

HEATHER MOORLAND



Other publications in this series

FIELD BOUNDARIES ~ PONDS ~ FARM BUILDINGS
TREES ~ GIANT HOGWEED ~ PESTS



Department of
**Agriculture and
Rural Development**

www.dardni.gov.uk

HEATHER MOORLAND

CONTENTS

MANAGING HEATHER MOORLAND

REGENERATING HEATHER MOORLAND

PEAT CUTTING IN HEATHER MOORLAND
– REDUCING THE DAMAGE

WILDLIFE IN HEATHER MOORLAND

MANAGING HEATHER MOORLAND

IMPORTANT FACTS

- ~ Unfenced upland areas, characterised by peat soil and plants such as heather, bell heather and cross-leaved heath, are known as heather moorland.
- ~ Moorland is an internationally important habitat under considerable threat.
- ~ A large proportion of the remaining moorland in Europe is found in the British Isles.
- ~ Heather moorland is a distinctive feature of the uplands.
- ~ Overgrazing decreases heather cover, allowing less nutritious plants to become established.
- ~ Agricultural support payments may be withheld from farmers who overgraze or cause other environmental damage.
- ~ Responsible management is essential to ensure the long-term survival of this important habitat.

Managing Heather Moorland gives practical advice on managing heather moorland and explains why it is important to prevent overgrazing. It is part of a series, which has been produced to encourage farmers and landowners to manage heather moorland as a valuable grazing and wildlife resource.

TYPES OF HEATHER MOORLAND

There are three main types of heather moorland in Northern Ireland and each requires a different management technique.

Dry heath - characterised by plant species such as heather, bell heather, bilberry, western gorse and wavy hair grass.

Wet heath - characterised by plant species such as heather, cross-leaved heath, cotton grasses, bog asphodel, sedges, rushes and *Sphagnum* mosses.

Blanket Bog - occurring on peats with a depth of greater than 0.5m and characterised by species such as heather, cross leaved heath, cotton grasses, deergrass, bog asphodel, sundews and sphagnum mosses.



Bilberry © G. Day
www.habitas.org.uk



Sphagnum moss

THREATS TO MOORLAND

There are a number of threats to heather moorland:

- ~ overgrazing;
- ~ supplementary feeding;
- ~ drainage and reclamation;
- ~ mechanical peat extraction;
- ~ applications of lime, fertilisers and pesticides;
- ~ tree planting;
- ~ bracken and scrub invasion;
- ~ uncontrolled burning.

MINIMISING THE THREATS

Overgrazing

Overgrazing of heather moorland reduces heather cover and leads to lower productivity as less nutritious plants become established in place of moorland species.

Overgrazing also reduces the wildlife and sporting value of the moorland and is contrary to Good Farming Practice and Cross Compliance regulations. It therefore jeopardises Single Farm Payment, Less Favoured Area Compensatory Allowance and Agri-environment scheme payments.

COUNTRYSIDE MANAGEMENT PUBLICATIONS

HEATHER MOORLAND

Overgrazing can be identified by:

- ~ heather cover restricted to small clumps between mainly grassy areas;
- ~ overgrazed heather plants with distinctive domed shapes;
- ~ areas of bare ground and sheep tracks through the area along with high concentrations of dung, impaired drainage and the likelihood of standing surface water;
- ~ severe poaching damage, especially in wet weather, exposing bare peat;
- ~ the gradual disappearance of heather cover over time and a change to less productive grasses.

Heather moorland is particularly vulnerable to livestock damage during the winter. DARD research has shown that heather needs a rest period to build up plant reserves. This does not occur under continuous grazing and plants gradually weaken. Winter grazing also destroys next season's growing points and can lead to trampling and poaching.

Stock should be removed from heather moorland between 1 November and 28 February and stock levels controlled during the grazing season. Maximum stocking rates, in livestock units (LU) per ha, for the period March to October are:

Dry Heath	0.3LU/ha	(i.e. 2 ewes/ha or 3 cows/10ha)
Wet heath	0.25LU/ha	(i.e. 1.66 ewes/ha or 2.5 cows/ha)
	Cattle grazing of wet heath before June or after August is not recommended	
Blanket bog	0.075LU/ha	(i.e. 0.5 ewes/ha)
	Cattle grazing of blanket bog is not recommended	

Supplementary Feeding

Supplementary feeding must not take place on areas of heather. The practice damages heather moorland and is contrary to Good Farming Practice and Cross Compliance regulations. Single Farm Payment, Less Favoured Area Compensatory Allowance and Agri-environment scheme payments are all, therefore, at risk if supplementary feeding is carried out on heather moorland.

- ~ If supplementary feeding is necessary, feed stock on existing tracks, hard-core or concrete aprons away from heather areas.
- ~ Minimise the use of ATVs and other machinery on moorland; where their use is essential, vary their tracks if possible.

Drainage and reclamation

Avoid any new drainage systems and reclamation of heather moorland; these practices are contrary to Good Farming Practice and Cross Compliance regulations.

New or improved drainage systems dry out the land by lowering the water table. This leads to a loss of moorland and bog species which is most pronounced on areas of wet heath and blanket bog. Wet areas or bog flushes are an important source of insects for grouse and wader chicks. Young chicks can also fall into drainage channels and drown.

Anyone wishing to carry out drainage or reclamation on heather moorland must apply to [DARD Environmental Policy Branch](#).

Mechanical peat extraction

Planning permission may be required for peat extraction. Contact [Planning Service](#) for information.

Mechanical peat extraction can severely damage moorland vegetation and reduce its productivity and wildlife value. It can also compact peat layers, interfere with the water-table and cause erosion. Damage can also occur to vegetation on areas used for the spreading and drying of extruded peat. [Peat Cutting in Heather Moorland– reducing the damage](#) describes how this damage can be reduced.

