Bogland Wildlife

Quirky Facts

Contents

The bogs of Ireland have been valued in the past for the peat, often called brown gold, stored beneath their surface. Today we are not the Ireland of years gone by. We have alternative greener technologies available to heat homes and to generate electricity rather than using turf or milled peat. When choosing a compost to improve garden soil we can choose peat free. This booklet is about bogland biodiversity and presents some quirky facts about how this wildlife has adapted to life on the wet and wild bogs of Ireland.

Fox - a predator on bogs.
Photo: É. de Buitléar

Species Name:
Fox
Vulpes vulpes
Sionnach

The Fox is one of Ireland's top predators. It is described as an opportunistic bogland animal. It uses the bog to hunt for prey but does not actually live on the wet bog surface preferring the surrounding drier landscape.

Bogs are Climate Change Warriors

Bogs or peatlands are wetlands containing 90% water and 10% dead plants. Peat is the result of the accumulation of partially decayed plants over thousands of years. The dead plants don't rot because they grow in waterlogged conditions where there is little oxygen. Bacteria and fungi - the agents of decay are prevented from working in these conditions. Peat is a massive carbon store.

Raised bogs formed in lakes left behind after the Ice Age 10,000 years ago, while Blanket Bogs began to form 4,000 years ago in the uplands.

Sphagnum moss, known as the bog builder is abundant on bogs and can hold up to 20 times its weight in water ensuring that the bog is waterlogged year round. The main source of water to a peatland is from rainfall.

Bogs are valuable as an ecosystem and provide many services including provisioning, cultural, regulating and supporting. Their wildlife demonstrates wonderful and unique adaptations enabling them to survive in one of Ireland's wettest, windswept landscapes. While the dead plants that have built the bog store carbon helping Ireland meet climate change targets.

Blanket Bog, Co. Wicklow.
Photo: C. O'Connell

Raised bog, Co. Westmeath.
Photo: N. Madigan

Quirky Fact

Bogs are climate change warriors. They cover about 3% of the earth's land surface area, yet they store roughly 30% of all land based carbon.

Water Storing Sphagnum mosses

Bog mosses form a colourful carpet on Girley Bog, Co. Meath. Photo: C. O'Connell

Quirky Fact
The absorbancy of Sphagnum moss was put to good use in the First World War as it was made into bandages.

Species Name:
Bog Moss
Sphagnum moss
Súsán

There are over twenty different species of *Sphagnum* Moss found living on Irish bogs. These are known as the bog builders and are the most important plants on bogs. They form living multi-coloured carpets over the entire surface of the bog ranging in colour from green and yellow to red and brown. Different types of *Sphagnum* moss form the dry hummocks and line the wet hollows on the bog surface. Depending on the species of *Sphagnum* moss growing on bogs ecologists can determine if the bog is healthy and actively laying down peat.

Sphagnum moss grows quickly and holds up to 20 times its own weight in water. The only part that is alive in the plant is the growing tip. As the plant grows upwards it buries dead plant material on the surface of the bog building the peat layer in Irish bogs at a rate of 1mm per year.

During the First World War *Sphagnum* moss was harvested and dried and stitched together as a wound dressing to treat injured soldiers. It was only when the last of the military hospitals closed in London in the 1920's that the use of *Sphagnum* moss as a wound dressing came to an end and collections of the moss in Ireland for this purpose stopped.

Camouflaged Frog

Species Name:
Common Frog
Rana temporaria
Loscann

The Common Frog is an Amphibian meaning it can live both in water and on land as an adult but it must return to water to breed and complete its lifecycle. Young frogs are called tadpoles. Adult Frogs are gardeners' friends as they are carnivores feeding on slugs and flies. Tadpoles are actually herbivores and can help eat algae in your garden pond.

The frog's long sticky tongue is attached to the front part of its mouth. It can flick it out to catch flies. Frogs have lungs which allow them to breathe on land but under water they breathe through their skin.

The colourful pattern on the frog's skin helps to disguise it from enemies such as rats, herons and hedgehogs. A frog can also make it's skin become darker or lighter to match it's surroundings. This camouflaging colour change takes about two hours to effect.

Spot the frog, it is so well camouflaged against the ground. Photo: N. Madigan

A male frog waits in a pond in spring for a mate. Photo: T. Whyte

Quirky Fact
Male Frogs have vocal sacs that stretch to act like resonating chambers allowing them to sing to attract a female to mate with in Spring.

Sundew a Fly Trapping Plant

The remains of dead flies eaten by a sundew plant. Photo: C. O'Connell

Quirky Fact
On average a Sundew plant can trap up to five insects per month.

