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Sustainability in the Early Years ECEY605/C

51.899° N, −3.560° W

DISCOVER

Cwm Senni is a small, picturesque valley in the heart of Bannau Brycheiniog. It is nestled by Fan Hir, Fan Nedd, Fan Brynich and Cwm Du and is located just north of the Fforest Fawr section of Bannau Brycheiniog.
As you speed along the A470 towards Cardiff or the A4067 towards Swansea, you might easily miss the sign for Heol Senni, the little hamlet at the heart of the valley. In fact, you will probably be unaware of its existence. This means that the valley has been left unspoiled and relatively unchanged.

For generations, my ancestors have farmed in the valley, and my home is a farm called Cefnfedw Ganol. I am the seventh generation to have lived in this beautiful and historical farmhouse, in the tradition of the Welsh long house.

DISCOVER

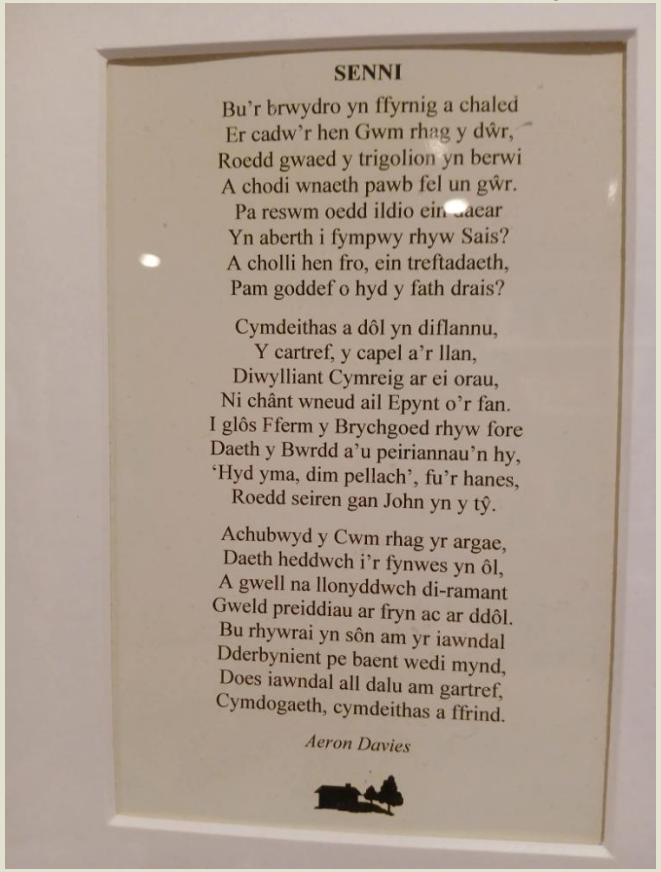
There are those who claim that the valley derives its name from the river Seine in France and the story goes that the valley was given this name by one of William the Conqueror's Norman soldier who was reminded of the river back home in France. Who knows but what is not in doubt is that the Normans left their influence on the valley. Some call the Senni valley the Havard valley. My name is Beca Havard Hiscocks and at one time every farm in the valley was occupied by Havards, who were the descendants of Bernard Neufmarche, one of the first Norman conquerors in Wales.

But the history of Cwm Senni goes back much, much further than the 11th century. Humans occupied the Valley as evidenced by a bronze age axe found by a local farmer when ploughing his field. The standing stone at Maen Llia goes back even further. The Romans visited the valley and left the Roman Road called Sarn Helen. There is an iron age hill fort above my home and the remains of a catholic church scattered all over the valley. The more recent history and troubled chapter in the history of the valley was the campaign to save it from being drowned to create a reservoir to supply water to Cardiff's growing population and industry. The campaign to save the valley lasted 10 long years and was led by my grandfather.

Why I choose to discover this area:

One of the main reasons the valley was ideal for creating a reservoir was its rich sandstone soil which characterises Breconshire. But there was one area of the farm which was totally unsuitable for cultivation. Over 50 years ago, my grandfather planted around an acre of larch and spruce trees. in an area of wet ground.
By 2020 they had come to full maturity and were felled for timber. On advice from Natural Resources Wales, we decided not to replant the area with fir trees as we were told that this plot represented a rare and precious habitat, namely a **wetland woodland.** Since 2020, the plot has been regenerating itself with native species adapted to this special environment.

For my sustainability project, I decided to concentrate on this remarkable habitat and to explore and discover the diverse species of native trees, grasses and birds that now inhabit the area. To do this, I isolated a section of the woodland and identified the species in that particular section.



