

Flora & Fauna

The near-natural eco-system that a raised bog is home to a unique combination of species. Due to the extreme environmental conditions that prevail, and the fact that 90% of the volume of an active raised bog is continuously circulating water, a range of specialist plant and animals that are simply not found elsewhere thrive on raised bogs.

Plants such as the carnivorous, fly-eating *Drosera* (Sundew) and *Utricularia* (Bladderwort) are among those that are unique to peatland habitats. The bog-building *Sphagnum* mosses that are abundant in boglands do not reach such importance in any other habitat type. Important plants such as bog cottons, deergrass, bogbean, asphodel, cross-leaved heath, rosemary, crowberry, cranberry, cladonia, lichens, myrtle and hundreds are found on our 12 sites.

The bird life on a raised bog is probably the most noticeable wildlife aspect on a casual visit. There are serious conservation concerns over the many species who use raised bogs for breeding, roosting or over-wintering purposes. Curlew, Red Grouse, snipe, meadow pipit, merlin, falcons, hen harriers, golden plovers, kestrel, Greenland white-fronted geese, long-eared owl and many others are regulars, but numbers are falling.

Many rare invertebrates, amphibians, insects and spiders can only really flourish on an Irish raised bog.

Most of the species that occur on raised bogs are specialists and, for that reason alone, if the habitat disappears so do they. Restoration and conservation of raised bogs is essential for their survival.

Here are just a few examples of the flora and fauna found on our 12 SAC/Natura 2000 sites:

CURLEW

Raised Bogs are home to many endangered species – the curlew being chief among them. With their large, down-curved bill and evocative bubbling call, they are instantly recognizable. The curlew's call was once common on Irish bogs (its preferred nesting ground) but breeding pairs in 2016 were estimated to be as low as 150. Loss of peatland habitats and continued peat extraction has been a key cause of their decline, and the Curlew is facing extinction within the next 10 years unless emergency action is not taken. Following the establishment of a Curlew Task Force in 2016, a Curlew Conservation Programme is now underway in Ireland. Our project will help restore its natural habitat.



RED GROUSE

Like the Curlew, the Red Grouse has become scarcer in Ireland, with its decline on raised bogs in the midlands so alarming it is now a red-listed species. The shy bird with a distinctive, accelerating call feeds on Heather shoots and prefers raised bogs for shelter and nesting.

SNIPE

Snipe, known as the 'Bog Bleater' or 'She-goat of the Air' is relatively common, but hard-to-see unless it is flushed out of its preferred boggy home. Its long, straight bill is easily visible – even in the air.



COMMON FROG

A Common Frog resting on *Sphagnum capillifolium*. As they survive in the water and on land, raised bogs are the perfect habitat for this protected species.

SPHAGNUM MOSS

Sphagnum moss is without doubt the most important plant on the bog. It is also called the bog builder as it is the main peat forming plant of raised bogs. It has amazing absorbency qualities and can hold over 20 times its own weight in water.

Without *Sphagnum* mosses there would be no bogs in Ireland. Bogs have a living surface which is made of a carpet of *Sphagnum* mosses. This is floating on a thick layer of partly rotted plant material that is soaking wet. This is why when you walk across the surface of a bog it feels bouncy.

It has no roots, the top part is living while the bottom part is dead. The dead part helps the living part by storing water in its cells to help prevent it from drying out during drier spells. There are about 24 species of sphagnum moss on our 12 sites.

Spotters Guide: www.raisedbogs.ie



EMPEROR MOTH

A truly spectacular insect that is on the wing in April and May, this large, day-flying moth species is a particularly striking sight, and can easily be mistaken for a butterfly due to its bright colours. The widespread species uses smell to find a lover, with the male able to detect a female from over a kilometre away!

SPIDERS

Ireland's bogs are home to a bewildering array of spiders, with over 25 species unique to raised bogs, including six very rare types, such as the orb-weaving *Hypsosinga Albovittata*.

POND LIFE

Pools on bogs are teeming with life, with creatures such as raft spiders, pond skaters, water boatmen, whirligig beetles, great diving beetles, water spiders, water scorpions, water beetles, midges, caddis flies and bloodworms all common.



CLUB MOSS

An unusual moss that is one of over two dozen found on our 12 project sites.



BOG ROSEMARY

Bog rosemary is the flower that represents Offaly on its county crest, chosen because it is so characteristic of the midland bogs and is rarely found elsewhere. It likes to grow among sphagnum mosses such as *s.magellanicum* in this picture.

CRANBERRIES

Known as *Mónóg* this small plant winds through other plants and produces cranberries in autumn that last until spring. Found on raised bogs they are eaten by many bogland animals and birds.