Sundew plant on the bog surface. Photo: N. Madigan

Species Name:
Round-leaved Sundew
Drosera rotundifolia
Drúchtín Móna

Plants are normally eaten by insects. On bogs, however, the opposite happens as insects become prey to certain plants. The leaves of the Sundew, are covered with red tentacles containing glands at the tips which create a sticky trap. When an insect lands on the leaf it gets stuck on the sticky fluid and the leaf tentacles close around it. All the nutrients in the body of the insect are digested into molecules which can be absorbed into the Sundew through pores on the leaf surface which stimulates the plant to grow.

Round-leaved Sundew is not the only insect-eating plant on Irish Bogs. There are long-leaved and intermediate-leaved varieties also found. Two other insect-eating plants found on bogs are Butterwort and Bladderwort.

Why do they have this very special adaptation? Bogs are extremely nutrient poor, this is due to the high water table on bogs which limits decomposition and the release of nutrients from this process.

With limited food available throughout the winter months Sundew plants die back to conserve energy. Watch out for Sundew on a peatland in your local area between April and September.

The Calling Curlew

Species Name:
Curlew
Numenius arquata
Crotach

The iconic call of the Curlew was once a familiar sound on Ireland's bogs. Sadly today the Curlew is the most threatened bird in Ireland with the National Parks and Wildlife Service recording a 98% decline in the breeding population since the 1980's.

Curlew build their nest on the bog surface each summer. Their camouflaged plumage helps to hide the adult bird sitting on the nest from predators such as fox and grey crow. The eggs in the nest are mottled and muted in colour to blend in with the bog wildlife. Chicks feed on the bog and in the surrounding farmland before they fledge. Long grass provides cover for them during this flightless period. Adult birds feed by probing their long sensitive curved beaks into wet soil in search of invertebrates. As the surface of the bog has potential to freeze during winter, Curlew migrate to coastal areas to feed at this time.

Unfortunately the ascending "cur..lee, cur..lee" cry, or the "cew, cew, cew" calls are not as common any more on our bogs due to habitat destruction and predation of eggs and chicks by foxes or hooded crow. There are currently less than 130 pairs reported to be breeding in Ireland. Action is being taken to protect these birds and help boost the current breeding population by conservationists working with farmers and land owners.

Quirky Fact
Curlew spend most of the year along the coastline of Ireland but move to Irish bogs in the summer to nest and rear their young.

Close up view of a Curlew.
Photo: D. Camier

Curlew in flight.
Photo: A. McCluskey

Bog Asphodel Partners Bacteria

The flowering head of Bog Asphodel. Photo: C. O'Connell

Bog Asphodel grows at the edge of bog pools. Photo: C. O'Connell

Quirky Fact

Bog Asphodel is also known as 'Brittle Bones' as it contains chemicals which have an adverse weakening effect on the bones of grazing animals. Its latin name translates into 'bone breaker' in English!

Species Name:
Bog Asphodel
Narthecium ossifragum
Sciollam na Móna

The star-shaped flowers of Bog Asphodel have glowing yellow petals with orange-tipped anthers. The leaves can be described as sword shaped and are arranged in groups of three on the stem.

Living on the nutrient poor peatland habitat Bog Asphodel has formed a partnership with a nitrogen fixing bacterium called *Rhizobium*. It is a type of symbiotic relationship where both Bog Asphodel and the *Rhizobium* bacterium benefit. Our atmosphere contains 78% nitrogen, however this nitrogen is not available to use by plants. *Rhizobium* bacteria can fix atmospheric nitrogen into a usable form for plants. To achieve this it needs a host. Bog Asphodel provides its roots as a host for the *Rhizobium* and in return the bacterium shares its fixed nitrogen with Bog Asphodel.

Bog Asphodel hibernates in winter. It leaves turn orange as it reabsorbs all the nutrients from the leaves into an underground stem. It is in flower on Irish bogs in July.

The Lizard that Drops its Tail

Species Name:
Viviparous Lizard
Lacerta vivipara
Earc

Also known as the Common Lizard the Viviparous Lizard is Ireland's only native reptile. Viviparous means this lizard gives birth to live young.

Lizards are cold blooded meaning that they cannot regulate their own body temperature. In cold weather they can slow down their metabolism to almost a complete stop. To heat their body temperature and start their metabolism they must bask in the morning sunshine absorbing heat. This is also the best time to see a lizard on your local bog because when they are cold they are also slow moving. By the afternoon the lizard will be quick to hide when disturbed.

Similar to other reptiles their body is covered in scales that blend in with the surrounding landscape, these scales help the lizard to camouflage itself from predators.

The Viviparous Lizard is well camouflaged on this lichen covered twig. Photo: P. Foss

Viviparous Lizard with its tail missing. Photo: N. Madigan

Quirky Fact
The Viviparous Lizard can drop the end of its tail off to escape predators - allowing it to find shelter and leaving its predator with only a wriggling tail for lunch! The tail can grow again.

