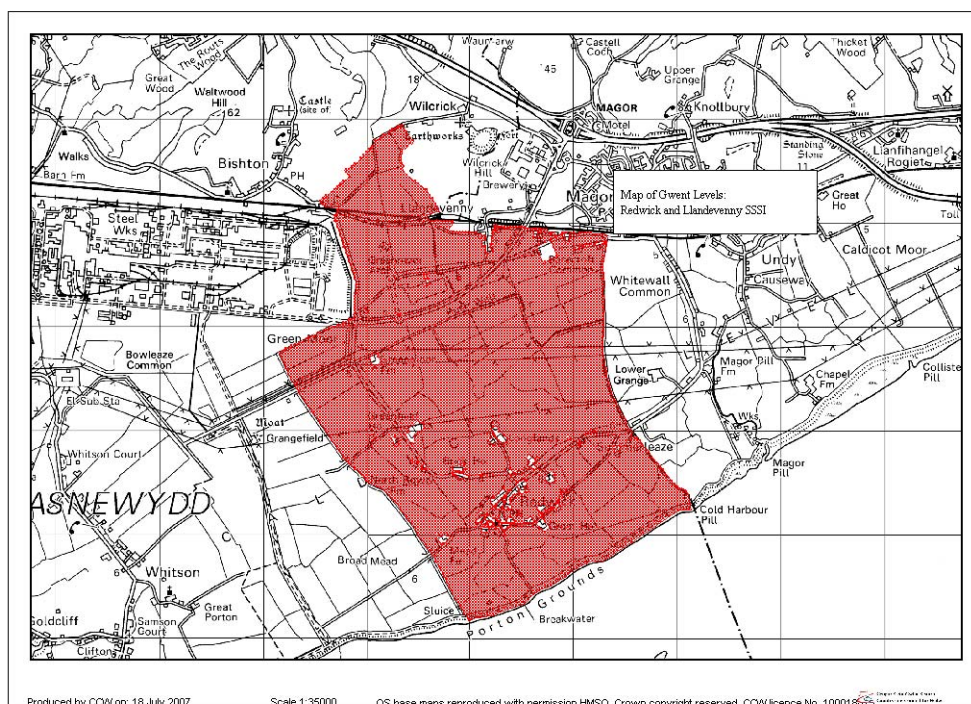


GWENT LEVELS: REDWICK AND LLANDEVENNY SITE OF SPECIAL SCIENTIFIC INTEREST



YOUR SPECIAL SITE AND ITS FUTURE

‘Your Special Site and its Future’ is part of our commitment to improve the way we work with Site of Special Scientific Interest (SSSI) owners and occupiers. In it, we explain what is special about the wildlife on your site, and what care is needed to look after its wildlife into the future.

All SSSIs are considered to be of national importance and we recognise the crucial role that owners and occupiers play in their management and protection. We need you to share your views and knowledge of this site with us, to help us safeguard it.

We hope that you will find ‘Your Special Site and its Future’ interesting and helpful. Please contact us if there is anything about the site and its management that you would like to discuss.

What is ‘special’ about the wildlife of the Gwent Levels: Redwick and Llandeenny SSSI?

The Gwent Levels: Redwick and Llandeenny SSSI is one of a series of six SSSIs, totalling 5700 hectares (about 14 000 acres). They lie alongside the Severn Estuary and cover the whole of the Gwent Levels, stretching from east of Cardiff through to Caldicot. The landscape we know today is entirely man made, a result of reclamation from the sea over the last 2000 years. The land is below high mean water level and the sea is kept out by extensive sea defences. Traditionally, fields are drained by a system of ridge and furrow or ‘grips’ (shallow trenches) into the extensive system of interconnected ditches that surrounded each field. The larger of these are known as reens, which discharge at intervals to the Severn Estuary via tidal flaps. This drainage system is the largest in Wales and contains a wide range of wetland plants and insects that are becoming increasingly uncommon. The closest comparison in Britain is the Pevensey Levels in Sussex.

