# Community Action: A Beginner's Guide to Wetlands





This project is funded by Clare County Council, Monaghan County Council and the Local Biodiversity Action Fund supported by the National Parks and Wildlife Service









This booklet has been prepared by the Community Wetlands Forum for Clare County Council, Monaghan County Council, and the National Parks and Wildlife Service; and is supported by Clare and Monaghan County Council's Biodiversity Officers. The Local Authority Biodiversity Officer Programme is delivered in Partnership with the Heritage Council.

The Community Wetlands Forum is grateful to everyone who assisted with the preparation of this booklet, including by way of providing input, advice, proof reading, and the provision of photography for use in the booklet.

In particular thanks is due to Barry O'Loughlin Biodiversity Officer with Clare Co Council, and Patricia McCreesh Biodiversity Officer with Monaghan Co Council. Thanks, is also due to Wetland Surveys Ireland, the Irish Peatland Conservation Council and Joe Shannon of Birdwatch Ireland for their input and guidance. Also, thanks to members of the Community Wetlands Forum for their input, in particular Jim Ryan. George Smyth and Kate Flood. Thanks also to the many members and other stakeholders who provided images and photography for use in the booklet.

Photography was provided by Tina Claffey, Eugene Dunbar, Eileen Fahey, Irish Peatland Conservation Council, Oisin Duffy (National Biodiversity Data Centre), Jonathon Shackleton, John Lynch of Killyconny Bog Project, Aoife Kirk, George Smith, Heather Bothwell, Ray Stapleton, Barry O'Loughlin, Enda O'Loughlin, and Dr. Micheline Sheehy Skeffington. Birdwatch Ireland supplied photographs taken by Joe Shannon, Shay Connolly, Richard T Mills, Dick Coombes, Ronnie Martin, John Griffin. Michael Finn, John Carey, Gustavo Zoladz, and Shane Prole.

Thanks to Jenny Seawright, Irish Wildflowers, for permission to use her photographs in this publication.

Thanks to Dan Devlin for providing graphic design services.

Front cover image: Tina Claffey

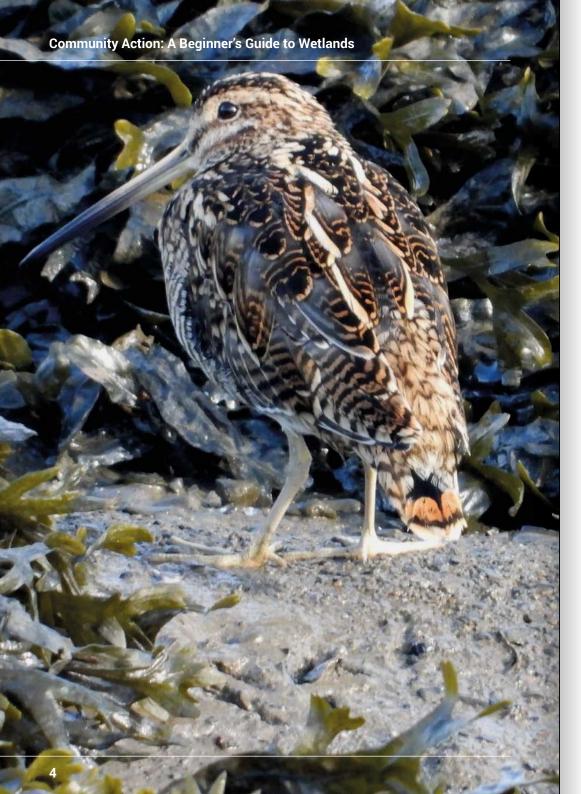
Thanks to Micheal Callaghan for his work in preparing this booklet.

Edited by Laurence Fullam for the Community Wetlands Forum CLG.

Year of publication: 2025

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#### What is a wetland?

A wetland is, as the term suggests, an area of land or ground that is either covered by water or saturated with water. The water level of the wetland may vary from time to time depending on factors such as the amount of rainfall.

Wetlands in Ireland can be natural or artificial, such as manmade ponds. They are created by freshwater and/or saltwater, and the water can be static or flowing. These areas include peatlands, fens, wet woodlands, lakes, reservoirs, ponds, turloughs, swamps, streams, rivers, canals, floodplains, freshwater marshes, and many coastal areas such as estuaries, saltmarshes, wet machair, dune slacks and some tidal habitats.

'The Convention on Wetlands' which is better known as 'The Ramsar Convention' defines a wetland as:

"areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres"

Wetlands are all around us. According to the work of Wetland Surveys Ireland, there are over 13,000 wetlands in Ireland.

#### Why are wetlands important?

There are many different types of wetlands and these provide important habitats for a wide range of bird, insect and plant life, including some rare and endangered species. For example, peatlands, and other wetlands, are important habitats for the curlew, an iconic and endangered bird species.

Wetlands provide a wide variety of other "ecosystem services", which basically describe the benefits that wetland provides to society. As well as being a home to a rich variety of species, healthy wetlands play an important role in providing clean drinking water by acting as natural filters and managing flood risk by storing water. Wetlands also store or sequester carbon through the actions of wetland plants in capturing atmospheric carbon, storing it in the soil and keeping it there. This helps combat climate change.

Wetlands are also vital for human health and wellbeing, for example, as places that people go to enjoy some time in nature and to get away from it all. Many wetlands have walkways and boardwalks around them, allowing people to connect with and learn about these important places. Wetland sites also offer spaces for education and learning about nature, whether it be via interpretative signage, guided nature walks, or time spent recording biodiversity. Wetlands are special places which inspire people in creative and artistic ways.



Click or scan this QR code for info about the **County Monaghan Wetland Tour,** a tourist resource showcasing 23 wetlands in the county and their visitor facilities such as parking, paths, fishing stands etc.

#### **Ecosystem services**

Ecosystem services refer to the benefits that ecosystems provide for human functioning and wellbeing, either directly or indirectly. For example, direct ecosystem services might be food or fibre, while indirect ecosystem services include clean water and flood management.

There are four types of ecosystem services.

- Provisioning services. These relate to products which can be directly obtained from nature, including food and timber, or in the case of peatlands this would include turf.
- 2. Regulating services. This relates to benefits derived from functioning ecosystems. In the case of wetlands this would include water quality, flood management, and carbon seguestration.
- 3. Cultural services. This includes non-material benefits that people derive from ecosystems, and includes spiritual benefits. It would also include mental wellbeing benefits from recreation and time spent in nature.
- 4. Supporting services. These relate to habitats functioning by themselves. For example, healthy habitats support a range of other species and ecosystems. Wetlands provide important habitat for a wider range of bird, insect and plant species.

#### **Ecosystem services of wetlands**

#### **Provisioning**

- Peat / turf for fuel
- Peat for horticultural purposes
- Water supply
- Food products and forestry
- Plant products / materials for crafts – eg rushes and sedges
- Peatlands for paludiculture (sustainable wetland agriculture)

#### Cultural

- Habitat and home to wildlife
- Places for bird watching, nature education and citizen science
- Spaces for recreation for physical and mental wellbeing
- Inspiration for artists, poets, musicians and creative practitioners
- Sense of place
- Tourism

#### Regulating

- Water retention
- Water flow management / flood mitigation
- Water quality
- Carbon sequestration
- Sediment capture
- Pollination

#### **Supporting**

- Provision of habitat for plant, bird and insect species
- Soil formation
- Nutrient cycling
- Water storage

#### Our changing relationship with wetlands

Wetlands are of immense importance to nature and humans alike. As the table, above, on ecosystem services shows, they provide many important benefits. In the past we have relied on wetlands as sources of fuel, raw materials and to benefit other economic activities. Into the future, the benefits we derive from wetlands will increasingly be sustainable in nature given the great need to protect and restore these important habitats as a result of climate change and the biodiversity crisis. The below table gives an insight into how the benefits and uses we get from wetlands has changed and will continue to change.



#### Past uses

Domestic turf cutting for fuel

Industrial turf extraction for energy production and associated job creation

Industrial peat harvesting for horticultural purposes

Use of sphagnum moss for wound dressing during WW1

Ancient trackways (tóchair) and roadways build across bogs

Defence purposes during historical battles, including via crannógs in lakes.