Snorkelling Bog Cottons

Many-headed Bog Cotton is one of the best loved plants of bogs. Photo: C. Krieger

Within the stem of Bog Cotton internal air channels allow oxygen move from the surface of the bog to the roots deep below the peat.

Quirky Fact

Many Headed Bog is like a snorkel. Internally there is aerenchyma tissue that channels oxygen entering the plant through leaf pores to the roots of the plant at a depth of 60cm in the bog.

Species Name:
Many Headed Bog Cotton
Eriophorum angustifolium
Ceannbhán

Many Headed Bog Cotton produces four to five white seed heads that at first glance look like cotton wool.

It is the deepest rooting plant on the bog. Its roots reach into the peat to a depth of 60cm. Many Headed Bog Cotton is sometimes called the 'bog snorkeller'. It has specially adapted leaves and stems that contains a tissue called aerenchyma which is full of air channels. This brings oxygen from the aerial part of the plant to the roots of the plant deep in the peat.

Why are these deep roots so important? In the nutrient-poor waterlogged bog habitat, being able to search for nutrients where no other plant can enables Many Headed Bog Cotton survive on bogs.

Many Headed Bog Cotton dies back in winter. As the nutrients in its leaves are withdrawn to underground storage organs the leaves turn red, colouring the whole bog a rusty colour in winter.

Single Headed Bog Cotton is also found on bogs. This has only one white fluffy seed head.

We do not collect Bog Cotton in Ireland to make clothing, as the cotton fibres are too short however locally it was collected and spun into a thread or used to stuff pillows in years gone by.

The Drumming Snipe

Species name:
Common Snipe
Gallinago gallinago
Naoscach

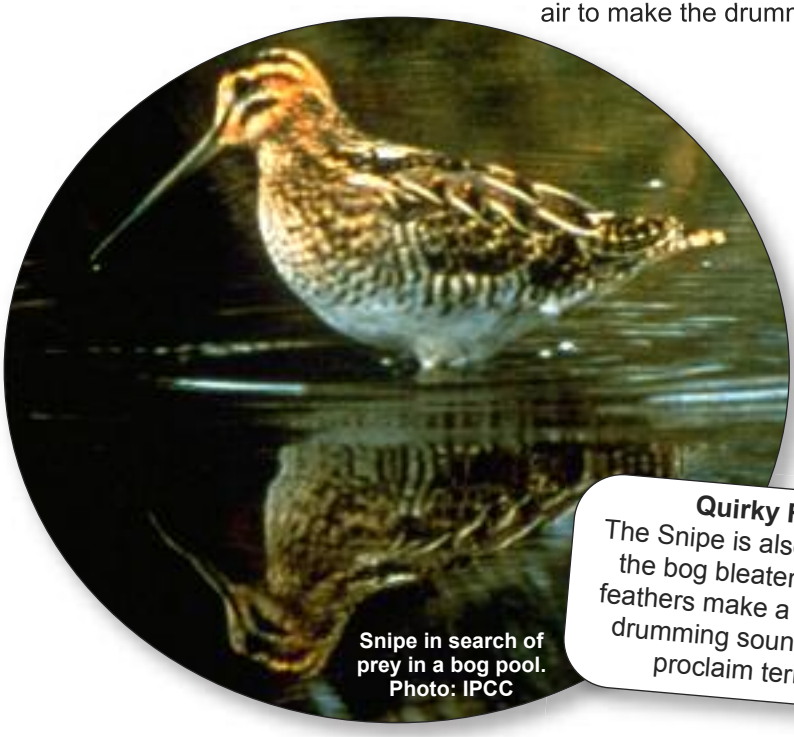
The Snipe is a ground nesting bird of boglands. Their nest is built on tussocks and when disturbed the birds fly away in a distinctive zig zag pattern. They can actually give you quite a shock when they rise from their nest in front of you as you walk across the wet bogland surface.

Their long, straight sensitive beak is used to probe peaty soils and wet bog pools to feed on invertebrates but also on seeds and other plant material.

As Snipe are omnivorous they can live in bogs year round. In summer they enjoy a plentiful supply of invertebrates and in autumn they feed on seeds. Curlew are not omnivores so they leave the bog in winter in search of invertebrates at the coast.

Their plumage of dark brown, pale buff and black stripes with bars on the head and body provide good camouflage helping to protect this bogland bird from predators including Fox and birds of prey such as Buzzard and Kestrel.

The Snipe makes an amazing drumming sound to mark its breeding territory. It sticks two of its tail feathers out from the tail. These vibrate with the air to make the drumming sound.



