

Wildlife in Radnorshire

2017



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Radnorshire Wildlife Trust

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**Sir Faesyfed
Radnorshire**



1987 - 2017

Protecting wildlife for the future / Gwarchod natur ar gyfer y dyfodol

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The State of our Wildlife

This report summarizes a detailed audit undertaken by Radnorshire Wildlife Trust (RWT) to assess the current status of Radnorshire's wildlife, and sets out priorities for RWT's role in aiding nature's recovery. The full audit document will be available to download from the RWT website at www.rwtwales.org

Background

For over 30 years, RWT has been working to create a county richer in wildlife, both within and outside our nature reserves and by working with a variety of people and partner organisations. RWT believes in a shared vision for the future, ensuring that Radnorshire will be an increasingly attractive place to live and work; a place where farms produce quality food and deliver valued services without diminishing our wildlife, and where we all develop the skills to sustain and benefit from our natural and cultural heritage.

Far more species are declining than increasing in the United Kingdom (UK), and those in decline include some of our most treasured wildlife (Refs: 1 & 2). As in the rest of the UK, trends in Wales leave no doubt that many kinds of wildlife are in trouble. For example, more than a third of all woodland species are declining, more than a sixth of plant species in Wales are threatened and nearly two thirds of Welsh butterflies and a third of all widespread Welsh moths are in decline. While 'generalist' species that use a range of resources and thrive in a variety of environments continue to do quite well, many specialist species that require specific conditions are faring badly.

It is not all bad news though as, across the UK, there have been wildlife success stories. Legislation and policies for wildlife and the environment, agri-environment schemes and the efforts of voluntary organisations like The Wildlife Trusts have managed to stem the loss of some species and habitats. Wales' agri-environment scheme, Glastir, has been heralded as a successful way of reversing habitat and species declines (Ref: 3). Legally protected sites such as National Nature Reserves (NNRs) and Sites of Special Scientific Interest (SSSIs) have been of great value for nature conservation.

Active interventions have resulted in some species increasing their range and abundance. Across much of Wales, including Radnorshire, otters have returned to rivers and streams where they lived before 1950. The peregrine falcon has returned to many of its traditional nesting sites.



Pine Marten © Robert Cruickshanks

Numbers of pine marten in Wales were so low that without intervention this elusive mammal was likely to go extinct. Now a project run by the Vincent Wildlife Trust is well underway to restore a self-sustaining population with translocation of pine martens from Scotland to mid-Wales. Pine marten have also re-established themselves in Shropshire, close to the Radnorshire border.

RWT, through its land management expertise and advice to members and land managers, has helped to stem some of the losses. It has also raised awareness of why wildlife is important and provided a suite of important nature reserves.

We have seen the return of the red kite throughout mid Wales and beyond and osprey are nesting once again in Powys. Reintroductions have the potential to reverse the decline of some key species though they can be controversial. Pine marten are now being recorded in Radnorshire following wild releases into mid-Wales in 2015 and 2016.

Many invertebrate species respond quickly to climate change, which probably explains the increase in range of several butterfly species. For example, Essex skipper, gatekeeper and speckled wood are spreading north and west and marbled white is extending into south and east Radnorshire and was even recorded from the Elan Valley in 2013.

However, the overall picture for wildlife in Radnorshire, as with most of the UK, is an underlying trend of specialist species declining and the most vulnerable habitats continuing to decline and fragment. Greater action and new and innovative ideas are needed if we are to reverse this biodiversity loss.

Current Status: a summary of the flora and fauna of Radnorshire

Fungi, lichens and plants

Of the 2,914 species of plants, fungi and slime moulds recorded from Radnorshire, at least 39 appear to have become extinct. They include 25 vascular plants (i.e. flowering plants and ferns), 7 bryophytes (mosses and liverworts) and 7 fungi (6 of which were lichen species). Many were lost long before RWT existed.

Recent extinctions include spreading bellflower (probably due to a lack of disturbance to woodland edge habitats) and the bee orchid and pyramidal orchid – lost to a combination of highway maintenance and infrastructure developments – whilst Dutch elm disease led to the loss of three elm-dependent lichen species.

Amongst vascular plants, 247 are considered to be of conservation concern. Some of our standing waters have suffered a significant loss of botanical interest with Llanbwchllyn nature reserve a prime example. Here some of the aquatic and lakeside edge plant species recorded in the 1960s have gone, probably forever, due to diffuse agricultural pollution, alteration of water level and in the past copper sulphate treatment for public water supply. Heavy grazing has led to losses elsewhere.



