Plants of Open Habitats

Heather (Ling) *Calluna vulgaris* Fraoch
Bell Heather, *Erica tetralix*
Cross Leaved Heath *Erica cinerea*

The heathers are very important plants of the wild mountainside, covering large areas of heath and the drier parts of bogs and mires. Although most people think of 'heather' as a single species, there are in fact eight species found in the wild in Ireland. Three of these are quite widespread and are found at Gleninchaquin. Heathers are evergreen shrubs of acid soils that develop woody stems as they grow and plants can live for 30-40 years. While it can grow to heights of 100cm, it is more often less than 50cm tall, being kept in check by grazing animals, management (fire) or exposure. The leaves of ling heather, the most abundant type, are tiny, only 2 millimetres long, and are closely pressed against the stem. Bell heather and cross leaved heath have also narrow leaves, but these are somewhat larger and free from the stem. In all of the heathers the leaves are evergreen and are covered in a hard waxy skin which helps to prevent the plant from drying out in harsh windy environments.

The heathers flower quite late in the year, helping to create the spectacular late summer golden purple tinge that can be seen on the mountainside. Ling flowers are tiny, pale pink, open bells appearing on the branch tips in July. Bell heather has larger closed bells that are a deep purple colour and are also visible from July in clumps at the tips of branches. The flowers of the cross leaved heath appear earlier, in June and are a rosy pink colour. They are usually less numerous than those of ling and bell heather and are found in a tight clump at the tip of an elongated flower stalk. Heather flowers are visited by nectar feeding insects such as bees and moths and true honey is formed by heather feeding bees. Long ago, dried heather twigs were used as brooms, and the scientific name, Calluna comes from the Greek 'kalluno' meaning 'to brush'.

The flowers of heather are antiseptic and used to treat urinary infections. Dried flowers have also been used to make tea, and extracts from the shoots were the basis for Scottish heather beer.

Heathers are grazed by a wide variety of mountain and moorland wildlife including grouse, deer, goats, sheep and hares. Moderate levels of grazing are easily supported but if levels become too high heathers are soon grazed out to be replaced by grasses and sedges.

Bog Myrtle *Myrica gale* Railleóg

The bog myrtle is a deciduous, small, bushy shrub that grows up to about a metre in height and has dark brown twigs. The leaves are 2-4 centimetres long and are oblong and somewhat willow-like. It grows on the edges of wet woodland and on lightly grazed bogs and heaths. Separate male and female flowers appear in April, often before the leaves are out, and are tiny upright catkins. The plant is easiest identified by crushing and smelling a leaf or flower. The aromatic smell is beautiful and unmistakable. The aromatic compound that gives rise to the scent also has cleansing properties so that in the past, tea made from the plant was used as a purgative. In addition, bog myrtle was used as a strewing herb in medieval times, the scent helping to neutralize unpleasant odours and the aromatic compound killing off some fleas and other insect pests. The plant was also used to flavour beer although this practice largely died out when hops were introduced to Britain from mainland Europe in the middle ages.

Gorse *Ulex europaeus, Ulex gallii* Aiteann

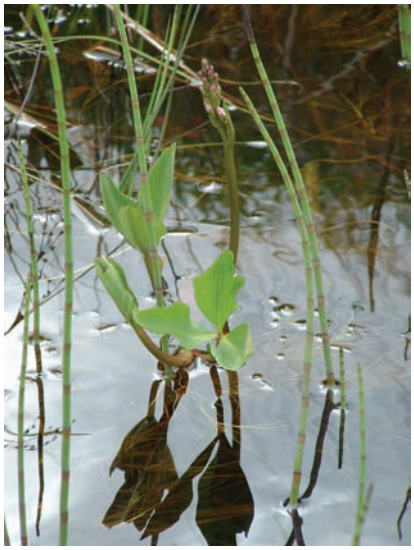
Also known as furze and whin, the gorse is a yellow flowered spiny bush that quickly invades bare and rocky ground over acid substrates. Gorse seems to be always in flower, but actually there are two species that flower at opposite ends of the year. This is connected with the old rhyme: 'when gorse is out of bloom, courting is out of fashion'. In spring gorse flowers (of Ulex europaeus) have a beautiful coconut smell and these can be gathered to make gorse wine. Although it is most often seen as a low growing bushy plant, the wood of gorse was widely used and valued for a variety of uses in the past. In common with other members of the pea family, gorse has soil improving characteristics and is capable of fixing nitrogen in nodules in its roots and so land with gorse growing on it was considered to have value, for example during the Civil Survey of Ireland in 1654. Despite its spiny growth, gorse is very nutritious to animals and is often taken by grazers. The wood has been used for hurley making and if course the spiny growth habit makes gorse a good hedging plant.

