



NORTH YORKSHIRE FIRE & RESCUE SERVICE

Final Report of [REDACTED]

Incident number:	DNDN009958-26062025
Address of incident:	Langdale Forest
Specialist field:	Fire investigation
Assisted by:	Station Manager [REDACTED] and Station Manager [REDACTED]
On instructions of:	North Yorkshire Fire and Rescue Service
On behalf of:	North Yorkshire Fire and Rescue Service
Subject matter:	Fire investigation involving fire at Langdale Forest
Dated:	15/12/2025
Signed:	[REDACTED]

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[REDACTED]

1.0 Introduction

1.1 The author of the report

1.1.1 My name is [REDACTED], and I have been employed by North Yorkshire Fire & Rescue Service (NYFRS) since 2012. Since joining the Fire Service I have been responsible for assisting in the investigation of fires and from 2024 I have been responsible for leading investigations which have also included joint investigations with Police and Insurance Investigators.

1.1.2 My specialist field is fire investigation, being warranted under the Fire and Rescue Services Act (2004), section (44) (1) (b) to investigate, "What caused the fire or why it progressed as it did". I have provided reports on fires, ranging from relatively simple and small-scale incidents to more complex investigations involving substantial financial losses.

1.1.3 [REDACTED]

1.1.4 This investigation was assisted by Station Manager [REDACTED] and Station Manager [REDACTED] who both work for NYFRS and have been responsible for leading fire investigations since 2023. They are both qualified to Level 7 BTEC Advanced Professional Award in Expert Witness Evidence (APAEWE) and Level 5 Certificate in Fire Scene Investigation. [REDACTED] and [REDACTED] assisted with scene examination, photography and collecting information from witnesses and other agencies.

1.1.5 External fire investigation support and advice was provided to the Investigation team from [REDACTED] who is the Fire Investigation Technical Manager for Northumbria Fire & Rescue Service (NFRS). [REDACTED] attended Langdale Forest on 09/09/2025 to assist with a scene examination.

1.1.6 Remote support and advice was also provided from Watch Manager [REDACTED] who works for Lancashire Fire & Rescue Service and was the investigator responsible for the Winter Hill wildfire in 2018 and Station Manager [REDACTED] Lead Fire Investigation Officer at Dorset and Wiltshire Fire & Rescue Service where the Wareham Forest fire occurred in 2020.

1.1.7 The opinions and conclusions drawn in the report are solely my own and derived from the facts obtained and observations made when investigating the fire.

1.1.8 This report has been independently peer reviewed as per NYFRS Policy and Procedure prior to release.

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- 1.3.6 NYFRS had resources in attendance for the next five days until Forestry England provided heavy machinery on 1/07/2025. Heavy machinery was used to create **fire breaks** and stop the fire from spreading into other areas of forestry and moorland.



Image 3: Image taken from Forestry England document dated 17/07/2025, Red Line shows the fire breaks created, green area shows the fire location, thin green line shows the river Derwent. Blue and Purple lines are Forestry England zoning and plots.

- 1.3.7 Tracks used to access the fire were excavated further to help stop the fire spreading and a drain area was completely dug out (Image 4) to create another **fire break**. The river to the North of the fire was utilised as a natural **fire break**.

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Image 4: Image taken on 13/09/25 showing one of the fire breaks constructed by Forestry England. Track on the far-right hand side of the image, River Derwent is further left. Orientated looking East.

1.3.8 Following completion of the firebreaks the responsibility of monitoring the incident was handed over to Forestry England. On 04/07/2025 a formal external handover form was completed, and the incident was handed over to Forestry England where watching briefs were being maintained. This is an established practice for situations in which a fire cannot be completely extinguished but remains within designated control lines and is supervised by a responsible person. See appendix F for a copy of the external handover form.

1.3.9 The handover form was sent electronically to [REDACTED] and confirmed that; the fire will be left to burn within the confines of the fire breaks, NYFRS would attend again if the fire breached any of the fire breaks and if this happened a 999 call would need to be made requesting NYFRS attendance. The handover form is a formal procedure for NYFRS and at this point the responsibility for the fire was handed over to Forestry England.

