





# Llanfihangel Genau'r Glyn

## Wild flowers and other wildlife of the Castell Gwallter pastures

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2015


Treftadaeth Llanforc Heritage







LOTTERY FUNDED

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# Wild flowers and other wildlife of the Castell Gwallter pastures, Llanfihangel Genau'r Glyn

## 1. Introduction

Castell Gwallter is a Norman motte and bailey built in around 1110 AD. It lies to the west of the village of Llanfihangel Genau'r Glyn/Llandre near Bow Street in Ceredigion on a hill at 120 m altitude. It has a grid reference of SN 622867. It is thought that Castell Gwallter was built on the site of an earlier, Iron Age fort called Bryn Hir.

Castell Gwallter lies in one of six fields grazed as a single unit by cattle in the summer. The six fields together, cover an area of 6.68 ha (OS map, 1888).

Since being a child I've always had a love for wild flowers and since moving to Llandre in 2001 the public footpaths that cross Castell Gwallter have been a regular source of pleasure and discovery. The attraction of the fields for me was the great number of different flowers that grow there and of course the associated bugs, birds, animals and colourful fungi!

So after doing flower surveys in the old and new churchyards and the woodlands that extend up the small steep valley from the church I felt that the fields were the next step in my investigations into the wildlife of my local patch.

However, with a growing family and little free time it took me quite a long time to pluck up the courage to find out who the owners of the fields were and ask their permission to walk in all the fields. Eventually, about four years ago I asked, and Mabel Owen the owner of the fields, gave her permission, via her sister Ann Protheroe.

This account of the wild flowers and wildlife of the fields is a result of all those walks over the fields. I made the most number of visits between September 2014 and September 2015 - I think I became quite obsessed by the end!

**PLEASE NOTE**

**Permission was given by the owner of the field for me to survey all six fields that surround the Castell Gwallter monument, however members of the public visiting the fields are advised to keep to the public footpaths. Please keep your dog on a lead if cattle are present in the fields.**

Annette Williamson, Coedgruffydd, Llanfihangel Genau'r Glyn

October 2015

Additional photos added 2016

# 2. Method

Each of the six fields were assigned a number and the following carried out:

- A description was made of each field: slope, aspect, soil characteristics including wetness or dryness

- The main vegetation types were identified for each field e.g. dry grassland, wet rush-dominated areas.

- In each vegetation type the dominant species were identified and as many as possible additional species. The height of vegetation and amount of dead material left from the previous season's growth was also noted.

- Each of the 15 external and internal boundaries was assigned a letter, A to O. Each was described. Where the boundary was a hedgerow the main tree species making up the boundary were recorded. Other woody and non-woody plants growing to the side of and within the hedgerow were also noted.

- Photographs of the fields, hedgerows and species were taken with a Nikon Coolpix L29 digital camera. All photos used in this account are from the Castell Gwallter fields and dates taken shown with each photo.

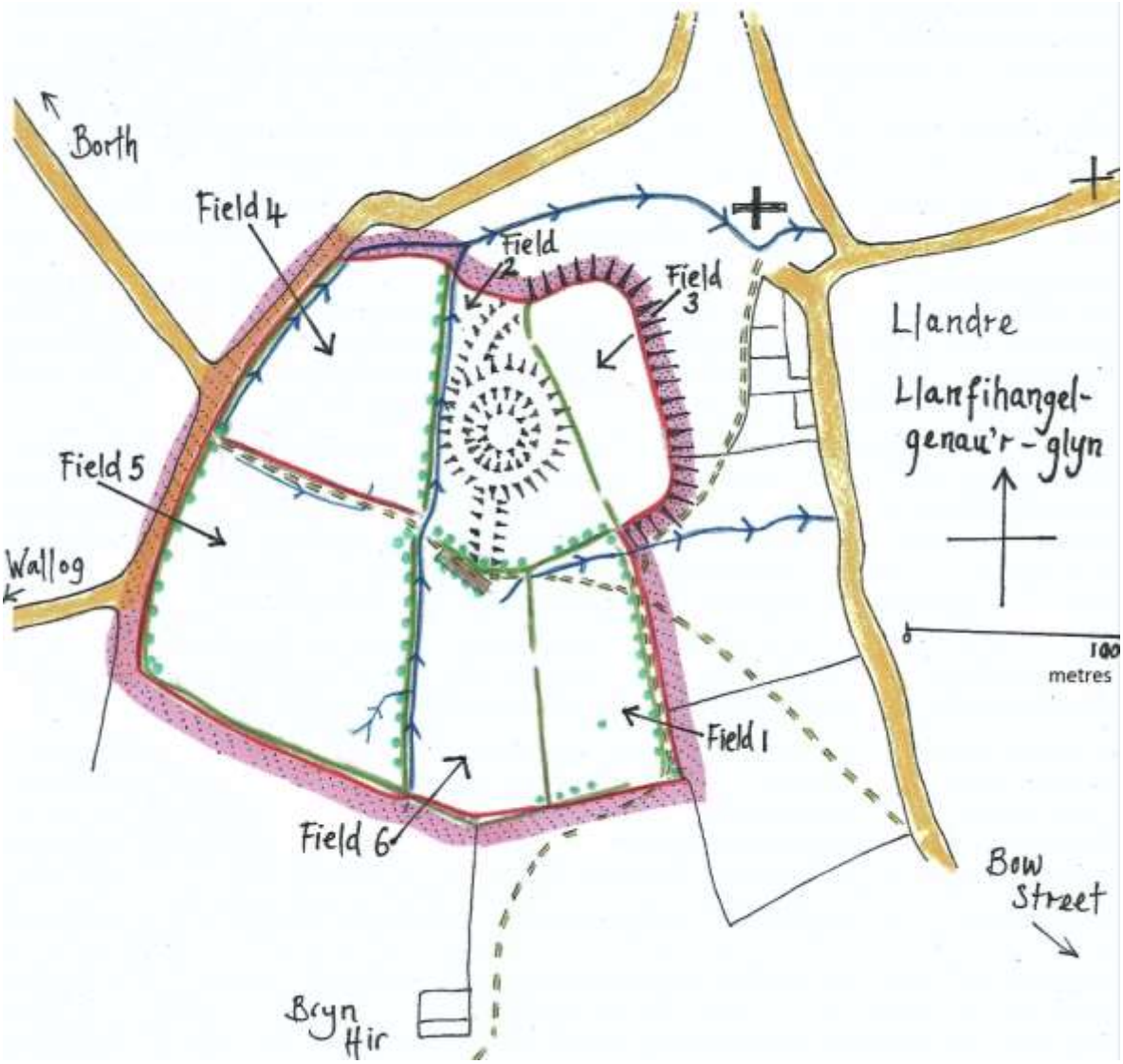
- Species other than flowering plants, ferns and their allies were identified and recorded where possible. Lists were drawn up of fungi, mammals, birds, amphibians, reptiles, insects and spiders.

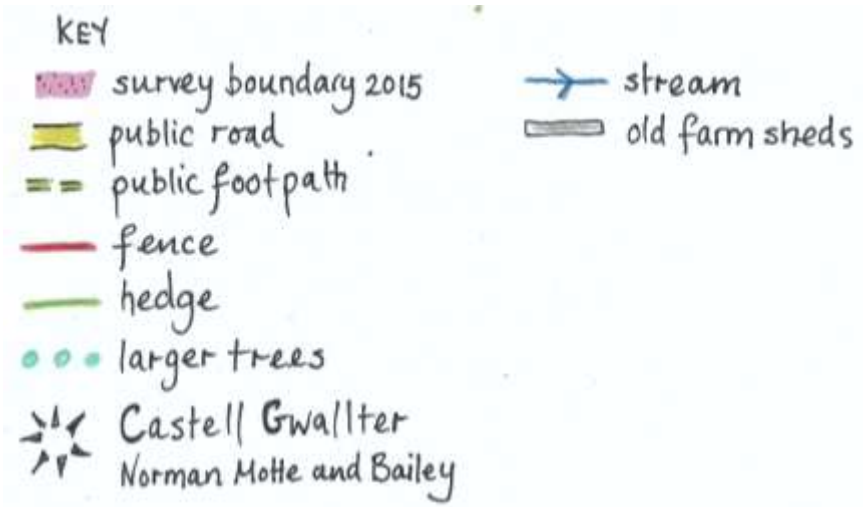
- All species names were recorded as far as possible using accepted nomenclature to date.

