

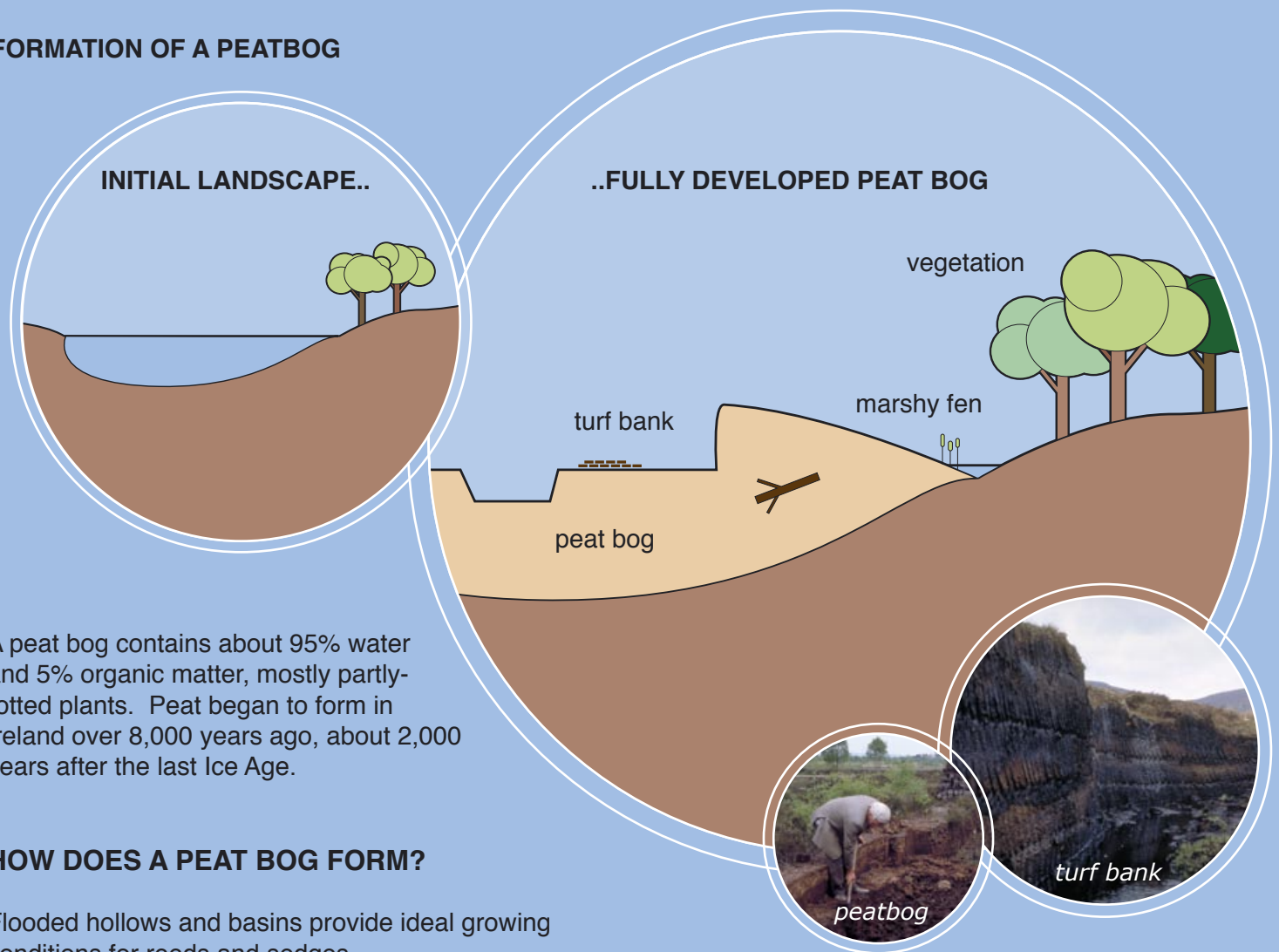
# Natural Heritage

NH 008

2005

PEAT BOGS

## FORMATION OF A PEATBOG



A peat bog contains about 95% water and 5% organic matter, mostly partly-rotted plants. Peat began to form in Ireland over 8,000 years ago, about 2,000 years after the last Ice Age.

