# The 2020 Biodiversity Challenge

Large Heath and view of its landscape: G Tordoff

Butterfly Conservation Wales

# Butterfly Conservation in Wales Annual Newsletter 2013

Small Tortoiseshell at Ffos Las: M James

# The 2020 biodiversity challenge

The launch of the *State of Nature* report on 22 May presented a challenge to us, as well as the Welsh Government and wider society, to do more to reverse declines in our biodiversity. All those involved in monitoring and recording butterflies and moths know our environment is becoming poorer, with declines in abundance and diversity of species. Those involved in conservation projects also know we can turn things round. The challenge is to revitalise our enthusiasm, knowledge and energy to continue to work with so many willing and concerned landowners to reverse the long term trends in butterflies and moths.

Even though Butterfly Conservation Wales only owns or leases 25 hectares of land, staff and volunteers directly manage over 200 hectares and give advice on a much bigger area, working with landowners to deliver conservation gains. We will now be working more closely with our conservation partners to deliver even more over the next seven years.

In this edition we look at how some key species are faring in Wales - the Large Heath, the Argent & Sable and the Welsh Clearwing - and review the former Tir Gofal scheme. Some Butterfly Conservation members enthusiastically share their experiences of butterfly sites in North and South Wales and we look ahead at Butterfly Conservation Wales' new reserve for the Marsh Fritillary at Median Farm in Carmarthenshire.

The *State of Nature* Report can be downloaded at

www.rspb.org.uk/ourwork/science/stateofnature/index.aspx

## Contents

# Median Farm

## Reserve extension to Caeau Ffos Fach

Russel Hobson
**Head of Conservation, Wales**

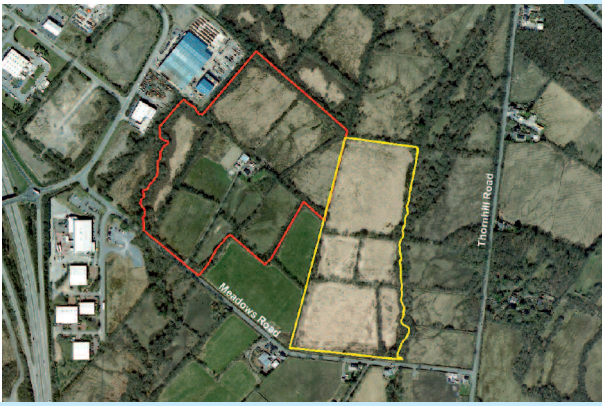
Marsh Fritillary on Devil's-bit Scabious leaf: D.Sazer

In an exciting development Butterfly Conservation has increased the size of its nature reserve in Carmarthenshire. A lease of land at Median Farm provides an additional 10 hectares adjacent to our Caeau Ffos Fach reserve that will help improve management for the Marsh Fritillary.

The new land has been leased from Natural Resources Wales and increases the area of breeding habitat for the butterfly by four hectares. There are further fields of semi-improved grassland that we aim to restore. These areas will allow us to demonstrate different restoration techniques and monitor the results to see what works best.

The lease of the site also gives much better access to the reserve and an area of hard standing as well as possible storage space. This will make it easier to manage the cattle that grazed the reserve and for the volunteer work parties.

Butterfly Conservation has applied for a landfill tax grant from Cwm Environmental to do the first phase of work. This will largely involve securing the boundary fence, tidying rubbish, unblocking ditches, installing gates and undertaking monitoring and baseline habitat assessments. There are also other species to consider, such as Dormouse in the hedges and use of the fields by foraging bats and Barn Owls, so the work will be carefully timed to reduce impact on other species.




Median Farm, outlined in red, borders the existing Caeau Ffos Fach Reserve, in yellow.

# Monitoring the Tir Gofal scheme

George Tordoff
**Conservation Officer**


Small Pearl-bordered Fritillary

**Agri-environment schemes are run by Government to encourage land management practices to benefit the environment, which includes habitats for butterflies and moths.**

Tir Gofal was the higher-level agri-environment scheme in Wales between 1999 and 2012, when it was replaced by Glastir. It proved very popular, with over 3,000 farms entered into the scheme, totalling over 330,000 hectares of land. The scheme aimed to encourage agricultural practices which would protect and enhance the landscapes of Wales, their cultural features and associated wildlife. However, it would be impossible to know whether these objectives had been met without a scientific evaluation of the scheme's performance. A programme of monitoring was therefore commissioned by the Welsh Government and ran from 2009 to 2012.