- All species names were translated to Welsh, where possible, using the most up to date lists available.

- Results were checked by the local representitives of the Botanical Society of Britain and Ireland for errors and help with identification.

## 2.1 Map of the wild flower survey area



## 2.2 Photos of the wild flower survey area


**Castell Gwallter fields as seen from the south**. To the right, hidden in the valley below the woodland, is Llanfihangel Genau'r Glyn. In the far distance is the Dyfi estuary and Aberdyfi. Fields are numbered as on the map on page 5. Photo taken November 2016.

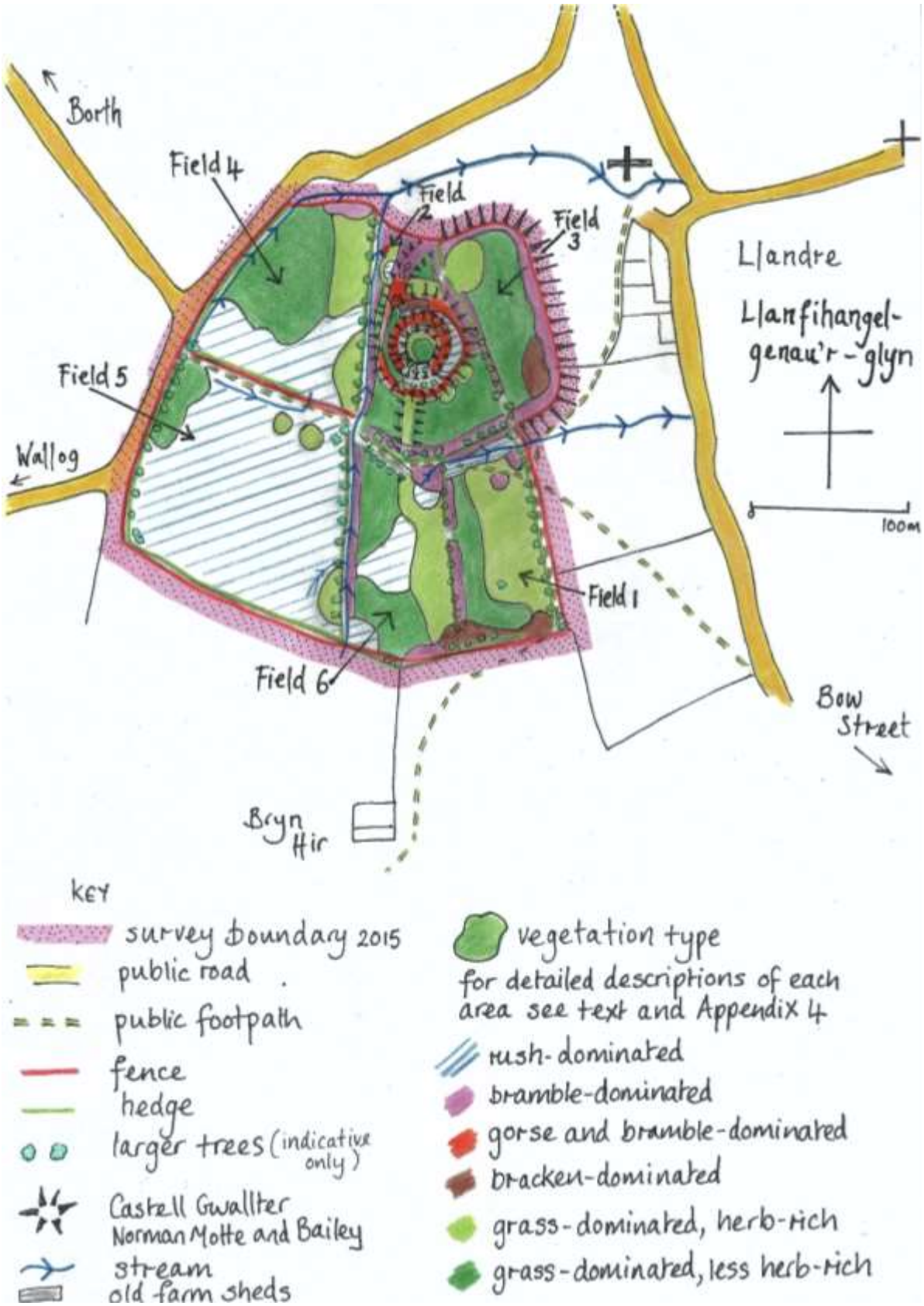

**Castell Gwallter fields as seen from the north**. Llanfihangel Genau'r Glyn can be seen in the valley on the left. Photo taken November 2015.

# 3. Results 3.1 Field characteristics.

| ***Physical characteristics*** | ***Field 1*** | ***Field 2*** | ***Field 3*** | ***Field 4*** | ***Field 5*** | ***Field 6*** |
|---|---|---|---|---|---|---|
| ***Area*** | 0.94 ha | 1.12 ha | 0.64 ha | 1.02 ha | 1.95 ha | 1.01 ha |
| ***Grid reference*** | | | | | | |
| ***Aspect*** | North east | Flat and east | East | Flat to slightly north and east facing | North facing | East and north facing, some flat |
| ***Slope*** | Gentle | Gentle to moderately steep | Gentle | Very gentle | Gentle | Gentle |
| ***Soil*** | deep | deep | deep | deep | deep | deep |
| ***Drainage*** | Well drained on the majority of the field with springs and wet zone at the northern end of the field | Well drained on majority of the field. Impeded drainage in the moat of the motte and bailey – occasionally standing water. | Well drained | Well drained in the central, eastern and northern areas, wet to the south and west | All field with impeded drainage except the far south eastern corner where it is well drained. | Well drained but with a central section with spring and impeded drainage |
| ***Bordering habitat*** | To the north and west, field 2 and 6. To the east mature woodland. To the south sheep pasture. | To the north mature woodland, to the east field 2, to the south fields 1 and 6 and to the west field 4 | To the north and east and south mature woodland. To the west field 1. | To the north mature woodland, to the east and south field 2 and 5, to the west minor road. | To the north field 4, to the east field 6, to the south sheep pasture | To the north, field 2, to the east field 1, to the south sheep pasture, to the west field 5 |
| ***Boundaries*** | Internal: hedge External: hedge and sheep netting | Internal: hedge External: hedge and sheep netting | Internal: hedge External: sheep netting | Internal hedge and sheep netting, external sheep netting and hedge and sheep netting | Hedge and sheep netting and hedge | Hedge and hedge and sheep netting |

## 3.2 Vegetation map.

For description of individual vegetation areas see Appendix 4, p73



## 3.3 Field 1

(for full species list and English and Welsh names see Appendix 1, p55)

30.6.2012

This is a beautiful field, crammed full of old hay meadow/pasture species. Four different areas of vegetation were identified with a total of 62 species of plants (including ferns). The main grasses here are cock's-foot (*Dactylis glomerata),* red fescue (*Festuca rubra),* Yorkshire fog (*Holcus lanatus),* sweet vernal-grass (*Anthoxanthum odoratum*), common bent (*Agrostis capillaris*), crested dog's-tail (*Cyanosurus cristatus*) and less commonly, heath grass (*Danthonia decumbens*). Perennial rye-grass, a grass sown for agricultural improvement purposes is absent from this field.