## HOW DOES A PEAT BOG FORM?

Flooded hollows and basins provide ideal growing conditions for reeds and sedges.

When the vegetation dies, it does not rot away completely as the water in the hollows prevents oxygen, which most decomposer organisms need to live, from reaching the dead plants. The partly-rotted plants gradually build up to form fen peat.

Eventually dark fibrous peat completely fills the hollow to form a fen.

Most of the nutrients are tied up in the peat and so the only minerals available for plant growth are those dissolved in rainfall. Sphagnum moss is one of the few plants that can grow in such harsh conditions because it requires few nutrients and can soak up water like a sponge. Carpets of bog moss, which create their own acid environment, begin to replace the fen vegetation and transform fen into true bog.

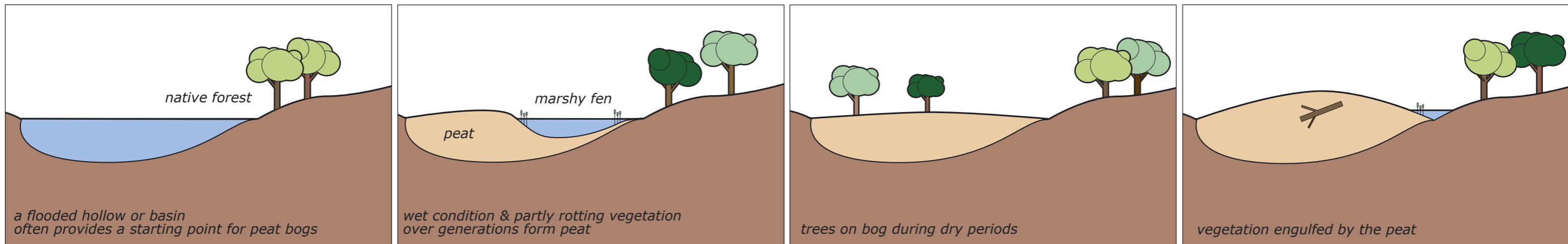
An increasing thickness of sphagnum peat slowly accumulates and the surface of the bog starts to rise

above the surrounding land, sometime reaching a height of 10 m after more than 8,000 years of growth. The water in the raised mass does not drain away because of the sponge-like abilities of the sphagnum and the dampness of the Northern Ireland climate. The original fen has now become a raised bog.

Raised bogs are mostly found on the lowlands around Lough Neagh, along the Bann Valley and in Counties Fermanagh and Tyrone.

In upland area, conditions are so wet that peat can form directly on the mineral soil, so that eventually the entire landscape, except for the steepest slopes, can become covered in a blanket of peat 2-6 m thick. These blanket bogs occur mostly on the mountains in the North and West of the Province.

## Natural development to maturity of raised bogs in Ireland



## FLORA AND FAUNA

The surface of the bog is not flat, but is made up of hummocks, wet moss lawns and occasional deep, open pools which provide a wide range of micro-habitats for both plants and insects.

The dominant plants on the bog surface are bog mosses of the genus *Sphagnum*. Different species grow in the pools, lawns and hummocks forming a richly coloured mosaic of red, yellow, orange, green and brown.

The pools may contain bogbean and bladderwort and provide the necessary conditions for the aquatic larvae of dragonflies. These acid pools also support specialised insects such as water skaters, water scorpions and water beetles, some species of which are only found on peat bogs. The pools are also home to frogs and their tadpoles.

Spongy sphagnum lawns are the natural habitat of many bog plants such as cranberry, bog-asphodel, bog cotton, sundews, white-beaked sedge and cross leaved heath. Moist conditions on the lawns also suit different species of slug.

The hummocks stand above the waterlogged hollows and are drier. They are dominated by different *Sphagnum* species, ling heather and lichens. On these drier areas, the caterpillars of butterflies and moths can be found feeding on the bog plants, while the adult insects feed on the nectar of bog flowers. The large heath, small heath, green hairstreak, orange tip, marsh fritillary, small copper, emperor moth and northern eggar can all be found on or around bogs.

A number of birds, such as mallard, snipe, curlew, redshank, pheasant, meadow pipit, skylark and linnets are found on bogs. Greenland white-fronted geese over winter on a few blanket bogs in Counties Fermanagh and Tyrone.