The impacts of Tir Gofal on landscape, habitats and species were investigated separately. The species package adopted a unique 'multi-taxa' approach involving a partnership of five wildlife conservation organisations. The monitored taxa were birds (RSPB), terrestrial mammals (Wildlife Trusts), bats (Bat Conservation Trust), plants (Plantlife) and, last but certainly not least, butterflies (Butterfly Conservation Wales). Monitoring involved a 'paired farm' approach, which compared populations of target species on Tir Gofal farms with matched farms not in any agri-environment schemes, but which were as similar as possible to the Tir Gofal farms in other respects (e.g. farm enterprise, geographical location).

Three butterflies were selected for the project, on the basis that they were Priority (Section 42) species associated with farmland, and for which fieldwork could be spread throughout the year. Thus, Small Pearl-bordered Fritillary *Boloria selene* adults were surveyed in north-west Wales in summer, Marsh Fritillary *Euphydryas aurinia* larval webs in southern Wales in autumn, and Brown Hairstreak *Thecla betulae* eggs in south-west Wales in winter. Habitat assessments were carried out for all species.

The monitoring project was successful, with all partner organisations meeting their survey targets despite some disruptive weather. A total of 281 farm surveys were completed for butterflies, and revealed differing fortunes for the three species. Small

Pearl-bordered Fritillary was present, often in good numbers, on 37 of the 40 farms surveyed and Brown Hairstreak eggs were found on 32 of 40 farms visited. On the other hand we found Marsh Fritillary webs on only 17 out of 110 farms (just over 15%), but several of these were new sites and we have gathered useful habitat information. Over the three years we recorded 3,377 Small Pearl-bordered Fritillaries on timed counts, 1,223 Brown Hairstreak eggs (in 411 hours of searching!), and 109 Marsh Fritillary webs.

The exquisitely small eggs of the Brown Hairstreak are laid on Blackthorn and are easier to find in winter

Surprisingly, none of the three butterfly species fared better on Tir Gofal farms than on non-scheme farms, even though the prescriptions of Tir Gofal should help these species. For Brown Hairstreak and Marsh Fritillary, there was some evidence of better habitat quality on Tir Gofal farms than non-scheme farms, though this was not consistent across all measures. The lack of any clear benefits for the target butterflies suggests that improvements in habitat quality under Tir Gofal were too slight to help these species, or that there was a time lag and species did not respond within the lifetime of the scheme. Some of the other studied taxa also failed to show a positive response, including bats, Water Vole and Lapwing. However, many species of arable land did benefit from the scheme, including Yellowhammer, Brown Hare and a range of arable plants. It may be that the higher levels of intervention on arable land, compared to pastoral systems, led to greater differences in species of arable habitats.

The project surveyors met the extremes of the British climate, from wading through bogs in hot summer weather to trying to find Brown Hairstreak eggs on frozen twigs during winter. Another interesting aspect was the incidental records of other species which were found on the surveyed farms. One of the highlights was finding Forester moth *Adscita statices* at five new sites in Merioneth.

*All photographs were taken by the author.*

Marsh Fritillary larvae protect themselves in webs among the leaves of the Devil's-bit Scabious, their main food plant

# Action Plan for Pollinators in Wales

Russel Hobson
**Head of Conservation, Wales**


Micro moth *Glyphypterix simpliciella*: G.Tordooff

There has been a lot of publicity about the plight of pollinators, particularly honeybees, and the likely risk to human food security. Much of the debate has focussed on the impact of neonicotinoid pesticides on bees.

Butterfly Conservation and many other conservation groups are as concerned about state of our wild pollinators. We already have evidence of declines in widespread butterflies and moths. In the more pastoral landscapes of Wales (arable farming only occupies 12% of agricultural land) the decline of landscapes rich in flowers from spring to autumn is likely to have a far greater impact.

