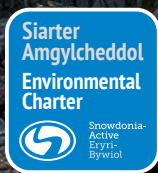


iSee...



North Wales Uplands

Reconciling Conservation and Recreation

Siarter Amgylcheddol Environmental Charter



Snowdonia-
Active
Eryri-
Bywiol

Charter signatories seek to:

- Avoid damage to sites and minimise disturbance to wildlife and the environment
- Ensure all group leaders understand more about the habitats, species, geology and environments of North Wales and how to avoid disturbance and damage
- Encourage others to respect the wildlife, landscapes and community life in and around North Wales
- Work with land managers, statutory bodies and other interested parties to best manage groups on existing sites and consider the implications before developing new sites
- Respect conservation based management plans that have been agreed and publicised
- Show consideration to landowners, residents and other users when parking and operating
- Encourage groups, colleagues and students to respect, protect and enjoy the special character of the region – habitats, species, wildlife, geology, archaeology and manmade structures
- To discuss any essential permanent fixtures with the statutory bodies and relevant parties
- Leave a site cleaner than we find it and take litter home



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HEART OF
ADVENTURE
CALON ANTUR

Visit www.snowdonia-active.org to find out more about Snowdonia-Active. Explore the fantastic range of outdoor activities available in North Wales at www.outdoornorthwales.com

North Wales Uplands

The growing popularity of outdoor activities means that we all need to be aware of the sensitivity of the environment in which our activity is taking place and take steps to minimise our potential impact.

The uplands of Wales are iconic landscapes; supporting rare habitats and species; rich in culture and archaeological interest; visibly illustrating dramatic geological processes. This guide provides an introduction to these special qualities to share with others.

Other guides in the series:

- iSee North Wales Rivers
- iSee North Wales Coast
- iSee Llangollen Canal

Be Adventure Smart: Ask yourself three simple questions before you head off into the Welsh uplands: Do I have the right gear? Do I know what the weather will be like? Am I confident I have the knowledge and skills for the day? From the weather forecast and sunset times to tide times and lots more practical advice, adventuresmart.uk will give you the answers you need to be kitted out and in the know to have a great day and return home safely.

Cymru ~ Wales
**ADVENTURE
SMART**.uk



heaths &
moors

blanket
bog

rocks &
crevices

grassland

wetlands

nature
detectives

nature's
compass

landforms

best practice

unwelcome
visitors

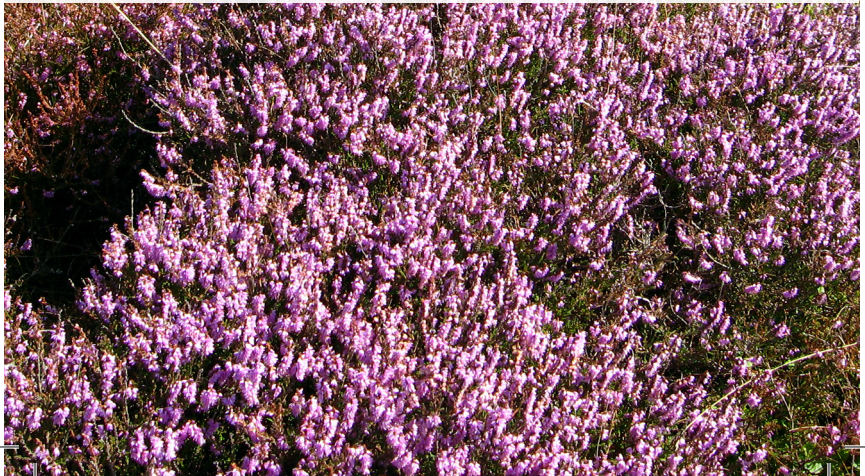


Ruabon Moor



Heaths and Moors

Many perceive the upland heaths and moorlands of Wales as 'wild land', relatively untouched by people. In reality, the character of these often remote expanses commonly reflects hundreds, if not thousands, of years of human interference. The vegetation on our heaths and moorlands below the tree-line is maintained by management practices such as grazing, cutting and burning which prevent scrub and trees moving in. Heather moorland is a fragile and internationally scarce habitat, which has suffered serious declines over the last 50 years.





raven



rowan

Heaths and Moors



◀ The strange shapes which can often be seen on **heather** moorland are the result of a combination of burning and cutting which encourages new heather to grow and provides fresh grazing for sheep.

▶ The place where the male **black grouse** group to display to attract female birds is called a lek. Ruabon Moor, once the grouse shooting capital of North Wales is still home to 80% of Wales' black grouse population.