The herbs are spectacularly colourful in the summer and include red clover (*Trifolium pratense*), common knapweed (*Centaurea nigra*), greater bird's-foot-trefoil (*Lotus pendunculatus*), common bird's-foot trefoil (*Lotus* corniculatus), tormentil (*Potentilla erecta*), cat's-ear (*Hypochaeris radicata*), selfheal (*Prunella vulgaris*), ribwort plantain (*Plantago lanceolata*), bulbous buttercup (*Ranunculus bulbosus*), bluebell (*Hyacinthoides non-scripta*), lesser spearwort (*Ranunculus flammula*), ground ivy (*Glechoma hederacea*), yellow pimpernel (*Lysimachia nemorum*), lady-fern (*Athyrium filix-femina*), cuckoo flower (*Cardamine pratensis*), wild angelica (*Angelica sylvestris*) and opposite-leaved golden-saxifrage (*Chrysoplenium oppositifolium*). Two much less common species in Ceredigion are present; the beautiful and delicate ballerina waxcap (*Hygrocybe calyptriformis*) which is a type of fungus, and a marsh orchid (probably Northern marsh orchid (*Dactylorhiza purpurella*)).

## Pysen-y-ceirw fawr

Greater bird's-foot trefoil (*Lotus pedunculatus*) prefers to grow in soils that are damp and fairly infertile and mildly acidic. It is taller and more robust than the closely related pysen y ceirw/common bird's-foot-trefoil (*Lotus corniculatus*) but both are food for the caterpillar of the common blue butterfly.

28.9.2011

## Meillionen goch

Red clover (*Trifolium pratense*), a species that thrives in neutral soils of low fertility where there is little grazing and trampling. It is a really important plant for long-tongued types of bumble bees.

30.6.2012

## Y bengaled

Common knapweed (*Centaurea nigra*) is a tough perennial of slightly acidic, moist soils. It flowers in the late summer and provides an excellent general nectar source for a wide range of insects (e.g. honey bees, bumblebees, hoverflies, butterflies). The cattle tend to avoid grazing the tough stems of this plant but appear to like nipping off the flowers!

16.8.2015

## Y feddyges las

Selfheal (*Prunella vulgaris*) is a common grassland plant in Ceredigion where it prefers slightly acidic, moist soils. Its flowers are excellent for nectar feeders like bees. In field 5 it grows in much wetter soils and has a much more robust, tall and purple-flushed growth form.

30.6.2012

## Tresgl y moch

Tormentil (*Potentilla erecta*) is a plant of acidic soils of intermediate fertility and is a common species in Ceredigion. It is very unpalatable to grazing animals.

29.4.2007

## Pumnalen groesryw

Hybrid cinquefoil (*Potentilla x mixta*)

A hybrid between *Potentilla anglica* and *Potentilla reptans*.

18.5.2015

## Llygad doli

Germander speedwell (*Veronica chamaedrys*) has beautiful, small, bright blue flowers. It is a herb of lightly grazed and fairly infertile pastures in Ceredigion. It is found in the drier grassland areas of field 1.

29.4.2007

## Blodyn llefrith

Cuckoo flower (*Cardamine pratensis*) flowers in the spring and is a plant of wet grassland habitats on moderately fertile soils. It is the food plant of the orange-tip butterfly. It is found most abundantly in the wet area in the northern part of field 1.

10.5.2015

## Tegeirian-y-gors

One individual flower spike of a marsh orchid, probably Northern marsh orchid (*Dactylorhiza purpurella*) found on 9th June 2015. I was so excited to find it…but unfortunately the stem was grazed through the following day by slugs!. It is described as 'widespread' in Ceredigion in the county flora and is characteristic of damp acidic soils. This one was growing in the centre of field 1, rather than in the wetter areas at the northern end of the field.

9.6.2015

## Tegeirian brych y rhos

Between 2003 and 2015 only one heath spotted orchid (*Dactylorhiza maculata*) was seen (but not searched for specifically) then 7 individual plants were found at the northern end of field 1 on July 7th 2015. It is a species of damp, acidic pastures (frequent in Ceredigion) and is pollinated by bees and hoverflies.

7.7.2015

## Gwlyddyn melyn Mair

Yellow pimpernel (*Lysimachia nemorum*) prefers damp habitats such as damp woodlands and marshes and in field 1 it appears to like growing where there is some shade. It is related to scarlet pimpernel (Llysiau'r cryman*/Anagallis arvensis*) which appears as a garden weed or in other types of disturbed soil.

28.9.2011

## Elinog

This exotic-looking flower is Bittersweet (*Solanum dulcamara*). Here it is threading its way up through the brambles and stems of a blackthorn bush growing on the edges of the wet vegetation at the north western edge of field 1. This species is closely related to potatoes and aubergines.

24.8.2015

## Cap cwyr pinc

Ballerina waxcap (*Hygrocybe calyptriformis*) is a localised and uncommon species of fungus in Britain and Ireland. It favours grazed unimproved acidic or neutral soils. The application of artificial fertilisers will get rid of this species. Until 2007 this species was on the UK Biodiversity Action plan list, it has since been removed but still remains a rare and beautiful fungus.

24.9.2014

## Cap cwyr coch

This is most likely to be the scarlet waxcap (*Hygrocybe coccinea*) a species of fungus that is infrequently found in Britain and Ireland due to its preference for soils of low nutrient status.

2.11.2014

## Animal and bird life

Though not surveyed for specifically, these are some of the creatures photographed in field 1. For a full list of animal and bird life seen in field 1, see Appendix 2, p62.

### Cacynen

There are several sorts of **bumblebees** on the Gwallter fields but I do not have the skill to identify them! This one is possibly *Bombus lucorum* – the white-tailed bumblebee. Knapweed flowers are a favourite flower to visit.

16.8.2015

### Gwenynen Fêl

**Honey bees** (*Apis mellifera*) are a common sight on the Gwallter fields in spring and summer. The fields have a wide range of flowers to feed from – but perhaps the honey bee is most likely to be seen on dandelions, brambles and knapweed flowers. There must be some hives nearby!

16.8.2015

### Bwrned pum smotyn

**Five spot burnet** (*Zygaena trifolii*). This eye-catching, day-flying moth prefers slightly damper habitats than its close relative, the six-spot burnet. Its caterpillars feed on greater bird's-foot trefoil (*Lotus pendunculatus*) and the empty, papery cocoon cases are often to be seen attached to grass-stems in field 1.

28.6.2014

## Teigr ôl-adain goch

This is the caterpillar of a scarlet tiger (*Callimorpha dominula*) a beautiful yellow-spotted moth with scarlet underwings. The caterpillar feeds on a wide variety of herbs and shrubs and is found in damp habitats.

17.4.2010

## Glesyn cyffredin

The common blue butterfly (*Polyommatus icarus*) can be regularly seen up on the Gwallter fields. The individual in these pictures taken in field 1 is a male (the female is largely brown in colour) and the caterpillars feed on common bird's-foot-trefoil and greater bird's-foot-trefoil. It is the commonest blue butterfly species in Wales and the UK. 16.8.2015

16.8.2015

## 3.4 Field 2

(for full species list and English and Welsh names see Appendix 1, p55)

