Land Management Case Study

Fylingdales and Bransdale Fires 2003

Below are details of the fire at Fylingdales in 2003, compared with one which was lit within the same hour at Bransdale. The only difference is that the Bransdale fire was on moorland that had been subject to a programme of prescribed burning in the previous years and where the Estate had access to plenty of firefighting equipment and staff in addition to that provided by the Fire and Rescue Service.

These were a very small fraction of the resources that were needed at Fylingdales.

The environmental consequences of the fire at Fylingdales was catastrophic with total loss of peat, dormant seed layers etc. over many hectares and of course, the contribution to air and water pollution. The impact on that environment is likely to be permanent although extensive efforts have been made to revegetate it, which has been successful – although very costly. By comparison on Bransdale (the managed moorland site) the impact was very short term and really of no significance. The problem at Fylingdales was the presence of a very large fuel load due to no managed burning having taken place for several years - and then only a very odd fire in the few decades prior to that.

Background: The North York Moors National Park Authority purchases MORECS data, which is sent to them each Wednesday at about 12 noon giving the stress level for the previous day. The stress on 9th September was virtually the safest level (0.98?) since 1st April. The level on 16th September however, plunged to 0.68 – well below the 0.8 fire risk level. However, the NYMNPA only received this information a few hours before the fires started.

The weather had been dry and hot for some days and on 17th there was a good south west breeze as well.

Description	**Moor Managed for Grouse Shooting**	**Moor Not Managed for Grouse Shooting**
Location	Bransdale	Ravenscar/Fylingdales
Time and Date Fire Started	Wednesday 17th September 2003 @ approx. 1.30pm.	Wednesday 17th September 2003 @ approx. 1.45pm

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First Reported	The fire was in a remote site but was noticed by the keepers and rung in to the fire brigade at 1.55pm. The fire was across moorland from the narrow Bransdale road & access to the control point and fire were more difficult and therefore it was less easy to give a big early response.	The fire started in a layby next to the A171 and would have been reported almost immediately (the fire service were called at 2pm). The fire brigade could get good access immediately but unfortunately it was too intense and crossed the A171 and got away.
Source of Fire	The fire started 125m from the nearest road, although the moor does have an open access agreement. The ignition source is a mystery but the most likely explanation is a visitor having discarded a cigarette having walked across the moor to enjoy the view.	The fire started in a layby where gorse had been allowed to grow into tall dense bushes and a great deal of litter including discarded diesel had been allowed to build up around them. The actual source of ignition remains a mystery but once alight it burnt with such intensity the flames were able to lick across the A171 and light a similar overgrown patch of gorse on the other side of the road and hence into adjoining moorland. A 2nd fire started nearby later in the afternoon of day 1, close to a track and this was felt could be copycat arson but no evidence of such was found.
Speed of Response/Day 1	PRIVATE: 4 Estate staff arrived at the scene at 2.25pm. By 3.30pm a total of 15 Estate staff on the scene. A neighbouring Estate arrived over the hill at 3.45pm with an argocat and bowser and 3 men. A 3rd Estate sent an ATV and 550 litre water bowser with pumps etc. to help with the damping down operation between 7-9pm. The Estate 4 wheel drive tractor arrived with a 2000 litre tank and 2 pumps at about 3.45pm.	Approx. 15-20 fire engines (with over 100 firemen at its peak) attended the site with full back up of Incident Command Unit, catering vans, bulk bowsers etc. 3 local farmers came with slurry tankers to help as well. The National Park and Forest Enterprise sent approximately 15-20 staff between them. All fire crews were sent home at sunset on day one but some only got 1

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	PUBLIC: First fire engine at the scene by 2.30pm. A total of 7 fire engines and 2 scot-tracks and 1 catering van attended the scene and all left by 8pm due to the darkness. No National Park rangers attended. The flames were out by 4.30pm but over whole area there were hot pockets where it was smouldering into the peat. A perimeter zone around the boundary of fire had been thoroughly damped down by 9pm and all the Estate staff left except for 2 keepers who continued watering all night using well over 6000 litres of water.	½ hours sleep before they were called back out again because the fire was threatening 4 residential properties. Round the clock cover was provided for several days. It was thought that every fire appliance in North Yorkshire has attended this fire at some stage even from as far as Bentham and Hawes. Neighbouring Fire & Rescue Services e.g. from Leeds have had to cover areas of North Yorkshire e.g. Harrogate due to the drain on North Yorkshire's resources. Cleveland FRS also deployed resources at the incident.
Day 2	2 Estate staff continued watering throughout day 2 until 7pm. The fire service returned to the scene at 6.15am and in total throughout the day 5 fire engines and one Scot-Track attended to help with the damping down operation and all left by 8pm. A bulk tanker from Hull arrived at 8.20am to help lead water for the fire service. One keeper stayed on site all night until 6.15am.	Day 2-6 inclusive: All the above resources remained deployed pretty constantly and the fire was largely under control on Monday 22nd September.

