It has served generations for centuries. Because of its largely untouched nature, common land is valued for its biodiversity, sporting interest, historical significance and increasingly, because of the amenity and sense of well being it provides as open countryside, or in more urban settings, as undeveloped land. It is also a valuable agricultural resource.[33]

Common Land has been included in this LBAP as a landscape feature of Caerphilly county borough due to the diverse number of habitats found on common land, including a number of UK priority habitats and species. It comprises a large percentage of the county borough and as such it is important to raise awareness among commoners associations and the general public. Common land requires favourable management and increased protection, particularly from damage by off-road vehicles and motorbikes, to conserve this mosaic of habitats and the species that rely on a diverse landscape. It is therefore not included in the UK BAP, but it has considerable local importance for wildlife.

2. HABITAT DEFINITION

Common land is made up of a mosaic of habitat types that frequently merge together to give the upland commons of the county borough their characteristic appearance. Habitats found within the boundary of the commons include:[29, 30]

- **Woodlands**
  - broadleaved semi-natural woodland
- **Grasslands**
  - marshy grassland (rhos pasture)
  - unimproved acidic grassland/semi-improved acidic grassland
  - unimproved calcareous grassland
  - (reseeded grassland)
- **Heathland** (wet dwarf shrub heath, dry dwarf shrub heath)
  - Dry heath and Wet heath (acidic grass mosaic)
- **Wetlands**
  - wet /dry modified bog
  - blanket bog
  - ponds
  - oligotrophic reservoirs
  - Valley mire
- Scattered trees
- Scrub (various densities)
- Continuous or scattered bracken
- Acidic/neutral flush
- Scree and acidic/neutral rock outcrops

In addition, there are numerous species dependent upon these specific habitats in order to survive within the county borough. Loss, damage or modifications to these habitats could well result in the loss of many species now considered to be already declining nationally, but more so within the county borough.

3. CURRENT STATUS

3.1 Caerphilly County Borough

The area covered by this plan broadly encompasses the unenclosed land throughout the county borough. Where these unenclosed areas adjoin enclosed farmland, the boundaries are often clearly marked by the change from semi-natural habitats to improved grassland. Commons occur chiefly along the ridges separating the valleys. Due to their unenclosed nature, historic management and patterns of grazing, the habitats represented can differ markedly from those on adjoining farmland.

There are 19 areas of common land in the county borough (eight shared with neighbouring unitary authorities), consisting of a mosaic of differing habitats. Although by definition common land does not constitute a specific habitat type, commons within the county include several habitats that are now confined solely to the linear, whale-backed ridges which act as wildlife corridors, separated by industrialised and urbanised valleys. Many of these habitats are now becoming uncommon, if not rare within the county borough. In addition to these habitats, many forms of wildlife are now confined to the commons, chiefly due to the nature of management and relative lack of disturbance. Common land is also seen as an area with high open space amenity value by the inhabitants of the valleys, and is also an important agricultural resource for those farmers with commoners rights.

3.2 The Rights of Owners, Commoners and the Public

All common land is owned by a person or body in a similar manner to any other privately owned land. The owner holds it subject to the rights of commoners and to the special Acts relating to common land, notably the Law of Property Act 1925. This prohibits fencing of land subject to common rights without consent of the National Assembly of Wales. The owners are also subject to the laws affecting all landowners, such as the Town and Country Planning Acts. Rural District Councils however were excluded from the Law of Property Act 1925, for example, Rudry.

- Owners must not substantially interfere with rights of commoners, but do hold rights to:
    - minerals
    - shooting
    - balance of grazing
    - granting of easements
    - planting and cutting timber trees
    - maintaining an action for trespass

- Commoners on the other hand may have rights including:
    - grazing of pasture
    - estovers (the right to gather firewood, litter, animal bedding)
    - turbary (peat cutting
    - piscary (fishing rights)
    - pannage (the right to turn out pigs to graze on beech mast or acorns)
    - common in the soil (the right to dig sand, gravel etc for use in the commoner's holdings[7].

- Members of public however, only have right of access to the commons within the county borough (being urban commons) "for air and exercise" subject to three basic prohibitions:
    - driving a vehicle (including a bicycle) on any common land
    - camping

- lighting a fire

The general public within valley communities tend to regard the commons as un-owned land, upon which they can pursue a multitude of recreational activities. It is this misconception, combined with the abuse of commoner's rights by a minority that poses the greatest threats to those habitats found on the upland commons.

3.3 Associated Species

Many species of flora and fauna have been identified through various surveys carried out on the commons within the county borough. A large proportion of these depend totally upon the variety of habitats and environmental conditions that exist on our commons. Indeed, if it were not for our commons, many species would probably be extinct within the county.
Such species include:

- **Birds**: *barn owl, buzzard, green woodpecker, lapwing, little owl, long-eared owl, linnet*, nightjar*, peregrine, skylark*, wetland birds (dipper, grey wagtail, kingfisher)*, golden plover[+], merlin[+], red grouse[+], snipe, stonechat, wheatear, whinchat
- **Mammals**: *badger, brown hare*, bats* (*)
- **Reptiles**: *adder, common lizard, grass snake, slow-worm*
- **Amphibians**: *common frog, common toad, newts* (wetland areas)
- **Invertebrates**: *pearl-bordered fritillary (*acid grassland/bracken), *dragonflies and damselflies* (wetland areas)
- **Plants**: *bluebell, cowslip, orchids,* sundew and other pioneer plants

3.4 Links with Habitats

- *Wetlands*
- *Deciduous Woodlands*
- *Planted Coniferous Woodland*
- *Wildlife Corridors*
- *Species-rich Grasslands*
- *Coedcae/Ffridd*
- *Heathland*
- *Post-Industrial Land*

4. CURRENT FACTORS AFFECTING THE HABITATS

- Commons within the county are susceptible to a plethora of factors causing damage to the habitats previously listed. However, misuse of common rights probably amounts to the greatest threat to common land within the county. Civil action taken against any commoner by the commoners association as a result of their misuse of rights, or for damage caused to the common and rights of other commoners, currently costs far more than the value of the land, or value of the rights affected. As there are no other forms of legal redress for the damage caused, mismanagement tends to continue unchecked, gradually degrading the value of the habitats and their ability to support the various forms of wildlife.

[+] Although suitable habitats exist at present, due to a number of factors some of these species are only recorded occasionally. These could return to breed in the future if positive management steps are taken to redress current activities that create unacceptable levels of disturbance through inappropriate activities and management methods.

- Increased use of 4x4 off road vehicles, quad bikes and motorcycles – users of which find the combination of rough grassland and boggy wet flushes a challenge to drive through.

- The general public have the belief that they are permitted to drive their motorcars off the public highway and onto common land for the purpose of picnicking. Whilst the Road Traffic Act permits the driving of motor vehicles no further than 15 metres off the public highway in order to park, this is illegal as far as commons are concerned. Damage is often caused by members of the public by creating new access from highways onto commons. This access is then used by other vehicles such as 4 x 4s, and car thieves prior to burning out stolen vehicles.

- Fly tipping and illegal dumping of building/garden/household waste.

- Illegal shooting.

- Uncontrolled fires started during periods of dry weather, mistimed or inappropriate controlled burning.

- Overgrazing of livestock due to irresponsible management by a minority of commoners.

- Commoners Association currently have no legal means to impose constraints upon commoners abusing their common rights.

- Diverse approach towards management/maintenance of common land where commons are divided between neighbouring unitary authorities

- Absence of grazing on some commons leading to invasion by scrub and bracken

5. CURRENT ACTION

5.1 A number of SINC sites have been identified that include large areas of land on our commons[4].

5.2 A number of species that occur on our commons are protected under the Wildlife and Countryside Act 1981 (as amended) and include; bats, barn owl, nightjar, peregrine and lapwing.

5.2 Caerphilly county borough Local Access Forum meets regularly to discuss any problems and possible solutions.

5.4 Application for lottery funding to fence and gate the two lowland commons of Rudry and Caerphilly.

5.5 Rudry Common and Caerphilly Common Management Plans.

5.6 Meetings of Commoners/Brinkers Associations.

5.7 Commoners Associations are represented on the Caerphilly Biodiversity Partnership and have therefore been involved in the local biodiversity process from the beginning and in the preparation of this LBAP.

5.8 Caerphilly Common Ecological Survey work currently underway to explore habitat management options (2001).

6. CONSERVATION DIRECTION

6.1 The **Main Objectives** for habitat conservation on common land will be centred around the ability to:

- **Maintain and enhance** the variety of habitats on the commons
- **Ensure** sympathetic and suitable methods of management through both the local authority and the commoners who hold rights on specific areas of common land.
- **Promote** an increased level of awareness amongst commoners and members of the public regarding responsible use of common land, and the detrimental effects of misuse upon biodiversity.

6.2 Possible actions:

- Promote dialogue between adjacent unitary authorities to establish common attitude and approach towards the management of common land.
- Protect commons from inappropriate development.
- Establish 'honey pot' sites i.e. car parks at view points, to encourage use by the public at selected areas, with access to the remaining areas of common restricted for example by boulders and access gates constructed for lawful access by commoners.
- Statutory management, better facilities for the implementation of the law.
- Ring fence and grid commons, maintenance of grids to be carried out by the unitary authority.
- Signage re-iterating unlawful activities.
- Wardening of common land.
- Increased policing of commons to reduce threats to habitats and commoners rights resulting from illegal activities.
- Liaison between CCBC and local motorcycle clubs with the view to establishing an off-road/scrambling facility in a non bio-sensitive/agriculturally important area, with the proviso that the clubs educate/put pressure on individual scramblers to keep off common land.
- Awareness campaign to educate general public within the county about their rights relating to common land, and highlighting unacceptable activities.

FFRIDD (COEDCAE) HABITAT STATEMENT

1. INTRODUCTION

"Coedcae" or "ffridd" is part of the classic Welsh landscape arising from hill farming practice. Although there is no UK BAP for this habitat, it is important in both a Welsh and a Caerphilly county borough context. It is characteristic of valley sides and comprises a mosaic of different habitat types supporting a wide range of animals, in particular important bird and butterfly species. Due to its linear and often continuous nature it can form significant wildlife corridors for its associated species, especially birds.

2. HABITAT DEFINITION

Ffridd refers to the vegetation of the, often uncultivated, valley sides; the middle slopes between the upland farms, extensive conifer plantations or unenclosed common land and the valley bottoms. The ffridd is a complex mosaic of heath, bracken, woodland, acid grassland, old workings and wet flushes. These habitats can include numerous NVC communities and are traditionally grazed by sheep or cattle. In north Wales "ffridd" usually refers to unenclosed land, whereas in south Wales it is generally enclosed. The term "Coedcae" is normally used in south Wales specifically to denote unenclosed ffridd.

Ffridd is particularly important for high brown fritillary and pearl-bordered fritillary butterflies, which are UK priority species. The bracken fronds act like a woodland canopy for the violets on which fritillary butterfly caterpillars feed and the bracken litter provides a warm microclimate for the early life stages. Fritillary butterflies thrive better where cattle or ponies are the main grazing stock. These animals, being heavier, break up the bracken litter so that the female butterfly can fly to the violet beneath but there is still enough small dead bracken 'debris' to capture warmth and raise temperatures for caterpillar development in the spring. Also cattle and ponies unlike sheep do not selectively graze violets.

3. CURRENT STATUS

3.1 Caerphilly County Borough

Within Caerphilly county borough coedcae/ffridd occurs in the following areas: (see **Map 7.1**)

- Sides of the Aber valley between Mynydd Meio & Mynydd Eglwysilan;
- Eastern fringe of Cefn Gelli Gaer;
- Fringe of Cefn y Brithdir;
- Between south-eastern edge of Mynydd Bedwellty & Mynydd Manmoel/Mynydd Pen-y-fan;
- Between Mynydd y Grug & Mynydd Machen;
- Between Islyn & Mynydd y Lan;
- Western fringes of Mynydd Maen
- From Caerphilly Common to Mynydd Machen/Rudry Common.

The following SINC sites have examples of coedcae/ffridd[4]:
5 **Cefn y Brithdir**; 7 **Coed Cefn-Rychdir**; 8 **Mynydd Manmoel**; 10 **Craig Ysgwydd-Gwyn**; 15 **Coed Deri-Newydd**; 31 **Coed y Moeth**; 46 **Cwm Afon Railway Line**; 116 **Mynydd Eglwysilan**; 159 **Craig y Fedw**; 163 **Mynydd Meio**; 168 **Caerphilly Common**; 171 **Mynydd Rudry**; 178 **Graig y Rhacca Grasslands**

3.2 Associated Species

The presence of bracken in this mosaic of habitat ranging from open grassland to woodland is important for many forms of wildlife:

- **Birds**: ***nightjar****, **linnet****, **yellowhammer***, *curlew, skylark**, whinchat, tree pipit and stonechat
- **Invertebrates**: ***high brown fritillary****, **pearl-bordered fritillary***, small pearl-bordered fritillary
- **Plants:** *bluebell,* violets

3.3 Links with Habitats

- *Deciduous Woodlands*
- *Wildlife Corridors*
- *Species-rich Grasslands* (rhos pasture)
- *Common Land*
- *Heathland* (upland and lowland heath)

4. CURRENT FACTORS AFFECTING THE HABITAT

- Overgrazing, particularly sheep, preventing regeneration especially of heath and deciduous woodland elements
- Lack of grazing or other appropriate management (beneficial cattle less common than sheep)
- Gradual overall decline of bracken cutting for bedding
- Past coniferisation and current new planting schemes
- Economic development
- Agricultural improvement
- Poor image of ecological value of bracken slopes
- Burning of bracken by vandals
- Burning ("muirburn") as agricultural practice

5. CURRENT ACTION

5.1 Possible grants for the management of this habitat as part of the whole farm agri-environment scheme, Tir Gofal.

5.2 Some SINCs contain species-rich ffridd and bracken as part of the site[4].

5.3 Some bracken is once again being harvested for animal bedding from commons and ffridd. Care is needed that this currently sustainable level does not increase so as to threaten eradication.

5.4 CCBC liaison with Coed Cymru for appropriate management of certain sites.

6. CONSERVATION DIRECTION

6.1 The Main Objectives are to:

- **Halt** the loss of coedcae/ffridd.
- **Ensure** favourable management of ffridd, in particular methods of grazing and prevent further agricultural improvements.
- **Prevent** development on ffridd which removes the landscape's natural diversity.
- **Raise the awareness** of landowners and managers, and the general public of the importance of these habitats and the need for beneficial management and land use regimes, particularly aiming to alter the negative public perception of bracken habitat.

6.2 Possible actions to consider are:

- o Raise awareness of importance of ffridd, for example by producing a Biodiversity Briefing Note promoting the importance and wildlife value of bracken slopes & "ffridd".
- o Survey/assess quality and condition of ffridd habitats.
- o Require ecological surveys to support all planning applications.
- o Encourage use of traditional cattle breeds e.g. Welsh Blacks over sheep.
- o Create areas of new habitat where appropriate e.g. to restore lost continuity.
- o Improve Council liaison with farming community and commoners associations, via the SINC and LBAP processes.
- o Encourage owners of ffridd slopes to apply for Tir Gofal.
- o Encourage the investigation of bracken cutting and composting as a peat substitute.

HEATHLAND HABITAT STATEMENT

1. INTRODUCTION

Heathland is characterized by a dominance of dwarf shrubs, usually heather, and is found in both lowland and upland areas. Lowland and upland heath have been afforded priority status in the UK BAP[43, 49] and are covered in this habitat statement:

- **Lowland Heath***
- **Upland Heath***

The CCW Phase 1 survey for Mid and South Glamorgan[13] and for Gwent[14] and the Biological Survey of Common Land for Gwent[38] and Glamorgan[39] shows that heathland in Caerphilly county borough is a relatively rare habitat, particularly at lower altitudes, and recorded a total of 180ha of dry and wet heath in the county borough. Lowland heath has declined significantly during the 20th century, and upland heath, although more widespread, has declined from a variety of agricultural and forestry practices.

2. HABITAT DEFINITIONS

2.1 Lowland Heath

Lowland heath is characterised by the presence of dwarf shrubs such as heather or ling at a cover of at least 25%. In wet situations heather is associated with cross-leaved heath and various bog mosses, while on more freely draining soils, bell heather, western gorse and bilberry occur. Lowland heath is generally associated with thin, acidic and nutrient-poor soils, and is broadly restricted to the area immediately below the unenclosed uplands at elevations of <300m.

The division between lowland and upland heath in Caerphilly county borough is in some areas difficult to define, as several unenclosed uplands are below 300m, while in other places the enclosed fields supporting heath extend to higher than 300m. For the purposes of this plan, lowland heath in Caerphilly county borough includes all enclosed heath regardless of altitude, together with the unenclosed heath that lies on the southern lip of the Caerphilly basin.

2.2 Upland Heath

Like lowland heath, upland heath is characterised by the presence of dwarf shrubs at a cover of at least 25%. They are found on unenclosed uplands generally between the altitudes of 300 to 600m above ordnance datum (measure of land height, approx. from sea level). In Caerphilly county borough the division between lowland heath and upland heath has been drawn to include all heath occurring on commons that lie to the north of the Caerphilly Basin. These commons are generally over 300m above ordnance datum, although occasionally heath extends below 300m on the lower slopes of the commons, for example at Mynydd Machen and Mynydd Meio, or occurs entirely below 300m, for example at Mynydd Dimlaith.

3. CURRENT STATUS

The extent and distribution of heathland habitats in Wales has been considerably enhanced as a result of the NCC/CCW Phase 1 Habitat Survey (1979-1998) and from the Upland Vegetation Surveys for Mid-Glamorgan[53] and Gwent[28], and the Commons Surveys of Mid-Glamorgan[39] and Gwent[38]. There are 6 heathland communities associated with both lowland and upland heath that occur in Caerphilly county borough. They include:

- heather - western gorse dry heath

- heather - bell heather dry heath
- heather - bilberry dry heath
- bilberry - wavy hair grass heath
- deergrass - cross leaved heath wet heath
- cross-leaved heath - *Sphagnum compactum* wet heath

These communities are described in more detail in the appendix to this statement.

3.1 Lowland Heath

About one fifth of the world's total area of lowland heathland occurs in Britain and Ireland. The UK holds 58,000 ha, of which 7,000ha occur in Wales. Caerphilly county borough supports relatively few areas of lowland heath, with key areas occurring on Penllwyn Grasslands SSSI, Caerphilly Common SINC and less extensive areas occurring on Rudry Common SINC and at Pengam patch[4]. Much of the lowland heath in the county borough is now reduced to small fragments. Several old colliery tips have developed valuable heathland habitat, for example at Deri and New Tredegar.

3.2 Upland Heath

The UK holds a large proportion of European heath, which is mainly restricted to the western seaboard. The total UK upland heath resource is between 2 – 3 million hectares, of which 70-80,000ha occurs in Wales. Caerphilly county borough supports several relatively large areas of upland heath, occurring on many of the commons, particularly on Merthyr and Gelligaer Common, which includes Cefn y Brithdir SSSI, Mynydd Machen Common, Mynydd Eglwysilian, Mynydd Meio and Mynydd Maen. Much of the heath occurs as mosaics with acid grassland or bracken.

Map 8.1 shows the distribution of lowland and upland wet and dry heath in the county borough.

3.3 Associated Species

The following species are known to be associated with upland and lowland heath in the Caerphilly county borough area.

• **Birds:**	***linnet****	(associated with gorse)
	*nightjar**	(lowland heath, in south of CCB)
	*skylark**	(strong population associated with commons)
	*grey partridge**	(often uses heath habitat for nesting)
	*song thrush**	
	curlew	(often uses heath habitat for nesting)
	yellowhammer	(associated with gorse)
	green woodpecker	
	woodlark*	(bred at Penyfan Pond in 1971)
	grouse	(casual records in 1998 indicate that may be present; more research required to confirm)
	dartford warbler*	(no records; but increasing on heath in Glamorgan)
	stonechat	
	whinchat	
	wheatear	
	hobby	
• **Mammals:**	*brown hare**	(associated with grassland/heath mosaics)
• **Amphibians:**	*great-crested newt**	
• **Reptiles:**	*adder*	(associated with dry heaths)

slowworm	(associated with dry heaths)
common lizard	(associated with dry heaths)
grass snake	(sometimes associated with wet heath)

- **Invertebrates:**

*marsh fritillary**	(occasionally associated with wet heath)
*high brown fritillary**	
*pearl-bordered fritillary**	
Other moths	
scarce blue-tailed damselfly	(associated with wet heath)
keeled skimmer	(associated with wet heath)
grayling butterfly	(associated with heath)
green hairstreak	(associated with heath)
silurian moth	(no records; but could potentially occur in upland gullies over 1,300ft, with bilberry)

- **Plants:** *Orchids*

3.4 Links with other Habitats

- *Wetlands* (ponds, fens, blanket bog, lowland raised bog)
- *Deciduous woodland*s (Upland oak woodland)
- *Species Rich Grasslands* (lowland acid grassland, rhos pasture)
- *Common Land*
- ***Ffridd/Coedcae***
- *Post-Industrial Land* (naturally vegetated colliery spoil)

4. CURRENT FACTORS AFFECTING THE HABITAT

Considerable areas of heath have been lost since the 1930s, and many of the remaining areas are either fragmented or exist as mosaics with other habitats. Specific factors and threats relating to this decline include:

- Lack of management on some sites leading to scrub and bracken encroachment, particularly on lowland heath.

- Agricultural improvement including reclamation, and pasture improvement leading to overgrazing. Heavy grazing is thought to be one of the major causes of change from heath to grassland in Wales.

- Fly tipping and uncontrolled burning particularly threatens lichen and moss rich heathland.

- Fragmentation and disturbance from developments such as road building, mineral extraction, house building and associated infrastructure.

- Recreational pressures, such as motorcycles and off road vehicles.

- Land reclamation schemes that result in the loss of secondary lowland heath.

- General lack of public awareness.

5. CURRENT ACTION

5.1 One key upland heath site **Cefn y Brithdir SSSI** has been designated as an SSSI in Caerphilly county borough for its dry heath habitat, and **Penllwyn Grasslands SSSI** contains lowland wet heath. Owners and tenants of these sites are able to enter into management agreements with CCW to manage SSSI land. Many other sites that support upland and lowland heath have been designated as SINCs[4].

5.2 The agri-environment scheme Tir Gofal offers grant aid on a whole farm basis, and encourages farm management practices that are sympathetic to, or encourage the maintenance of, heathland. 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.

5.3 A management plan has been prepared for Rudry Common which includes a small area of heath. Implementation of the plan has been put on hold awaiting funding.

5.4 Caerphilly county borough local Access Forum is currently exploring off-road bike and car issues in an attempt to combat damage.

5.5 CCBC's Local Transport Plan[5] provides a commitment to manage important roadside verges for nature conservation. Heathland occurs on several roadside verges in the north of the county.

6. CONSERVATION DIRECTION

6.1 Main Objectives for the conservation of this habitat will be to:

- **Prevent** further loss of existing habitats, through statutory protection and local designations
- **Manage** existing stands through appropriate management
- **Re-establish** heathland where opportunities arise, particularly in areas where this will reduce habitat isolation and increase size of existing areas

6.2 Possible actions:

- Ensure all key heathland sites are designated as SINCS.
- Introduce appropriate management to heathland sites that are currently unmanaged
- Review management of grazed heathland sites to identify practical ways of restoring heathland to favourable condition.
- Engage Commoners in exploring how heathland habitats on commons can best be conserved.
- Restore habitats adjacent to important or vulnerable sites. Develop a fuller understanding of restoration techniques with the aim of expanding remnant patches of heathland.
- Continued monitoring and surveying of sites in Caerphilly county borough to assess habitat value for flora and fauna species.
- Raise awareness of the nature conservation value of heathland 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 – NVC COMMUNITIES

Dry Heath

H8: Heather - western gorse heath
Calluna vulgaris - Ulex gallii heath

This community type occurs relatively infrequently throughout the county borough, and usually as part of a heath/acid grassland mosaic. It occurs on Gelligaer Common and is characterised by the presence of western gorse.

H10: Heather - bell heather heath
Calluna vulgaris - Erica cinerea heath

This community may occur in small patches within the county borough, but is unlikely to form a major community type within the area.

H12: Heather - bilberry heath
Calluna vulgaris - Vaccinium myrtillus heath

H18: Bilberry - wavy hair grass heath
Vaccinium myrtillus - Deschampsia flexuosa heath

These are the most commonly occurring heath communities in the county borough, occurring on most commons that support heath. More sites are dominated by bilberry than with heather, although the frequency of heather in the community increases in the north of the county borough. Cefn y Brithdir supports one of the largest expanses of bilberry – crowberry heath *Vaccinium myrtillus – Empetrum nigrum* heath in the Glamorgan area.

Wet Heath

M15: Deergrass - cross leaved heath wet heath
Scirpus cespitosus - Erica tetralix heath

M16: Cross-leaved heath - *Sphagnum compactum* wet heath
Erica tetralix - Sphagnum compactum wet heath

These communities are found on the wetter parts of the commons with a good example occurring on Gelligaer and Merthyr Common north of Fochriw.

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[2]. 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 SINCs that include colliery spoil, for example, Maesycwmmer Meadows[4] (full list in **appendix 9.1.2** to this statement and shown on **Map 9.2**).

The condition of early 20th 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[3] 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[4] 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[4].

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 SINC 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 SINC is an old coal tip
44: **Princetown Meadows**; a small spoil tip on part of the SINC 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 pf 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: **Maesycwmmer 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
• Fochrhiw, 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

	SITE	OS GRID REF
•	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
•	Presbyterion Church, Gilfach	ST1598SW
•	Rhymney Constitional 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 SINCs

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 SINCs abut 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 SINC (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** SINC (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** SINC (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 – Maesycwmmer 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 SINC (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 SINCs

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 20th 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
Hafodrynys	Dan y Graig Quarry, Risca
Trinant	Fernlea
Coed Top Hill	Old Trehir
Old Coed y Brain	Aberbargoed

URBAN HABITAT STATEMENT

1. INTRODUCTION

Urban habitat is not a priority in the UK BAP, but an Urban Habitat Statement is included and was later renamed as *Built Up Areas and Gardens* to include a wider range of habitats[49]. Urban areas provide a myriad of ecological niches that when taken together represent a very rich biodiversity resource. Some of the habitats found in urban areas may be unique and important from a scientific point of view. Others, though biologically interesting, are of greater value by virtue of them being accessible and interactive with a large number of people. Many urban action plans have been written for LBAPs across the UK because of their importance for wildlife and to local residents, and as a way of encouraging people to appreciate biodiversity close at hand.

The habitat types covered by this habitat statement are:

- **Domestic Gardens**
- **Old Buildings**
- **Unused Urban/Industrial Land**
- **Allotments**
- **Churchyards**
- **Public Parks**

2. HABITAT DEFINITION

In the UK BAP[4] this habitat type is defined as urban and rural settlements, farm buildings, caravan parks and other man made structures, such as industrial estates, retail parks, waste and derelict ground, urban parkland, transport infrastructure, domestic gardens, allotments and churchyards.

2.1 Domestic Gardens

As a nation we look after more than one million hectares of garden. With the countryside increasingly under threat, every garden, however big or small, is a potential nature reserve[41]. Although individual gardens may be small, together they form a patchwork, linking urban green spaces with the open countryside. Gardens are relatively quiet, generally sheltered, and often follow the line of old landscape features, for example hedges which frequently date back hundreds of years, providing animals with places to feed, breed, nest and shelter.

2.2 Old Buildings

All buildings both new and old can provide habitats for a variety of species. However, old buildings, particularly those constructed with local materials, such as stone and old timbers, can be particularly important for providing nest and roosting sites for bats and birds such as barn owls, sparrows, swallows, house martins and swifts, while mosses, lichens and a number of insects can also find a niche.

2.3 Unused Urban/Industrial Land

Unused urban land is defined as land previously developed and subsequently abandoned ("brownfield"), or land within an existing urban industrial development yet to be developed. Unused urban/industrial land can often lie unused for many years. Naturally seeded urban areas or urban industrial sites, such as demolition sites or unexploited industrial land, can be particularly species-rich, often reflecting the complex mixture of features. In the early stages

of colonisation short-lived (ephemeral) species are favoured and may include many uncommon species of bees and wasps, for which urban areas are now strongholds. In the later stages of succession short perennial, tall ruderal plants arrive, and succession will continue through to the formation of woodland. This habitat also contains some uncommon invertebrate species such as bees and wasps, beetles and flies, and the lichens of disused land often include several rare species.

*There is some overlap with this urban habitat category and post-industrial land habitats. This statement deals with urban industrial areas within the settlement boundary, but there may be some land reclamation schemes listed in the *Post-Industrial Habitat Statement* that relate to urban areas.

2.4 Allotments

Allotments derive from the enclosure legislation of the 18th and 19th centuries and the word *allotment* originates from land being allotted to an individual under an enclosure award. They started off as a requirement under the General Enclosure Act 1845, which required provision for the landless poor, and then, through the 19th century, parcels of land in urban areas began to be used as allotments. The spread of urban allotments was intensified by the growth of high-density housing, often without gardens. They played an important role for food production in both World Wars, with 1.4 million plots producing around 1.3 million tonnes[22]. Modern legislation covering allotment provision and protection has developed with various Allotment Acts being introduced between 1908 and 1950. These are still in force and continue to define many aspects of allotment provision, for example, a duty is placed upon local authorities to provide allotments where demand exists, and protection is given to statutory sites owned by local authorities.

Allotments contribute to the amount of green space in many urban settings. They also provide a habitat for a variety of species. Butterflies, moths and bees will be attracted to the flowers of cultivated plants and wildflowers, and the cultivated ground provides feeding opportunities for birds. Disused allotments are a particular haven for wildlife while some tended plots can act as seed-banks for rare vegetable species[17].

2.5 Churchyards

For the purposes of this plan churchyards relate to land that is used for burials that either surround churches, chapels or other religious buildings in the county borough, or stand in their own grounds such as cemeteries. Churchyards can be found in both a rural and an urban setting. In rural areas, unlike the surrounding farmland, these sites have, generally, not been sprayed with chemical fertilisers and pesticides and can support species-rich grassland. In urban areas, the general lack of agricultural practices and the quiet nature of these sites provide a haven for wildlife in an otherwise hostile urban environment.

The gravestones themselves are often covered by a variety of lichens and mosses, while ancient trees and hedgerows provide important nesting and foraging sites for birds and small mammals. The open grassy areas also benefit a wide range of wildlife. Butterflies, bees and other insects will be attracted to wildflower nectar sources, and bats may roost in church buildings.

2.6 Public Parks

Managed green spaces, including town parks, amenity grasslands and planted shrubberies can, depending on their structure, management and planted species, support a large number of wild species of invertebrates and birds, especially in the suburbs. Public parks provide a wide variety of wildlife habitats, they benefit from being well-established, stable environments, often dating

back to Victorian times. Many parks have a number of different habitats from wetland areas to deciduous woodlands, with hedgerows and open grasslands. They can hold populations of priority species such as the linnet, song thrush, pipistrelle bat and great-crested newt, and a variety of other common species such as hedgehogs. They also act as a transitional zone between other habitat areas. In some instances they provide opportunities for habitat creation and sympathetic management for wildlife. Sometimes they are the only place where people come into contact with wildlife, particularly in heavily built up towns like Caerphilly.

3. CURRENT STATUS

Wildlife is often inconspicuous in urban areas, but it can be fostered and encouraged to enrich and benefit us all in our daily lives. The main, important characteristic of urban areas are the network of green spaces they hold, providing a mosaic of different habitats. This provides the necessary mixture of breeding sites, foraging areas and shelter, needed by many species exploiting these relatively small areas, including BAP priority species, such as the great-crested newt. This network needs sites in close proximity to each other if they are to collectively support viable populations of plants and animals. Outside the built-up area there is a further mosaic of habitats, including roadside verges, railway embankments and colliery spoil tips linking with the open countryside. Given the rather loose definition and the large variety of habitats, it is difficult to estimate the amount of urban habitat in Caerphilly county borough.

The policies in CCBC's UDP[3] to develop land within existing settlement boundaries and on brownfield sites, will have an inevitable effect on these sites, and it will be important to ensure that sites are properly assessed for their wildlife value, prior to the procedure of any development. Similarly, new developments will also need to incorporate open spaces with links to adjoining green areas, which may be utilised by urban wildlife species.

3.1 Domestic Gardens

There are many aspects of the domestic garden which are important for biodiversity. Hedgerows, trees, garden shrubs and herbaceous plants provide nectar for bees and butterflies, and berries for birds and small mammals. Wildflowers such as hedgerow, woodland and meadow species, for example, red campion, yellow archangel, bluebell, yellow rattle, ox-eye daisy and greater knapweed are also common to gardens. Garden ponds provide vital breeding grounds for frogs, toads, newts and also many insects, particularly dragonflies and damselflies. Dead vegetation is a vital part of the wildlife garden, for example a pile of logs attracts many invertebrates such as spiders, wood wasps and beetles, and varieties of fungi. Even garden rockeries, dry stone walls, paving, gravel, sink gardens and hanging baskets can support many different species. Butterflies and moths often lay their eggs on specific plants, e.g. nettles (red admiral, small tortoiseshell, peacock and comma). The provision of artificial nest boxes attracts birds, bumblebees, bats and hedgehogs to a garden where other breeding sites may be uncommon.

Nationally, there are around 15 million domestic gardens[41]. Caerphilly county borough has approximately 61,000 private gardens, potentially a huge resource for urban wildlife to exploit. The linear nature of many settlements in the county borough means that many gardens are close, or adjacent to, the open countryside and are therefore quite rich in wildlife, attracting many otherwise rarely seen animals, such as slow worms and grass snakes, newts and other amphibians, and many farmland species, including birds such as the song thrush that have lost their traditional habitats through agricultural intensification. They also provide, or have the potential to provide, important wildlife corridors, forming strips of habitat between other

wildlife habitats allowing the free movement of species over a wider area. However, the management of many gardens is currently not very sympathetic to wildlife, few contain 'wild' areas and most consist of single-species, close-mown lawns and a lack of wildlife features such as hedgerows, ponds, trees and deadwood. However, with the rise in popularity of gardening programmes on television, the interest in wildlife gardening is growing, and a range of literature and advice is now available to those interested in making their garden more attractive to butterflies, birds, mammals, frogs and newts.

3.2 Old Buildings

There is currently a lack of knowledge about the use of many of the old buildings in the county borough by particular species, and many have been demolished or renovated without first undertaking a wildlife survey. Anecdotal evidence and casual records indicate that old buildings in the county borough are important as roosting and nesting sites for all bat species (except tree roosting bats such as the noctule), and a number of bird species including barn owl, swallow, swift, house martin, house sparrow and starling. Before granting planning permission there is a need to undertake surveys of various types of buildings, which may have significant wildlife value.

3.3 Unused Urban/Industrial Land

The current distribution of unused urban/industrial land in Caerphilly county borough is not adequately known, but concentrations can be found in the Mid Valley, Upper Rhymney Valley and Aber Valley. The status of this habitat will inevitably change as the demand for development in urban areas increases. Further survey work is required to locate these areas and identify those sites important for wildlife. Several SINCs include this habitat type[4], and future development will need to take account of the nature conservation interests of these sites.

The **Remploy Factory Grounds SINC**, near Oakdale is a good example of an industrial site where semi-improved neutral grassland has colonised rubbish and spoil around the factory. There is a diverse flora supporting the yellow rattle, pearly everlasting and a range of other characteristic neutral grassland species.

Pen-y-Fan Industrial Estate, north of Croespenmaen contains another SINC, **Valentec Nature Reserve**, which has been designated for its wildflower meadow, neutral grassland, and large area of marshy grassland dominated by rushes, with star moss and sedges in the more waterlogged areas. There is also a pond that is of particular value for dragonflies and other invertebrates.

Penyfan Pond and Meadows SINC includes some areas of species rich grassland within the industrial area, while **Crown Estate Meadows SINC** also contains species rich meadows on land that has been allocated for development.

3.4 Allotments

The importance of allotments for nature conservation has been identified in the document *The Allotment, its Landscape and Culture*[17], with both cultivated and untended allotment plots contributing to maintaining biodiversity. Evidence from the National Society of Allotment and Leisure Gardeners shows that allotments have on average up to 30% higher species diversity than urban parks and are ecologically valuable[22].

There are 80 allotment sites in Caerphilly county borough: 28 in the former Islwyn borough, for example, **Tunnel Row,** Newbridge and **Halls Gardens,** Crumlin; and 52 in the former Rhymney Valley district, e.g. **Boot Road,** Maesycwmmer, and **Penydre,** Rhymney. The Islwyn Allotment

Federation actively runs and maintains allotments in this area of the borough, but in the Rhymney Valley CCBC provides grants to each of the on-site allotment committees for necessary maintenance work and equipment.

Rules for the maintenance of allotments in the tenancy agreement include the protection of internal hedges, ditches, trees, buildings and sheds. Wildlife using these habitats are therefore afforded some protection, however, apart from a small number, many tenants are unaware of the importance of allotments for wildlife and the role they play as wildlife corridors.

3.5 Churchyards

There are churchyards and cemeteries in virtually every community in the county borough. The older churchyards in particular can be particularly valuable for wildlife especially where sites are less intensively managed.

Bedwellty Churchyard has been designated as a SINC (36) for its species-rich grassland communities[4]. Further survey work is needed to determine the importance of other churchyards in the county borough.

3.6 Public Parks

There are 11 established public parks in Caerphilly county borough, many dating back to the turn of the 20th century. These are:

Abertridwr Park	Bargoed Park
Crumlin Park	Islwyn Park
Morgan Jones Park	Newbridge Park
Penyrheol Park	Rhymney Park
Risca Park	Senghenydd Park
Waun Fawr Park	

Numerous habitats occur within them, including deciduous woodlands, wetlands, hedgerows and open managed grasslands, but no comprehensive survey has been undertaken to identify their extent and condition. The woodlands at Ystrad Mynach Park have been designated as a SINC (123) and **Sir Harold Finch Memorial Park** has been designated as a LNR (195) and an SSSI for its grassland communities.