We also know that to conserve butterflies and moths and reverse population declines it is not just the adult stage that is important. If the caterpillars have no food plants, such as Orange-tip on the crucifer family, or Peacock on Nettle, that stage of the lifecycle will fail. Likewise if they cannot find somewhere safe to overwinter, such as Brown Hairstreak eggs on young Blackthorn shoots (p. 5), that stage will fail.


Orange-tip egg on one of the caterpillar's food plants, Cuckooflower or Lady's Smock: J Asher

Peacock caterpillars depend on Nettle J Asher

The Welsh Government has just published an *Action Plan for Pollinators* (http://wales.gov.uk/topics/environmentcountryside/consmanagement/conservationbiodiversity/action-plan-for-pollinators) that will help address some of these issues, as part of a refreshed Biodiversity Strategy. If it is to be successful we need to see more wildflowers throughout the year on farmland, in woodland and in our towns. This could be achieved in many simple ways but the most common examples suggested by Butterfly Conservation staff, members and volunteers would be:

- **Reduced mowing of road side verges** where safe to do so, to provide breeding, nectaring and overwintering sites.
- **Rotational cutting of hedges,** allowing flowers and fruit to develop and providing overwintering sites.
- **Widening and rotational cutting and mowing of woodland rides** to provide continuous nectar sources in sunny situations.
- **Preventing post industrial sites, such a coal spoil heaps, from becoming woodland.**
- **Stop spreading topsoil on new road verges** and edges of developments as these allow vigorous grasses and invasive weeds to smother sown or naturally regenerating wild flowers.
- **Enable every farm to have a one acre flower meadow that is left ungrazed in the summer.**

There are many good examples of what does work and it is often cheaper than current poor practice. Our challenge is to monitor the results on butterflies and moths to show what works best for this important group of indicators.

Forester moths on Ragged Robin, G Tordoff

Small Pearl-bordered Fritillary on Thistle, G Tordoff

# Bombs to butterflies:

## the transect at Rhydymwyn

Members Brian and Sue Roberts explore ...

Brimstone

The Rhydymwyn site (SJ204667) comprises 35 hectares of the Alyn Valley, about three miles North West of Mold. In 1939 the Ministry of Supply developed it as a chemical weapons factory and storage facility and it was associated with the development of the atomic bomb. Various Government Departments used it until closure in 1994 and it has now been developed as a Nature Reserve with an impressive list of mammals, birds and butterflies. A good number of the buildings used in World War II are still standing and being used by bats, including a roost of Lesser Horseshoe bats. Sue and I have also seen up to eight Common Lizards at a time on logs outside the machinery house; these wonderful characters are reasonably tolerant providing you stand still.

The butterfly transect walk takes you around a large portion of the site, passing some of the original buildings still showing camouflage, the platform that was used to transport the gas and tunnels used for storage. This may give you the impression that the site is austere; quite the contrary, it has a peaceful atmosphere and when visiting a silence prevails which has a wonderful effect.

In late July 2011 Sue and I started surveying Rhydymwyn on a regular basis for butterflies and recorded 18 species: Common and Holly Blue, Small, Large and Dingy Skipper, Small Copper, Red Admiral, Peacock, Small Tortoiseshell, Comma, Gatekeeper, Meadow Brown, Speckled Wood, Small, Large and Green-Veined White, Small Heath and Purple Hairstreak.

The weather at the beginning of the 2012 season was not kind and it was therefore encouraging to have an early sighting of a Brimstone but this would be our only one of the year. During one walk in July we recorded over 400 butterflies including 95 Small Skippers, over 200 Gatekeepers and several Ringlets, a new species for us at the site. Both broods of Wall Brown were seen, also Orange Tip and a solitary Painted Lady. In all we recorded 23 species of butterfly. Given the poor weather encountered in 2012 we hope 2013 will see an improvement and more species may be found.

The Reserve is managed by North-East Wales Wildlife (NEWW). Access is restricted to members and many activities are offered.

Please visit www.newwildlife.org.uk, or phone 01352-742115.