The Gwent Levels: Redwick and Llandeenny SSSI has three special features;

- **Reen and Ditch Habitat**

The reens and ditches are host to a wide range of aquatic plants, including many rare or scarce species, that in turn support a wide variety of other wildlife. The ditches are carefully constructed so that the system drains by gravity. Pumps and various water control structures, such as sluices and penstocks control water levels. In the summer water levels are kept high to provide wet fencing and stock watering, but in winter the boards are removed to allow floodwater to drain into the Severn Estuary. The reens and ditches are also periodically weeded and cast (cleared out). Across the Gwent Levels as a whole there are approximately 870 miles of ditch. The Environment Agency manages about 40 miles, the Caldicot and Wentlooge Levels Internal Drainage Board (CWIDB) about 80miles and over 600 individual farmers and landowners look after the remaining 750 miles.

- **Insects and other Invertebrates**

There is a diverse community of insects and other invertebrates (for example water beetles) inhabiting the reens and ditches. Over 200 species of insects and other invertebrates have been recorded from this site, many that are so obscure they only have Latin names. Of particular interest is the silver colonel soldier fly, which is more or less confined to the Gwent and Somerset Levels. The larvae of this soldier fly are found in shallow standing water and the adults can be seen during May and June feeding on flowers near the breeding site. The hairy dragonfly is also found on this SSSI.

The assemblage of water beetles found across the Gwent Levels is unique in Wales and this SSSI is home to several of the rarest of these water beetles, such as the great silver beetle, our largest water beetle (up to 40mm long) which is found nowhere else in Wales and is restricted to only a few other sites in southern England.

- **Shrill carder bee**

The Gwent Levels have also recently been found to be an important site for the shrill carder bee. This bee was once fairly widespread throughout southern England and lowland Wales but is now known from less than 20 sites in the UK.

It is likely that the intensification of agriculture, the loss of flower rich grasslands and fragmentation of habitat are key reasons for its decline. However, across the Gwent Levels the un-mown ditch banks and rough grassland areas provide ideal habitat for the shrill carder bee, as they contain the flowers preferred by the bee for sources of nectar and pollen, such as red clover, creeping thistle and black knapweed.

As well as the features listed above, Gwent Levels: Redwick and Llandeenny SSSI has other habitats that contribute to the special wildlife interest. These include green lanes, hedgerows and flower rich ditch banks. This mixture of habitats is important for a wide range of species. Except where specified below, management of this site should aim to look after these habitats as well as the listed features of interest.

What do we want the Gwent Levels: Redwick and Llandeenny SSSI to look like?

The following is a description of how we would like to see the features at this site.

Within any 10 fields the reens and ditches vary in appearance from deep, wide open water channels to small field ditches which may only hold water for part of the year. The majority of field ditches are unshaded by hedgerows for the majority of their length. In mid summer water levels are still high in all the main reens and as many as half of the field ditches have water at least 20cm deep. There is very little algae to be found anywhere.

Recently cast reens and ditches contain little vegetation while others may be full of plants, this mosaic of watercourses provides an ideal habitat for insects. Plants such as water plantain with its delicate white flower can be seen in almost all the ditches and others such as hairlike pondweed can be found in several main reens. Submerged plants such as water milfoil and floating-leaf plants such as water starworts and frogbit, are also common throughout the drainage system.

On still, sunny days in mid summer lots of different dragonflies, damselflies and other insects fly over the water, feeding and resting on the emergent vegetation. They are also providing plenty of food for birds such as swifts and swallows.

What management is needed on Gwent Levels: Redwick and Llandeenny SSSI and why?

Although this site is an excellent place for wildlife it will only remain so if it is managed carefully. Like most of lowland Britain, in the last 50 years there has been a steady rise in the agricultural improvement of the grassland through under-drainage, ploughing, regular re-seeding and the use of artificial fertiliser. Large areas have also been converted to arable production and intensive dairy farming. All these changes have led to ditches being filled in, summer water levels being lowered and more pollution entering the ditches. In addition, extensive areas across the Gwent Levels are under increasing pressure from development for housing, business and leisure use.

Our intention is to prevent the further loss of habitat to development and to increase the amount of suitable habitat for the wide range of insects and plants that rely on the drainage system to survive. We wish to retain the existing management as currently carried out by the Environment Agency and the CWIDB. The management of individual ditches is likely to vary across the SSSI depending upon existing land use, the number of ditches already under active management and the number of neglected field ditches. CCW's priority is to work with you to ensure that this management is carried out.

