



# A Guide to Irish Fen Habitats



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West Bog and Pollardstown Fen,  
Co. Kildare © Catherine O'Connell

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Fens are wetlands made of peat, plants and water combined together. 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. The main source of water to a fen is from groundwater which means the peatland is alkaline to slightly acidic pH 6-8 and is rich in minerals.

Fens formed in lakes left behind after the Ice Age. These slowly filled with dead plants. On the surface typical fen vegetation such as brown mosses and sedges developed.

A fen is often a mosaic of different habitats ranging from open-water, reed-beds, small sedge vegetation, to semi-terrestrial birch and alder woodland. The complex of habitats that can occur within a fen contributes to the rich diversity of plants and animals. More than 200 hundred different plants have been recorded on fens in Ireland.



Fen habitats on Scragh Bog, Co. Westmeath © Peter Foss

## How Irish fens grow

# Fen plants



Lough Roe Fen-habitat on Clara Bog © Peter Foss and top right Bog Pimpernel © Catherine O'Connell

Saw Sedge © Catherine O'Connell



Butterfly Orchid and below Brown Moss © Catherine O'Connell

The vegetation of fens are rich in plant species for two reasons. Firstly, the fen is continuously fed by spring water which is alkaline and rich in minerals. Secondly, fens are made up of a mosaic of different habitats including open water, quaking mats and fen carr. Fens are dominated by sedges and brown mosses like Saw Sedge, Black Bog Rush and Bottle Sedge. They can also include extensive Reed beds.

including Devils-Bit Scabious, Common Reed, Horsetails, Grass of Parnassus, Meadow Sweet, Purple Loosestrife, King Cup, Ragged Robin, Bog Cotton, Bog Pimpernel, St John's Wort, Lady's Smock and the rare Marsh Saxifrage.

In the wooded areas Birch, Willow and Alder are found.

- 4 In the marshy areas of a fen many beautiful plants occur

## Brown Moss & Orchids

The dominating plants in the moss layer on fens are brown mosses. These include a range of species such as *Scorpidium scorpioides*, *Drepanocladus revolvens*, *D. aduncus* and *Calliergon giganteum*

A stunning feature of fens is the variety of orchids that grow there including; Marsh Helleborine, Butterfly, Marsh, Fly and Fragrant

Orchids and Common Twayblade.

The Fly Orchid is extremely interesting because it mimics the appearance of a fly in order to attract a male fly which tries to mate with the flower. The fly ends up pollinating the flower. The Fly Orchid is one of the most interesting of Ireland's orchid species.

# Fen minibeasts

Carnivorous flying insects, such as dragonflies and damselflies, enjoy hunting over fens where there are lots of smaller flying insects for them to feed on such as midges and mosquitoes. They lay their eggs under water in fen pools. The larvae spend up to three years developing in the pool. They are ferocious predators. After this time they emerge from the pool to become a flying insect and exploit a new habitat for food and to find a mate.

There is a great diversity of life within pools and many other minibeasts can be found here for example: Water Beetles, Water Boatmen, Pond Skaters. Freshwater Hoglice, Fly Larvae, Freshwater Shrimps and Cased Caddisfly Larvae.



Male and female Large Red Damselflies © Catherine O'Connell



Dragonfly Nymph © Peter Foss



Great Pond Snail © Catherine O'Connell



Snail eggs © Catherine O'Connell

V. geyeri © M. Horskák

## Fen snails

The availability of lime rich water on a fen means that there is plenty of calcium carbonate for animals to use in the construction of shells.

In fen pools Pond Snails, Planorbis Snails and Ramshorn Snails are common.

the Great Pond Snail can measure up to 6cm

long. It takes in air by floating upside-down on the

underside of the water surface as it grazes on algae and rotting matter. Female snails attach their eggs to the underside of leaves in shallow water. The warmer the water the quicker the eggs hatch.

Some of the rarer fen snails known as Whorl Snails of the genus *Vertigo* live in the humid conditions found under the layer of brown fen mosses. These microscopic snails are a biological indicator of fen quality and are a protected species in Europe.



Cased Caddisfly © Catherine O'Connell

Marsh Fritillary Butterfly resting on the leaf of Devil's Bit Scabious © Catherine O'Connell



## Fen insects

On a still, sunny day in May you might see the beautiful and endangered Marsh Fritillary Butterfly. They live in fens and their caterpillars eat the leaves of Devil's-Bit Scabious. The abundance of wild flowers on fens ensure there is a rich diversity of butterflies including Green-veined White, Orange-tip, Peacock, Green Hairstreak, Large White, Common Blue and many more. Irish fens are also rich in other insects such as dragonflies, damselflies and hoverflies.