*All photos were taken by the authors*

Common Lizard

# A flutter at the races

**a Ffos Las diary, summer 2012**

**Maggie James** walks her dog on paths around the Carmarthenshire racecourse - the site of a former opencast mine - photographing wildlife and recording butterfly sightings. She shares extracts from her diary...


Marbled White

**April** "The warmest since 1910 … The whole of Ffos Las seemed to spring into life … wild flowers blooming, migratory birds returning... The air became full of insect life with butterflies, damselflies, and grasshoppers appearing. I recorded Small Tortoiseshell, Brimstone, Orange Tip, Peacock, Large and Small White, Speckled Wood, Common Blue, Dingy Skipper, and Wall Brown butterflies… It was a lovely time of the year"

*"it was as if I was walking through a snow storm of Marbled Whites"*

**May** "...dull and overcast with lots of drizzling rain and high winds."

**June** "I saw the greatest number of different species of butterfly … and the air was thick with the Five Spot Burnet day flying moths which were hatching from their bright yellow cocoons on the grasses, reeds and even the wire fencing.." On one day "there were clouds of Marbled White butterflies ...to the east of the site as if all the pupae had synchronised their hatching."

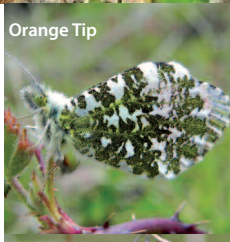
**July** " lots of butterflies, dragonflies and damselflies .. large numbers .. of bright orange cinnabar moth caterpillars .. on the ragwort, although I hadn't seen many of the adults flying"

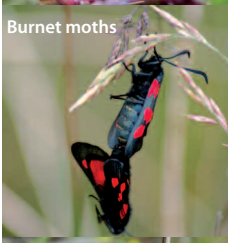
**August** "The butterflies were active on the brighter days but although Ringlet are supposed to fly during June to August, I didn't see any after the third week of July. Five Spot Burnet moths also were not seen .. despite being very numerous earlier in the summer."

| Number of each species counted at Ffos Las in 2012 | | National population changes 2011- 2012 (UKBMS) |
|---|---|---|
| Meadow Brown | 850+ | Grass-feeding, up by 21% |
| Gatekeeper | 650+ | Grass-feeding, fell by 25% |
| Small Heath | 164 | Fell by 26% from 2011 |
| Ringlet | 159 | Fell by 26% |
| Green-veined White | 138 | All the Whites tumbled by more than 50% |
| Small Skipper | 103 | Fell by 16% |
| Speckled Wood | 91 | Fell by 44% |
| Common Blue | 60 | Plummeted by 60% |
| Orange tip | 30 | Fell by 34% |
| Small Tortoiseshell | 28 | Fell by 37% |
| Dingy Skipper | 27 | Fell by 24% |
| Marbled White | 21 | Fell by 7% |
| Peacock | 14 | Fell by 16% |
| Large Skipper | 0 | Fell by 50% |

The summer of 2012 brought record rainfall and cool temperatures. The Butterfly Monitoring Scheme (UKBMS) found nationally that "many common species struggled" and the sightings at Ffos Las may reflect this. The caterpillars of the Meadow Brown and Gatekeeper feed on grasses which thrive in wet weather. The 2012 sightings must been seen against the background of long-term declines of all species and sadly even the Meadow Brown is not doing as well as it did in the 1970's. Amid these deep concerns, the wonderful spectacles to be enjoyed at sites like Ffos Las are to be treasured.

http://butterfly-conservation.org/48-3761/shifting-butterfly-baselines.html
http://butterfly-conservation.org/48-3680/2012-a-disaster-year-for-uk-butterflies.html


Orange Tip


Burnet moths


Burnet moth hatching


Cinnabar moth caterpillar


Gatekeeper

# What's so special about Welsh Clearwing trees?

George Tordoff
**Conservation Officer**

A Welsh Clearwing tree in mid-Wales

The Welsh Clearwing *Synanthedon scoliaeformis* is a scarce species of moth which depends on old birch trees, on which the larvae feed beneath the bark. In the UK the moth is confined to the Welsh uplands, parts of central Scotland and two heathland sites in England. Over the last 10 years we have gained a much better understanding of its range in Wales, thanks largely to surveys by Butterfly Conservation volunteers. The host tree requirements of the moth in North Wales have been investigated by Andrew Graham, but studies of occupied trees have not been carried out elsewhere. It was crucial to get a better understanding of these requirements to enable targeted planting of birch trees in the future. This will provide continuity of habitat once the currently occupied trees inevitably die off.

