The Heather and Grass Burning Code 2007

Best Practice Guide 4:

Burning Lowland Heathlands

NATURAL ENGLAND

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Published by the Department for Environment, Food and Rural Affairs. Printed in the UK, July 2007 on recycled paper containing 80% post-consumer waste and 20% Totally Chlorine Free virgin pulp.

Product Code: PB13071

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Purpose of Guide

1. The Heather and Grass Burning Regulations were updated in 2007 to cover the basic legal requirements that burners should meet. An updated Heather and Grass Burning Code was also launched, aiming to describe a standard of good practice and to raise awareness of the relevant laws, helping burners to burn safely and in ways which can benefit the environment. This guide aims to provide additional best practice guidance on burning lowland heathlands.

History of burning as a management tool

2. Lowland heathland is a priority habitat which, except in some coastal exposed conditions, originated as a result of the clearance of native woodland. It has been managed by grazing, cutting (trees, bracken, gorse and heather) and burning. There are records of charcoal from heathlands from the Neolithic. The objective of burning was to maintain vegetation with enough nutritional value for grazing animals and to create arable land. But heathland plants were also used for building or bedding, so burning may have been limited in the past.

Reasons for burning

3. Burning can result in a substantial amount of bare ground and, depending on the intensity of the fire, on partial or total removal of above ground vegetation. Most characteristic heathland plants need light for germinating and produce a seed bank which can persist in the soil for years and germinate when the conditions are right. Nowadays burning in the lowlands is mainly carried out for conservation purposes, in the form of controlled winter burns, but it is a contentious tool. There are many characteristic heathland species (invertebrates, reptiles and birds) which require bare ground – in particular sand – for nesting, basking or hunting grounds. However, burning can also be detrimental if carried out in large patches or if it is too intense. Burning is generally used in combination with other management techniques, most often grazing.

Legal requirements

4. Burning lowland heathland should be done in accordance with the Heather and Grass Burning Code. This gives the provisions of the Heather and Grass Burning Regulations and other laws which apply to burning which must be followed. In the lowlands, the burning season is from 1 November to 31 March. The Code includes "summits, ridges and other areas which are particularly exposed to the wind (and salt spray) with severely wind-pruned vegetation" as sensitive areas where "there should be a strong presumption against burning". This includes some areas of exposed maritime heath extending inland from the coast to the limit of salt-spray deposition (in some exposed situations for up to 500 m). Lowland, coastal and maritime heathland are also listed in the Code as areas where particular care should be taken when burning.

Risks

5. Burning results in even age stands of heather and other dwarf shrubs and a relatively short, open vegetation structure. Although it can kill trees and shrubs this provides an ideal seed bed for more to colonise. It also prevents the full development of the heather cycle by rejuvenating the plants.

6. Depending on the heat of the fire, burning can consume much of the accumulated litter layer thereby affecting the long-term nutrient status of the soil. A proportion of the nutrients from the standing vegetation and litter are lost in the smoke during the burn, although this is mostly nitrogen and sulphur rather than phosphorus which is released into the soil. However, burning can result in a large input of potash to the soil which can support vigorous bracken and gorse growth. Burning therefore is a cheap, useful technique to help keep some soil nutrient concentrations low.

7. Severe burns (particularly wildfires in summer) can severely inhibit recolonisation by heather by destroying the seed bank and therefore should be avoided.

8. The removal of heathland/scrub vegetation by managed burning is unlikely to lead to the wholesale erosion of the soil or damage to existing archaeology as it leaves the root/soil interface largely unaffected. However, this will depend on the depth of the burn and the resulting rate of heather regeneration. Practices such as burning bracken litter are unlikely to cause any significant soil erosion, unless the site is steep and recolonisation of the ground is slow, or prevented by rabbit grazing for example. Burns carried out on slopes could result in increased soil erosion (and could potentially affect archaeology) during heavy rains as a result of the washing of soil particles down slope.

Practicalities

9. Before burning, a Risk Assessment should be carried out. The check list should cover the points raised in paragraphs 15-19 in the Code and also:

- All site information at hand including a site map and grid reference.
- Awareness of any hazards on site such as overhead power lines.
- Presence of sensitive species that could be harmed by the operation such as reptiles or nesting birds (especially when burning late in the burning season).
- Warning signs properly erected.

10. The patches to burn should be delineated by appropriate firebreaks created in the autumn and early winter by cutting the vegetation and removing the cut material. There should be enough staff to ensure appropriate control of the burn. The burn can only take place safely on dry days with only a gentle breeze (see pages 15-16 of the Code for estimating wind speed), but the soils should not be too dry. Wet heath, if burnt, should be fully wet to reduce moss damage.

11. It is more effective to burn 0.25-1 ha patches than larger patches. The frequency will depend on the conservation objectives and the growth rate of the characteristic species. This differs across the country but is never less than 15-30 years.

12. Burning, as with any other type of management should include a monitoring component, so the size, frequency or appropriateness of the burn can be adjusted over time.

13. Bracken should only be burnt where there is a bracken management plan in place which takes account of the impact of burning.

Case study 1 – New Forest

14. Burning has probably been carried out in the New Forest for centuries, but like many other common practices was not well documented. The main reason to burn in this site is to control scrub,providing regrowth for the commoners' stock, to reduce accumulated biomass and to keep nutrients low. Up to the 1970s single burns could cover up to 60 ha and a total of 800-1,000 ha were burnt each year.

15. Burning dry heath is avoided to protect the shallow humus layer. Most burns are upon humid and wet heath and gorse stands. The rotation for heathland burning is 15-25 years (average 23 years) and for gorse, around 12-15 years. The diverse structure also created benefits for Dartford warblers, nightjars, woodlarks, lizards, snakes and insects.

16. Nowadays around 400 ha on about 150 sites are burnt every year by the Forestry Commission (around 3% of the heathland per season). The cost is about £150/ha. The controlled burning calendar, location and size is agreed with the Forestry Commission, the Commoners Defence Association and Natural England. Independent stakeholders (other NGOs) are also informed. Maps and aerial photographs are used to target the sites.

Case study 2 – Dorset

17. In the Dorset heaths in the mid-1970s, burnt heaths (mostly from wildfires during the 1976 drought) returned to their pre-burning states within ten years, a rate of recovery that corresponds closely with the building phase of heather of 10 to 11 years. During this regeneration phase, heather became established in 13.5% of areas formerly dominated by grasses such as bristle bent (Agrostis curtisii) in dry heathland, and became established in 23% of the area formerly dominated by purple moor-grass in wet/humid heathland. However, such burning can sometimes result in patches of bare ground remaining from many months to some years after the burn event, and when recolonisation does occur, this can be colonized by undesirable species of tree and shrub.

Further reading

18. The following publications also provide guidance and information on burning lowland heathlands:

Symes, N. & Day, J. (2003) A *practical guide to restoration and management of lowland heathland*. RSPB: Sandy.

Hawley, G., Anderson, P., Gash, M., Smith, P., Higham, N., Alonso, I. & Ede, J. (in prep.) Impact of heathland restoration and re-creation techniques on soil characteristics and the historical environment. *Natural England Research Report*. Natural England: Sheffield.

Further information

19. Information on burning, including electronic copies of the Regulations, the Code, and a range of best practice guides are available on Natural England's website at www.naturalengland.org.uk/planning/farming-wildlife/burning. This also gives contact details for Natural England's regional offices, which can be contacted to discuss burning. Hard copies of the above publications are available from:

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