Drainage of wetlands to create space for agricultural use – eg for pasture, or the use of turloughs as pasture during dry periods.

Provision of plants for crafts and small scale construction eg: Reeds and sedges used for thatching, willow for weaving and basket making, or rushes for the making of St. Bridget's Crosses.

Use of wetland plants in traditional medicine, eg the use of sedge roots were used to treat digestive issues, or the use of meadowsweet as an anti-inflammatory and for pain relief.

Turloughs and fens as water sources for agriculture

Hunting of wetland animals, especially birds, for food

#### **Present uses**

Domestic turf cutting for fuel

Industrial peat harvesting for horticultural purposes

Citizen science and education - eg bog talks and walks

Physical recreation – eq via boardwalks and walkways

Ecotourism opportunities and recreation eg boardwalks, walkways, birdwatching

Sites for social and green prescribing

Inspiration for artists and creative practitioners, for example, the turlough at Coole Park, Co. Galway, inspired the W.B Yeats poem, Wild Swans at Coole.

Cutaway bogs used for wind and solar farm development

Carbon sequestration via restoration measures

Reedbeds, often found on fens (both natural and manmade) can offer pollution control, with constructed reedbeds performing natural wastewater treatment services, as at the constructed reedbed in Castle Leslie, Glaslough, Co. Monaghan.

Water extraction

Crucially important sites for biodiversity

Drainage of wetlands for agricultural purposes and other land uses.

Citizen Science and education e.g. 'Magic Under Monaghan' Short Film (YouTube Link)



#### Future uses (new opportunities)

Carbon farming and carbon sequestration

Paludiculture – alternative wetland agriculture involving the growing of plants and crops on wetlands

Recreation & tourism initiatives and benefits

Enhancing natural flood defences and barriers

Improving water quality via natural means and ensuring health of wetlands and presence of wetland plants eg rushes and reeds in constructed wetlands for wastewater and stormwater treatment.

Opportunities for environmentally friendly farming and ecosystem service payments

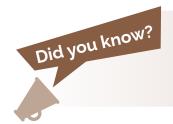


#### Common types of wetlands

#### **Peatlands**

We have a special relationship with peatlands in Ireland. The main types of peatlands are bogs and fens. Bogs are an ancient part of the landscape and have sustained communities for generations by providing a local source of fuel. Given their importance from a climate and biodiversity perspective, now it is time for us to sustain them to ensure they continue to provide benefits for future generations. There are two types of bogs, raised bogs and blanket bogs.

Water levels and water tables are key to a bog's health. In very simple terms, a wet bog is a healthy bog. Drainage of bogs whether for agricultural, commercial forestry, or industrial purposes, e.g the harvesting of peat, has had the greatest impact on many bogs, causing degradation of the bog ecosystem. Other threats and pressures include turf cutting, over grazing, burning and fires, air pollution, climate change and wind farms / development.



Peatlands cover about 3% of the earth's surface, but contain over 30% of the earth's carbon? They are massively important carbon sinks when in a healthy state.



#### Raised bogs

Raised bog typically form in lowland areas. Most of Irelands raised bogs are found in the midlands, and are typically between 3 and 12 metres deep. They formed from the build-up of partly rotted vegetation under waterlogged conditions in depressions and lakes left behind by the retreating glaciers of the Ice Age around 10,000 years ago. A lack of oxygen in these waterlogged conditions prevented the complete decomposition of plant material. Over time the semi-decomposed plant material formed a thick layer of peat that rose toward the surface of the lake. Eventually, the surface peat was invaded by reeds, rushes and sedges to form a fen. The peat layer continued to thicken until the roots of plants growing on the surface were no longer in contact with the calcium-rich groundwater, resulting in a raised bog. Rainwater was now the only source of nutrients for plant life, so only plants such as Sphagnum which can survive is these conditions thrived. Raised bogs tend to be older and deeper than blanket bogs, and occur in areas of less rainfall than blanket bogs.

It is estimated that originally there were approximately 310,000 hectares of raised bog in the Republic of Ireland and 25,196 hectares in Northern Ireland. Ireland supports over 50% of the remaining European Atlantic region raised bog. Only 1,650 ha (c 0.5%) of raised bog in Ireland is currently deemed to be still forming peat, known as Active Raised Bog.

In general, peatlands are really important places for a host of species of plant, bird, butterfly and moth. For example...



There are insect eating carnivorous plants found on Irish Bogs?

The sundew grows around bog pools on both blanket and raised bogs and is a sign of a bog in a healthy condition where the water table is close to the bog surface. They are beautiful, bright coloured plants. The Sundew's red tentacles produce a sticky substance which traps insects inside. The plant then secretes digestive enzymes devouring its prey. Other plants associated with raised bogs are bog asphodel, bog cranberry, bog cotton and bog rosemary.

Bogs are also important habitats for a range of wetland birds including the curlew and snipe. You will also see a wide variety of insect life on bogs including butterflies, moths and dragonflies.



There are 35 different types of butterfly and 1,500 species of moth in Ireland?



Click or scan this QR code to view the publication: "Plant Identification for Raised Bog Condition Assessment"

#### Example of raised bogs in Ireland include:

- Tullaher Lough and Bog SAC, Co. Clare.
- Cloncrow Bog NHA in Tyrrellspass, Co. Westmeath.
- · Killyconny Bog SAC in Co. Cavan.

#### Blanket bogs

Blanket bogs tend to be found in lowland (Atlantic) coastal areas and upland, mountainous areas, where rainfall is typically high, frequent and persistent. They are not as deep as raised bogs. There is about 774,860 hectares of blanket bog in the Republic of Ireland and 140,000 hectares in Northern Ireland. Blanket bogs are relatively rare on a global scale.

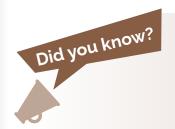


Ireland has 8% of the world's total blanket bog.

Unlike raised bogs which begin to develop in lakes and waterlogged depressions, blanket bogs can begin to develop on sloping ground and spread to cover whole landscapes. In many cases their spread was helped by man induced loss of the original forest cover and the formation of impermeable iron pans due to the leaching of minerals from the upper soil layers. This caused the upper layers to become waterlogged, and peat formation commenced and spread across the landscape, in some cases eventually covering extensive old field systems and human habitations such as at Ceide Fields, Co. Mayo.

The vegetation on mountain blanket bogs tends to be characterised by the presence of cottongrass, heather, crowberry, bilberry, sphagnum moss, and deergrass.

Lowland (Atlantic) blanket bog can have a grassy appearance, characterised by the presence of purple moor grass, black bog rush, deergrass and white beak sedge. Heather is again common but should be less abundant than upland blanket bog. They are found in the wettest parts of the west of Ireland, with peat depth of up to 7 metres in places.



Around 21% of blanket bog in Ireland is considered to be relatively intact while the figure for raised bog is only 0.5%. However, of course both types of peatland are extremely important, facing numerous threats and it is important that they are conserved and restored.

#### **Examples of blanket bogs include:**

- Sliabh Beagh / Bragan Bog NHA in Co. Monaghan.
- Poollagoona Bog SAC in the Sliabh Aughty Mountains, Co. Clare.



Click or scan this QR code to view the publication: "Sliabh Beagh Conservation Management Plan"



#### Indicators of the health of bogs

The surface of a healthy or relatively intact bog is wet. For example, raised bogs are generally drier nearer their edges and wetter in the centre, where characteristic pools systems are most likely to occur. Mosses, and small plants dominate here, including white beak sedge, common cottongrass and bog bean. Sphagnum moss, sometimes referred to as the 'bog builder' grows on wet bogs and is an indicator of actively forming peat. It retains about 10 times its weight in water and the water table ideally needs to be close to the surface as possible for the moss to grow. There are over 15 species of sphagnum moss associated with raised bogs. Scan the QR code below to learn more.