Speckled Wood © Pam Knight

Responding to climate change the speckled wood butterfly is one of several insect species that are spreading north and west.



Pyramidal Orchid © Richard Knight

The pyramidal orchid is a species now lost to Radnorshire.



Dedicated volunteer effort, to manually weed out and destroy every plant of Himalayan balsam before they seed each year, has resulted in the near elimination of this invasive species from the upper reaches of the River Wye and its tributaries as far south as Doldowlod. From tens of thousands of plants in 2009 to only 195 plants in 2017.

The ephemeral pools of upland Radnorshire are biologically very special and only partially understood and investigated but are threatened by invasive species, land use change and recreational activities. Freshwater invasive species along watercourses are a significant threat to native species and habitats. Himalayan balsam, Japanese knotweed and giant hogweed all pose a problem and Australian swamp stonecrop is spreading rapidly into many ponds, pools and lakes. In many cases effective control may not be possible.

Atmospheric pollutants continue to threaten many lichen species, with acid rain still a significant issue that is likely to be exacerbated by the loss of ash trees due to ash die-back disease. The naturally base-rich bark of ash provided a refuge from acid rain for a number of lichen species. Recently, rising ammonia levels from new intensive livestock units threaten many lichens and may lead to nutrient enrichment, dis-favouring many of our treasured wild flowers such as primrose and red campion. Rising silt levels in rivers have also caused the loss of populations of nationally notable species such as river jelly lichen.



The ephemeral pools of upland Radnorshire are biologically very special.

We have collated over 1,700 records of rare and threatened plants and fungi from Radnorshire including records of 63 British National Red Data Book species and 160 Welsh Red Data Book species. Of these notable plant and fungi species, 160 populations occur on RWT reserves and they alone create a formidable monitoring and management challenge.



1 A lungwort lichen *Lobaria amplissima*
The Lobaria amplissima survives, just, on a single tree in Radnorshire on a roadside near Rhayader.
 2 Splendid waxcap *Hygrocybe splendidissima*
 3 Pink waxcap *Hygrocybe calyptriformis*
The commons of Radnorshire are important for waxcap fungi including the splendid waxcap while old lawns in Llandrindod Wells are important for pink waxcaps.

Invertebrates

Radnorshire currently has around 31 butterfly species. The number of recorders is small and despite a reasonable set of records from 1990 onwards it is difficult to identify clear trends. Marsh fritillary, still widespread in the 1970s, has almost certainly become extinct with pearl-bordered fritillary now known from only a single site.

There are sporadic sightings of wood white within the woodlands around Presteigne and Knighton and large heath within the Elan Valley, but their precise status is unclear. Both wood white and large heath have probably always been very localized.

Several other species of local interest include wall brown, silver-washed fritillary and dark green fritillary. These are probably all declining but they are regularly reported from across the county and additional survey work is needed. Radnorshire is important for small pearl-bordered fritillary which is recorded from about 30 sites, including the RWT nature reserves Abercamlo Bog, Pentrosfa Mire, Gilfach and Tylcau Hill (Floss Brand).

In Radnorshire, over 1,200 moth species are known out of a total UK list of over 2,500. While it is likely that numbers have declined in line with the national picture, recent records do not show any clear pattern. The number of recorders is small and fluctuating and moth numbers vary hugely each year in response to weather, parasites and other factors.

The freshwater pearl mussel is in very serious decline but a few are found close to the border with Brecknock to the west and Shropshire to the east. Freshwater pearl mussels in the River Wye have declined from hundreds of thousands (possibly millions) during the 1920s to virtually nil today. The freshwater sponge has undergone a similar fate and other less charismatic species have probably fared equally badly.

White clawed crayfish populations have been decimated since the 1990s and are possibly heading for effective extinction without intervention. Whilst the introduction of the American signal crayfish has been a major factor, sheep dip and other chemicals and increased sedimentation and acidification have also been major factors.

There is now a widely recognized threat to bees which are declining in most parts of the country with potentially very serious consequences for pollination. Many other groups of invertebrates are also declining including grasshoppers and crickets, hoverflies (which are also important pollinators) and beetles such as the glow-worm and species dependent on deadwood.