◀ **Bilberry** bushes are covered in beautiful berries in late summer. They are said to be good for treating varicose veins and haemorrhoids.

▶ **Tormentil** flowers from May to October. The roots yield a red dye, which is still used as an ingredient in the manufacture of artists' colours.



◀ The **adder** is the only snake that can be found as far north as the Arctic Circle. Revered in Wales for its curative properties; powdered adder skin, added to soup, was thought to cure constipation.

▶ The **ring ouzel** is a type of blackbird, *mwyalchen y mynydd* in Welsh (mountain blackbird). They can be seen on rough areas of moorland from April to September.



meadow pipit





Blanket Bog

Upland blanket bogs where peaty soils 'blanket' the hillsides are not only beautiful and inspiring places to visit: The high quality water that drains from them sustains healthy aquatic ecosystems and provides most of our drinking water: Peaty soils contain more carbon than any other soil type. Disturbance to the peat and soils from drainage and changes in land-use can result in releases of carbon dioxide to the atmosphere, thus contributing to climate change.



◀ The welsh name for **butterwort**, *tafod y gors*, translates as 'tongue of the bog'. It grows on poor soils and supplements its diet by trapping insects on its sticky leaves and digesting them.

▼ **Sphagnum moss** species are a major component of peat bogs. Living and dead plants can hold up to 20 times their own dry weight in water inside their cells. The empty cells help retain water in drier conditions. Hence as sphagnum moss grows it can slowly spread into drier areas leading to formation of larger mires such as raised and blanket bogs. It is partial decomposition of sphagnum mosses and associated plants in waterlogged, acidic conditions that leads to the formation of peat.





◀ **Cotton grass** is a sedge not a grass. The fluffy white 'cotton' was once used to stuff pillows, as an alternative to goose down. However, the strands of the 'cotton' are not long enough to spin into thread or weave into cloth.

▶ **Round-leaved sundew** is recognised by its sticky nectar globules, which are used to catch unsuspecting insects. They are said to be medicinal and used to cure anything from warts and corns to asthma and bronchitis.



◀ The **merlin** is the UK's smallest bird of prey.

▶ The **golden plover** can fly up to 88 hours non stop covering 2500 miles.





purple saxifrage



Rocks & Crevices

Communities of arctic alpine plants can be found in some of the rock crevices in the uplands of North Wales. They are botanical relics that link us to a time of melting glaciers, mammoths and permafrost. Arctic alpine species tend to grow in mats or cushions and have short flowering seasons, which means they are protected from the harsh winter weather.



parsley fern



peregrine
falcon

Rocks & Crevices



◀ The **Snowdon lily** is only found on a few inaccessible ledges and rock faces, out of reach of grazing animals. Snowdonia is its only known location within the UK.

▶ **Clubmosses** have been around for nearly 400 million years. Millions of years ago tree clubmosses and other species made up the bulk of organic material from which coal has formed.





◀ Now famously used to flavour gin, in medieval times **juniper** was used to cure a variety of conditions including flatulence, for which juniper oil is still used today.

▶ **Lichen** are actually a mutually advantageous combination of a fungus and an alga. Lichens need clean air to grow and are used as indicators of air quality.



◀ Often found in rocky areas on open moorland, **stonechats** make a call that sounds like two pebbles being struck together.

▶ The **common lizard** is rarely seen because they scurry for cover when disturbed. If attacked by predators they can shed their tail and then grow a new one.





harebell

Grassland

The grasslands of the North Wales uplands are the result of generations of grazing by sheep, goats and in some areas mountain ponies. Over grazing has led to a monoculture of mat grass in some areas. Where grazing has been reduced biodiversity has improved, although other species such as bracken can then become a problem, demonstrating the difficulty in maintaining the balance of nature through careful land management.





**small heath
butterfly**



**starry
saxifrage**

Grassland



◀ **Mat grass** is hard and fibrous and is only edible to sheep in the spring, this means it can spread and dominate in heavily grazed areas. Swathes of mat grass support fewer plant species than areas of more natural vegetation.

▶ **Devil's bit scabious**

According to legend, the devil grew angry about this flower's medicinal properties and tried to get rid of them by biting the roots off. Hence its name 'devil's-bit' scabious.



► The **frog hopper** larvae protects itself with a coating of froth, known as cuckoo spit.



◄ **Hafod a hendre** is the name given to the traditional seasonal movement of livestock in the Welsh hills. Sheep would be moved to the hafod meaning a farm on the higher pastures during the summer (haf is Welsh for summer) and back to the hendre, the main settlement or farm, for the winter. These names are commonplace on our maps.