Applications of lime, fertiliser and pesticides

Applications of these products will lead to a more rapid decline in heather cover.

There should be no application of lime, fertiliser (including manure or slurry) or pesticides, with the exception of herbicides approved for bracken control.

Tree planting

Grant aid for tree planting on areas of heather moorland is no longer available. Establishment of woodland on heather moorland may be subject to the Environmental Impact Assessment (Forestry) Regulations (Northern Ireland) 2000.

Do not plant trees on areas of heather moorland.

Bracken and scrub invasion

Burning and flailing can encourage bracken to spread and shade out regenerating heather.

Bracken is poisonous to livestock, harbours parasites such as ticks and bracken spores are carcinogenic in humans. Bracken can be controlled by cutting the fronds (leaves) twice yearly or by using chemical sprays. Cutting may need to be repeated over a number of seasons and should not be attempted during spore release in mid July and August. Operators are advised to wear protective clothing, gloves and a respirator to minimise the risk of breathing in fine plant particles.

The herbicides Asulam and Dicamba are approved to control bracken. If using asulam, bracken should be sprayed in July and August when fronds are open and before they turn brown. Dicamba, if used, should be applied from March to early May. Repeat applications may be necessary in subsequent years.

In some circumstances, scrub such as gorse, birch and rowan can invade areas of heather moorland and can quickly colonise with the subsequent loss of heather. This should be prevented by a programme of cutting and treating the stumps with a suitable herbicide. Take care not to remove western gorse, an important component of dry heath, and seek advice from CMB before removing areas of scrub.

Read the label before you buy and carefully follow the manufacturer's directions for use – USE PESTICIDES SAFELY.

Uncontrolled burning

Burning, when carried out correctly, can be a valuable tool in the regeneration and management of some types of heather moorland. Burning should only be undertaken after advice is taken from CMB, as poorly planned or badly executed burning can cause serious damage to moorland and wildlife.

- ~ The law states that heather must not be burned between 15 April and 31 August.
- ~ Never burn or flail areas of very wet heath or blanket bog where peat depth exceeds 0.5m.
- ~ Do not burn or flail within 10m of any watercourse. Such operations can result in water pollution, affecting wildlife, livestock and humans.
- ~ Do not burn large single blocks of heather moorland.
- ~ Do not burn during the summer months – it is illegal and causes damage to nesting birds and other wildlife.
- ~ It is illegal to burn heather or other vegetation within one mile of a forest unless you have informed the owner of the forest in writing of your intention to burn within one month and at least fourteen days before starting to burn.

Further details on heather regeneration techniques, including burning, are described in [Regenerating Heather Moorland](#).

REGENERATING HEATHER MOORLAND

Important Facts

- ~ The aim of heather regeneration is to retain young heather shoots which are a particularly valuable resource for grazing and wildlife.
- ~ Heather moorland can be regenerated using a number of techniques including controlled grazing, burning and flailing.
- ~ The most valuable productive heather moorland is one with a patchwork pattern of heather at different stages of maturity.
- ~ Overgrazing decreases heather cover, allowing less nutritious plants to become established.
- ~ Heather regeneration should NOT be attempted on blanket bog which is a biodiversity priority habitat requiring its own special management.

Regenerating Heather Moorland *gives practical advice on regenerating heather moorland. It is part of a series that has been produced to encourage farmers and landowners to manage heather moorland as a valuable grazing and wildlife resource.*

Heather Regeneration

An understanding of the life cycle of the heather plant will increase the success rate of attempts to regenerate heather moorland.

The heather plant goes through a life cycle involving four main growth phases over a 25-40 year period.

These phases are:

Pioneer phase

Building phase

Mature phase

Degenerate phase

Greatest growth occurs in the building phase, after which production declines. As plants become woody and tall their ability to produce new shoots declines. The nutrient value of the plants is also seriously reduced. In the degenerate phase heather will be invaded by more competitive grasses, gorse and scrub.

Moorland can be kept in good condition by carefully controlled grazing. Where heather has become over mature, it can be improved by the use of regeneration techniques which interrupt the natural life cycle of the plant.

The most valuable and productive heather moorland is one with a patchwork pattern of heather at different stages of maturity.

A planned programme of burning or flailing a number of small blocks or strips of heather across the moor each year should be followed. This will:

- ~ encourage livestock to graze over the whole area;
- ~ prevent regenerating blocks being overgrazed;
- ~ provide an excellent habitat for wildlife including red grouse.

Heather Burning

Burning is the most common method of regenerating heather. It encourages fresh new growth to sprout from existing heather plants, removes dead material and recycles nutrients. Burning also stimulates seed germination from the seed bank in the top layer of peat. However, burning should not be attempted on blanket bog where the peat depth is greater than 0.5m.

Heather burning is a skilled job which requires careful planning, supervision and labour to keep fires under control. Uncontrolled fires can cause enormous damage.

When to burn

The law states that heather burning must not be carried out between 15 April and 31 August.