Click or scan this QR code to view the publication: "A Beginner's Guide to the Sphagnum Mosses of Raised Bogs"

Heather is often associated with bogs, and has a beautiful bright pink flower. Despite being commonly associated with bogs, the presence of large amounts of heather often indicates that the bog has dried out to an extent, however it can also occur sporadically on intact raised bogs, especially on the top of hummocks. Birch and Scots pine may also be present on drier cut parts of the bog.

In order to restore the health of bogs, it is important to block drains using peat dams and bunds to raise water levels, slow the flow of water off bogs, and raise the water table. This process is sometimes known as 're-wetting' which sees the water table of the bog restored. This creates optimal conditions for Sphagnum mosses to establish once more and helps to reduce carbon emissions and aid recovery of the peatland ecosystem. It is estimated that for every 10cm the water table is raised a reduction in 5 tonnes of CO2 emission per hectare per year occurs.

The process factors in third party landowner boundary drains which remain unblocked. A hydrological assessment is carried out in advance of works being undertaken.

The CANN peat project improved the conservation value of 1200 ha of Sliabh Beagh.



There are currently few reliable figures for the the actual emissions saved by restoration of Irish bogs because of the relatively short time that bog restoration has been underway. However at the community managed Abbeyleix Bog, where restoration work of 100ha was undertaken in 2009, a 2020 survey concluded that the CO2 emissions reduced from 443.3 tonnes per year in 2009 to 209.9 tonnes in 2020. This is a reduction of 52.7% (234 tonnes per year) or approximately 2.3 tonnes/ha/year. Taking into account than an average car in Ireland emits 2.9 tonnes of CO2 per year (SEAI, 2020), a reduction in emission in 234 tonnes equates to 81 fewer standard cars on the road or 116 new cars with lower emissions.

#### Fens

Fens are a form of marshy peatland environment, that are accumulating peat. They are fed by groundwater, whereas bogs are fed by rainwater. Fens have a high water level, at or slightly above the ground surface for over 60% of the year. Poor and rich fens are dominated by sedges and rushes but a dominance of black bog-rush is indicative of rich fens, whilst a higher abundance of Sphagnum is characteristic of poor fens. Fens follow a similar formation to the early stages of bogs; plant material accumulates under anaerobic conditions which forms a thick layer of peat, the surface is then invaded by sedges to form a fen.

Pressures and threats to fens include drainage, land reclamation, and most of Ireland's remaining fens have been damaged to some degree by drainage or reclamation. Monaghan was the first county in Ireland to undertake a comprehensive countywide fen survey in 2007. All fen sites surveyed were found to be negatively affected by drainage.

In general, fens are less acidic than bogs, have a higher mineral content and frequently occur in a mosaic of different habitats. This means they can support a greater variety of plant and animal life. More than 200 different plants have been recorded on Irish fens. Amongst the plants found on fens are non-sphagnum (brown) and sphagnum mosses, black bog rush, a variety of sedges, and orchids including the butterfly orchid. Like bogs and other wetlands, fens are also important habitats for numerous bird species, including shovelers and sedge warblers.

#### Good examples of fens are:

- Pollardstown Fen in Co. Kildare, which is the largest spring fed fen in Ireland.
   It is fed by calcium rich water from 40 springs in the Curragh aquifer.
- Moyree River System SAC in Co. Clare, which comprises good examples of alkaline fen.

#### Turloughs

A turlough is a type of disappearing lake found mostly in limestone areas of the west of Ireland. Moylan Lough near Carrickmacross in Monaghan is probably the most northeasterly turlough in Ireland. They are rare outside of Ireland. They occur in low lying areas of depressions in the ground and are generally ground water fed but can have in-flowing rivers. The Burren area in Co. Clare, with its limestone pavement landscape, is known for its turloughs. Due to the limestone landscape, turloughs flood through underground passages as water levels rise, and then drain through underground swallow holes. Turloughs are priority habitats protected under the EU's Habitats Directive. They support a wide variety of plant and flower life, such as the butterfly orchid and shrubby cinquefoil, and depending on water levels throughout the year, also water birds, and can also provide habitat for whooper swans and white fronted geese. Numerous water beetles are also found in and around turloughs. Turloughs support a range of different plant communities that comprise a mixture of aquatic, amphibious and terrestrial species and are described as ecotones (transitional zones between aquatic and terrestrial systems). Turloughs are renowned for their botanical interest.

The turlough at Coole Park, Co. Galway, was made famous by the WB Yeats poem, the Wild Swans at Coole. Other well-known turloughs include Lough Gealain in the Burren. Because they occur on and around grassland, and are often dry in the summer, turloughs also provide grazing for farm animals. Like many other wetlands, they have faced pressure from drainage and agricultural intensification, however their conservation is important for biodiversity and also for providing natural flood management.

#### Transition mire and quaking bogs

Transition mire is a protected habitat under the EU Habitats Directive. These extremely wet peat-forming habitats are usually associated with the wettest parts of a fen or bog. Their transitional nature means the habitat can occur in the area between a bog and fen, or as a successional habitat in lakes, ponds, slow rivers and fens. The habitat succession occurs as peat gathers in groundwater fed fens or open water to produce a rainwater fed bog. They can be known as quaking bog, as they tend to be very unstable underfoot. On transition mires,

there are often floating mats of vegetation over open water. Like other peatland and wetland types, they have suffered decline from drainage and reclamation, afforestation, turf cutting and pollution. Amongst the plants found on transition mires are water horsetail, bog bean and sphagnum moss. Like other wetlands, transition mires are important habitats for a wide variety of biodiversity, including bird, butterflies and other insects.

#### Good examples of transition mires include:

- · Ketts Lough and Tullaher Lough, Co. Clare.
- · Aughnamullan Fen and Black Lough Co. Monaghan.

#### Freshwater marsh

Marshes occur on level ground near river banks, streams, lakesides and other places where the mineral or shallow peaty soils are waterlogged for at least part of the year but not for so long that significant peat formation occurs. Extensive areas of standing water are only present during very wet periods. They are species rich and support a wide variety of wetland plants, including rushes, sedges and broadleaved herbs such as meadowsweet, marsh cinquefoil, flag iris, marsh pennywort and wild angelica. The sedges and rushes should make up less than 50% of the vegetation cover to be considered a marsh. Again a wide variety of birds are to be found in rushes, many taking advantage of the vegetation for nesting.

#### Good examples of freshwater marshes in Ireland are:

- The marshes along the Shannon Callows.
- Ballycar Lake, Co. Clare.
- Glaslough lake, and Rafinny Lough, both in Co. Monaghan.

#### **S**wamps

Swamps occur at the margins of rivers, lakes, flooded areas and estuaries. Water levels fluctuate but they remain wet with the water table usually above ground level for most of the year, forming extensive areas of standing water. They contain stands of vegetation, which can be dense or more open. As with other wetland habitats, the pressures they face largely come from drainage, agricultural run-off, human development around lakes and pressures from recreational activities.

Reed swamps are characterised by the dominance of reeds, large grasses or sedges, with just one or two species generally being particularly prominent. Broadleaved herbs form a relatively small component of reed swamps, giving the habitat a characteristically poor development of the understory vegetation. The Common Reed is often the most frequent species in this habitat, but other prominent species include Common Club-rush, Reed Sweet-grass and Reed Canary-grass.

Tall-herb swamps are dominated by broadleaved herbs, giving them a greater species-richness in comparison to the reed swamps. Reeds, large grasses and sedges should be a minor element of the habitat, with a dispersed or patchy occurrence. Frequent broadleaved species include Lesser Water-parsnip, Fool's Water-cress and Hemp-agrimony.

Swamps are also important for bird life, and also host other species, including the otter which needs a safe refuge to rest in, so reedbeds in swamps provide important cover for them.

#### A good example of a swamp is:

- Drum Lough in Co. Monaghan, which has an area of reedswamp on its shore.
- · Ballycullinan Lake, Co. Clare.





#### How can communities act as wetland stewards?

Wetlands are precious habitats that provide many benefits to humans and the natural world when they are in a healthy condition. There is a lot that communities can do to raise awareness of and protect local wetlands. For example the Monaghan Wetlands Forum which was set up in response to the Monaghan Wetland Action Plan, is made up of stakeholders with an interest in the aquatic environment across the county.

