



Cynor Cefn Gwlad Cymru
Countryside Council for Wales



ASiantaeth yr Amgylchedd Cymru
ENVIRONMENT AGENCY WALES



Llywodraeth Cynulliad Cymru
Welsh Assembly Government

Burning Management Plan for Wales

Supporting Technical Guidance

Further copies of this publication are available from:
Plant Health & Biotechnology Branch
Technical Services Division
Welsh Assembly Government
Cathays Park
Cardiff
CF10 3NQ

Tel: 029 2082 3596

E-mail: planthealthandbiotech@wales.gsi.gov.uk

This document can also be found on the Welsh Assembly Government website:

www.wales.gov.uk/countryside (navigate to 'farming' or alternatively search for Heather and Grass Burning on the site).

Burning Management Plan for Wales

Supporting Technical Guidance

These guidance notes are to help the landowner/manager to draw up a Burning Management Plan as required by the Heather and Grass etc. Burning (Wales) Regulations 2008 and the Heather and Grass Burning Code for Wales 2008.

Step 1 Creating a burning plan map

The first task should be to acquire a map of the land on which you intend to carry out burning. A copy of your IACS map should be used if you are a registered holding, otherwise a standard Ordnance Survey map at 1:25000 will be suitable.

Step 2 Deduction of no burn areas

Establish and mark clearly on the map those sensitive areas that should not be burnt, i.e. no burn areas. Calculate the area of no-burn zones and deduct this from your total in Step 1. This will give you the total area of burnable vegetation.

Deduct areas that are generally classed as no burn areas, these are:

- Peat bog and wet moor/heath; wet ground; peat hags and other areas with exposed peat; areas dominated by bog-mosses, liverworts and/or lichens (see Annex 1 for definitions of bog mosses, heather heath, wet heath, blanket and raised bog)
- Wet ground (see definition for valley mire and flushes)
- Woodland and scrub
- Maritime/coastal heaths; maritime/coastal grasslands (see definition for western heath, heather heath and maritime grassland + heath)
- Large areas of old rank heather
- Heath vegetation severely suppressed by livestock; wind-pruned vegetation

- Eroding and very shallow soils (less than 5cm deep); erosion gullies
- Areas where 'fire sensitive' species are known to occur
- High altitude sites [above 600m]
(see definition for montane heath and grassland)
- Steep slopes (of 1 in 2 or greater)
- Scree and other rocky slopes
- A 10m strip parallel to watercourses
- Archaeological/historic sites and features
- Areas identified as no-burn by the Fire & Rescue Service

The list above includes some **sensitive areas**, some of which may be burnt in some circumstances. You **must** seek technical advice from the Department of Rural Affairs (Welsh Assembly Government) or the Countryside Council for Wales (CCW) before doing so as serious long-term damage may result.

For a fuller description of the above please refer to Annex 1 of the Burning Code.

Be aware that burning in itself is not an effective means of controlling:

1 Common Gorse - burning is of little benefit for long-term control. Its effect is to bring about a break in seed dormancy resulting in the appearance of young seedlings as a carpet to re-invade the burnt area.

2 Bracken - burning is of no benefit. Burning of dead litter is unlikely to affect the buds below the surface.

3 Purple moor grass (*Molinia*) - there is little long-term benefit to burning purple moor grass unless part of a restoration programme.

You are advised therefore not to include areas dominated by these species within a burning programme.

Step 3 Frequency of burning - rotation length

State your burning rotation length in years. The burning rotation indicates how many years it will take to burn all the vegetation included in the plan. Frequency of burning will depend on the type of vegetation you are burning and local climate and environmental conditions.

Assess various vegetation types based on the categories below:

Heather dominated stands

Heather dies if burnt too frequently and may deteriorate if burnt infrequently. **Burning must not be used to reduce the area of heather to improve grazing quality.**

Where heather dominates, the length of rotation is determined by the time taken for the heather to reach the appropriate stand condition for burning. Heather height can be used as an indicator of stand condition.

Heather can normally be burnt once it has reached a height of **no less than 30cm**. The time it takes to reach this height will vary from area to area depending on local climate and soil characteristics. To maintain the heather a burning rotation should be adopted that reflects the growing time; i.e. if the heather reaches 30cm in 12 years then 1/12 of the total managed area should be burnt each year; if it reaches 30cm in 20 years then 1/20 should be burnt each year etc.

Other issues which need to be considered are:

- On all sites at least 10% of the heather should be left unmanaged by burning so that it reaches maturity and degenerates naturally.
- low grazing levels may be needed early in the rotation to prevent over-grazing of burnt patches, but stocking levels can be increased as the area in the rotation increases.
- Burning large woody plants brings the risk of over-hot fires with consequent loss of control and possibly poor regeneration after burning.

Western gorse and heather mix

Western gorse seed is stimulated by fire therefore regular burning encourages the spread of the gorse at the expense of heather. Western gorse can become dominant on frequently burnt heaths. A rotation of no less than 11 years is recommended to break the dominance of western gorse.