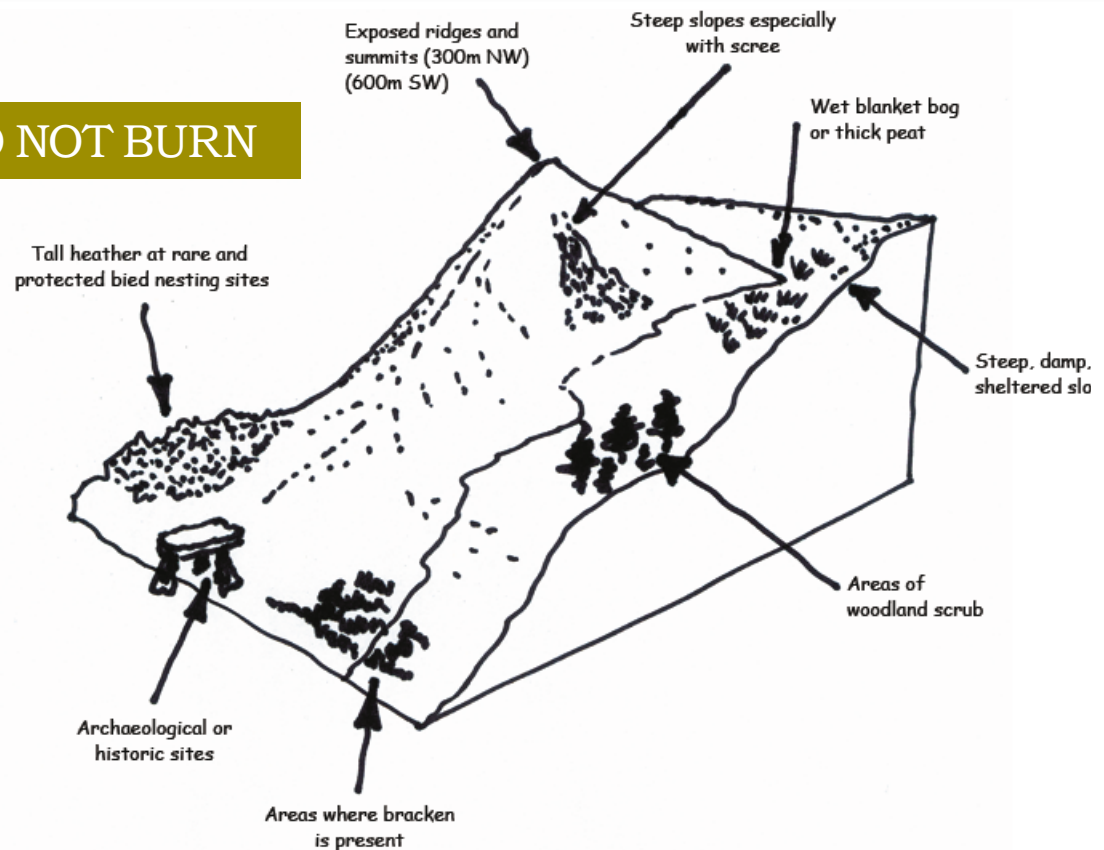
Burning should only be carried out in suitable weather conditions which occur in Northern Ireland on average only 10 days per year. It is best carried out in the autumn when the vegetation is sufficiently dry and a steady breeze is blowing at between 8 and 12 miles/hour (enough to move small branches on trees). It should not be carried out after a prolonged dry spell as the surface layers of peat will burn and destroy seeds. Light winds also make control difficult because they are often variable in strength and direction. Always aim to burn when the breeze is blowing downhill.

Planning to burn

Careful planning is the key to good heather management. An outline map of the area should be drawn up, clearly showing the location and size of areas to be burned. Areas to avoid should also be marked.

- ~ *Do not burn* blanket bog where burning can cause severe damage to the plant community. Plants such as cross-leaved heath, bog cotton and Sphagnum mosses are typical of blanket bog. Burning can lead to an increase in heather at the expense of these plants.
- ~ *Do not burn* where bracken is present. Burning will encourage the spread of bracken unless it is eradicated before burning by spraying with Asulam.
- ~ *Do not burn* woody heather plants over 30cm tall because they will burn very intensely. This can kill the plant, destroy any seeds in the top layer of peat and set fire to the underlying peat.
- ~ *Do not burn* woodland or scrub.
- ~ *Do not burn* specially protected areas such as ASSIs (Areas of Special Scientific Interest) without prior consultation with the [Environment and Heritage Service](#), Department of Environment (DOENI).
- ~ *Do not burn* within 10m of a watercourse, stream or river, to minimise any pollution or siltation of the water.
- ~ *Do not burn* areas where fires cannot be easily controlled, such as steep slopes and very rocky ground.
- ~ *Do not burn* close to archaeological or historic sites or allow the fire to spread near to them.

DO NOT BURN



A heather burning rotation will be required to achieve a patchwork pattern of heather at different stages of maturity. The length of rotation and area to be burned will vary with location and the growth rate of heather plants.

No one area should be burned more than once in a 15-year period. Initially plan each year to burn one fifteenth of the total area to be burned. If, however, the heather is slow to regenerate after burning, smaller areas should be targeted for burning in subsequent years.

Do not be over-optimistic when estimating the size of area that can be safely burned in a single day. Such mistakes can be dangerous, both to human health and the environment.

A realistic target for inexperienced personnel would be five burns, each covering 0.4-0.8 hectares (1-2 acres) per day but it may not be necessary to burn as much as this to meet the annual requirement for the rotation.

The size of the proposed burn will also depend on the labour available – a useful rule of thumb for determining burn width is one person for every 5-6m of fire front. Fires should be kept to around 30m wide and not allowed to spread to greater than 50m in width. A burning gang should consist of 5-6 people.

It is a legal requirement to have sufficient people, properly equipped and on hand to control a burn.

Final preparations

Although the width of a burn should be kept to around 30m, it can be as long as is practical. Whatever the length of burn, firebreaks must be present. These can either be natural features, such as streams, gullies, wet strips or flushes and farm tracks. If no natural firebreaks exist, artificial ones must be created by: -

- ~ *burning* – a fire burned AGAINST the wind, so that it burns hot and slow, can be used to create a firebreak. This technique may also be used to safely burn plots in the mosaic rotation.
- ~ *flailing* – an ATV towed or tractor-powered flail can be used to create a firebreak by cutting the areas to be burned.
- ~ *use of fire-retardant foam* – thick, creamy foam applied from a hand lance operating from a tractor-mounted sprayer or knapsack sprayer can offer effective control of fires. The foam must be applied less than one hour before the fire reaches it. Foam should not be used within 20m of a watercourse.