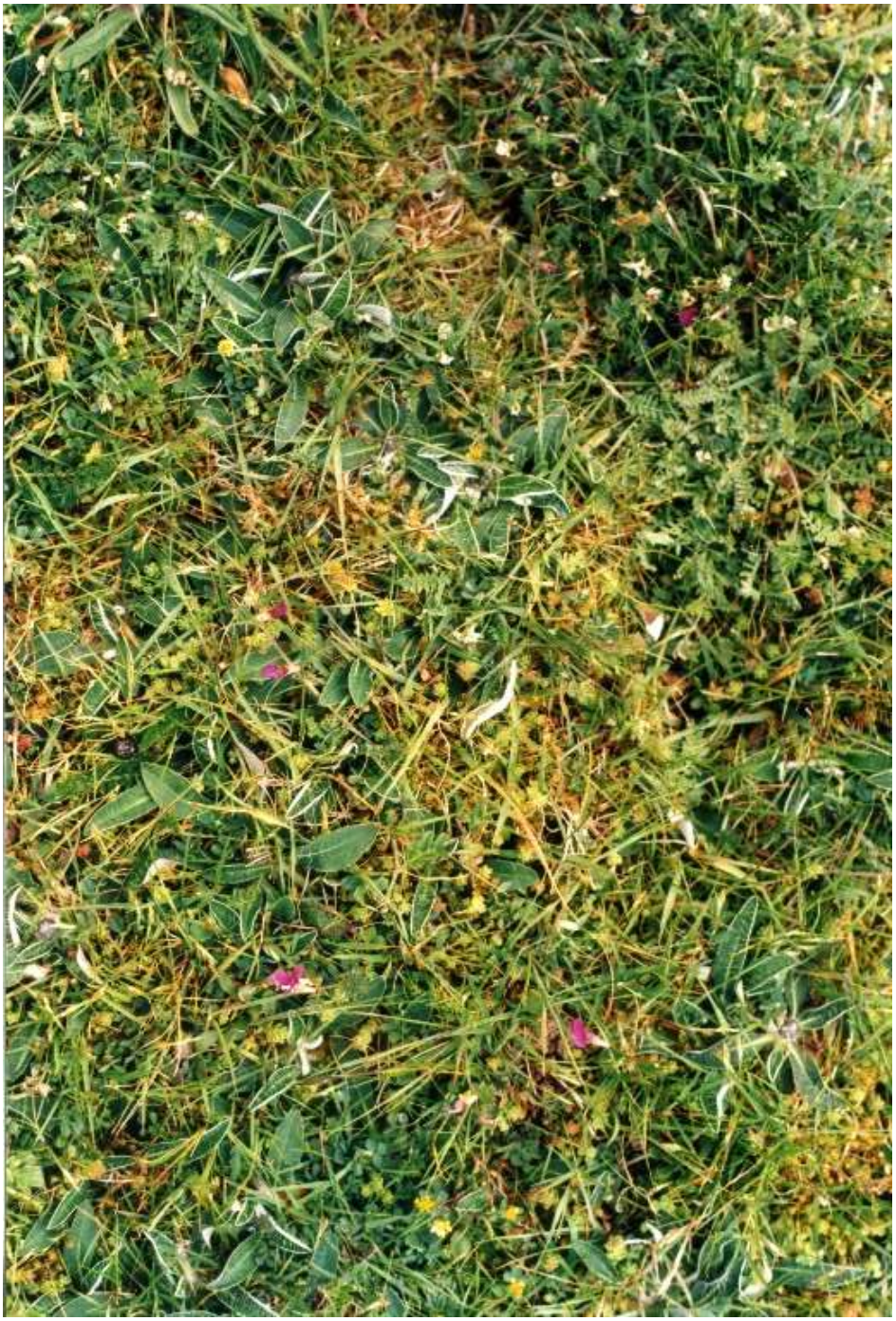
Seventeen different areas of vegetation were identified with a total of 85 species of higher plants. This field contains the Castell Gwallter monument and is responsible for the large number of different areas of vegetation. Grass-dominated vegetation surrounds the Castell and the Castell features (inner mound, moat, moat boundary and ridge to the north of the Castell) have scrub vegetation. There are large areas of bramble-dominated vegetation.

The grass-dominated vegetation ranges from relatively species poor areas where there is strong grass growth (by grasses such as false oat-grass (*Arrhenatherum elatius*) and cock's-*foot* (*Dactylis glomerata*)) and few herbs to areas where the drainage is sharp, the soil is poor and there are a high number of flowering herbs. Species present in the latter areas include common vetch (*Vicia sativa*), bulbous buttercup (*Ranunculus bulbosus*), mouse-ear-hawkweed (*Pilosella officinarum*), slender parsley-piert (*Aphanes australis*), wall speedwell (*Veronica arvensis*), English stonecrop (*Sedum anglicum*), yarrow (*Achillea millefolium*), early hair-grass (*Aira praecox*), common bird's-foot-trefoil (*Lotus corniculatus*), pignut (*Conopodium majus*), English stonecrop (*Sedum anglicum*) and mouse-ear-hawkweed (*Pilosella officinarum*).

Over the last ten years the number of grazing animals has decreased on the Castell Gwallter fields and the growth of shading scrub has increased. The following species (delicate and easily shaded out by taller vegetation) can no longer be found in field 2 - bird's-foot (*Ornithopus persupillus*), harebell (*Campanula rotundifolia*), lady's bedstraw (*Galium verum*) and a species of eyebright (*Euphrasia sp.*).

Species associated with the scrub-dominated areas include western gorse (*Ulex gallii*), wavy hair-grass (*Deschampsia flexuosa*), heath bedstraw (*Galium saxatile*), wood sage (*Teucrium scorodonia*), bluebell (*Hyacinthoides non-scripta*) red campion (*Silene dioica*) and three-nerved sandwort (*Moehringia trinervia*).

A species that re-appeared in 2015 after not being seen for a number of years was the tiny but beautiful annual, changing forget-me-not (*Myosotis discolor*). A large number of plants appeared where the soil had been disturbed following topping of brambles the previous autumn.



6.5.2002

This photo was taken in May 2002 and shows the species-rich turf on well-drained infertile soil in an unshaded location. Here is mouse-ear-hawkweed (*Pilosella officinarum*) (tongue-shaped leaves with pale undersides), bird's-foot (*Ornithopus perpusillus*) (leaves with many tiny leaflets), common vetch (*Vicia sativa*) (vetch with dark pink flowers), English stonecrop (*Sedum anglicum*) (succulent leaves), yellow flowers of lesser trefoil (*Trifolium dubium*), white clover leaves (*Trifolium repens*) and yarrow (*Achillea millefolium*). This shortly-grazed vegetation has all but disappeared in field 2 (2015) following increased growth of gorse scrub and lower intensity of grazing.

## Cribell felen

Yellow rattle (*Rhinanthus minor*) is a semi-parasite of grasses and it grows on relatively infertile and well-drained soils. It seems to have appeared on the Gwallter fields in the last five years. It is a true meadow species in that the seeds rattle inside its inflated 'pods' when it is time for the hay to be cut.

17.6.2010

## Clychau'r gog

A dense patch of bluebells (*Hyacinthoides non-scripta*) is growing on the south-facing sheltered bank of the outer moat wall. In this picture the bluebells are coming up through the young fronds of bracken (*Pteridium aquilinum*).

2.5.2010

## Cneuen y ddaear

Pignut (*Conopodium majus*) is a woodland and grassland species. It has edible tubers much favoured as food by badgers (and in the past by children?).

20.5.2015

18.5.2015

**Blodyn neidr** Red campion (*Silene dioica*) prefers richer and less acidic soils, usually with some shade. The flowers in the left-hand picture are the usual colour. The flowers in the right -hand picture are a pink-streaked version with pale green and pink-spotted calyx tube – an unusual find!

## Chwerwlys yr eithin

Wood sage (*Teucrium scorodonia*) grows on the banks of the inner mound of Castell Gwallter. The soil here is well-drained and dry which suits this perennial. It has a strange smell, like hops, and is pollinated by bees.

16.8.2015

## Y benboeth

Common hemp-nettle (*Galeopsis tetrahit*) grows on the edge of the gorse bushes that flank the northern edge of the motte and bailey. It's a tall (up to 1m) summer-flowering, rather bristly annual. It is described as common in Ceredigion in the county flora.

16.8.2015

## Troed yr aderyn

Bird's-foot (*Ornithopus perpusillus*) is a small plant characteristic of thin, dry soils and unshaded conditions on the coast in Ceredigion. It has creamy, pink-tinged flowers, 3-4mm across. It can only survive in short turf. It has not been seen on the Gwallter fields within the last seven years as the sward where it grew previously has become shaded by gorse bushes and over-grown with tall grasses.

1.5.2008

## Suran yr ŷd

Sheep's sorrel (*Rumex acetosella*) only thrives in unshaded areas on acidic, dry soils. It is one of the types of sorrel that the caterpillar of the small copper butterfly (*Lycaena phlaeas*) feeds on – the adult butterflies have been seen in adjacent field 3.