SENNI

Bu'r brwydro yn ffyrnig a chaled
Er cadw'r hen Gwm rhag y dŵr,
Roedd gwaed y trigolion yn berwi
A chodi wnaeth pawb fel un gŵr.
Pa reswm oedd ildio ein tiaear
Yn aberth i fympwy rhyw Sais?
A cholli hen fro, ein treftadaeth,
Pam goddef o hyd y fath drais?

Cymdeithas a dôl yn diflannu,
Y cartref, y capel a'r llan,
Diwylliant Cymreig ar ei orau,
Ni chânt wneud ail Epynt o'r fan.
I glôs Fferm y Brychgoed rhyw fore
Daeth y Bwrdd a'u peiriannau'n hy,
'Hyd yma, dim pellach', fu'r hanes,
Roedd seiren gan John yn y tŷ.

Achubwyd y Cwm rhag yr argae,
Daeth heddwch i'r fynwes yn ôl,
A gwell na llonyddwch di-ramant
Gweld preiddiau ar fryn ac ar ddôl.
Bu rhywrai yn sôn am yr iawndal
Dderbynient pe baent wedi mynd,
Does iawndal all dalu am gartref,
Cymdogaeth, cymdeithas a ffrind.

Aeron Davies

Here a poem by Aeron Davies on Senni.

EXPLORE

On one evening in May, I recorded and identified the birdsong in the woodland plot. I then researched the birds I had identified and was shocked to discover how many of them were on the AMBER LIST of UK Birds of Conservation Concern.

I was able to take photographs of some of the birds, such as the dunnock, the blue tit, the song thrush , the wren and the garden warbler. I used the Merlin app to record and investigate the birds and their song.