MYRTLE

Bog Myrtle, rubbed onto the hand, ears, neck or even pillow, is said to act as a natural insect repellent. The Vikings used it to treat poor memory and promote well-being; The Scots used it for beer; And it may have a future as a sustainable crop for insect repellent and acne treatment

DRAGONFLIES

Dragonflies and Damselflies are common hunters on the bog in summer time and are notable because of their bright colours and lightning fast flight. Dragonflies begin their life in a bog pool.



THE MARSH FRITILLARY

A listed, protected species who is on the wing from May to July, the spectacular butterflies are brightly patterned with black, white and orange markings.



BLADDERWORT

A carnivorous plant found on the unpolluted waters on a raised bog, it catches insects in tiny semi-transparent bag-like traps, or bladders. Hair triggers open a little door which sucks insects in. The watery prison becomes a grave as it is slowly digested to enrich the plant in the largely nutrient-free world of the raised bog.



BOG COTTON

Bog cotton or cottongrass stands 30-50cm high when in flower in April and May. There are three types on our sites – Hare's tail and common are frequent, and gracile is a very rare type. In times of old, bog cotton was used to stuff pillows, cushions and mattresses!



BOG ASPHODEL

Bog Asphodel was given the species name of 'ossifragum' ("bone-breaker") as it was blamed for causing brittle and broken bones in sheep which grazed through the bogs. It does contain chemicals which have an adverse effect on bone. In former times, it was also known as 'Maiden Hair' because the yellow flowers were used as hair dye.

SUNDEWS – KILLER IN THE BOG

Irish raised bogs are home to 11 insect-eating carnivorous plants, chief among them are three species of Sundew, who lure insects to a sticky death by trapping them with hundreds of red tentacles - each tipped with a sweet stickum. The killer tentacles curl over insects, literally sucking the life from them. The process can last from minutes to hours to days, and even large dragonflies can be turned into plant food by long-leaved sundews!



The round-leaved Sundew *Drosera rotundifolia* is most common, being found almost wherever *Sphagnum* mosses grow. The long-leaved *Drosera anglica*, commonly grows in pools, *Drosera intermedia* is local to the west of Ireland.



THE LIVING BOG

The Living Bog is the largest raised bog restoration project ever undertaken in Ireland, and is set to improve over 2,600 hectares of raised bog habitat on 12 raised bogs across 7 counties. We are bringing a habitat which supports hundreds of plants, species, and many of Europe's rarest animals, birds and insects, back to life.

Dating back over 10,000 years active raised bogs are among Ireland's oldest surviving near-natural ecosystems, but they are under threat.

Over millennia, raised bogs were intricately linked with Irish culture and tradition, but the mechanisation of turf-cutting, the demand for peat by the horticultural sector and the use of peat as a fuel for electricity generation has accelerated their decline.

They once covered an estimated 310,000 hectares, but less than 10% of this is now suitable for conservation purposes.

From the 1990's on, 53 raised bogs were selected and designated under the EU Habitats Directive as SAC's (Special Areas of Conservation) and Natura 2000 sites. Within the 53 SACs, the most recent survey shows that 1,210ha of active raised bog remains. The Living Bog will bring this figure to over 2,000ha.

Often referred to as Ireland's rain forest, living bogs are of great importance for biodiversity, flood control, education, science and the control of carbon emissions. Although bogs and peatlands cover just 3% of the world's total surface, they store twice as much carbon as the world's forests. Protecting and restoring peatlands would protect us from the worst effects of climate change. As 60% of the remaining raised bog habitat in Western Europe is held in Ireland, the onus is on us to restore this great resource.

Restoration involves re-creating the hydrological and ecological conditions under which superabsorbent sphagnum moss habitats will form new peat. Over 182 km drainage channels will be blocked on high and cutover bog areas using over 15,000 dams to raise water levels and rewet the bogs. 18% of the national high bog area will be improved by this project, securing the future of these bogs for generations to come.

LIFE14 NAT/IE/000032 RESTORING ACTIVE RAISED BOG IN IRELAND'S SAC NETWORK 2016 – 2020

LIFE+ NATURE & BIODIVERSITY

The LIFE programme is the EU's funding instrument supporting environmental, nature conservation and climate action projects through the EU. The general objective of LIFE is to contribute to the implementation, updating and development of EU environmental policy and legislation by co-financing pilot or demonstration projects with European added value.

LIFE+ Nature & Biodiversity is one of the main strands of the European Union's funding programme. LIFE+ Nature & Biodiversity co-finances best practice or demonstration projects that contribute to the implementation of the Birds Directive (79/409/EEC) and the Habitats Directive (92/43/EEC) and the Natura 2000 network. It also co-finances projects contributing to the implementation of the objective of Commission Communication (COM (2006) 216 final) on "Halting the loss of biodiversity by 2010 – and beyond".

'The Living Bog' is also funded by the Department of Arts, Heritage, Regional, Rural & Gaeltacht Affairs. DAHRRGA is the Coordinating Beneficiary on the project and provides the legislative and policy framework for the conservation of nature and biodiversity in Ireland, and oversees its implementation. See www.ahrrga.gov.ie and www.npws.ie for more info.