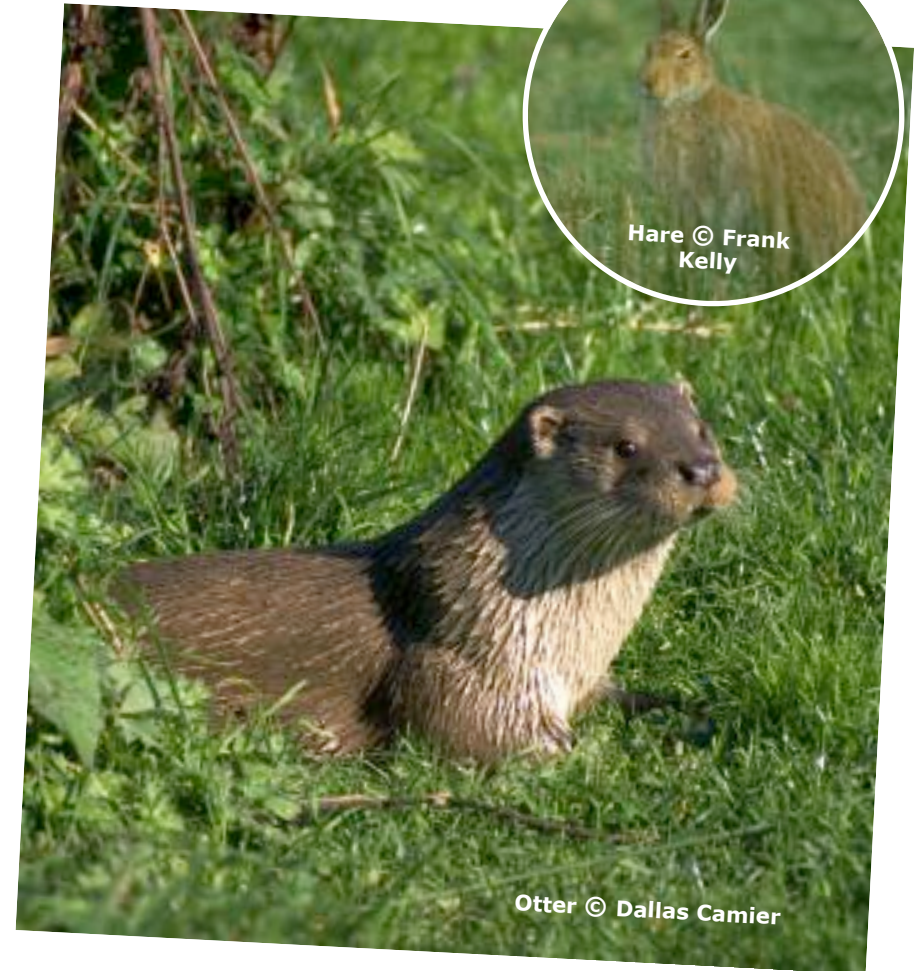
Green-veined White Butterfly feeding on Lady's Smock © Catherine O'Connell

## Mammals

Several mammal species visit fens. The otter is the most frequently encountered mammal. It is largely nocturnal but can sometimes be seen swimming in areas of open water or scurrying along ditches. Otter scat may be encountered on prominent plant tussocks as a sign to look for.

Otters are fierce hunters and will feed on fish, frogs, small mammals, birds and invertebrates.

Other mammals that visit fens include Fox, Rabbit, Hare, Pygmy Shrew and Bat.



Hare © Frank Kelly

Otter © Dallas Camier

# Amphibians

Smooth Newt © John Earley



Common Frog © Catherine O'Connell



The Smooth Newt, Ireland's only newt species occurs on fens. Newts live on dry land outside the breeding season but they must return to water to breed. The female lays her eggs singly on the leaves of submerged aquatic plants found on fens. When the eggs hatch the newt tadpole is more fish-like than the frog tadpole. By the end of the summer the young newt crawls out of the water to seek shelter under vegetation. The Common Frog is also breeds in fens.