WILLOW WARBLER

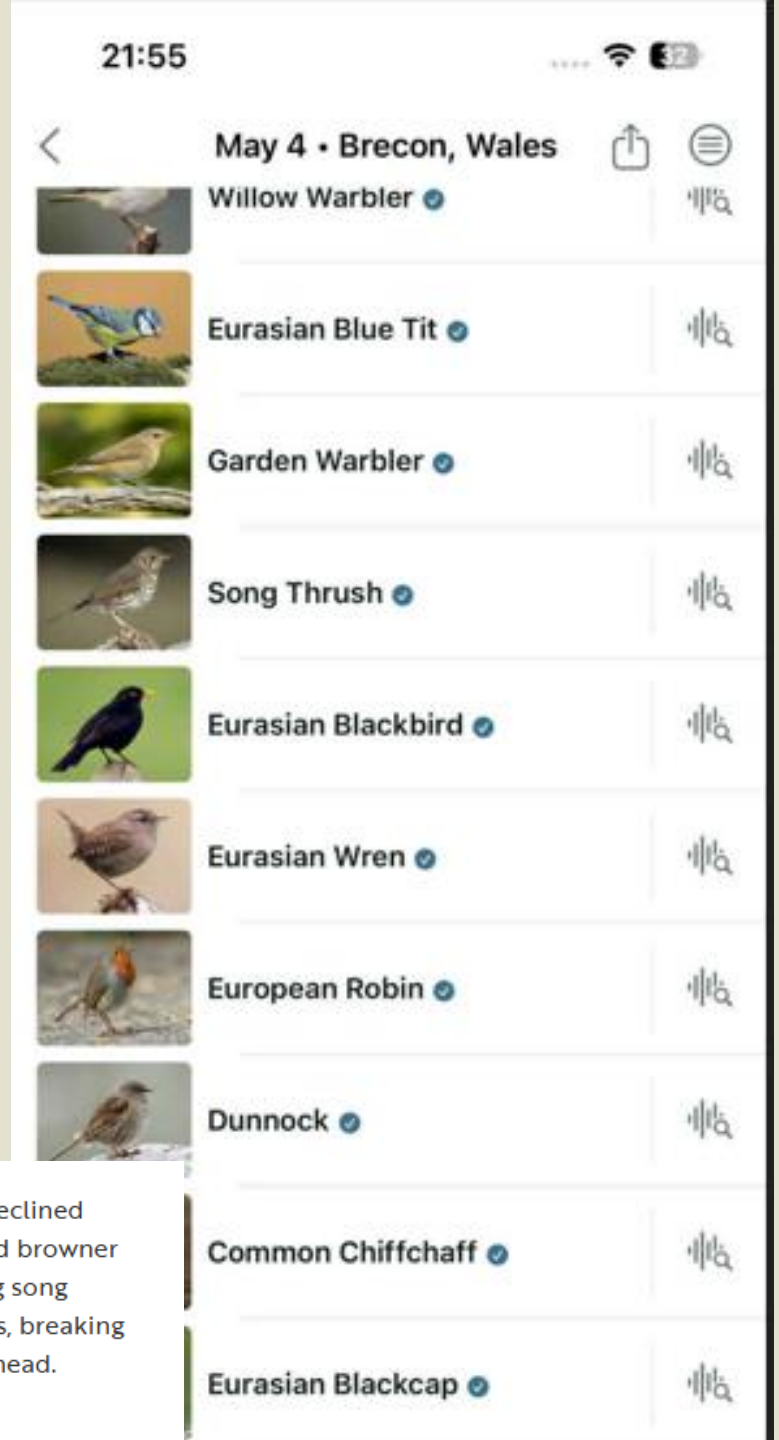
https://xeno-canto.org/26756

Willow Warblers are small birds with grey-green backs and pale under parts. They have a yellow tinged chest and throat and pale supercilium (the stripe above the eye). They are separated from the very similar Chiffchaff by their song. Their population, especially in southern Britain, has undergone a moderate decline over the past 25 years making them an Amber List species.

SONG THRUSH

https://xeno-canto.org/26981SONGTHRUSH

A familiar and popular garden songbird whose numbers have declined significantly on farmland and in towns and cities. It's smaller and browner than a Mistle Thrush with smaller spotting. Its habit of repeating song phrases sets it apart from singing Blackbirds. It likes to eat snails, breaking into them by smashing them against a stone with a flick of the head.



DUNNOCK / HEDGE SPARROW

The Dunnock is a small brown and grey bird. Quiet and shy, it's often seen on its own, creeping along the edge of a flower bed or near to a bush, moving in a rather nervous, shuffling way, often flicking its wings as it goes. When two rival males come together they become animated with lots of wing-flicking and loud calling.

https://xeno-canto.org/27116DUNNOCK

These birds are on the AMBER LIST on the UK list of Birds of Conservation Concern. This means there is an increasing concern for the species, which can suffer declines following cold winters.

A colourful mix of blue, yellow, white and green makes the Blue Tit one of our most attractive and most recognisable garden visitors. In winter, family flocks join up with other tits as they search for food. A garden with four or five Blue Tits at a feeder at any one time may be feeding 20 or more.

https://xeno-canto.org/28208 BLUETIT

WREN

The Wren is a tiny brown bird, although it's heavier and not as slim as the even smaller Goldcrest. It's almost round in shape with a fine bill, quite long legs and toes, very short round wings and a short, narrow tail, which is sometimes stuck up vertically. For such a small bird, it has a remarkably loud voice. It's the most common UK breeding bird, and a common garden visitor, although it suffers declines during prolonged, severely cold winters.

https://xeno-canto.org/27114 WREN

GARDEN WARBLER

A very plain warbler with no distinguishing features (a feature in itself!). It spends a lot of its time in the cover of trees and bushes and can be more difficult to see than its relative, the Blackcap. Despite its name, it is not really a garden bird except in mature gardens next to woods. Its song is similar to that of a Blackcap, but has longer mellow phrases.
https://xeno-canto.org/30101GARDEN WARBLER

The Blackcap is a distinctive greyish warbler. The top of the male's head is black (its black cap) while the female's is chestnut brown. Its delightful fluting song has earned it the name 'northern nightingale'. Although primarily a summer visiting bird from Germany and north-east Europe, Blackcaps are increasingly spending the winter in the UK.
https://xeno-canto.org/29723BLACKCAP

The **CURLEW** is a cherished part of the Welsh landscape and Wales boasts vital breeding grounds for the birds. One of the breeding sites is above the woodland plot in my project.
Recent decades have seen a dramatic decline in their numbers. Not enough chicks are surviving to maintain the population. The decline is driven by several factors: changes in land use, changes in farming methods and higher predation on eggs and chicks.
Curlew exhibit a remarkable trait called "site infidelity" which drives them to return to the same breeding grounds year after year. One such breeding ground is close to the woodland area in my project and very year we hear the sound of the curlew pair in exactly the same place.
The future of the curlew depends on farmers and, together with the farmer who rents the land around the woodland plot, we are working with the Curlew Recovery Project in Banau Brycheiniog National Park .

DID YOU KNOW ?

Curlews nest in well-hidden scrapes in the ground. Their camouflage makes them easy to miss.,

The end of the curlew's bill is sensitive and acts like tweezers, which enables it to feel around in thye mud for prey.

Once fledged, the curlew can live up to 30 years.