The perimeter of the bog is a good feeding ground for birds, particularly the cuckoo, willow warbler, reed bunting, various thrushes and finches and the now rare corncrake. Birds of prey, especially merlins, kestrels, peregrines and hen harriers also hunt over the bog.

Although more rare and difficult to spot, mammals also occur on bogs, such as the fox, badger, Irish hare and pygmy shrew.

As bogs receive most of their minerals from rainwater, plant nutrients are in short supply. Some plants are carnivorous and supplement their nutrient supply by eating insects. Sundews have spoon-shaped leaves covered in sticky tentacles that can trap flying insects. The butterwort has slippery leaves with edges that curl inwards: insects cannot climb out and become trapped to be slowly digested by glands on the leaf surface. In pools, the bladderwort traps aquatic animals in tiny bladders which have an explosive trap door.

## HISTORY WITHIN OUR BOGS

Bogs have been described as 8,000 year old diaries. The acid conditions and lack of oxygen can preserve items buried in the peat for thousands of years. (See ARC 002 – Wetland Archaeology).

By examining pollen grains from different layers of the bog, it is possible to reconstruct the climate changes over the last 8,000 years. This could help us to predict general weather patterns for the future.

The remains of trees are often found in bogs. The most common remains are pine, but birch, oak and yew are also found. The wood is well preserved and has been used for building, firewood and carved items such as church lecterns.

Antlers measuring up to 3.5 m tip to tip are sometimes found. They once belonged to Giant Irish Deer.

Human artifacts are often uncovered during peat cutting. Lost caches of butter that were stored buried in the bog are sometimes unearthed. Small items including gold ornaments and amber beads have been found, as well as larger structures such as wooden trackways and neolithic field systems that were engulfed by blanket bogs around 4,500 years ago.

Occasionally, human bodies have been found preserved in bogs. Most bodies date from Medieval or modern times, but some are over 2,000 years old.

## THREATS TO PEATLANDS

In the past, bogs have often been seen as wastelands valued only as a source of fuel or horticultural peat, or as reclaimed land for agriculture and forestry, or as sites for dumping rubbish. As a result, only 12% (167,580 ha) of Northern Ireland's peatlands remain intact.

The peatlands that once covered much of Northern Ireland have been greatly reduced during this century. At present only 167,580 ha of Northern Ireland's peatlands remain and of this only a very small proportion remains intact (neither cut or drained).

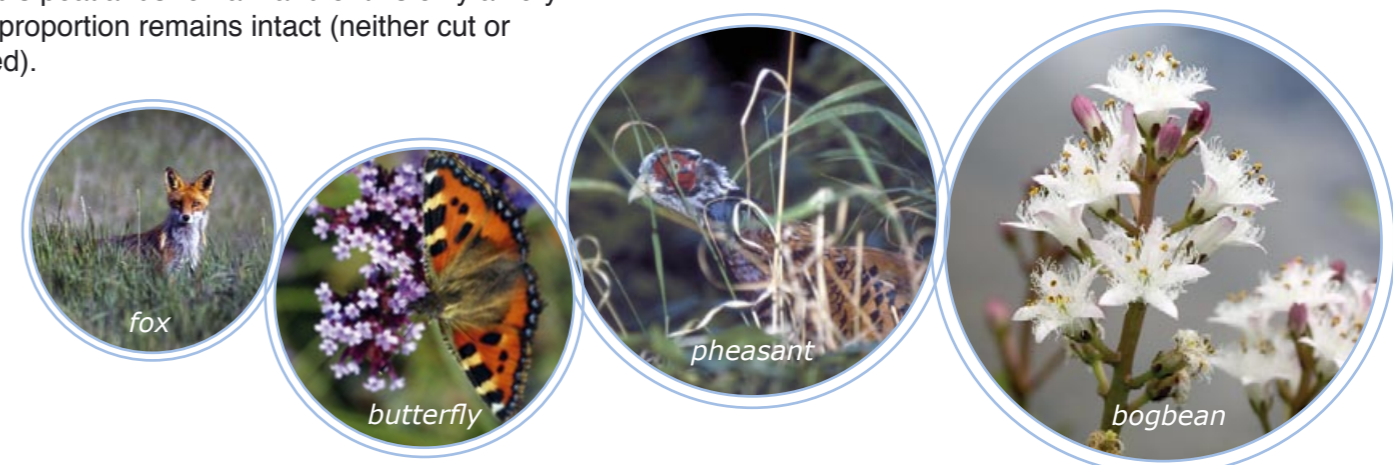
The major threats to peatlands in Northern Ireland are.