For many years public parks have declined both in investment and in use by the public. It is uncertain what effect this has had on biodiversity. Future investment and strategies should dispel the over-tidy image of public parks and encourage management sympathetic to wildlife in order to maintain biodiversity.

3.7 Urban SINCs (**Map 10.1**)

36: **Bedwellty Churchyard**; of botanical importance for its unimproved grassland plants including devil's bit scabious, bitter-vetch, wood bitter-vetch, black knapweed, cats ear, great burnet and birds foot trefoil

47: **Park Drive Hollow**; a good example of an urban wildlife site with a variety of habitats including woodland, heath and wetland

51: **Pottery Road Woods**; an important urban wildlife habitat

61: **Valentec Nature Reserve**; a 2.6ha area of unimproved neutral grassland

67: **Remploy Factory Grounds**; a factory compound with a large area of neutral grassland supporting the yellow rattle

80: **School Grassland**, **Pontllanfraith**; a small neutral grassland with common bent and yorkshire fog, abundant devil's bit scabious, tormentil and clover
123: **Coedcae Mawr**; an urban oak woodland, important as an urban site for birds and plants
180: **Machen Woodlands**; part mature woodland, and a significant urban wildlife habitat for plants and birds

3.8 Associated Species

- **Birds**: ***house sparrow*** (most urban habitats), ***song thrush****, **bullfinch****, linnet**, *nightjar** (gardens), *spotted flycatcher**, little *owl, buzzard, kestrel, barn owl, peregrine falcon,* redstart, starling
- **Mammals**: *lesser horseshoe bat**, *pipistrelle bat**, *brown long-eared bat, daubentons bat, noctule bat, whiskered/brandts bat, badger,* **hedgehog**, grey squirrel, fox
- **Reptiles:** *slow worm, common lizard*
- **Amphibians**: *common toad, common frog, palmate newt, smooth newt, great-crested newt**
- **Invertebrates**: *buttoned snout moth**, *Other moths, Dragonflies and Damselflies,* butterflies and moths, bees and wasps
- **Plants**: *bluebell*, *cowslip,* primrose, snowdrop,

3.9 Links with other Habitats

- *Wetlands* (rivers and streams, ponds, canals)
- *Deciduous Woodlands* (lowland types; lowland beech and yew)
- *Wildlife Corridors* (hedgerows, railways and cycleways, roadside verges)
- *Species-rich Grasslands* (remnant areas)
- *Common Land*
- *Post-Industrial Land* (colliery spoil, refuse tips)

4. CURRENT FACTORS AFFECTING THE HABITATS

- Lack of recognition of the importance of urban habitats for biodiversity – not just their scientific value, but also for their amenity value. A familiar native species in an urban setting will have more significance to many people rather than a rare species in the countryside they are unlikely to see or recognise **(All)**

- Public perception: industrial decline and anti-social activity targeted at brownfield sites has created a negative public image of derelict urban areas, even gardens, public parks and churchyards are not seen as vital biodiversity resources, for example the value of nettles in wildlife gardens **(unused urban/industrial land, public parks, churchyards)**

- Development pressure: the demand for land in urban areas means that urban habitats are under the greatest threat from development **(All)**

- Pollution: urban habitats occasionally contain contaminated land. In some instances this can be advantageous for the wildlife occupying it, as it can deter development. Conversely, it can result in an impoverished flora and fauna **(All)**

- People pressure: 80% of the population live in urban areas. Pressure comes in many guises, from theft and vandalism **(allotments, public parks)** to passive recreation such as playing football or mountain biking, disturbance and trampling. When managing urban habitats these pressures should be considered **(All)**

- Urban design: new developments often fail to take account of wildlife in their initial designs. Opportunities to create interesting habitats may be missed for no other reason than to make the environment look neat **(All)**

- Management of urban habitats: excessive maintenance of mown areas in public parks, and the over-use of pesticides/herbicides and fungicides in gardens and allotments, and tidying of derelict land sites such as scrub clearance and levelling, all make urban habitats less attractive to wildlife **(All)**

- Conversion and rehabilitation: Unsympathetic renovation/Extension of old buildings may threaten associated wildlife **(old buildings)**

- Lack of information of the current urban habitat resource

- Little or no statutory protection

- Habitat fragmentation and isolation from other habitats in built-up areas

- Competition with non-native species, for example the grey squirrel, and from domestic cats

5. CURRENT ACTION

5.1 CCBC UDP[3] includes a policy for the protection of leisure facilities, including allotments.

5.2 Some urban habitats have been designated as SINC, LNR and/or SSSI in the county borough (see section 3.6)[4].

5.3 Grants in the region of £700,000 were given by CCW in 1994/95 for work on urban and urban fringe areas, with roughly 60% going to Groundwork Trusts and Local Authorities.

5.4 The Local Agenda 21 Strategy encourages people to take an active role in enhancing their local environment which includes benefits for biodiversity.

5.5 In Wales, derelict and disused urban areas may be eligible for grants administered by the WDA. These provide funds for development projects designed to restore derelict land, but some consideration is given to the additional environmental benefits achievable.

5.5 RSPB Garden Bird Watch has a significant following throughout the South Wales area, and is valuable for monitoring birds and raising awareness.

5.7 There are a variety of publications providing information about urban wildlife habitats, particularly wildlife gardens and ponds. For example, BTCV leaflets: *How to make a Wildlife Garden, Starting a Butterfly Garden, Your Wildlife Pond, Wildflowers in the Garden, Gardens for Birds;* Wildlife Trust materials such as Derbyshire's *Wildlife Gardening – a practical handbook*[31]*;* and RSPB leaflet *Gardening for Wildlife.*

5.8 Information and advice on conservation and planting local native species are available from national organisations such as Flora and Fauna International and Plantlife.

5.9 CCBC's Local Agenda 21 school grounds project includes some nature conservation ideas. Urban habitats have considerable potential as an educational/awareness tool for local people and children, also associated with the LBAP process.

5.10 Reclamation schemes of unused urban/industrial sites include native species planting.

6. CONSERVATION DIRECTION

6.1 Main objectives for urban habitats are to:

- **Survey** to identify the distribution, extent and condition of urban habitats in the county borough.
- **Maintain and protect** the existing diversity and extent of wildlife in all urban areas.
- **Expand** the range and distribution of associated plants and animals in order to enhance biodiversity in urban areas.
- **Promote** the importance of urban habitats for wildlife and utilise the resource as an educational tool.

6.2 Possible actions to consider include:

- Survey and evaluate the existing range of urban habitats (including those in this statement) in terms of their importance in maintaining wildlife interest.
- Protect important sites from changes in land use and seek to halt any further loss through favourable management and mitigation.
- Encourage the integration of 'green networks' (incorporating a full range of wildlife habitats) in planning and developments within the urban environment.
- Devise and implement strategies to enable the use of vacant and derelict land as wildlife habitats, either temporarily, or wherever possible, permanently.
- Complete the preparation of CCBC Parks Strategy and include proposals to maintain and enhance the biodiversity of public parks.
- Maintain and improve the quality, state and infrastructure of public parks in a way that is sympathetic to biodiversity.
- Develop Best Practice Guidelines for industry, business, landowners and development bodies.
- Produce an Allotment Handbook, which will give advice and best practice information, including composting and biodiversity.
- Encourage community action to survey, plan and manage urban wildlife habitats, e.g. domestic garden and garden pond surveys targeted at biodiversity indicator species, such as garden birds. Provide basic training for interested groups and individuals.
- Promote urban habitats to improve public perception of all urban habitats and use as an educational tool to inform communities and various groups about local wildlife through professional bodies, schools, businesses, community groups, gardeners, allotment societies, and others involved in the urban estate.
- Produce literature about wildlife gardening.
- Identify sources for funding habitat protection and conservation projects, particularly where the local community is involved.
- Develop a Caerphilly county borough environmental excellence award scheme for local environmental groups, etc.

PART II: HABITAT STATEMENT INDEX

FRAMEWORK FOR HABITAT STATEMENTS

1. INTRODUCTION

An introductory paragraph including information to explain why the habitats are important and have been selected for this Biodiversity Action Plan (BAP).

2. HABITAT DEFINITIONS

Defines the different types of habitats included in the broad group.

3. CURRENT STATUS

Describes the distribution and extent of the habitats in the UK, Wales, Glamorgan/Gwent and Caerphilly county borough.

Associated Species
Lists characteristic species associated with the habitats. Key species having a primary association with the habitat are highlighted in bold; actions for these will be included within Habitat Action Plans. Species with action plans in the LBAP are in *italics* and UK priority species are indicated by a star (*).

Links with other Habitats
Lists habitats in close association with those included in the statement. Main habitats are highlighted in bold, those covered by a statement in this LBAP are in *italics* and a star highlights UK priorities (*).

4. CURRENT FACTORS AFFECTING THE HABITAT

Lists factors currently causing loss/damage or threatening the habitats.

5. CURRENT ACTION

Lists current actions being undertaken for the habitats.

6. CONSERVATION DIRECTION

Identifies the main objectives for habitat conservation and possible actions (for writing HAPs).

WETLANDS HABITAT STATEMENT

1. INTRODUCTION

Wetlands, like many other habitats in the UK, have been subjected to degradation by the past influence of humans. The majority of wetland areas have either been lost due to land drainage for agriculture, industry, urban sprawl, or physically modified for flood protection schemes. A wide range of environmental factors influence wetlands and their communities. The local geology will have an effect on the chemistry of the water, also the source and quality of the water.

Wetlands play an important role within Caerphilly county borough, providing essential habitats for a diverse range of animals and plants. The numerous ponds, rivers and fens support nationally important species such as water vole and otter. Wetlands are an important habitat type and consequently have been selected for inclusion in this LBAP. Some have been identified in the UK BAP[49], and are marked with a *, but others such as ponds are significant for biodiversity conservation locally. The habitats included in this Habitat Statement are:

- **Rivers, Streams and Floodplains**
- **Ponds**
- **Fens***
- **Reedbeds***
- **Blanket Bog***
- **Lowland Raised Bog***
- **Lakes and Reservoirs** (standing open water*)
- **Swamps**
- **Canals**

2. HABITAT DEFINITIONS

Where applicable National Vegetation Classification (NVC) Communities are listed in the appendix to this habitat statement.

2.1 Rivers, Streams and Floodplains

In their natural state rivers are dynamic systems, continually modifying their form. Many rivers in the UK have been physically modified by humans, for example through flood defence structures and impoundments, but such rivers still represent a very valuable biodiversity resource.

The mosaic of features found in rivers and streams support a diverse range of plants and animals, from the truly aquatic species such as the stickleback and fresh water shrimp to those that spend part of their life cycle in the water, such as mayflies and damselflies. A wide range of habitats are associated with rivers and streams from the steep fast flowing conditions in the upper reaches of catchment areas, to meanders, shingle beds and sand bars in the mid to lower reaches.

All rivers and streams in the county borough are covered in this statement, including the adjacent floodplains and grazing marsh. The river often acts as a wildlife corridor link between fragmented habitats in farmed areas. With extensive ditches, banks and other habitats they provide important transitional zones to the floodplain. River floodplains often include grazing marsh in some catchment areas; these are grasslands that are periodically flooded due to their

low-lying position near the coast or in river floodplains. Unimproved sites are very rich areas for wildlife, often supporting rare plant and invertebrate communities and offering good habitat for breeding waders such as lapwing and curlew. However, the majority are improved and/or drained in order to provide for more intensive grazing, resulting in low biodiversity. The drainage ditches, though, can contain important populations of rare plants and invertebrates even where the diversity of the surrounding pastures is low.

2.2 Ponds

The definition by the Pond Conservation Group[35] defines a pond as "an area 1 metre to up to 2 ha which holds water for at least 4 months." The majority of ponds will hold water for 12 months of the year, but where they dry out (usually in high summer) they are known as seasonal ponds. Artificially constructed ponds, such as settlement ponds created to collect silt from run-off (e.g. from roads and land reclamation sites) and garden ponds for aesthetic, ornamental and wildlife reasons, are also included in this category.

2.3 Fens

Fens are peatlands which receive water and nutrients from surface and ground water as well as from rainfall, and they are usually found on peat that is more than 0.5m deep. The water table is at or just below the surface.

The species composition of fens is dependent on the mineral content of the water feeding it, derived from the rocks beneath or adjacent to the fen. The most diverse fens are fed by calcareous waters, but the one fen in Caerphilly county borough is fed with water from base-poor rocks such as shales and sandstones and it is therefore called a 'poor fen'.

2.4 Reedbeds

Reedbeds are characterised by stands of tall, emergent vegetation dominated by the common reed *Phragmites australis,* where the water table is at or above ground level for most of the year. These include areas such as open water fringe habitats at the edges of lakes, and riverine and estuarine watercourses. They can be either freshwater reedbeds or brackish reedbeds in tidal reaches, although Caerphilly has only examples of the former. The common reed can grow up to 3m tall and often forms dense, almost impenetrable stands with a thick ground layer of decaying stem and leaf litter. Areas of open water and ditches are also associated with reedbeds, and small areas of wet grassland (rhos pasture) and wet woodland (carr) may also occur. Key controlling factors that govern the type, composition and zonation of communities present at a site include hydrology (mean water level and seasonal range), water quality (pH, base and nutrient content), soil fertility, successional history, site context and past management (grazing, peat-cutting, burning, etc). Although common reed is always the dominant species other plant species can be found amongst the reed, but when other tall herbs make up a large component it would no longer be classed as a reedbed.

Reedbed includes several NVC communities (see appendix). Several of the larger secluded reedbeds in Wales provide an important habitat for scarce or declining birds such as the bittern and Cetti's warbler. A bittern was last recorded in Caerphilly in 1970. They also support rare and scarce plants and invertebrates.

2.5 Blanket Bog

Blanket bog is a general term used for peat-forming ecosystems where the ground is periodically or permanently waterlogged by high rainfall, poor drainage and a high water table. Peat forms not only in wet hollows but also over large expanses of the undulating land surface,

usually between 250 – 700 m. They are seldom found on slopes of up to 30% hence the descriptive name blanket bog. Rainfall is the sole supply of water and the dominant supply of nutrients to the peat vegetation. The vegetation is dominated by heather (*Calluna vulgaris*), cross-leaved heath (*Erica tetralix*), deer grass (*Scirpus cespitosus*), cotton grasses (*Eriophorum vaginatum* and *E. angustifolium*) and purple moor-grass (*Molinia caerulea*). These species are found in various combinations and dominance depending on the altitude and the degree of water logging and drainage. Blanket bog often occurs in a mosaic with rock outcrops, acid grassland and upland dry heath.

The presence of hard, acidic rock and base deficient soils favours the development of surface, acid loving plant communities in which *Sphagnum* is abundant. The drainage is usually diffuse and undisturbed blanket bog often shows a hummock-and-hollow structure, with *Sphagnum*-rich pools in the hollows.

2.6 Lowland Raised Bog

Lowland raised bogs are peatland ecosystems, which develop primarily, but not exclusively, in lowland areas such as on estuarine floodplains, along river flood plains and in topographic depressions. In such locations drainage may be impeded and the resultant water-logging provides anaerobic conditions which slow down the decomposition of plant material, leading to an accumulation of peat. The continued accumulation of peat elevates the bog surface above groundwater levels in the surrounding area to form a gently curving dome, from which the term 'raised' bog is derived. The thickness of the peat varies considerably, but is known to exceed 12 metres in some areas.

2.7 Lakes and Reservoirs

Lakes are defined as natural permanent water bodies of 1ha or more[12]. Reservoirs are also permanent bodies of water, but have been constructed artificially. Three different types of lakes and reservoirs are described below.

2.7.1 Oligotrophic lakes and reservoirs

Oligotrophic waters are nutrient poor and typically found in the northern and western parts of Britain. Waters tends to be clear with a low biomass of plankton, and have restricted aquatic plant growth and invertebrate populations. These lakes and reservoirs are important for invertebrate groups such as mayflies and caddis, and usually support reasonable numbers of native brown trout (*Salmo trutta*), minnow (*Phoxinus phoxinus*) and stickleback (*Gasterosteus aculeatus*). Water is generally very clear with a rocky or sandy substrate and usually has a pH of less than 7. Discolouration may occasionally occur due to the presence of acids derived from peat within the catchment area.

2.7.2 Mesotrophic lakes and reservoirs

Mesotrophic lakes and reservoirs are generally found between the nutrient-poor mountain lakes and the more nutrient-rich lakes in the lowlands. They are capable of sustaining the highest diversity of flora and fauna, but are particularly sensitive to disturbance from a range of activities which stimulate nutrient supply. The water is sometimes discoloured by phytoplankton, and has a pH usually around or slightly below neutral. Approximately 600 known or potentially mesotrophic lakes have been identified within the UK, 33 of these being within Wales. Further work is being carried out to confirm the status of these waters, as samples have to be taken on a quarterly basis to establish an average nutrient level.

2.7.3 Eutrophic lakes and reservoirs

These are the end result of the process of nutrient enrichment. They are rich in plant nutrients, particularly phosphates, and support large populations of both plants and animals. Indeed, many are nationally important wintering sites for large numbers of wildfowl. Water is generally clouded with algae, pH is usually over 7 and substrates tends to be highly organic mud and silt. Eutrophic waters also contain large populations of coarse fish, particularly Roach (*Rutilus rutilus*), Bream (*Abramis brama*) and Pike (*Esox lucius*).

2.8 Swamps

This habitat is defined as emergent or frequently inundated vegetation, occurring over peat or mineral soils. Swamp contains tall emergent vegetation typical of the transition between open water and exposed land. Swamps are generally standing water for a large part of the year, and the species typically include both mixed and single-species stands of bulrush *(Typha* spp), common reed, *(Phragmites australis),* reed canary-grass *(Phalaris arundinacea),* reed sweet-grass *(Glyceria maxima),* tussock sedge *(Carex paniculata),* lesser pond sedge *(C. acutiformis),* bottle sedge *(C. rostrata)* or other tall sedge. Single-species stands are mainly found in deeper water (single stands of common reed have been described separately in section 2.4).

2.9 Canals

Canals can be very important for wildlife and often support highly diverse assemblages of plants and animals, particularly those that no longer carry heavy boat traffic. The aquatic habitats together with the margins, towpath and hedge, or other boundary features provide shelter and/or emergence sites for aquatic, semi-aquatic and terrestrial animals. Canal tunnels and bridges may provide important roosting and breeding sites for bats. The associated habitats are themselves often species-rich, and some are relicts from formerly widespread habitats such as unimproved grassland, marsh and wet woodland/carr. Canals can also provide important linear corridors for the movement of species.

3. CURRENT STATUS

3.1 Rivers and Streams

Caerphilly county borough covers two main river catchments: the Ebbw and Rhymney, within which the rivers Ebbw, Rhymney and Sirhowy flow, along with their tributaries and streams **(Map 1.1).** Ancient and semi-natural woodlands, heathland, wet marshy grassland areas (rhos pasture), and other species-rich grasslands are often found alongside rivers in the county borough.

The **River Rhymney** rises above the town of Rhymney. It is a deep cutting river, passing southwards through a relatively wide valley for approximately 58km, before discharging into the Severn Estuary at Cardiff. The total catchment area is 233km^2 with 275km of rivers and streams within it. The river passes through the towns of Rhymney, New Tredegar, Bargoed, Ystrad Mynach and Caerphilly[25]. Important habitats on the **Nant Bargoed Rhymney**, for example, include a wet marshland, with frequent broadleaved woodlands on the middle and lower reaches, and good habitats containing species poor, rush dominated, semi-improved grassland. Improvements to water quality, has given rise to the return of otters to the Rhymney River. Fish species found in the **Rhymney** include salmon, sea, brown and rainbow trout, stickleback, chub, dace, roach, minnow, common eel and grayling.

The **River Ebbw Fawr** starts at several small streams north of Carno Reservoir in the Brecon Beacons. The actual **River Ebbw** forms at the confluence of the Ebbw Fawr and Ebbw Fach at

Aberbeeg, north of Crumlin. From the source of the Ebbw Fawr to the River Usk the river travels 47km. The River Ebbw passes through main settlements of Crumlin, Newbridge, Abercarn, Crosskeys and Risca, and finally passes into Newport[25]. It has been greatly modified by successive periods of industrialisation over many years. Activities such as mining have caused many changes to the channel and associated flora. Since much of the industrial activity has ceased many of the natural features associated with rivers have started to return, e.g. berms riffles and pools within previously modified channels. Signs of otters have been recorded in the lower Ebbw.

The source of the **River Sirhowy** can be found to the west of Shon-Sheffrey's Reservoir below Trefil in Blaenau Gwent county borough. From its source it travels 32.6km before entering the river Ebbw north of Risca. The catchment area is 76.1 km^2. The river passes through Tredegar, Blackwood, Pontllanfraith, Ynysddu, Cwmfelinfach and into Crosskeys[25]. Ancient woodland bank flora is quite common on this river, including species such as wavy hair grass *Deschampsia flexuosa*, remote sedge *Carex remota*, wood sorrel *Oxalis acetosella* and fern *Dryopteris* spp. Such communities occur frequently where the valley side ancient woodland is adjacent to the channel.

The rivers of Caerphilly county borough like many other valley rivers have suffered due to past industrial practices and urban development. More recently extensive flood alleviation schemes have resulted in loss of floodplain habitat, and have also altered the course and nature of the riverbed and bank. Erosion of banks has also been caused by canalisation and the removal of tree cover in historic times. Eutrophication is a major problem in more recent times and can have a detrimental effect on the floodplain habitat that still retains some connection with the main stream.

Since the decline of coal mining and other traditional heavy industry the quality of watercourses in Caerphilly county borough has greatly improved. Wildlife is returning and the rivers, tributaries and flood plains are fast becoming significant contributors to the biodiversity of the county borough. We are now witnessing the return of the otter, dipper and grey wagtail. However, several areas of the catchment are suffering pollution from sewage and metaliferous mine waters and extensive littering of windblown and fly-tipped materials.

The following Sites of Importance for Nature Conservation (SINC) contain rivers or streams within their boundaries[4]: **(Map 1.1)**

10: **Craig Ysgwydd-Gwyn**; several small streams run through site
11: **Cwm-Llydrew Wood**; ancient oak wood alongside stream
15: **Coed Deri-Newydd**; stream flows through site
19: **Y-Graig Mire**; stream issues on site
37: **Nant Cwm-Crach**; part of site is an alder lined stream
39: **Cwmsyfiog River Meadow**; alongside the River Rhymney
43: **Pentwyn Fields**; small stream and pond
44: **Princetown Meadows**; a number of streams run through site
62: **Caenau Cwm-Corrwg**; River Sirhowy flows through site
70: **Cyncoed Fields**; stream through part of site
88: **Brittania Woods**; various streams running through the woodland
110: **Cwm Gawni Woodland**; with stream
117: **Nant Cae'r-Moel Swamp and Woodland**; stream through woodland
149: **Cwmcarn Slopes**; Nant Carn provides an important stream habitat with a range of riffles, pools and undercut banks

157: **Coed y Mochyn, Risca**; river runs through woodland
167: **Churchill Meadows**; 2 minor streams run through site, water cress is abundant

The total area of coastal and floodplain grazing marsh in Wales has been estimated at 80,000 ha. This amounts to 3.9% of the total area of Wales, and 17% of the habitat within the UK. In Caerphilly county borough, floodplain grazing marsh is limited to small areas adjacent to the main rivers as identified on Map 1.1.

3.2 Ponds

Current figures for England and Wales indicate that 63% of ponds have been lost over the past 100 years, and are continuing to be lost in Britain as a whole at a rate of 9,000 per year[35]. Ponds are considered wildlife havens, for half of Britain's wetland plants and 300 Red Data Book species are associated with ponds. Research data collected on behalf of the EA and the DETR suggests that ponds are as important a wildlife habitat as rivers. The research identified 431 species of invertebrates in 200 best ponds in Britain, compared to 377 species in the 600 best rivers. Ponds were found to contain 78 'Nationally Notable' species, compared with 41 in rivers; and there were also 26 Red Data Book species found in ponds, twice the number found in rivers[32]. Ponds are also significant habitat for common species which may become endangered if there is further pond loss, for example the common frog *Rana temporaria,* or smooth newt *Triturus vulgaris.* Article 10 of the EU Habitats and Species Directive[23] identifies ponds, among other habitats, as stepping-stones that "are essential for the migration, dispersal and genetic exchange of wide ranging species".

There are a large number of potential ponds in Caerphilly county borough, but as yet there has been no systematic survey to identify their presence and importance for wildlife. For example, settlement ponds are found at Penallta Community Park, and there are several quarry ponds, e.g. on Mynydd-y-Grug and Llanbradach Quarry SSSI and several ponds occur in Aberbargoed Fields SAC. There are also likely to be a large number of garden ponds in the county borough, and a community survey of these is required.

The following Sites of Importance for Nature Conservation (SINC) contain ponds within their boundaries[4]: **(Map 1.2)**

3: **Tair Carreg Moor**; contains 4 ponds
6: **Mile End Pond**, Abertysswg
9: **Cefn Gelligaer**; series of ponds on part of site
25: **Hafrodrissclawdd**, east of Markham; includes a small artificial pond
43: **Pentwyn Fields**; pond as part of site
44: **Princetown Meadows**; a number of ponds add to the diversity of this site
52: **Cefn Hengoed Hillside**; pond in the eastern part of site
61: **Valentec Nature Reserve**
74: **Nelson Ponds**, Tredomen
87: **Upper Trelyn Marsh**; small pond on site
101: **Pant-Ysgawen Fields**, Tredomen; 2 small ponds provide additional habitat on part of site
115: **Pwllgwinau**, east of Newbridge; deep pond on site (all 3 species of newt present)
126: **Maesycwmmer Meadows**; includes a farm pond on part of site
131: **Twyn Yr Oerfel**; upland mire and pond
140: **Coedcae Newydd**; deep pond in flooded quarry
151: **Twmbarlwm**; several seasonal ponds near road
162: **Coed y Brain**, Penyrheol; pond in the Llanbradach quarry
183: **Coed Cefn-Pwll-Du**; area of colliery spoil and associated pond

3.3 Fens

The UK is thought to host a large proportion of the fen surviving in the EU. As in other parts of Europe fen vegetation has declined dramatically in the past century. Generally fens in intensively farmed lowland areas occur less frequently, are smaller in size and more isolated than in other parts of the UK. Fens are dynamic semi-natural systems and in general, management is required to maintain open-fen communities and their associated species-richness. Without appropriate management (e.g. mowing, grazing, burning, peat-cutting, scrub clearance), natural succession will lead to the formation of scrub and woodland.

CCW's Phase 1 Habitat Survey recorded a total of 2728 ha of fen (basin, valley and floodplain mire). The LBAP Target Guide (CCW)[12] currently in preparation gives a figure of 10 ha of valley mire in Caerphilly county borough, and a total of fen and flush (soligenous fen) at 26 ha. In the county borough, **Nelson Bog SSSI** (SINC 55) **(Map 1.3)** supports the only significant example of fen, but there are likely to be small fragments of fen that occur in other sites.

3.4 Reedbeds

Reedbed remains a rare habitat in the UK with only an estimated 5000ha, and of the 900 or so sites contributing to this total, only about 50 are greater than 20ha, and these comprise a significant proportion of the total area. CCW's Phase 1 Habitat Survey identified 48 ha of single-species swamp that includes reedbeds as a component, but the report did not quantify the extent and distribution of reedbeds in the Gwent and Glamorgan regions.

Many reedbeds are small in size with critically small populations of associated species. Most of the large areas of reedbed have been lost as a result of land drainage and water abstraction, and the predicted rise in sea level could also destroy many important coastal examples.

In Caerphilly county borough the main area known for reedbed is **Nelson Bog SSSI** (SINC 55), **(Map 1.4)** in association with its fen habitat[4]. This site is significant for its population of breeding birds, in particular the reed bunting and water rail. There are also water vole and (perhaps) otter at this important local wetland area. However, there is a lot of overlap between reedbed, swamp and fen habitats, with these often having a small component of reedbed. Management proposals should therefore ensure that all wetland features are retained.

3.5 Blanket Bog

The British Isles has between 10-15% of the total world resource of blanket bog (approximately 1.48 million hectares) and a major part of the total resource of blanket bog in the EU occurs in the UK[12]. Scotland has by far the largest proportion of this, approximately 1,060,000 ha, with Wales supporting around 70,000 ha (4.7% of the UK total) and England some 215,000ha. Significant proportions of peat soil, probably in excess of 10%, no longer support blanket bog vegetation. Comprehensive figures for changes to the total UK resource are not known, but studies carried out in Scotland suggest a 21% reduction in the extent of blanket mire between the 1940s and 1980s. This has mainly been attributed to afforestation, and substantial losses to forestry are reported in Wales. Further losses can be put down to drainage and heavy grazing, peat cutting and atmospheric pollution, resulting in significant habitat change in, for example, mid and south Wales and the Pennines. The Welsh resource has particular biogeographical significance as blanket mire is absent across much of this latitudinal range in England, disappearing south of the Pennines until Dartmoor in the south-west. Welsh examples also encompass much of the core range of ecological variation of this habitat in Britain. Much is above 250m where the annual precipitation exceeds 1200mm, and in Upland areas. However, an

estimated 540ha of blanket bog occurs at elevations below the general upper limit of agricultural enclosure in Wales.

The presence and variety of associated plants, birds, invertebrates and lower plants, particularly species of bog moss (*Sphagnum* spp.), are important indicators of this habitat's quality. Notable species include bog rosemary (*Andromeda polifolia*), hen harrier (*Circus cyaneus*), merlin (*Falco columbarius*), skylark (*Alauda arvensis*), golden plover (*Pluvialis apricaria*), short-eared owl (*Asio flammeus*) and the nationally scarce large heath butterfly (*Coenonympha tullia*) which is confined to this habitat.

In Caerphilly county borough all blanket bog appears to have been modified in both upland and lowland areas, and occurs on the following SINCs[4]: **(Map 1.5)**

1: **Traed y Milwyr, Llechryd** (on peat)
54: **Waun Rydd, Gelligaer** (on peat)
175: **Nant Gwaunybara Mire** (on peat)

3.6 Lowland Raised Bog

In the UK lowland raised bogs are a particular feature of cool, rather humid regions such as the north-west lowlands of England, the central and north-east lowlands of Scotland, Wales and Northern Ireland. Remnants also occur in some southern and eastern localities, such as Somerset, South Yorkshire and Fenland. As elsewhere across NW Europe there has been a dramatic decline in the area of lowland raised bog habitat since around the start of the nineteenth century. The area of lowland raised bog in the UK retaining a largely undisturbed surface is estimated to have diminished by around 94% from an original c.95,000 ha to c6,000 ha at the present day, with a reduction from 4,000 ha to 800 ha in Wales (England: 37,500 ha to 500ha; Scotland: 28,000 ha to 2,500 ha, Northern Ireland 25,000 ha to 2,000 ha)[49]. Historically, the greatest decline has occurred through agricultural intensification, afforestation, and commercial peat extraction. Future decline may result from the gradual desiccation of bogs damaged by a range of drainage activities and/or a general lowering of groundwater tables.

Lowland raised bogs support a distinctive range of animals including a variety of breeding waders and wildfowl, and invertebrates. The raised bog surface may support a patterned mosaic of pools, hummocks and lawns, a micro-topography created in part by plant growth. This provides a range of water regimes supporting different species assemblages. Plant accumulation preserves a unique and irreplaceable record of plant and animal remains and some atmospheric deposits from which it is possible to assess historical patterns of vegetation, climate change and human land use.

Caerphilly county borough supports only one known example of a raised bog at **Nelson Bog SSSI**[4] (SINC 55) **(Map 1.6).** The majority of the bog however was lost in the 1970s as a result of tipping colliery spoil, and the remaining area is heavily modified from drying out and heavy grazing.

3.7 Lakes and reservoirs

Lakes and reservoirs within the county borough tend to be restricted to the upland areas of common land, or in the case of the Rhymney reservoir, in the valley area north of the A469 constituting an impoundment of the catchment area of the river Rhymney. Very few areas of open standing water are found along the valley floors or near urban developments. There are a

small number of exceptions, however, these being Caerphilly castle moat and the lakes at Parc Cwm Darran.

During the past ten years, an increasing number of smaller areas of open water have been constructed as commercial fisheries, but the nature conservation value of these is limited. Almost all lakes and reservoirs within the county borough are nutrient poor (oligotrophic) with the exception of Pen-y-fan pond. This is the only example of moderately nutrient rich (mesotrophic) water in the area, and one of only 33 in Wales.

Lakes and reservoirs within the county borough are all privately owned, (with the exception of Caerphilly Moat, Pen-y-fan pond and Parc Cwm Darran lake) either by industrial organisations such as Chorus (British Steel) and British Coal or Dwr Cymru/Welsh Water. All are man made and no examples of natural lakes occur in the county borough. They provide a variety of functions including water supply for drinking, or as a cooling agent. Former mine and canal feeder ponds are now leased to angling clubs or syndicates. The following lakes or reservoirs occur in Caerphilly county borough: **(Map 1.7)**

Oligotrophic Examples:
Rhymney reservoirs; SO 103103 and SO 098105
Butetown pond; SO 101091
Rhaslas pond; SO 095072
Nant y Draenog reservoir; ST 189935
Jepsons pond SO 085093
SINC 147: Distillery Pond, Abercarn (reservoir)[4]

Mesotrophic Examples: Pen-y-fan pond SO 006198 (Pen-y-Fan Pond and Meadows SINC); this is an unusual example of a mesotrophic lake in the county borough, because its geographical location generally corresponds with typical oligotrophic water. Situated in an upland area, between the Ebbw and Sirhowy valleys, it receives its water from a single rain-fed stream emerging from Mynydd Pen-y-fan, an area of acidic habitats.

Eutrophic Examples: There are no documented cases of eutrophic waters within the county borough, although waters such as Parc Cwm Darren, Caerphilly castle moat and Fochriw feeder pond are potential cases due to the activities of coarse fish that have been stocked into these very shallow waters. Nutrients released into the water column by bottom feeding, the quantity of anglers baits and feed introduced into the water combined with the reduction in light penetration, due to suspended solids, produce a similar effect to that of dense algal blooms. Further work is required to assess the exact status of these waters.

3.8 Swamps

CCW's Phase 1 Habitat Survey recorded a total of 1802 ha of swamp in Wales, but it did not distinguish between reedbed and other types of swamp. Swamps are often found in association with fen and reedbed, and only a few fragments of swamp are known in the county borough, in particular Nelson Bog, Llanbradach Swamp and Crown Roundabout Marsh. The CCW LBAP Target Guide draft[12] identifies 9.2 ha of swamp in the county borough. The following Sites of Importance for Nature Conservation contain swamp communities[4]: **(Map 1.8)**

55: **Nelson Bog SSSI**
84: **Crown Roundabout Marsh, Pontllanfraith**
117: **Nant Cae'r-Moel Swamp and Woodland**
126: **Maesycwmmer Meadows**; some areas of mire

131: **Twyn Yr Oerfel**; upland mire and pond
162: **Coed y Brain**, Penyrheol (Llanbradach swamp)

3.9 Canals

Construction of canals in the UK took place predominantly between 1750 and 1830, although some were built much earlier and others later. The main concentration of canal construction was in the Midlands linking it to London. Outlying areas often only had local canals. British Waterways currently owns 2,012 miles (including some river navigation) of canals, representing 52% of the canal network in Britain.

The western arm of the Monmouthshire - Brecon Canal lies within Caerphilly county borough, known as 'The Crumlin Arm'. The canal was first opened in 1796 and within Caerphilly county borough runs from Pontywaun, past Crosskeys, through the centre of Risca to the Newport/Caerphilly county borough boundary between Risca and Rogerstone[15]. At present the canal can no longer be used for navigation along it's entire length, as it has been traversed by a number of developments. It is now a series of short linear water bodies connected mainly by pipes beneath roads. There is only very light boat usage on certain lengths and these provide a valuable wildlife resource. The canal contains open water habitats and swamp communities along its edges including stands of reed sweet grass and in places more diverse communities such as water cress, water mint and reedmace, yellow flag and gipsywort[15]. Its margins, towpaths, hedges and tunnels are of high value to wildlife providing a mixture of terrestrial and wetland habitats.

The canal is of importance as a wildlife corridor, for species that use its aquatic and terrestrial habitats, however, it is broken up by roads crossing the canal and so is not as effective as it could be. Some bank stabilisation works have severely reduced the wildlife value in some areas, restricting the colonisation of bank side flora and fauna, but in other areas a more natural margin has developed enabling the establishment of emergent vegetation. Moorhen are breeding in several areas along the canal where reed sweet-grass is dominant, and the water vole and otter may also be attracted to certain areas of the canal, especially where it is in close proximity to the River Ebbw, noted for its otter population[15]. Many species of invertebrates are found on the canal, including a number of dragonflies and damselflies, and could support crayfish, although no survey work has been undertaken to confirm this. **Map 1.9** shows the location of the canal in the county borough.