21.5.2015

1.5.2008

## Rhwyddlwyn y fagwyr

Wall speedwell (*Veronica arvensis*) is another species that prefers dry, open sites with thin and infertile soils. It grows on the edges of yellow meadow ant hills and has absolutely minute blue flowers! Here it is growing alongside the drought-tolerant succulent **briweg y cerrig** (English stonecrop *Sedum anglicum*).

18.5.2015

## Sgorpionllys amryliw

Changing forget-me-not (*Myosotis discolor*) is an annual plant. It prefers thin dry soils in unshaded places. The tiny flowers (2mm across) change colour from cream to blue as they mature. This beautiful flower had not been seen for 10 years on the Gwallter fields (previously seen in field 3) but appeared again in Spring 2015 on an area of disturbed soil where brambles had been cut back. Presumably it grew from dormant seeds in the soil.

## Mwg-y-ddaear amrywiol/mwg-y-ddaear grymus

It was not possible to determine which species of fumitory this was as it shared characteristics both of common ramping-fumitory (*Fumaria muralis*) and tall ramping-fumitory (*Fumaria bastardii*). They are both delicate, scrambling plants that take advantage of disturbed soil (here where the soil had been exposed after bramble cutting).

18.5.2015

## Animal and bird life

Though not surveyed for specifically see a full list of animal and bird life seen in field 2, see Appendix 2, p62.

## Sioncyn gwyrdd cyffredin

Grasshoppers are common on the Castell Gwallter fields, especially this species, the common green grasshopper (*Omocestus viridulus*). When the male sings it sounds a bit like a sewing machine.

24.8.2015

## **3.5 Field 3** (for full species list and English and Welsh names see Appendix 1, p55)

6.6.2010

Four different areas of vegetation were identified with a total of 44 species of higher plants. There are two grass-dominated areas of vegetation. The smaller area, associated with the mound at the northern end of the field, tends to be made up of finer-leaved grasses such as red fescue (*Festuca rubra),* Yorkshire fog (*Holcus lanatus),* common bent (*Agrostis capillaris*), and sweet vernal-grass (*Anthoxanthum odoratum*) with herbs such as common knapweed (*Centaurea nigra*), ribwort plantain (*Plantago lanceolata*), greater bird's-foot-trefoil (*Lotus pendunculatus*), bulbous buttercup (*Ranunculus bulbosus*) and meadow buttercup (*Ranunculus acris*). The second, larger, area is dominated by cock's-foot (*Dactylis glomerata)* and a smaller number of herbs including common sorrel (*Rumex acetosa*), ribwort plantain (*Plantago lanceolata*), common knapweed (*Centaurea nigra*), creeping buttercup (*Ranunculus repens*) and cleavers (*Galium aparine*).

In the south east corner of the field bracken (*Pteridium aquilinum*) is established and is associated with herbs such as common sorrel (*Rumex acetosa*), creeping buttercup (*Ranunculus repens*), cuckoo flower (*Cardamine pratensis*), wavy bitter-cress (*Cardamine flexuosa*) and common nettle (*Urtica dioica*). The edges of the field are dominated by brambles which are periodically topped. Associated with these areas are some lovely patches of red campion (*Silene dioica*) and bluebell (*Hyacinthoides non-scripta*).

## Clust-y-llygoden lydanddail

Sticky mouse-ear (*Cerastium glomeratum*) is a common species in Ceredigion. On the Castell Gwallter fields it appears to prefer growing on the sides of yellow meadow ant-hills!

12.4.2010

## Ffacbysen

Common vetch (*Vicia sativa*) with its vibrantly-coloured flowers, prefers dry grassland habitats. It is seen here growing with the flower-heads of sweet vernal-grass (*Anthoxanthum odoratum*).

19.5.2011

## Berwr chwerw hyblyg

Wavy bitter-cress (*Cardamine flexuosa*), a common, early-flowering species in Ceredigion. It prefers soils that are damp, slightly shaded and quite fertile. Here it is growing where the bracken has died back in the winter.

17.4.2010

## Porpin y ffynon

Blinks **(***Montia fontana*) is a tiny plant - here it grows on the bare soil where animals have walked between field 2 and field 3.

18.5.2015

## Animal and bird life

Though not surveyed for specifically, these are some of the creatures photographed in field 3. For a full list of animal and bird life seen in field 3, see Appendix 2, p62.

### Neidr y gwair

I disturbed this grass snake (*Natrix natrix*) on the area of flattened grassland on the humped area to the north west of field 3. It hissed and whipped itself around into a coil. Seconds later its head emerged (and its tongue!) and it disappeared into the grass quick as a flash! It was not a large snake, about 2cm thick, maybe 60cm long. Adult females can grow as large as 90cm long and they can live for up to 20 years.

20.8.2015

Grass snakes eat amphibians (frogs, toads, newts) but need drier areas for sunbathing and hibernation. They are not venomous. They are not a common snake in Ceredigion. Conservation status: Protected in the UK under the Wildlife and Countryside Act, 1981, and classified as a Priority Species in the UK Biodiversity Action Plan.

20.8.2015

## Madfall

This was the first common lizard (*Lacerta vivipara*) I'd seen on the Gwallter fields, seen about 30 seconds after seeing the grass snake (above). It had no tail – the ability to shed its tail is a response to attack by a predator. Lizards eat invertebrates and hibernate in the winter. They can live for up to 12 years.

Conservation status:
Protected in the UK under the Wildlife and Countryside Act, 1981, and classified as a Priority Species in the UK Biodiversity Action Plan.
20.8.2015

This is quite a large fly (*Sericomyia silentis*) with distinct markings. Its larvae live in muddy water.

20.8.2015

## Gwibiwr bach

The small skipper butterfly (*Thymelicus sylvestris*) is frequently seen on the Castell Gwallter fields. Its caterpillars feed on grasses and it is a common butterfly in Wales.

20.8.2015

## Cacynen

This is another species of bumblebee regularly seen on the Castell Gwallter fields with a distinct red patch of colour on the end of its abdomen and a yellow patch on its head. It is most likely to be the red-tailed bumblebee (*Bombus lapidarius*). The females are all black with a red end but the males have the yellow facial hairs. It nests under large stones.

20.8.2015

## Chwilen goesdew

This is a female *Oedemera nobilis* (type of beetle) feeding on the pollen of the knapweed flower.

20.8.2015

## Pryf llwyd

Here is a cleg-fly (a type of horse-fly), probably *Haematopota pluvialis* that was trying to bite through my cardigan! It is a common summer fly on the Gwallter fields and seems to prefer humid weather. The female flies suck blood and the larvae live in damp soil or mud. Usually I don't look at this fly closely but this photograph shows the delicate patterning on its wings.

20.8.2015

## Pryf glas, pryf gwyrdd, gwenynen feirch

Ripening blackberries are a favourite for wasps and flies such as greenbottles and bluebottles.

20.8.2015

## 3.6 Field 4

(for full species list and English and Welsh names see Appendix 1, p55)

5.6.2010

Six different areas of vegetation were identified with a total of 45 species of higher plants. There are three areas of wet vegetation dominated by rushes but with associated beautiful herbs such as wild angelica (*Angelica sylvestris*), meadowsweet (*Filipendula ulmaria*), water horsetail (*Equisetum fluviatile*), common marsh-bedstraw (*Galium palustre*), bog stitchwort (*Stellaria alsine*), marsh thistle (*Cirsium palustre*) and curled dock (*Rumex* crispus). In the wet area in the northwest of this field are large patches of ground ivy (*Glechoma hederacea*).

There are also two grass-dominated areas of vegetation. The first (smaller area) tends to be made up of finer-leaved grasses such as common bent (*Agrostis capillaris*), sweet vernal-grass (*Anthoxanthum odoratum*), red fescue (*Festuca rubra)* and field wood-rush (*Luzula campestris*), with herbs such as ribwort plantain (*Plantago lanceolata*), meadow vetchling (*Lathyrus pratensis*), red clover (*Trifolium pratense*), cat's-ear (*Hypochaeris radicata*), bulbous buttercup (*Ranunculus bulbosus*) common bird's-foot-trefoil (*Lotus corniculatus*) and hybrid cinquefoil (*Potentilla x mixta*).