Bog Asphodel *Narthecium ossifragum*

This attractive member of the lily family is fairly widespread over wet heath and peat bogs but has suffered some decline with land drainage and large-scale turf extraction. It is a slender herb, growing to about 30 cms tall, with star like, yellow petals and orange stamens that are visible during July and August. It is also attractive during the autumn as its fruits are a rich golden orange colour and persist on the flowering stalks well into October. The bog asphodel was formerly used as a source of dye, used both for clothing and for hair tinting! The plant is poisonous to sheep and has a reputation of weakening the bones of cattle, hence the Latin species name, *ossifragum*, which means bone-breaking.

Bogbean *Menyanthes trifoliatum* Bearnán lachan

The bogbean as its name suggests is a plant found on bogs, usually in pools. It is rooted in the peat but the leaves of three entire oval leaflets grow above the water on long stalks. The tall flowering stalks appear in May and June, and bear 10-20 small white flowers. The leaves of the bogbean are bitter to taste and were used in the past to treat rheumatism and to flavour beer.



Greater Butterwort (*Pinguicula grandiflora)*

The greater butterwort is one of three species of butterwort found in Ireland. This species is frequent only in Co. Kerry, where it grows on bogs, fens and wet rocks. It has been recorded from altitudes as high as 855m, in the McGillycuddy reeks. It is found throughout the wet heath and boggy areas of Gleninchaquin, and a very unusual 'albino-flowered' type also occurs locally within the park.

The butterwort has a basal rosette of yellow green leaves which are broadly oblong in shape, narrowing towards the ends to a blunt tip. The margins of the leaves are strongly curved upwards and inwards and the upper surface of the leaf is often shiny with a sticky surface. The leaves are present all year round. The flower of the butterwort is borne on a slender stalk and is irregular in shape, somewhat like a violet flower. The colour is (usually) deep purple-violet and may be about 2cm across. The flowers occur from May to July.

The butterworts are of great interest because of their primary mode of nutrition. Living on nutrient poor, often acid substrates they have evolved an ingenious way of gathering extra nutrients….they eat animals! The greater butterwort is one of 11 species of insectivorous plants found in Ireland. They have special glands on their leaves which secrete sticky substances that attract and entrap insects. Other leaf glands secrete enzymes that then break the insect body down into molecules that can be absorbed and utilised by the plant.

Butterworts (and many other insectivorous plants) rely on the existence of peatlands for their survival. If bogs are drained, afforested, over-grazed, over-burnt, over-trampled or harvested for peat then the habitat of these and many other specialist plants are irrevocably damaged. Peatlands once covered about 17% of the Irish landscape but now less than one fifth of that area remains in good condition. Kerry contains a large area of upland blanket bog and conserving it for the future will also ensure the conservation of rarities like the greater Butterwort.

Sundews *Drosera intermedia, Drosera rotundifolia* Drúchtín móna

The sundews are another genus of insectivorous plants found on wet heath and bog, particularly in western parts of Ireland. They have round (*D. rotundifolia*) or spoon (*D. intermedia*) shaped leaves with sticky glands around the margins. These glands secrete sticky digestive enzymes that externally digest any insect prey that land on the leaves, thus allowing the plant to gather much needed nutrients that are in otherwise short supply in these acid habitats.

Heath bedstraw *Galium saxatile*

This relative of the goosegrass is a small, straggling prostrate herb found on heath and in acid woodlands. Its leaves are whorled in groups of 6-8 and have loose prickles at the edges which help them to stick to animal fur and botanists clothes! They are not so effective as those of the proper goosegrass however. The flowers are tiny and white and are present from June to August. Another well known relative of this plant is the larger and yellow flowered Lady's Bedstraw, found in sandy places.

Lousewort *Pedicularis sylvatica*

The lousewort if a plant frequently found in the wetter parts of heaths, acid grasslands and moors, and in the drier parts of peat bogs. It is a perennial plant with prostrate stems bearing small (<2cm) leaves. It is most noticeable in the early summer (April – July) when the dark reddish, purple flowers can be seen. This are irregularly shaped, with 2-lipped upper and 3-lipped lower lobes, and are borne on relatively short flower stalks. The lousewort is what is called a 'hemi-parasitic' plant. This means that it gathers minerals and water from the roots of other plants, with which it grows. The name 'louse' (and also the latin *pediculus* which means louse) refers to the fact that the wet meadows in which it grows are suitable habitats for 'lice' or liver fluke that can affect grazing animals.