1.4 Fire synopsis between 04/07/2025 and 11/08/2025 (NYFRS handed over to Forestry England)

1.4.1 On 09/07/2025 a 999 call was made from a member of the public at 15:01 stating there was smoke in the proximity of the fire initially reported to NYFRS on 26/06/2025. A single fire engine from Scarborough was assigned and attended at 15:41. Crew Manager [REDACTED] was officer in charge and confirmed the fire was the same incident and was within the confines of the **fire break**. The incident was left open for a revisit the following day.

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- 1.4.2 A fire engine from Scarborough and Group Manager [REDACTED] attended on 10/07/2025 to revisit the fire and confirmed the fire was still within the confines of the **fire break**. Due to access constraints and the time required to revisit the site, it was decided with the Duty Strategic Officer that NYFRS would only reattend the site if the request came from Forestry England who were monitoring the fire. This was to prevent any unnecessary resource commitment for fires within the designated control lines.
- 1.4.3 Following a conversation between the duty **Strategic Officer** Deputy Chief Fire Officer [REDACTED] and the Duty **Tactical Officer** Group Manager [REDACTED], a decision was made that if NYFRS received any calls about the fire then NYFRS would contact Forestry England and get them to assess in the first instance as per the handover agreement referenced in 1.3.9 and appendix F. NYFRS would only attend if this had been done and if fire service resources were required. Group Manager [REDACTED] informed all **Tactical** and **Strategic** officers of this decision on 10/07/2025 at 13:13.
- 1.4.4 NYFRS records show that attendances to site were being conducted by Forestry England and on 02/08/2025 the fire was still confined to the area within the fire breaks. The requirement to inform NYFRS that attendances were being made was not a requirement of Forestry England.
- 1.5 Fire synopsis between 11/08/2025 and 02/09/2025 (NYFRS back in attendance)**
- 1.5.1 At 17:05 on the 11/08/2025 NYFRS received a call from Crew Manager [REDACTED] who works at the RAF Fylingdales Fire Service section stating that the Ministry of Defence (MOD) police had been down to Langdale Forest and there was a large amount of smoke in the area. As per procedure stated in 1.4.2 a call was then made by NYFRS Control at 17:19 to Forestry England, during this call the Langdale Beat Forester stated she had attended earlier that day and the fire was contained within the fire breaks at this time. She would reattend later that evening to check the location of the smoke reported.
- 1.5.2 Separately to this at the same time a crew from Goathland with Crew Manager [REDACTED] in charge were on their way to another incident when they saw significant amounts of smoke at Langdale Forest. They informed Control they would proceed via Langdale forest tracks and assess whilst alternative resources were mobilised to attend the other incident. At 18:30 Goathland arrived at the scene and reported that the fire had breached the **fire break**, now approximately one to two acres of forest were on fire. Further resources were then mobilised, and Forestry England were contacted again to provide support.

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Image 5: Approximate area of forest area impacted by fire, showing where fire breached track and spread. Not to scale.

- 1.5.3 NYFRS attended the incident over the next two days, resources included fire engines, **Argocats**, officers and water bowsers and attempted to get the fire under control. The geography and thick vegetation made firefighting very difficult. Getting water to the fire was challenging due to the terrain and distances involved.
- 1.5.4 On the morning of 12/08/2025 the fire breached the natural fire break of the River Derwent and spread onto Fylingdales Moor to the North of the forest, NYFRS had to reposition resources via new tracks and access points to surround the fire and attempt to stop the fire spreading again.
- 1.5.5 A **Major Incident** was declared at 12:22 on the 13/08/2025. At this point 20 pumps along with several special resources, officers and contractors were requested to the incident. This included resources and support from neighboring Fire & Rescue Services.
- 1.5.6 The fire continued to burn the moorland North of the forest and spread in all directions, NYFRS aimed to contain the fire with natural fire breaks and offensive firefighting tactics along the tracks and river Derwent which are highlighted red in the image over page.

