

wetlands and bogs

Wetlands and Bogs

Wetlands are unique environments, and have become quite rare, even in Ireland.

In West Cork we are fortunate enough to still have examples of these diverse habitats.

The Formation of Bogs

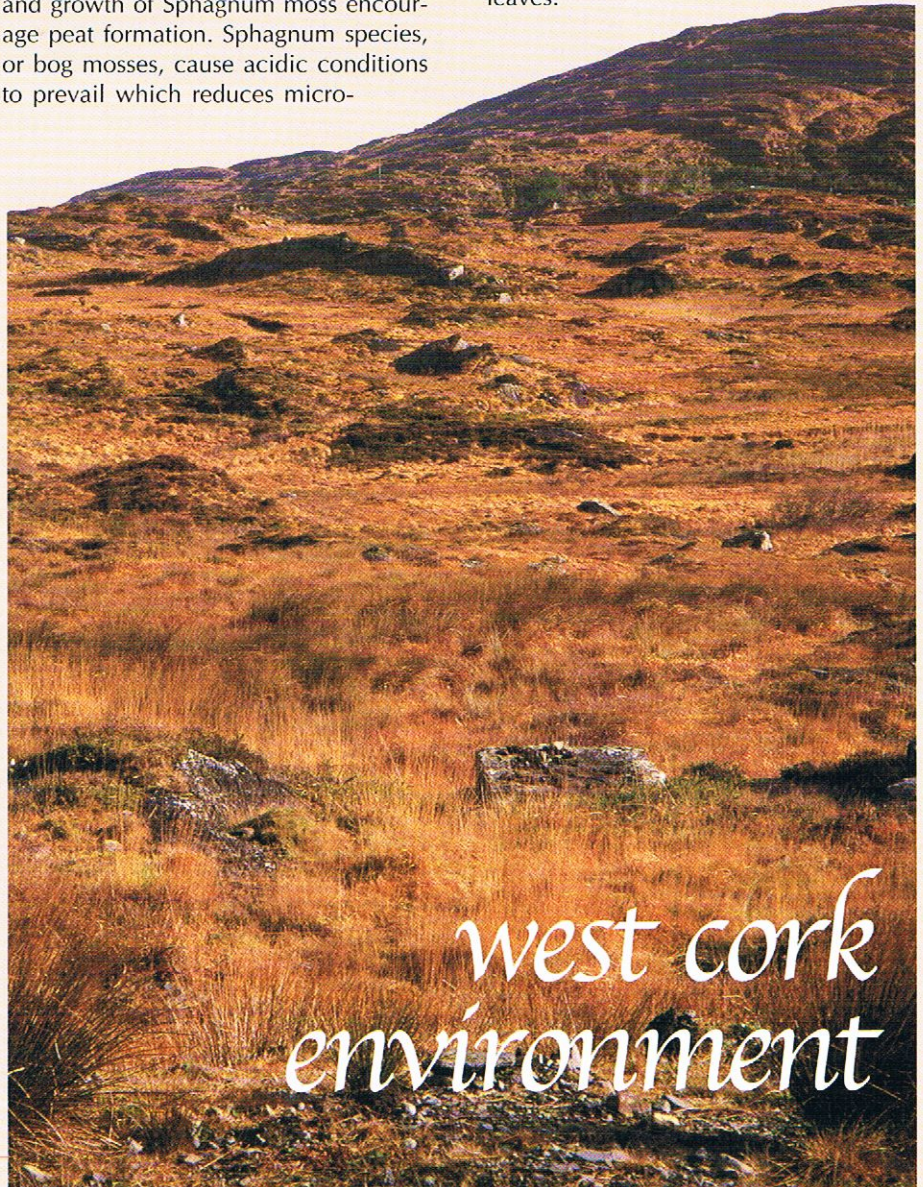
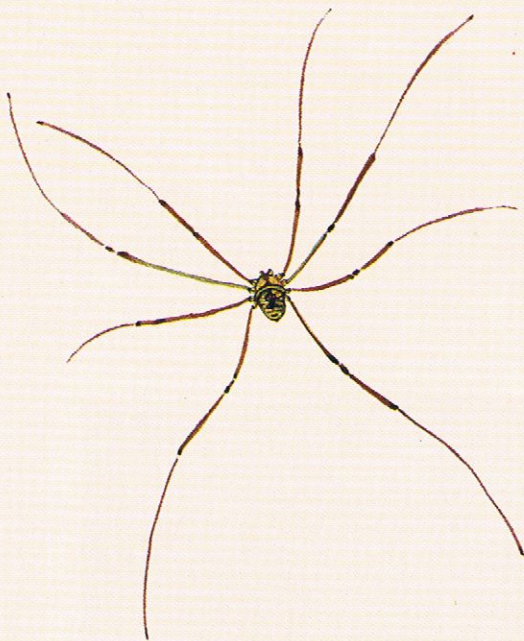
Blanket bogs are formed in areas of high rainfall and are common in the upland areas of West Cork. Iron and other minerals wash down through the soil, forming an impermeable layer called an Iron Pan. The waterlogged soil encourages the formation of peat as shown below, in Beara.