► **Gorse** has edible flowers, which smell and taste similar to coconut. They can be used as a flavouring agent or used for tea.



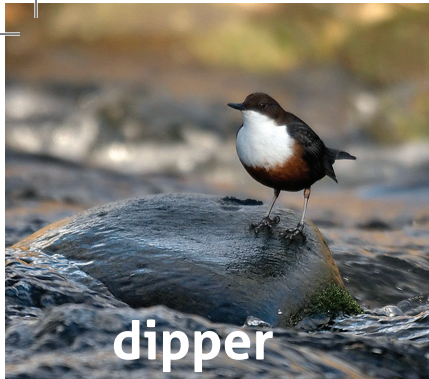


mayfly



Wetlands

Wet upland areas, such as flushes, bogs, fens and swamps, may be on peaty or mineral soils and are waterlogged for most of the year. Plant life is dominated by sedges, rushes, grasses and mosses, and some wetland plants such as bogbean. Upland lakes and streams tend to be acidic and low in nutrients, so naturally do not support many species. Running waters are typically steep, with a bed of rock and cobbles; their flow rates vary with heavy rain and snowmelt. Insects found here include stoneflies, mayflies and caddisflies, which are hunted by salmon and brown trout, and birds like dippers.



dipper



bogbean

Wetlands



▶ **Sedges** can be difficult to tell apart from look alike grasses and rushes so remember 'Sedges have edges, rushes are round, grasses are hollow, what have you found?'.

▶ Rushlights were a type of candle used by the poor in the 17th and 18th century. They were made of **soft rush**, dipped in animal fat.





◀ The female **golden ringed dragonfly** is the UK's longest dragonfly.

▶ Following flowering in July and August, the lovely flower spikes of the **bog asphodel** are replaced with bright orange fruits.



◀ **Common sandpiper** are often spotted near mountain streams, Cwm Idwal is a good place.

▶ **Cross-leaved heath** is a type of heather that gets its name from the distinctive whorls of four leaves that occur along its stems.



Nature Detectives

Become a nature detective by learning to spot some of the many clues visible in the environment around you.

Who goes there? Look for animal tracks in soft ground, especially along rivers and streams.

► **Fox** tracks have four symmetrical toe pads with two in front and two to the side. They are typically diamond-shaped and narrow (50mm long by 35mm wide). Occasionally, it is possible to see impressions of hairs between the pads.



◄ **Otter, mink, stoats and weasels** all have similar tracks; with five toes splayed in a star shape. Claw marks may be visible, especially in soft ground, though they often merge with the toe pads. Otter tracks are the largest (hind foot up to 60mm wide and 90mm long, fore foot a little shorter)