To prevent water pollution firebreaks should not be created within 10m of any watercourse.

All firebreaks must be aligned across the line of the proposed fire. They should be at least 6m and preferably 10m wide. Try to avoid making the firebreak too regular - an irregular edge looks much more natural in the landscape.

Forestry areas should always have a full 10m firebreak maintained annually, as should all public roads.

Each member of the burning squad should have a disposable face mask (EN 149: 2001 FFP3 type) and a long-handled heather beater. The latter should be 3–4m long and is best constructed from aluminium with either a flat rectangular aluminium end or a rectangle of reinforced rubber conveyor belting.

Burning and the law

Legally, you must give notice of intent to burn to neighbours and owners or occupiers of adjacent land at least 24 hours before burning.

It is illegal to burn heather or other vegetation within one mile of a forest unless you have informed the owner of the forest in writing of your intention to burn within one month and at least fourteen days before starting to burn.

It is advisable to give notice in writing at the beginning of the burning season of the intention to burn and provide a map plan of the areas to be managed.

COUNTRYSIDE MANAGEMENT PUBLICATIONS

HEATHER MOORLAND

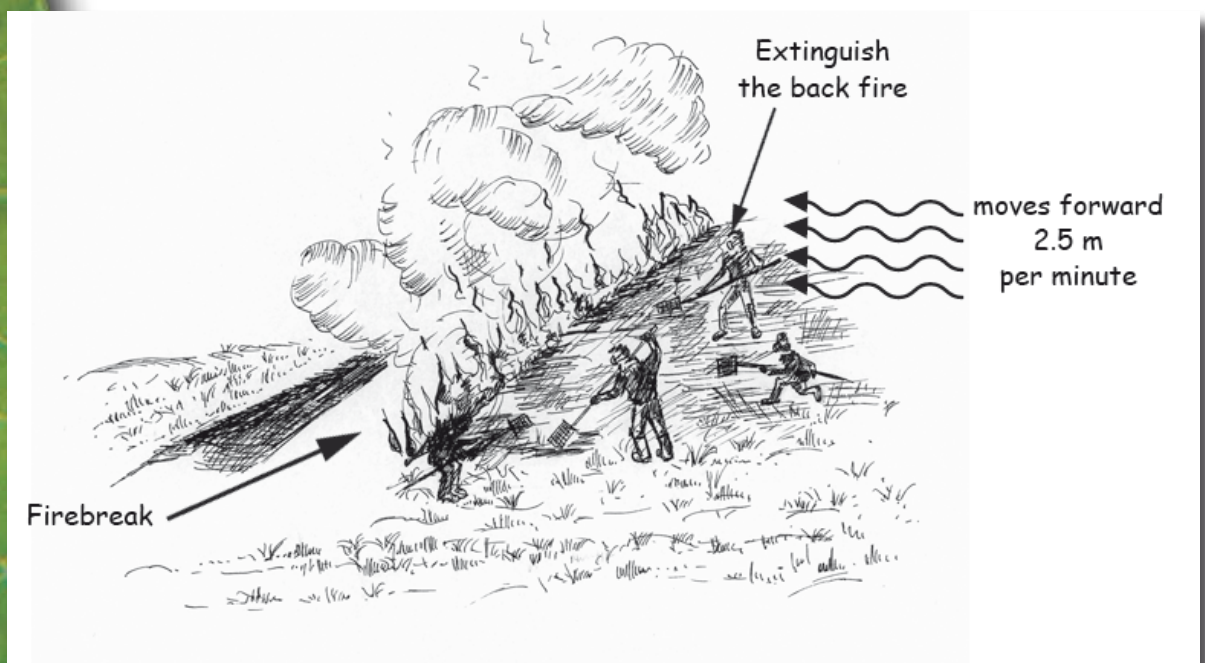
If you intend to carry out burning within an Area of Special Scientific Interest (ASSI), you must obtain written permission from the [Environment and Heritage Service](#) at least three months in advance of the proposed burning period.

You must also:

- ~ take all reasonable precautions to prevent injury or damage to people and animals;
- ~ take precautions to avoid any possible interruption or danger to road users;
- ~ avoid burning between sunset and sunrise;
- ~ avoid creating excess smoke;
- ~ obtain CMB's permission if you have an Environmentally Sensitive Area or Countryside Management Scheme agreement.

Starting the burn

Fires are best started using a proper heather burner or a rag tied to the end of a wire or metal rod, which has been soaked in diesel. It is important to get a strong, even fire, burning quickly along the length of the proposed burn. Once the fire has started, the members of the burning squad should extinguish any back fire on the windward side. Some of the squad can then attend to the sides of the fire to ensure a width of about 30m is maintained. The fire front should never exceed 50m in width. The remaining members of the squad, meanwhile, should follow the fire front, extinguishing any back fires. Under ideal conditions, the fire will move forward at about 2–4m per minute.



Future management

If the burn has been carried out properly, heather will regenerate both from the plant base and the underlying seed bank. These young tender shoots will invariably attract sheep and if overgrazing results, the heather may be grazed out. This can be avoided if the burning programme is spread around the whole moor in small blocks, rather than concentrating it in one large block. If the area of regenerating heather is at risk from overgrazing, some form of temporary fencing such as electric fencing will be required.

Flailing Heather

Flailing heather by mechanical means is another acceptable way of encouraging regeneration. Suitable machines include specifically designed heather flails and self-powered flails which can be towed behind an ATV. Alternatively, it is possible to use adapted single and double-chop forage harvesters. The flail should be set 12.5cm to 15cm above the ground (5 to 6 inches).

