The causes and prevention of wildfire on heathlands and peatlands in England (NEER014)

Appendix 4: Practitioner comments and common themes

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Appendix 4. Practitioner responses and common themes

Introduction

The call for practitioner evidence resulted in a number of submissions either focused upon particular case studies of wildfires or in the form of comments in relation to the specific Evidence Review questions. These submissions largely related to wildfires in the uplands with comments on a lowland, wildfire at Swinley Forest in 2011 being the exception. This appendix attempts to draw out common themes or areas of concern expressed by practitioners in these submissions (also summarised below in Table A4.1), but does not attempt to assess them against the evidence summarised in the review.

Weather and season

There is a general perception that the majority of upland wildfires take place in spring and often follow periods of dry and warm weather. It has been observed that an easterly or north-easterly wind in particular, can have a drying effect and that wildfires often appear to occur with winds from these directions. Spring Bank Holidays are identified as being associated with wildfires. Fires also occur in the summer, associated with hot, dry spells and fires at these times can be especially large.

Vegetation

Upland habitats tend to be referred to collectively as “moorland” by both land managers and the general public, with heather being the most recognisable plant species that can cover large areas. As a descriptive term, “moorland”, can be unhelpful as it fails to differentiate between ecologically distinct habitats that have developed due to differences in geology, climate, aspect and land management. Upland habitats usually occur in mosaics at different scales so it is inevitable that most open-land fires will relate to vegetation that includes combinations of heather (*Calluna vulgaris*), cottongrass (*Eriophorum* spp.), purple moor-grass (*Molinia caerulea*) and *Sphagnum* bog-mosses.

This Evidence Review focuses upon heathland and peatland. Heathland can typically be split between dry heath that occurs on mineral soils and wet heath on shallow peat soils. Peatland includes blanket bog which is defined as a habitat occurring on peat greater than 40 cm in depth. Raised bogs are also habitats that occur on deep peat and have vegetation that is similar in composition to that found on blanket bog. Blanket bog and raised bogs are ombrotrophic, meaning that they receive their water entirely from rainfall. Wet and dry heath by contrast, develop where there is water flow through the soil, in addition to receiving water directly through rainfall. The majority of peatland habitat by area is found in the uplands although the largest areas of raised bogs are found in the lowlands. Heathland habitat is found across both the lowlands and uplands.

Allowing for the fact that this Evidence Review is focused upon heath and peatland habitats, there is a recurring pattern of fires being associated with heather- and purple moor-grass-dominated sites or combinations of the two.

Wildfire ignition/human-related factors/access

There is consensus that fire ignitions fall into two broad categories: accidental and arson. Within the category of accidental, specific causes of ignitions that were identified by practitioners were: cigarettes, bottles/broken glass, BBQs, public access, arson, sparks from steam engines, sparks from poorly maintained vehicles, vehicle exhausts, military ordnance, camping/partying (not wild

camping), school children, lightning, Chinese lanterns, prescribed burning for grouse and prescribed burning for agriculture (largely aimed at purple moor-grass to provide fresh growth for livestock in the spring).

The general public were identified as a key component of wildfire ignitions. The majority of fires on heathland and peatland were considered the result of arson. Restricting access at times of high fire risk was seen as an important consideration.

Fire behaviour, severity and management

Factors that were believed to be important to the spread of wildfires include fuel load, condition of the habitat and previous management. “Under-management” or no management of vegetation that leads to the development of a tall or dense vegetation sward is also perceived as having an influence on fire behaviour and severity. Lack of, or poor, access for fire-fighting equipment was also cited as a contributor to the severity of a fire.

Access to water for use to fight wildfires was recognised as a key issue. Helicopters were recognised as being able to make a significant difference to bringing wildfires under control but the cost of using them is acknowledged to be significant. Fighting wildfires has a financial cost to landowners and the emergency services.

Engineering, firebreaks and wildfire planning

Wildfire planning was recognised as a key component of wildfire management as was the need for regular liaison between organisations and estates that have to deal with wildfire. Land managers are encouraged to put in place a wildfire plan but this is generally voluntary.

Roads, paths, bridleways, rivers, lakes and reservoirs along with open grazed areas with no dry vegetation were seen as natural firebreaks.

There was discussion of the role of firebreaks (created by cutting or burning) in slowing or preventing the spread of wildfire which reveals contrary points of view. There are examples of where previous management burning is reported to have slowed a fire to the point that it could be brought under control, whilst there are other examples where both burning and cutting failed to make any difference to the spread of a fire or the ability to control it. Recent (in the year prior to a wildfire) firebreaks have been reported as being effective in controlling fires. The advocated width of firebreaks is 2.5 times the expected flame length that in turn is dependent upon the volume of fuel. There is also the view that firebreaks should be at least 10 metres wide and that in high-risk areas the distance should be up to 30 metres.

There is a view that where cutting for firebreaks takes place, cut material should be removed. Rank (old/tall) vegetation should be removed and where possible, re-wetting vegetation can help reduce the impact of a fire.

Management of ignition sources such as clearing litter and vegetation near access points or known hot-spots for wildfire activity is also advocated.

Prediction of extreme fire weather conditions and site closure

A common observation was that most fires appear to occur in weather conditions that are not identified as being extreme by the range of fire models in use. These models are seen as requiring further refinement to be useful at a local level.

Education and access

Education of the general public and school-aged children was recognised as a key preventative action. Provision of information to the public and the development of a warning system were also seen as important. Partnership working was seen as encompassing working together at the preventative stage as well as shared approaches to wildfire planning and wildfire fighting.

The importance of collecting and analysing wildfire data was seen as a key area for preventative work and for making the case for more resources.

Controlling public access at times of high risk was also advocated.

Table A4.1. Summary of practitioner comments in relation to wildfire.

Subject	Factors
Weather conditions	Unusually hot and dry periods especially where it coincides with Bank Holidays, wind direction (east wind especially associated with wildfire) and wind speed.
Vegetation	Heather and Purple Moor-grass are associated with wildfire.
Wildfire ignition	Fires fall into two categories arson or accidental. Cause of ignitions are: Cigarettes, bottles/broken glass, BBQs, public access, arson, sparks from steam engines, sparks from poorly maintained vehicles, vehicle exhausts, glass bottles/Objects, Military ordnance, camping/rave partying (not wild camping), school children, lightning, Chinese Lanterns, military ordnance, prescribed burning for grouse and prescribed burning for agriculture. Public Access points and vehicle parking areas are seen as high-risk areas.
Wildfire spread and behaviour	Influenced by fuel load, condition of habitat, previous management, levels (intensity) of management, access for machinery to fight fires, availability of helicopters and access to water.
Engineering, firebreaks and wildfire planning	Wildfire planning and liaison across organisations is key. Use of natural firebreaks important. Created firebreaks (through burning and cutting) appear to play a role in fighting fires but they are not guaranteed to be effective. Clearing litter and assessing likely ignition points is important.
Fire prediction	Current models require further development at local level to be effective.
Education and access	Key to preventative action. Targeted at Schools and adult population. Collecting and analysis of wildfire data. Greater control of public access at times of high risk.

Source documents

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