3.10 Associated Species

- **Birds**: Breeding: ***reed bunting****, ***kingfisher***, ***dipper***, ***grey wagtail***, curlew,* water rail, common sandpiper, black headed gull, mallard, little ringed plover, mallard, heron, teal; Other species: *bullfinch*, green woodpecker,* sparrowhawk, common scoter, goosander, sand martin (feeding area), swallow (feeding area), swift (feeding area), divers, cormorant
- **Mammals**: ***water vole****, ***European otter****, *daubentons, natterers, noctule, pipistrelle*, lesser horseshoe* bats*
- **Amphibians**: ***great-crested newt****, ***palmate newt***, ***smooth newt***, ***common toad***, ***common frog***
- **Reptiles**: *grass snake*
- **Fish:** ***common eel***, ***bullhead***, ***three-spined stickleback***, ***brook lamprey***,

stone loach, ***native brown trout***, ***salmon*** *and* ***sea trout***, bream, pike, roach and various other fish species

- **Invertebrates:** ***dragonflies and damselflies***
- **Crustacean**: ***freshwater white-clawed crayfish****
- **Plants**: ***common reed***, *Orchids*

3.11 Links with Other Habitats

- *Deciduous Woodlands* (wet woodland, e.g. willow and alder carr)
- *Wildlife Corridors* (hedgerows)
- *Species-rich Grasslands* (rhos pasture)
- *Common Land* (mosaic of wetland habitats)
- *Urban*

4. CURRENT FACTORS AFFECTING THE HABITATS

- Nutrient Enrichment: Nutrient enrichment stimulates the growth of algae that rapidly utilise excess phosphorous and nitrogen dissolved in the water column. Algal blooms, particularly blue green, are thus a common indicator of nutrient enrichment. **(All open water habitats)**. Wetlands are very sensitive to change, particularly where nutrient levels are affected by:
    - the discharge of effluents;
    - leaching and erosion of nutrients from agricultural land and forestry,
    - the liberation of nutrients from lake sediments by bottom feeding coarse fish, and
    - alterations in agricultural management practices and industrial or land development strategies within the catchment areas of lakes and reservoirs can quickly alter the chemical balance of a water body, particularly if shallow and relatively small in size. Oligotrophic waters can become eutrophic within a matter of years. **(lakes and reservoirs)**;

- Climate Change: potential threats from sea level rise and global warming **(All)**

- Inappropriate Management and Neglect: heavy grazing by sheep, cattle and horses and uncontrolled burning which can lead to increased erosion and the loss of characteristic wetland species **(blanket and raised bog)**; lack or inappropriate management of existing wetlands leading to drying, scrub encroachment and succession to woodland **(All)**

- Development: many forms of development can have an effect on wetland habitats, both directly by removing or altering the habitat and indirectly for example by altering surface and ground water movements**(All)**

- Drainage: **(fen, reedbeds, raised bog)**; physical modification and management for drainage, flood prevention and navigation **(rivers, streams and floodplains)**;

- Agriculture: agricultural improvements including drainage and fertiliser application **(blanket bog)**; conversion to intensive agriculture **(fen, reedbeds and ponds)**; use of adjoining land for intensive agriculture, leading to pollution and increased rates **(rivers, streams and floodplains)**;

- Water Abstraction: over abstraction from groundwater or river resulting in low water flows **(rivers and streams)**; and drying out of other wetland habitats; water abstraction for industrial use creates greatly fluctuating water levels, particularly amongst those water bodies feeding the Ebbw Vale tin plate works. This creates unstable marginal and aquatic habitats, loss or reduction of marginal and emergent flora with knock-on effects to higher order species and a resultant decrease in biodiversity **(lakes and reservoirs)**; abstraction from underlying aquifers may limit the re-wetting potential of certain sites. **(raised bog)**

- Pollution: indirect (diffuse) or direct (point source) pollution, increase in mine water discharge, domestic sewage, agricultural run off, industrial run off, litter and fly-tipping **(rivers, streams and floodplains and reedbeds)**; pollution from sulphate and nitrate deposition, and acidification from atmospheric deposition **(blanket bog)**; contamination from adjacent landfill, opencast, or agricultural drainage. Current deposition of atmospheric pollutants. **(raised bog)**; two stroke oil emissions from boats also cause water borne pollution leading to degradation of water quality and damage to aquatic life **(lakes and reservoirs)**

- Invasive Species: threat from invasion of non-native species such as Japanese Knotweed, mink, North American crayfish **(rivers, streams and canals)**; canals are also prone to alien invasion such as *(New Zealand pigmyweed)*

- Forestry: previous planting of trees, mainly non-native species over extensive tracts of bog and also on adjacent tracts of land can affect hydrology. Aerial spraying of fertilisers and pesticides can drift onto bogs; impacts of existing and new plantations on neighbouring areas can dry out adjacent bogs and act as an invasive seed source **(raised and blanket bog)**

- Natural erosion process **(blanket bog, raised bog)**

- Natural succession: wetlands are dynamic, and unless actively managed can revert to woodland **(All except rivers and streams)**

- Human Activities: wake and wash damage from certain forms of powered watersports can cause significant damage to emergent vegetation, this results in a loss of cover for other species, and a reduction in biodiversity. **(lakes and reservoirs and canals)** towpath use has been increased as part of the National Cycleway; light boat use, walking and angling **(canals)**

- Overstocking: of coarse fish species, particularly carp in to small and shallow still-waters, can result in a degradation of water quality through their feeding habits. Increased silt levels within the water column results in an almost total blocking of sunlight and loss of aquatic plant and invertebrate species. **(lakes and reservoirs)**

- Size: small total area of habitat and critically small population sizes of several key species dependent on this habitat. **(reedbeds)**

- Lack of Knowledge amongst planners, farmers and landowners of the value of wetlands for wildlife **(reedbeds, swamps and bogs)**

- Design of Garden Ponds: the location, size, shape, materials and introduced plants and animals are all important considerations when constructing a garden pond. In particular the introduction of non-native species which can become invasive and can spread out into the surrounding area, especially when inadvertently put into more natural ponds.

5. CURRENT ACTION

5.1 The Environment Agency and water companies have a statutory duty to further the conservation value of the sites they own or manage (Water Resources Act 1991). The EA also has a statutory responsibility for pollution.

5.2 The duty to further conservation applies to the water management functions of the EA from 1996, while the pollution control functions of the Agency must regard the desirability of conserving and enhancing features of special interest.

5.3 Where possible, the Environment Agency carries out maintenance work on watercourses in such a way as to enhance the conservation value of the site.

5.4 The Environment Agency has prepared a Local Environment Action Plan (LEAPs) for the area; the Eastern Valleys LEAP[21].

5.5 The EA has commenced a programme of Catchment Abstraction Management Strategies (CAMS) which will assess the current water resources and current abstraction to determine whether the catchment is under- or over-utilised. This will be based on the ecological requirements for each catchment (physical, fish, macrophytes, invertebrate populations). The Rhymney catchment is to be assessed during 2001/2002.

5.6 Dwr Cymru/Welsh Water actively raise awareness of river management and biodiversity at their Environmental Education Centre at Cilfynydd.

5.7 The statutory conservation agencies are funding several lake research projects. These include the CCW Lake Survey and palaeolimnological studies funded by CCW and EN. CCW have also produced a draft guide identifying potentially or confirmed mesotrophic lakes and reservoirs within Wales as part of their LBAP Target Guide (document in preparation).

5.8 The EA regularly monitor the quality of all open standing waters, checking for pollution and indicators of nutrient enrichment. Advice should, therefore, be sought from the EA and CCW before management plans are drawn up for any particular area of open standing water.

5.9 British Waterways has produced an environmental code of practice designed to instigate more sympathetic operating procedures and to protect and enhance wildlife habitat on canals and has produced its own 'corporate' biodiversity action plan.

5.10 CCBC is looking at long-term maintenance issues along the Monmouthshire – Brecon canal.

5.11 CCBC Parks Services have carried out long term weed control on the Monmouthshire - Brecon canal.

5.12 Local angling clubs/voluntary groups carry out litter picks and vegetation management.

5.13 Keep Wales Tidy Campaign, through its Afonydd Glan/Clean Rivers Project, have 8 voluntary river care groups who actively carry out a variety of environmental projects throughout the county borough.

5.14 The Forestry Commission has produced 'Forests and Water Guidelines' giving details of best forest practice around watercourses.

5.15 An estimate of the blanket bog resource in Great Britain is being carried out through the National Peatlands Resource Inventory (NPRI) resourced by SNH, and work undertaken by DoE (now DEFRA). The NPRI maps and assesses the peatland resource using satellite imagery and soil map information, backed up by field validation.

5.16 The Tir Gofal agri-environment scheme in Wales includes blanket bog as a component of moorland and includes specific guidelines for the management of bogs. It also contains provisions which may benefit management of coastal and floodplain grazing marsh in the future.

5.17 Conservation bodies in the UK have also received funding from the EU, through the EC LIFE (Nature) Programme, for projects that develop techniques for the management and restoration of peat bogs.

5.18 Under the Wildlife and Countryside Act 1981 (as amended) the unlicensed release into the wild of non-native animals, some established alien species (including the European pond terrapin and certain species of amphibia, fish and crayfish) and some plants is prohibited.

5.19 Many wetland sites within Caerphilly county borough have been designated as SSSI and/or SINC which offers them some protection, for example Nelson Bog SSSI comprising a mosaic of various wetland habitats, Llanbradach Quarry SSSI, and a large number of SINCs.

6. CONSERVATION DIRECTION

6.1 Main Objectives for wetland habitats are to:

- **Survey** to identify the distribution, extent and condition of wetlands in the county borough.
- **Maintain** and improve the quality, state, structure and conservation interest of wetlands, through the use of integrated management plans and the sensitive management of adjacent land.
- **Create/restore** wetland features or areas of maximum wildlife benefit, wherever possible.
- **Promote** the importance of wetlands to all sectors of the community to raise awareness of their significance for biodiversity and the local environment.

6.2 Possible actions:

- Carry out Environmental Assessments of developments which will have an impact on wetlands and their associated habitats.
- Promote the importance of all wetland habitats and floodplains to the general public, water companies and other organisations, businesses and individuals involved with wetland features and watercourses.
- Develop a local inventory and agree a framework for identifying the extent and quality of the wetland resource, the factors affecting the habitats and action required for conservation.

- Encourage and promote the appropriate management (grazing, burning, etc) of all wetland areas in the county borough.
- Continue survey and monitoring work for habitats and associated species in wetland areas to identify the extent and quality of the existing resource and opportunities for restoration/re-creation.
- Enhance existing river corridors and wetland habitats (e.g. EA, CCW, CCBC).
- Seek alternative uses that are compatable with wildlife interests to prevent draw-down of redundant reservoirs and subsequent loss of open water habitats.
- Rehabilitate areas of damaged blanket bogs where the hydrological integrity is suitable for restoration (e.g. drain blocking).
- Protect blanket bogs from inappropriate uses by identifying them in local authority plans, and in Forest Indicative Strategies.
- Promote alternatives to peat for use in horticulture.
- Secure cross-sector Government Department policies for sustainable utilisation of extensive peatland resources, based on principles of conservation.
- Carry out a Pond Survey throughout the county borough to include all types of pond, including a garden pond survey where the involvement of the local communities may be possible.

APPENDIX - NVC Communities

Fens

Information on NVC fen communities present in Caerphilly county borough is not available because the Phase 2 Habitat Survey has not been carried out by CCW. However the main fen community at Nelson Bog is likely to be: S27: *Carex rostrata – Potentilla palustris* tall herb fen.

Reedbeds

- S4: Common reed swamp and reedbeds
  Phragmites australis swamp and reedbeds
  = areas of reed-swamp that retain some water throughout the year.

- S25: Common reed – hemp agrimony fen
  Phragmites australis – Eupatorium cannabinum fen
- S26: Common reed – common nettle fen
  Phragmites australis – Urtica dioica fen
  = reed –fens which become dry in summer

Canals

- S5: Reed Sweet-grass swamp
  Glyceria maxima swamp

This community is dominated by reed sweet-grass, usually with few other species except on the margins. It is characteristic of eutrophic conditions; nutrient-rich waters. It is a lowland community and has a restricted distribution in Wales.

DECIDUOUS WOODLANDS HABITAT STATEMENT

1. INTRODUCTION

Deciduous woodlands are important habitats for biodiversity, representing in the case of Ancient Semi-natural Woodlands continuous tree cover stretching back over centuries. However, despite this length of time, man to a greater or lesser extent has affected all deciduous woodlands. The following five types of deciduous woodland that occur in Caerphilly county borough have been identified as priority habitats in the UK Biodiversity Action Plan[42]:

- **Upland Oak Woodland***
- **Upland Mixed Ash Woodland***
- **Lowland Beech and Yew Woodland***
- **Wet Woodland***
- **Lowland Wood Pasture and Parkland***

2. HABITAT DEFINITIONS

2.1 Upland Oak Woodland

Upland oak woods occur on base-poor to acidic soils under conditions of high rainfall. "Upland" is used in a UK sense rather than as a direct reference to elevation, although typically they are found covering the steep valley sides. These woodlands are one of four National Vegetation Classification (NVC) types that are outlined in the appendix to this statement.

The main tree species is sessile oak (*Quercus petraea*), but birch (*Betula* spp.*)* and an understorey of hazel (*Corylus avellana*), rowan (*Sorbus aucuparia*) and holly (*Ilex aquifolium*) are common. Epiphytic lichens, mosses and liverworts thrive in the clean humid air of upland oak woods providing a suitable habitat for many internationally rare species. A patchwork of other woodland types may be present where there are different soil conditions, for example, soils flushed with water may support ash (*Fraxinus excelsior*), elm (*Ulmus* spp.) and hazel, and boggy hollows supporting alder (*Alnus glutinosa*). Soil fertility, drainage conditions and the extent of grazing are major factors in determining the composition of the ground flora of upland oak woods. Bluebell (*Hyacinthoides non-scriptus*), bramble (*Rubus* spp.) and ferns are the most common on the richer soils, whilst heather (*Calluna vulgaris*), bilberry (*Vaccinium myrtillus*) and mosses are more prominent on the acid and nutrient poor soils.

Animals are well represented in these valuable habitats. Distinctive breeding birds such as pied flycatcher (*Ficedula hypoleuca*), redstart (*Phoenicurus phoenicurus*) and wood warbler (*Phylloscopus sibilatrix*) can be found as well as a range of deadwood invertebrates.

2.2 Upland Mixed Ash Woodland

Upland mixed ash woodlands are found on base-rich soils under conditions of high rainfall. The distinction between upland and lowland ash woodland in Caerphilly county borough is not clear, and for the purpose of this plan, all the NVC communities for ash woodland have been included (see appendix to this statement). Classification can also be difficult as upland mixed ash woodlands may merge into lowland beech or wet woodland. Ash is always the major species, although oak, elm, birch and sycamore can all be locally abundant. Hazel is very common as an understorey species, occasionally forming the canopy. Some rare native trees may be found in these woodlands, notably large-leaved lime *(Tilia platyphyllos)* and various whitebeams *(Sorbus*

spp.) Despite variations in the canopy composition ground flora remains broadly similar and particularly rich for an upland habitat. Bright displays of flowers can be found such as bluebell, primrose *(Primula vulgaris)*, wood cranesbill *(Geranium sylvaticum)* and wild garlic *(Allium ursinum)*.

Upland ash woodlands can support a rich invertebrate fauna with uncommon or declining species and the dense and varied understorey of these woodlands can also provide suitable habitats for dormice (*Muscardinus avellanarius*), and an important lichen flora.

2.3 Lowland Beech and Yew Woodland

Lowland beech and yew woodland comprise three NVC types reflecting different soil and topographical conditions (see appendix). "Lowland" is used in its UK context, but Welsh beech stands of any altitude are included in this Habitat Statement. Beech woodlands tend to be found as high forest structure and often in a mosaic with other woodland communities.

Calcareous beech woods form around 40% of the total lowland beech and yew woodland habitat. The canopy can include mixtures of beech, ash, sycamore, yew *(Taxus baccata)* and whitebeam. Oak is less common than in other types of beech wood. Characteristic uncommon or rare plants include box *(Buxus sempervirens)*, red helleborine *(Cephalanthara rubra)*, coralroot bitter-cress *(Cardamine bulbifera)* and bird's nest orchid *(Neottia nidus-avis)*.

Beech woodland on neutral, slightly acidic soils comprises about 45% of the habitat. It is found on heavier soils, often where the drainage is poor or impeded. Stands tend to be dominated by beech, but oak is commonly associated and bramble forms a characteristic ground layer. Although a shrub layer is often lacking, holly, and occasionally yew, can form a second layer. Mosaics with oak-bracken-bramble woodland are common and it can be found colonising western oak woods.

The remaining 15% of the habitat comprises acidic beech woodland (pH 3.5 - 4.5). Holly is the main understorey species and oak a common canopy associate. It is not uncommon for it to form mosaics with oak-birch-wavy-hair grass communities. It also has spread into western oak woods.

2.4 Wet Woodland

Wet woodland occurs on poorly drained or seasonally wet soils. They usually have alder, willows or birch as their main species and comprise a wide range of NVC types (see appendix). There are three main situations in which wet woodland can be found:

1. Successional developments on wetlands such as mires, fens, bogs, wet meadows and lake margins. The flora of these stands is highly variable.

2. Alder stands on seepages and spring lines on valley sides. They are frequently part of mosaics with upland oak woods or upland mixed ash woodland. If unmanaged or undisturbed the alder component may decline and drier examples may succeed to upland mixed ash woodland.

3. On floodplains and along river edge. If well developed they can be extremely diverse both biologically and structurally. The wettest areas may hold carr vegetation, poorly drained areas, alder and willow, and free-draining areas mature stands of oak or ash.

2.5 Lowland Wood Pasture and Parkland

Lowland wood pasture and parkland, often with veteran trees, are present today largely due to historic land management systems and represent a vegetation structure as opposed to a plant community. Sites often consist of grazed woodlands and open grown or forest trees, many reaching veteran age. Today these habitats often survive in the form of golf courses, deer parks, ancient orchards and landscaped parkland. Trees specific to each site influence the variety of invertebrates and lichens. Typical tree species found in wood pasture, parkland and veteran tree habitats include oak, ash and beech; mature trees can occur as either maidens or pollards. Due to the variety of structure and composition they can be difficult to classify under NVC communities although they are most commonly associated with four woodland types (appendix). Additionally, the more open wood pastures and parkland may include various scrub, heathland, and improved and unimproved grassland communities.

3. CURRENT STATUS

Although around 60 Sites of Nature Conservation Importance (SINC) have been declared by Caerphilly county borough council for their woodland habitat[4], only a small percentage have been classified under NVC types and can be identified as belonging to the five habitats within this Habitat Statement. The remainder of the SINC woodlands are unclassified at present but may reveal further information about the current status of these priority habitats.

3.1 Upland Oak Woodland

Upland oak woods are restricted to the oceanic fringe of Western Europe, with the UK having the most extensive and best-developed examples. There is, therefore, a significant international responsibility to this habitat and it is recognised as a UK BAP priority habitat. The total UK area of upland oak woods is estimated to be around 80,000 to 110,000 hectares[12] of which Wales has some 40% (39,000ha). The highest cover within Wales occurs in a zone covering most of Snowdonia, the borders of Powys and Ceredigion, northern Camarthenshire and north Pembrokeshire. In Wales, upland oak woods account for nearly half the semi-natural woodland cover. Regionally, upland oak woods cover an estimated 327ha in Glamorgan and 610ha in Gwent. The Gwent woodlands are found at some of the habitat's eastern-most limit in the UK.

Within Caerphilly county borough there are six SINC woodlands recorded as having examples of upland oak wood habitat, **Coed Deri Newydd** (NVC type: W16), **Craig Ysgwydd-gwyn** (W11), **Troed-rhiw'r-fuwuch** (W17), **Cwm-llydrew Wood** (W11), **Coed Gelliau'r-Gwellt** (W10, W11) and **Blackwood Riverside Woodlands** (W11)[4] (see **Map 2.1**).

3.2 Upland Mixed Ash Woodland

Although its exact distribution is not clear, upland mixed ash woodland occurs throughout the Western seaboard of Europe with its range restricted by climatic requirements. The UK has a significant international responsibility for this habitat and it is recognised as a UK BAP priority habitat. The UK estimate for the total area of upland mixed ash woodland is 67,500 hectares[12], occurring mainly in southwest England, Wales, northern England and Scotland. Wales has approximately 25% (17,000 ha) of the UK total with the largest concentrations on the limestone areas of Clwyd, Monmouthshire, South and West Glamorgan and central Camarthenshire. Across Wales upland mixed ash woodlands make up about 20% of the total area of semi-natural woodland. Glamorgan has an estimated 3,200ha and Gwent 2,100ha.

Within Caerphilly county borough upland mixed ash woodlands can be found at SINC sites such as **Cwm Syfiog Woodland** (W8), **Penmaen Woodlands** (W8), **Cwm Dows Valley** (W9), **Cwm**

Pennar (W9), **Nant y Draenog** (W9)[4] (see **Map 2.2**). Other SINC sites may prove to contain upland mixed ash woodland habitat but difficulties exist as upland mixed ash and lowland mixed woodlands form an ecological continuum. They may also merge with lowland beech woods on base rich soils.

3.3 Lowland Beech and Yew Woodland

In the UK beech is considered native only in southern England and southern Wales. It is likely that it would have spread naturally to other areas had forest fragmentation not impeded its progress. The UK estimate for this habitat type is between 15,000 and 25,000ha with Wales having around 3,700ha[12]. These figures increase if recent beech woodland is included. In Wales the native range is generally accepted to be Gwent and the eastern halves of Mid- and South Glamorgan. Gwent has approximately 1,500ha and Glamorgan 680ha. Lowland beech and yew woodland found within Caerphilly county borough is important within a Welsh context. SINCs: **Cwm Syfiog Woodland** (W14) and **Blackwood Riverside Woodlands** (W14)[4] (see **Map 2.3**).

3.4 Wet Woodland

Wet woodlands on floodplains are associated with most river systems but are usually small and fragmented due to the high agricultural productivity of the floodplain. Alder stands on valley sides can be found throughout most of the central upland zone often in association with upland oak woods and upland mixed ash woodland. Successional sites tend to have a more scattered distribution with a series of wetland sites in West Gwynedd and Anglesey, bog complexes in mid-Wales and sand dunes in South Wales. An estimated 70,000ha of wet woodland can be found in the UK[12]. Wales has between 8,500 - 10,000ha, with 310ha found in Gwent and 1,100ha in Glamorgan.

SINC sites within Caerphilly county borough that contain wet woodland include **Troed-rhiw'r fuwuch** (W7) **Pottery Road Woods** (W6), **Coed Gellia'r-Gwellt** (W7) and **Blackwood Riverside Woodlands** (W7)[4] (see **Map 2.4**).

3.5 Lowland Wood Pasture and Parkland

Preliminary estimates by CCW indicate approximately 6,500 – 7,500ha of parkland (excluding other wood pasture) is found in Wales out of the 10,000 – 20,000ha estimated to be in good condition in the UK[12]. Many sites are of historic, cultural and landscape importance. The descriptions of designated SINC sites within Caerphilly county borough suggest that there are several examples of this habitat within the county borough[4]. However, as lowland wood pasture and parkland NVC types are similar to some of the other woodland communities further examination of these sites is necessary.

3.6 Associated Species

- **Birds:** ***spotted flycatcher**, **song thrush**, **bullfinch**, **tree sparrow**, **green woodpecker**, **long-eared owl**, barn owl, nightjar*, linnet*, buzzard, kestrel,* redstart
- **Mammals**: ***dormouse**, **brown long-eared bat**, **badger**, **yellow-necked mouse**, greater horseshoe bat*, lesser horseshoe bat*, pipistrelle bat*, brown hare*;* and *otter** (wet woodland)
- **Amphibians**: *great-crested newt*, common frog* and *toad, palmate* and *smooth newt*
- **Invertebrates**: ***red wood ant**, **waved carpet moth**, buttoned snout moth**, netted carpet moth*, violet click beetle, stag beetle*, bark beetle (*Emoporus tiliae)*; beetle (*Gastrallus immarginatus),* heart moth

- **Plants:** ***bluebell**, Cornish moneywort*, *Orchids,* devil's bolete fungus, hedgehog fungus, knothole moss, orange-fruited elm lichen, Lichens (*Bacidia incompata, Enterographa sorediata,* and *Schismatomma graphidiodies*); Royal bolete fungus, oak polypore

3.7 Links with other Habitats

Many of the woodlands within Caerphilly county borough contain a mix of NVC types. For example, wet woodlands may be found within upland oak woods or upland mixed ash woodlands. Similarly, upland mixed ash woodland can form a continuum with lowland beech and yew woodland. Therefore, this Deciduous Woodland Habitat Statement should be read in its entirety rather than as specific woodland habitat types. Links with habitats other than woodland include:

- *Wetlands*
- *Species-rich Grasslands*
- *Wildlife Corridors* (hedgerows)
- *Post-Industrial Land*
- *Urban Habitats*

4. CURRENT FACTORS AFFECTING THE HABITAT

- Overgrazing leading to changes in structure, ground flora impoverishment and difficulties for regeneration **(All)**
- Invasion by sycamore and other species not generally native to these woods **(All)**
- Development pressures such as new roads and quarrying **(All)**
- Until the early 1980s replacement of deciduous woodlands with conifers **(All)**
- Changing agricultural practices leading to increased ecological isolation **(All)**
- Cessation of traditional management practices such as coppicing or unsympathetic forest management **(All)**
- Climate change and atmospheric pollution **(All)**
- Dutch Elm disease **(upland mixed ash woodlands)**
- Grey squirrel damage to young trees **(lowland beech and yew woodland)**
- A predominance of older age classes **(lowland beech and yew woodland)**
- Loss of habitat due to the restoration of other, particularly wetland, habitats **(wet woodland)**
- Unsympathetic management of pollarding and grazing **(lowland wood pasture and parkland)**
- The perception that sites should be left 'clean and tidy' by removing felled timber and dead wood at sites with high amenity use **(lowland wood pasture and parkland)**

- Conversion to arable land resulting in the loss of pasture and damage to trees **(lowland wood pasture and parkland)**

- Lack of management where ancient trees fail to be replaced **(lowland wood pasture and parkland)**

- Remote factors such as changing groundwater levels, water abstraction, drought, climate change and disease **(lowland wood pasture and parkland)**

5. CURRENT ACTION

5.1 The Forestry Commission (FC) has a presumption against clearance of native woodland for conifer planting or agricultural use and all woodland is expected to be managed according to the UK Forestry Standard. Felling licences from the FC are normally required when the woods are not being managed under a plan approved by them.

5.2 FC operates the Woodland Grant Scheme to promote the sympathetic management of woodlands.

5.3 FC is preparing a Welsh Forestry Strategy that will form the basis for future woodlands incentives policies.

5.4 Forest Enterprise (FE) has produced management plans for upland oak woods based on their Action Plan for the habitat.

5.5 FE is currently surveying all ancient woodland sites within the FE estate in Wales to determine the condition and NVC types of all ancient semi-natural woodland and replanted ancient woodland. This information will then be used to guide the restoration of plantations on ancient woodland sites to native tree species. The NVC types of ancient semi-natural woodlands will help in the production of further FE Habitat Action Plans. Survey work is expected to be complete in October 2001.

5.6 CCW has set targets of 10% expansion and 10% restoration in the various woodland habitat types with a ranking system for each LBAP area as to which woodland type is of greater importance. Within Caerphilly county borough upland mixed ash woodland and lowland beech and yew woodland are ranked of greater importance than the other types within this statement.

5.7 CCW identifies Sites of Special Scientific Interest (SSSI) and promotes the proper management of ancient semi-natural woodlands. Future management will be considered against a framework that is being drawn up for the whole of Wales. No SSSIs have been designated for woodland in Caerphilly county borough.

5.8 Coed Cymru, through its Caerphilly/Blaenau Gwent/Torfaen county borough woodland officer, is able to offer advice on management and the development of local markets for woodland products that can provide an impetus to the management of these woodlands.

5.9 Tir Gofal, the Welsh agri-environment scheme, offers grant aid on a whole farm basis and encourages the sympathetic management of deciduous woodlands.

5.10 Promotion and identification of actions for native woodland through the South East Wales Woodland Group.

5.11 Caerphilly county borough council has declared **Graig Coch**, an oak – beech - birch woodland, a Local Nature Reserve.

5.12 Caerphilly county borough council has drawn up a list of Sites of Interest for Nature Conservation (SINC) including many woodland sites[4].

5.13 CCBC Countryside Strategy includes a commitment to the preparation of a Woodland Strategy.

6. CONSERVATION DIRECTION

6.1 The Main Objectives for this habitat are to:

- **Prevent** the further loss of existing habitats
- **Manage** existing woodlands through appropriate management
- **Rehabilitate** damaged woodlands to favourable condition through habitat management, and to expand, where appropriate, the habitat.

The 10% targets set by CCW for restoration and expansion are pro-rata across all woodland habitat types and across all of Wales. The ranking system means that upland mixed ash woodland and lowland beech and yew woodland are currently considered of more importance than the other woodland types in this statement.

6.2 Possible actions:

- Encourage surveys to identify further woodlands that comprise these woodland habitat types. Where they meet SSSI selection criteria they should be designated as such.
- Woodland SINC sites within Caerphilly county borough should be evaluated to ensure that they are properly classified. Other woodlands should be considered for selection as SINCs.
- Ensure that woodlands within the ownership of CCBC and other conservation bodies are appropriately managed.
- Ensure that management plans and appropriate management regimes are in place for all designated sites.
- Promote management advice and support the development of markets for sustainable woodland products through Coed Cymru to woodland owners.
- Produce CCBC Woodland Strategy.
- Encourage the reversion of conifer plantations on ancient woodland sites back to a native woodland character.
- Raise awareness of the nature conservation value of deciduous woodlands in all sectors of the community, including agriculture, business, developers, government and the general public.
- Identify sites that can be used to expand the woodland types in this habitat statement.

APPENDIX: NVC COMMUNITIES

1. Upland Oak Woods

W17: *Quercus petraea - Betula pubescens - Dicranum majus* woodland
(Sessile oak - Downy birch - *Dicranum majus* (fern) woodland)

W16b: *Quercus* spp. - *Betula* spp.- *Deschampsia flexuosa* woodland with *Vaccinium myrtillis – Dropteris dilatata* sub-community
(Oak – Birch – Wavy hair-grass woodland with Bilberry - Broad buckler fern sub-community)

W11: *Quercus petraea - Betula pubescens - Oxalis acetosella* woodland
(Sessile oak - Downy birch – Wood sorrel woodland)

W10e: *Quercus robur – Pteridium aquilinum – Rubus fruticosus* woodland
(Pedunculate oak - Bracken - Bramble woodland)

2. Upland Mixed Ash Woodlands

W8: *Fraxinus excelsior – Acer campestre – Mercurialis perennis* woodland
(Ash – Field maple – Dog's mercury woodland)
(d) *Hedera helix* (Ivy);
(e) *Geranium robertianum* (Herb Robert);
(f) *Allium ursinum* (Wild garlic)
(g) *Teucrium scorodonia* (Wood sage)

W9: *Fraxinus excelsior – Sorbus aucuparia – Mercurialis perennis* woodland
(Ash – Rowan – Dog's mercury woodland)

W8 (a-c), W7c and W13 *Taxus baccata* woodlands may be found in mosaic with the above. Also upland mixed ash woodlands that merge into beech woods (W12 and W14) may be difficult to place in either upland mixed ash woodlands or lowland beech and yew classifications.

3. Lowland Beech and Yew Woodlands

W12: *Fagus sylvatica – Mercurialis perennis* woodland (base-rich soils)
(Beech – Dog's mercury woodland)

W14: *Fagus sylvatica – Rubus fruticosus* woodland (mesotrophic soils)
(Beech – Bramble woodland)

W15: *Fagus sylvatica – Deschampsia flexuosa* woodland (acidic soils)
(Beech - Wavy hairgrass woodland)

W13: *Taxus baccata* woodland (Yew stands)

4. Wet Woodland

W1: *Salix cinerea – Galium palustre* woodland
(Grey willow – Common marsh bedstraw woodland)

W2: *Salix cinerea – Betula pubescens – Phragmites australis* woodland
(Grey willow – Downy birch – Common reed woodland)

W3: *Salix pentandra – Carex rostrata* woodland
(Bay willow – Bottle sedge woodland)

W4: *Betula pubescens – Molinia caerulea* woodland
(Downy birch – Purple moor-grass woodland)

W5: *Alnus glutinosa – Carex paniculata* woodland
(Alder – Greater tussock sedge woodland)

W6: *Alnus glutinosa – Urtica diocia* woodland
(Alder – Common nettle woodland)

W7: *Alnus glutinosa – Fraxinus excelsior – Lysimachia nemorum* woodland
(Alder – Ash – Yellow pimpernel woodland)

Some birch stands classified as W4 (a and b) are relatively dry, and if they occur in association with upland oak woods they are best treated as a phase of that habitat rather than as distinct wet woodland.

The driest sections of the floodplain woodlands may also contain "dry" NVC communities, most commonly W8: *Fraxinus excelsior – Acer campestre – Mercurialis perennis* woodland.

5. Lowland wood-pasture and parkland

W10: *Quercus robur – Pteridium aquilinum – Rubus fruticosus* woodland
(Pedunculate oak – Bracken - Bramble woodland)

W14: *Fagus sylvatica – Rubus fruticosus* woodland
(Beech – Bramble woodland)

W15: *Fagus sylvatica – Deschampsia flexuosa* woodland
(Beech – Wavy hairgrass woodland)

W16: *Quercus spp. – Betula spp. - Deschampsia flexuosa* woodland
(Oak – Birch – Wavy hairgrass woodland)

In more open wood pasture and parkland various scrub, heathland, improved and unimproved grassland NVC communities may occur.

PLANTED CONIFEROUS WOODLAND HABITAT STATEMENT

1. INTRODUCTION

Though the natural woodland in the majority of Britain is broadleaved/deciduous woodland, many woods contain conifer species, both native and introduced, that have been planted on otherwise open habitats. Although not a priority habitat in the UK BAP, existing conifer plantations have some biodiversity value, and the Planted Coniferous Woodlands Habitat Statement in the UK BAP[49] identifies conservation needs.

2. HABITAT DEFINITION

Woodlands composed wholly or mainly of conifer species, both native and introduced, have been planted throughout Britain and there are many to be found in the region of South Wales. The commonest species planted are larch (*Larix spp.),* douglas fir (*Pseudotsuga menziesii)* and spruce (*Picea abies* and *P. sitchensis)*, with smaller amounts of other species such as western hemlock (*Tsuga heterophylla)* and Corsican pine (*Pinus nigra* subsp. *laricio*). Conifer plantations often consist of blocks of even-aged crop trees and may include recently felled and recently planted areas, both of which may be invaded by birch, bracken and bramble, adding diversity to an otherwise uniform habitat.

There are two types of coniferous plantations, the Private Woodland, planted on many private estates, and what may be called the State Woodland administered by the Forestry Commission, with the majority planted as a result of the timber shortage in World War I.

3. CURRENT STATUS

3.1 UK and Wales

Approximately 7%, (1,516,000ha), of Great Britain is covered by conifer woodlands. The stands are usually of a single species, with approximately 40% being Sitka Spruce. However, at the forest scale, species composition is normally mixed; in thinned older stands and at edges and in glades, a variety of native trees and shrubs develop as an understorey. FE manages 775,000ha and 741,000ha are privately owned. The CCW Phase 1 survey results indicate that there is 8,138ha of coniferous plantation in Gwent and 24,696ha in Glamorgan[8].

When the trees reach harvesting age there are opportunities for restructuring the habitat, which will lead to diversification of the plant and animal communities they contain. Second rotation forests are more likely therefore to take account of the nature conservation needs through creating internal forest diversity, in tree and stand age. Many forests also have a number of associated features and habitats that are important for wildlife. Woodland rides and glades can be important for vascular plants and many invertebrates. They can also provide areas for targeting limited restoration of semi-natural habitat in conifer plantations. Old stands with dead or dying trees, understorey vegetation and open canopies are also important for a variety of species. A number of GB Red Data Book bird species may occur in plantations, including goshawk, and in clearfell or the early growth stage, nightjar and woodlark can be found.

3.2 Caerphilly County Borough

The ridges forming the southern crop of the coalfield have a mixture of private and state woodland. In the interior of the county borough most is state woodland. Prior to 1939 there was

not much forestry in the county borough, an exception was the Ruperra woodland, which was replanted with conifers following a disastrous storm in 1916. Post-1945 saw the growth of planted coniferous woodland throughout Caerphilly county borough.

There are two types of coniferous plantation in this area. The first is along the border ridges south of Caerphilly town, where historically the ancient woodland has been partially replaced by coniferous plantation by the landowners as part of an existing forest management system. Some ancient woodland remains and so this area is more varied than the conventional view of the planted woodland. Due to its history the habitats range from mature trees, clearfell sites, streams, ponds, abandoned clay and coal workings. The Clay Pits support breeding frogs, and grey heron and mallard have been known to roost there. The mature trees offer feeding and nesting sites for sparrowhawks, coal tits, goldcrests and treecreepers, seasonal visitors include cuckoos, tree pipits, and warblers. The nightjar has been seen in the clear-fell areas in Wern Ddu. Many species of plant are found in the forest, including yellow pimpernel, century, common spotted-orchid, and water mint. Several species of butterfly are also found and around 55 species of moth. The grass snake, adder, slowworm and common lizard represent reptiles, and mammals such as foxes, rabbits and grey squirrels are also common.

The second type is the large commercial conifer plantation that has grown up in the last 60 years, for example those managed by Forest Enterprise. Typical of these are the woodlands on both banks of the river Ebbw, especially on the eastern tributaries in the vicinity of Abercarn and Crosskeys. Other areas are on the southern slopes of Mynydd Machen and at Bryn Owen, above Llanbradach. Most of this is managed woodland on agriculturally poor land. Surveys in other areas have shown that this type of woodland can support a wide range of species including birds such as the nightjar, crossbill, and siskin, and mammals like the fox, rabbit, grey squirrel and the dormouse. In the north of the county borough in the Darren Valley, a conifer plantation supports a colony of breeding herons.

Elsewhere, however, there is a lack of knowledge regarding the biodiversity of coniferous woodlands.