The second, larger area is dominated by cock's-foot (*Dactylis glomerata)* and meadow foxtail (*Alopecurus pratensis*), with a smaller number of herbs including common sorrel (*Rumex acetosa*), meadow buttercup (*Ranunculus acris*), common knapweed (*Centaurea nigra*) and common ragwort (*Senecio jacobaea*).

## Erwain

Meadowsweet (*Filipendula ulmaria*) is a tall, sweet-smelling herb associated with wet and often shaded sites. For some reason, on the Castell Gwallter fields it is found only in this corner of field 4 and not in the wet parts of fields 5 and 6. The cattle appear to like grazing it.

16.8.2015

## Llysiau'r angel

Wild angelica (*Angelica sylvestris*) is a tall perennial of damp places.

16.8.2015

The cattle seem to be especially fond of eating wild angelica!

16.8.2015

## Marchrawnen y dŵr

The emerging shoots of water horsetail (*Equisetum fluviatile*), again, only found in this corner of field 4. It prefers wet habitats and is described as 'frequent' in Ceredigion by Chater.

22.4.2015

## Eidral

Ground ivy (*Glechoma hederacea*) seems to be associated with damp habitats on the Castell Gwallter fields. In the northwest corner of field 4 it grows in a large carpet/patch. Bumblebees are often to be seen visiting the flowers.

22.4.2015

## Serenllys y gors

Bog stitchwort (*Stellaria alsine*) is a plant of wet, fairly fertile, slightly acidic soils. It is described as common in the flora of Ceredigion.

10.5.2015

## Fioled gyffredin

Common dog-violet (*Viola riviniana*) extends from the woodland into field 4 where brambles dominate. It is pollinated by bees.

22.4.2015

## Ytbysen y ddôl

Meadow vetchling (*Lathyrus pratensis*) is scrambling species that can compete with other tall species but cannot tolerate shade or disturbance.

6.6.2010

## Animal and bird life

Though not surveyed for specifically, these are some of the creatures heard or photographed in field 4. For a full list of animal and bird life seen in field 4, see Appendix 2, p62.

## Troellwr bach

A Grasshopper warbler was heard singing on a number of occasions during April 2010 and again in April 2016. Grasshopper warblers eat insects and migrate to Wales in the summer to breed. They have a distinct trilling call. Unfortunately this bird has decreased in numbers in the UK dramatically over the last 25 years (at least a 50% decline). Their preferred habitat is scrub and thick grassland so, in theory, the Castell Gwallter fields should be perfect habitat for them.

## Hen wrach

Mother Shipton moth (*Callistege mi*). This is a common type of moth that flies in the day. Its caterpillars feed on clovers (this adult is feeding on common bird's-foot-trefoil). The moth gets its common name due to the similarity of its wing pattern to the profile of a legendary witch – Mother Shipton!

6.6.2010

## 3.7 Field 5

(for full species list and English and Welsh names see Appendix 1, p55)

25.5.2015

Six different areas of vegetation were identified with a total of 54 species of higher plants.

Field 5 is generally wet underfoot all through the year. Rushes, either soft rush (*Juncus effusus*) or patches of sharp-flowered rush (*J. acutiflorus*) dominate the majority of the field with associated herbs such as common sorrel (*Rumex acetosa*), common marsh-bedstraw (*Galium palustre*), heath wood-rush (*Luzula multiflora*), marsh thistle (*Cirsium palustre*), meadow buttercup (*Ranunculus acris*), curled dock (*Rumex crispus*) cuckoo flower (*Cardamine pratensis*), common knapweed (*Centaurea nigra*), short-fruited willowherb (*Epilobium obscurum*), silverweed (*Potentilla anserina*), bog stitchwort (*Stellaria alsine*), greater bird's-foot-trefoil (*Lotus pendunculatus*) and sneezewort (*Achillea ptarmica*).

At the southern and eastern margin of the field are some spring up-wellings with species associated with these wetter conditions e.g. sweet-grass species (*Glyceria sp.*), water forget-me-not (*Myosotis scorpioides*), water-starwort species (*Callitriche sp.*), round-leaved crowfoot (*Ranunculus omiophyllus*), greater bird's-foot-trefoil (*Lotus pendunculatus*), marsh willowherb (*Eopilobium palustre*), marsh thistle (*Cirsium palustre*) and water purslane (*Lythrum portula*).

Along the southern edge is also a patch with purple moor-grass (*Molinia caerulea*) and sharp-flowered rush (*Juncus acutiflorus*). Associated with these areas are patches of tormentil (*Potentilla erecta*) and marsh violet (*Viola palustris*).

In the south-east quarter of the field are patches of shorter vegetation dominated by the patch-forming sedge, carnation sedge (*Carex panicea*).

Towards the northern end of this field are some drier slightly domed patches of ground. Here the vegetation is dominated by fine-leaved grasses and herbs such as yellow rattle (*Rhinanthus minor*), ribwort plantain (*Plantago lanceolata*), common knapweed (*Centaurea nigra*), dandelion (*Taraxacum)* and carnation sedge (*Carex panicea*).

## Fioled y gors

Marsh violet (*Viola palustris*) grows where the soil is acidic and wet. It is an early-flowering species and is pollinated by bees. After flowering the leaves seem to increase in size and are more obvious in the sward.

17.4.2015

## Crafanc-y-frân y rhostir

Round-leaved crowfoot (*Ranunculus omiophyllus*) grows in field 5 where there are areas of muddy wet seepages. It is common in Ceredigion and is a member of the buttercup family.

18.4.2009

## Ysgallen y gors

Marsh thistle (*Cirsium palustre*) is a common plant in Ceredigion. On the Castell Gwallter fields it grows on the wetter areas in all of the fields. It is a tall thistle with purple flowers, much-visited by bumblebees.

Here is a common carder bee (*Bombus pascuorum*) taking nectar from the marsh thistle flower. In the background you can see where the (tasty?!) top of the thistle has been nipped off by grazing cattle.

24.8.2015

Monkeyflower (*Mimulus guttatus agg.*) was found in 2009 but has now disappeared from the Gwallter fields. The following message was sent by Arthur Chater, the then botanical recorder for Ceredigion: 'What an interesting place to find *Mimulus* – it is not at all a common plant. Unfortunately the photos do not really show the corolla clearly enough, whether the throat is closed or open, and what the spots of orange-brown, if any, are like. It is presumably either *M. x robertsii* with open throat and usually rather conspicuous spots or blotches, or more likely *M. guttatus* with closed throat and more often without blotches or spots. The former is variably glandular-pubescent in the inflorescence, the latter always rather densely so. *M. guttatus* is at Bow Street, on the Brook just below the footbridge down the road from Garn Chapel, and it is in the same stream at Llangorwen.'

6.6.2010

## Sgorpionllys ymlusgol

Creeping forget-me-not (*Myosotis secunda*) can live on acidic and more neutral soils that are wet. It is a common species in Ceredigion and is pollinated by flies and bees.

4.6.2015

## Blodyn ymenyn

Meadow buttercup (*Ranunculus acris*) is most common on the Castell Gwallter fields in the wet areas of field 5. It is a common perennial species in Ceredigion, able to live in wet and damp habitats but not usually very dry soils. Its open, relatively simple flowers are pollinated by a wide range of insects.

25.5.2015

## Llafnlys bach

Lesser spearwort (*Ranunculus flammula*) is also in the buttercup family but it is able to live in much wetter soils. In common with all buttercups both of these species are avoided by grazing animals due to their toxicity. 16.8.2015

## Ystrewlys

Sneezewort (*Achillea ptarmica*) is related to yarrow (*Achillea millefolium*) but prefers wetter soils. It is pollinated by flies and bees and is relatively common in Ceredigion.