St. Patrick's Cabbage (*Saxifraga spathularis*)

The St.Patrick's Cabbage is a member of the saxifrage family, a group of plants that are adapted to cope with the extreme conditions present in arctic and alpine habitats. Thus these plants have a 'cushion' habit, their leaves forming a dense basal rosette that traps heat very effectively.

St. Patrick's Cabbage has a basal rosette of hairless, fleshy, spoon-shaped leaves, which have a tiny translucent margin. The star-like flowers are present from May to July and are borne on leafless stems, up to 50cm high. The flowers themselves have white petals with small red spots.

St. Patrick's Cabbage has an hiberno-lusitanian distribution, being found in the Pyrenees and South western Ireland. It occurs only over acid rocks and requires high rainfall. It is often found on mountain cliffs and large boulders within woodland. It has been found growing at 1040m, on Carantoohil, Ireland's highest peak. A closely related species, the kidney saxifrage, occurs in similar habitat in Kerry, and can be distinguished from St. Patrick's Cabbage by its hairy, *kidney*-shaped leaves. However, the two species often hybridise giving rise to plants with intermediate features. The saxifrages are often found growing in association with delicate filmy ferns.

According to an early eighteenth century herbal, St. Patrick's cabbage has a hot dry nature and a decoction of the roots is good for the treatment of bladder ailments!

Like other species, the conservation of these plants is dependant on the protection of their habitat. Erosion of uplands due to overgrazing and trampling may affect populations of these, and woodland destruction also damages their habitat.

Eyebright *Euphrasia nemorosa* (sensu lato) Roisín radhairc

The eyebright is a group of very closely related species that frequently hybridise. It is a small erect annual, found frequently in grassy verges and in wet pastures. Like the lousewort, the eyebright is hemiparasitic, and scavenges water and minerals from the roots of other plants. Its flower is quite small (up to about a centimeter in length) and is usually white with purple veins and a yellow spot. The flowers are irregular in shape and are visible between June and September. As the name suggests, eyebright was formerly used as a poultice to soothe inflamed eyes.

Creeping buttercup *Ranunculus repens*

Everybody knows the buttercup, with its charming shining yellow flowers. It is found in a wide variety of habitats, from waste ground to meadow and woodland edge. In fact there are many species, but the creeping type is perhaps the most common. It is a hairy, perennial plant, and it spreads extensively by creeping and rooting runners, in a similar fashion to that employed by the strawberry. It is closely related to the celandine, but unlike that spring species, the buttercup is a flower of the summer, flowering between May and August. At the base of the yellow tepals (they are petals and sepals combined!) there are nectarines, which offer a reward to passing insects who distribute pollen from plant to plant. A close relative of the creeping buttercup is ***Ranunculus flammula,* the lesser spearwort**. This plant has a very similar flower to the buttercup, but is smaller overall, and has simpler, lanceolate leaves. It is found growing near to water, and is often rooted in ditches or by lakeshores.

Creeping tormentil *Potentila erecta* Néalfhartach

The creeping tormentil is a real plant of the mountains, where it is abundant and found in a variety of habitats including heath, bog, grassland and woodland. It has slender creeping stems and 3-5 wedge-shaped, deeply toothed leaflets in each leaf. The flowers appear from June to September and have four widely spaced petals, each with a notch in the middle. The four pointed green sepals can be seen peeping through the petals, emphasizing the space between the petals themselves. The roots of this plant can become quite woody, and in places such as parts of Scotland where trees were scarce, they were sometimes used as a substitute for oak bark, when tanning leather.

Devil's-bit Scabious *Succisa pratensis* Urach ballach

The name derives from the short thick rhizome, that has an abruptly cut-off end and is said to have been bitten off by the devil himself! It is a plant found in hedgebanks, grassland and open woodlands and is sometimes quite abundant. There is a basal rosette of leaves which are elliptical and with a distinct central vein, and there are narrower leaves along the tall stem. The flowers do not appear until July or even August, and are among the last flowers to be seen in the woods in summer. They are dark blueish-purple, and long and tubular and are seen in rounded heads of many flowers all packed together. The name 'scabious' comes from the former use of this and related plants in the treatment of scabies and other skin complaints. The leaves of this plant are the main food source for the caterpillars of the Marsh fritillary butterfly, which is in serious decline.