The Community Wetlands Forum is a membership organisation that works to promote, develop and support community-led wetland conservation for the public benefit; and, to provide a representative platform for community-led wetland conservation groups. It has community group members across the country working to promote the importance of, protect and manage wetlands. These community groups have led a variety of projects including wetland restoration, citizen science and education initiatives connecting people with their local wetlands and recreation projects such as the development of walkways and boardwalks around local wetlands.

#### Examples of community led wetland projects include:

#### Abbeyleix Bog Restoration Project

Abbeyleix Bog Project (ABP) has a 50-year lease from Bord na Móna. Management is organised through a Board of Trustees, a Technical Advisory Group and Management Committee. As a result of community efforts, this project is viewed as a successful example of community led peatland restoration. The area of active raised bog is increasing, and areas of the bog are now sequestering carbon. Biodiversity has been enhanced, and the walkways developed by the community are a fantastic resource for physical and mental wellbeing, allowing walkers to experience the beauty of the bog.



#### **Scohaboy Bog**

Cloughjordan Community Development Association is a local community partner along with Coillte and the NPWS on the restoration of this bog in Sopwell, Co. Tipperary, outside Cloughjordan. CCDA have led on the development of walking trails in the nearby woodland, as well as a boardwalk into the bog, with the consent of local landowners. As well as managing the boardwalk, the local community group has led on numerous community engagement and education events connected with the bog. In an area with no history of peatland conservation, with dedicated community support, Scohaboy has transitioned from a place of burning and cutting to conservation, and all achieved without conflict. Today the restoration programme at Scohaboy is an award-winning example of how local community groups, state agencies, and nearly fifty local landowners have collaborated successfully in the restoration and conservation of this precious natural heritage asset and the public good.



#### **Ketts Lough**

Ketts Lough, a transition mire, is located within the Tullaher Lough and Bog SAC Co. Clare. It covers an area of 63.12 hectares and was purchased by the Irish Peatland Conservation Council in 2021. A Transition mire is an unstable peatforming community that develops on the surface of water where there is a small to medium influx of nutrients and where floating mats of vegetation typically occur over saturated or open water. At the northern end of Ketts Lough, which is relatively shallow, there is a large open body of water. The substrate in the lake is a mineral rich gritty clay. Emergent plants present over the surface of the lake included Bogbean and Bottle Sedge. The vegetation around the lake shore is species rich and grows in approximately 20 – 30 cm of water. Beyond the immediate lakeshore vegetation, larger areas of sedge vegetation occur. To the south of the open water body small sedge vegetation and Horsetail are the main plants present. All these areas form quaking mats of vegetation. Moving south and north of the lake the vegetation becomes less aquatic in nature and transitions to Cotton Grass and Sphagnum dominated vegetation.



## Everything Tyrrellspass has on show - Boardwalk at Cloncrow Bog

The ETHOS group in Tyrrellspass have organised many community engagement events with local schools and the wider community to raise awareness of the importance of Cloncrow Bog NHA on the edge of the village. In 2023, they completed and opened a boardwalk and walking trail, connecting the village with the bog, through woodland. This community led project received consent and buy in from local landowners and support from a wide range of bodies and agencies including the NPWS and Westmeath County Council. The boardwalk, seating and interpretative signage complements the research and restoration works happening on Cloncrow Bog led by the Care Peat Project, NPWS and Farm Peat.



#### Shanakyle Bog Restoration Group

The Shanakyle Bog Restoration Group carried out the first bog restoration and rewetting project in County Clare under the Shanakyle Bog Restoration and Habitat Enhancement Project EIP. This work began in 2021 and involved restoring and rewetting 30 acres of raised and cutover bog; creating a wildlife pond; installing bird nest boxes and bat roost boxes; carrying out an invasive species eradication programme; and managing 10 acres of grassland for wildflower meadow creation. This community group now manages a range of species rich habits. Eight different species of sphagnum have been recorded on the bog; as well as bog cotton, bog asphodel, ling heather, cross-leaved heath, white-beak sedge, and carnivorous sundews. Rewetted bog pools support damselflies, dragonflies and common frog, and the wildlife pond is home to the smooth newt. The bog woodland is dominated by downy birch with rowan and oak. The wildflower meadows are a haven for pollinators, and contain the common spotted orchid, eyebright, red bartsia, ox-eye daisy, knapweed, tormentil, hawksbeard, common birds-foot trefoil, meadow sweet and cuckoo flower. Shanakyle community group aims to promote and raise awareness of raised bogs and peatland restoration among the local farming community and wildlife interest groups.





# Key steps for communities wishing to protect or manage a local wetland

As you can see, there are different possibilities for communities to highlight the importance of local wetlands and take steps to protect them. Here are a few important first steps.

#### Identify the landowner(s)

If you are planning to undertake any project related to a wetland, it is vitally important to identify the landowner or landowners and get their buy in. There may be more than one landowner, and there could be a mix between public and private landowners. If you are unsure who the landowner is, you can use landdirect.ie to check who the owner(s) are, however, you will be required to pay a €5 fee to view the folio. You may also want to talk to the Community Wetlands Forum, your local NPWS ranger or local authority biodiversity officer. Please do not undertake any events or projects without the consent of the landowner and without ensuring you have access to the site.

#### Form a group

It is a good idea to have a group together who can collectively work on a project idea and its execution. This spreads the work out evenly, and also offers more potential for funding opportunities, especially if there is a committee and a group constitution.

#### Learn what you can about the wetland site

It is a good idea to gather as much information as you can before starting. For example, by visiting the Wetlands Ireland Survey Map you can find see the most recent survey of the site. have been carried out in relation to your wetland. You can also use <a href="mailto:npws.ie">npws.ie</a> to find out whether the wetland is a protected area or not. Your local Biodiversity Officer may be able to help identify other relevant.



Click or scan this QR code to view the **Wetlands Ireland Survey Map**.

#### Map and reach out to key stakeholders

Identify what other groups might be able to help. What other community groups might have an interest in your project, perhaps a tidy towns group, or a local environmental group? Get in touch with the local Public Participation Network (PPN) as they will have a list of other community groups and any relevant local events or upcoming funding opportunities. Reach out to key people in your local authority including the biodiversity officer, climate action officer and heritage officer. The Local Authority Water Programme Office (LAWPRO) have community engagement officers who may also be able to provide guidance and advice, and let you know about upcoming funding opportunities. Your local NPWS ranger will be able to advise on any environmental legislation or protected species you should be aware of. Once you have your group formed, reach out to the Community Wetlands Forum about membership. You will be connected in with a network of like minded groups and individuals, and will benefit from relevant resources, trainings and events.

#### Develop a plan

Get your group together and begin to develop a plan for what you want to achieve. Ask the Community Wetlands Forum, your Biodiversity Officer, or the NPWS Ranger for suggestions on which wetland sites to visit and what community groups to talk to. There will be lessons to be learned and mistakes to be avoided. Most importantly make sure you have a clear long term plan before you start applying for funds.

#### Identify suitable funding sources

Once you have a sense of what you want to achieve, you will need funding to undertake actions or conduct studies / surveys. Some sources of funding include:

National Parks and Wildlife Service Peatland and Natura Community
 Engagement Scheme. This is an annual scheme that provides up to €40,000 for
 community groups to undertake projects related to peatlands or non peatland
 Natura 2000 (protected area) sites. Keep an eye on <a href="mailto:npws.ie">npws.ie</a> or contact
 <a href="mailto:nature@npws.gov.ie">nature@npws.gov.ie</a>

- LAWPRO Community Water Development Fund. LAWPRO run regular funding programmes to support community groups run projects to promote and protect waterbodies. This is particularly useful for habitat surveys, studies and community engagement events.
- Department of Agriculture, Food And the Marine Locally Led EIP Scheme.
   This funding stream funded the restoration of Shanakyle Bog.
- Community Foundation Ireland funding for Biodiversity Action Plans.
   Community Foundation Ireland have been providing funding in recent years for communities to develop community biodiversity action plans. They also have provided funding for groups which have an action plan to carry out the actions in the plan.
- Heritage Council. The Heritage Council run an annual community grant scheme for community groups and not for profits. Wetlands are part of our natural heritage, so groups should be eligible for this funding stream, which sees grants of up to €25,000 available.
- Community Climate Action Fund: Get in touch with your local authority community climate action officer about funding for practical projects to reduce the impact of climate change. As wetlands, and in particular peatlands, are important when it comes to storing carbon, this is a good funding option.
- Local Biodiversity Action Fund. Local authority biodiversity officers apply every year for funding for projects in their local authority area to promote and protect biodiversity. Get in touch with them if you have a project to promote or protect a local wetland.