16.8.2015

## Briwydd y gors

This delicate flower is marsh bedstraw (*Galium palustre*), a perennial plant that scrambles up and is supported by other, tougher-stemmed species. It prefers wet, moderately acidic soils and is pollinated by beetles and flies. Another bedstraw species, briwydd wen (heath bedstraw, *Galium saxatile*) grows on the nearby hedge bank (hedge N) and prefers much drier and acidic soils. Both species are common in Ceredigion. 16.8.2015

## Grug

The hedgebank associated with hedge N on the eastern side of field 5 has a range of species that prefer more acidic soils. Heather (*Calluna vulgaris*) grows on the bank and is possibly a relic of more poorer, more acidic vegetation that could have been found on the Castell Gwallter fields (heath or rhos-type vegetation) in the past.

Heather has a sweet, honey-like smell and is much favoured by bees. There are about 6 plants on this hedgebank.

16.8.2015

## Eithinen fân

Western gorse (*Ulex gallii*) is found on the eastern edge of field 5. This species flowers in the late summer and is generally shorter and less robust that common gorse (eithinen Frengig, *Ulex europaeus*). It also prefers acid soils that are not waterlogged.

18.9.2015

## Animal and bird life

Though not surveyed for specifically, these are some of the creatures seen or photographed in field 5. For a full list of animal and bird life seen in field 5, see Appendix 2, p62.

**Gïach gyffredin** – common snipe. A small flock (about 15-20 birds) usually fly up from field 5 in the winter. The wet ground is perfect for them as snipe need soft ground to probe their beaks into to find invertebrates to eat. Snipe from northern Europe come to Wales in the

winter. Snipe also breed in Wales but have declined as a breeding bird (a 62% decline between 1982 and 2002 in England and Wales) due to habitat loss.

## Broga

The common frog (*Rana temporaria*) lays its spawn in the small pools and the shallow ditch alongside the footpath in field 5. Frogs are eaten by a number of predators including grass snakes. Frogs eat invertebrates such as flies and spiders and usually hibernate in the winter in damp mud or leaves.

17.4.2015

## Madfall ddŵr balfog

The palmate newt (*Triturus helveticus*) also prefers to lay its eggs (singly, each attached to a water plant leaf) in small pools away from the threat of predation by fish, so often tadpoles and newt tadpoles can be found in the same pool!. Adult newts live on land most of the year but have to return to water to breed. They eat a range of aquatic and terrestrial invertebrates.

13.4.2016

## Mursen las asur

This is an azure damselfly (*Coenagrion puella*), a common species in Wales. Damselflies are more delicate than dragonflies with slender bodies and weaker flight. They also hold their wings above their body at rest (dragonflies hold their wings out the sides of the body at rest). The nymphs of damselflies also live in water.

4.6.2015

## 3.8 Field 6

(for full species list and English and Welsh names see Appendix 1, p55)

31.8.2015

Six different areas of vegetation were identified with a total of 51 species of higher plants.

Field 6 has a damp, spring-fed central area that is dominated by rushes (soft rush (*Juncus effusus*) and patches of sharp-flowered rush (*J. acutiflorus*)). Associated with this wet area are herbs such as common sorrel (*Rumex acetosa*), common marsh-bedstraw (*Galium palustre*), marsh thistle (*Cirsium palustre*), meadow buttercup (*Ranunculus acris*), cuckoo flower (*Cardamine pratensis*), common knapweed (*Centaurea nigra*), and bog stitchwort (*Stellaria alsine*). There is also another, smaller, very wet, rush-dominated patch at the south western end of the field and a similar one on the eastern side of the field with species such as sweet-grass species (*Glyceria sp.*), common sorrel (*Rumex acetosa*), creeping buttercup (*Ranunculus repens*), marsh thistle (*Cirsium palustre*), cuckoo flower (*Cardamine pratensis*), wavy bitter-cress (*Cardamine flexuosa*), bog stitchwort (*Stellaria alsine*), common marsh-bedstraw (*Galium palustre*), curled dock (*Rumex* crispus), and common nettle (*Urtica dioica*).

There is a sizeable patch of bramble and scrub at the north eastern end of the field.

The rest of the field has grass-dominated vegetation with associated species such as ribwort plantain (*Plantago lanceolata*), meadow buttercup (*Ranunculus acris*), common knapweed (*Centaurea nigra*), red clover (*Trifolium pratense*), cat's-ear (*Hypochaeris radicata*), bulbous

buttercup (*Ranunculus bulbosus*) common bird's-foot-trefoil (*Lotus corniculatus*), tormentil (*Potentilla erecta*), green-ribbed sedge (*Carex binervis*), and heath-grass (*Danthonia decumbens*).

The northern end of field 6 has a number of decaying farm buildings (timber and corrugated iron roofs) only one of which remains standing. There are also a number of pre-war farm implements (e.g. horse-drawn plough, horse gin, chaff-cutter, cart-wheels). This area is surrounded by 7 (mainly) mature beech trees. The ground is littered with beech nuts and the dense shade of the beech trees allows few plants to grow.

21.3.2015

**Pysen y ceirw** Common bird's-foot-trefoil (*Lotus corniculatus*) is a plant of unshaded, slightly acidic and well-drained soils. Bees like to visit the flowers.

9.5.2011

## Hesgen ddeulasnod

Green-ribbed sedge (*Carex binervis*) is a species of acidic soils, usually, in Ceredigion a plant of upland habitats.

2.5.2010

## Brithdegyll cylchog

This mushroom is possibly banded mottlegill *(Panaeolus cinctulus)*.

9.11.2014

## Blodyn-ymenyn bondew

Bulbous buttercup (*Ranunculus bulbosus*) is a plant of neutral, dry grasslands. When in flower it is easy to identify by its down-turned sepals. The soil characteristics of field 6 must be quite diverse!