River flies (mayflies, caddis and stone flies) have suffered over a long period due to river pollution but the situation is now improving in many areas.



Freshwater Pearl Mussel
© Andy Shaw



White Clawed Crayfish
© Stephen Mullard

The freshwater pearl mussel is in very serious decline although a few are still found on the west and eastern borders of the county while the white clawed crayfish populations have been decimated since the 1990s due to the introduction of the American signal crayfish, effects of sheep dip and other chemicals and increased sedimentation and acidification of our rivers.



Hoverfly *Helophilus pendulus*
© Richard Knight

Hoverflies are important pollinators that along with bees are declining in numbers.

There are 40,000 species of invertebrate in Britain and according to Buglife, many of these are declining due especially to the loss of wildflower-rich grasslands and increased intensification of agriculture. Three million hectares of flower rich grassland have been lost in the UK since 1945 (Refs: 4 & 5).

Fish

Rivers and streams in Radnorshire escaped many of the modifications and pollution that so profoundly impacted freshwater ecosystems across Britain during the industrial revolution. However, modern farming and forestry have had a significant impact.

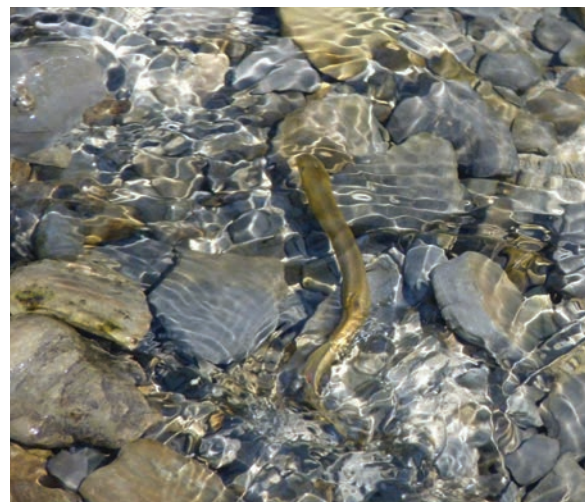
Declines in species such as the Atlantic salmon, river and sea lamprey, allis and twaite shad, and the European eel are also connected to other factors outside of Radnorshire such as off-shore fishing, coastal and estuary pollution and power station in-takes.

With perhaps the exception of salmon and brown trout, there is insufficient data on many fish species. Non-commercial species such as minnow, bullhead and stone loach are key for many smaller brooks and streams but little is known of their status.

Recent and catastrophic declines of the European eel, perhaps by as much as 95% since 1980, have been well documented within the Severn River Basin District, which includes all of Radnorshire (Ref: 6). However, we need to rely on anecdotal reports to demonstrate the decline – rivers like the Marteg, Edw and Cwmbach Dulas were once said to support significant eel populations where now there are none or very few.

According to catch reports collated by the Wye and Usk Foundation, grayling continue to thrive in the River Wye and the Ithon. Lower down the Wye around Boughrood, Glasbury and Llowes, so-called coarse fish species are more prevalent like chub, dace, pike, perch, roach, barbel and gudgeon. It is possible that chub and dace have declined from rivers like the Ithon where they were commonly caught in the 1970s, but again there appears to be insufficient data.

Radnorshire is one of the few counties in Britain where the non-native bitterling thrive, specifically at Llandrindod Lake where there has been a sizeable population for many years. Other fish that have been stocked into lakes and ponds include rainbow trout, bronze bream (with reports of silver bream), tench, and common, mirror and crucian carp.



Brook Lamprey © Jonathan Stone



Minnows © Richard Knight

Brook lamprey, minnow, bullhead and stone loach are key species within the ecology of many smaller brooks and streams but little is known of their status while sea lamprey are one of several migratory species whose decline is identified as being connected to factors outside of Radnorshire.

Amphibians and reptiles

The number of native amphibians and reptiles in Radnorshire is quite limited. Amphibians recorded are common frog, common toad, common or smooth newt, palmate newt and great-crested newt, also the non-native midwife toad. Reptiles recorded are slow worm, common or viviparous lizard, grass snake and adder.

Amphibians are widely distributed although they face a wide range of threats, from loss of foraging and hibernation habitat due to intensive agriculture and development, through to diffuse and point source pollution, the chytrid fungus and the introduction of fish or ducks into ponds and lakes.