#### Tell the community about your work and plans

It is important to keep the wider community informed of your plans and any ongoing works. Not only will this help to gain long term buy in to your project, it may also encourage others to get involved. Think of organising a talk or an event, such as a guided walk, or setting up a social media page or getting in touch with local media to see if they will promote your work. If developing a Community Biodiversity Action Plan, you may want to consider 'adopting a local wetland' as an action in this plan, to encourage local stewardship of a wetland.

#### Resources / references

Irish Uplands Forum, Upland Birds	
Bird Watch Ireland – Birds	
Irish Wildflowers - photographs and details of wildflowers in Ireland.	
Irish Peatland Conservation Council – various resources including A to Z of Peatlands	
Irish Ramsar Wetland Committee, Irish Wetland Types Guide	
Wild Flowers of Ireland Website	
ENFO, Turloughs Briefing Sheet	
Biodiversity Ireland Species Database	







#### BIRDS

# Conservation of birds in Ireland The conservation status of birds in Ireland is signalled using a traffic light system - Green (G), Amber (A) or Red (R). Birds on the red list are the species most at risk and have the highest conservation concern, while those on the green list have the lowest level of concern. In the case of birds included under Annex I of the EU Birds Directive, Ireland is required to restore and maintain their populations to good conservation status.

G

### Moths

• Birds

Butterflies

Wetlands

**Species Table** 

• Plants, Sphagnums & Lichens



Numenius arquata - Crotach - The curlew is an iconic bird with many people having memories of its call on the bog. However, it is unfortunately endangered They can be found in numerous wetland habitats and thrive on the open space and wetland bog habitats, with long grasses providing cover from predators. They have long legs and a long bill.

#### Most commonly found on:

Raised bog; blanket bog



Gallinago gallinago - Naoscach - The snipe is another iconic bird found on boglands. It is a ground nesting bird. If disturbed they fly away in a zigzag pattern. They have a distinctive long bill, and are sometimes associated with making a drumming noise by the vibrations of its tail feathers in the wind to mark their breeding territory.

#### Most commonly found on:

Raised bog; blanket bog; marsh; transition mires; fens; turloughs



*Alauda arvensis - Fuiseog -* You will often hear them on the bog. The small brown bird, nests in the ground and flies up to 100 metres over ground.

#### Most commonly found on:

Raised bog; blanket bog;

(wide variety of grasslands and wetlands)



Circus cyaneus - Cromán na gcearc - The Hen Harrier is a large bird of prey, with a wingspan of up to 1 metre, which feeds on ground birds. Sliabh Beagh, Co. Monaghan and the Sliabh Aughties in Clare and Galway are among the hen harrier habitats protected under Annex 1 of the EU Birds Directive. It is sometimes known as the skydancer, because of the 'dance' the male performs high in the sky during springtime to find a mate.

#### Most commonly found on:

Blanket bog; raised bog; marginal grasslands

**Mute Swan** 



Cygnus olor - Eala bhalbh - Large white swans with orangered bills and black blob on forehead, and black nostrils.

#### Most commonly found on:

Fens; Also lakes, ponds, rivers



Lagopus lagopus hibernicus - Cearc fhraoigh - Found on bogs and upland heath areas. Its numbers have declined significantly in recent years. It has motted brown feathers with grey areas on the wings. They are a ground nesting bird, which feeds mostly on heather shoots, while also eating seeds, berries and insects. Ballydangan Red Grouse Conservation project is an example of a community led project to conserve the red grouse, involving the local gun club, farmers, Bord na Móna and other key stakeholders.

#### Most commonly found on:

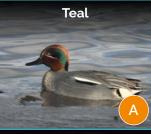
Raised bog; blanket bog



Pluvialis apricaria - Feadóg bhuí - This is a migratory bird protected under Annex 1; EU Birds Directive. Arriving from the continent in summer, and Iceland in winter, with some staying year round on blanket bogs. They have golden brown, flecked, plumage, with lighter underbellies. They breed in heather moors, blanket bogs and acidic grasslands, in particular in the west and northwest. They feed on ground insects, earthworms, as well as seeds, berries and grass.

#### Most commonly found on:

Blanket bog; raised bog



Anas crecca - Praslacha - Small duck with a short neck. The males have a brown head and a distinctive green patch around the eye. Their bodies are grey with a black and white stripe. The females are mottled brown and streaked.

#### Most commonly found on:

Wide variety of wetland habitats including turloughs; fens and marshes



Gallinula chloropus - Cearc uisce - Also known as the water hen, this dark bird with long legs, has white stripes along its side, and a red beak with a yellow tip. It is usually seen on the ground or in the water. It nests near water, usually in vegetation, and it winters nearby also. Resident throughout the year, but migrants arrive over winter.

#### Most commonly found on:

Wide variety of wetland habitats, especially in vegetation at edge of water, including in reedswamps and fens



Ardea cinerea - Corr ghlas - A distinctive wetland bird. They stand tall, up to one metre in height and are often poised at the edge of wetlands, on their own, or sometimes in pairs. They have grey – purple plumage, and distinctive long sharp bills.

#### Most commonly found on:

Wide variety of wetland habitats, especially at water's edge, including fens; turloughs; marshes



Tachybaptus ruficollis - Spágaire tonn - They have a small body and a short neck. During breeding season the adults have bright brown cheeks and throat, with a grey – brown body. Outside the breeding season, their bodies have dull brown colour above, with paler brown below.

#### Most commonly found on:

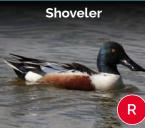
A wide variety of wetland habitats including Turlough; fen



Acrocephalus schoenobaenus - Ceolaire cíbe - Widely found on wetlands throughout summer. This small bird has a brown appearance all over, and is paler on its underparts. There is some faint black striping on its back. It breeds on the edges of wetlands, and winters in the south of Africa.

#### Most commonly found on:

Wide variety of wetlands, especially along the edges, including in reed swamps, marshes, fens



Anas clypeata - Spadalach - A member of the duck family, it is medium to large with a long broad bill. The males have a green head, white breast and brown belly. The females are more similar to mallards with a darker belly.

#### Most commonly found on:

Variety of wetland habitats, breeding in vegetation on water's edge, including fens; reed swamps



Anser albifrons flavirostris - Gé bhánéadanach Ghraonlannach Protected under Annex I; EU Birds Directive, these Geese
breed in Greenland and Siberia and come to Ireland in
October to overwinter along lakes, and turloughs. They are

October to overwinter along lakes, and turloughs. They are most commonly found in the west and in Wexford. They are a medium sized grey goose, with an orange-yellow bill and orange legs.

#### Most commonly found on:

Turloughs; transition mires; marshes



Mareca penelope - Rualacha - A member of the duck family, these medium sized ducks have a rounded head and small bill. The males have a red-brown head, which is a creamy-yellow colour on the crown and forehead, with a grey-white body and pink hues to the breast. The females are darker, being grey-brown in colour, with a spotty / mottled appearance.

#### Most commonly found on:

A wide variety of wetlands including turloughs



Vanellus vanellus - Pilibín - Distinctive wetland bird. They are a pigeon shaped bird, black and white, with pink tinted legs. It has roundish wings and a distinctive crest extending upwards from the back of its head.