Snipe in search of prey in a bog pool. Photo: IPCC

Quirky Fact
The Snipe is also known as the bog bleater as its tail feathers make a bleating or drumming sound used to proclaim territory.

Lichens are Air Quality Indicators

Quirky Fact
Lichens are very sensitive to air pollution and only grow in fresh clean air which is plentiful on Irish bogs

Lichens form mini gardens on the bog surface.
Photo: K. Geraghty

Species Name:
Lichen
Cladonia species
Léicean

A Lichen is a plant formed by a symbiotic relationship between an algae and a fungus. Both live in harmony benefitting from being in the relationship. The alga makes glucose through photosynthesis while the fungus collects ingredients such as water for the alga.

Look out for Pixie Cup, Bearded, Antler-horn and Matchstick Lichens on the bog.

They survive on the bogland habitat all year as they have the ability to desicate, that is dry out preventing the plant from freezing in the winter and protecting the plant from transpiration (water loss) in summer.

Lichens as indicators of air quality are divided into three groups:

* Crustose Lichens are pollution tolerant.
* Foliose Lichens can live in areas of moderate air pollution
* Fruticose Lichens are sensitive to pollution and are only found in areas with clean air.

False-Eyed Emperor Moth

Species name:
Emperor Moth
Saturnia pavonia
Impire

The Emperor Moth is a spectacular invertebrate found on bogs. This large day-flying moth can be easily mistaken for a butterfly due to its bright colours and the prominent false eye-spots on its wings. These false eye-spots are used by the Emperor Moth to warn off predators.

The caterpillar of the Emperor Moth feeds on Ling Heather and due to its large size and bright green colour it is easily identified. The caterpillars spin a cocoon from brown silk that protects them as they mature into adults. This looks like an antique gun powder flask.

Adult Emperor Moths do not feed. Their sole purpose is to find a mate and reproduce. Once the female emerges from her cocoon she releases pheromones, a chemical scent, then sits and waits. The male Emperor Moth can be seen flying over the bog surface in a zig zag pattern trying to locate the females' irresistible scent.

A female Emperor Moth is larger than a male. Photo: N. Madigan

Quirky Fact
A male Emperor Moth can detect a female up to a kilometer away using his feather-like antennae.

A male Emperor Moth has feathery antennae to pick up the scent of female moth pheromones. Photo P. Foss

Emperor Moth Caterpillar feeds on Ling Heather. Photo: N. Madigan

Silk Emperor Moth Cocoon. Photo: C. O'Connell

Lucky White Heather

Flowering Ling Heather colours the bogs purple in autumn.
Photo: P. Foss

Lucky white heather.
Photo: O. Huby

Quirky Fact
If you find Heather with white flowers you'll be in for some good luck.

Species name:
Ling Heather
Calluna vulgaris
Fraoch Coiteann

Ling Heather is one of the tallest plants found on living peat forming bogs, growing to a height of 50cm. It is a woody, shrubby plant associated with the drier parts of the bog and has special adaptations that allow it live on the bog surface all year long.

Even though it lives in a wetland Ling Heather prefers the drier parts of the bog. It has small waxy leaves to prevent transpiration (water loss) from the plant during long warm days of summer or in the cold winter winds. Ling Heather also holds very little water within its body ensuring it does not freeze in winter.

Ling Heather makes it owns food by photosynthesis making use of its evergreen leaves year round. You can expect to see the pretty purple/pink flowers from August to October each year.

If you come across Heather with a white flower it is said to bring you luck. This Heather is rare but is more likely to be found in the west of Ireland where there is a luxurious growth of this plant!

Hare's Eat their Droppings

Species name:
Irish Hare
Lepus timidus hibernicus
Giorria Éireannach

The Irish Hare can often be seen running across the bog surface. As herbivores Hare's feed on Heather and Bog Cotton. Even if you do not see the Hare you may find evidence of their presence on the bog by watching for footprints, fur or their droppings which are described as being oval in shape.

Unlike Rabbits, Hares do not dig burrows. They build their shelter or form in a moss hummock on the bog surface. This is an adaptation Hare's have to living on bogs. Rabbits do not live on bogs because they cannot dig a dry burrow in the wet bog. Young hares are known as leverets.

Female hares are larger than males and therefore dominate males throughout the year. During the mating season, in March, it is not uncommon to see Hare's 'boxing' one another. Usually it is a female Hare warning a male Hare to stay away. This is also where the saying 'Mad as a March Hare' comes from.

Hare feeding.
Photo: D. MacPherson

Hare form in a moss hummock.
Photo: P. Foss

Hare leveret.
Photo: N. Madigan

Hare Droppings

Quirky Fact
During times of food shortage Hare's have been known to eat their own droppings which are still rich in nutrients.

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