The technique is simple – plan in the same way as you would for burning except that as outlined previously the selected blocks of heather are flailed instead of burned. As with burning, it is important to leave the side of the block as irregular as possible to result in a more natural appearance in the landscape.

- ~ Flailing should not be carried out between 15 April and 31 August.
- ~ Do not flail blanket bog where regeneration is very slow and machinery can damage the vegetation.
- ~ Do not flail where bracken is present.
- ~ Do not flail within 10m of any watercourse to minimise pollution of the water and future excessive trampling of watercourse edges.
- ~ Do not flail specially protected areas such as Areas of Special Scientific Interest (ASSI) without prior consultation with [Environment and Heritage Service](#).
- ~ Obtain CMB's permission if you have an Environmentally Sensitive Areas agreement or Moorland Scheme or Countryside Management Scheme agreement.

The mulch produced by flailing can be removed from the site either by blowing it over the surrounding area if using a forage harvester, or by raking it into piles and drawing it off the site. A thick layer of mulch may suppress heather regeneration, depending on the chop length, the quantity of material left by the flail, the timing of the flailing and the amount of rainfall and winter weather in the area.

SUMMARY

Burning	Flailing
<i>Advantages</i>	<i>Advantages</i>
Can be used on most types of terrain	Less labour intensive than burning
No machinery requirement	Easy to control
Recycles nutrients	Non-weather dependent
Stimulates seed germination	Useful for cutting firebreaks
	Suitable for all ages of heather
<i>Disadvantages</i>	<i>Disadvantages</i>
Not suitable for steep slopes and rocky areas	Not suitable for rough terrain
Labour intensive	Availability and cost of machinery
Weather dependent	Safety considerations
Safety considerations	Mulch may inhibit regeneration if not removed
Difficult to control	May cause compaction

Agri-environment Scheme participants

Any farmers participating in agri-environment schemes must get CMB approval for any proposed regeneration plans. The current prescriptions for agri-environment schemes in relation to heather management should take priority over any of the recommendations outlined in this series.

PEAT CUTTING IN HEATHER MOORLAND – REDUCING THE DAMAGE

IMPORTANT FACTS

- ~ As described in [Managing Heather Moorland](#), dry heath, wet heath and blanket bog are the main types of heather moorland. Of these, blanket bogs, along with lowland raised bogs, make up the bulk of Northern Ireland's peatlands resource.
- ~ Hand cutting of peat for fuel has been carried out for centuries in Northern Ireland's peatlands. However, the increasing use of machines is causing severe damage to peatlands.
- ~ Peat is a finite, non-renewable resource; large-scale peat cutting is not sustainable over the long term.
- ~ Peat stores large quantities of carbon; the cutting and burning of peat has implications for climate change.
- ~ Sale of machine cut peat is unauthorised unless the cutter has planning permission for commercial extraction.

Peat Cutting in Heather Moorland – Reducing the Damage explains why it is important to reduce the damage caused to bogs and describes how the impacts of machine cutting can be reduced. It aims to influence those who own moorland, buy turf, or cut peat and is part of a series which has been produced to encourage responsible use of this valuable resource.

WHY ARE PEATLANDS IMPORTANT?

Peatlands develop under conditions of high rainfall and waterlogging which inhibit decay and allow organic material to accumulate. These conditions contribute to biological diversity in peatlands. Blanket bog, lowland raised bog, fens and the three types of peatland are all subject to Biodiversity Habitat Action Plans.

Plants

- ~ The waterlogged and acidic conditions that occur on peatlands support a uniquely specialised range of plants that includes heather, bog cotton, sundew and *Sphagnum* mosses.

Animals

- ~ Peatlands provide an important habitat for many birds. Several species of wader, such as curlew, snipe and golden plover, nest on bogs. Red grouse also depend on all types of heather moorland for food and nesting. While no Irish mammals are dependent on bogs, several species such as the pigmy shrew and Irish hare make frequent use of these areas. Peatlands are an important habitat for Ireland's only reptile, the common lizard.

Heritage

- ~ Peatlands preserve records of the past, including remains of animals such as the Irish elk, trees from former forests, plant pollen which tells us about past vegetation and human artefacts such as tools, pottery and even food.

CONSERVING PEATLANDS FOR THE FUTURE

In 1993 Government issued a Statement of Policy on Conserving Peatland in Northern Ireland (currently under review). As a result:

- ~ The most important peatland sites in Northern Ireland have been protected as Special Areas of Conservation (SAC), Areas of Special Scientific Interest (ASSI) and National Nature Reserves (NNR);
- ~ The expansion of commercial peat extraction for horticultural uses or fuel is being discouraged;
- ~ New public forests and grant aided private forests are no longer being planted on peatlands;

- ~ Prospective commercial peat cutters may be required to submit an environmental statement with their planning application assessing the impacts of the proposed extraction. Contact: Minerals Unit, [Planning Service Headquarters](#);
- ~ The importance of Northern Ireland's peatlands has been publicised through centres such as [Peatlands Park](#) near Dungannon.

HAND CUTTING

Hand cutting of peat for fuel has been carried out for centuries in Northern Ireland. This traditional method of peat extraction causes less damage to bogs than machine cutting.

- ~ Cutting peat from vertical banks means that only a small surface area of vegetation is removed at one time.
- ~ Pools are often created at the foot of peat banks which bog mosses soon colonise and start the process of regeneration.
- ~ The plants from the top of the bank can be moved as turves to the foot of the bank to encourage recovery of vegetation.
- ~ Hand cutting uses the peat resource much more efficiently than machine cutting because there is little wastage of peat.

MACHINE CUTTING

There are three methods of machine cutting peat commonly used in Northern Ireland.