#### Most commonly found on:

Next to blanket and raised bogs; turloughs



Cygnus cygnus - Eala ghlórach - These iconic swans are protected under Annex I; EU Birds Directive. They breed in Iceland and overwinter in Ireland. They are larger than the Bewick's swan and have large long necks and yellow-black bills.

#### Most commonly found on:

Various wetlands including turloughs; transition mires



Anthus pratensis - Riabhóg - A small bird, similar in appearance to the slightly larger skylark. It is dark in colour, with brown streaks, with a white breast. It flies straight up before parachuting back down.

#### Most commonly found on:

Widespread bird, found on raised and blanket bogs; marshes



*Phylloscopus trochilu - Ceolaire sailí -* They are a summer visitor to Ireland, very similar in appearance to the chiff chaff. They are pale green on top, and pale yellow on the underbelly, with typically pink legs.

#### Most commonly found on:

Marshes; edges of raised bogs and blanket bogs

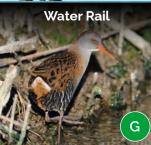
#### **Reed Bunting**



Emberiza schoeniclus - Gealóg giolcaí - A common wetland bird, it has a chunky bill and long tail. Adult summer males have a black neck and throat, with white collar on the neck. The underparts are grey-white with some light black streaks. The back and wings have streaks of black and brown. In adult winter males the white colour and black neck is largely moulted brown. The head is dark brown with a small white eye ring. Adult summer female Reed Buntings are similar to winder males, but with black streaking on the underparts and without the white collar or the white eyering. Adult winter females have a dark brown crown, broad buffy eyebrows and a pale brown stripe from the bill to the neck.

#### Most commonly found on:

A variety of habitats including marshes, reed swamps; blanket & raised bogs



Rallus aquaticus - Rálóg uisce - Smaller and slimmer than the moor hen, this secretive bird is typically found in freshwater wetland habitat, often hiding in dense vegetation, such as reeds. It has long legs with brown upperparts with dark spots, while its belly is black and white. The adult has a long red bill. It breeds in waterside vegetation such as reeds.

#### Most commonly found on:

Reed swamp

#### **Conservation Key for:**

• Plants, Sphagnums & Lichens • Butterflies • Moths

European Red Lists identify those species that are threatened with extinction at the European, and National level, so that appropriate conservation action can be taken to improve their status. They inform EU conservation policy as well as National conservation policy.

The NPWS and the Northern Ireland Environment Agency, together with the National Biological Data Centres North and South, are working with national experts to produce regional Red Lists for the island of Ireland. Irish Red Lists are not yet available for all species for example Sphagnums and Lichens. Another source for information on the conservation status of Irelands wetlands is 'The Status of EU Protected Habitats and Species in Ireland 2019'.







Click or scan this QR code to view the **The Status of EU Protected Habitats and Species in Ireland 2019**.



Rhynchospora alba - Gobsheisc - This tufted sedge grows to about 50 cm tall and has a white flower, flowering in August. The flowers are often arranged in compact spikelets at the top of the stems. The leaves are green and grasslike.

#### Most commonly found on:

Raised & blanket bogs



Eriophorum angustifolium - Ceannbhán, or Bog Cotton, grows on small stems of about 30 – 50cm. It has reddish – brown colouring on its stalks. In summer, its fruit is held in fluffy white tufts, resembling cotton, hence the name. In the past it was used as a feather substitute in pillows.

#### Most commonly found on:

Raised & blanket bogs



Menyanthes trifoliata - Ponaire chorraig - This little plant has short, creeping stems, often below the surface of the water. It has star shaped white – yellow flowers, with white petals, which have long white hairs on them.

#### Most commonly found on:

Raised bog, transition mires



Sphagnum austinii - Súsán austinii, or Austin's Bog-moss is a sphagnum which can tolerate drier conditions. It forms large hummocks which rise above the water table. These hummocks are usually hard to the touch.

#### Most commonly found on:

Raised bog, upland and lowland blanket bog



Sphagnum cuspidatum - Súsán cleiteach, or 'Drowned kitten', has a distinctive appearance and is found in wetter, more acidic habitats. It was one the sphagnums mosses gathered for use as a wound dressing during WW1 because of its antiseptic and absorbent properties.

#### Most commonly found on:

Bogs, poor fen and flush, wet heath, dystrophic lakes and drainage ditches



*Calluna vulgaris - Fraoch mór -* It has pale pink flowers, in bloom between July and October. It is a bushy plant with long shoots that has tiny, scale-like leaves that are packed together and overlapping.

#### Most commonly found on:

Raised bog; blanket bog



*Drosera rotundifolia - Drúchtín móna*, or Round-leaved Sundew, is the most common of the three sundews found in Ireland. It grows around bog pools on both blanket and raised bogs, and is a sign of a bog in a healthy condition. This carnivorous plant traps insects in a sticky substance produced by its red tentacles.

#### Most commonly found on:

Raised bog; blanket bog



Narthecium ossifragum - Sciollam na móna - This is a bright yellow flower with a spiky star shaped head. It blooms during the summer. It is sometimes referred to as the bone breaker, as animals grazing on bogs, where asphodel grows lacked calcium. However, this is not caused by the asphodel per se.

#### Most commonly found:

Near bog pools



**Andromeda polifolia - Lus na móinte -** These small plants have evergreen stalks, and pointed leaves. Their characteristic flowers bloom in summer, and are bright pink at first turning paler. They have an oval shape, occurring in clusters.

#### Most commonly found on:

Raised bogs



Cladonia portentosa - Léicean an réinfhia, or Reindeer lichen. Lichens are a symbiotic partnership of two separate organisms, a fungus and an alga. They are neither mosses nor plants. Reindeer lichen is soft when wet and crisp when dry. Grey/green in colour to yellow/brown. Forms loose compact tufts and is fire tolerant.

#### Most commonly found on:

Wet heath, bogs, bog woodland and dunes

Devil's Matchsticks
Lichen

NE

Cladonia floerkeana - Cipíní an diabhail, or Devil's Matchstick looks like a tiny match. Devil's Matchstick is an indicator of fire history, previously exposed peat, acidic substrates or acidic humus.

#### Most commonly found on:

Peaty soils



*Empetrum nigrum - Lus na feannóige -* A member of the heather family, which has edible berries in the summer. The fruits grow in clusters along the stem. They start pink before turning red then to black. They can last on the plant into the autumn winter.

#### Most commonly found on:

Blanket Bog



*Vaccinium myrtillus - Fraochán -* They are similar to blueberries, but with red inner flesh. They grow on small bushes. Their flowers are small and pink which grow into the dark berries which can be harvested for jams.

#### Most commonly found on:

Blanket Bog



*Trichophorum cespitosum - Cíb cheanngheal* - This sedge has small brownish tips which grows in tufts. It has a small, five sided white-yellow flower. It grows to 30cm.

#### Most commonly found on:

Raised bog; blanket bog



Molinia caerulea - Fionnán - It grows to between 30 and 100cm on wiry stems, forming tussocks. It has long, narrow, purple spikelets, which give its name. These tiny purple flowers are produced from July to September. The leaves are a blue-green in summer, orange in autumn, and turn pale white in winter.

#### Most commonly found on:

Blanket bog; transition mire



Schoenus nigricans - Sifin - A tough wiry rush, with shiny black flower clusters. It can grow up to 1 metre often in tussocks. Found on base rich fens, and also blanket bogs.

#### Most commonly found on:

Blanket bog; fen; turlough



Pinguicula vulgaris - Bodán meascáin is one of three butterworts found in Ireland. It is a carnivorous plant, with a tiny two lipped purple flowers. It blooms from May to August and it flowers on a slender stem. It has a rosette of green star-shaped leaves which grow close to the ground.

#### Most commonly found on:

Raised bog; blanket bog



*Utricularia vulgaris - Lus an bhorraigh -* This is a small carnivorous plant, with yellow flowers which are up to 8 mm long in clusters on 2-6 stems. It blooms in June and July.

#### Most commonly found on:

Raised bog; blanket bog



Carex paniculata - Cíb thortógach mhór - Forms dense tussocks of tall, triangular, dark-green stems, up to 150cm. A native perennial.