SINC sites[4]: (Map 3.1)

16: **Pont Caradog and Nant Ilan Woodlands** (part)
92: **Cwm Gelli Wood and Meadow** (part)
99: **Coed Goferau** (part spruce plantation)
104: **Cwm Pennar** part to the north)
112: **Coed Cil-Lonydd** (part)
113: **Coedcae Watkin Dafydd**
114: **Gwyddon Valley and Mynydd Maen** (some areas)
165: **Wern Ddu Woodlands** (notable for population of dormice)

Coniferous plantations found adjacent to the following:

106: **Tyle-Coch Wood**,
108: **Cwm Hafod-Fach Woodlands**
133: **Craig y Prisiad Woodlands** (the plantation separates two oak woods)

3.3 Associated Species

- **Birds**: ***goshawk***, ***nightjar****, *linnet**, *kestrel, long-eared owl, green woodpecker,*

woodlark*, crossbill, siskin, cuckoo, tree pipit, warblers, (mallard and grey heron on unplanted clay pits within the forest)

- **Mammals**: *dormouse**, *badger*, *lesser horseshoe bat**, *noctule bat*, fox, rabbit, grey
- **Reptiles:** *adder, grass snake, slow worm* and *common lizard*
- **Invertebrates:** butterflies and moths
- **Plants:** *bluebell, common spotted-orchid,* rosebay willowherb, water mint, bracken, bramble, sheep's fescue, yellow pimpernel, century, western hemlock, holly, silver birch, beech, pine, sessile oak, spruce, larch, star moss

3.4 Links with Habitats

-
- Woodland rides and glades (e.g. clearfell sites): can have patches of ***Acid Grassland*** or ***Heathland*** in open areas where light reaches the ground;
- *Deciduous Woodlands* (mixed in with conifers)
- *Wetlands* (ponds, rivers and streams);
- Mature trees, deadwood and scrub

4. CURRENT FACTORS AFFECTING THE HABITAT

There is no particular threat to conifer plantations as a whole. However, the end of the coal industry and the closure of downstream hardboard manufacturing plants had local implications for soft wood production.

- Many of the species listed in 3.3 are dependent on a particular age of timber and therefore a clear-felling cycle. The moves towards continuous cover would be detrimental to these species, in particular nightjar and woodlark.

Other threats have been identified as:

- Lack of appropriate management, leading to decreases in structural diversity of stands and forests
- Lack of regeneration due to grazing of woods
- Felling without replanting
- Clear-felling and replanting that disrupts other elements of the forest ecosystem, eg, through erosion or effects on water bodies.
- Invasion of species such as Rhododendron, Japanese Knotweed
- Re-conversion to agricultural land

5. CURRENT ACTION

5.1 The overall UK policy aims are set out in *Sustainable Forestry: The UK Programme* (1994) and *Biodiversity in Britain's Forests* (1993).

5.2 The UK also signed up to Resolution for the Conservation of Biodiversity of European Forests, as agreed in Helsinki in 1993. This provides for the enhancement of biodiversity as part of the sustainable forest management programme by integrating the requirements of native, natural and managed woodlands.

5.3 There is a strong emphasis on wildlife conservation management in licences and grants administered by the FC. Through its Regional Advisory Committees and Environmental Panels, FC consults conservation specialists on its activities.

5.4 FE manages publicly owned plantations on behalf of the National Assembly for Wales.

5.5 FE is preparing Forest Design Plans with local conservation experts, which are subject to Forestry Commission approval. These plans are a major means of delivering biodiversity gains in FE forests through promoting structural diversity and populations of key species.

5.6 FC has also produced the documents *Forest and Water Guidelines* (1993), *Nature Conservation Guidelines* (1990) and *Landscaping Guidelines* (1989) which are used as a basis for prescribing management for wildlife conservation. The FC is working to draw these together, along with other environmental guidelines, to produce standards for enhancing biodiversity of planted forests. These will reflect the functional and structural elements of the forests as well as the species interest.

6. CONSERVATION DIRECTION

6.1 Main Objective is to:

- **Maintain** and **enhance** the wildlife potential of the existing conifer resource through continued restructuring and diversification.

6.2 Possible actions:

- o Maintenance of areas of existing planted coniferous woodland, and where appropriate enhancement of their wildlife value.
- o All semi-natural woodland should be buffered, and, along with planted woodland or native broadleaved woodlands, increased in size by natural regeneration and/or planting of local provenance stock.
- o The production of long term appropriate management plans for semi-natural and planted woodland sites should be agreed with owners and managers.
- o The provision of advice, information and training on grants, management schemes, enhancement techniques and the planting of new woodland, to owners and managers.
- o Species and habitat surveys in planted woodlands; require species and habitat surveys for all planning applications affecting conifer plantations.
- o Development of systems for monitoring the biodiversity conservation value of planted conifer woodlands, for eg, by assessing critical habitat features and selected key or indicator species.
- o Promotion of forestry management which enhances the conservation value of plantations through restructuring and diversification among landowners and managers, but also highlight the significance of coniferous woodlands for plants and animals to the general public.
- o Encouragement of sympathetic woodland ride management that benefits biodiversity.

WILDLIFE CORRIDORS HABITAT STATEMENT

1. INTRODUCTION

The Wildlife Corridors referred to in this habitat statement are:

- **Ancient and/or Species-Rich Hedgerows***
- **Roadside Verges**
- **Railway Lines and Cycle-ways**
- **Stone Walls**

Three main types of boundary feature are recognised in the UK BAP[49], but it is only ancient and/or species-rich hedgerows that have been identified as a UK priority habitat*. Stone walls, railway lines (some with cycleways) and roadside verges are considered to be important for biodiversity conservation locally. River and canal corridors are included in the *Wetlands Habitat Statement.*

2. HABITAT DEFINITIONS

2.1 Wildlife Corridors

Boundary features, as described in the UK BAP[49], are an important biological characteristic of the British landscape, and many can be described as "Wildlife Corridors"; for example lines of trees and shrubs, grassland, other semi-natural habitats. These are usually linear habitats and often occur on agricultural land and alongside roads and railway lines. Wildlife corridors are often said to act as a means of dispersal for many species by linking isolated habitats such as woodland and grassland, allowing the movement of species through otherwise open terrain. They are also important in the dispersal of plants, acting as a linear habitat for the dispersal of seeds, and attracting insects for pollination. They contain a large part of the countryside's biodiversity, but are also considered important for agricultural, cultural and archaeological reasons. This is in keeping with available guidance such as the Planning Guidance Wales[56], which recognises the need for wildlife corridors in maintaining viable populations that would otherwise suffer as a result of fragmentation and isolation.

2.2 Ancient and/or Species-rich Hedgerows

Hedgerows form a distinctive and highly attractive part of the landscape of much of Britain. Ancient hedgerows are defined as those that were in existence before the Enclosure Acts (1720 - 1840) in Britain. It is these that tend to support the greatest diversity of plants and animals, but species-rich hedgerows are taken as those containing 5 or more native woody species on average in a 30 metre length, or 4 or more in upland Wales. Hedges containing fewer woody species but support species-rich ground flora of herbaceous plants should also be included, but the practical criteria to identify them have yet to be agreed by the national steering group. Planted species-rich hedges have been included recently[49]. The definition for this statement covers boundary lines of woody vegetation, including associated features such as banks, ditches, and standard trees which form part of the hedgerow. Hedgerows often resemble woodland edge habitat with the most important rich in relicts of ancient woodland. A well-maintained hedge with a good variety of trees and shrubs will provide a year-round supply of food, shelter for winter hibernation, and shelter and cover for small mammals, which then provide food for owls and other predators. Insects such as butterflies are attracted to the flowers and the nectar, and in turn provide food for insectivores such as hedgehogs, shrews and birds.

2.3 Roadside Verges

Many thousands of miles of roads occur throughout Britain. Many of these include verges, banks or hedgerows, which represent small areas of semi-natural habitat, and are an important collective biodiversity resource. Road verges can often support species-rich, long-established neutral grassland vegetation, diverse calcareous grassland, heath vegetation, mixed scrub or emerging woodland. They are therefore also important for many animal and invertebrate species, often providing a refuge where many uncommon species can still survive. The conservation value of road verges has long been recognised, they are important in linking fragmented habitats such as woodland, grassland and wetland areas, allowing animals to travel between isolated areas of habitat. They also provide food and shelter for a wide range of wildlife, from badgers and foxes to small mammals such as voles and bats, to invertebrates such as butterflies and moths. Verges can, if managed properly, represent a valuable and under-utilised resource[36], with some potential for habitat enhancement and creation.

2.4 Railway Lines and Cycle-ways

Disused railways have developed wildlife interest through natural colonisation. Old railway lines often now form well-established, specialised habitat in an area of upheaval and disturbance caused by industrialisation. The materials used on railways, for example railway ballast, also provide suitable habitats for some specific species types. Calcicoles sometimes grow where basic steel slag or limestone chippings have been used as ballast. A few moderate calcicoles also grow on some old basic slag-heaps, for example wild thyme (*Thymus praecox*)[52]. These calcareous grassland communities are a priority habitat. Some disused railways are often used for walking and cycling, and some have been made into cycle-ways. These still retain adjacent habitats and are an important corridor for wildlife. They also provide an opportunity for many people to enjoy the countryside, and become more aware of the importance of biodiversity. But it is not just disused railways that are important for wildlife, the active railway system also supports well-established semi-natural vegetation on embankments and cutting slopes, and are contiguous with important woodland sites and other habitats.

2.5 Stone Walls

Dry stone walls are most typically found in areas of enclosed upland pastures, where they provide a boundary to sheep and other grazing animals. They are an important component of the landscape and have become an attractive addition to new homes and gardens in many areas where the traditional skill is still implemented. Traditional techniques and local varieties of stone make the walls very unique to the area and contribute to local identity. They also provide important habitats for a wide range of flowering plants, ferns, mosses and lichens adapted to rock habitats, plus a wide range of invertebrates, reptiles, birds and mammals which use them for feeding, breeding or as shelter.

3. CURRENT STATUS

3.1 Ancient and/or Species-rich Hedgerows

In Europe, ancient hedged landscapes are found only in parts of France, northern Italy, the Austrian Alps, Greece and the Republic of Ireland and the UK. The current UK total is estimated at 450,000km, and in 1993 it was estimated that about 49,000km of hedgerow remained in Wales[1]. Some 42% of British hedges or about 154,000km (20,600km in Wales) are ancient and/or species-rich[49]. These are concentrated in the southwest of England and southern Wales, and are closely related to landscape history, varying significantly at the local level. However, many continue to decline through lack of survey work or sympathetic management of the adjacent land as well as the hedgerow and hedgerow trees. Between 1984 and 1990, the

overall loss of hedgerow length in Wales was estimated at 25%[11]. Hedges are an important component of the Welsh lowland landscape where they are an irreplaceable historical record of how land was divided and managed in the past.

Hedgerows still remain a strong feature in many parts of the Caerphilly county borough landscape, but it is not possible at this time to estimate the length or the proportion that is species-rich. The CCW Phase 1 Habitat Survey did not record the presence or condition of hedgerows in the county borough, but they do give broad estimates for Gwent (4,000km or 8% of the total Welsh resource) and Glamorgan (6,000km or 12%)[8]. In the county borough hedges are characteristic features of the slopes between the valley floor and the open hilltops, but the current condition of hedges is very variable. The interconnected network of hedges and hedgerow trees in the area is a valuable feature for biodiversity conservation, with a wide variety of woody species including beech, hazel, hawthorn, sycamore, oak, field maple, holly, dog rose and field rose, willow and blackthorn. Although there may be few 'ancient' hedgerows, the majority of those that remain can be considered species-rich and/or locally distinctive, distinguishing the landscape in different parts of the borough and representing a feature that people may use to define local areas of countryside. Ancient and species-rich hedgerows, along with hedgerow trees, are disappearing, and many of those in the county borough are gappy and defunct. Those on farmland are often neglected, leading to the shading out of ground flora and arable crops. Without appropriate management and/or restoration they will continue to deteriorate. Roadside and 'country lane' hedgerows are regularly cut, but no hedge-laying is undertaken on Council hedgerows, except on specific projects, for example, a programme of hedgerow restoration was introduced to the Sir Harold Finch Memorial Park, Pontllanfraith (SSSI), and at Ynys Hywel Farm and Llancaiach Fawr[9].

SINC sites[4]: 57 **Llancaiach Fawr Meadows**, 79 **Penmaen Carr**, 121 **Coed Penallta and Railway Line** (*Penallta Community Park*), 159 **Craig y Fedw**, 164 **Gypsy Lane Wetland** and 165 **Wern Ddu Woodlands** (see **Map 4.1**).

General regions: Mynydd Islwyn, Mynydd Maen, Cwmcarn, Penmaen, Pen-y-fan and Manmoel and Argoed/Markham uplands.

There are over 600 plant, 1,500 insect, 65 bird and 20 mammal species known to live, feed or breed in hedgerows, especially butterflies and moths, farmland birds, bats and dormice. In a typical hawthorn hedge there can be as many as 34 species of breeding birds in a 1,000m section, and almost 30 species of mammal regularly use hedgerows either as cover, for food or as hunting grounds[55]. The hedgerows around Wern Ddu support populations of dormice.

3.2 Roadside Verges

In the 1970s it was estimated that there were some 180,000ha of roadside habitat in England and Wales, of which about 100,000ha was actively managed grass verge habitat[55]. There is 1,050km of road in Caerphilly county borough and a variety of adjacent habitats are found in both urban and rural areas. The majority comprise grassland habitats with some heathland communities and scrub, and associated features such as a hedgerow, bank, ditch, fence, trees and/or small woodland. On the mountain roads there is often a hedgerow on top of a grass bank made up of mixed soil and stone. There are also a number of examples of wooded roadside verges; a typical example is the stretch of the A4048 between Pontllanfraith and Ynysddu. The essential cutting back of woody species benefits the ground flora by opening up areas and increasing the available light. The density of bluebells at this site indicates that it has been wooded for many years, as they are typically slow to colonise[16]. Road verges are important in

linking fragmented habitats such as woodland, grassland and wetland areas in the county borough, allowing animals to travel between isolated areas of habitat.

The majority of roadsides in the county borough are maintained for highway safety reasons. Maintenance regimes vary for different types of roadside verge, and the Council recognises eight types; for example the "Highway Verge" is a one metre wide strip that is cut three times a year, and is managed mainly as a pedestrian refuge. The minimum cut of any verge is once a year, but verges and roundabouts in urban areas are managed more regularly in order to prevent them causing an obstruction to traffic. Roadside verges are not currently managed to sustain wildlife, but there is a policy in the Local Transport Plan for the future consideration of wildlife[5]. New roads also contribute to this network of linear habitats, and the associated planting of local native species will attract wildlife as existing roadsides do. The main type of habitat planted is woodland, using native tree and shrub species. This has been done in large-scale road construction schemes and means that relatively little management is required during the establishment years. An example of well-established woodland is on the Risca – Rogerstone Bypass, planted in 1986.

SINC sites[4]: 86 **Victoria Road Slopes** (an area of roadside verge of botanical interest);
Other sites: 'Heads of the Valleys' Road (A465), Llechryd (2ha of unimproved grassland) where the roadside verge was reported important for its calcareous grassland with purging flax, lady's mantle, yellow rattle and other plants[37]; **roadside verge near Maesycwmmer**; 1ha of neutral grassland, with some unusual plants including harebell and salad burnet; **road near the "Rowan Tree", Nelson**; hedgerow on road verge with good botanical interest[37]; and **Heol Ddu, Bargoed**; roadside verge in an urban area[37] (see **Map 4.2**).

3.3 Railway Lines and Cycle-ways

Woodland, scrub, grasslands and heathland communities often colonise **disused railway cuttings and embankments**, providing an important habitat in much the same way as roadside verges, linking fragmented habitat areas and providing food and shelter. There are 47,478 metres of disused railway in Caerphilly county borough, and much of this is continually under threat from development of pipelines and restoration for transport. Many plant species are found on disused railway lines in the county borough, for example, pearly everlasting (*Anaphalis margaritacea)*, which is an important local species as it is found only in Monmouthshire and Glamorgan, in particular in the Rhymney Valley[52].

The 40,335m of **active railway** in Caerphilly county borough also represents a significant wildlife habitat, for example the extensive Coed Llanbradach woodland, Coed y Brain and Llanbradach Quarry SSSI, which are adjacent to the active Cardiff - Rhymney railway line. Without some form of management, however, invasive species will colonise the railway line rapidly, to the detriment of the important vegetation including species such as pearly everlasting, rosebay willowherb and nettles which provide food and breeding opportunities for butterflies, birds, bats, and other animals. Management also curtails natural succession of vegetation, which would otherwise result in the formation of woodland and scrub, and the loss of open habitat, in particular butterfly rides and areas for reptiles to bask in the sun.

The 34,412m of **cycleway on former railway lines** is of similar biodiversity value as the corridor and its adjacent habitats remain largely unaffected, and the leisure aspect ensures regular management and local people's enjoyment of the countryside. The old drainage ditches that were part of the railway system are also managed, there still being a need to divert excess water. These represent an additional habitat for plants and animals, including frogs, toads and

newts. In some instances the mature trees lining the railway are unaffected by the construction of the cycleway and retain their importance as feeding corridors for bats. Bridges found along railways and cycleways also add to the diverse nature of these areas. They are often quite damp, moist places attracting lichen, liverworts, mosses and ferns. Cycleways are an ideal starting point to encourage local people to visit the countryside.

Map 4.3 shows the extent of railways and cycleways in Caerphilly county borough, and SINCs associated with them[4]:

- Disused railway lines
  Crosskeys – Markham (SINC 33)
  Crumlin – Pentwynmawr
  Blackwood – Tredegar; Maesycwmmer – Machen
  Maesycwmmer – Fleur de Lys

- Cycleways on disused railway lines
  Sirhowy Valley Country Park Cycleway
  Parc Cwm Darran Cycleway (SINC 12)
  Aberbargoed – New Tredegar – Abertysswg
  Pontllanfraith – Nelson (SINC 121)
  Penyrheol (Caerphilly) – Abertridwr (cycleway on up to Senghenydd)

- Sites of Importance for Nature Conservation (SINCs)[4]
  12: Cwm-Llydrew Meadows
  33: Markham Railway Line
  45: Cwm Afon Railway Line
  121: Coed Penallta and Railway Line (cycleway)
  173: Caerphilly/Machen Disused Railway

- Active railway lines
  Newport – Ebbw Vale
  Cardiff – Rhymney

3.4 Stone Walls

In Caerphilly county borough these mainly occur in the enclosed rough upland grazing areas, replacing hedgerows as boundaries to grazing livestock. There are quite a number of such walls with the majority in good condition, however there are a number in need of repair. They are important habitats for reptiles, for example lizards; amphibians for example, great crested newt, and many types of lichen, moss and fern. However, the lack of survey work means that the quality of the walls and their value for wildlife is unknown. The creation of new walls is negligible countywide, but some have been built in Penallta Community Park. It is a labour-intensive, costly and time-consuming operation for many landowners, but in the long term, by using local stone and traditional techniques, they are much more sustainable than temporary boundaries or fencing. The following sites contain examples of dry stone walls: (see **Map 4.4**)

SINC sites: 158 **Ty'n-y-Parc**; old walls colonised by spleenworts; 121 **Coed Penallta and Railway Line** (*Penallta Community Park*);
General regions: Mynydd Islwyn; Mynydd Maen and Cwmcarn; Pen-y-fan and Manmoel; Manmoel Common/Cruglwyn (dry stone walls in disrepair)

3.5 Associated Species

- **Birds**: *linnet*, tree sparrow*, grey partridge*, bullfinch*, song thrush*,* redstart, *green woodpecker, barn owl, buzzard, kestrel,* chaffinch
- **Mammals**: *pipistrelle*, brown long-eared, greater horseshoe** and *lesser horseshoe* bats, dormouse*, badger,* stoat, weasel, fox, wood mouse, harvest mouse, field vole, common and pygmy shrews
- **Amphibians**: *great-crested**, *palmate* and *smooth newts, common frog, common toad*
- **Reptiles**: *common lizard, slow worm, grass snake, adder*
- **Invertebrates**: *dragonflies, moths* (*buttoned snout*) and butterflies*
- **Plants**: ***cowslip***, *early purple orchid, southern marsh orchid*, *bluebell*, *yellow rattle,* many other flowering plants, lichens and ferns

3.6 Associated Habitats

- *Wetlands* (rivers and streams, canal corridors)
- *Deciduous Woodlands* (lowland wood pasture and parkland)
- *Species-rich Grasslands* (neutral, calcareous and acid communities)
- *Common Land* (agricultural land; upland pasture and enclosed land)
- *Coedcae* (often forms linear habitat on ridges in the Uplands alongside Common Land)
- *Heathland* (communities on roadsides, and as linear corridors adjacent to Common Land)
- Ancient/mature trees, banks, and ditches, scrub

4. CURRENT FACTORS AFFECTING THE HABITATS

- Neglect - development of gaps; encroachment of scrub and woodland, the eventual collapse of *stone walls,* reflecting modern high labour costs, the loss of traditional skills and, often, non-intervention in the belief that no management is beneficial (**All**)

- Poor management - too frequent or wrongly timed, leading to poor habitat conditions, development of gaps, probable species change, disturbance in the breeding/fertilising months (**All**)

- Loss of hedgerow trees - senescence or felling, and no replacement (**hedgerows**)

- Use of herbicides, pesticides and fertilisers - often used up to the base/bank; leads to nutrient enrichment and decline in species-diversity; spray drift and run-off also major problems (**hedgerows, roadside verges**)

- Increased stocking rates and traffic - erodes the feature, and can be replaced with fencing which then reduces the necessity for maintenance (**hedgerows, stone walls**, **roadside verges**)

- Deliberate removal - often carried out for agricultural or development purposes (**hedgerows, stone walls)**

- Development - housing, industry and road construction and widening are the main threats to wildlife corridors (**All**)

- Planting - of trees and shrubs on existing corridors increases the possibility of woodland and scrub encroachment; inappropriate use of non-native species in planting schemes is also a problem (**roadside verges, railway lines, cycle-ways, hedgerows**)

- Increasing disturbance - from maintenance of services such as gas, electricity, and telecommunications (**roadside verges**)

- Road features - widening and alignment results in direct loss of traditional boundaries and verges; the provision of features such as pavements and lay-bys may conflict with roadside habitats (**roadside verges, hedgerows**)

- Infilling and reclamation - for example a railway at Maesycwmmer has been infilled; others have disappeared or are threatened by redevelopment and reclamation. (**disused railway lines**)

- Invasive Species - Japanese knotweed and ragwort threaten native plant species by competing for space and light (**All**)

- Gritting - necessary on roads when conditions threaten highway safety, but salt can affect vegetation (**roadside verges**)

- Theft of stone from local walls (**stone walls**)

5. CURRENT ACTION

5.1 The Conservation (Natural Habitats, etc) Regulations 1994 recognise that linear features are essential for the migration, dispersal and genetic exchange of wild species.

5.2 Article 10 of the EC Habitats Directive[23] requires Member States to encourage management of hedgerows in their land use planning and development policies. Deterioration of individual hedgerows also leads to the fragmentation of the important habitat corridors.

5.3 Hedgerow management advice available from many sources, such as NAWAD, GlamWT, GWT, BTCV.

5.4 Grant aid available for positive management; the CCW Hedgerow Renovation Scheme is now superseded by Tir Gofal; this new agricultural scheme requires agreement holders to maintain existing stockproof boundaries, including capital payments for hedgerow restoration, and it is a condition of set-aside payments to protect adjacent features such as hedgerows.

5.5 Positive use of countryside designations to attract relevant funds and initiatives.

5.6 Implementation of legislation (Hedgerow Regulations, 1997[18]) to protect wildlife corridors, and UDP[3] policies for Nature Conservation includes hedgerow and hedgerow trees.

5.7 Ongoing research such as LANDMAP projects and WDA landscape studies.

5.8 The use of Tree Preservation Orders (TPOs) protects a number of hedgerows and roadside verges.

5.9 Highways Authorities have a role to play in managing roadside verges, roadside hedgerows and other features. The CCBC Local Transport Plan[5] recognises the importance of roadside verges and states - "verges of roads will be managed actively to sustain wildlife, provided highway safety is not compromised".

5.10 The Local Transport Plan[5] also identifies the need for progress on the National Cycle network, 2 routes already exist (numbers 4 and 47), but CCBC are in the process of identifying additional areas of interest, most will have links with disused railway lines.

5.11 CCBC SINC selection criteria[4] identifies hedgerows and scrub habitats where they form linkages with habitats of higher value or where they support rare species, and where they form part of a habitat mosaic[7].

5.13 Planting alongside new roads in construction schemes usually involves planting native trees and shrubs to establish species-rich woodland, with suitable funding.

5.14 Cycleways are managed by appropriate methods to conserve the diversity of habitats and species. Country park management plans involve work on the cycleway and adjacent habitats. A cycleway is usually 2-3m wide, and must be maintained to prevent encroachment alongside and above (canopy). Public use of existing cycleways (eg, Penallta to Nelson) is high and CCBC are currently in the process of formally adopting existing cycleways as 'highways', which will ensure regular management.

6. CONSERVATION DIRECTION

6.1 Main objectives for Wildlife Corridors will be to:

- **Survey** to identify the extent and quality of wildlife corridors in the county borough for both habitats and species;
- **Halt** the loss of any species-rich and good quality examples identified, and maintain and enhance important wildlife corridors, protecting features of conservation value and bringing derelict features into appropriate management;
- **Promote** the biodiversity value of wildlife corridors to landowners, land managers and the general public, and provide education and training where necessary.

6.2 Possible actions:

- Develop methodologies for the identification and management of important wildlife corridors.
- Survey and compile a register of hedgerows, together with a register of hedgerow trees, in order to establish base line data.
- Undertake a road verge assessment, and ask the general public to report potentially interesting roadside verges (using indicator species), and follow-up with survey/assessment work. Produce a 'first tranche' register of important roadside verges in Caerphilly county borough.
- Protect all wildlife corridors from damage and destruction through the implementation of Hedgerow regulations and the Local Transport Plan policy TE4 to manage road verges. Designate wildlife corridors as SSSI, SINC, etc.

- Encourage and support farmers, landowners and managers in their efforts to use measures such as Tir Gofal and the Hedgerow Scheme to manage wildlife corridors sensitively. Also apply positive management on Council owned land.
- Extend wildlife corridors to increase cover and connect isolated habitat fragments, encourage the planting of hedgerows and building of stone walls in new developments, road improvement projects and restoration schemes. Apply sound ecological principles by planting mixtures of native species rather than single species.
- Promote the importance of hedgerows and other wildlife corridors to the farming community and the general public. Provide advice and training on traditional techniques such as hedgelaying, and sources for possible funding/grants.
- Educate the general public, farming and landowning communities, and council staff about the conservation value of wildlife corridors. Perhaps set-up community-based projects, hold training days for council staff and contractors on traditional techniques such as hedge-laying and dry stone walling.
- Continue to monitor, after initial survey work, the populations of associated priority and local species.
- Continue work on hedgerow enhancement in the Caerphilly Mountain Countryside Service area, and research the possibility of similar work elsewhere.

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 Glamorgan[13] and Gwent[14] 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 BAP[49], 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 BAP[49] 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 BAP[49] 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 fields[49].

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 SINCs[4], 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 UK[49]. 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 Survey[13]; 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 Gwent[14].

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** SINCs[4] 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 UK[49]. 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 LNR[4] (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 maintained[23]. 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 Glamorgan[13] and Gwent[14] and Phase 2 lowland grassland survey of the better quality sites.

5.4 Caerphilly county borough council has identified many grassland sites as SINCs[4], a non-statutory designation for sites of interest within a county context and includes policies for their protection in the UDP[3]. 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 Plan[5] 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:

o 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.

- o 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.
- o 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.
- o Continued monitoring and surveying of sites in Caerphilly county borough to assess habitat value for flora and fauna species.
- o Prepare and maintain a complete record of species-rich grasslands in Caerphilly county borough.
- o 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 borough[12]: 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-Isaf 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-Isaf 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 Ochrwyth 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 Maesycwmmer 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

COMMON LAND HABITAT STATEMENT

1. INTRODUCTION

There are some 550,000 hectares of common land in England and Wales. It has served generations for centuries. Because of its largely untouched nature, common land is valued for its biodiversity, sporting interest, historical significance and increasingly, because of the amenity and sense of well being it provides as open countryside, or in more urban settings, as undeveloped land. It is also a valuable agricultural resource.[33]

Common Land has been included in this LBAP as a landscape feature of Caerphilly county borough due to the diverse number of habitats found on common land, including a number of UK priority habitats and species. It comprises a large percentage of the county borough and as such it is important to raise awareness among commoners associations and the general public. Common land requires favourable management and increased protection, particularly from damage by off-road vehicles and motorbikes, to conserve this mosaic of habitats and the species that rely on a diverse landscape. It is therefore not included in the UK BAP, but it has considerable local importance for wildlife.

2. HABITAT DEFINITION

Common land is made up of a mosaic of habitat types that frequently merge together to give the upland commons of the county borough their characteristic appearance. Habitats found within the boundary of the commons include:[29, 30]

- **Woodlands**
  - broadleaved semi-natural woodland
- **Grasslands**
  - marshy grassland (rhos pasture)
  - unimproved acidic grassland/semi-improved acidic grassland
  - unimproved calcareous grassland
  - (reseeded grassland)
- **Heathland** (wet dwarf shrub heath, dry dwarf shrub heath)
  - Dry heath and Wet heath (acidic grass mosaic)
- **Wetlands**
  - wet /dry modified bog
  - blanket bog
  - ponds
  - oligotrophic reservoirs
  - Valley mire
- Scattered trees
- Scrub (various densities)
- Continuous or scattered bracken
- Acidic/neutral flush
- Scree and acidic/neutral rock outcrops

In addition, there are numerous species dependent upon these specific habitats in order to survive within the county borough. Loss, damage or modifications to these habitats could well result in the loss of many species now considered to be already declining nationally, but more so within the county borough.

3. CURRENT STATUS

3.1 Caerphilly County Borough

The area covered by this plan broadly encompasses the unenclosed land throughout the county borough. Where these unenclosed areas adjoin enclosed farmland, the boundaries are often clearly marked by the change from semi-natural habitats to improved grassland. Commons occur chiefly along the ridges separating the valleys. Due to their unenclosed nature, historic management and patterns of grazing, the habitats represented can differ markedly from those on adjoining farmland.

There are 19 areas of common land in the county borough (eight shared with neighbouring unitary authorities), consisting of a mosaic of differing habitats. Although by definition common land does not constitute a specific habitat type, commons within the county include several habitats that are now confined solely to the linear, whale-backed ridges which act as wildlife corridors, separated by industrialised and urbanised valleys. Many of these habitats are now becoming uncommon, if not rare within the county borough. In addition to these habitats, many forms of wildlife are now confined to the commons, chiefly due to the nature of management and relative lack of disturbance. Common land is also seen as an area with high open space amenity value by the inhabitants of the valleys, and is also an important agricultural resource for those farmers with commoners rights.

3.2 The Rights of Owners, Commoners and the Public

All common land is owned by a person or body in a similar manner to any other privately owned land. The owner holds it subject to the rights of commoners and to the special Acts relating to common land, notably the Law of Property Act 1925. This prohibits fencing of land subject to common rights without consent of the National Assembly of Wales. The owners are also subject to the laws affecting all landowners, such as the Town and Country Planning Acts. Rural District Councils however were excluded from the Law of Property Act 1925, for example, Rudry.

- Owners must not substantially interfere with rights of commoners, but do hold rights to:
    - minerals
    - shooting
    - balance of grazing
    - granting of easements
    - planting and cutting timber trees
    - maintaining an action for trespass

- Commoners on the other hand may have rights including:
    - grazing of pasture
    - estovers (the right to gather firewood, litter, animal bedding)
    - turbary (peat cutting
    - piscary (fishing rights)
    - pannage (the right to turn out pigs to graze on beech mast or acorns)
    - common in the soil (the right to dig sand, gravel etc for use in the commoner's holdings[7].

- Members of public however, only have right of access to the commons within the county borough (being urban commons) "for air and exercise" subject to three basic prohibitions:
    - driving a vehicle (including a bicycle) on any common land
    - camping

- lighting a fire

The general public within valley communities tend to regard the commons as un-owned land, upon which they can pursue a multitude of recreational activities. It is this misconception, combined with the abuse of commoner's rights by a minority that poses the greatest threats to those habitats found on the upland commons.

3.3 Associated Species

Many species of flora and fauna have been identified through various surveys carried out on the commons within the county borough. A large proportion of these depend totally upon the variety of habitats and environmental conditions that exist on our commons. Indeed, if it were not for our commons, many species would probably be extinct within the county.
Such species include:

- **Birds**: *barn owl, buzzard, green woodpecker, lapwing, little owl, long-eared owl, linnet*, nightjar*, peregrine, skylark*, wetland birds (dipper, grey wagtail, kingfisher)*, golden plover[+], merlin[+], red grouse[+], snipe, stonechat, wheatear, whinchat
- **Mammals**: *badger, brown hare*, bats* (*)
- **Reptiles**: *adder, common lizard, grass snake, slow-worm*
- **Amphibians**: *common frog, common toad, newts* (wetland areas)
- **Invertebrates**: *pearl-bordered fritillary (*acid grassland/bracken), *dragonflies and damselflies* (wetland areas)
- **Plants**: *bluebell, cowslip, orchids,* sundew and other pioneer plants

3.4 Links with Habitats

- *Wetlands*
- *Deciduous Woodlands*
- *Planted Coniferous Woodland*
- *Wildlife Corridors*
- *Species-rich Grasslands*
- *Coedcae/Ffridd*
- *Heathland*
- *Post-Industrial Land*

4. CURRENT FACTORS AFFECTING THE HABITATS

- Commons within the county are susceptible to a plethora of factors causing damage to the habitats previously listed. However, misuse of common rights probably amounts to the greatest threat to common land within the county. Civil action taken against any commoner by the commoners association as a result of their misuse of rights, or for damage caused to the common and rights of other commoners, currently costs far more than the value of the land, or value of the rights affected. As there are no other forms of legal redress for the damage caused, mismanagement tends to continue unchecked, gradually degrading the value of the habitats and their ability to support the various forms of wildlife.

[+] Although suitable habitats exist at present, due to a number of factors some of these species are only recorded occasionally. These could return to breed in the future if positive management steps are taken to redress current activities that create unacceptable levels of disturbance through inappropriate activities and management methods.

- Increased use of 4x4 off road vehicles, quad bikes and motorcycles – users of which find the combination of rough grassland and boggy wet flushes a challenge to drive through.

- The general public have the belief that they are permitted to drive their motorcars off the public highway and onto common land for the purpose of picnicking. Whilst the Road Traffic Act permits the driving of motor vehicles no further than 15 metres off the public highway in order to park, this is illegal as far as commons are concerned. Damage is often caused by members of the public by creating new access from highways onto commons. This access is then used by other vehicles such as 4 x 4s, and car thieves prior to burning out stolen vehicles.

- Fly tipping and illegal dumping of building/garden/household waste.

- Illegal shooting.

- Uncontrolled fires started during periods of dry weather, mistimed or inappropriate controlled burning.

- Overgrazing of livestock due to irresponsible management by a minority of commoners.

- Commoners Association currently have no legal means to impose constraints upon commoners abusing their common rights.

- Diverse approach towards management/maintenance of common land where commons are divided between neighbouring unitary authorities

- Absence of grazing on some commons leading to invasion by scrub and bracken

5. CURRENT ACTION

5.1 A number of SINC sites have been identified that include large areas of land on our commons[4].

5.2 A number of species that occur on our commons are protected under the Wildlife and Countryside Act 1981 (as amended) and include; bats, barn owl, nightjar, peregrine and lapwing.

5.2 Caerphilly county borough Local Access Forum meets regularly to discuss any problems and possible solutions.

5.4 Application for lottery funding to fence and gate the two lowland commons of Rudry and Caerphilly.

5.5 Rudry Common and Caerphilly Common Management Plans.

5.6 Meetings of Commoners/Brinkers Associations.

5.7 Commoners Associations are represented on the Caerphilly Biodiversity Partnership and have therefore been involved in the local biodiversity process from the beginning and in the preparation of this LBAP.

5.8 Caerphilly Common Ecological Survey work currently underway to explore habitat management options (2001).

6. CONSERVATION DIRECTION

6.1 The **Main Objectives** for habitat conservation on common land will be centred around the ability to:

- **Maintain and enhance** the variety of habitats on the commons
- **Ensure** sympathetic and suitable methods of management through both the local authority and the commoners who hold rights on specific areas of common land.
- **Promote** an increased level of awareness amongst commoners and members of the public regarding responsible use of common land, and the detrimental effects of misuse upon biodiversity.

6.2 Possible actions:

- Promote dialogue between adjacent unitary authorities to establish common attitude and approach towards the management of common land.
- Protect commons from inappropriate development.
- Establish 'honey pot' sites i.e. car parks at view points, to encourage use by the public at selected areas, with access to the remaining areas of common restricted for example by boulders and access gates constructed for lawful access by commoners.
- Statutory management, better facilities for the implementation of the law.
- Ring fence and grid commons, maintenance of grids to be carried out by the unitary authority.
- Signage re-iterating unlawful activities.
- Wardening of common land.
- Increased policing of commons to reduce threats to habitats and commoners rights resulting from illegal activities.
- Liaison between CCBC and local motorcycle clubs with the view to establishing an off-road/scrambling facility in a non bio-sensitive/agriculturally important area, with the proviso that the clubs educate/put pressure on individual scramblers to keep off common land.
- Awareness campaign to educate general public within the county about their rights relating to common land, and highlighting unacceptable activities.

FFRIDD (COEDCAE) HABITAT STATEMENT

1. INTRODUCTION

"Coedcae" or "ffridd" is part of the classic Welsh landscape arising from hill farming practice. Although there is no UK BAP for this habitat, it is important in both a Welsh and a Caerphilly county borough context. It is characteristic of valley sides and comprises a mosaic of different habitat types supporting a wide range of animals, in particular important bird and butterfly species. Due to its linear and often continuous nature it can form significant wildlife corridors for its associated species, especially birds.

2. HABITAT DEFINITION

Ffridd refers to the vegetation of the, often uncultivated, valley sides; the middle slopes between the upland farms, extensive conifer plantations or unenclosed common land and the valley bottoms. The ffridd is a complex mosaic of heath, bracken, woodland, acid grassland, old workings and wet flushes. These habitats can include numerous NVC communities and are traditionally grazed by sheep or cattle. In north Wales "ffridd" usually refers to unenclosed land, whereas in south Wales it is generally enclosed. The term "Coedcae" is normally used in south Wales specifically to denote unenclosed ffridd.

Ffridd is particularly important for high brown fritillary and pearl-bordered fritillary butterflies, which are UK priority species. The bracken fronds act like a woodland canopy for the violets on which fritillary butterfly caterpillars feed and the bracken litter provides a warm microclimate for the early life stages. Fritillary butterflies thrive better where cattle or ponies are the main grazing stock. These animals, being heavier, break up the bracken litter so that the female butterfly can fly to the violet beneath but there is still enough small dead bracken 'debris' to capture warmth and raise temperatures for caterpillar development in the spring. Also cattle and ponies unlike sheep do not selectively graze violets.