There are some regionally important breeding sites for common toad in the county, including Llanbwchllyn and Llandrindod Lake. Recent studies have shown a 68% UK-wide decline in toad numbers (Ref: 7) and it would be useful to know if this UK trend is mirrored in Radnorshire.

Smooth newt appears generally widespread and palmate newt appears to be widespread in many upland pools. The Beacon Lodge pond restored by RWT in 2011-2012 has healthy populations of all five of our native amphibian species. It would be interesting to have an inventory of all similar ponds in Radnorshire.

Since the turn of the 21st century a population of the non-native midwife toad has become established around Llandrindod, Howey, Newbridge-on-Wye and Disserseth. Whilst there are signs that this species is spreading, it does not appear at this stage to be harming any other species or habitat.

Amongst the reptiles, it is a priority to determine if the grass snake has declined in the extent of its range and if it could be restored to its former haunts. The adder is found only in the Knighton area and may well be declining further, but more information is needed. The slow worm is widespread but is probably under-recorded so it is difficult to judge its current status.

Birds

Nationally, many breeding bird species are in decline, some due to changes in farming practices and loss of habitat to various types of development. Other declines are due to causes outside the UK, many unknown. Drainage, re-seeding, and conversion from hay to silage has greatly reduced the number of safe nesting sites for lapwing and curlew. While some raptors are thriving, illegal persecution is still holding down numbers of hen harrier and, in some areas, peregrine falcon. Generally, the number of farmland birds is still declining. Changes in farm crops and agricultural practices have a huge impact on farmland bird populations and this is frequently noticeable in Radnorshire, especially at a local level.

The avifauna of Radnorshire is reasonably well recorded. Records have recently been collated: 254 species have been recorded up until 2013, of which 125 have bred in recent times (Ref: 8).

Radnorshire has done better than many intensively farmed areas in retaining species and the ones we have lost or which are threatened tend to reflect national trends. These include turtle dove, lesser spotted woodpecker and of course lapwing, golden plover and curlew.



Common Toad © Richard Knight

Recent studies have shown a 68% UK-wide decline in toad numbers and it would be useful to know if this UK trend is mirrored in Radnorshire which has regionally important breeding sites for common toad including Llanbwchllyn and Llandrindod Lake.



Once so widespread the curlew was called the "Radnorshire or Llanbister Cuckoo" but agricultural activities of drainage, re-seeding, and conversion from hay to silage have greatly reduced the number of safe nesting sites for curlew, lapwing and golden plover, making them more vulnerable to predation.

Some sites which were very rich are now poor through mis-management. Maelienydd Common for example used to hold good numbers of breeding lapwing, curlew, snipe and redshank. Despite its status as an SSSI, these species have largely disappeared since the 1980s. Of our oak-wood specialities pied flycatcher and wood warbler have declined although redstart has increased.

Of the regular breeding birds in Radnorshire, rough totals are 32 species increasing over at least the last 20 years or so, 46 declining and 31 stable or unclear.

Mammals

We need greater recording effort for wild mammals. Species such as brown rat, rabbit and grey squirrel are ubiquitous yet under-recorded (Ref: 9). Other species that are probably quite widespread but which appear to have a limited distribution in Radnorshire include mole, common, pygmy and water shrew, bank and field vole, wood and yellow-necked mouse, stoat, weasel and hedgehog. There has been increased recording effort for some of these species since 2009 but it is still difficult to give an accurate measure of their status.

Species with the most records include badger, brown hare and otter yet all three species still face varying threats to their long-term status. There are also a good number of polecat and pine marten records, though the latter maybe mistaken sightings for polecat, whose numbers appear to be stable.

Water vole still has a precarious existence in Radnorshire. They live within sub-optimal habitat in and around the Elan Valley but are still susceptible to habitat changes and predation by American mink. Their long-term survival is not secure. The red squirrel has been extinct from Radnorshire since before 1980 with the exception of an occasional record from the Wye Valley.

Records of harvest mouse are known only from the Clyro area. More widespread, but still rather local is the common dormouse occurring predominantly in the south and east of the county within Wye Valley dingle woodlands.

Deer are likely to be increasing with reports of fallow, roe and muntjac deer. Roe deer seem most widespread, favouring Radnor forest and the plantation woodlands in and around Knighton and Presteigne. It is possible to find them throughout the county, although they never appear numerous.



Roe Deer at Burfa © Jonathan Stone



Polecat © Anne Newton

Polecat numbers appear to be fairly stable at present while records of deer in Radnorshire are on the increase.