1. *Chain cutters* – tractor-mounted machines extrude peat in sausage-like rows on the peat surface.
2. *Bin System* – an excavator is used to extract the peat, which is loaded into a tractor-mounted field press and extruded.
3. *Milling machines* – large scale commercial operators often use milling machines. These operations are controlled through planning consent and are not considered further in this series.

DAMAGE CAUSED BY MACHINE CUTTING

Machine cutting of peat is extremely damaging to peatlands and reduces the peatland resource as a whole. It is damaging in several ways:

Plants

Plants are damaged directly by the heavy machinery. Drainage dries the peat and leads to the loss of bog plants, some of which are rare. Until extruded peat is lifted, it has the effect of smothering vegetation, preventing growth or even killing plants. Successive cuttings can also destroy the source of seeds and thus reduce vegetation recovery.

Animals

The loss of vegetation reduces the cover available for insects and spiders and fewer can survive on cutover peat. Birds such as golden plover and snipe have less food and poor cover for nesting and so their numbers, in turn, decline.

Bog Structure

Heavy cutting machinery compacts peat and destroys natural variation within the peat and on the peat surface. The loss of vegetation and the weakening of the peat mass by carving of deep slits through chain cutting can lead to erosion of bogs. This also makes walking on the bog difficult and potentially dangerous.

Livestock

Machine cutting can damage the grazing value of the bog as heather tends to be destroyed and eventually replaced by less palatable plants such as sedges. The surface can also become dangerous for livestock.

Landscape

Machine cutting of peat can create unsightly scars in the landscape which take many years to heal and new access roads may disrupt views. Discarded bags litter the view and are a menace to livestock and wildlife.

Heritage

Some important historical finds have been made in peat banks. Machine cutting of peat is likely to damage such features before they have even been identified.

Water

Drains are usually installed before machine cutting. This invariably causes habitat damage, changing the composition of the vegetation. Peat cutting may also increase the amount of water draining from the site and reduce its quality by increasing sediments and releasing nutrients locked in the peat. This will in turn affect aquatic animals such as freshwater pearl mussels, trout and salmon. It may also affect the quality of water abstracted for drinking.

REDUCING THE IMPACTS OF MACHINE CUTTING

Consumers

If you purchase mechanically cut peat for fuel:

- ~ consider using alternative fuels or hand cut peat;
- ~ ensure fuel peat you purchase has been cut only from land for which there is planning permission for commercial extraction.

If you gather mechanically cut peat from the bog yourself:

- ~ ensure that it has been cut following the guidelines below;
- ~ gather it all - do not leave it on the bog over winter.

Landowners/Peat cutters

- ~ If you are a landowner, join a DARD agri-environment scheme. Grant aid may be available under these schemes to encourage positive management of moorland.
- ~ Where cutting is carried out the best environmental option is to cut peat by hand.
- ~ If access roads are necessary to facilitate cutting, site them where they will have the least impact on the landscape and ensure that materials are obtained from sites for which there is planning permission.
- ~ Remove all bags and other materials that will cause damage if left.
- ~ If peat is cut mechanically, ensure that the guidelines, below, are followed.

GUIDELINES FOR MECHANICAL PEAT CUTTING

- ~ Peat must only be cut from land where you have turbary rights and the owner permits the use of machines.
- ~ If you intend to sell peat you must obtain planning permission for commercial peat extraction.
- ~ Only harvest as much peat as you require for one year.
- ~ Collect all the peat that you have cut.
- ~ Cut areas which are covered by grasses, sedges or rushes in preference

to areas which are covered by heather or bog mosses.

- ~ Leave a distance of at least 10m between any area of cutting and watercourses.
- ~ Where multiple cuts are being made using tractor-mounted chain cutters, these should always be made in the same direction.
- ~ If you must cut peat mechanically cut from vertical banks wherever possible. Remove the surface vegetation before cutting and replace it at the bottom of the bank after cutting. If possible, create one bank rather than excavating several banks in a small area. Leave a depth of at least 0.5 metres of peat at the bottom of the bank.
- ~ If the bin system is used do not extrude or leave peat to dry on heather or bog.
- ~ Avoid the wettest areas.
- ~ Avoid any disruption to natural drainage.
- ~ Do not dig drainage ditches.
- ~ Allow the natural vegetation to recover.
- ~ Take care not to obstruct public access where it is permitted.
- ~ Do not leave any litter on the peatland.
- ~ Peat must not be cut from a peatland which has been declared a SAC, ASSI or NNR without the consent of [Environment and Heritage Service](#).
- ~ Peat must not be cut from any area under management agreement as part of the Environmentally Sensitive Area Scheme or Countryside Management Scheme, without permission from CMB.

WILDLIFE IN HEATHER MOORLAND

IMPORTANT FACTS

- ~ Heather moorland incorporates both lowland and upland heathland and blanket bog and is a valuable grazing and wildlife resource providing a home to a number of specialised plants and animals.
- ~ The European Habitats Directive identifies these habitats as requiring special protection measures.
- ~ The importance of these Peatland types for biodiversity is recognised in Northern Ireland Habitat and Species Action Plans.
- ~ Almost 90% of blanket bog in Northern Ireland has already been significantly damaged or destroyed.

Wildlife in Heather Moorland is part of a series produced to encourage farmers and landowners to manage heather moorland as a valuable grazing and wildlife resource. It provides information on the important wildlife associated with blanket bogs and heathland and gives practical advice on management for wildlife. Wildlife is described under the following sections – bird life, animal life, insect life and plant life.

TYPES OF HEATHER MOORLAND

Heather moorland in Northern Ireland can be categorised into three main types, all of which support important and highly specialised communities of plants and animals.

Dry heath - develops where peat is shallow and relatively free draining. It is mostly found in the Mourne Mountains and Ring of Gullion. These areas are dominated by heather cover, often in combination with gorse, bilberry and bell heather.