Fenor Bog, Co. Waterford © Catherine O'Connell

Juvenile Sky Lark © Peter Foss



Meadow Pipit © Dallas Camier



Reed Bunting © Catherine O'Connell



# Birds

Some of Ireland's most beautiful song birds live in fen habitats. The Skylark and Meadow Pipit are common breeding species in fens, building their nests on the ground, hidden in the sedge tussocks. Skylarks mark their territory by singing rapturous songs as they ascend up into the sky.

The Sedge Warbler and the Reed

Bunting also breed in fens. The Reed Bunting feeds on the seeds of reeds and sedges. Once the Reed Bunting bred only in wet habitats, but as these have diminished the bird has become more adapted to drier habitats.

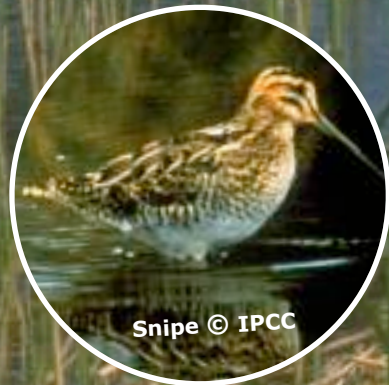
The Stonechat and the Whinchat are summer visitors. They use Saw Sedge and Common Reeds as song posts.

# Breeding birds

Nesting Mute Swans © Peter Foss



Robin  
©Dallas Camier



Snipe © IPCC

The stands of Saw Sedge and the Reedbeds are an ideal breeding habitat for many birds providing material for nest building and shelter from predators. The Mute Swan, Little Grebe, Great Crested Grebe, Teal, Mallard, Water Rail, Moorhen and Coot all breed within this area. Snipe and Lapwing breed in the wet marshy ground of the fen.

During autumn and winter substantial numbers of wildfowl occur on fens if there are adequate areas of open water. Wigeon, Shoveler, Tufted Duck and

Pochard are commonly seen. Grey Herons are also frequent visitors to fens hunting for food such as frogs.

Fen carr is an ideal breeding habitat for many common passerines such as Wren, Dunnock, Robin, Blackbird and Thrush. During the summer Birch and Willow trees attract Willow Warblers and Chiffchaffs. Other species that breed within fens include Cuckoo, Wheatear, Grasshopper Warbler, Whitethroat and Spotted Flycatcher.



Heron © Cillian Breathnach



Fen Habitat surrounded by agricultural land at Mullaglassan Lough, Co. Monaghan © Peter Foss



Ground water pollution at Sheetrim Fen, Co. Monaghan © Peter Foss



Reed beds © Peter Foss



Infilling of fen habitat at Aghacloghan Fen, Co. Monaghan © Peter Foss

## Fen uses & threats

Fens are wetlands that feed into the river catchment for their area. They provide many important functions including water supply, flood water storage, pollution control, groundwater recharge and habitats for wildlife.

Fen habitats such as reed beds are constructed and used in wastewater treatment. The reeds naturally filter out the nutrients, cleaning the water.

The original extent of fens in the Republic of Ireland was 92,508ha. However, due to utilisation of fen resources 77% have been lost. The most serious impact on fens has been their reclamation for agricultural land which involves drainage, fertilisation, reclamation and removal of peat.

Fens are often looked upon as suitable locations for dumping of landfill because of their low-lying nature and the fact that they are unsuitable for most other types of development.

Fens are also particularly vulnerable to nutrient pollution as they often occur in more intensely managed landscapes than other peatlands. Part of their water supply comes from ground water and once this is polluted it is difficult to clean up. Large amounts of nutrient entering the surface or ground water from local sources such as farming run-off, fertilisation or septic tanks can lead to eutrophication of fen habitats. This nutrient enrichment can cause a change in vegetation composition and a loss of species that are sensitive to nutrient enrichment.



# Save the bogs



The Irish Peatland Conservation Council (IPCC) is an environmental NGO. Its mission is to conserve a representative sample of Ireland's peatlands for future generations to enjoy. The IPCC has been working to save bogs for over 30 years and has run numerous projects around the country to achieve our goal. With only 23% of Ireland's peatlands remaining of conservation value it is important that these habitats are protected and conserved.

## IPCC:

- Restore, manage and conserve peatland nature reserves
- Protect peatland wildlife
- Run peatland education programmes for schools
- Monitor over 1000 peatlands of conservation value
- Produce and publish information on peatlands
- Train volunteers to help us to save bogs
- Meet visitors to bogs and fens at the Bog of Allen Nature Centre