Further details on the project can be found at www.raisedbogs.ie

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Restoring Active Raised Bog in Ireland's SAC Network 2016 – 2020
LIFE14 NAT/IE/000032



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Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs



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KILLYCONNY BOG SAC, CO CAVAN/MEATH – 191.23 HA

Also known locally as Cloghbally Bog and Mullagh Bog and located beside the historic Cavan town of Mullagh, it is the most northern project site and the only one to share two counties: Cavan and Meath.



CLARA BOG SAC, CO OFFALY - 836.54 HA
*CLARA BOG VISITOR CENTRE, OPEN APR – NOV
www.clarabognaturereserve.ie

Our largest site and the finest remaining example of a large raised bog in Ireland today, Clara Bog is easily accessible and well frequented. There is a visitor centre in the town and a fine boardwalk on the bog is popular with locals and visitors alike.



ARDAGULLION BOG SAC, CO LONGFORD - 117.33 HA

Located between Edgeworthstown and Granard, Ardagullion is the remnant north-east lobe of a much larger bog that is now largely cutover and afforested. Just 8.5% of high bog mapped in the 1800's remains.



FERBANE BOG SAC, CO OFFALY – 153.08 HA

Situated right beside the town of Ferbane it is one of the finest examples of typical midlands raised bog of the basin type - wet and spongy and rich in flora.



CARROWNAGAPPUL BOG SAC, CO GALWAY – 487.43 HA

Located close to Mountbellew, Carrownagappul Bog is the second largest LIFE project site and is easily one of Ireland's most important large raised bogs.



MONGAN BOG SAC, CO OFFALY – 207.83 HA

One of the most significant raised bogs in the world Mongan is situated beside the monastery of Clonmacnoise, one of the world's most historic sacred sites. The bog has dazzled and captivated visitors for many centuries.



GARRISKILL BOG SAC, CO WESTMEATH – 324.81 HA

The most central bog, beside the village of Streete and 15km from Mullingar, its name translates as 'rough nook'.



MOYCLARE BOG SAC, CO OFFALY – 129.86 HA

Situated close to Ferbane town and beside Ferbane SAC, this relatively intact midlands raised bog is rich in flora and fauna.



RAHEENMORE BOG SAC, CO OFFALY – 210.01 HA

A classic example of a midland raised bog and one of the deepest raised bogs in the world (15m deep in places). It was saved in 1970 and has become one of the most studied bogs in the country.



DERRINEA BOG SAC, CO ROSCOMMON – 86.19 HA

Located 10km northwest of Ballyhaunis, it lies alongside the freshwater Cloonagh Lough and is bordered to the north and east by the River Anaderryboy,



SHARAVOQUE BOG SAC, CO OFFALY – 223.43 HA

Situated south of the historic town of Birr and north of Roscrea, Sharavogue is one of the world's best preserved raised bogs, full of rare flora and fauna with a rare lag zone.



CARROWBEHY/CAHER BOG SAC, CO ROSCOMMON - 343.83 HECTARES

A large floodplain bog nestled in the heart of the Gorthaganny area, it is a fine bog with visitor facilities. Located 8km north-east of Ballyhaunis and 9km north of Ballinlough.

FORMATION OF A RAISED BOG

Raised Bogs are perhaps Ireland's oldest surviving eco-system, a near-natural habitat where you can experience ten thousand years of history in a few hundred acres. They began to form after Ice Age glaciers retreated leaving behind depressions which were occupied by shallow lakes (A).

Plants started to grow around the edges of the lake and in time, these plants extended over most of the lake's surface as it became infilled with dead plant matter (B). As this partly decayed plant matter (fen peat) grew above the influence of mineral rich groundwater or surface waters, sphagnum mosses and other plants which could thrive in a nutrient-poor rainwater-fed environment, began to dominate (C).

They too died, but did not decompose in the acidic, waterlogged, low oxygen environment. The dead moss accumulated as sphagnum peat, rising towards the surface of the lake.

The accumulation of peat was greatest in the centre and least around the margins, where decomposition of the plant material was faster. This gave the bog a high dome shape, raised up above the surrounding land, to which the name 'raised bog' refers (D). The peat can reach depths of up to 15m.

Our 12 project sites were once great domes, rising from the lake beds (E) to meet eskers and other features. But these domes have all been affected by human interference, in the form of drainage for peat extraction, roads etc. However, raised bog formation is an ongoing process and thanks to 'The Living Bog' some will rise again.

Our 12 sites contains all the classic components of a raised bog: fine examples of hummocks, hollows, mossy lawns, pools and flushes. They are rich in wildlife with hundreds of diverse species of flora and fauna all of which have adapted to waterlogged, acidic and exposed conditions calling the raised bog their home.