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Day 3	One fire engine came to help finish the damping down and collect all their equipment from 6.15am to 11am. 2 Estate staff continued damping down with the tractor and trailer but were finished by noon.	The fire service called in Pennine Helicopters Ltd who spent approx. 27 hours damping down hot spots on site but were not called in until day 3 at a cost of over £10,000. The site was still an ongoing incident on 1st October (Day 15) although only the fire brigade were attending by this stage. The total cost of North Yorkshire Fire & Rescue Services was £140,000 plus 2 staff injured and off work – one with a broken arm.
Total Area Damaged	11 acres	600-700 acres
Long Term Damage	Only very small pockets of peat have been destroyed but they are sufficiently small (a few square metres only) that areas around them will hopefully be able to re-vegetate it naturally and it is anticipated that any long term damage will be insignificant.	Approx. 50% of the area – say 350 acres - of peat has been totally destroyed leaving a red and yellow ash. Some of it on steep slopes. A "re-vegetation and regeneration" programme is already in place to try to consolidate and stabilise the surface to stop it being eroded by wind and rain and it is costing in excess of £250,000. The National Park is still working to re-vegetate sites that were similarly damaged in 1976 and in the 1930's. Much of the peat, dormant seed banks and biodiversity is lost forever.

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Conclusions and Lessons Learnt

(Some extracted from action points of Extraordinary meeting of North York Moors Fire Liaison Panel - 01/10/03)

- MORECS – Once more the MORECS data system has failed to give appropriate warning in time to enable cautionary/preventative measures to be implemented. If on 9th September a prediction had shown the fire risk level (0.8) being reached by say Sat 13th September then many fire notices and other actions could have been implemented and these may have both prevented these fires and sharpened responses to them.

- It is likely that an Estate employing grouse moor keepers would have managed the gorse in the layby and on the roadside so that it did not become such a fire hazard. It is also likely they would not have allowed a layby to become so full of litter and an obvious accident waiting to happen.

- The managed grouse moor was able to muster a great deal of private resources to help tackle the fire in its early stages and get it under control. This ability is more limited where there are no grouse moor staff and then usually involves public funded not privately funded resources.

- The area of the fire on managed grouse moor had the majority of its area either recently (last 2 winters) burnt (no fuel) or young and short heather (which can only burn with a low intensity) not only making it much easier to be able to tackle the flames but also reducing the ability for it to burn down into the peat. Note if you double the biomass of a wild fire you quadruple the intensity with which it burns. The moor not managed for grouse shooting had no burns at all in the previous 2 winters and only a few in the winter prior to that. The vast majority was mature and degenerate heather with much dead, dry litter etc.

- The big problem in tackling both fires was getting water there. The creation of wetland features which will naturally catch water and be sufficiently well formed and supplied to hold a useful amount of water even in very dry times would be very helpful. If they were close to places where fire engines can get then they could be used to ferry water to incidents some distance away. Mains pressure in moorland areas is usually too weak to be of real use to Fire Services and water was being brought in from natural and mains sources several miles away.

- The need for appropriate vegetation management along high fire risk areas such as roads, car parks, camping places etc. was highlighted. Similarly the need for litter management in the same areas. High risk areas/zones should be identified in advance and consideration should be given to the closure of high risk lay-bys at times of extreme fire risk.

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Conclusions and Lessons Learnt

- Fire risk posters to be displayed in lay-bys.
- Vegetation around houses and other vulnerable property should be reduced so that if it burns it will not be so intense as to threaten the property. (**See Firewise information under Education**)
- Any policy leaving large areas of older heather in situ should be reviewed and any such areas should be broken up to minimise risk.
- Helicopter “water bombing” assisted greatly in bringing the fire under control far more quickly than would otherwise have been the case had traditional firefighting tactics been employed alone.
- With regards to the observation / thought that “fire warnings prompt arsonists” it should be noted that despite widespread publicity of the fire risk (not only by the usual National Park Authority fire notices but also by a huge media interest in the Ravenscar/Fylingdales fire including daily, local and national, TV coverage) there were no further fires reported in the same period. It is worth noting that the fire risk actually got greater over this hot, dry period.
- To assist with communications at any future incident all fire plans should be renewed on a regular basis and be available to local stations.
- Joint training days for Estate/National Park Authority/Forest Enterprise staff and the Fire Service should be held.
- The presence of Molinia can play a role in any wildfire as it can produce tinder dry grass. By burning off all the old leaf litter each burning season the tinder dry fuel load can be removed.

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