Wet heath - develops under conditions of heavy rainfall and waterlogging resulting in the formation of peat soils up to 0.5m in depth on fairly steep slopes. Wet heath is found in association with Blanket Bog in the Antrim Plateau, Sperrins and Fermanagh uplands. Wet Heath is characterised by plant species such as heather, cross-leaved heath, cotton grasses, bog asphodel, sedges, rushes and *Sphagnum* mosses.

Blanket Bog - develops under conditions of heavy rainfall and waterlogging resulting in the formation of layers of peat greater than 0.5m deep on gently undulating slopes. Large areas of blanket bog are found in the Antrim Plateau, Sperrins and Fermanagh uplands. Blanket bog is characterised by a mix of heather, cross-leaved heath, cotton grasses, deer grass, sundews and *Sphagnum* mosses.

Some areas of moorland have been designated as Areas of Special Scientific Interest (ASSI) by [Environment and Heritage Service](#) because of their high nature conservation value. A number have been designated as Special Areas of Conservation (SAC) under the European Habitats Directive.

BIRD LIFE

Moorland habitats are home to a number of highly specialised birds such as red grouse, golden plover, hen harrier and merlin. These species are almost all ground-nesting birds but each makes use of the moorland habitat in very different ways.

Red grouse are almost completely dependent on heather for both food and shelter. They need tall heather to conceal their nests but prefer to feed on the tender shoots of young heather, and so favour areas that have heather of different ages. Few areas are now managed specifically for grouse and in many areas heather cover has been grazed out by sheep or is under-grazed. As a result, the grouse is now rare in our uplands and is restricted to areas of moorland where there is good heather cover and where active management is taking place.

To encourage grouse:

- ~ reduce grazing intensity to help restore heather cover;
- ~ manage existing heather, on dry and wet heaths only, by careful burning or flailing of areas on rotation.

Another moorland species, the **golden plover**, tends to avoid areas dominated by heather. It is more at home on blanket bog where grasses and bog cotton are common. The bird prefers to feed on shorter vegetation but nests amongst longer tussocks. Areas with humps or ridges are especially favoured, as birds will use these as vantage points to look for danger across the open moorland. Golden plover are wading birds and the presence of damp ground/wet areas is important for them.

Golden plover are now restricted to a few moors in Fermanagh and Antrim, although they are common outside the breeding season when numbers are boosted by visitors from further north.

To encourage golden plover:

- ~ retain wet areas on blanket bog;
- ~ reduce grazing intensity during the breeding season (May to July) to reduce the risk of trampling nests.

The **hen harrier** (for which there is a [Northern Ireland Species Action Plan](#)) and **merlin** are both specialised moorland hunters, feeding on small birds such as meadow pipits and skylarks. Harriers will also take larger prey such as starlings and small mammals. While both species often nest in or around forestry plantations, they hunt over open moors where there are good numbers of small birds. Most hen harriers still nest on the ground, generally in areas of tall heather within plantations, but they have also recently taken to tree nesting. Merlin nest almost exclusively in trees.

To encourage hen harrier and merlin:

- ~ retain open moorland;
- ~ ensure that grazing intensity encourages longer vegetation.

Moorland is also home to a range of birds that are also found on lowland habitats in Northern Ireland, from waders like curlew (for which there is a [Northern Ireland Species Action Plan](#)) and snipe to smaller birds such as skylark, (which is a Northern Ireland Priority Species subject to a Species Action Plan), meadow pipit, linnets and stonechat. A diversity of moorland management will benefit these less specialised species.

Most ground-nesting birds can be vulnerable to predation by foxes, magpies and carrion crows. Any form of predator control must be by legal means as detailed in the Wildlife (NI) Order 1985.

For further information on moorland management for birds contact the [RSPB](#).

MAMMALS

A number of mammals use heather moorland, including the pigmy shrew, badger, fox, otter, stoat and Irish hare.

The **Irish hare** (for which there is an [All-Ireland Species Action Plan](#)) is a race of the mountain or blue hare found in northern Britain. Unlike its close relative, it rarely turns completely white in winter and most remain predominantly brown throughout the year.

The Irish hare has been declining in Northern Ireland and has disappeared from many lowland areas. However, it is still found in upland areas, particularly where there is sufficient cover of rushes or heather. The hare needs tall vegetation to hide from predators and to conceal the young hares or leverets.

To encourage the Irish hare:

- ~ retain rushy areas and stands of mature heather;
- ~ retain in-bye unimproved pasture;

The **common lizard** is the only reptile native to Northern Ireland. It is found on areas of upland dry heath as found in the Mourne Mountains and also on bogs. Uncontrolled heather burning is very damaging to common lizards.

INSECT LIFE

Heather moorland is an important habitat for many types of insect such as beetles, dragonflies, butterflies and also spiders. It is estimated that there can be up to seven million insects present on one hectare of moorland and heather moorland supports many species that cannot live in any other habitat. Insects are the main consumers of live and dead plant material and play a much greater part in nutrient cycling than higher animals. In addition to being important in their own right, insects provide a vital link in the food chain between plants, birds and animals.

The **large heath butterfly** inhabits lowland raised bogs, upland blanket bogs and damp acid moorland – all wet areas, where the main larval food plant, hare's tail cottongrass, grows. The large heath butterfly is declining rapidly in England and Wales due to loss of habitat and in Northern Ireland it is becoming more localised and will only survive if extensive areas of habitat are managed appropriately.

The **emperor moth caterpillar** feeds on heather and is under threat because of loss of habitat through drainage, mechanised peat extraction, overgrazing and past afforestation.