Orchids

Early purple orchid *Orchis mascula*

Heath spotted orchid *Dactylorhiza maculata*

The orchids are quite a famous family of flowering plants, renowned for their beautiful and strange flowers and for the rarity of many of the species. Orchids have evolved highly complex floral structures, and in many cases this has to do with special relationships with their pollinators. Some will simply not release pollen unless the particular species of bee, fly or whatever, lands on the flower in exactly the right way. The early purple orchid is found in damp pastures and woodlands and can be spotted in early spring as its purple spotted Lanceolate leaves appear above the ground. These are followed in April and May by long, moderately dense spikes of reddish-purple, non-fragrant flowers. The heath spotted orchid, as its name suggests also has spotted leaves, but is found in more acidic conditions than the common spotted. In addition, the flowers of this species are a much paler pink in colour, with darker, purple markings, and are visible between June and August.

Jointed Rush *Juncus articulatus*

Sharp-flowered Rush *Juncus acutiflorus*

Soft Rush *Juncus effuses*

Rushes are hairless perennials, usually erect or tufted and almost always found growing in damp or marshy places. Their stems and leaves are often rather indistinguishable, and appear as cylindrical, spiky, dark green structures up to about a metre in height. These leaves and stems are usually filled with special tissue called pith, which is white and foamy. This extends down into the roots, and is filled with tiny cavities that allow air to travel up and down the plant, even when it is growing in waterlogged conditions. The green 'skin' of these plants is usually quite leathery and tough, and this allows the plant to grow in exposed windy conditions without loosing too much moisture. Rushes of various species have often been used for weaving, for example, St. Brigid's Crosses and in basket making. The flowers are not very colourful or large. They are usually present in late June and July and are brown.

Milkwort *Polygala serpyllifolia* Glúineach

This little flower is low growing and found abundantly throughout the grassland, heath and boggy areas in Gleninchaquin. It has tiny (less than 1 cm long) pointed oval leaves and deep blue flowers that are present from May to September. The name comes from the ancient belief that when taken medicinally it encouraged milk production in nursing mothers.

Heath dog violet *Viola canina,* Marsh violet *Viola palustris*

Both of these species of violet are found in damp acid conditions. The marsh violet is often found in wet woodland and is known from the other violets by its more kidney-shaped to rounded leaves. The flowers are shaped liked other violets but are quite small, and are pale lilac with darker purple markings and are visible from April to July. The heath dog violet is known by its somewhat elongated heart-shaped leaves and a slate blue flower that appears between April and June.

Yellow & White Water lilies *Nuphar lutea, Nyphaea alba* Duilleóg bháite

As their name suggests, water lilies are aquatic plants, with large more or less round floating leaves, on long stalks connected to the rhizome, rooted in the bed of the lake/pool where the plants grow. The yellow water lilies have more oval leaves and yellow flowers that are present from May to July. The white water lily has more circular leaves and white flowers present in June and July. The white water lily is rather common in the western counties of Ireland while he yellow is fairly rare outside of the midlands. Both species are found in the pools and lakes of Gleninchaquin.

Grass-like plants on the heath and bog

Purple moor grass *Molinia caerulea*
Viviparous fescue *Festuca vivipara*
Bog cotton *Eriophorum* spp. Ceannbhán
Black bog rush *Schoenus nigricans*
Common Sedge *Carex nigra*
White beak sedge *Rhynchospora alba*

The vegetation on upland blanket bog and wet heath is dominated by two groups of plants. The first group includes the heathers and low shrubs. The second group consists of 'grassy' plants such as sedges, rushes and rough grasses. The long linear leaves of these types of plant are adapted to the harsh, exposed conditions on these open habitats, and help the plants to resist water loss and desiccation. Purple moor grass is the main grass occurring on blanket bog and in certain conditions grows in great tussocks. The grass blades contain silica, to deter grazers, and passing a blade of purple moor grass through your hand can result in a painful paper cut. The viviparous fescue is another grass of the uplands and is easiest identified in July and August after it has flowered. It is unusual in that the seed is not dispersed to fall and grow into a new plant on bare ground, as with most other plants. Instead, the seed germinates and grows on the parent plant, and after some time the new 'plantlet' falls off and roots in fresh ground. Bog cotton is a common sight on the wetter parts of the bog in July and August and is named for the white cottony hairs that occur when the plant is in fruit. This cotton was widely collected for use as a fibre in the past.


Bog cotton & Black bog rush


Viviparous fescue grass

Sedges are very similar to grasses in appearance, but instead of flat leaves, the leaves are keeled, *i.e.* are triangular in cross section. Like many of the grasses that occur on the mountain, the sedges retract their nutrients into their roots and other underground organs each autumn. This contributes to the changes to golden brown colours that are seen on the bog during the winter months.