In 2012, a student project by Rhiannon Bevan of Swansea University sought to further our understanding of the moth's host tree requirements. Surveys were undertaken in three discrete Welsh Clearwing populations: Lake Vyrnwy in North Wales, Elan Valley in Mid Wales, and at Cannock Chase in England. The characteristics of occupied birch trees were recorded, including tree girth and trunk shading. Rhiannon then counted the number of exit holes, made by the moth as it emerges from its pupa, on the trunk of each tree. Data for the three populations were then compared.

Rhiannon revealed that the moth might have differing requirements depending on local site conditions. At upland sites such as Vyrnwy and parts of Elan Valley, the moth requires birches with exposed trunks, whereas the moth seems able to use more shaded trees at the lower-lying Cannock.

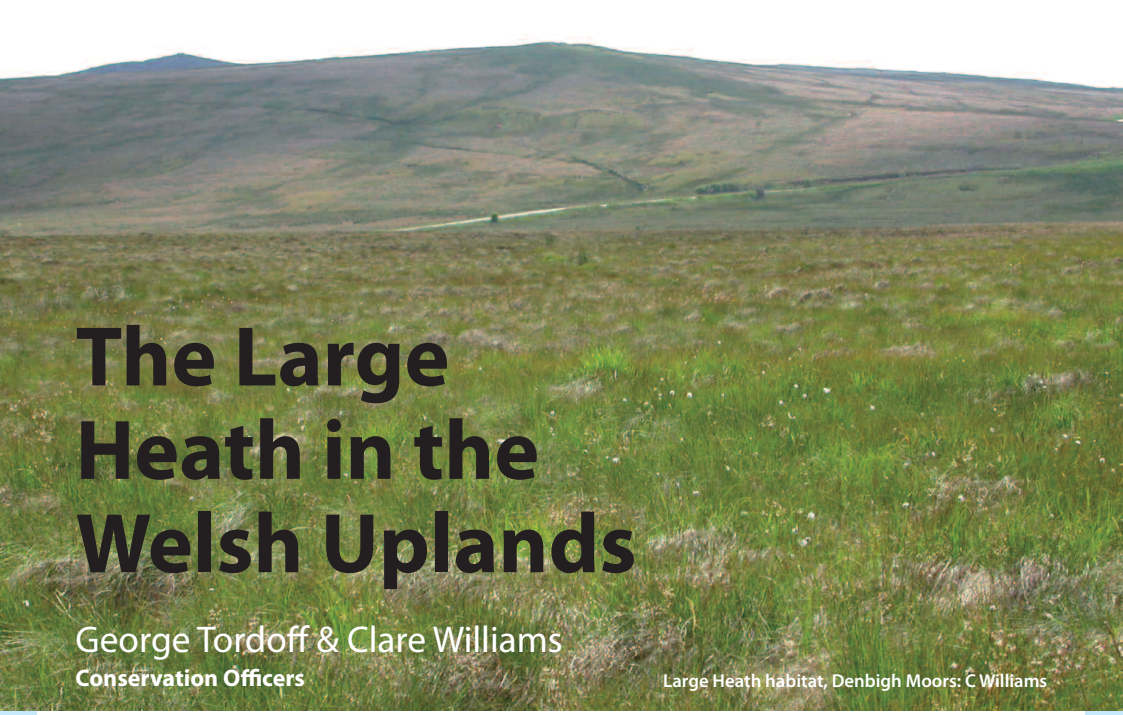
This was attributed to the harsh climate in the uplands limiting the species to sunnier trees than are needed in the lowlands, where warmer temperatures allow the use of shadier trees. These findings require further investigation as they may have a bearing on the design of future tree planting schemes for the Welsh Clearwing


Welsh Clearwing

**Thanks**

We are grateful to Swansea University for supporting Rhiannon's project, and to Andrew Graham who has carried out many surveys for Welsh Clearwing in North Wales and Sorcha Lewis, Norman Lowe, Pete and Ginny Clarke in Mid Wales. Access to sites was provided by RSPB (Lake Vyrnwy), Welsh Water and Radnorshire Wildlife Trust (Mid Wales) and Staffordshire County Council (Cannock Chase).