3. CURRENT STATUS

3.1 Caerphilly County Borough

Within Caerphilly county borough coedcae/ffridd occurs in the following areas: (see **Map 7.1**)

- Sides of the Aber valley between Mynydd Meio & Mynydd Eglwysilan;
- Eastern fringe of Cefn Gelli Gaer;
- Fringe of Cefn y Brithdir;
- Between south-eastern edge of Mynydd Bedwellty & Mynydd Manmoel/Mynydd Pen-y-fan;
- Between Mynydd y Grug & Mynydd Machen;
- Between Islyn & Mynydd y Lan;
- Western fringes of Mynydd Maen
- From Caerphilly Common to Mynydd Machen/Rudry Common.

The following SINC sites have examples of coedcae/ffridd[4]:
5 **Cefn y Brithdir**; 7 **Coed Cefn-Rychdir**; 8 **Mynydd Manmoel**; 10 **Craig Ysgwydd-Gwyn**; 15 **Coed Deri-Newydd**; 31 **Coed y Moeth**; 46 **Cwm Afon Railway Line**; 116 **Mynydd Eglwysilan**; 159 **Craig y Fedw**; 163 **Mynydd Meio**; 168 **Caerphilly Common**; 171 **Mynydd Rudry**; 178 **Graig y Rhacca Grasslands**

3.2 Associated Species

The presence of bracken in this mosaic of habitat ranging from open grassland to woodland is important for many forms of wildlife:

- **Birds**: ***nightjar****, **linnet****, **yellowhammer***, *curlew, skylark**, whinchat, tree pipit and stonechat
- **Invertebrates**: ***high brown fritillary****, **pearl-bordered fritillary***, small pearl-bordered fritillary
- **Plants:** *bluebell,* violets

3.3 Links with Habitats

- *Deciduous Woodlands*
- *Wildlife Corridors*
- *Species-rich Grasslands* (rhos pasture)
- *Common Land*
- *Heathland* (upland and lowland heath)

4. CURRENT FACTORS AFFECTING THE HABITAT

- Overgrazing, particularly sheep, preventing regeneration especially of heath and deciduous woodland elements
- Lack of grazing or other appropriate management (beneficial cattle less common than sheep)
- Gradual overall decline of bracken cutting for bedding
- Past coniferisation and current new planting schemes
- Economic development
- Agricultural improvement
- Poor image of ecological value of bracken slopes
- Burning of bracken by vandals
- Burning ("muirburn") as agricultural practice

5. CURRENT ACTION

5.1 Possible grants for the management of this habitat as part of the whole farm agri-environment scheme, Tir Gofal.

5.2 Some SINCs contain species-rich ffridd and bracken as part of the site[4].

5.3 Some bracken is once again being harvested for animal bedding from commons and ffridd. Care is needed that this currently sustainable level does not increase so as to threaten eradication.

5.4 CCBC liaison with Coed Cymru for appropriate management of certain sites.

6. CONSERVATION DIRECTION

6.1 The Main Objectives are to:

- **Halt** the loss of coedcae/ffridd.
- **Ensure** favourable management of ffridd, in particular methods of grazing and prevent further agricultural improvements.
- **Prevent** development on ffridd which removes the landscape's natural diversity.
- **Raise the awareness** of landowners and managers, and the general public of the importance of these habitats and the need for beneficial management and land use regimes, particularly aiming to alter the negative public perception of bracken habitat.

6.2 Possible actions to consider are:

- o Raise awareness of importance of ffridd, for example by producing a Biodiversity Briefing Note promoting the importance and wildlife value of bracken slopes & "ffridd".
- o Survey/assess quality and condition of ffridd habitats.
- o Require ecological surveys to support all planning applications.
- o Encourage use of traditional cattle breeds e.g. Welsh Blacks over sheep.
- o Create areas of new habitat where appropriate e.g. to restore lost continuity.
- o Improve Council liaison with farming community and commoners associations, via the SINC and LBAP processes.
- o Encourage owners of ffridd slopes to apply for Tir Gofal.
- o Encourage the investigation of bracken cutting and composting as a peat substitute.

HEATHLAND HABITAT STATEMENT

1. INTRODUCTION

Heathland is characterized by a dominance of dwarf shrubs, usually heather, and is found in both lowland and upland areas. Lowland and upland heath have been afforded priority status in the UK BAP[43, 49] and are covered in this habitat statement:

- **Lowland Heath***
- **Upland Heath***

The CCW Phase 1 survey for Mid and South Glamorgan[13] and for Gwent[14] and the Biological Survey of Common Land for Gwent[38] and Glamorgan[39] shows that heathland in Caerphilly county borough is a relatively rare habitat, particularly at lower altitudes, and recorded a total of 180ha of dry and wet heath in the county borough. Lowland heath has declined significantly during the 20th century, and upland heath, although more widespread, has declined from a variety of agricultural and forestry practices.

2. HABITAT DEFINITIONS

2.1 Lowland Heath

Lowland heath is characterised by the presence of dwarf shrubs such as heather or ling at a cover of at least 25%. In wet situations heather is associated with cross-leaved heath and various bog mosses, while on more freely draining soils, bell heather, western gorse and bilberry occur. Lowland heath is generally associated with thin, acidic and nutrient-poor soils, and is broadly restricted to the area immediately below the unenclosed uplands at elevations of <300m.

The division between lowland and upland heath in Caerphilly county borough is in some areas difficult to define, as several unenclosed uplands are below 300m, while in other places the enclosed fields supporting heath extend to higher than 300m. For the purposes of this plan, lowland heath in Caerphilly county borough includes all enclosed heath regardless of altitude, together with the unenclosed heath that lies on the southern lip of the Caerphilly basin.

2.2 Upland Heath

Like lowland heath, upland heath is characterised by the presence of dwarf shrubs at a cover of at least 25%. They are found on unenclosed uplands generally between the altitudes of 300 to 600m above ordnance datum (measure of land height, approx. from sea level). In Caerphilly county borough the division between lowland heath and upland heath has been drawn to include all heath occurring on commons that lie to the north of the Caerphilly Basin. These commons are generally over 300m above ordnance datum, although occasionally heath extends below 300m on the lower slopes of the commons, for example at Mynydd Machen and Mynydd Meio, or occurs entirely below 300m, for example at Mynydd Dimlaith.

3. CURRENT STATUS

The extent and distribution of heathland habitats in Wales has been considerably enhanced as a result of the NCC/CCW Phase 1 Habitat Survey (1979-1998) and from the Upland Vegetation Surveys for Mid-Glamorgan[53] and Gwent[28], and the Commons Surveys of Mid-Glamorgan[39] and Gwent[38]. There are 6 heathland communities associated with both lowland and upland heath that occur in Caerphilly county borough. They include:

- heather - western gorse dry heath

- heather - bell heather dry heath
- heather - bilberry dry heath
- bilberry - wavy hair grass heath
- deergrass - cross leaved heath wet heath
- cross-leaved heath - *Sphagnum compactum* wet heath

These communities are described in more detail in the appendix to this statement.

3.1 Lowland Heath

About one fifth of the world's total area of lowland heathland occurs in Britain and Ireland. The UK holds 58,000 ha, of which 7,000ha occur in Wales. Caerphilly county borough supports relatively few areas of lowland heath, with key areas occurring on Penllwyn Grasslands SSSI, Caerphilly Common SINC and less extensive areas occurring on Rudry Common SINC and at Pengam patch[4]. Much of the lowland heath in the county borough is now reduced to small fragments. Several old colliery tips have developed valuable heathland habitat, for example at Deri and New Tredegar.

3.2 Upland Heath

The UK holds a large proportion of European heath, which is mainly restricted to the western seaboard. The total UK upland heath resource is between 2 – 3 million hectares, of which 70-80,000ha occurs in Wales. Caerphilly county borough supports several relatively large areas of upland heath, occurring on many of the commons, particularly on Merthyr and Gelligaer Common, which includes Cefn y Brithdir SSSI, Mynydd Machen Common, Mynydd Eglwysilian, Mynydd Meio and Mynydd Maen. Much of the heath occurs as mosaics with acid grassland or bracken.

Map 8.1 shows the distribution of lowland and upland wet and dry heath in the county borough.

3.3 Associated Species

The following species are known to be associated with upland and lowland heath in the Caerphilly county borough area.

• **Birds:**	***linnet****	(associated with gorse)
	*nightjar**	(lowland heath, in south of CCB)
	*skylark**	(strong population associated with commons)
	*grey partridge**	(often uses heath habitat for nesting)
	*song thrush**	
	curlew	(often uses heath habitat for nesting)
	yellowhammer	(associated with gorse)
	green woodpecker	
	woodlark*	(bred at Penyfan Pond in 1971)
	grouse	(casual records in 1998 indicate that may be present; more research required to confirm)
	dartford warbler*	(no records; but increasing on heath in Glamorgan)
	stonechat	
	whinchat	
	wheatear	
	hobby	
• **Mammals:**	*brown hare**	(associated with grassland/heath mosaics)
• **Amphibians:**	*great-crested newt**	
• **Reptiles:**	*adder*	(associated with dry heaths)

slowworm	(associated with dry heaths)
common lizard	(associated with dry heaths)
grass snake	(sometimes associated with wet heath)

- **Invertebrates:**

*marsh fritillary**	(occasionally associated with wet heath)
*high brown fritillary**	
*pearl-bordered fritillary**	
Other moths	
scarce blue-tailed damselfly	(associated with wet heath)
keeled skimmer	(associated with wet heath)
grayling butterfly	(associated with heath)
green hairstreak	(associated with heath)
silurian moth	(no records; but could potentially occur in upland gullies over 1,300ft, with bilberry)

- **Plants:** *Orchids*

3.4 Links with other Habitats

- *Wetlands* (ponds, fens, blanket bog, lowland raised bog)
- *Deciduous woodland*s (Upland oak woodland)
- *Species Rich Grasslands* (lowland acid grassland, rhos pasture)
- *Common Land*
- ***Ffridd/Coedcae***
- *Post-Industrial Land* (naturally vegetated colliery spoil)

4. CURRENT FACTORS AFFECTING THE HABITAT

Considerable areas of heath have been lost since the 1930s, and many of the remaining areas are either fragmented or exist as mosaics with other habitats. Specific factors and threats relating to this decline include:

- Lack of management on some sites leading to scrub and bracken encroachment, particularly on lowland heath.

- Agricultural improvement including reclamation, and pasture improvement leading to overgrazing. Heavy grazing is thought to be one of the major causes of change from heath to grassland in Wales.

- Fly tipping and uncontrolled burning particularly threatens lichen and moss rich heathland.

- Fragmentation and disturbance from developments such as road building, mineral extraction, house building and associated infrastructure.

- Recreational pressures, such as motorcycles and off road vehicles.

- Land reclamation schemes that result in the loss of secondary lowland heath.

- General lack of public awareness.

5. CURRENT ACTION

5.1 One key upland heath site **Cefn y Brithdir SSSI** has been designated as an SSSI in Caerphilly county borough for its dry heath habitat, and **Penllwyn Grasslands SSSI** contains lowland wet heath. Owners and tenants of these sites are able to enter into management agreements with CCW to manage SSSI land. Many other sites that support upland and lowland heath have been designated as SINCs[4].

5.2 The agri-environment scheme Tir Gofal offers grant aid on a whole farm basis, and encourages farm management practices that are sympathetic to, or encourage the maintenance of, heathland. 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.

5.3 A management plan has been prepared for Rudry Common which includes a small area of heath. Implementation of the plan has been put on hold awaiting funding.

5.4 Caerphilly county borough local Access Forum is currently exploring off-road bike and car issues in an attempt to combat damage.

5.5 CCBC's Local Transport Plan[5] provides a commitment to manage important roadside verges for nature conservation. Heathland occurs on several roadside verges in the north of the county.

6. CONSERVATION DIRECTION

6.1 Main Objectives for the conservation of this habitat will be to:

- **Prevent** further loss of existing habitats, through statutory protection and local designations
- **Manage** existing stands through appropriate management
- **Re-establish** heathland where opportunities arise, particularly in areas where this will reduce habitat isolation and increase size of existing areas

6.2 Possible actions:

- Ensure all key heathland sites are designated as SINCS.
- Introduce appropriate management to heathland sites that are currently unmanaged
- Review management of grazed heathland sites to identify practical ways of restoring heathland to favourable condition.
- Engage Commoners in exploring how heathland habitats on commons can best be conserved.
- Restore habitats adjacent to important or vulnerable sites. Develop a fuller understanding of restoration techniques with the aim of expanding remnant patches of heathland.
- Continued monitoring and surveying of sites in Caerphilly county borough to assess habitat value for flora and fauna species.
- Raise awareness of the nature conservation value of heathland 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 – NVC COMMUNITIES

Dry Heath

H8: Heather - western gorse heath
Calluna vulgaris - Ulex gallii heath

This community type occurs relatively infrequently throughout the county borough, and usually as part of a heath/acid grassland mosaic. It occurs on Gelligaer Common and is characterised by the presence of western gorse.

H10: Heather - bell heather heath
Calluna vulgaris - Erica cinerea heath

This community may occur in small patches within the county borough, but is unlikely to form a major community type within the area.

H12: Heather - bilberry heath
Calluna vulgaris - Vaccinium myrtillus heath

H18: Bilberry - wavy hair grass heath
Vaccinium myrtillus - Deschampsia flexuosa heath

These are the most commonly occurring heath communities in the county borough, occurring on most commons that support heath. More sites are dominated by bilberry than with heather, although the frequency of heather in the community increases in the north of the county borough. Cefn y Brithdir supports one of the largest expanses of bilberry – crowberry heath *Vaccinium myrtillus – Empetrum nigrum* heath in the Glamorgan area.

Wet Heath

M15: Deergrass - cross leaved heath wet heath
Scirpus cespitosus - Erica tetralix heath

M16: Cross-leaved heath - *Sphagnum compactum* wet heath
Erica tetralix - Sphagnum compactum wet heath

These communities are found on the wetter parts of the commons with a good example occurring on Gelligaer and Merthyr Common north of Fochriw.

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[2]. 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 SINCs that include colliery spoil, for example, Maesycwmmer Meadows[4] (full list in **appendix 9.1.2** to this statement and shown on **Map 9.2**).

The condition of early 20th 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[3] 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[4] 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[4].

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 SINC 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 SINC is an old coal tip
44: **Princetown Meadows**; a small spoil tip on part of the SINC 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 pf 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: **Maesycwmmer 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
• Fochrhiw, 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

	SITE	OS GRID REF
•	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
•	Presbyterion Church, Gilfach	ST1598SW
•	Rhymney Constitional 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 SINCs

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 SINCs abut 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 SINC (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** SINC (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** SINC (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 – Maesycwmmer 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 SINC (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 SINCs

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 20th 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
Hafodrynys	Dan y Graig Quarry, Risca
Trinant	Fernlea
Coed Top Hill	Old Trehir
Old Coed y Brain	Aberbargoed

URBAN HABITAT STATEMENT

1. INTRODUCTION

Urban habitat is not a priority in the UK BAP, but an Urban Habitat Statement is included and was later renamed as *Built Up Areas and Gardens* to include a wider range of habitats[49]. Urban areas provide a myriad of ecological niches that when taken together represent a very rich biodiversity resource. Some of the habitats found in urban areas may be unique and important from a scientific point of view. Others, though biologically interesting, are of greater value by virtue of them being accessible and interactive with a large number of people. Many urban action plans have been written for LBAPs across the UK because of their importance for wildlife and to local residents, and as a way of encouraging people to appreciate biodiversity close at hand.

The habitat types covered by this habitat statement are:

- **Domestic Gardens**
- **Old Buildings**
- **Unused Urban/Industrial Land**
- **Allotments**
- **Churchyards**
- **Public Parks**

2. HABITAT DEFINITION

In the UK BAP[4] this habitat type is defined as urban and rural settlements, farm buildings, caravan parks and other man made structures, such as industrial estates, retail parks, waste and derelict ground, urban parkland, transport infrastructure, domestic gardens, allotments and churchyards.

2.1 Domestic Gardens

As a nation we look after more than one million hectares of garden. With the countryside increasingly under threat, every garden, however big or small, is a potential nature reserve[41]. Although individual gardens may be small, together they form a patchwork, linking urban green spaces with the open countryside. Gardens are relatively quiet, generally sheltered, and often follow the line of old landscape features, for example hedges which frequently date back hundreds of years, providing animals with places to feed, breed, nest and shelter.

2.2 Old Buildings

All buildings both new and old can provide habitats for a variety of species. However, old buildings, particularly those constructed with local materials, such as stone and old timbers, can be particularly important for providing nest and roosting sites for bats and birds such as barn owls, sparrows, swallows, house martins and swifts, while mosses, lichens and a number of insects can also find a niche.

2.3 Unused Urban/Industrial Land

Unused urban land is defined as land previously developed and subsequently abandoned ("brownfield"), or land within an existing urban industrial development yet to be developed. Unused urban/industrial land can often lie unused for many years. Naturally seeded urban areas or urban industrial sites, such as demolition sites or unexploited industrial land, can be particularly species-rich, often reflecting the complex mixture of features. In the early stages

of colonisation short-lived (ephemeral) species are favoured and may include many uncommon species of bees and wasps, for which urban areas are now strongholds. In the later stages of succession short perennial, tall ruderal plants arrive, and succession will continue through to the formation of woodland. This habitat also contains some uncommon invertebrate species such as bees and wasps, beetles and flies, and the lichens of disused land often include several rare species.

*There is some overlap with this urban habitat category and post-industrial land habitats. This statement deals with urban industrial areas within the settlement boundary, but there may be some land reclamation schemes listed in the *Post-Industrial Habitat Statement* that relate to urban areas.

2.4 Allotments

Allotments derive from the enclosure legislation of the 18th and 19th centuries and the word *allotment* originates from land being allotted to an individual under an enclosure award. They started off as a requirement under the General Enclosure Act 1845, which required provision for the landless poor, and then, through the 19th century, parcels of land in urban areas began to be used as allotments. The spread of urban allotments was intensified by the growth of high-density housing, often without gardens. They played an important role for food production in both World Wars, with 1.4 million plots producing around 1.3 million tonnes[22]. Modern legislation covering allotment provision and protection has developed with various Allotment Acts being introduced between 1908 and 1950. These are still in force and continue to define many aspects of allotment provision, for example, a duty is placed upon local authorities to provide allotments where demand exists, and protection is given to statutory sites owned by local authorities.

Allotments contribute to the amount of green space in many urban settings. They also provide a habitat for a variety of species. Butterflies, moths and bees will be attracted to the flowers of cultivated plants and wildflowers, and the cultivated ground provides feeding opportunities for birds. Disused allotments are a particular haven for wildlife while some tended plots can act as seed-banks for rare vegetable species[17].

2.5 Churchyards

For the purposes of this plan churchyards relate to land that is used for burials that either surround churches, chapels or other religious buildings in the county borough, or stand in their own grounds such as cemeteries. Churchyards can be found in both a rural and an urban setting. In rural areas, unlike the surrounding farmland, these sites have, generally, not been sprayed with chemical fertilisers and pesticides and can support species-rich grassland. In urban areas, the general lack of agricultural practices and the quiet nature of these sites provide a haven for wildlife in an otherwise hostile urban environment.

The gravestones themselves are often covered by a variety of lichens and mosses, while ancient trees and hedgerows provide important nesting and foraging sites for birds and small mammals. The open grassy areas also benefit a wide range of wildlife. Butterflies, bees and other insects will be attracted to wildflower nectar sources, and bats may roost in church buildings.

2.6 Public Parks

Managed green spaces, including town parks, amenity grasslands and planted shrubberies can, depending on their structure, management and planted species, support a large number of wild species of invertebrates and birds, especially in the suburbs. Public parks provide a wide variety of wildlife habitats, they benefit from being well-established, stable environments, often dating

back to Victorian times. Many parks have a number of different habitats from wetland areas to deciduous woodlands, with hedgerows and open grasslands. They can hold populations of priority species such as the linnet, song thrush, pipistrelle bat and great-crested newt, and a variety of other common species such as hedgehogs. They also act as a transitional zone between other habitat areas. In some instances they provide opportunities for habitat creation and sympathetic management for wildlife. Sometimes they are the only place where people come into contact with wildlife, particularly in heavily built up towns like Caerphilly.

3. CURRENT STATUS

Wildlife is often inconspicuous in urban areas, but it can be fostered and encouraged to enrich and benefit us all in our daily lives. The main, important characteristic of urban areas are the network of green spaces they hold, providing a mosaic of different habitats. This provides the necessary mixture of breeding sites, foraging areas and shelter, needed by many species exploiting these relatively small areas, including BAP priority species, such as the great-crested newt. This network needs sites in close proximity to each other if they are to collectively support viable populations of plants and animals. Outside the built-up area there is a further mosaic of habitats, including roadside verges, railway embankments and colliery spoil tips linking with the open countryside. Given the rather loose definition and the large variety of habitats, it is difficult to estimate the amount of urban habitat in Caerphilly county borough.

The policies in CCBC's UDP[3] to develop land within existing settlement boundaries and on brownfield sites, will have an inevitable effect on these sites, and it will be important to ensure that sites are properly assessed for their wildlife value, prior to the procedure of any development. Similarly, new developments will also need to incorporate open spaces with links to adjoining green areas, which may be utilised by urban wildlife species.

3.1 Domestic Gardens

There are many aspects of the domestic garden which are important for biodiversity. Hedgerows, trees, garden shrubs and herbaceous plants provide nectar for bees and butterflies, and berries for birds and small mammals. Wildflowers such as hedgerow, woodland and meadow species, for example, red campion, yellow archangel, bluebell, yellow rattle, ox-eye daisy and greater knapweed are also common to gardens. Garden ponds provide vital breeding grounds for frogs, toads, newts and also many insects, particularly dragonflies and damselflies. Dead vegetation is a vital part of the wildlife garden, for example a pile of logs attracts many invertebrates such as spiders, wood wasps and beetles, and varieties of fungi. Even garden rockeries, dry stone walls, paving, gravel, sink gardens and hanging baskets can support many different species. Butterflies and moths often lay their eggs on specific plants, e.g. nettles (red admiral, small tortoiseshell, peacock and comma). The provision of artificial nest boxes attracts birds, bumblebees, bats and hedgehogs to a garden where other breeding sites may be uncommon.

Nationally, there are around 15 million domestic gardens[41]. Caerphilly county borough has approximately 61,000 private gardens, potentially a huge resource for urban wildlife to exploit. The linear nature of many settlements in the county borough means that many gardens are close, or adjacent to, the open countryside and are therefore quite rich in wildlife, attracting many otherwise rarely seen animals, such as slow worms and grass snakes, newts and other amphibians, and many farmland species, including birds such as the song thrush that have lost their traditional habitats through agricultural intensification. They also provide, or have the potential to provide, important wildlife corridors, forming strips of habitat between other

wildlife habitats allowing the free movement of species over a wider area. However, the management of many gardens is currently not very sympathetic to wildlife, few contain 'wild' areas and most consist of single-species, close-mown lawns and a lack of wildlife features such as hedgerows, ponds, trees and deadwood. However, with the rise in popularity of gardening programmes on television, the interest in wildlife gardening is growing, and a range of literature and advice is now available to those interested in making their garden more attractive to butterflies, birds, mammals, frogs and newts.

3.2 Old Buildings

There is currently a lack of knowledge about the use of many of the old buildings in the county borough by particular species, and many have been demolished or renovated without first undertaking a wildlife survey. Anecdotal evidence and casual records indicate that old buildings in the county borough are important as roosting and nesting sites for all bat species (except tree roosting bats such as the noctule), and a number of bird species including barn owl, swallow, swift, house martin, house sparrow and starling. Before granting planning permission there is a need to undertake surveys of various types of buildings, which may have significant wildlife value.

3.3 Unused Urban/Industrial Land

The current distribution of unused urban/industrial land in Caerphilly county borough is not adequately known, but concentrations can be found in the Mid Valley, Upper Rhymney Valley and Aber Valley. The status of this habitat will inevitably change as the demand for development in urban areas increases. Further survey work is required to locate these areas and identify those sites important for wildlife. Several SINCs include this habitat type[4], and future development will need to take account of the nature conservation interests of these sites.

The **Remploy Factory Grounds SINC**, near Oakdale is a good example of an industrial site where semi-improved neutral grassland has colonised rubbish and spoil around the factory. There is a diverse flora supporting the yellow rattle, pearly everlasting and a range of other characteristic neutral grassland species.

Pen-y-Fan Industrial Estate, north of Croespenmaen contains another SINC, **Valentec Nature Reserve**, which has been designated for its wildflower meadow, neutral grassland, and large area of marshy grassland dominated by rushes, with star moss and sedges in the more waterlogged areas. There is also a pond that is of particular value for dragonflies and other invertebrates.

Penyfan Pond and Meadows SINC includes some areas of species rich grassland within the industrial area, while **Crown Estate Meadows SINC** also contains species rich meadows on land that has been allocated for development.

3.4 Allotments

The importance of allotments for nature conservation has been identified in the document *The Allotment, its Landscape and Culture*[17], with both cultivated and untended allotment plots contributing to maintaining biodiversity. Evidence from the National Society of Allotment and Leisure Gardeners shows that allotments have on average up to 30% higher species diversity than urban parks and are ecologically valuable[22].

There are 80 allotment sites in Caerphilly county borough: 28 in the former Islwyn borough, for example, **Tunnel Row,** Newbridge and **Halls Gardens,** Crumlin; and 52 in the former Rhymney Valley district, e.g. **Boot Road,** Maesycwmmer, and **Penydre,** Rhymney. The Islwyn Allotment

Federation actively runs and maintains allotments in this area of the borough, but in the Rhymney Valley CCBC provides grants to each of the on-site allotment committees for necessary maintenance work and equipment.

Rules for the maintenance of allotments in the tenancy agreement include the protection of internal hedges, ditches, trees, buildings and sheds. Wildlife using these habitats are therefore afforded some protection, however, apart from a small number, many tenants are unaware of the importance of allotments for wildlife and the role they play as wildlife corridors.

3.5 Churchyards

There are churchyards and cemeteries in virtually every community in the county borough. The older churchyards in particular can be particularly valuable for wildlife especially where sites are less intensively managed.

Bedwellty Churchyard has been designated as a SINC (36) for its species-rich grassland communities[4]. Further survey work is needed to determine the importance of other churchyards in the county borough.

3.6 Public Parks

There are 11 established public parks in Caerphilly county borough, many dating back to the turn of the 20th century. These are:

Abertridwr Park	Bargoed Park
Crumlin Park	Islwyn Park
Morgan Jones Park	Newbridge Park
Penyrheol Park	Rhymney Park
Risca Park	Senghenydd Park
Waun Fawr Park	

Numerous habitats occur within them, including deciduous woodlands, wetlands, hedgerows and open managed grasslands, but no comprehensive survey has been undertaken to identify their extent and condition. The woodlands at Ystrad Mynach Park have been designated as a SINC (123) and **Sir Harold Finch Memorial Park** has been designated as a LNR (195) and an SSSI for its grassland communities.

For many years public parks have declined both in investment and in use by the public. It is uncertain what effect this has had on biodiversity. Future investment and strategies should dispel the over-tidy image of public parks and encourage management sympathetic to wildlife in order to maintain biodiversity.

3.7 Urban SINCs (**Map 10.1**)

36: **Bedwellty Churchyard**; of botanical importance for its unimproved grassland plants including devil's bit scabious, bitter-vetch, wood bitter-vetch, black knapweed, cats ear, great burnet and birds foot trefoil

47: **Park Drive Hollow**; a good example of an urban wildlife site with a variety of habitats including woodland, heath and wetland

51: **Pottery Road Woods**; an important urban wildlife habitat

61: **Valentec Nature Reserve**; a 2.6ha area of unimproved neutral grassland

67: **Remploy Factory Grounds**; a factory compound with a large area of neutral grassland supporting the yellow rattle

80: **School Grassland**, **Pontllanfraith**; a small neutral grassland with common bent and yorkshire fog, abundant devil's bit scabious, tormentil and clover
123: **Coedcae Mawr**; an urban oak woodland, important as an urban site for birds and plants
180: **Machen Woodlands**; part mature woodland, and a significant urban wildlife habitat for plants and birds

3.8 Associated Species

- **Birds**: ***house sparrow*** (most urban habitats), ***song thrush****, **bullfinch****, linnet**, *nightjar** (gardens), *spotted flycatcher**, little *owl, buzzard, kestrel, barn owl, peregrine falcon,* redstart, starling
- **Mammals**: *lesser horseshoe bat**, *pipistrelle bat**, *brown long-eared bat, daubentons bat, noctule bat, whiskered/brandts bat, badger,* **hedgehog**, grey squirrel, fox
- **Reptiles:** *slow worm, common lizard*
- **Amphibians**: *common toad, common frog, palmate newt, smooth newt, great-crested newt**
- **Invertebrates**: *buttoned snout moth**, *Other moths, Dragonflies and Damselflies,* butterflies and moths, bees and wasps
- **Plants**: *bluebell*, *cowslip,* primrose, snowdrop,

3.9 Links with other Habitats

- *Wetlands* (rivers and streams, ponds, canals)
- *Deciduous Woodlands* (lowland types; lowland beech and yew)
- *Wildlife Corridors* (hedgerows, railways and cycleways, roadside verges)
- *Species-rich Grasslands* (remnant areas)
- *Common Land*
- *Post-Industrial Land* (colliery spoil, refuse tips)

4. CURRENT FACTORS AFFECTING THE HABITATS

- Lack of recognition of the importance of urban habitats for biodiversity – not just their scientific value, but also for their amenity value. A familiar native species in an urban setting will have more significance to many people rather than a rare species in the countryside they are unlikely to see or recognise **(All)**

- Public perception: industrial decline and anti-social activity targeted at brownfield sites has created a negative public image of derelict urban areas, even gardens, public parks and churchyards are not seen as vital biodiversity resources, for example the value of nettles in wildlife gardens **(unused urban/industrial land, public parks, churchyards)**

- Development pressure: the demand for land in urban areas means that urban habitats are under the greatest threat from development **(All)**

- Pollution: urban habitats occasionally contain contaminated land. In some instances this can be advantageous for the wildlife occupying it, as it can deter development. Conversely, it can result in an impoverished flora and fauna **(All)**

- People pressure: 80% of the population live in urban areas. Pressure comes in many guises, from theft and vandalism **(allotments, public parks)** to passive recreation such as playing football or mountain biking, disturbance and trampling. When managing urban habitats these pressures should be considered **(All)**

- Urban design: new developments often fail to take account of wildlife in their initial designs. Opportunities to create interesting habitats may be missed for no other reason than to make the environment look neat **(All)**

- Management of urban habitats: excessive maintenance of mown areas in public parks, and the over-use of pesticides/herbicides and fungicides in gardens and allotments, and tidying of derelict land sites such as scrub clearance and levelling, all make urban habitats less attractive to wildlife **(All)**

- Conversion and rehabilitation: Unsympathetic renovation/Extension of old buildings may threaten associated wildlife **(old buildings)**

- Lack of information of the current urban habitat resource

- Little or no statutory protection

- Habitat fragmentation and isolation from other habitats in built-up areas

- Competition with non-native species, for example the grey squirrel, and from domestic cats

5. CURRENT ACTION

5.1 CCBC UDP[3] includes a policy for the protection of leisure facilities, including allotments.

5.2 Some urban habitats have been designated as SINC, LNR and/or SSSI in the county borough (see section 3.6)[4].

5.3 Grants in the region of £700,000 were given by CCW in 1994/95 for work on urban and urban fringe areas, with roughly 60% going to Groundwork Trusts and Local Authorities.

5.4 The Local Agenda 21 Strategy encourages people to take an active role in enhancing their local environment which includes benefits for biodiversity.

5.5 In Wales, derelict and disused urban areas may be eligible for grants administered by the WDA. These provide funds for development projects designed to restore derelict land, but some consideration is given to the additional environmental benefits achievable.

5.5 RSPB Garden Bird Watch has a significant following throughout the South Wales area, and is valuable for monitoring birds and raising awareness.

5.7 There are a variety of publications providing information about urban wildlife habitats, particularly wildlife gardens and ponds. For example, BTCV leaflets: *How to make a Wildlife Garden, Starting a Butterfly Garden, Your Wildlife Pond, Wildflowers in the Garden, Gardens for Birds;* Wildlife Trust materials such as Derbyshire's *Wildlife Gardening – a practical handbook*[31]*;* and RSPB leaflet *Gardening for Wildlife.*

5.8 Information and advice on conservation and planting local native species are available from national organisations such as Flora and Fauna International and Plantlife.

5.9 CCBC's Local Agenda 21 school grounds project includes some nature conservation ideas. Urban habitats have considerable potential as an educational/awareness tool for local people and children, also associated with the LBAP process.

5.10 Reclamation schemes of unused urban/industrial sites include native species planting.

6. CONSERVATION DIRECTION

6.1 Main objectives for urban habitats are to:

- **Survey** to identify the distribution, extent and condition of urban habitats in the county borough.
- **Maintain and protect** the existing diversity and extent of wildlife in all urban areas.
- **Expand** the range and distribution of associated plants and animals in order to enhance biodiversity in urban areas.
- **Promote** the importance of urban habitats for wildlife and utilise the resource as an educational tool.

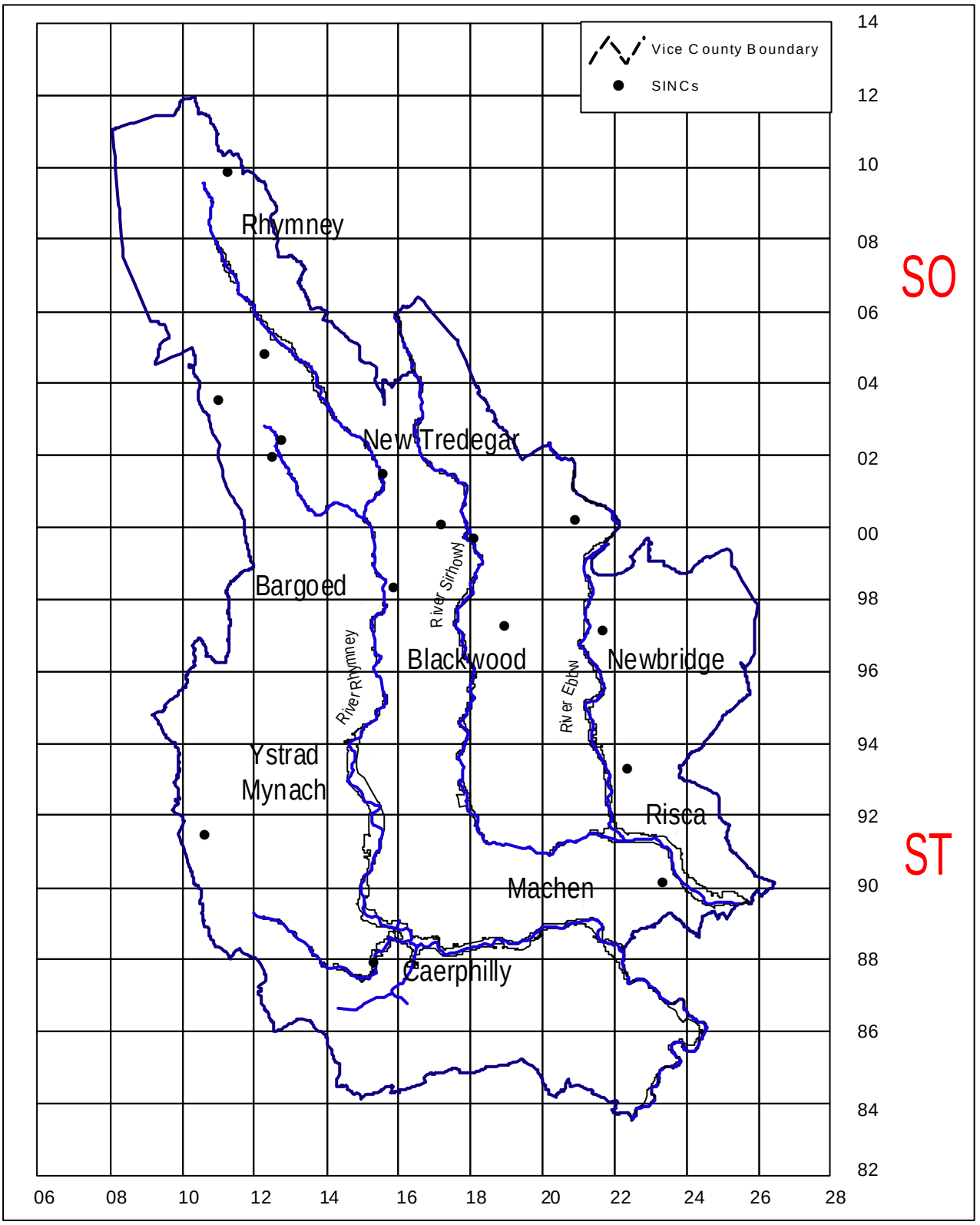
6.2 Possible actions to consider include:

- Survey and evaluate the existing range of urban habitats (including those in this statement) in terms of their importance in maintaining wildlife interest.
- Protect important sites from changes in land use and seek to halt any further loss through favourable management and mitigation.
- Encourage the integration of 'green networks' (incorporating a full range of wildlife habitats) in planning and developments within the urban environment.
- Devise and implement strategies to enable the use of vacant and derelict land as wildlife habitats, either temporarily, or wherever possible, permanently.
- Complete the preparation of CCBC Parks Strategy and include proposals to maintain and enhance the biodiversity of public parks.
- Maintain and improve the quality, state and infrastructure of public parks in a way that is sympathetic to biodiversity.
- Develop Best Practice Guidelines for industry, business, landowners and development bodies.
- Produce an Allotment Handbook, which will give advice and best practice information, including composting and biodiversity.
- Encourage community action to survey, plan and manage urban wildlife habitats, e.g. domestic garden and garden pond surveys targeted at biodiversity indicator species, such as garden birds. Provide basic training for interested groups and individuals.
- Promote urban habitats to improve public perception of all urban habitats and use as an educational tool to inform communities and various groups about local wildlife through professional bodies, schools, businesses, community groups, gardeners, allotment societies, and others involved in the urban estate.
- Produce literature about wildlife gardening.
- Identify sources for funding habitat protection and conservation projects, particularly where the local community is involved.
- Develop a Caerphilly county borough environmental excellence award scheme for local environmental groups, etc.