#### Most commonly found on:

Fen; Transition mire; marsh; swamp



#### Platanthera bifolia - Magairlín beag an fhéileacáin -

The butterfly orchid grows up to 50cm and has a tall flower spike with creamy white flowers. Flowers from May - Sept.

#### Most commonly found on:

Fen; turlough



*Epipactis palustris - Cuaichín corraigh -* The marsh helleborine has small flowers consisting of three purple / red outer parts (sepals) and red marked narrow white petals in the centre. They have a reddish stem.

#### Most commonly found on:

Fen; turlough; freshwater marsh



Phragmites australis - Giolcach - This is a distinct, tall coarse grass which has a hard cane like structure. They have broad leaves and flowering dark purple heads from August to October. They tend to grow in clustered beds. They can help to remove nutrients, such as phosphorous and nitrates from the water, and are therefore important for water quality.

#### Most commonly found on:

Fen; reed swamps



Succisa pratensis - Coireán na gcuach - A small flower, which flowers from June to October. It can also be found on bogs and marshes. Its flowers are blue — violet making up a rounded flower head, growing on long slender stalks. It attracts many insects and bees and is the food plant for the marsh fritillary butterfly.

#### Most commonly found on:

Raised bog; fen; transition mires; turloughs



Nuphar lutea - Duilleog bháite bhuí - This green, heart shaped plant on the water's surface, has a single yellow flowering head at or just above the water surface, enclosing the flower head. They often make a carpet on the water's surface. Attractive to pollinators, they flower between June and September.

#### Most commonly found on:

Transition mires: lakes



Nymphaea alba - Duilleog bháite bhán - This native plant is anchored to the bottom of slow flowing water courses. From June to September they produce lily-white flowers, on oval green leaves, which only open in full sunshine, with about 20 oval shaped petals. The white petals are contrasted with the white stamens in the centre of the flower. It grows on green stems, has pink buds, and flowers from April to June.

#### Most commonly found on:

Transition mires; lakes



Carex rostrata - Cíb ghobach - This is a perennial plant, with light green spikes of fruit, shaped like a bottle, hence its name. It flowers between May and July. It grows in wet and peaty habitats, in dense clumps.

#### Most commonly found on:

Lake edges, ponds, rivers and streams; also in ditches, fens and bog pools



Filipendula ulmaria - Airgead luachra - Can grow up to 1 metre, with dense and numerous small white flowers, which flower from June to September. It has dark green leaves. They have a distinct sweet scent and are known for medicinal properties in traditional and folk medicine to relieve pain and inflammation.

#### Most commonly found on:

Fen; turlough; freshwater marsh



Anacamptis pyramidalis - Magairlín na stuaice - Pyramidal orchids flower from June to September with a pink flower, in dense pyramid shaped heads, holding up to 100 flowers. Its leaves are long, narrow and pointed.

#### Most commonly found on:

Turlough; fen; marsh



Dactylorhiza fuschii - Nuacht bhallach - The spotted orchid blooms from May to August, with light flowers from light pink to purple, with dark pink stripes or spots. The flowers are densely packed and form a cone or cylindrical shape. The leaves are green with purple stripes.

#### Most commonly found on:

Turlough; fen; marsh



Potentilla anserina - Briosclán galánta - This is a common plant which trails the ground. It has a bright yellow flower with five petals. The leaves are silky with a silvery green colour. The leaves have numerous sharp tooth like leaflets. It flowers from May to August.

#### Most commonly found on:

Turloughs



Dasiphora fruticosa - Tor cúigmhéarach - A plant particularly associated with the Burren, it is a small shrubby plant, which grows to about 1 metre. Its abundant flowers are bright yellow, with five petals, and it flowers from May to July. It has green leaves.

#### Most commonly found on:

Turloughs



Comarum palustre - Cnó léana - Identified by its magenta, star-shaped flowers. A perennial, blooms May to July Its leaves are divided into five long lobes with toothed margins.

#### Most commonly found on:

Marshes, bogs, fens and wetlands



*Viola riviniana - Fanaigse* - This plant has a single blue-violet flower with five petals. It flowers form April to June. Its leaves are dark green on long slender stalks.

#### Most commonly found on:

Woodlands, hedgerows and shady places



Littorella uniflora - Lus an chladaigh - Found at the edges of turloughs and lakes. This is a small green plant which flowers once water levels drop, between June and October. Flowers are very small and white, with male flowers on the stalks, while unstalked female flowers are at the base of the plant.

#### Most commonly found on:

**Turloughs** 



*Eleocharis palustris - Cíb dhéise -* Occurring at the edge of lakes and turloughs. Occurring in clusters, it can look like lots of tightly packed green spikes near the lakesedge. It has a brown, small, oval shaped flower from May to July. These are common plants and grow to about 60cm tall.

#### Most commonly found on:

Turloughs; fen; marshes



Viola persicifolia - Sailchuach uisce - This is a rare species, with a pale, blueish-white flower with dark streaks on the petals. They have five petals, flowering between April and July, growing up to 15cm in height.

#### Most commonly found on:

Turloughs



Juncus effusus - Luachair bhog - This is the most common rush, which grows in tufts, with dark green stems, growing to about 1 metre. Stems are smooth. It has pale brown flowers, flowering between May and July.

#### Most commonly found on:

Marsh



Juncus inflexus - Luachair chrua - These are stiffer and more brittle than the soft rush. They have hard, dark green stems with brown flowers, growing to about 90cm.

#### Most commonly found on:

Marsh



Dactylorhiza Kerryensis - Magairlin gaelach - It has intensely bright purple — pink flowers in a spike shape on top of the plant. The flowers have broad, flat lips and three lobes. The leaves may be spotted or unspotted, and flowers from May to the end of June.

#### Most commonly found on:

Marsh; fens



Caltha palustris - Lus buí Bealtaine - This is a wetland flower, of the buttercup family, with bright yellow flowers, between 1 and 5 cm across, flowering between April and July. The flowers have between 5 and 9 sepals. The stems are hollow and have deep green large rounded leaves.

#### Most commonly found on:

Swamp; marsh



Hydrocotyle vulgaris - Lus na pingine - A deepgreen plant that stays close to the ground in a mat. It has round, toothed leaves, shaped like coins. The leaves are veined and on upright hairy stalks Its flowers are tiny, underneath the foliage, and are a white-green colour, with a pink tinge, flowering form June to August.

Most commonly found on:

Marsh



Apium nodiflorum - Gunna uisce - This is a low growing water plant with leaves similar to water cress. It has short stalked umbels / rounded heads of small white flowers, which have 5 petals. Its leaves are oval and slightly toothed.

Most commonly found on:

Reed swamp; marsh



*Iris pseudacorus - Feileastram -* Native to Ireland, the yellow flag iris grows along damp ditches, riversides and in marshes. It is a pretty and distinctive plant with a bright yellow flower on top of a sharp green stalk, growing to up to 1 metre. The flowers are between 8 to 10cm with three erect petals and three lower petals which droop downwards.

Most commonly found on:

Marsh; swamp; fen



Equisetum fluviatile - Scuab eich uisce - Smooth dark green stems which can grow up to 150 cm, often found in pools or wetter areas, with cones at the top which ripen between June and July. Stems are smooth and can be branched or unbranched, and can have spirals of short pointy branches. Its deep root system helps to stabilise the soil and prevent erosion.

Most commonly found on:

Marsh; swamp; transition mire



Angelica sylvestris - Gallfheabhrán - A common plant with umbrella-like clusters of purple-tinged flowers between July and September. It has purple hollow stems.

Most commonly found on:

Marsh; swamp; turloughs



Schoenoplectus lacustris - Bogshifín - Tall, growing to 3 metres with dark green spiky stems, this rush forms large stands. It has brown flowerheads with clustered spikes. Was used to make baskets, seats and mats.

Most commonly found on:

Swamp; fen; marsh



**Phalaris arundinacea - Cuiscreach -** Commonly found at the edge of lakes, ponds and canals, these tall green plants have pointed, flat leaves, and branched flowerheads with silky flowerheads.