Peat consists of plant material that has accumulated over thousands of years. It forms where plant material builds up in the soil faster than it is degraded by soil micro-organisms. In blanket bogs the waterlogged conditions and growth of Sphagnum moss encourage peat formation. Sphagnum species, or bog mosses, cause acidic conditions to prevail which reduces micro-

organism activity and thus slows down the decay of plant material.

Adaptations

The acidic conditions in bogs result in nutrient poor soils. This low availability of nutrients has led to the evolution of some particularly ingenious plants. For example, some bog plants supplement their diet with insects. Sundew, bladderwort and butterwort are all carnivorous, catching their prey in different ways and digesting them to make up for the low nutrients in the soil. Sundew has white flowers and round hairy leaves.



*west cork
environment*



Small waterfall in a blanket bog on Beara.

Each leaf hair has a sticky drop of "dew". Small insects like midges land on these sticky leaves and get trapped, where they are digested by the plant.

Fens and riparian wetlands are richer in nutrients than bogs. The adaptations here are for light and space rather than nutrients. Tall plants such as reeds and bulrush grow in the shallows, while

water lilies and duckweed thrive in pools. Duckweed is the smallest flowering plant in Europe, floating on the water surface with a small dangling root.

Bog pools contain a myriad of microscopic plants and animals. These form complex food webs in each small pool. Just stop and lay down close to a bog pool on a hot sunny day and wonder at the diversity of life right under your nose.

Drowned Bogs

For several thousand years after the bogs began to develop, the sea level was much lower than it is today. Bogs that developed along coastal regions thus became submerged when the sea rose to its present level. Drowned bogs between the Old Head of Kinsale and Galley Head were dug for fuel during low tides.

Archives in Peat

When the first farmers began cultivating the soil in Ireland there was very little bog. It is thought that the interference with the woodland cover at a time when the climate was deteriorating, aided the development of the great bogs of Ireland. The evidence for this is to be found in pollen buried over millennia in the growing bogs. Pollen in different layers of peat indicates what plants were growing during a particular era, and thus reflects the climate and growing conditions of that time.



Common reed in last year's colours and gorse.

As well as recording the history of vegetation since the Ice Age, bogs have stored artefacts of human activity also. Buried walls have shown ancient field boundaries. Tools, weapons and ornaments show the skill of the people, while metal and wooden containers, items of clothing and bog butter indicate the practicalities of ancient life.

Blanket Bog Report

According to a 1999 report by the Irish Peatland Conservation Council (IPCC), none of the mountain ranges in the south of Ireland have been properly surveyed for blanket bogs. West Cork almost certainly has conservation-worthy bogs that are not acknowledged. The IPCC is Ireland's foremost conservation group for bogs. Unlike other groups which campaign for birds or for wildlife in general, the IPCC specifically looks after the whole peatland ecosystem.

The characteristic combination of bog and rock outcrop is more prevalent in West Cork than in any other area of Ireland.

Kerry Bog Pony

The Kerry Bog Pony was originally bred in the 17th century, specifically for working on the bogs. They were used to help move turf to drying areas. This rare breed of horse was saved from extinction and bred by John Mulvihill, Kerry Bog Village, Glenbeigh. John says that the pony would have been used around West Cork to pull slide carts containing the cut peat out of the bog.

On the Banks

The riparian zone is the name given to the land at the sides of rivers and streams. This area has a unique ecological community. Many of the plants that grow along the river banks are tall and vigorous and utilise the nutrients and rich silt of the river for their benefit.

Yellow flag iris is one of the more colourful of these plants. The bulrush (*Typha*) has a long cigar-like flower



A bog stream on Beara shows the high water table in the bogs.

head, sometimes used in flower arrangements. Reeds (*Phragmites*) can be seen in vast stands along riverbanks such as on the Bandon river, where they are sometimes harvested for thatching. They grow out into the water where it is shallow enough and slow the flow of the river, thus catching more sediments on which to extend their roots. They show off a splendid haze of purple when they flower from August to October.

