

CARMARTHENSHIRE'S STATE OF NATURE – LICHENS



Sausage Beard Lichen © S. Bosanquet



Usnea florida © Alan Hale



Sant Mihangel © T. Greenaway

HEADLINES

- A total of 630 lichen species (including lichenicolous fungi that parasitise lichens) has been recorded in Carmarthenshire since 2000.
- There are 67 'Section 7' Priority Species of lichen species (and two lichen communities) in Wales and 11 have been recorded in Carmarthenshire since 2000 along with the two priority lichen 'communities'
- Wales, for its size, has [the highest diversity](#) of lichen species in the world.
- Lichens are very sensitive to air pollution and are used by scientists to monitor air quality.
- The Sausage Beard Lichen (*Usnea articulata*) was thought to be really rare in the county, but increased recording effort has shown it is more widespread than previously thought in suitable habitat.

OVERVIEW

A lichen is not a single organism; it is a stable symbiotic association between a fungus and algae and/or cyanobacteria.

Lichens occur in a wide variety of habitats, on a range of substrates, e.g. the bark of trees (veteran trees can have especially interesting lichens); on rocks in the uplands and by the coast; on soil, sand or peat. 'Artificial' environments such as old walls, gravestones and wooden/stone gateposts can also be important. Among the "specialities" of Wales are the 'metallophyte' communities found on spoil at the many abandoned lead mines - Mwyngloddfa, Nantymwyn SSSI at Rhandirmwyn includes at least 32 species that are either restricted or prefer metal-rich substrates.

An important factor determining the distribution of lichens is the degree of air pollution. Lichens are extremely pollution-sensitive. In the mid to late 20th century the most important pollutant was sulphur dioxide, produced by coal burning industry and power stations, which, dissolved in water fell as acid rain. This left affected areas devoid of lichens, apart from the "pollution lichen" *Lecanora conizaeoides* which thrived. Thankfully sulphur dioxide levels are now falling in most parts of Britain and some lichens are recolonising areas where they have not been seen for many years.

Today, the effects of nutrient enrichment are becoming more apparent. Increased levels of nitrogenous compounds dissolved in the atmosphere from sources including animal husbandry and vehicle exhaust have reduced or eliminated species sensitive to these pollutants. Particularly sensitive lichens include species of *Cladonia* and *Usnea*. However some species (nitrophiles) can flourish in areas with high levels of nitrogen compound pollution, including the conspicuous bright orange–yellow *Xanthoria parietina*.

Lichen diversity remains high in areas with clean air, both on trees and rocks. Churchyards can be important sites for lichens as the headstones and the churches themselves often provide many rock types and those in rural environments may remain undisturbed for years. St Ishmael's Church near Ferryside is one good example, and also the ancient church of Sant Mihangel in Llanfihangel Rhos-y-Corn. Lichens that slowly grow on headstones confer a sense of age and peaceful tranquillity. They are part of the history of the churchyard. Many parts of Carmarthenshire are under-recorded for lichens, and the County would benefit from additional recording expertise. In some instances, increasing awareness and recording effort has led to an increase in records for some species notably the Sausage Beard lichen.

CURRENT PRESSURES

- Air pollution – ammonia/nitrogen from intensive farming.
- Climate change – it is likely that Mediterranean species will increase in the UK as the climate grows warmer with longer dry spells, while species that enjoy cooler weather, especially in north Britain, may disappear. Epiphytic (tree) species seem to be more resilient than terricolous (soil) lichens.
- Ash Dieback - the implications for lichens of the spread of this disease of ash trees caused by the fungus *Hymenoscyphus fraxineus*, could be very serious.
- Felling of veteran trees.

RECOMMENDATIONS FOR LOCAL ACTION

- Maintain and restore high-quality, resilient habitats through landscape-scale projects.
- Where necessary used species-focused conservation to help conserve key specialist threatened lichen species.
- Promote the survey and description of habitats of high nature conservation interest for their lichens.
- Promote the sympathetic management of key habitats for lichens by issuing guidance and advice.
- Carmarthenshire is still very under recorded and this could be improved by focused surveys.
- Identify opportunities for mentoring/training of lichen recorders.

KEY AREAS

Dinefwr Park, Llandeilo

Allt-Rhyd- Groes, upper Tywi Valley

CASE STUDY

Sausage Beard Lichen (*Usnea articulata*) is an easily recognised, conspicuous species that could be suitable for Citizen Science or school projects. A concerted effort to get new records led to a dramatic increase of sites with this distinctive lichen in the county.



WANT TO FIND OUT MORE?

[Priority Lichens in Carmarthenshire](#)

[Welsh Lower Plant Strategy](#)

[A Lichen Red Data List for Wales, Plantlife](#)

[Lichens in Wales](#)

[British Lichen Society](#)

[Wales Biodiversity Partnership - Lichens](#)

Commented on by County Lichen Recorder 2024