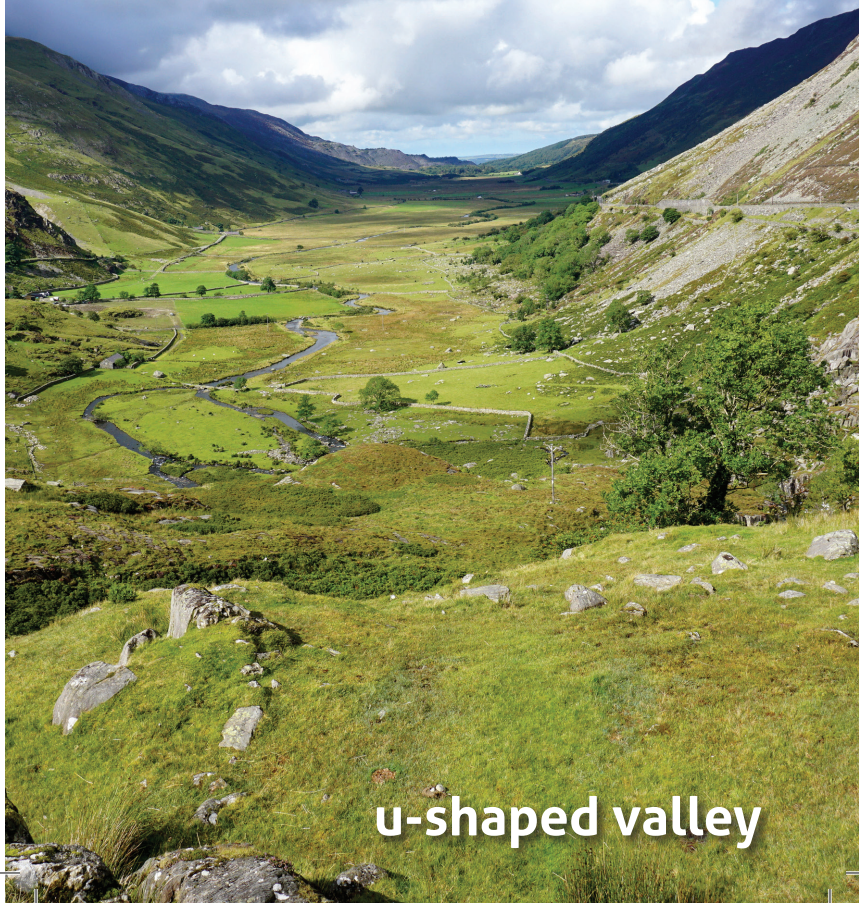
Nature's Compass

Did you know that the shape of exposed trees can tell you which way you are facing?

The shape of exposed trees is often determined by the prevailing wind. In the UK the prevailing wind is from the southwest, which means that the tops of exposed trees often show combing from southwest to northeast.



The sun also affects the shape of trees. The branches on the southern side tend to grow more horizontally, out towards the sun, whereas the shaded northern branches tend to grow up, closer to vertical, in their search for more sunlight. The side that gets the most sun, the southern side in the UK, will also grow more densely and appear 'heavier' than the side that is shaded by the trees' own leaves.



u-shaped valley



Landforms

The geology of North Wales is extremely complex. The rocks are very old, formed around 460 million years ago, and although most of the rocks are volcanic, there are also sedimentary rocks formed by the sea which then covered much of Wales. Add in to this movement of the tectonic plates and erosion by water and ice over millennia and you can begin to fathom the complexity of what you see around you.



◀ **Folding** occurs when rock is compressed over long periods of geological time, such as when tectonic plates collide. Folds are most easily seen in sedimentary rocks, where the bedding planes trace out the pattern of the fold. A great example is the syncline (upward curving concave shape) at the back of Cwm Idwal.

▶ **Glaciation** The mountains we see today have been shaped by 400 million years of erosion by water & ice. Once the mountains of Snowdonia were over 7,000m, but over millennia erosion has worn them down so that the highest peak, Snowdon, is now 1,085m.



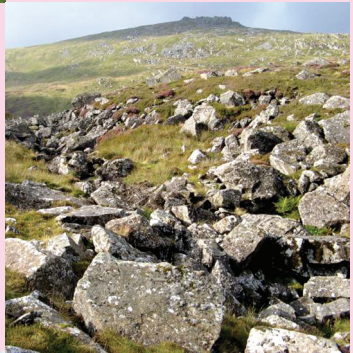
Arête A narrow ridge of rock separating two valleys, such as Crib Goch.





◀ **Erratics** are large irregular boulders, perched in apparently strange places. They have been carried to their resting place in or on the moving ice of glaciers.

▶ **Moraines** are formed when glaciers stop moving and then dump the debris they have been carrying.



◀ **Pyramidal peaks** Angular, sharply pointed mountain peaks shaped by erosion from multiple glaciers converging on a central point.



Best practice guidance

for you to share with your groups, for those less familiar with the mountain environment.



Litter in the mountains is an increasing problem. Add into your session a discussion on the impact of littering and as a group carry out all litter you find. Communicate that there is no 'acceptable' waste, not even that which is biodegradable, such as banana skin and apple cores. It takes 2 years for an orange peel to biodegrade!



Ground Nesting Birds Dogs running free can have significant detrimental effects to the breeding success of ground nesting birds. Under the CROW Act, dogs on open access land must be kept on a short lead between 1 March to 31 July to prevent disturbance to livestock and ground nesting birds.



Wild Swimming

Wild swimming If you are contemplating swimming in upland lakes ensure there is no crosscontamination between water bodies by avoiding swimming in any other lakes prior to your visit. Follow the Wild 'Check, Clean, Dry' campaign guidelines.



Wild Camping

Wild camping is discouraged in the uplands of North Wales. There are many fantastic campsites in the region, ranging from fully equipped to basic. If you are contemplating wild camping then always follow the wild camping code of conduct; try and minimise your visual presence by using an unobtrusive coloured tent and erecting it after dusk. Always support the principle of leaving no trace.



Cairns

Stone cairns damage fragile habitats such as moorland and scree, together with the animals and plants associated with them. They can also cause new footpaths which can exacerbate erosion in the mountains and leads to people not using a map or compass when navigating. Please encourage individuals to refrain from adding to or building stone cairns.