What does this mean in practice?

There are a number of different factors that could damage the special features at this site if they are not properly managed. These are the ones we regard as most important:

Ditch clearance

Without regular casting the reens and ditches become silted up and overgrown and lose their special interest, as the insects and plants require a certain amount of open water to complete their lifecycles. Conversely, clearing the reens and ditches too frequently and/or clearing all the ditches at the same time over a large area can prevent any insects or plants becoming established.

Across the Gwent Levels SSSIs, some of the most diverse wildlife interest is found on reens that are managed by the CWIDB. They have a programme of de-weeding reens every year-18 months and casting reens every 7-10 years which generally allows sufficient time for plants and insects to become established but does not allow the reen to become shaded out or choked with vegetation.

The Environment Agency manage the largest reens in the SSSI, casting them annually to ensure they can carry out their vital water storage and water carrying roles. These wide, deep water reens often support plants, such as pond weeds, that are not found elsewhere but are not generally as diverse as the CWIDB managed reens.

Field ditches are usually the responsibility of the landowner, and the changes in farming practice since the war has led to many of them becoming infilled, overgrown or silted up. Around 20-25 years ago the CWIDB had four machines solely employed to clear out ditches on a year round basis. However, as the grants dried up for this, so did the business. Across the Gwent Levels therefore we would like to work with landowners to see more field ditches included in a staggered programme of casting, for example five out of ten ditches cleared over ten years.

Water Levels

It is vital that water levels are maintained high in summer in as many reens and ditches as possible. If the water levels drop too far, the wide range of plants and animals associated with the ditches are unable to complete their life cycle. At this site, the area around Redwick village is special in that it is situated 'higher' than the surrounding area. Therefore in order to use the force of gravity to discharge water, the ditches are deeper than in other places on the Gwent Levels. This means that water levels can be lower than are usual in other parts of the Gwent Levels.

The high summer water levels are achieved by inserting boards into the various water control structures to keep the water in the system. This is done by the Environment Agency and the CWIDB.

Shading by hedgerows

Hedgerows are an important part of the Gwent Levels landscape and provide habitat for birds and nectar for insects. However extensive shading of ditches, particularly where there is a hedge on both sides, can cause problems for the insects and plants that require a certain amount of unshaded water to complete their lifecycles. In addition to the shading, the hedgerows can also reduce water levels in ditches by using the water for their root system and leaf fall can contribute to the silting up of a ditch.

Across all the Gwent Levels SSSIs hedgerow removal will be considered as part of any programme of general ditch casting.

Water Quality

As water is kept in the system over summer, any pollution which enters the ditches at that time will remain until the boards are removed and the system is flushed by the winter rains. Pollution can come from many different sources such as agricultural practices, residential and industrial developments and fly tipping. We will work with farmers, developers, local authorities, the Environment Agency and the general public to ensure that pollution incidents are minimised and dealt with quickly.

We will also continue to work with the Environment Agency, CWIDB and local authorities to address wider water quality issues arising from road run off, sewage outfalls and package sewage treatment plants.

Development Pressure

The proximity of this site to the M4 has led to a loss of some of the SSSI to the Gwent Europark. The immediate impact of development is the direct loss of reed and ditch habitat. Other impacts, such as pollution released during construction and after the development has been finished also need to be considered.

We are working with Newport City Council and Monmouthshire County Council to prevent further land allocation for development within the SSSI in strategic documents such as Unitary Development Plans. In this context, we refer specifically to the proposed new M4 road. We are also working with the Councils, developers, owners and other relevant bodies to ensure that where development does take place the special interests of the SSSI are conserved and enhanced.

Finally

Our knowledge and understanding of wildlife is continually improving. It is possible that new issues may arise in the future, whilst other issues may disappear. This statement is written with the best information we have now, but may have to change in the future as our understanding improves. Any information you can provide on the wildlife of your site, its management and its conservation would be much appreciated.

If you would like to discuss any aspect of your SSSI, or have any concerns about your SSSI, please contact your local CCW office.

Your local office is;

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