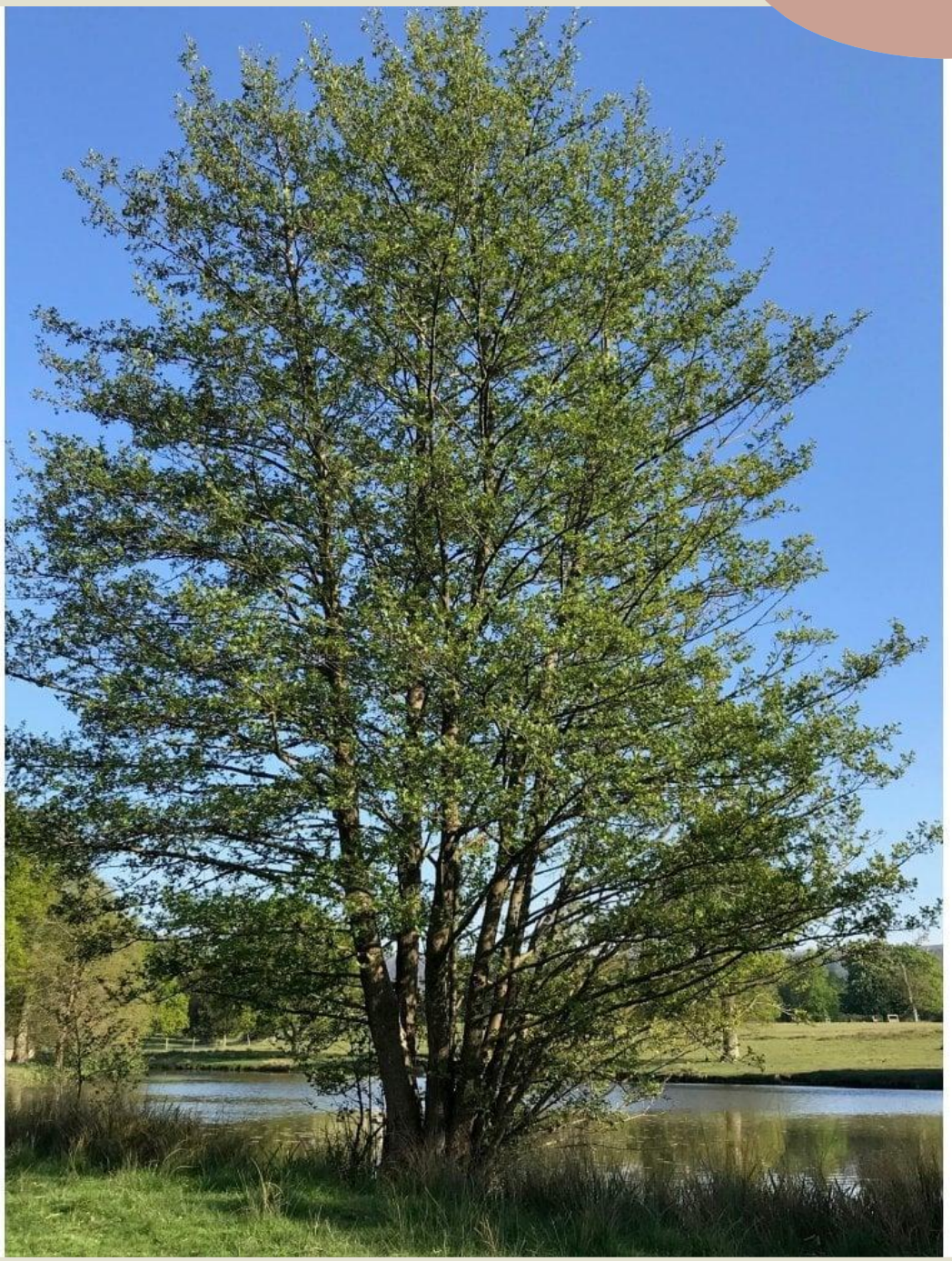
Chicks eat a range of invertebrates and need a mixed vegetation structure to provide food, shelter and cover form predators, all of which are in abundance in the woodland plot and around it

The curlew is most vulnerable during the first few weeks as a curlew chick takes six weeks to fledge.

The call of te curlew is a loud distinctive "curl-oo" sound. This sound becomes louder and raucous when the bird is alarmed.

CURLEW

These photos were taken in mid May on Mynydd Illtud, not far from the woodland.



In the plot of woodland which I isolated to study the wildlife, these are the trees I was able to identify by using the Woodland Trust app.