A Welsh Clearwing tree in mid-Wales



# The Large Heath in the Welsh Uplands

George Tordoff & Clare Williams
**Conservation Officers**

Large Heath habitat, Denbigh Moors: C Williams

The Large Heath butterfly *Coenonympha tullia* is a restricted species in Wales, occurring in bogs from sea level to over 550m altitude. It is found in the northern half of the country, having its main strongholds in the bogs of Snowdonia. However, the species is under-recorded, particularly in upland areas, due to its preference for remote tracts of moorland little visited by Lepidopterists. We urgently need to find out the full extent of its distribution to allow us to assess its conservation status.

Over the last two summers Butterfly Conservation has been trying to identify populations of the butterfly to the west of the core Snowdonia area, in the uplands of the Denbigh Moors (Mynydd Hiraethog) and Berwyn.

The Large Heath is one of our more difficult butterflies to study. Although many sources state that the butterfly is active in cloudy conditions, we have found that this isn't the case in Wales. Even on fairly warm days, Large Heath tend to disappear into tussocky vegetation as soon as the sun goes behind a cloud, and are then almost impossible to locate. Given the butterfly's preference for cool, cloudy uplands, coupled with a run of poor summers, finding them can be a real challenge.

Large Heath in Snowdonia, A Graham

In 2011 surveys were mainly undertaken on the Berwyn range. The butterfly was last seen there in 2005 but few recent surveys have been carried out. Seven different sites were visited in suitable weather but no Large Heath were recorded, suggesting that the butterfly is very localised in this area. Some of the sites did support good breeding habitat for the butterfly – tussocks of Hare's-tail Cotton-grass *Eriophorum vaginatum* (the larval foodplant) with abundant Cross-leaved Heath *Erica tetralix* (the main adult nectar source). Better luck was had on visits to the Denbigh Moors, where 44 Large Heath were counted at a known site near Cottage Bridge, as well as smaller numbers at several new sites nearby.

Following the successes on the Denbigh Moors in 2011, efforts were focused on this large moorland area in 2012. Over 25 different 1km squares were visited, which revealed numerous areas of potential breeding habitat. Unfortunately, there was only one day of good weather during the survey period. On this day, Large Heath was recorded in four new habitat patches, covering four new 1km squares. If only the weather had been better we would probably have found more.

In 2013 we will again focus on the Denbigh Moors. We plan to revisit some of the other areas of good habitat which were not surveyed in good weather in 2012, as well as mapping breeding habitat in other areas of the moors. We will be crossing our fingers for better weather this time!

Large Heath, J Asher

Large Heath , Denbigh Moors, G Tordoff

**Thanks**

Andrew Graham, Butterfly Recorder for Merioneth, has carried out many searches for Large Heath and shared his extensive knowledge of the butterfly in North Wales. Thanks also to Clare Faith, who helped with surveys while undertaking a student placement at CCW.

# Argent & Sable caterpillars found in Wales

George Tordoff
**Conservation Officer**


Argent & Sable D Green

The Argent & Sable *Rheumaptera hastata* is one of our rarest Welsh moths. There are recent records from only two sites: the Fenn's-Whixall mosses on the Denbighshire-Shropshire border, and Cors Goch near Trawsfynydd, Merionethshire. The latter colony was discovered in June 2010, when adults were seen flying at the edge of a conifer block within the bog.

The foodplant at Cors Goch was assumed to be Bog Myrtle *Myrica gale*, as the alternative foodplants, birches *Betula* spp., do not occur on the site itself. However, it was important to confirm this, and also to find out which parts of the site were used for breeding – Cors Goch has large stands of Bog Myrtle but adult moths have only been found in a small area in the south.

