

The Peak District Fires Operation Group

Sean Prendergast, Peak District National Park Authority

Abstract

The Peak District National Park contains some of England's most important upland habitats. Over 550 square kilometres of blanket bog and Calluna dominated Heath are protected under United Kingdom law as Sites of Special Scientific interest. In addition they are Special Areas of conservation, under European Union legislation and are Special Protection Areas for bird life under directive EC/97. Just as important, these peat lands systems are major carbon sinks with blanket Bog being ten times more effective at locking in carbon than forestry.

However they are also within one of the most visited protected areas in the world. They are surrounded by vast conurbations and it is estimated that up to half the population of England could access them for a day walking trip.

The susceptibility of peat itself (upon which these eco-systems are based) to fire, is witnessed by its continuing use as a fuel source in other areas of Europe. When deep-seated Summer fires occur in these areas, the very 'soil' in which the plants are growing burns and can continue to burn deep down under the surface, 'anaerobically'. If left unchecked the fire will burn down to the bed rock. Resultant exposed layers of peat will fail to regenerate naturally due to the lack of any remaining seed banks and the process of erosion is considerably accelerated with resultant and permanent habitat loss.

The Peak District Fires Operations Group (FOG) is an important and extremely successful initiative which is helping to significantly reduce the impact of these wildfires on these important habitats. It is a partnership approach bringing together 6 different fire authorities, private and public landowners and national park rangers. It has established fire fighting plans, methods of joint working, mutually compatible equipment standards and training. It doing so it has sought not only to improve the response time to fires but also the effectiveness in fighting them. In doing this it has recorded considerable success and achieved greatly improved eco-system security.

Introduction

The Peak District National Park was the United Kingdoms first National Park, established in 1951. Although the term National Park is used under the primary legislation, the technical description as defined under the International Union for the Conservation of Nature (IUCN) categorisation of Protected Areas is as a Category V Protected Area, namely; an *area of land, where the interaction of people and nature over time has produced an area of distinct character with significant aesthetic, ecological and/or cultural value, and often with high biological diversity. Safeguarding the integrity of this traditional interaction is vital to the protection, maintenance and evolution of such an area.*

Less than 4% of the land area is actually owned by the National Park Authority. The remainder is in private ownership, with the bulk of the Moorland areas owned by a combination of Water Companies, The National Trust (an NGO) or Private Shooting Estates. (PDNPA 2004)

Moorlands

The Moorland areas consist of over 550 square kilometres of blanket bog and Calluna dominated Heath, which are protected under United Kingdom law as Sites of Special Scientific interest. In addition they are Special Areas of conservation, under European Union legislation and are Special Protection Areas for bird life under directive EC/97.

Just as important perhaps, these peat lands systems are major carbon sinks. In global terms, peat lands cover only 3% of the land and freshwater surface area of the planet, yet they represent one third of the world's soil carbon. Peat lands are characterised by their unique ability to accumulate and store dead organic matter. It has been estimated that the Carbon Pool of the world's peat lands exceeds that of the world's Forests and equals that of the atmosphere (Clarke D & Joosten H. 2002).

The bulk of the peat formation in the Peak District is in the form of Blanket Bog (Mire). Blanket bogs are ombrotrophic i.e. they receive all their water and nutrients from the atmosphere and so tend to be highly acidic and low in plant nutrients (Charmen 2002).

Its formation is dependent upon relatively high annual levels of rain spread over at least 160 days per year with a mean temperature of less than 15 degrees Celsius for the warmest month. Consequently the formation of Blanket bog can only occur (with the exception of a small area of the Rwenzori Mountains of Uganda) in specific hyper-oceanic areas of the world which lie above the 40 degrees Northern Parallel or below the 40 degrees South Parallel. (Lindsay *et al* 1988)

The extent of Calluna dominated Heath is if anything significantly more geographically restricted than that of Blanket bog. This type of landscape as a natural feature is limited to western Europe. There is however evidence of it being introduced to other areas of the world, some of whom ironically consider it a 'pest' species. (Buckler 2006)