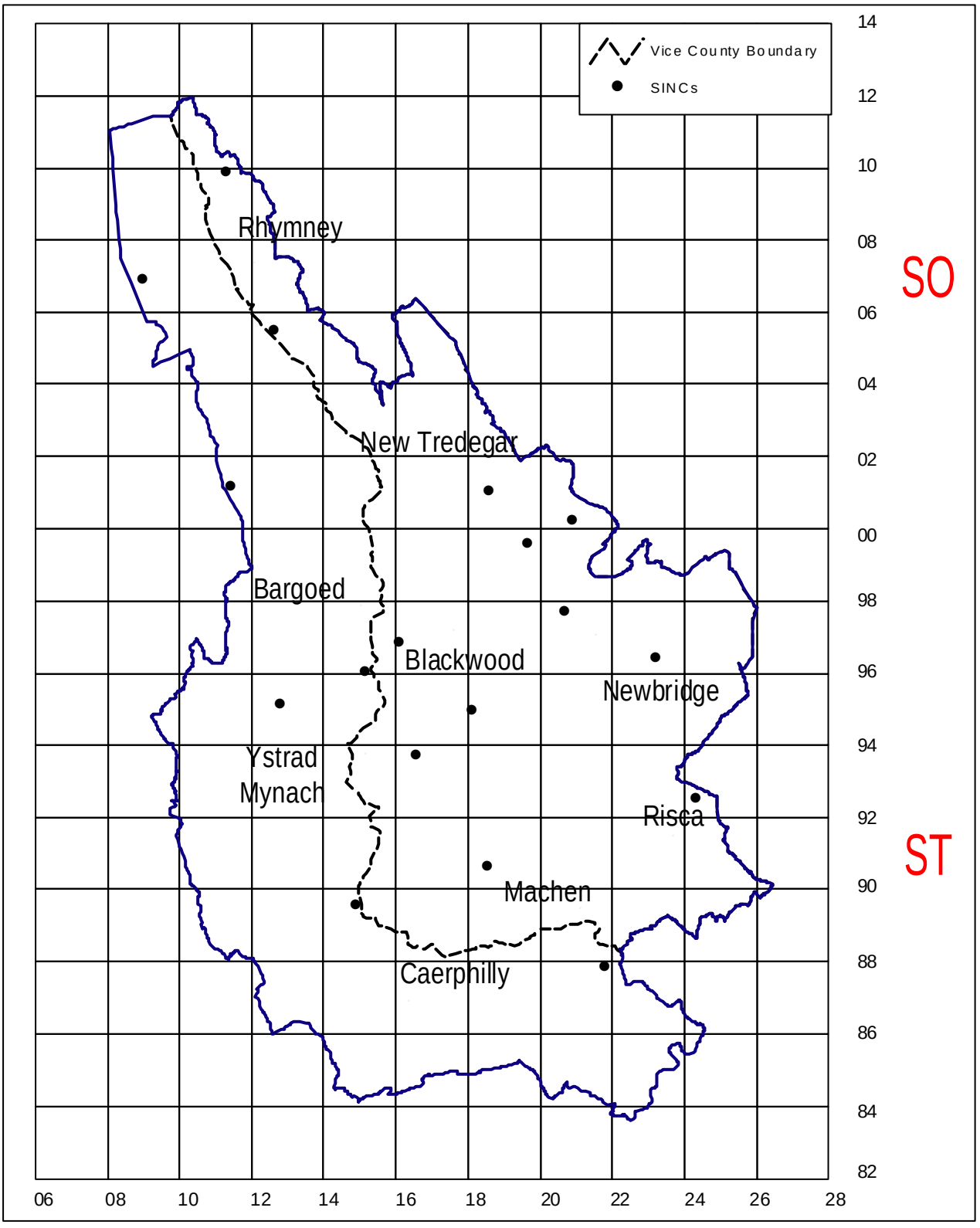
PART III: HABITAT MAPS INDEX

Maps

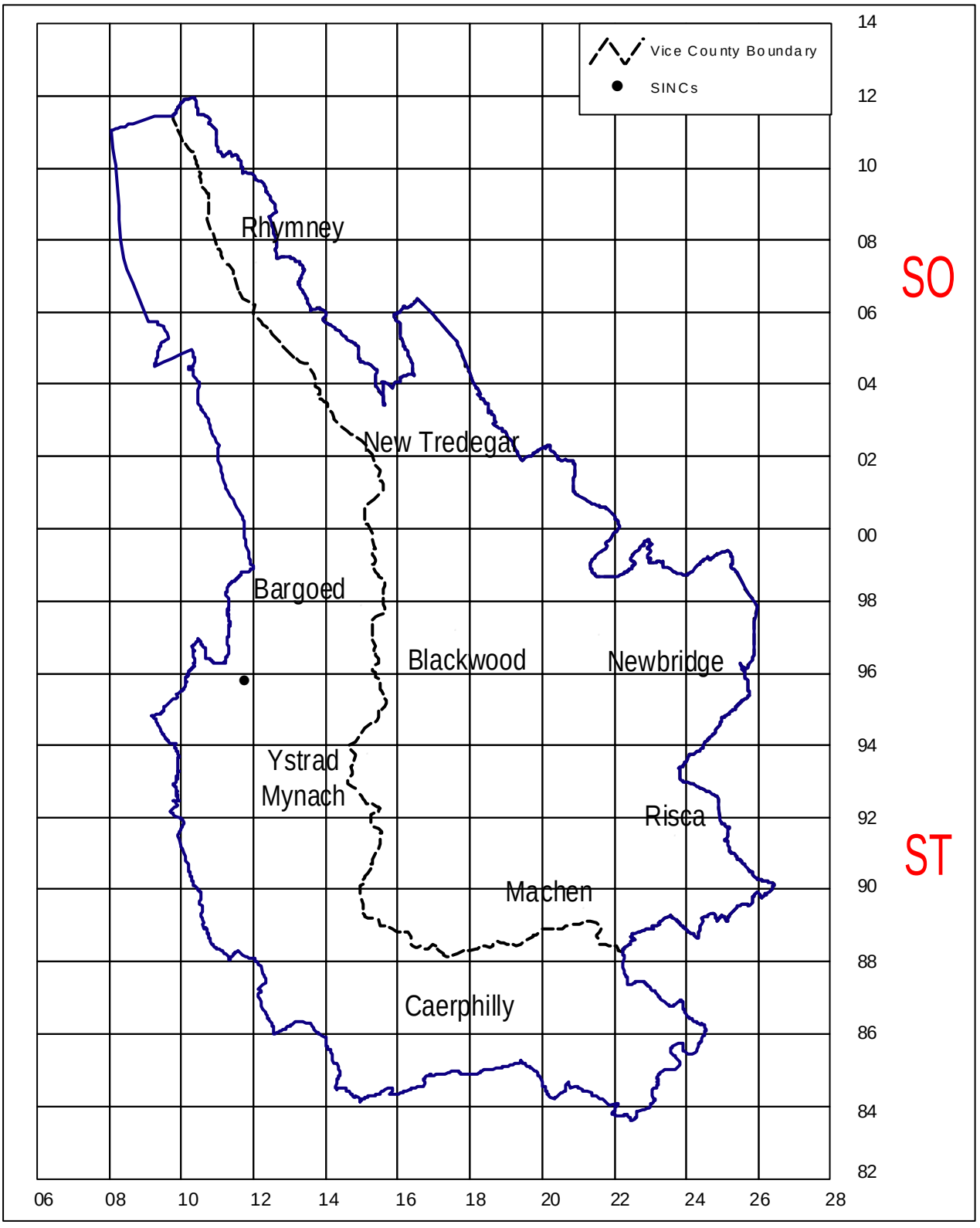
MAP 1.1 - RIVERS AND FLOODPLAINS



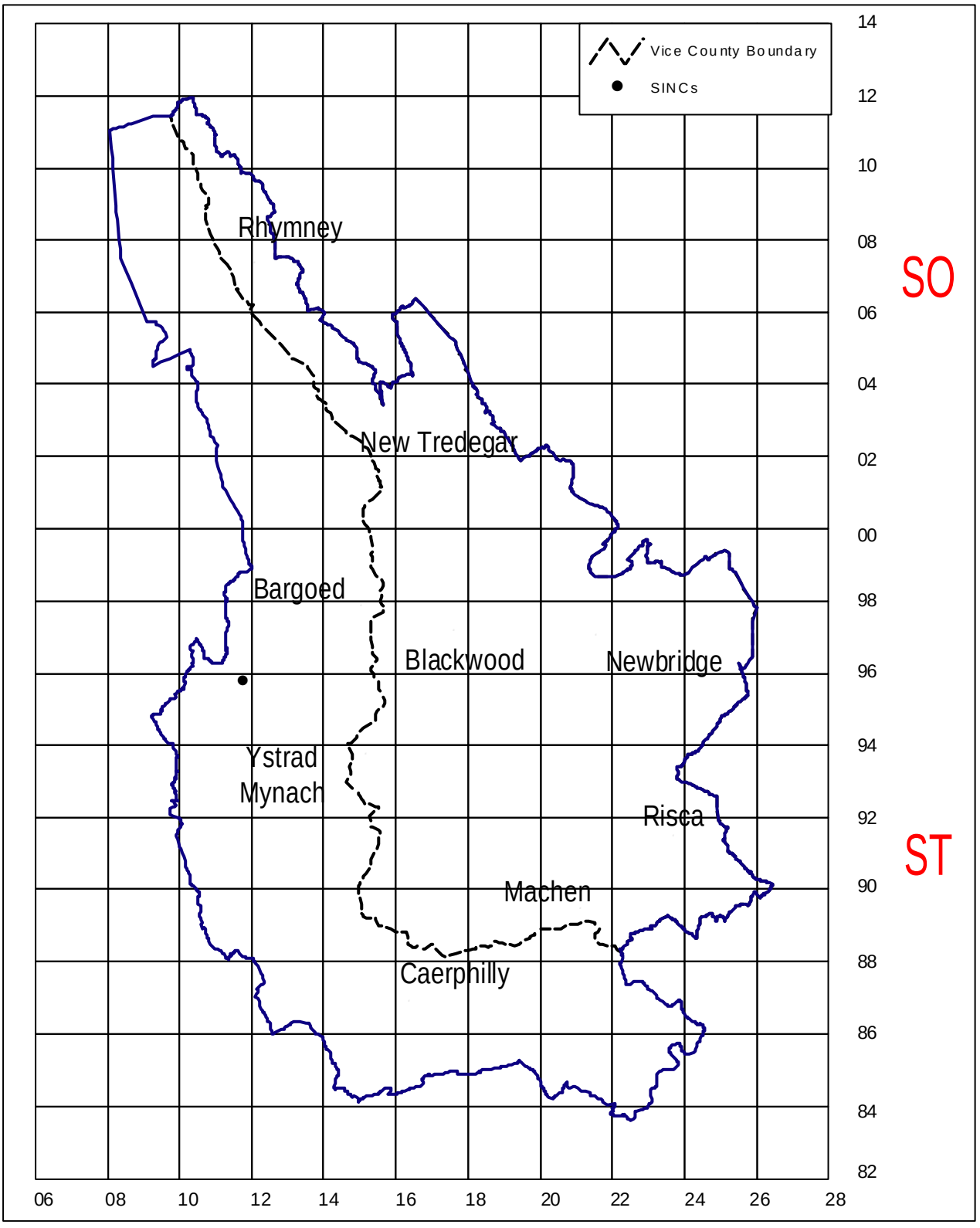
MAP 1.2 - PONDS



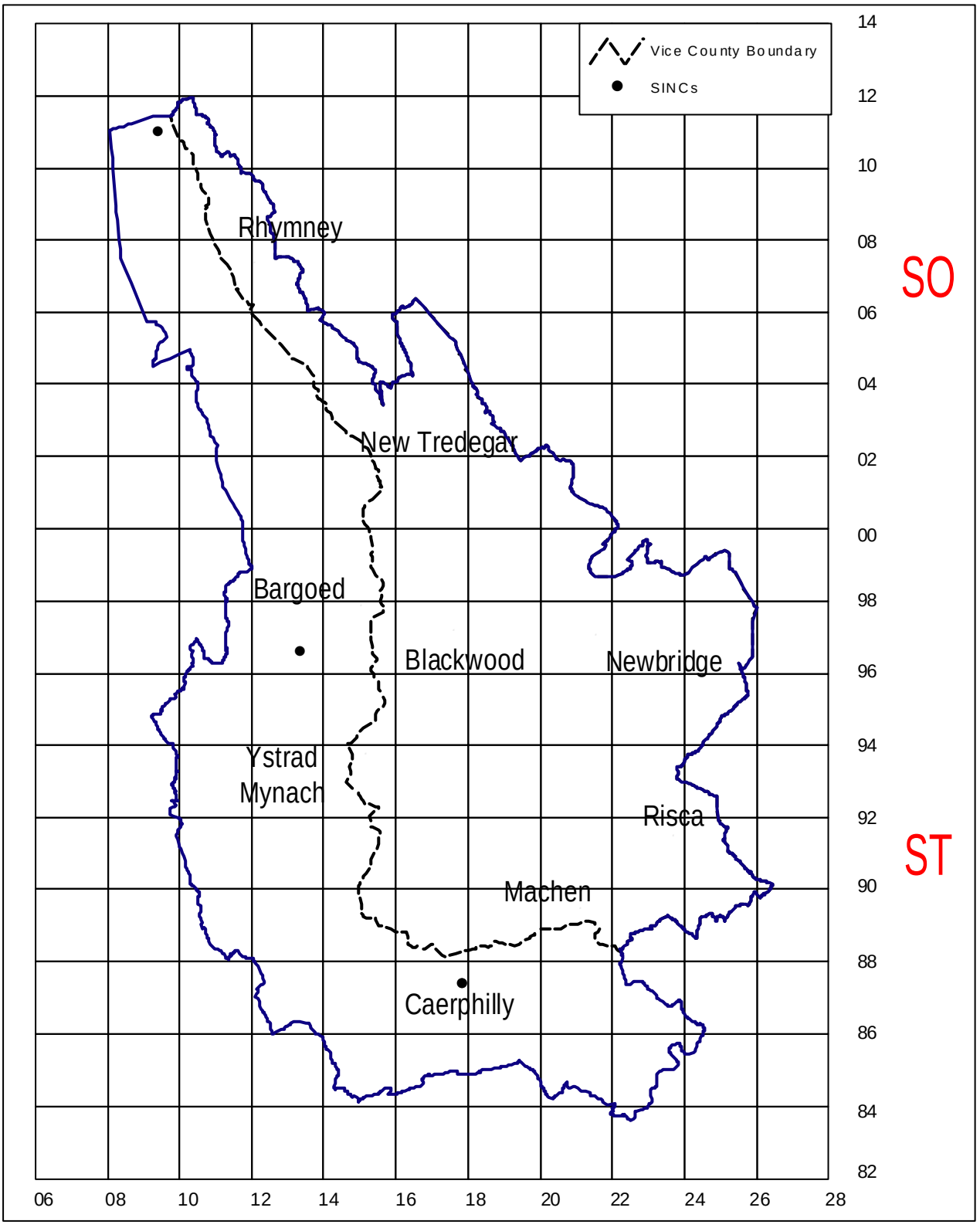
MAP 1.3 - FENS



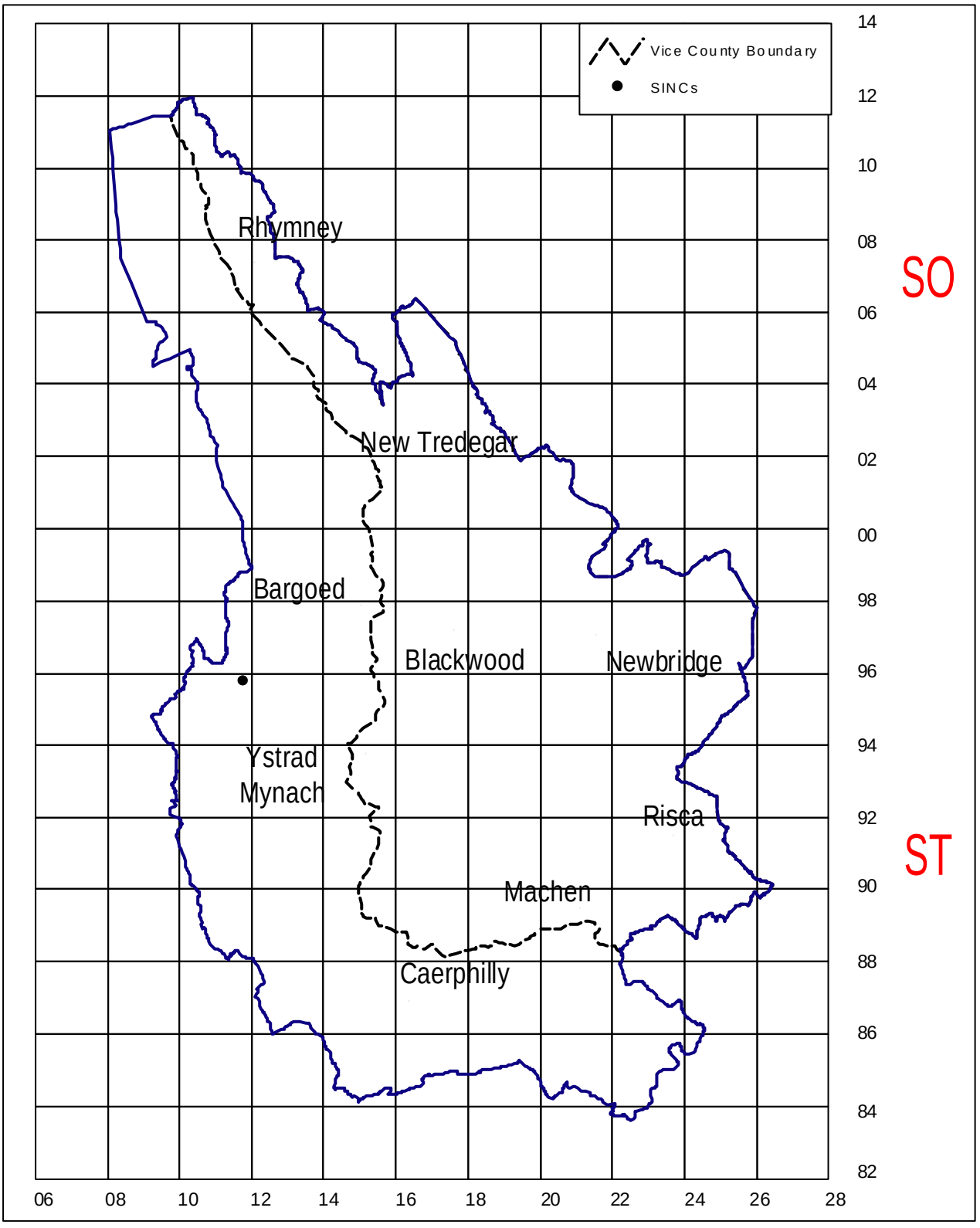
MAP 1.4 - REEDBEDS



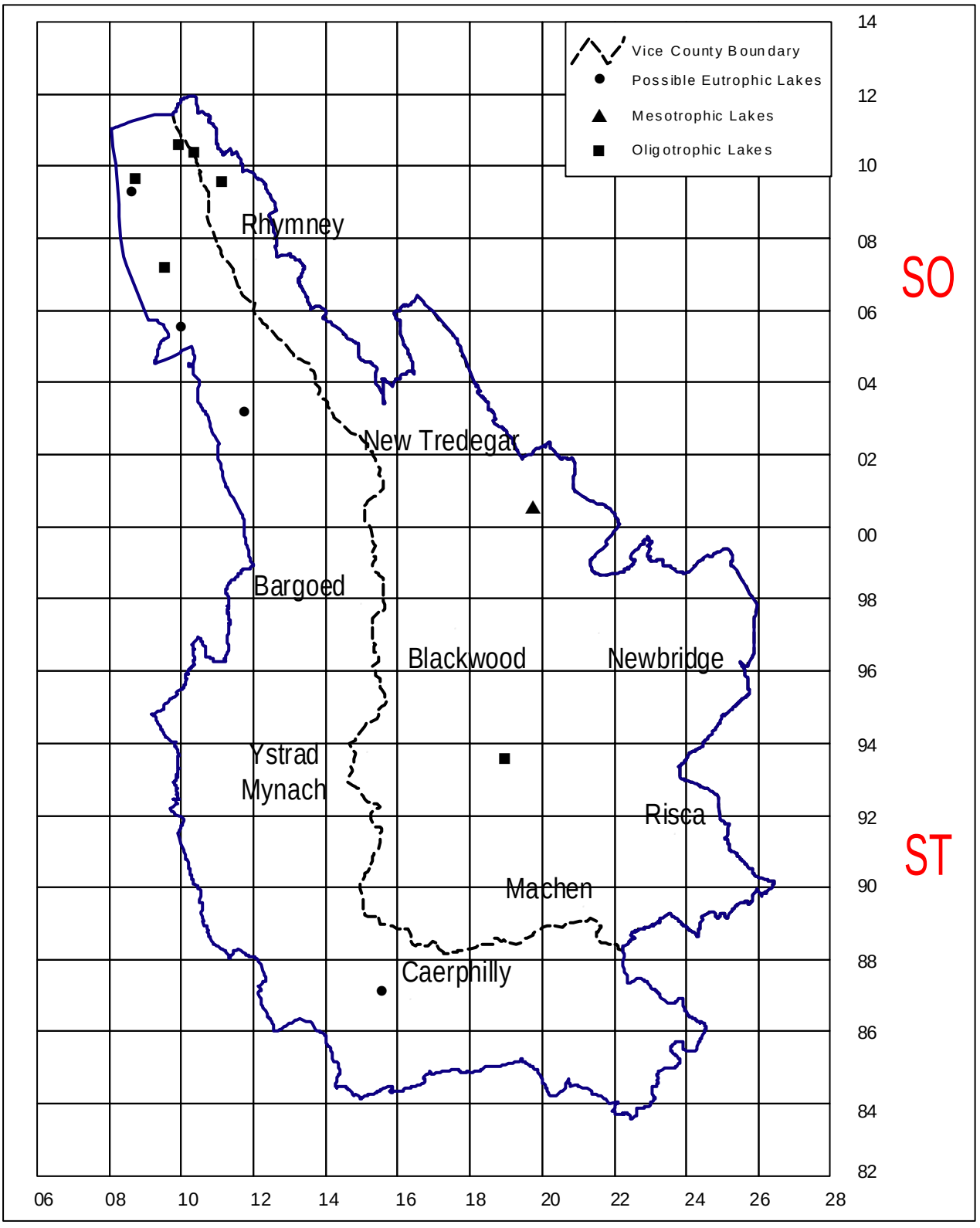
MAP 1.5 - BLANKET BOG



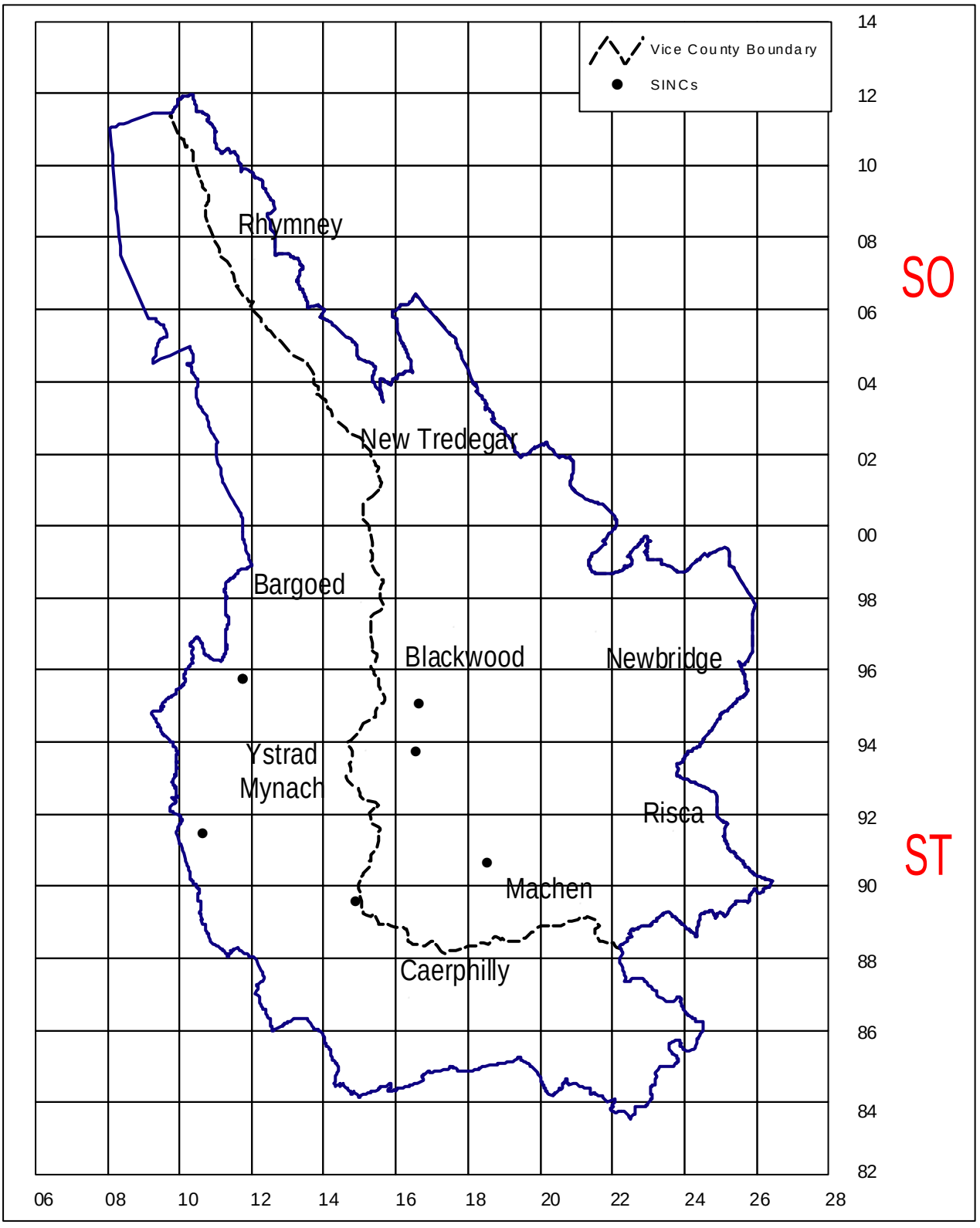
MAP 1.6 - LOWLAND RAISED BOG



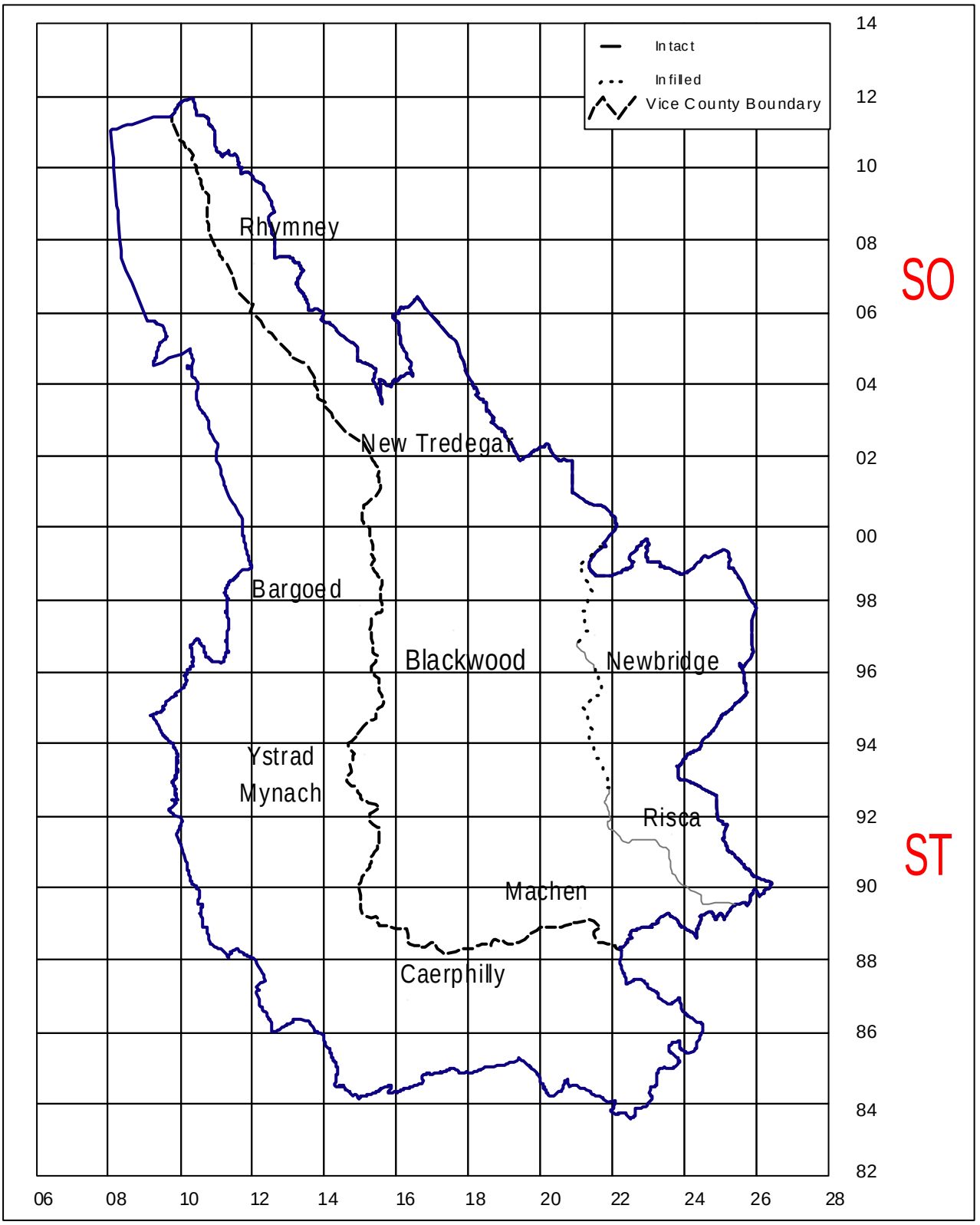
MAP 1.7 - LAKES AND RESERVOIRS



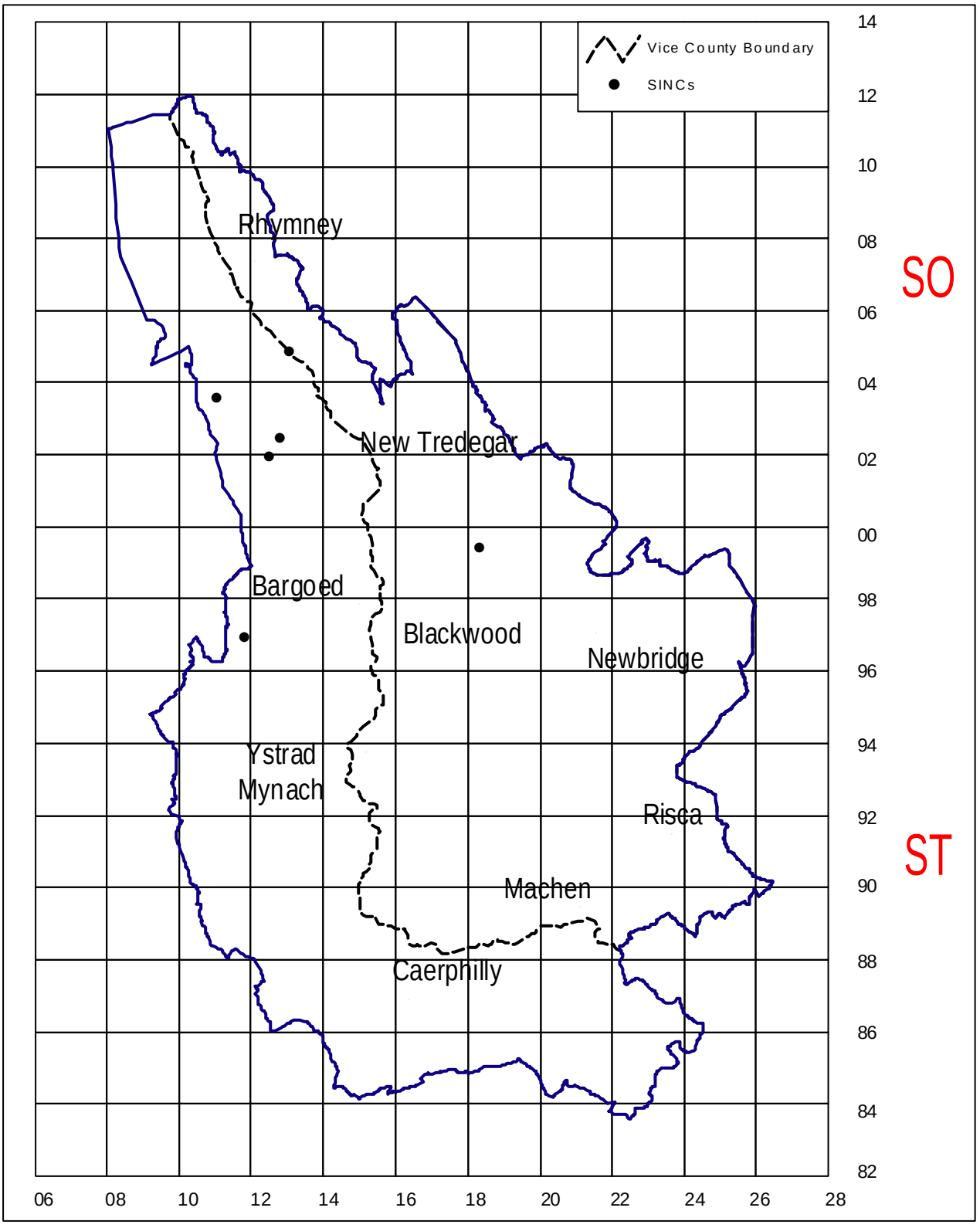
MAP 1.8 - SWAMPS



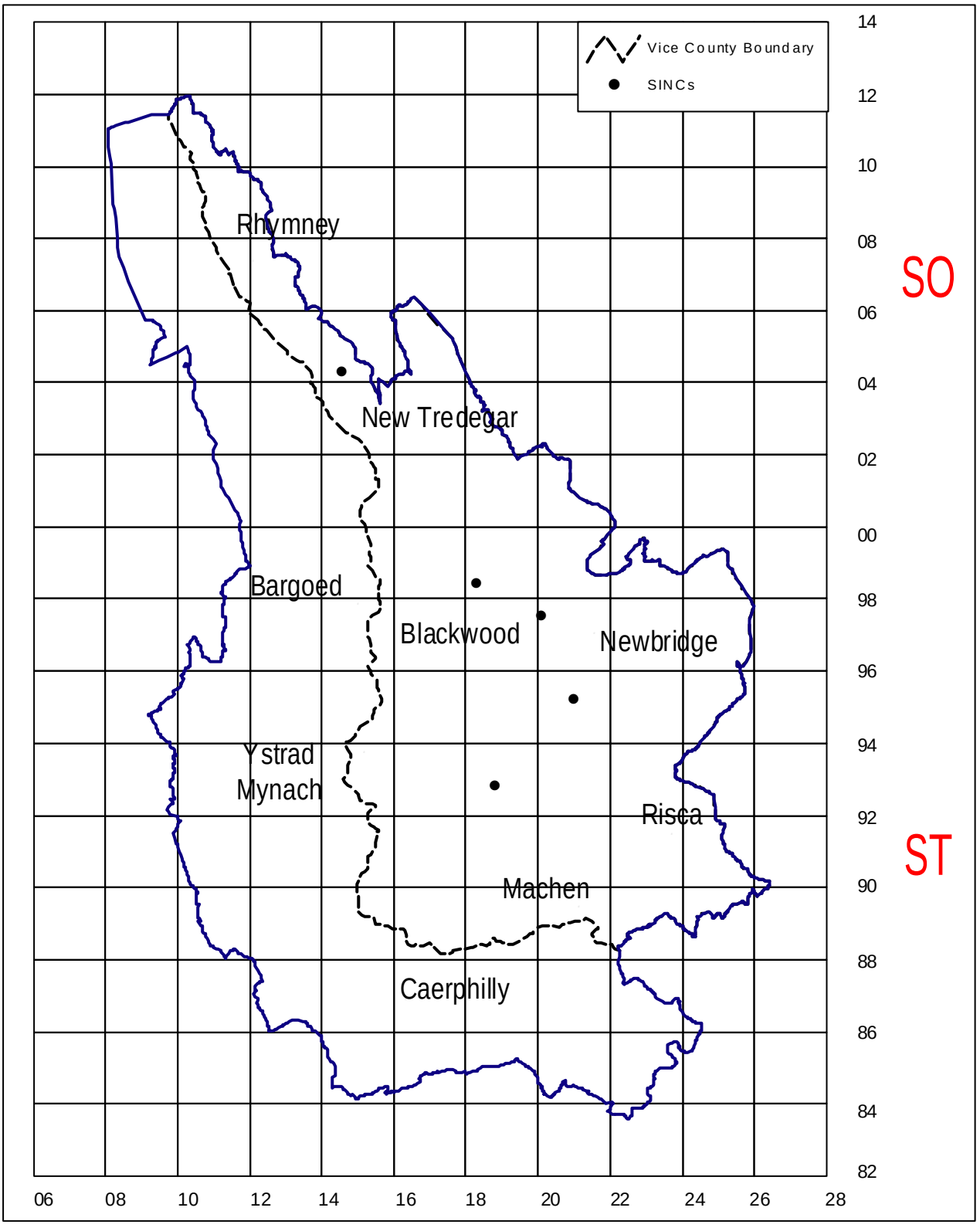
MAP 1.9 - CANAL



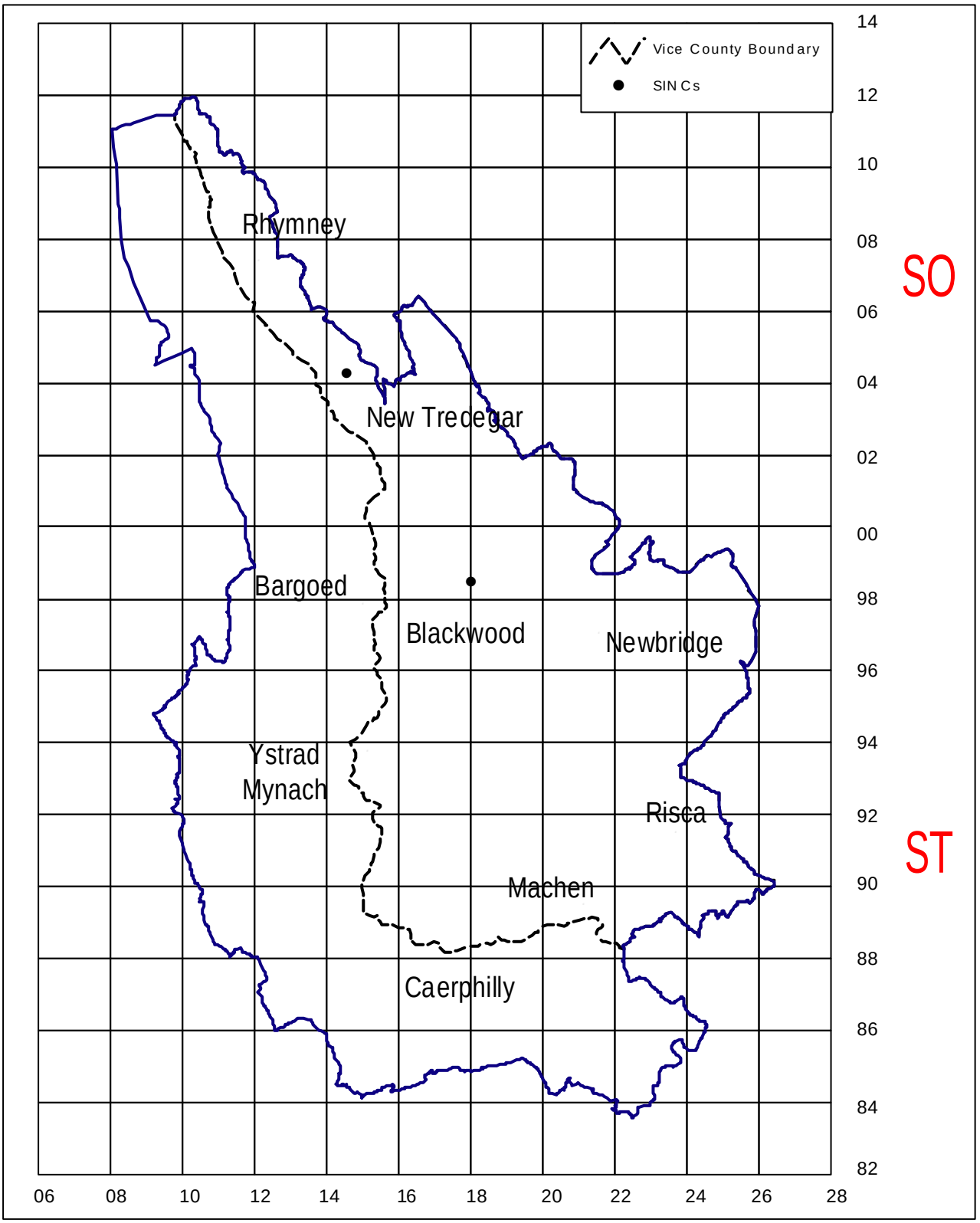
MAP 2.1 - UPLAND OAK WOODLAND



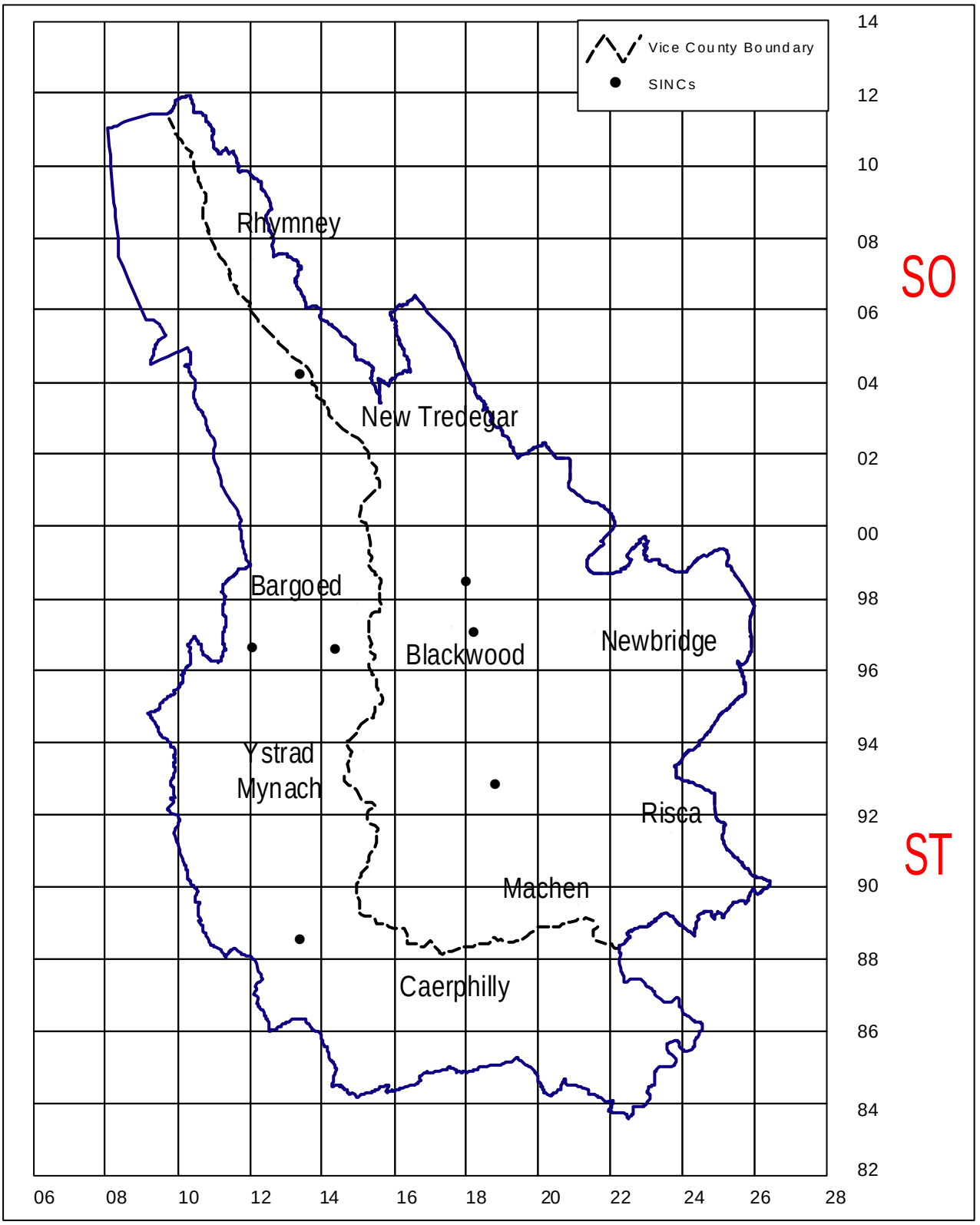
MAP 2.2 - UPLAND MIXED ASH WOODS



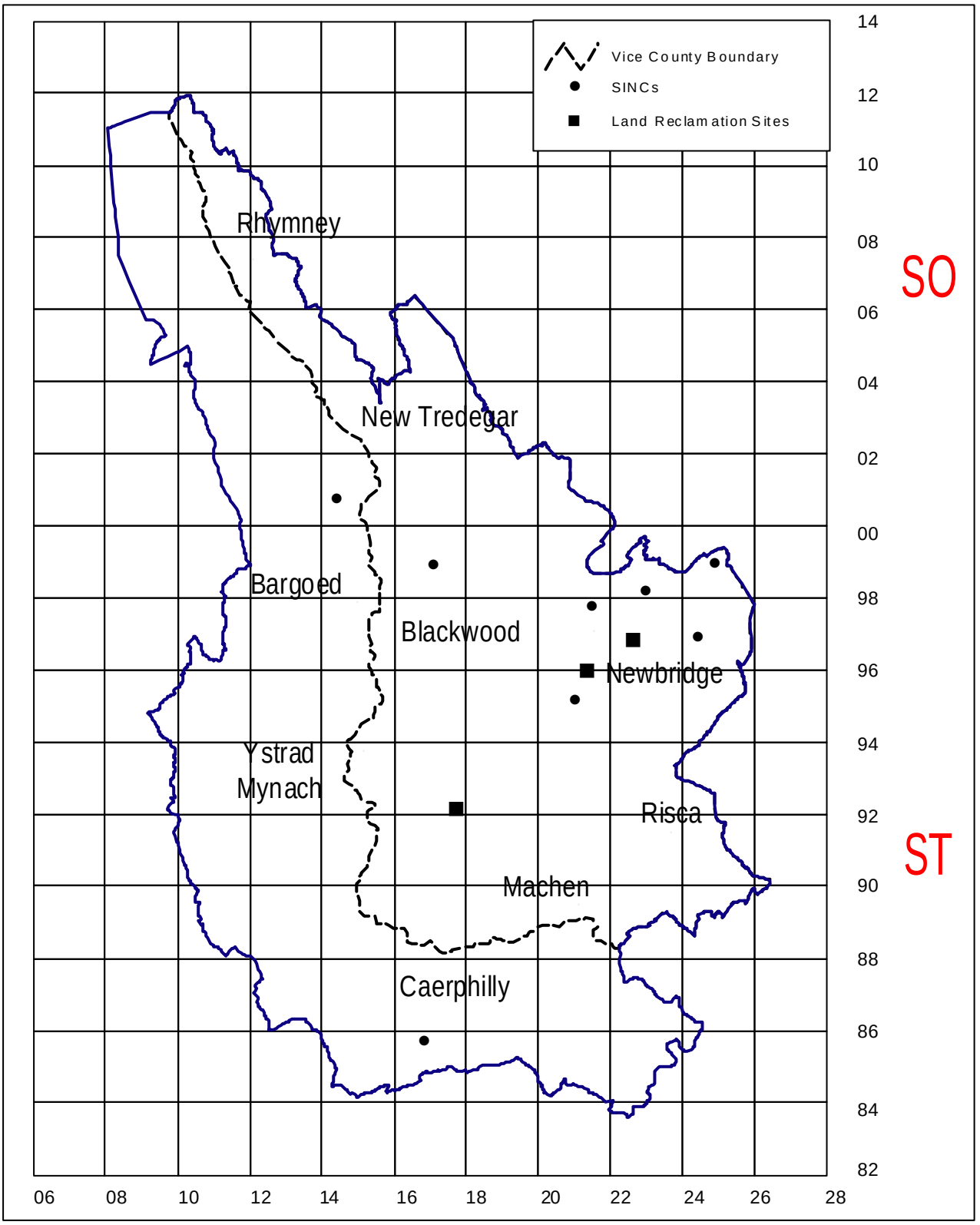
MAP 2.3 - LOWLAND BEECH AND YEW WOODLANDS