Most commonly found on:

Reed swamp



Berula erecta - Ráib uisce - It can grow to 80cm with umbels / ball shaped clusters of small white flowers. It is a perennial plant, with the lower leaves having numerous leaflets and toothed edges. It is a perennial plant that grows at the margins of shallow flowing water.

Most commonly found on:

Fens; swamp



Mentha aquatica - Mismín dearg, or water mint is a stiff, hairy upright perennial with a strong scent of mint. It grows in damp ground and wet places with a lilac-blue flower head which flowers from July to September. The plant attracts butterflies including Small Tortoiseshell and the Peacock butterfly.

Most commonly found on:

Reed and large sedge swamp; wet grassland, fen



Pararge aegeria - Breacfhéileacán Coille - Found in woodlands, brambles on the edges of bogs and wetlands. A common butterfly, with cream blotches on the upperside of its brown wings. They are often found basking in pools of sunshine.

#### Caterpillar food plant:

Grasses



Aglais urticae - Ruán Beag - Very commonly found, medium size butterfly, black and yellow bands alternating on forewing and necklace of deep blue spots towards bottom of upperwing. Found in grasses, wooded areas and the edges of wetlands.

#### Caterpillar food plant:

Nettles



Inachis io - Péacóg - Large butterfly, distinctive bright blue eyespots on fore and hindwings, whereas the underwings are dark without coloured markings. Found in a range of habitats and wetland habitats.

#### Caterpillar food plant:

Nettles



*Pieris napi - Bánóg Uaine -* Commonly found, medium white butterfly with distinctive green veins on the underside of the hindwings. They have angular wings. Found in a variety of wetlands including wet grassland and wet woodland.

#### Caterpillar food plant:

A range of plants including garlic mustard, cuckooflower, water cress, wild cabbage



Euphydryas aurinia - Fritileán Réisc - This has an orange and cream panelled pattern on the upperside of the wings. It has a prominent broad orange band at the margin of the upperside of its wings, with black dots at the centre of each square patch. It is a vulnerable species and is protected under the EU Habitats Directive. It is found in wet grassland and bogland.

#### Caterpillar food plant:

Devil's Bit Scabious



Coenonympha tullia - Fraochán Mór - This is a rarer species of butterfly. It has a white streak on the underside of its wings and has 2 to 6 ringed eye spots on the underside of the hindwing. It was listed as vulnerable in the red list. It feeds on the hare's tail cotton grass. Found on open wetlands including raised bogs and blanket bogs.

#### Caterpillar food plant:

Hare's tail cottongrass and common cottongrass



Callophrys rubi - Stiallach Uaine - These are unique small butterflies. The underside wings are a bright green emerald colour, the upperside of the wings are grey-brown, but only seen in flight as they often have their wings closed. They are found around the edges of bog and on gorse.

#### Caterpillar food plant:

Gorse



Coenonympha pamphilus - Fraochán Beag - This butterfly only flies in sunshine, low to the gound, and its wings are always kept closed when at rest. It has a brown-rust coloured forewing with an eyespot at the tip. The hindwing is banded with brown, grey and cream, without the eye spots. It is often found in semi-natural grassland and at the edge of marshes.

#### Caterpillar food plant:

Fine grasses, meadow grasses



Biston betularia - Brocóg - A relatively widespread species, as the name suggests, the wings often have a peppering or mottling pattern. Often found in woodland and scrub at the edge of wetlands.

#### Caterpillar food plant:

Trees and shrubs including blackthorn, hawthorn, silver birch, beech





Opisthograptis luteolata - Leamhan ruibheach - A relatively widespread species. It is distinctive with its yellow colouring with red / brown markings along the outer edges of its forewings. Often found on hedgerows, scrub and woodlands on edges of wetlands.

#### Caterpillar food plant:

Trees and bushes including blackthorn, hawthorn and rowan

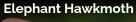




Petrophora chlorosata - Small to medium in size. Will often be seen when it is disturbed during the day on bracken, and will then settle on longer vegetation. Found on edges of wetland and on heaths.

#### Caterpillar food plant:

Bracken





Deilephila elpenor - Conach eilifinteach - Again quite common, and very distinctive with its pinkish hues. This is a larger moth. Found on a wide range of wetland habitats.

#### Caterpillar food plant:

Rosebay willow herb



Dicallomera fascelina - Leamhan clúmhach dubh - Particularly found on midlands raised bogs, it is most commonly found in June and July. The caterpillar is thought to use heather as a food plant. It is distinctive, with multiple tufts of hair along its back.

#### Caterpillar food plant:

Heather



Chiasmia clathrata - Smaller moth, often found around bog, fens, heathland as well as woodlands. As the name suggests, it has a latticed like appearance on the wings. Clovers and other trefoils are used as larval foodplants.

#### Caterpillar food plant:

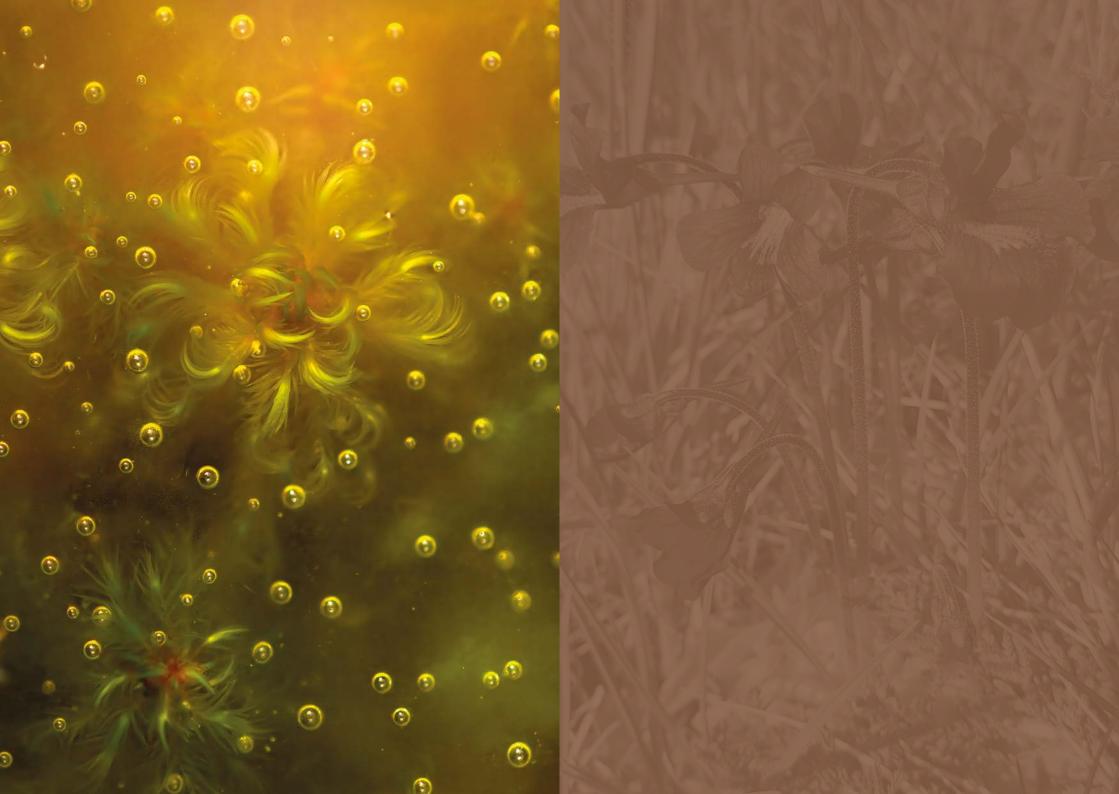
Clovers & trefoils



Saturnia pavonia - Impire - A very distinct species, often found around bogs, fens and heaths. It is a large species. The males are browner in colour, flying during the day, while the female are a more consistent silver / grey colour, and tend to fly at night. It has distinctive big eye spots.

#### Caterpillar food plant:

Heather, meadowsweet, bramble, hawthorn, blackthorn, birch





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