Arguably, bats are the most studied group of mammals over the past 40 years. Work by the Vincent Wildlife Trust and others has highlighted the importance of lesser horseshoe bat roosts along the Wye Valley in particular. Possibly the most recorded species is the brown long-eared bat, although a number of other species appear widespread. These include Brandt's, whiskered, Natterer's, Daubenton's, noctule, and common and soprano pipistrelle. The rarest Radnorshire species may be the serotine, although the barbastelle bat, thought extinct until recent years, has been recorded along the Ithon Valley and Edw Valley over the past 10 years, and the greater horseshoe bat has also been recorded.

Clearly, as with a number of mammal species, the exact status of bats in Radnorshire cannot be known without greatly enhanced recording effort.

What can be done?

Land and freshwater management

A current concern in Radnorshire is the proliferation of intensive livestock units, notably for poultry, especially within the River Ithon catchment. RWT will continue to campaign for effective implementation of the planning and regulatory system to try to prevent harmful releases of ammonia and phosphate.

Through the Powys Local Wildlife Sites scheme, RWT will continue to promote land management and farming practices that benefit and protect some of our most precious wildlife.

The upland commons of Radnorshire make up a fifth of the county and yet have undergone a significant change in management since the Second World War with levels of grazing, mowing and burning that have damaged wildlife. We need to improve partnership arrangements to secure better land management and in some areas better monitoring.

We will work with the National Trust and others on The Begwons to enhance management for species like the whinchat. We will develop the Hills of Radnor Living Landscape project idea in the east of Radnorshire, with management to enrich bird populations a priority.

Roadside verges provide an important reservoir for a range of plant and animal species. RWT will continue to liaise with Powys County Council and seek improvements in verge management to benefit biodiversity.

Discussions should take place with the owners and managers of potential sites for pearl-bordered and marsh fritillary butterflies and other notable butterfly species like grayling, wood white and large heath, with the aim of improving habitats where relevant.



Intensive poultry unit © Julian Jones



Great Ciliated lichen *Anaptychia ciliaris*
© Ray Woods

Radnorshire supports most of Wales' population of the great ciliated lichen but it is rapidly declining due to atmospheric ammonia pollution from intensive farming.

RWT will liaise with organizations like the Severn Rivers Trust and Wye & Usk Foundation to support conservation of species including sea, river and brook lamprey, white clawed crayfish and freshwater pearl mussel. We will also support the Freshwater Habitats Trust and others in their work to promote wildlife rich ponds and standing water.

A range of nationally threatened plant species is found in RWT reserves and their conservation will continue to be a high priority. Gilfach, with 423 lichen and lichenicolous fungi so far recorded, is a site of exceptional diversity. In this small area 18% of the entire British lichen and lichenicolous fungi mycota have been recorded. Two British vulnerable taxa stand out for priority treatment: significant British populations of both *Bacidia circumspecta* and *Protoparmelia atriseda* occur at Gilfach. RWT will work with internal and external specialists and Natural Resources Wales (NRW) to ensure that lichen flora form a key future management objective.

RWT manages a number of nature reserves, each with a management plan setting out priority management tasks for biological features. Generally, these focus on boundary maintenance and vegetation management through appropriate grazing regimes or through staff or volunteer effort. This will continue.

Surveying and monitoring

Biological monitoring should be integral to delivering a future, sustainable land management strategy for Wales and should be carried out to measure the effectiveness of Wales' Nature Recovery Action Plans.

A recognized problem is the paucity of trained taxonomists within specialist areas of biology. For many groups, in particular invertebrates, lichens and fungi, very specialized study is needed to identify and record individual species. RWT recognizes the need to train more people in biological recording, both on an informal and formal basis.



Invertebrate survey and identification
© Pam Knight

We also recognize the value of a biological records service and will work with our local Biodiversity Information Service (BIS) to prioritize collecting data on locations for threatened and rare species and habitats. We will encourage Powys County Council to make full use of this information, in particular to monitor and measure the success of its planning and regulatory services in delivering a sustainable future for Radnorshire.

RWT will promote the recording of key species of botanical interest in key habitats, including species-rich grassland, dry slopes and rocky outcrops, and sites important for 'arable weeds'.