ALDER

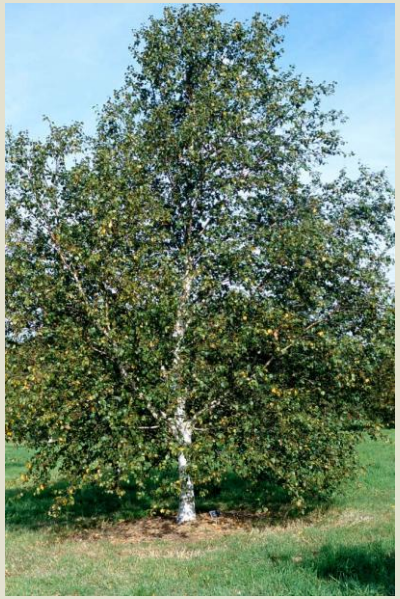
The alder is particularly important for nitrogen fixing because of a bacterium found in its root. It absorbs nitrogen from the air and makes it available to the tree. The symbiotic relationship between tree and bacterium improves the fertility of the soil.

It is ideal for the area of woodland in my project because the alder thrives in damp, cool areas and sometimes occurs in mixed woodland. It grows well form seed and and quickly colonise bare ground .

Alder is the food plant of several moths, and catkins supply and early source of nectare for bees. The wet conditions in this woodland are ideal for a number of mosses , lichens and fungi which are found in abundance in my woodland . Some alders have been infected by a type of fungus but a visit fromn Natural Resources Wales confirmed that the alder in my woodland were healthy and thrivinbg. bacterium absorbs nitrogen from the air and makes it available to the tree.

Downy Birch & Silver Birch

- Downy Birch is found on damper soils that silver birch and can tolerate waterlogged or peaty conditions. Because birch trees create a light, open canopy, they provide the perfect conditions for grasses , mosses and bluebells (see photo). I have not yet been able to identify the grasses in my plot, but that is something I wish to try to do in the next stage of my study.
- Downy birch provides food and habitat for more than 300 species, and woodpeckers and other hole-nesting birds often nest in the trunk. I didn't spot a woodpecker on the day I recorded birdsong, but I have often heard its distinctive knocking sound in the woodland. That is also true of woodpigeons.
- There are also Silver Birch trees in the plot. Silver Birch can be easily confused with Downy Birch but the shoots on the Downy Birch are covered in soft hairs whereas the ones on the Silver Birch are hairless. The two easily hybridise.



Goat's Willow

Goat's Willow is often know an pussy willow and after the silky grey male flowers that resemble a cat's paw. It is found in woodland, hedgerows and scrub and on damper ground. Again, my woodland offers the ideal habitat for the Goat's Willlow. It provides an early source of nectare for bees and and its foliage is eaten by caterpillars and a number of moths , making it an important food plant.

HAWTHORN

The Hawthorn can support more than 300 insects and is the food plant for many caterpillars and moths. It provides nectare for bees and its flowers anre eaten by dormice. The dense thorny foliage makes the Hawthorn a fantastic nesting shelter for birds.

Horse Chestnut

There is one tree that does not appear to belong in the woodland area. This is a majestic horse chestnut which was in all iits flowering glory when I photographed it for my project. My Grandfatherbtold a story to explain how it got there. The woodland plot borders on the playground of what was the Heol Senni School. It is thought that pupil playing conkers must have dropped them and a sapling grew from the conker into a glorious tree !

Some photo of the trees and plants

Dicots

These plants here are apart of the Dicots family. They are characterized by having two cotyle in their seeds and include various families such as Asteraceae and Leguminosae.

CONSERVE

Having identified and recorded the species of bird and tree in the woodland plot, for the **CONSERVE** component of my project, I decided to improve the habitat for insects and other creatures, using sections of the trees that had been felled in another small cops. First, I had to gain access to the plot, which had become overgrown with brambles, nettles and other under growth. I didn't want to clear too much of this undergrowth as it is beneficial for a variety of species. I cleared a narrow path into the woodland so that I could record the trees in that area and also record the birdsong. I used wood chip from the other nearby cops that had been thinned out and recycled it to create a natural surface for a short path into the wood. I will be able to maintain this path to gain access into my piece of woodland . This will enable me to monitor and compare species over time and measure the effectiveness of the new habitat I have created. Reusing the wood for this purpose was recommended to me during a visit from Natural Resources Wales.

BEFORE

AFTER

WOODCHIP USED

THE HABITAT I CREATED FOR INSECTS AND OTHER WOODLAND CREATURES.

Here a photo of me carrying wood.

Reflection

On reflection, I've come to realise the variety of birds and plants that exist within just one wet woodland area. It has made me realise the importance of not disturbing what nature has created for us but instead supporting and protecting it.

During this project, I have come to appreciate the small things around us and have developed a stronger urge to conserve them.