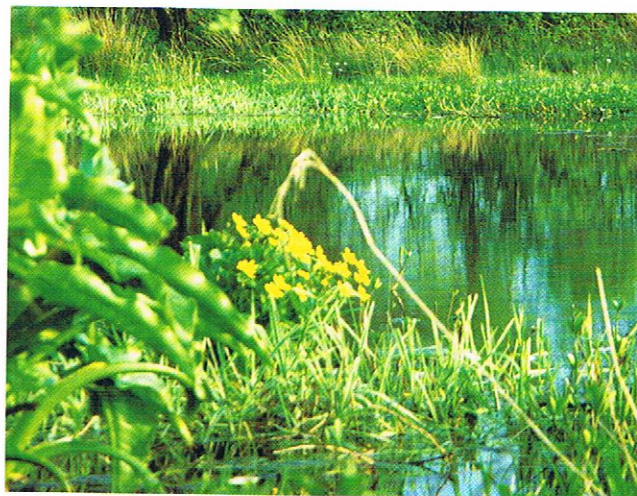
Wet meadows border the riparian zone

and often act as a flood plain. These too have unique ecological communities and are under threat from draining and over fertilising. Where wet meadows are managed as hay meadows, a rich flora can develop.

Water in Wetlands

One of the determining factors in defining a wetland is that the water table is at or above the soil surface regularly. The hydrology, or water balance, of wetlands is thus of vital importance in their survival. Drainage of bogs and river margins lowers the water table and kills the living bog.

Different water conditions dictate to a great extent the type of wetland that develops. Fens occur where plant material builds up within a lake, forming low marshy land. Fens are groundwater fed and are alkaline in nature. Riparian wetlands along river and lake margins are typically alkaline in nature also. Peat bogs are acidic from the rainwater that feeds them. This chemical difference between different peatlands affects the plants and animals that live there. Thus, blanket bogs support such acid loving plants as bog cotton or the striking yellow bog asphodel. Fens and riparian wetlands tend to support less acid tolerant species such as water mint and marsh marigold.



The water's edge sports *Caltha palustris* - marsh marigold, Dunmanway Lake.



Bog cotton and bog bean.

Cheese and Bill Hogan, maker of Gabriel and Desmond cheeses, both have wetlands for wastewater treatment.

Future of Wetlands

There are numerous organisations working to protect our wetland heritage. The Irish Peatland Conservation Council is an excellent reference for information about our bogs. Birdwatch Ireland and Irish Wildlife Trust both include wetlands in their overall conservation campaign. The Dutch Foundation for Conservation of Irish Bogs has aided the study and protection of our bogs also. Many other local, national and international groups campaign for wetland protection. Threats to wetlands such as drainage, forestry, peat extraction and overgrazing still exist. A general appreciation for our wetlands is growing and with it will come more protection.

Sponge effect of River Wetlands

Where wetlands exist along riverbanks, they act as valuable filters for cleaning the water running from the land. They also act as a sponge, absorbing excess water in the wet winter months and slowly releasing it to the river during dry weather. As small bogs and wetlands close to rivers and streams become drained for agriculture or development, this sponge effect diminishes. Thus, some small streams flood in winter and dry up completely in summer. By reintroducing a wild wet border beside the stream and some other measures, it is often possible to reduce this flood / drought cycle and restore some balance to streams. These wetlands also help to control erosion

along rivers. As well as the sponge effect, wetlands and bogs also absorb carbon dioxide as they grow, thus helping to reduce global warming.

Constructed Wetlands for Treating Wastewater

Constructed wetlands are wetlands that are specially designed and built for cleaning effluents and polluted water. They are used in several locations around West Cork.

Most of the constructed wetlands in West Cork are used for domestic septic tank effluent and for the treatment of whey from cheese making. Durrus

Action

Avoid using peat for fuel and moss-peat for gardening. Keep that little boggy patch at the end of the far field. If it is not drained or planted with trees maybe the snipe and dragonflies will stay for another while.

Action - Where to see Bogs and Wetlands

Blanket bog is present on most mountain areas of West Cork, particularly around the Beara Peninsula. The best way to guide yourself through the colourful insects and insectivorous plants of the bogs is to call ENFO or the IPCC for leaflets.



Marsh section of constructed wetland for Durrus Cheese.