A Roadside Verge Nature Reserve near Rhayader © Julian Jones



Wood Bitter-vetch *Vicia orobus*
© Jonathan Stone

This verge near Rhayader has been identified as a Roadside Nature Reserve and is managed to ensure the continuing survival of its population of the nationally rare wood bitter-vetch Vicia orobus.

RWT will focus attention on the Welsh wave moth and the Welsh clearwing moth and take action for large heath, marsh fritillary, pearl-bordered fritillary and wood white butterflies.

We will promote increased surveying of water beetles, fairy shrimp and the aquatic fern pillwort. We will work with Rivers Trusts, NRW and others to detect the distribution of invasive non-native species such as signal crayfish and Himalayan balsam.

We will support the Radnorshire Mammal Group in contributing to any national mammal recording surveys or a revision to the Radnorshire Mammal Atlas (Ref: 9). RWT will support the mammal group in its work to assess the current status of harvest mouse and water vole in Radnorshire.

Legislation, policies and planning

Recent legislative changes by the Welsh Government are encouraging. The Well-being of Future Generations Act 2015 and The Environment (Wales) Act 2016 stress the need for ecosystem resilience and include provisions to ensure that all public bodies recognize this need. There is also a much wider awareness at all levels of society of the need to connect children and adults with nature for their mental and physical health.

RWT believes in a sustainable land management policy that replaces the current scheme of agricultural payments and rewards farmers for restoring ecosystems and delivering associated public benefits.

RWT supports The Wildlife Trusts, Wales Environment Link and others in trying to ensure there is no weakening of environmental and biodiversity protection legislation and policies in the wake of Brexit.



Learning to use binocular microscopes © Pam Knight

Biological monitoring is required to measure the effectiveness of Wales' Nature Recovery Action Plans and should be integral to delivering a future, sustainable land management strategy for Wales. RWT recognizes the need to train more people in biological recording, both on an informal and formal basis.



Pillwort & Mudwort © Andy Shaw



Pillwort Pool, The Begwons © Ray Woods

The ephemeral pools of upland Radnorshire are biologically very special, supporting a globally important population of the curious and rare aquatic fern pillwort.



© Pam Knight

There is a wider awareness of the importance of encouraging connecting with nature for both mental and physical health of children and adults.

Recent Examples of Biodiversity Recovery Projects



Yellowhammer © Kev Joynes

The Yellowhammer and Farmland Bird Project, Rhayader and District

Initiated by RSPB in 2003, this project was led by Rhayader by Nature from 2007 and aimed to reverse the plight of yellowhammer and other seed-eating birds locally, including stock dove, house sparrow, tree sparrow, reed bunting, greenfinch, bullfinch, linnet and chaffinch.



Bird seed crop at Giffach © Pam Knight

Cultivated plots sown with wildlife cover crops abundant with arable weeds, supplemented by feeding stations, boosted numbers of the target species, both during winter and also as breeding species. The project also exposed how current farming methods continue to be hostile to many once common farmland bird species and how agri-environment schemes are not yet effective.

Long-term intervention and financial support would be required to sustain this recovery work until there is a more benign sustainable land management framework for Wales.

Current farming methods continue to be hostile to many once common farmland bird species. Agri-environment schemes need to be far more effective in developing a sustainable land management framework for Wales that will see recovery in the biodiversity of our natural environment.

Larger areas for wildlife: Cefn Cenarth, Pant-y-dwr

One of RWT's original nature reserves, the sessile oak woodland near Pant-y-dwr is the largest contiguous block of this type of habitat in Radnorshire outside the Elan Valley.

Not all of the woodland is in RWT ownership, but in 2004 RWT purchased about 8 hectares of conifer plantation dividing the two core oak woodland nature reserves. Much of the conifer plantation has since been felled and is recovering as native broad-leaved woodland and a heathland, grassland and woodland mosaic which has buffered, extended and joined up the two original reserves.

Meadow management and monitoring

For some years, RWT has been involved with the creation and restoration of species-rich grassland, both within its nature reserves and also by providing advice and support to land managers across the county. However, there is little scientific evidence about the best management for wildflower-rich meadows and pastures.

Between 2004 and 2013 the Elan Valley Meadows Project (Ref: 10) found that one of the best ways of maintaining and enhancing floral diversity was for meadows to receive small amounts of farmyard manure each year along with occasional amounts of lime. This traditional method of farming has been lost in many areas and replicating the practice across Radnorshire may have to await a more sustainable land management framework for Wales.