10.5.2015

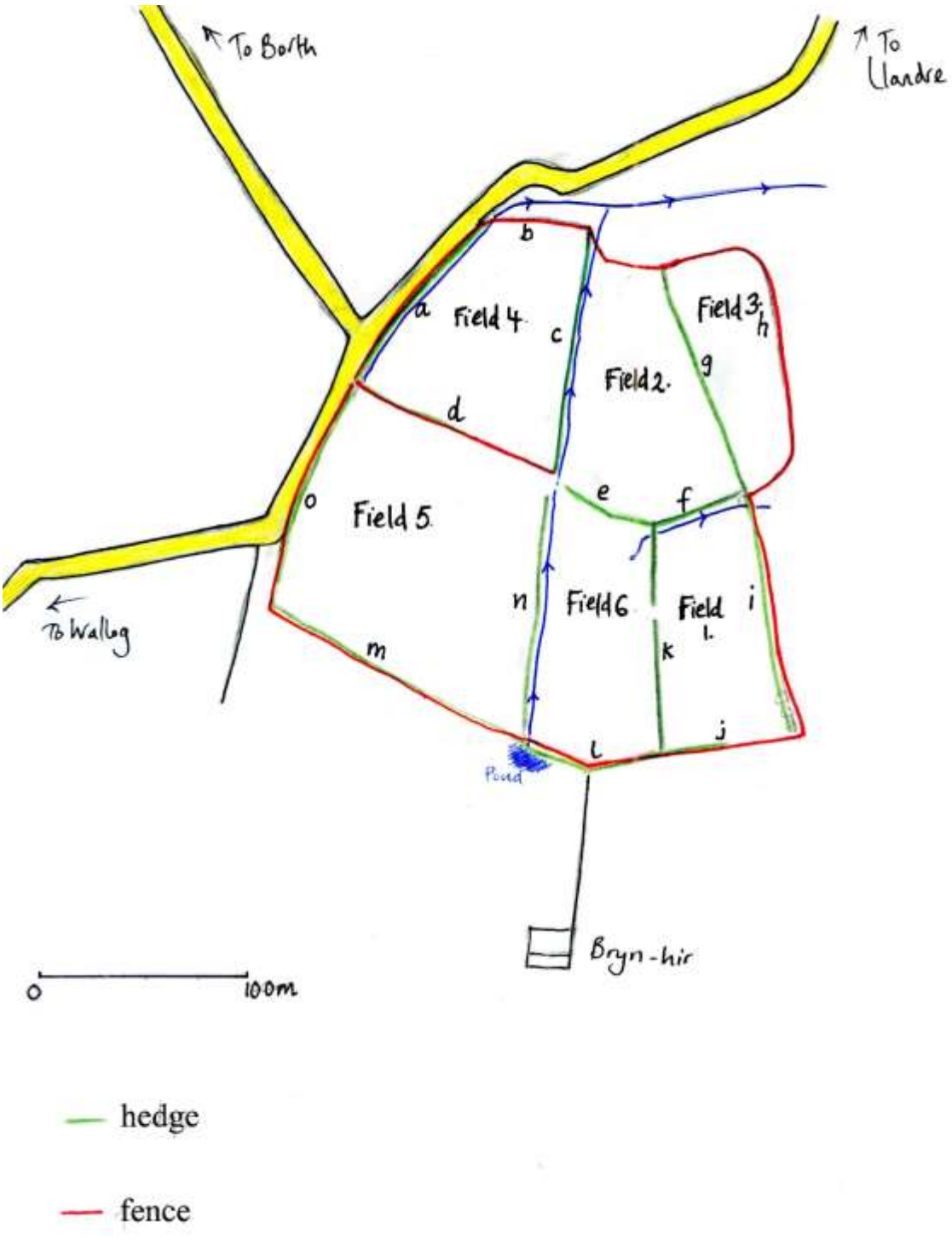
## Animal and bird life

Though not surveyed for specifically, see Appendix 2, p62 for a list of animal and bird life seen in field 6.

## 3.9 Hedgerows and boundaries survey

## For full descriptions of the boundaries see Appendix 3, p65.

(For full species list and English and Welsh names see Appendix 1, p55)



**Summary – hedgerows and boundary survey**

The six fields are grazed as one unit. The outer boundary is fenced apart from the north west end of field 4.

Fifteen boundaries were looked at.

Hedge and stockproof fence - 8 boundaries

Stockproof fence only - 2 boundaries

Hedge – non-stockproof 5 boundaries

**Hedges – species composition.** The hedges on the Castell Gwallter fields are quite varied in age and composition.

**Possibly young/more recent hedges** – hedge A (grey willow-dominated), D (hawthorn, blackthorn, common gorse dominated) and K (hawthorn dominated)

**Possibly older hedges** –appear to be associated with hedge banks – hedge C, E, F, G, I, N (species include hawthorn, sessile oak, blackthorn, holly, ash, hazel, elder, beech, sycamore, grey willow, rowan). More unusual species include Turkey oak, bullace, yew and wild cherry. It is generally assumed that older hedges contain more species of tree per 30m length than younger hedges (see Chater's county flora for a discussion of this in relation to Ceredigion).

**Indeterminate age** – hedge J, L, M, O (species include hawthorn, hazel, blackthorn, common gorse, sycamore, grey willow, wych elm)

## Draenen ddu

Blackthorn blossom is a delight in early spring, both for humans and bees. To the bottom right of the picture is a type of epiphytic (an epiphyte grows on another plant for support) lichen, one of the many epiphytic mosses and lichens growing on hedgerow twigs on the Castell Gwallter fields.

22.4.2015

# 4. Farming on Castell Gwallter fields

16.8.2015

**Farming in the past**

The presence of the pre-war, horse-drawn farm machinery in field 6 is a link back to the sheer amount of work, variety of tasks undertaken, diversity of crops grown and animals looked after on the Castell Gwallter fields in the past. Over time mixed farming has been replaced by permanent pasture.

**Farming in the present day**

When the author first started looking at fields in 2002 they were grazed lightly, altogether as one unit by cattle, in the winter months. Grazing intensity appears to have decreased over time since about 2005 and grazing now takes place during the summer months. The management generally encourages wild flowers to thrive although the very light levels of grazing is allowing the grasses and scrub to increase and some smaller species which require open, unshaded conditions have disappeared. Brambles and rushes are periodically topped in the autumn.

The fields appear to occasionally receive a dressing of pelleted fertiliser. It is likely that they have received regular dressings of farmyard manure over the years. A small lump of lime was found where the brambles were cut back in October 2014 – it is thought historically (not known if practice continued recently) that lime was probably spread to reduce acidity in the Castell Gwallter fields. Perhaps lime was transported from the lime kiln nearby at Wallog which was in use from about the 1830s.

In an attempt to dry out the public footpath in field 5, a ditch was dug by the side of the path in about 2010.

The brambles on the ramparts of Castell Gwallter have been cut back periodically. A photograph from a collection made by David Williams between 1905-1920 shows Castell Gwallter to be bare and grass-covered and devoid of any woody plants. The photograph is

held by the Royal Commission on the Ancient and Historical Monuments of Wales, Aberystwyth.

Two photographs taken by Arthur Chater (botanical recorder for Ceredigion until recently) on 10th May 1957 are compared below with photos taken from roughly the same places on 18th March 2016.

Taken from SN62008674 looking ENE.
10.5.1957
Arthur Chater

Taken from SN62008674 looking ENE.
18.3.2016

Taken from the eastern side of the motte and bailey, looking north west.

10.5.1957

Arthur Chater

Taken from the eastern side of the motte and bailey, looking north west.

18.3.2016

The photos taken in 1957 show that the shape of the motte and bailey could be easily seen at at distance. The vegetation appears to be rough grassland with some gorse and possibly heather.

# 5. Conclusions

This survey has found that the Castell Gwallter fields are home to at least 169 species of wild plants (9 ferns and allies, 28 trees/shrubs, 35 grasses and allies, 97 herbs). The plants, in turn, form the habitat for 15 species of butterfly, at least 4 species of bumblebee and many other insects, spiders and other invertebrates that are directly or indirectly food for at least 10 different mammal species, 25 species of bird, 3 reptiles and 2 amphibian species.

Most of the animals or plants found at Castell Gwallter are relatively common. However a number of them are declining in Wales and the wider countryside. Grass snake, common lizard, grasshopper warbler, spotted flycatcher, song thrush and common bullfinch are all UK Biodiversity Action Plan priority species (a list containing the most threatened species that require conservation action) and woodcock and mistle thrush have recently been added to the red list of birds of conservation concern drawn up by UK bird conservation charities. In addition, the pink waxcap fungus is extremely sensitive to chemical pollution and soil nutrient enrichment – so places like the Castell Gwallter fields are extremely valuable for this species and the other waxcap/grassland fungi.

In my opinion it is the density and variety of wild plants over the 6 fields and the habitats they form that make the Castell Gwallter fields special in their own way. Fields, like these, are becoming harder and harder to find. Pastures and meadows with a lot of different wild flowers make up less than 3.3% of the entire agricultural area in Wales. Typical pastures or silage fields today will contain at most 10 species of wild flower. The Castell Gwallter fields contain an average of 56 species with an additional 22 species that are only associated with the hedgerows. It is said that Wales has lost over 98% of its species-rich wild flower meadows over the last 40 years.

Please bear in mind however the limitations of this survey - many aspects of the fields were not looked at! For example soil biology (e.g. worms, woodlice, mites, millipedes, centipedes, mites and sprintails), fungi other than the most obvious, lichens, mosses and yet more above-ground-dwelling invertebrates such as slugs and snails…not to mention galls and all those invertebrates associated with dung, pools, springs and the stream. An investigation/ collation of data relating to the human history of these fields would also be fascinating e.g. age of boundaries, enclosure, farming practices, use of wild plants as animal/human medicines, construction of the motte and bailey, additional old photographs etc.

However, despite its limitations, this survey has shown that the Castell Gwallter fields are a very valuable space in our landscape for our local and special species and the habitats that they together form. The vast majority of the species recorded are to be found here because of the way the fields have been farmed i.e. they have been grazed with with cattle rather than sheep, they have received low, if any artificial fertiliser applications, thay have not been recently re-seeded or drained and their old hedgerows and trees have been kept. A visit to these fields for anyone with an interest in our natural and human history would not be disappointed as they are in my opinion, a beautiful, unique and fascinating place to be.

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