The combination of these two landscape types in the peak district has resulted in a rich a varied abundance of plants and wildlife, with some Arctic species at the southernmost extreme of their range (Cloudberry *rubus chamaemorus*, Northern Bilberry *vaccinium uliginosum* and Mountain Hare *lepus timidus*) and some temperate species, in particular birds, which are at the northernmost extreme of theirs. (e.g Hobby *falco subbuteo*), In addition internationally important populations of ground nesting birds such as Dunlin *calidris alpina*, Golden Plover *pluvialis apricaria*, Twite, *carduelis flavirostris*, and other species such Merlin *falco columbarius* and short eared owl *asio flammeus* use these areas as important breeding grounds (Thomas R. 2007)

A further factor with respect to these areas is the economic importance they have as a leisure resource for Grouse Shooting (*lapogus lapogus scoticus*). These vast expanses of Calluna dominated Heath, have been specifically managed for well over a hundred years as an ideal habitat for these game birds. The land management and habitat creation process is an extremely expensive one which is primarily funded from sporting income. A major fire taking place during the spring, could completely wipe out the potential for Grouse Shooting later in the year and take with it the whole potential annual income for that section of Moorland.

Visitor Pressure

However they are also within one of the most visited protected areas in the world. They are surrounded by vast conurbations and it is estimated that up to half the population of England could access them for a day walking trip. Initial research suggests that some 8 million walks are taken in the moorland areas of the National Park every year (PDNPA 1997)

Access to moorland for informal recreation was a long contested issue in the United Kingdom, particularly in this area of Northern England which was the site of the Mass

Trespass on Kinder Scout in 1932 (Shoard 1999). The formation of the Peak District as the first English national park has been cited as a direct result of these events and it is clear that the position of the Peak District National Park Authority, as co signatory to over 90 square miles of access land open by agreement under the National Parks and Access to the Countryside Act 1949, (which represented 60% of all such land available in England prior to 1999) was a direct result of demand for such access by the public at large (Hill 1980).

In September 2004, the Countryside and Rights of way Act 2000 came into effect opening up a total of just under 500square kilometres of Moorlands and similar areas in the Peak District to a statutory right of public access.

Fires Operations Group

The susceptibility of peat itself (upon which these eco-systems are based) to fire, is witnessed by its continuing use as a fuel source in other areas of Europe. Management Fires as an important part of Calluna Dominated Heath management and occur regular between the 1st October and the 1st April however these are closely managed and take place when the vegetation is dry but the soil is still damp. They are also designed to end before the ground nesting season commences. When deep-seated Summer fires occur in these areas, the very 'soil' in which the plants are growing burns and can continue to burn deep down under the surface, 'anaerobically'. If left unchecked the fire will burn down to the bed rock. Resultant exposed layers of peat will fail to regenerate naturally due to the lack of any remaining seed banks and the process of erosion is considerably accelerated with resultant and permanent habitat loss. (Tallis 1987)

The Peak District Fires Operations Group (FOG) is an important and extremely successful initiative which is helping to significantly reduce the impact of these wildfires on these important habitats. The position of the National Park, straddling the Pennine hills in the centre of the country means that it crosses numerous regional and local authority boundaries. As a consequence, partnerships and interagency approaches are a long established method of working.

The Fires Operations Groups is itself a partnership approach bringing together 6 different fire authorities, (Cheshire, Derbyshire, Greater Manchester, Staffordshire, South Yorkshire, and West Yorkshire), the three Water Companies (Severn Trent Water, United Utilities and Yorkshire Water) the National Trust, Private Estates and the National Park Ranger Service.

Each of these agencies have been involved in fighting moorland fires in the Peak District for many years. Whilst there had invariably been successes. It was generally accepted that considerable improvements could be made by better joint working. This was particularly true for aspects such as preparation, planning and training, all of which needed to take place in advance of the fire season.

A major Moorland fire in the Bleaklow area of the Park which took place in August 1997 and which burned for over two weeks served as a catalyst for the formation of the Peak District Fires Operations Group.