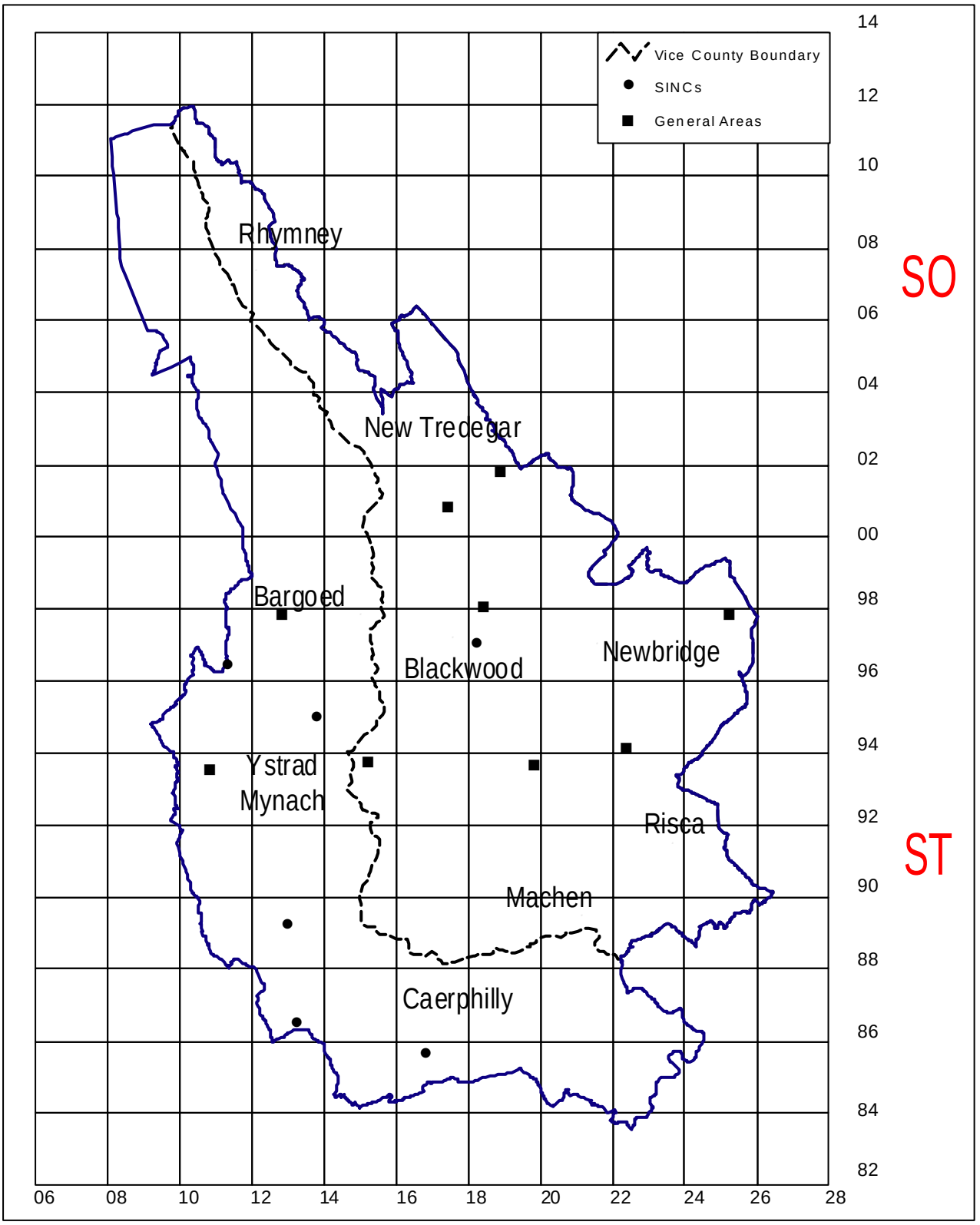
MAP 2.4 - WET WOODLANDS



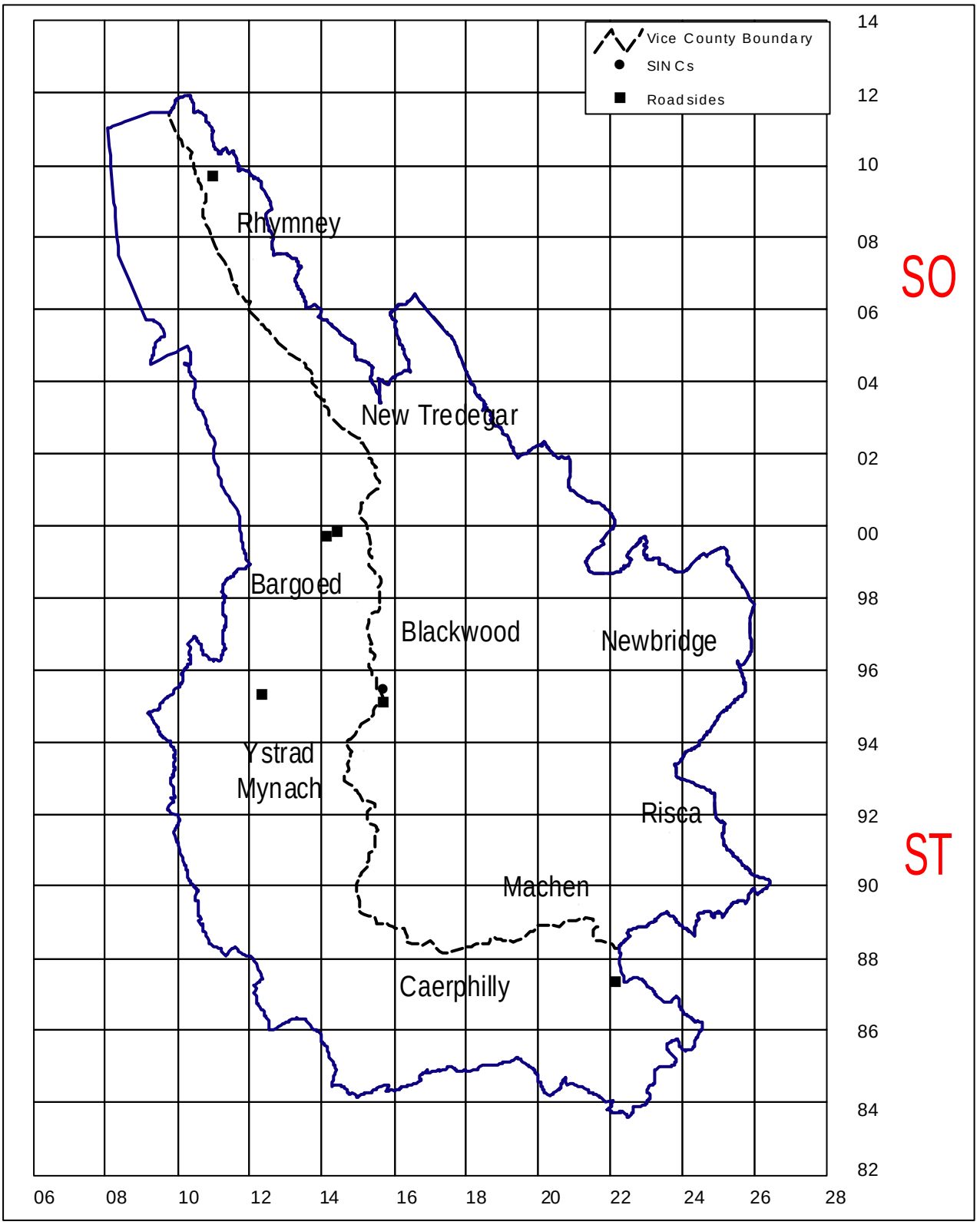
MAP 3.1 - PLANTED CONIFEROUS WOODLANDS



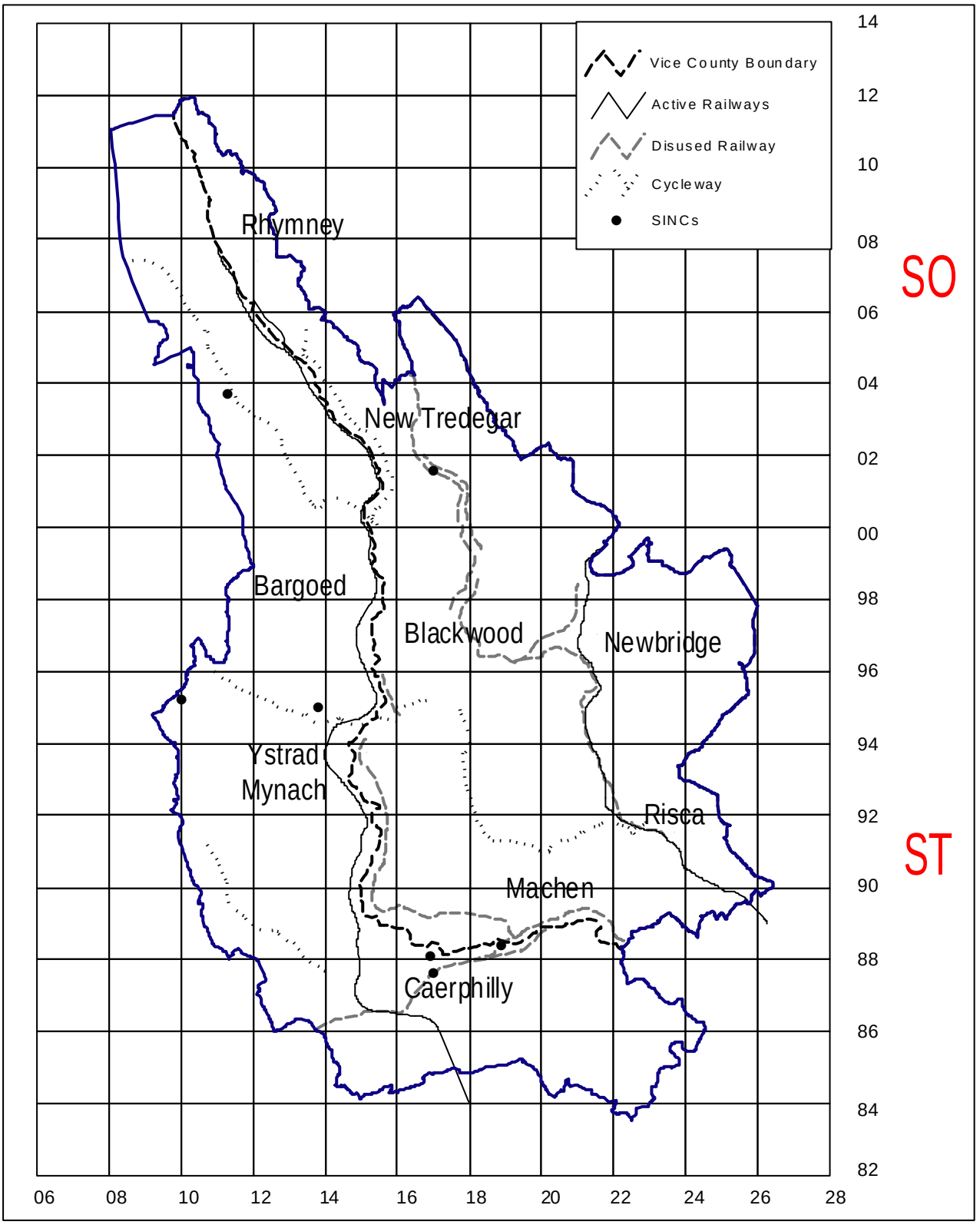
MAP 4.1 - HEDGEROWS



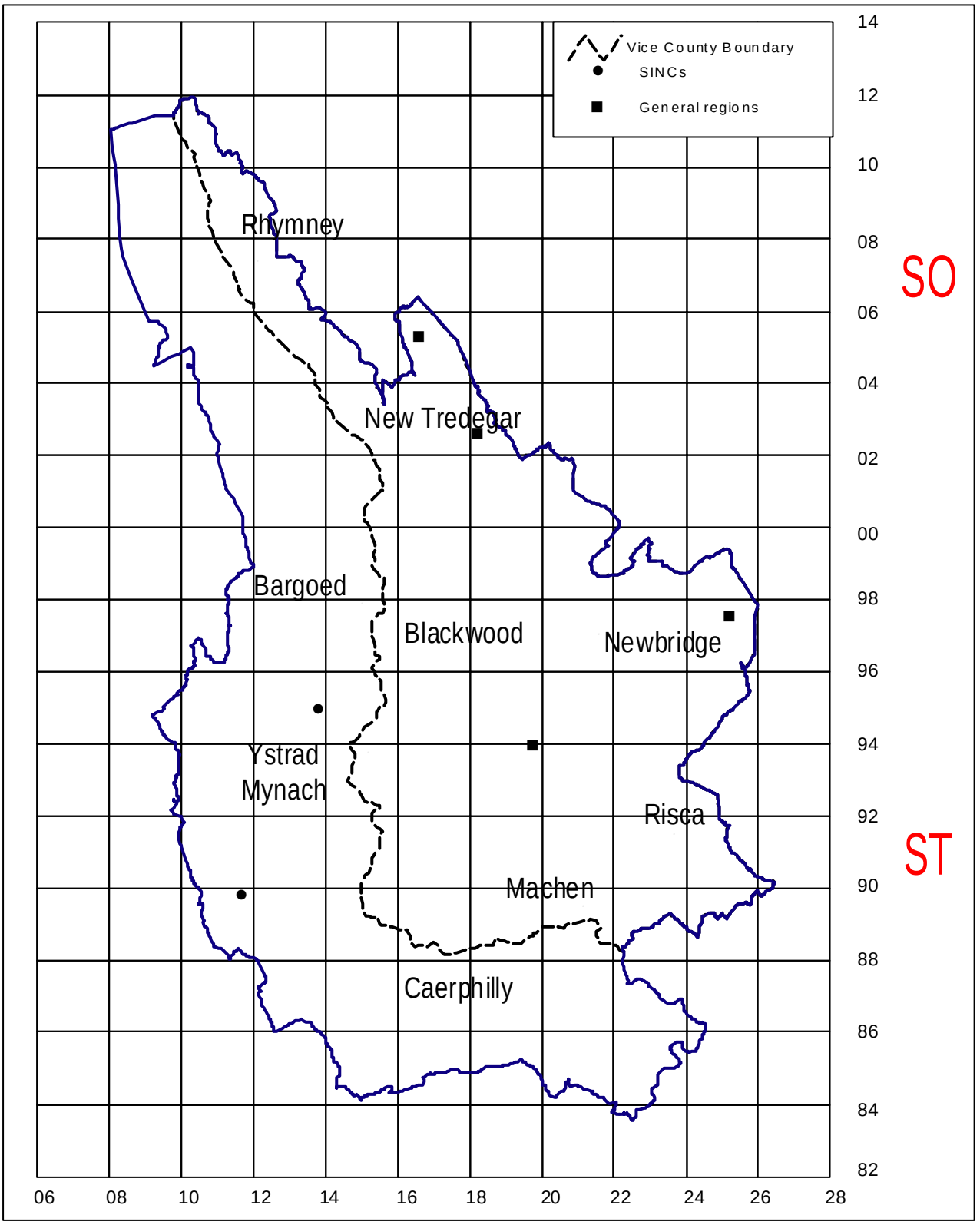
MAP 4.2 - ROADSIDE VERGES



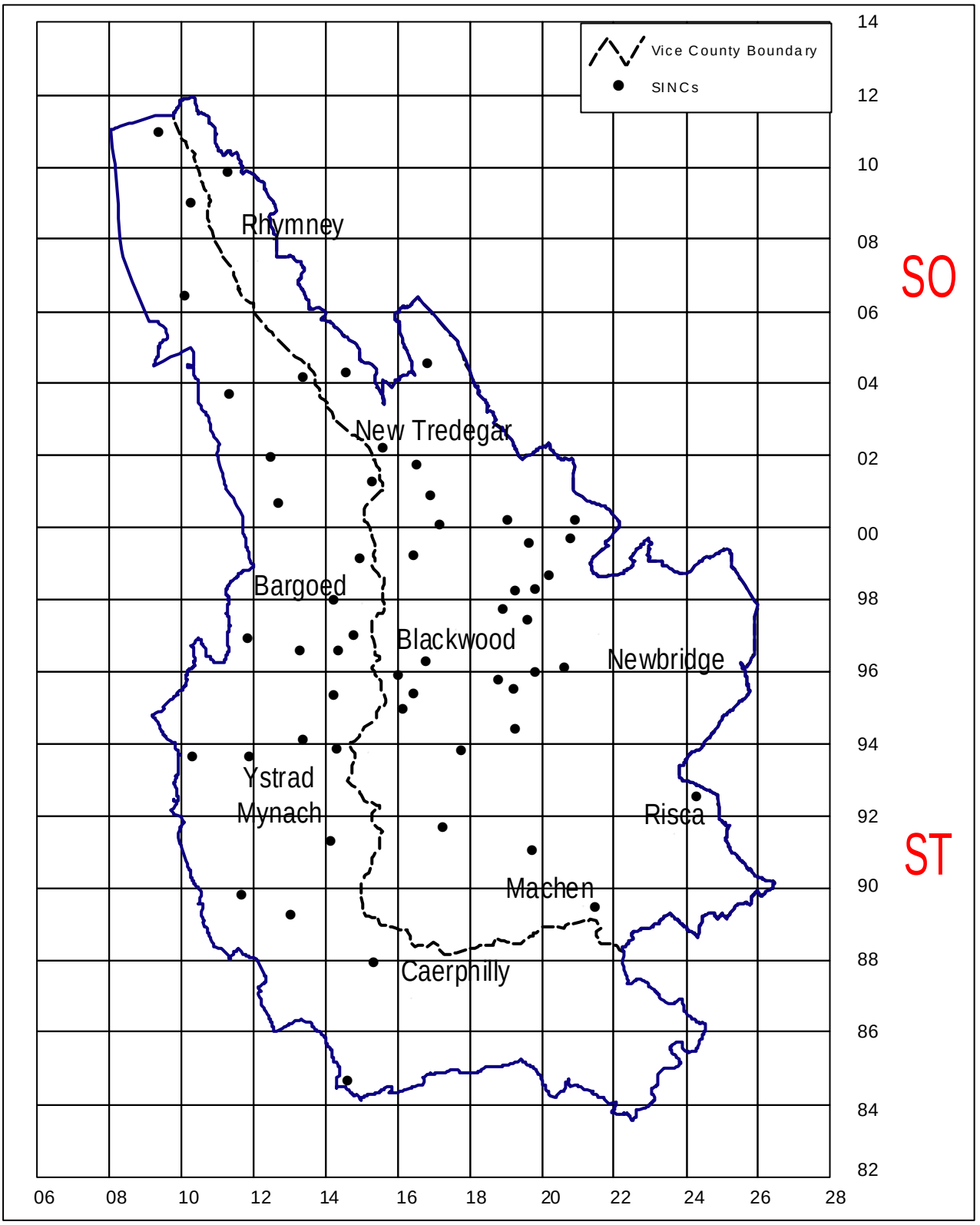
MAP 4.3 - RAILWAYS AND CYCLEWAYS



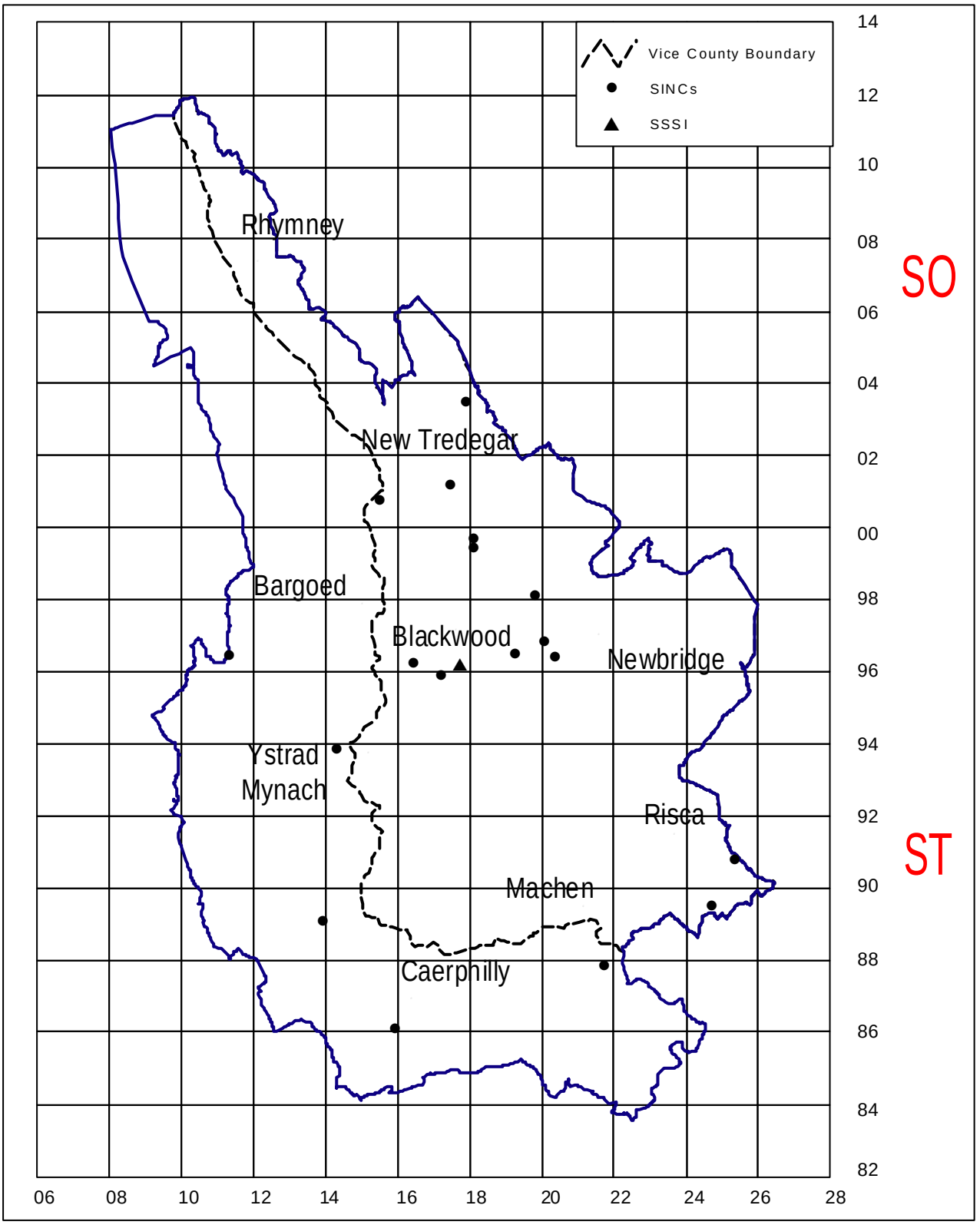
MAP 4.4 - STONE WALLS



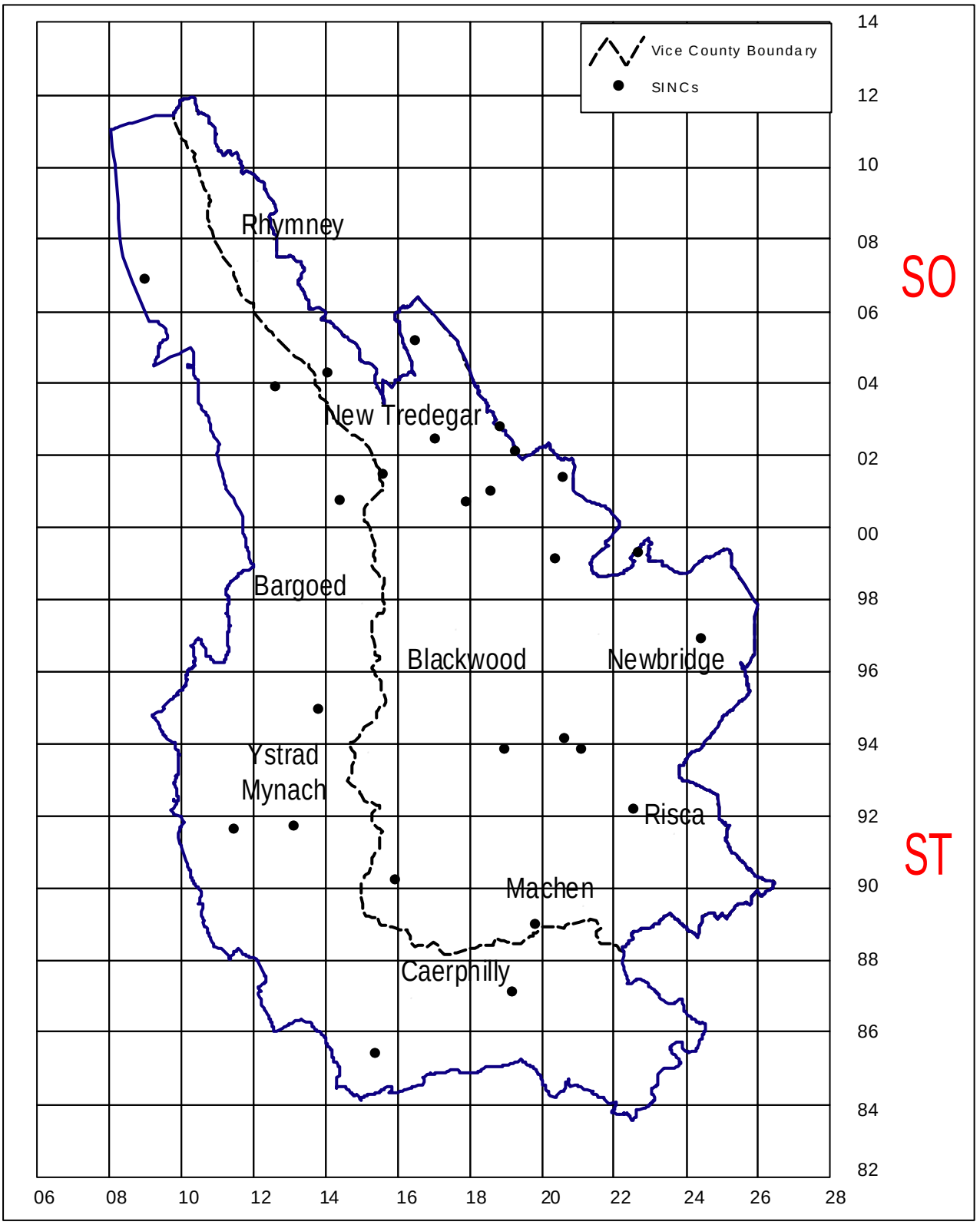
MAP 5.1 - GRASSLAND MOSAICS



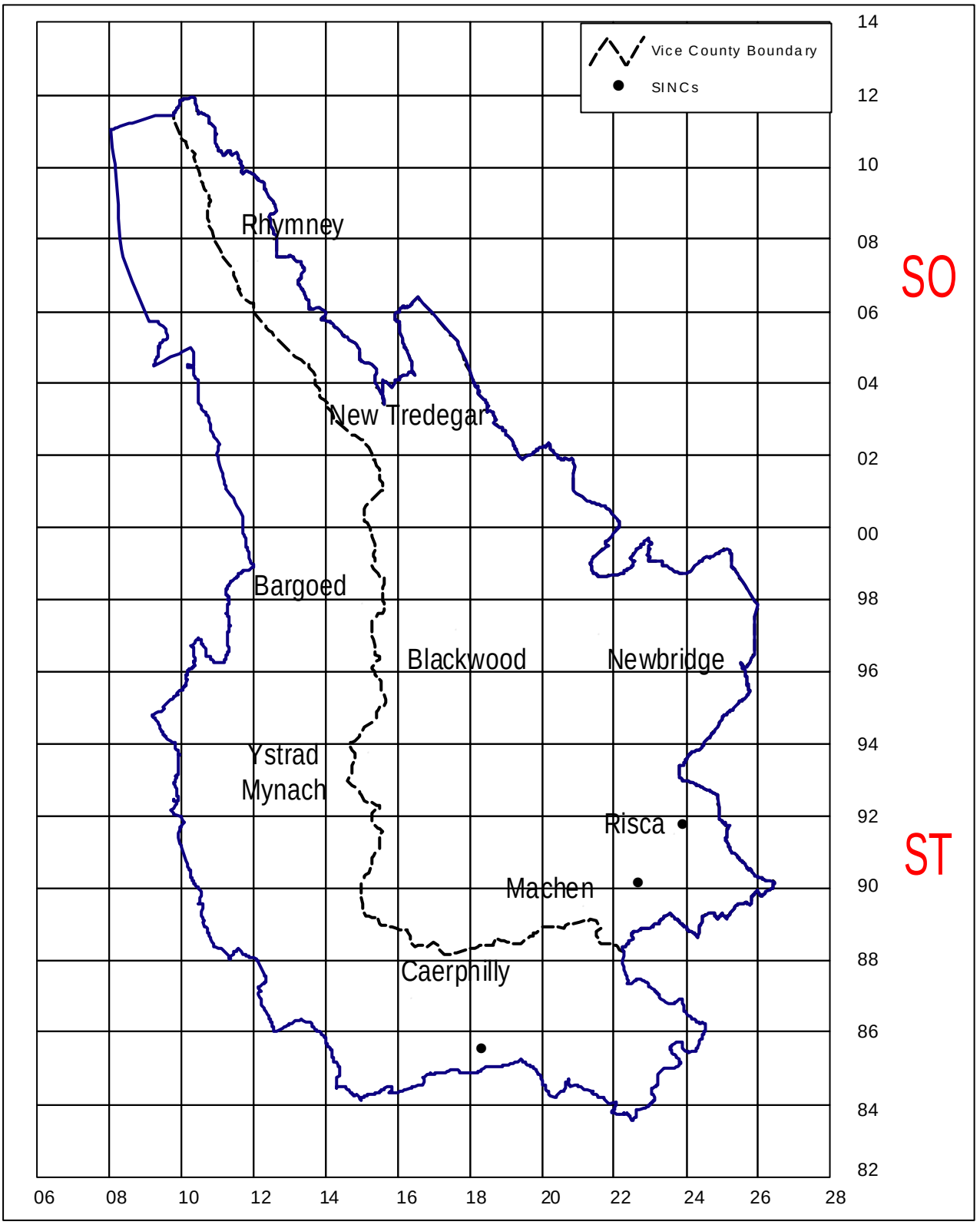
MAP 5.2 - NEUTRAL GRASSLAND



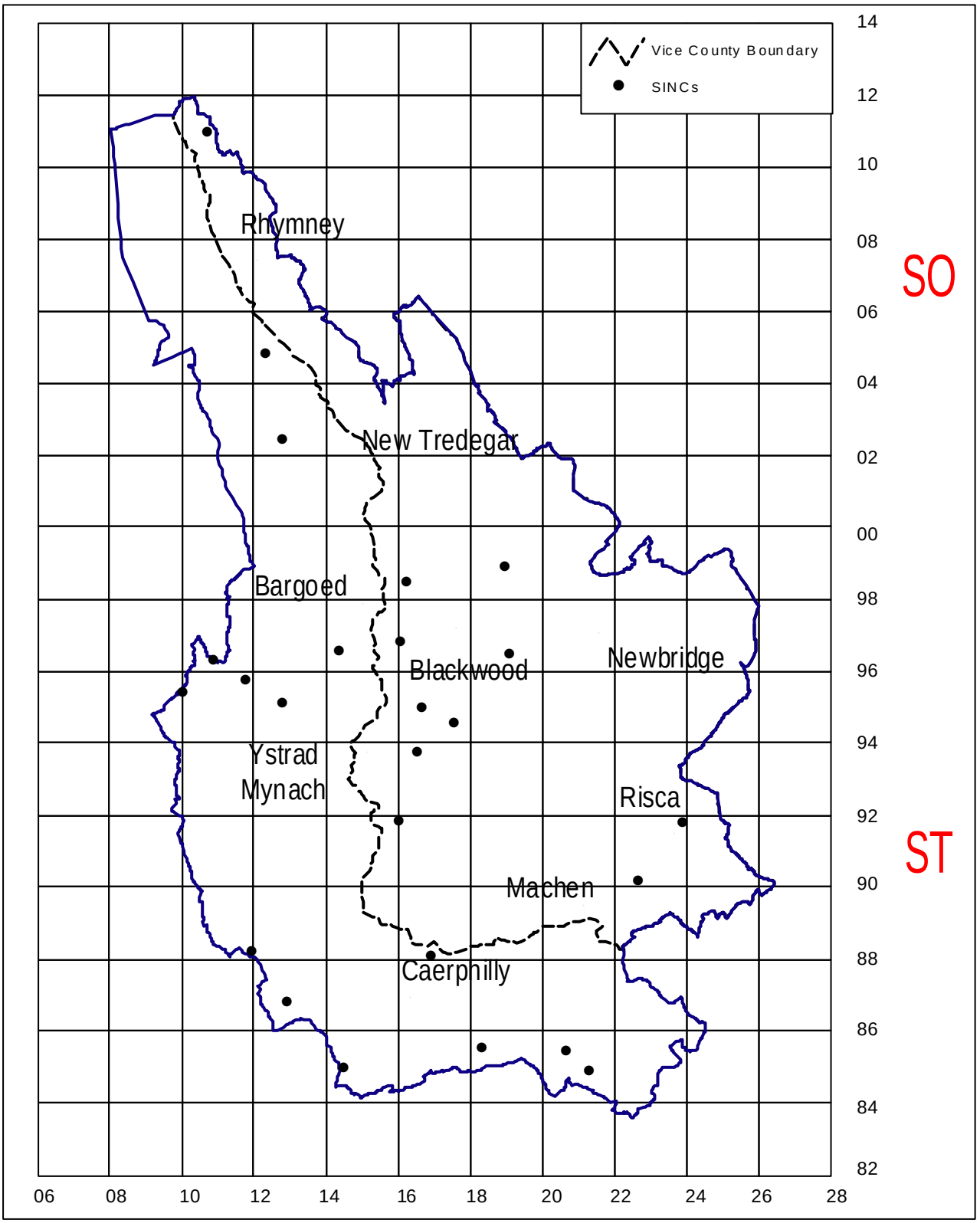
MAP 5.3 - ACID GRASSLAND