Unwelcome Visitors

Species introduced from elsewhere are known as non-native species. Most don't cause problems; others thrive and can have serious consequences for native wildlife. These are known as invasive non-native species. You can help record sightings at www.cofnod.org.uk - if possible take a picture.

► **Rhododendron** can withstand a wide range of environmental conditions so can outcompete many native plants. It spreads and forms dense stands over large areas, leading to a reduction in the number of native species of plants and insects.



◄ **Himalayan balsam** was introduced as a garden plant in 1839. Its explosive seed pods send seeds into rivers spreading the plants along the banks downstream. Dense stands of Himalayan balsam reduce the growth of native grasses and other plants. In autumn it dies back, leaving the banks bare of vegetation, and more likely to erode.



◀ **Japanese knotweed** was introduced to the UK from Japan in the 19th Century as a garden plant. The invasive root system and strong growth can damage buildings and makes it difficult to control.

Photo credits:

Kris Williams (Front/Back cover), Chris Davies (Ruabon Moor), Maggie Cox bit.ly/2OcjDpH CC¹ (Heaths and Moors), northeastwildlife.co.uk (raven, ring ouzel, sphagnum, cotton grass, sundew, peregrine falcon, lichen, stonechat, common lizard, harebell, small heath butterfly, frog hopper, gorse, mayfly, dipper, bog asphodel, sandpiper), Stuart Maddon bit.ly/2NEdumL CC¹ (rowan), Clwydian Range and Dee Valley AONB (Heather burning), Mark Andrews bit.ly/2N69feM CC¹ (Black Grouse), Andrew Curtis bit.ly/2ld2LK1 CC¹ (Bilberry), CCO (tormentil), Ron Knight bit.ly/2lf4qPr CC¹ (meadow pipit), Richard Law bit.ly/2Dtbau1 CC¹ (Blanket Bog), S Rae bit.ly/2xDbYqV CC¹ (butterwort), bit.ly/2OAY0ko via Wikimedia Commons (Merlin), Derek Harper bit.ly/2OMVK5b CC¹ (golden plover), Nigel Jones (purple saxifrage), bit.ly/2Q61es1 (Rocks and Crevices), Andrew Curtis bit.ly/2N149jQ CC¹ (parsley fern), Velela bit.ly/2DtIUyH CC² (Snowdon lily), Robbie Blackhall-Miles (clubmoss, starry saxifrage), © Can Stock Photo Inc. / MauMyHaTa (juniper), Eirian Evans bit.ly/2NEIN1N CC¹ (Grassland), Malcolm Storey bit.ly/2N1zjY4 (mat grass), bit.ly/2OL2kZU CC¹ (Sedge) Emma Edwards-Jones (devil's bit scabious), Trevor Littlewood bit.ly/2OPWeYl CC¹, Peter S bit.ly/2OPFVL8 CC¹ (Wetlands), Lairich Rig bit.ly/2xRY5om CC¹ (bogbean), Christian Fischer bit.ly/2xBADMy CC² (rushlights), Gail Hampshire bit.ly/2leWUDT CC¹ (golden ringed dragonfly), The Wildflower Society bit.ly/2OPkry1 (cross leaved heath), Dave Webb bit.ly/2leT5yE (otter track), Juan Lacruz bit.ly/2OcaJog CC² (fox track), Geraint Roberts bit.ly/2zsaelR CC¹ (Nature's Compass), Bill Boaden bit.ly/2Q4vcfT CC¹ (U-shaped valley), Arfon Davis (Landforms), Barbara Jones (Folding, Rhododendron), Ray Wood (Glaciation), Garry Smith (Arête, Pyramidal peaks), Chris Andrews bit.ly/2Oa7h1b CC¹ (Erratics), Jonathan Wilkins bit.ly/2Dv3eZn CC¹ (Moraines), Evelyn Simak bit.ly/2leYfup CC¹ (Himalayan balsam), Roger Kidd bit.ly/2OQpM8i CC¹ (Japanese knotweed). CC¹ - bit.ly/1dsePQq, CC² - bit.ly/1kvyKWl, CC³ - bit.ly/1jPpEzg

Other resources:

Nature of Snowdonia: A beginner's guide to the upland environment. Mike Raine (2010) Pesda Press. **Codes for the Countryside:** naturalresources.wales/days-out/the-countryside-codes. **BMC Regional Access Database:** www.thebmc.co.uk/rad

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This booklet is available in Welsh and English

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Waterproof Field Guide to North Wales Uplands