Using the National Park Ranger Service as a hub point of contact all partners fed in details of available equipment, key holder contact numbers and landownership details. The Rangers, Wardens and Gamekeepers then fed in details of potential water sources, access routes, rendezvous points and helicopter landing/re-fuelling sites. Vegetation type, ecological status and other scientific designation were also fed in as were any hazards such as overhead electric cables. This information has been brought together and applied to an Ordnance Survey Base Map and together with contact details and phone number form the Peak District Fires Plan, which covers all Moorland areas in the National Park.

A lack of mutually compatible equipment was also seen as a hindrance. The Fires operations group began to develop the concept of collapsible portable dams which could be easily transported to remote areas of moorland and which could then serve as reservoirs for a number of small water jets both for general spraying and for high pressure pumps capable of forcing water below the soil surface. These reservoirs could if needed feed of any small streams (suitably dammed) in the area or else be filled remotely by helicopter. A simple measure, such as ensuring all partners switched to using the same series of fittings for pumps and hoses had a dramatic effect on the extent and interchangeability of this and the other equipment.

The seasonality of Moorland fires inevitably means that methods of working, use of equipment, radio and liaison protocols whilst vital in times of fire are skills which tend to slip away during the rest of the year. This can be particularly true if there is a wet summer when there may be few if any fires breaking out. A key to skills retention (and indeed the development of new techniques is regular and appropriate training. A major part of the FOG group activities are training events such as desk top exercises and even simulated emergencies and new equipment exercises. As well as the obvious advantage of refreshing memories, these events also serve to act as networking opportunities for building relationships on a personal level; something which is vital given the disparate range of organisations the various partners work for.

There are typically three joint training events per year, however these will invariably be complemented by numerous other individual organisation based training events. A further key to success has been to raise awareness of the importance of these Moorlands among the grass roots staff as well as the senior management of what are often Urban based Fire Services. An on-going programme of lectures and slide shows around all stations that may at some time be called to a Moorland fire is carried out by the National Park Ranger Service and delivers an average of twenty such talks per year.

The activities of the Fires Operations Group have also been expanded by the work of the Moors for the Future Project (www.moorsforthefuture.org.uk). This Heritage Lottery Funded Project is itself a partnership of those bodies, both Statutory and Landowning, who are involved with the restoration and enhancement of the Peak District Moorlands. Using combined data sets which cross matched vegetation type, user patterns, topography and previous fire history. Moors for the Future using research carried out by the Centre for Urban and Regional Ecology, University of Manchester have produced a fire risk plan which identifies exactly where on the moors (though not when), a fire is likely to break out. Using this map, it has been possible to identify 11 locations, from which all of the areas identifying as being the likely risk can be observed. (McMorrow *et al* 2006)

Last year, in what is believed to be the first English inter-agency initiated, science based programme of 'firewatch' observations took place; triggered by the National UK fire Severity index reaching level 5. Observers were on duty from early afternoon until dusk and were equipped with radio and mobile phone communications, binoculars and most importantly the relevant section of the Fire Plan.

Measures of success

Due to the number of variables which can occur, such as weather, human (mis)behaviour and countless other factors, it is not possible to measure the success of the FOG group in terms of absolute number of fires on Moorland in the Peak District. There are an equal number of variables relating to each individual fire that make pin-pointing a specific effect almost impossible. However when viewed as part of a wider context it *is* possible to see a pattern emerging which relates to the existence of the Fires Operation Group and the nature and extent of fires in the Peak District.

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During July 2006 for example, there were eight fires, which by reason of location, vegetation and soil type and proximity to water supply had the potential to become major Moorland fires. In the event none of these lasted in excess of 36 hours whole incident times and none burned in excess of half a square mile of moorland (Peak District Moorland Fires Log 2006). Although not a direct comparison, this can none the less be contrasted with a similar area outside the National Park, which shared the same weather patterns yet which burned over 14 sqKms of moorland and lasted for 32 days.

The FOG approach can justifiably claim to be a successful multi agency approach protecting internationally important habitats from wildfires. The increasing recognition of the moorand resources as important Carbon sinks can only serve to emphasise the importance of this work in the future. It has reduced costs to the individual agencies by sharing knowledge and pooling resources. It is an excellent example of how inter agency cooperation can realise tangible benefits all around.

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