1. Peat-extraction - the introduction of machines for peat-cutting and milling has destroyed vast areas of boglands.
2. Drainage/Clearance - often perceived as wasteland many bogs have been drained to create arable land.
3. Afforestation - some areas of blanket bog have been used for conifer plantations.

## CONSERVATION OF NORTHERN IRELAND'S PEATLANDS

It is still possible to protect what remains of our peatland heritage. Environment and Heritage Service is working with the owners of important peatland areas to ensure that they are conserved as National Nature Reserves (NNRs) or Areas of Special Scientific Interest (ASSIs) under the Nature Conservation and Amenity Lands (NI) Order 1985.

Some protected bogs are managed as Forest Nature Reserves by the Forest Service of the Department of Agriculture (Northern Ireland).



## PROTECTED PEATLAND

Designation	Number of sites	Area (hectares)
ASSI	30	13,040.8
NNR	8	382
FNR	10	326
UWT	5	128
RAMSAR	1	1270
SPA	1	1270
<b>Total</b>	<b>25*</b>	<b>2964*</b>

\*The totals are not the sum of the figures given because some sites may have more than one designation.

For a description of these areas, see Factsheet No 11.

## PLACES TO SEE PEATLAND

Peatlands Park, adjoining Junction 13 of the M1 on the South-West side of Lough Neagh (Tel: (028) 3885 1102).

Aghatirourke Forest Nature Reserve, Florence Court Forest Park, off the A32, Co Fermanagh.

## SOURCES OF INFORMATION

- Bord na Mona, 76 Lower Baggot Street, Dublin 2
- ENFO – The Environmental Information Service, 17 St Andrew Street, Dublin 2.
- Irish Peatland Conservation Council, 3 Lower Mount Street, Dublin 2.
- Peat Producers Association, Tollund House, 8 Abbey Street, Carlisle, CA3 8TA.
- Please enclose a stamped addressed envelope when asking for information.
- Peatlands Park Information Centre (Tel: (028) 3885 1102).

## FURTHER READING

**The Wild Boglands** - *Bellamy, D.* (1986).  
Publisher: Christopher Helm, Kent.

**Peatlands. Wastelands or Heritage?** - *Cross, J R.* (1989). Publisher: Stationery Office, Dublin, ISBN 0 70 76 00790.

**Bogs in the Classroom: A Peatland Resource Pack for Teachers** - *Irish Peatland Conservation Council.* (1991). Publisher: Irish Peatland Conservation Council, Dublin.

## The Conservation of Peat Bogs -

*Nature Conservancy Council.* (1982).

Publisher: Nature Conservancy Council, Peterborough. ISBN 0 86139 193 4.

Available from English Nature Tel: (01733) 340345.

## The IPCC Guide to Irish Peatlands -

*O'Connell C.* (1987).

Publisher: Irish Peatland Conservation Council, Dublin.

## Northern Ireland Peatland Survey 1988 held within Environment and Heritage Service.

## Restoration of Damaged Peatlands -

*Wheeler B D, Straw S C.* (1995)

Published by University of Sheffield, HMSO.

ISBN 0117529788.

## Peatlands Forever Education Resource Pack

including video available from Department of the Environment, Peatlands Park.

## Atlas of The Irish Rural Landscape -

*Haley, F H A, Whelan K, Strout M.* (1997)

Publisher: Cork University Press.

ISBN 185918 0957.

## Northern Ireland Countryside Survey -

*Cooper A, Murray R, McCann T.* (1997)

Available from Environment and Heritage Service.

ISBN 0952825821.

## MORE INFORMATION ???

For further information on this topic or on any other Environment issue contact:-

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Tel: (028) 9054 6533 Fax: (028) 9054 6516

Web: [www.ehsni.gov.uk/education/factsheets.shtml](http://www.ehsni.gov.uk/education/factsheets.shtml)

Or contact the Warden at any Country Park or Countryside Centre or State Care Monument.



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