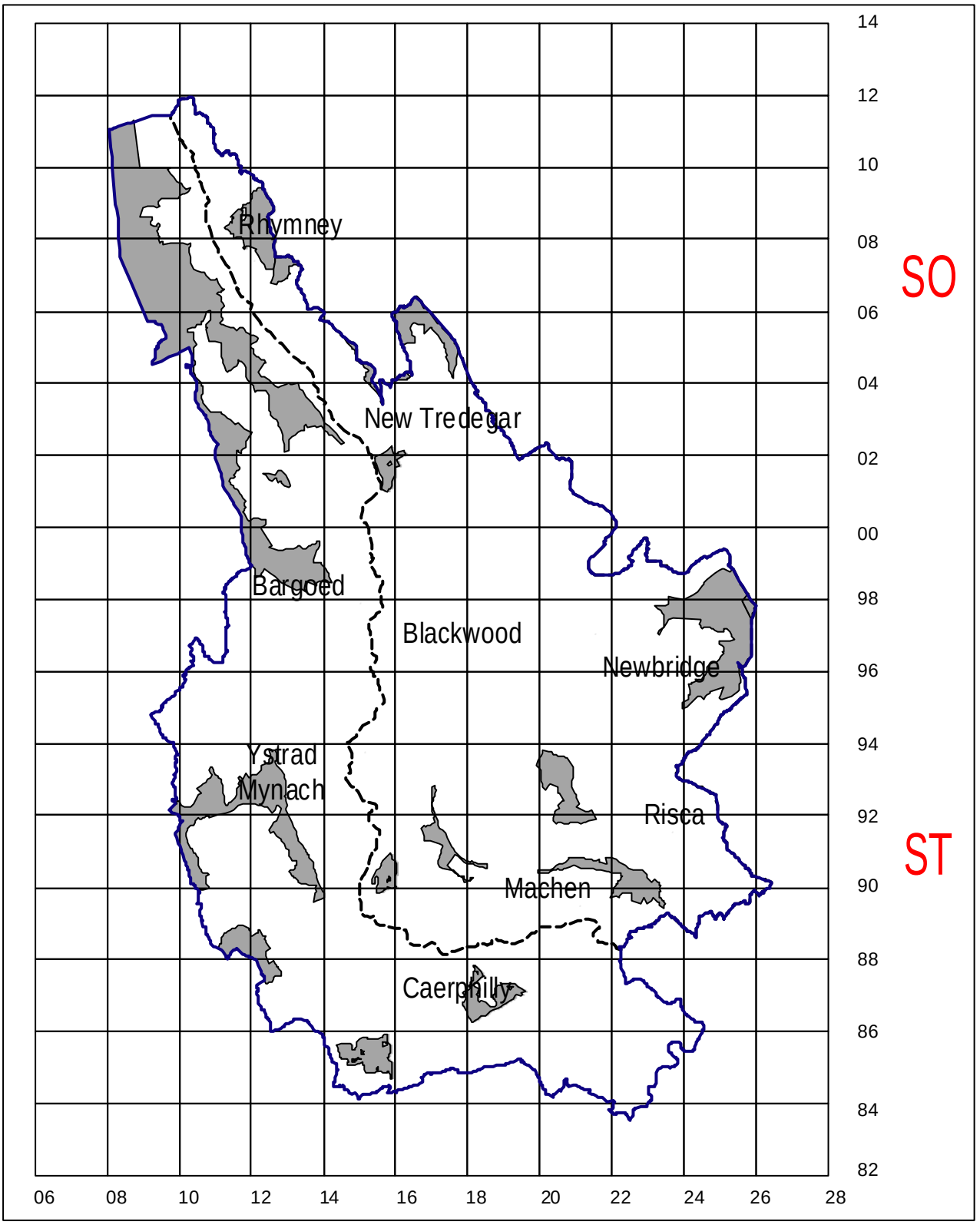
MAP 5.4 - CALCAREOUS GRASSLAND



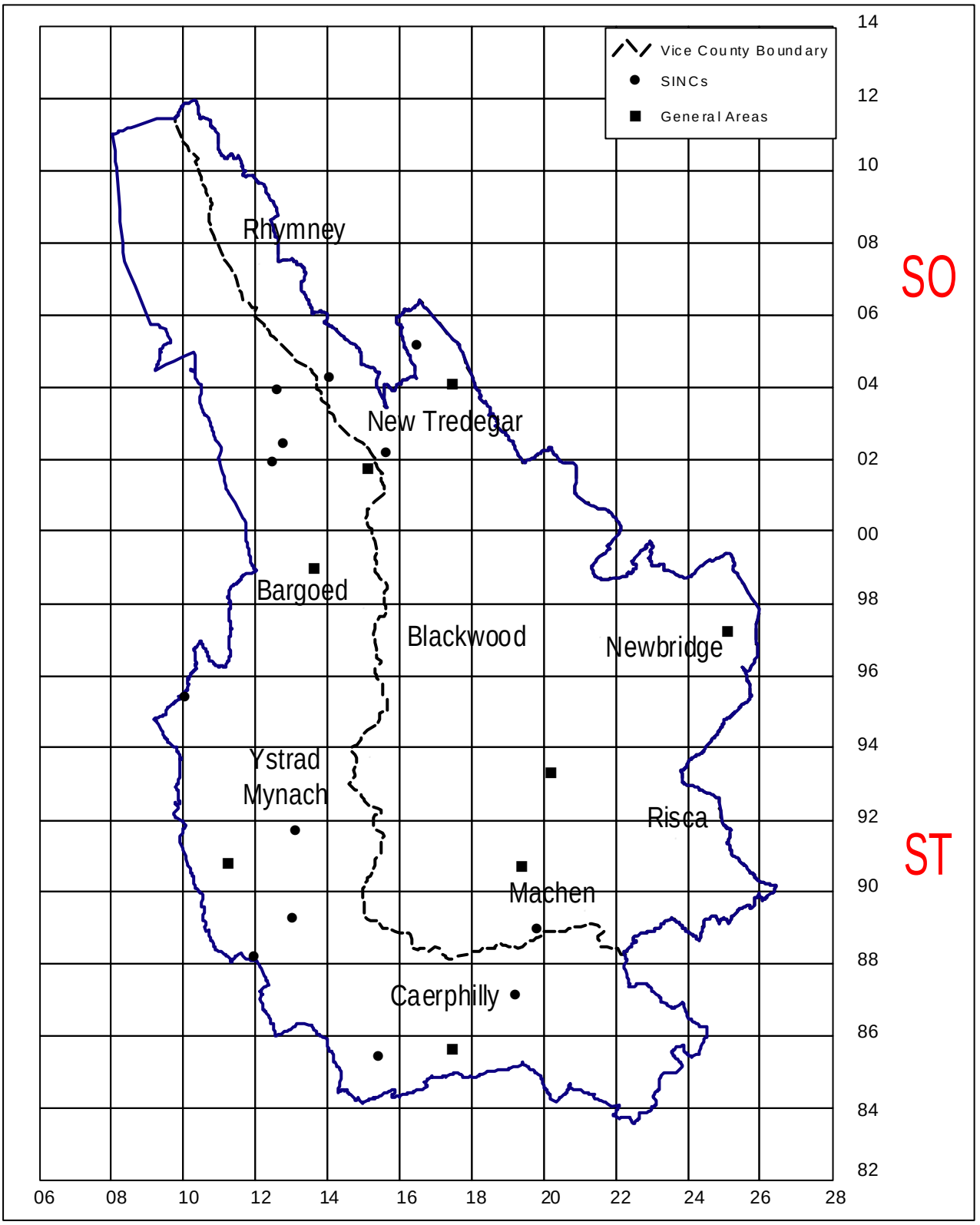
MAP 5.5 - RHOS PASTURE



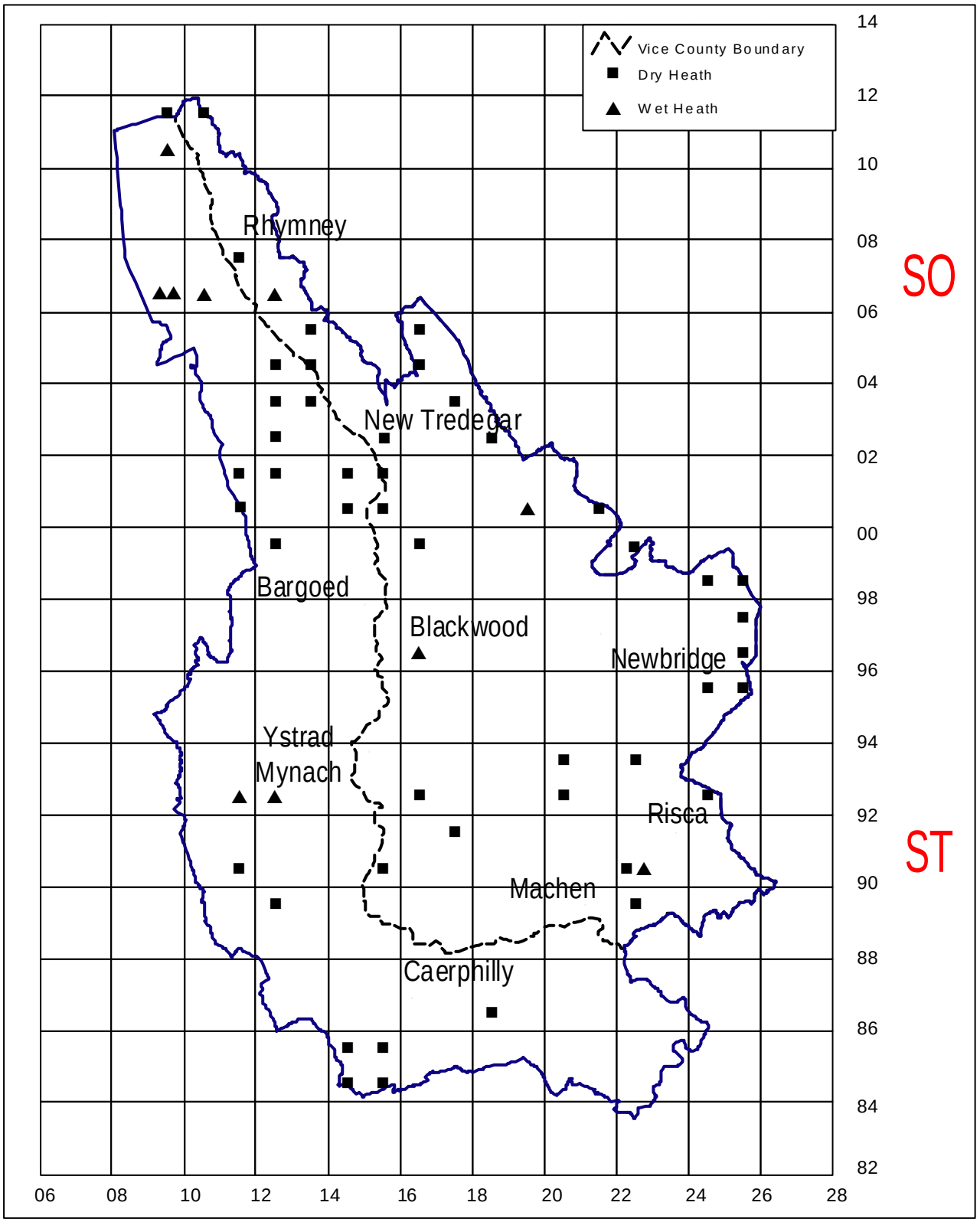
MAP 6.1 - COMMON LAND



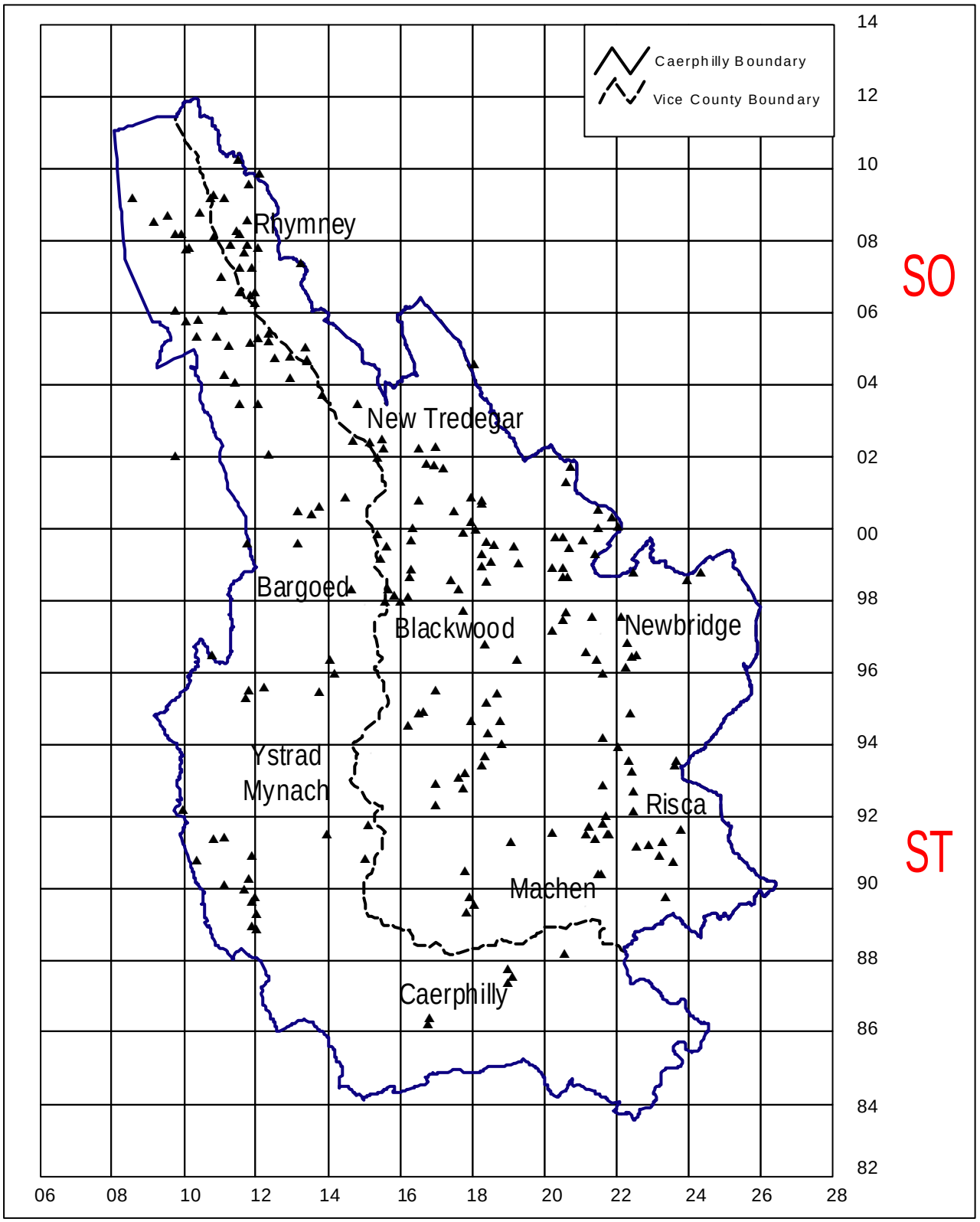
MAP 7.1 - FFRIDD/COEDCAE



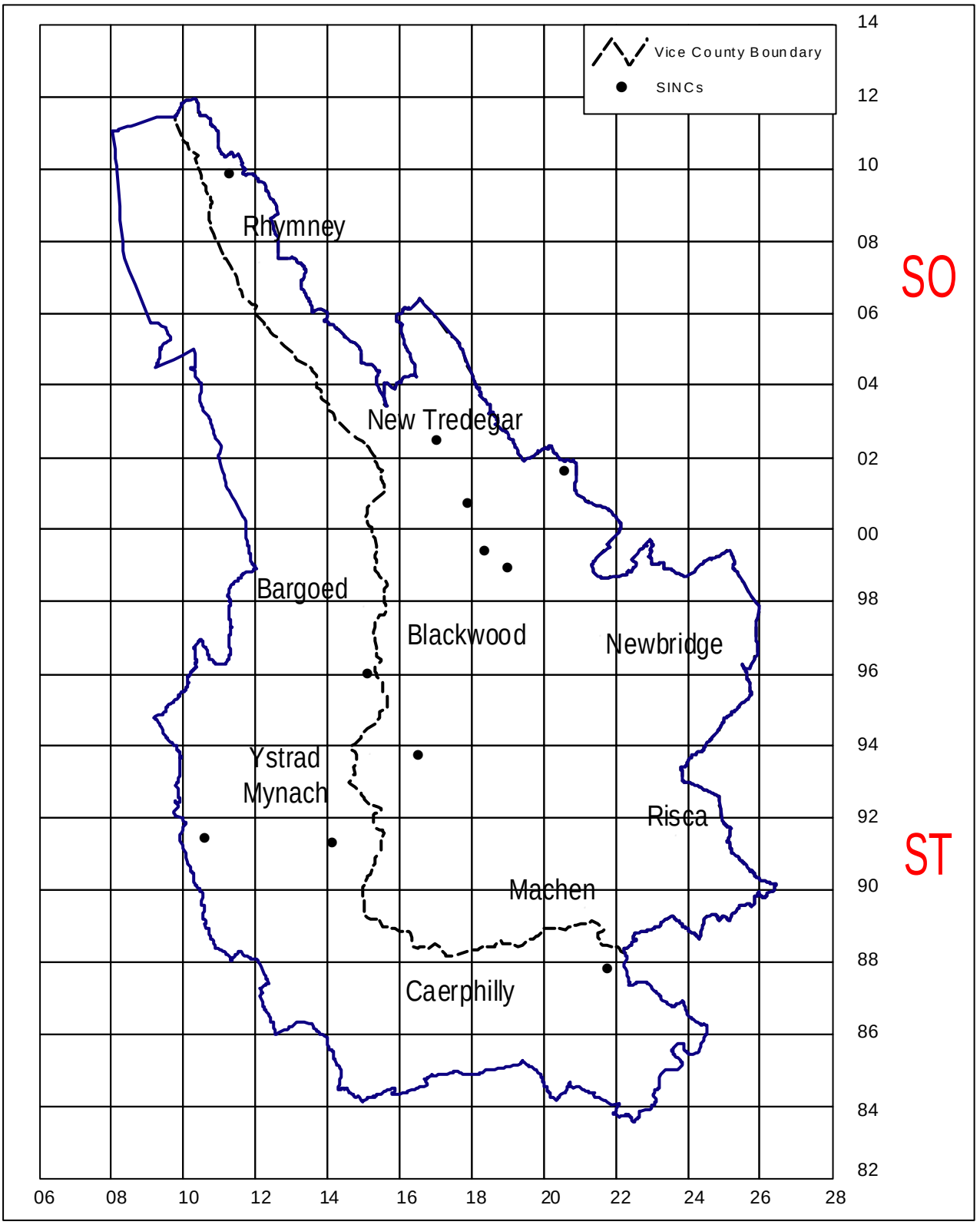
MAP 8.1 - HEATHLAND



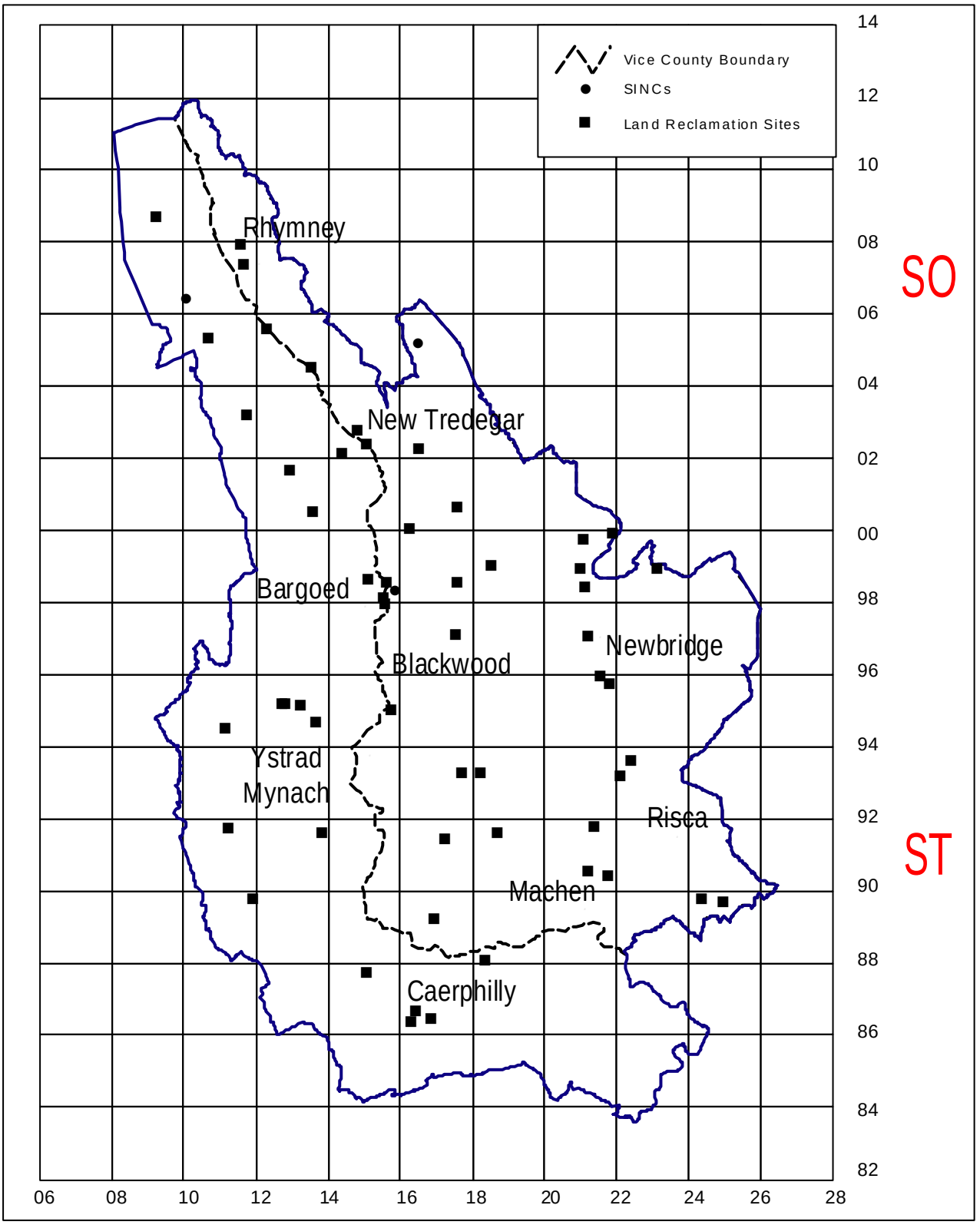
MAP 9.1 - TIP REGISTER



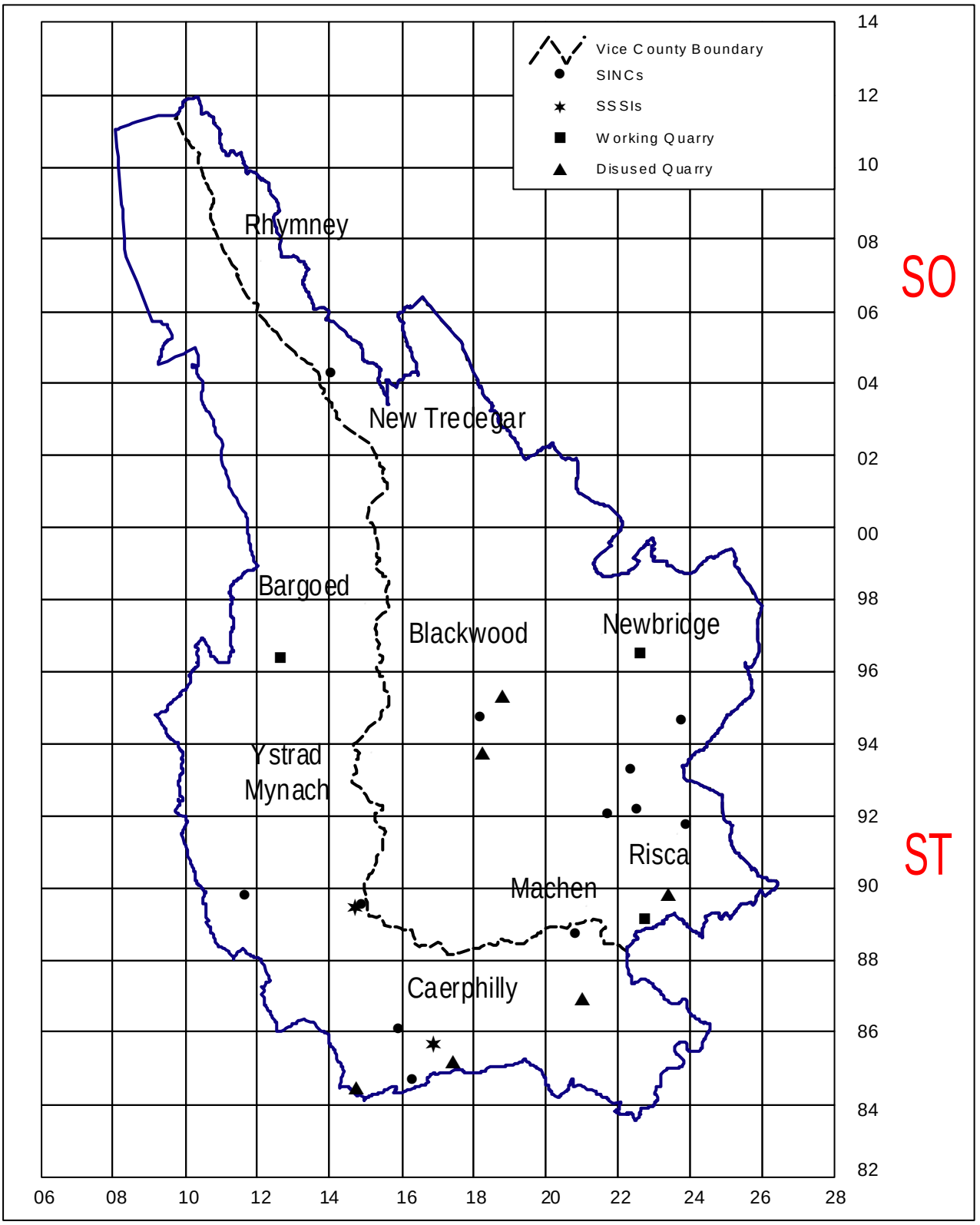
MAP 9.2 - NATURALLY RE-VEGETATED COLLIERY SPOIL



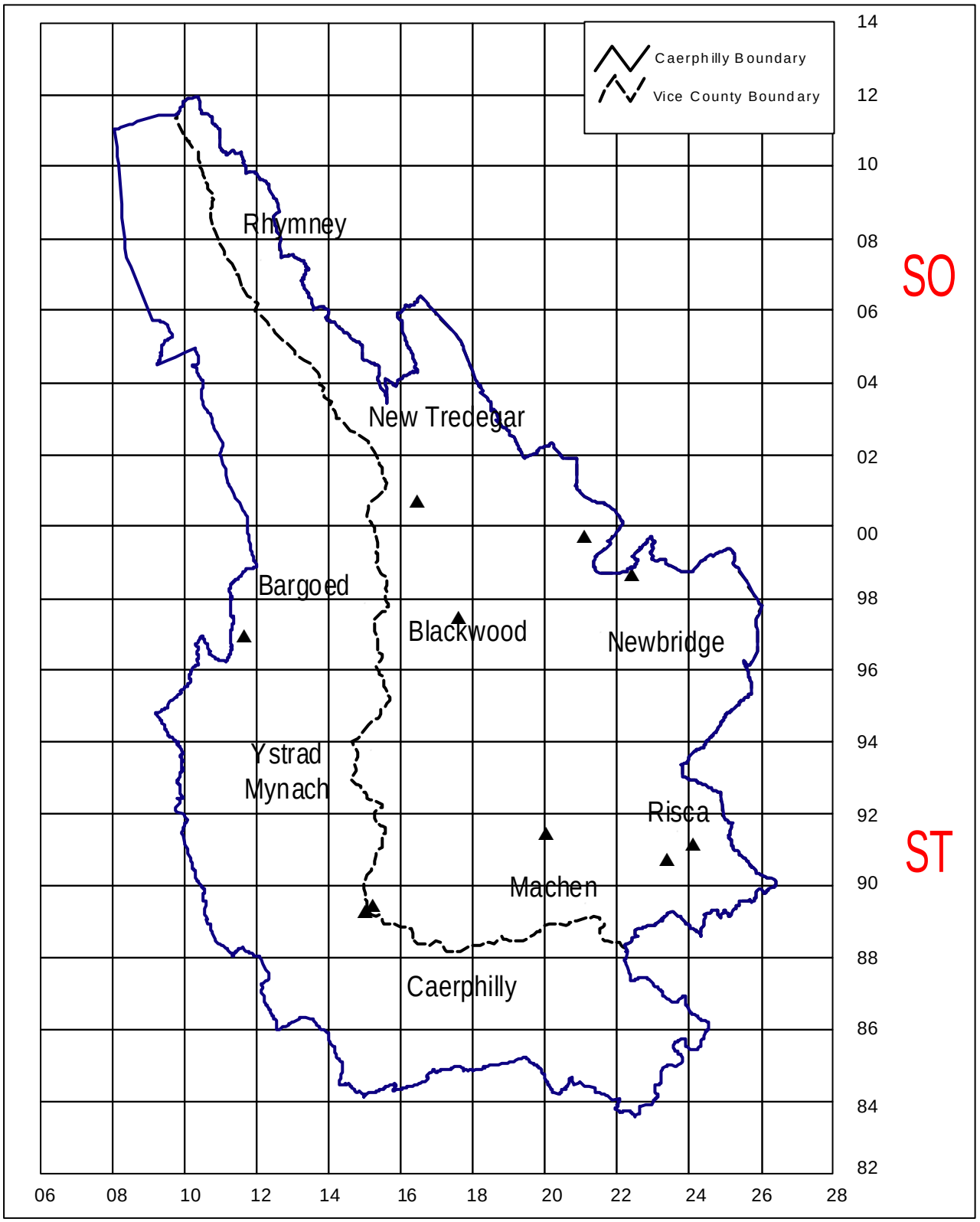
MAP 9.3 - LANDSCAPED COLLIERY SPOIL



MAP 9.4 - QUARRIES



MAP 9.5 - REFUSE TIPS



MAP 10.1 - URBAN HABITATS