In August 2012, Andrew Graham and I spent a warm and sunny afternoon searching for the characteristic larval spinnings at Cors Goch. With large stands of Bog Myrtle, it was feared that this might be a 'needle in a haystack' job, but fortunately a spinning containing a small, black caterpillar of Argent & Sable was found within 30 minutes. Within a few minutes two more were found close by, but a further two hours of searching proved fruitless. Starting to lose hope, we then checked a small stand of Bog Myrtle adjacent to the conifers, and were delighted to find 16 spinnings in just a few minutes. The high density in this area suggests that shelter is important, as only three larvae were found away from the conifer block despite much searching. This may explain why the moth only seems to be found in this part of the bog – perhaps the remaining areas are too exposed.

Knowing where the species is breeding will help us conserve the most important areas of habitat. We plan to survey further areas of Bog Myrtle in 2013.


Argent & Sable spinnings G Tordoff


Argent & Sable larva, Trawsfynydd J Graham

# Projects to help with


Scarce Hook-tip C Manley

### UK Butterfly Monitoring Scheme

If the fine weather has inspired you why not set up a butterfly transect? These are weekly counts from April to September along a fixed route.

More information on the UKBMS website http://www.ukbms.org/ or contact Clare Williams cwilliams@butterflyconservationwales.org.uk

### Wider Countryside Butterfly Scheme

All that is required is two core visits per year to an allocated 1km square, one in July and one in August, with optional visits at other times of the year to pick up other species (e.g. Orange-tip and Green Hairstreak).

If you would like to get involved contact Zoe Randle, survey@butterfly-conservation.org or 01929 406006.

### Butterfly Species Surveys

Brown Hairstreak Winter Egg counts. These searches in Pembrokeshire, Carmarthenshire and Ceredigion take place from November to February.

Contact Richard Smith rgsoverton@tiscali.co.uk

### Marsh Fritillary Surveys and Monitoring.

We still need more help with regular and one-off surveys of current and potential Marsh Fritillary sites around Wales.

Contact George Tordoff gtordoff@butterflyconservationwales.org.uk or 01792 642972

### Grizzled Skipper.

We need more timed counts on key sites in Wrexham, Glamorgan and Carmarthenshire. Contact George Tordoff gtordoff@butterfly-conservationwales.org.uk or 01792 642972

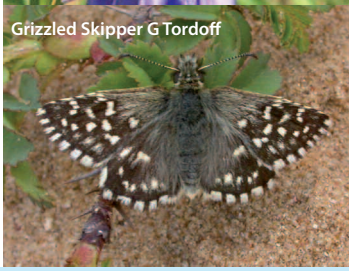
### Moth Species Searches

We are currently seeking to identify sites with a range of species particularly:

- Larval and adult searches for **Silurian** in Monmouthshire/ Brecknockshire.
- Old birch trees for **Welsh Clearwing** particularly on edge of current known range in Montgomeryshire, Ceredigion, Radnorshire, Brecknock and Monmouthshire.
- **Forester moth** anywhere in Wales.
- **Scarce Hook-tip** in Monmouthshire.

Contact George Tordoff gtordoff@butterflyconservationwales.org.uk or 01792 642972


Green Hairstreak K Thomas


Grizzled Skipper G Tordoff

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You can support Butterfly Conservation in the vital work we do by becoming a member today. As a member you will receive a welcome pack, our exclusive magazine ***Butterfly*** three times a year, an identification chart and membership of your local Branch.

Our Branches run over 700 public butterfly and moth events throughout the year and you could be part of them.

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## Wales Branches' Websites

www.northwalesbutterflies.org.uk
www.southwales-butterflies.org.uk


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Butterfly Conservation is the UK charity taking action to save butterflies, moths and our environment. Working with a wide range of partners, we are taking action by:

- Advising landowners and managers on conserving and restoring important habitats.
- Purchasing and managing land for threatened butterflies, moths and other wildlife.
- Carrying out surveys, monitoring and other essential research.
- Lobbying government and its agencies to influence land use policy.
- Being a working partner of BC Europe




Cyfoeth Naturiol Cymru Natural Resources Wales

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Ariennir gan Lywodraeth Cymru
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