Other issues that need to be considered are:

- Burning old woody gorse brings the risk of over-hot fires with consequent loss of control.
- Western gorse heaths must be grazed after burning to control gorse seedlings.

Grassland

Burning grassland every year benefits neither agriculture nor conservation.

Burning rotations on grass are generally too short. Grass moors containing a wide variety of grass types, including a significant population of bents and fescues, are generally of better grazing quality than moors consisting mainly of purple moor grass (*Molinia*) or mat-grass (*Nardus*). These poorer species recover quickly from burning and may become dominant if subject to repeated and frequent burning. Burning is only beneficial if dead herbage is obvious and widespread as a result of poor use by grazing stock during the previous seasons. This is particularly likely in a sheep only grazing system, therefore consideration should be given to introducing heavy livestock such as cattle or mountain ponies as they are more able to utilise coarse grass re-growth following a burn. If dense uneaten herbage is a persistent problem try burning a smaller area. This will lengthen the rotation and encourage better use of the new growth.

Plan a burning rotation based on the condition of the grass and grazing needs. Only burn enough for the needs of your stock and manage the grazing carefully.

Mixed communities

Where heather is present and desirable, manage as if it were all heather. Too frequent burning destroys the range of species and hastens their subsequent replacement by unwanted coarse grasses.

The frequency of burning where vegetation is made up of a range of heathers, grass and other species depends on the relative dominance and desirability of each within the overall management objective.

Step 4 Calculate the annual burning area

The annual burning area is calculated by dividing the total area of burnable vegetation calculated in Step 2 by the rotation length stated in Step 3.

Step 5 Planning patch burning and firebreaks

When preparing the plan it is **not** necessary to mark individual patches on a map as the actual location is likely to be dependant on factors such as weather and ground conditions on the day. ***The plan should show the blocks where burning/cutting management is permitted and indicate the number and size of patches to be managed annually.*** You may wish to annotate this with general information about patch shape and distribution. A more detailed plan of burn locations can be drawn up annually and given to whoever is carrying out the work.

Patch size, shape and distribution

Generally it is preferable to create a large number of small fires distributed throughout the area rather than a few large patches. However if small fires are placed too close they will soon be drawn together and you may lose control. Patches should not be managed next to each other in consecutive years as this will reduce structural diversity. Ideally there should be at least five years between managing neighbouring patches but this may not always be possible.

In terms of appearance and for the protection of wildlife habitats, a patch mosaic of various ages of vegetation is best. Agriculturally, this pattern enables better grazing. Within this ideal, the shape and size of individual fires may need to vary. The aim on most sites should be to create patches between 0.25 and 1.0 hectare.

On sites with species interest, particularly upland bird interest e.g; red grouse, curlew, golden plover, long thin patches rather than square patches should be created. Long narrow strips up to 30m wide should be burnt leaving nearby protective cover. This increases the interface between age classes and reduces re-colonisation time by fauna species. Unless there is a need to facilitate the movement of livestock into particular areas of the site, pathways should not be cut between management blocks as they can result in over-grazing of young heather and allow easy movement of predators.

Firebreak management

On unmanaged sites in particular there is a very high fuel load within the mature heather and gorse vegetation and a system of firebreaks needs to be created prior to burning management. Even where cutting rather than burning is deemed to be appropriate, firebreaks may be required to help control the spread of wildfires. If firebreaks are cut rather than burnt they must be cleared of dead vegetation as this is highly flammable. The firebreaks may become part of the annual burning/cutting programme and allowed to regenerate, or they may be permanently maintained by regular cutting/burning; however too frequent management will convert the firebreak to a more grassy strip.

Once a more diverse structure is created in the vegetation and the bulk of the very woody dwarf-shrub material is removed, firebreaks may not be required, however this will take a full rotation cycle to achieve.

Step 6

Establish a grazing regime

Establish a grazing regime that will maintain the vegetation in the desired condition once it has been burnt. The type and level of grazing required will depend on the vegetation being managed.

Interaction of grazing and burning management

Grazing is an essential part of habitat management. Burning without appropriate grazing can encourage the dominance of species such as purple moor grass (*Molinia*) and mat grass (*Nardus*); and scrub such as gorse (*Ulex*) at the expense of dwarf-shrub species. In general, spring and summer grazing is preferable and grazing should be reduced or removed in the autumn and winter particularly on upland sheep-grazed sites. On lowland sites ponies and cattle can be grazed at low densities all year. Factors such as availability of palatable grass species, topography, stock type, behaviour of stock etc ... will all determine how your site is grazed which in turn will impact on the vegetation. Where there is flexibility in management you may wish to investigate other regimes such as pulse grazing where short periods of heavy stocking are followed by no grazing. **Take care when grazing not to overgraze as this will breach GAEC requirements.**

If wet/humid heath with *Molinia* is burnt, then grazing (preferably with heavy livestock) in spring will be required to prevent the dominance of *Molinia*. Similarly, western gorse regenerates rapidly after burning and sufficient grazing will be required in spring to control its growth.