The **carabid beetle** *Carabus nitens* is a spectacular ground beetle, which is only found on heather moorland. This species, still present in Northern Ireland, has been lost from Holland and Germany due to the widespread destruction of its heathland habitat. Efforts to reintroduce it have failed.

Uneven phased stands of heather have more insect diversity because of the wide range of vegetation structure and ages.

To encourage insect life:

- ~ maintain a mosaic of different aged stands of heather;
- ~ keep areas of tall heather;
- ~ avoid uncontrolled burning as this is very damaging to insect populations. Heather should only be regenerated according to the guidelines in [Regenerating Heather Moorland](#).

PLANT LIFE

Plant life found on heather moorland varies according to the moorland type and provides both food and shelter for the insects, birds and animals that are found there.

Misuse of heather moorland through overgrazing, reclamation, drainage, liming, uncontrolled burning and mechanised peat cutting damages its specialised vegetation and reduces the diversity of plant life and associated wildlife.

Dry heath is characterised by plants such as heather, bell heather and bilberry, which produces berries in the autumn. Low-growing western gorse is also a feature of dry heath and differs from the taller European gorse or whin in that it flowers mostly in the autumn. Tormentil, milkwort, lousewort and heath bedstraw are typical flowering plants found on areas of dry heath. Lichens and mosses are also important components of dry heaths.

Only a few specialised plants occur in wet heath and blanket bog because of the waterlogged and acidic conditions. The characteristic plants are heather, cross-leaved heath, bog cottons, bog asphodel, sundews, crowberry, sedges, rushes and mosses. *Sphagnum* mosses can hold up to 20 times their weight in water and in the past were used as wound dressings because of their antiseptic qualities.

Natural scrub such as gorse, birch, rowan, willow and juniper, occurs mostly along stream sides and on steeper slopes and shallower peats. These areas are also valuable wildlife areas for birds, mammals and insects.

Insect-eating plants

A feature of bogs is that a number of plants have adapted to living in acidic conditions by trapping insects to provide nutrients. Three main types of insect-eating plants are found in Northern Ireland - sundews, butterworts and bladderworts.



Sundew © S. Beesley
www.habitas.org.uk

Sundews grow on wet peat and are found on blanket bogs and around the margins of bog pools. Sundew leaves have many tentacles, which secrete a sticky substance. When a fly lands on the leaf, it becomes stuck and the leaf then folds into the centre, trapping the fly. The plant then releases a chemical, which digests the insect - a process which takes several hours.

Butterworts are similar to sundews in that they trap insects using their sticky leaves. The leaves, which are flat with an upturned rim, are formed in a rosette. Unlike sundews, only the edge of the leaf moves when an insect is trapped.

Bladderworts are floating aquatic plants, without roots, which are found in bog pools. The plant is made up of a network of fine branching leaves with tiny bladders. Each bladder has a flap valve and hair-like trigger at the entrance. When a small aquatic creature touches the trigger, the bladder is activated and the prey is sucked into the bladder and trapped. The process takes only a fraction of a second. The animal is then digested by the plant.

Management for plants

To maintain a rich diversity of plants on heather moorland, and benefit the wildlife that depends on heather moorland, there are a number of key points to follow:

- ~ do not apply lime, fertiliser, slurry or farmyard manure;
- ~ do not apply herbicides except for the control of noxious weeds such as nettles, docks, thistles and ragwort, and then only as a spot treatment or by using a weed-wiper;
- ~ do not cultivate or drain areas of heather moorland;
- ~ do not overgraze with livestock and do not use moorland and heather areas for supplementary feeding sites;
- ~ remove livestock from November to March and control stocking rates during the rest of the year in line with the recommendations given in [Managing Heather Moorland](#);
- ~ avoid poaching damage on wet heath and blanket bog;
- ~ do not burn areas of blanket bog;
- ~ moorland should only be burned according to the guidelines given in [Regenerating Heather Moorland](#);
- ~ retain areas of old tall heather;
- ~ limit vehicles to existing tracks to minimise damage to blanket bog;
- ~ retain areas of native scrub, especially on stream sides and rock faces.

Remember, any management practices detrimental to wildlife on heather moorland are also likely to be contrary to Good Farming Practice and Cross Compliance regulations. Such practices could, therefore, jeopardise Single Farm Payment, Less Favoured Area Compensatory Allowance and Agri-environment scheme payments.

FURTHER INFORMATION

For further information on any issue relating to agriculture and the management of the countryside contact:

Countryside Management Branch
Annexe D
Dundonald House
Upper Newtownards Road
Belfast BT4 3SB
Telephone: (028) 9052 0922
E-mail: cmbenquiries@dardni.gov.uk

Other useful addresses:

Department of Agriculture and Rural Development
Forest Service
Dundonald House
Belfast BT4 3SB
Telephone: (028) 9052 4949
E-mail: customer.forests@dardni.gov.uk
Web: www.dardni.gov.uk

Environment and Heritage Service
Department of the Environment for Northern Ireland
Commonwealth House
35 Castle Street
Belfast BT1 1GU
Telephone: (028) 9054 6533
E-mail: ehsinfo@doeni.gov.uk
Web: www.ehsni.gov.uk

COUNTRYSIDE MANAGEMENT PUBLICATIONS

HEATHER MOORLAND

Minerals Unit
Planning Service Headquarters
Department of the Environment for Northern Ireland
Millennium House
19-25 Great Victoria Street
Belfast BT2 7BN
Tel: (028) 9041 6700
Fax: (028) 9041 6802
E-mail: planning.service.hq@doeni.gov.uk
Web: www.planningni.gov.uk

Royal Society for the Protection of Birds
Belvoir Park Forest
Belfast BT8 4QT
Tel: (028) 9049 1547
E-mail: rspb.nireland@rspb.org.uk
Web: www.rspb.org.uk