Restoring commons: Beacon Hill Heather, Pillwort and Pools Project

Between 2009 and 2012, RWT undertook a project to restore existing ponds and pools on the Beacon Hill common near Knighton. Around 30 ponds were created; 200ha of the common were managed to reduce the extent of bracken and encourage heathland species, and a full baseline ecological survey was carried out. In addition, RWT purchased Cnwch Bank, a 197 acre (82ha) area of the common as a nature reserve.

The RWT also started twice yearly counts of the red grouse population which have been continued to the present. Since then further management, led by the shooting tenant under the Powys Upland Partnership, has continued pool restoration and creation, but it has also targeted corvids and other 'pest' species. There is as yet no strategic plan for a future grazing regime.



Heather moorland © Richard Knight

The upland commons of Radnorshire make up a fifth of the county and have undergone a significant change in management since the Second World War with levels of grazing, mowing and burning that have much reduced the extent and quality of heather moorland.

Cwm Marteg Living Landscape Project

Since 2008, RWT has targeted work in the Marteg Valley sub-catchment of the upper Wye. Recently work has focused on making the RWT nature reserve a real 'gateway' to the Cambrian Mountains, but between 2008 and 2013, the focus was on the recovery of the local water vole population and restoring and creating wetland habitats throughout the 6,000ha area that drains into the River Marteg.

As well as providing advice and supporting over 100 local farmers, landowners and land managers, the project worked closely with the then Countryside Council for Wales, Environment Agency and Forestry Commission Wales to restore a wetland area within the Bwlch Cefn-Illian forestry plantation near St Harmon. Further monitoring and surveillance is needed to see how beneficial this work has been in the longer term.



Giffach © Pam Knight

Current RWT work is focusing on making the Giffach Nature Reserve a real 'gateway' to the Cambrian Mountains.

Priority Actions for RWT 2017-2022

In the course of compiling this report several priority actions have been identified to address some of the causes of decline in Radnorshire's biodiversity. All involve working with others and all require adequate financing, though currently it is hard to fund biodiversity conservation.

RWT will need to seek new funding, strengthen existing partnerships and develop new ones, and be focused about the work it does, recognizing when objectives may be shared and delivered better by others.

In addition to the ongoing management of its nature reserves, these are RWT's aims:



Rhos pasture © Richard Knight



Marsh Fritillary butterfly © Richard Knight

The marsh fritillary butterfly is now thought to be extinct in Radnorshire and North Brecknock due to degradation and loss of habitat, brought about by changes in farming. The species is dependent on rough, cattle grazed, rhos pasture where its food plant, devil's bit scabious, thrives and it can find safe places for its larval webs to survive the winter. RWT hopes to be able to restore rhos pasture to enable the re-introduction of the marsh fritillary butterfly.

- Develop a robust Local Wildlife Sites system based on sound criteria to help deliver the Powys Nature Recovery Action Plan;
- Work with Hanson at Builtth Quarry, Llanellwedd, to restore habitat for key moth and butterfly species, in particular pearl-bordered fritillary;
- Restore rhos pasture within the triangle formed by Rhayader, Nantmel and Newbridge-on-Wye and consider the feasibility of marsh fritillary butterfly re-introduction;
- Work with Rhayader by Nature and others on a farmland bird recovery project;
- Facilitate specialist taxonomic training in specialist groups (especially lichens and fungi);
- Promote the effective management of botanically rich roadside verges;
- Work with farmers, land managers and a range of partners including the Welsh Government and agricultural research organisations to tackle diffuse agricultural pollution, supporting the development and implementation of 'best practice' guidance through effective use of accurate scientific data;

- Promote key species, tackle invasive non-native species and enhance key habitats within the Marteg, Ithon and Lugg and Arrow sub-catchments of the River Wye and within the Teme sub-catchment of the River Severn;
- Work cross-border to develop the 'Wilding the Marches' initiative which incorporates the 'Hills of Radnor' Living Landscapes area and the Radnor Forest;
- Enhance key species and habitats within Radnorshire commons.



Tylcau Hill (Floss Brand) Nature Reserve © Julian Jones



Cuckoo © Will Lewis



The lower Eilan and upper Wye Valley © Pam Knight

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RWT plans to work cross-border to develop the 'Wilding the Marches' initiative and to enhance key species and habitats within the Radnorshire commons.



Protecting Radnorshire's Wildlife for the Future