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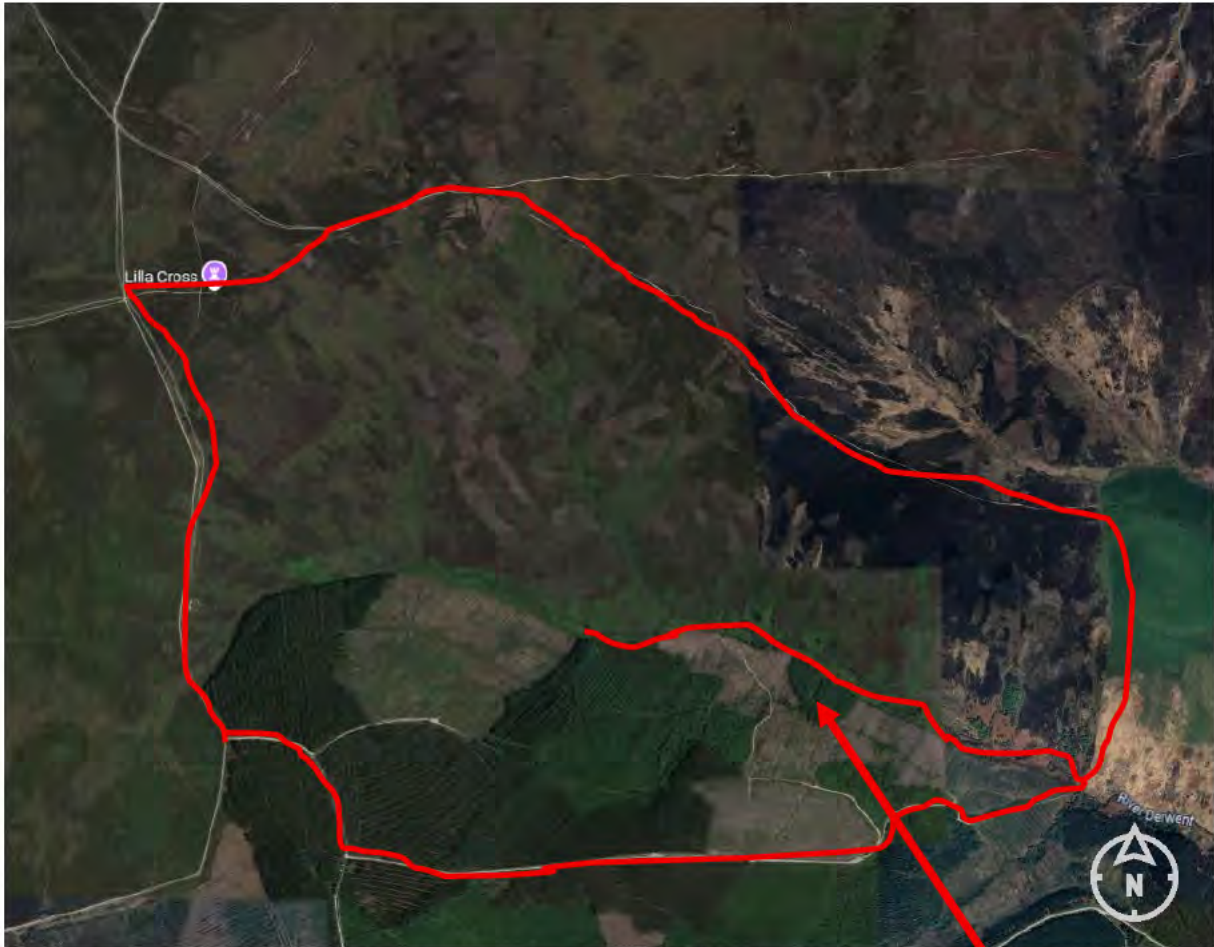


Image 6: Image from Google Maps showing the fire breaks (Red Lines) and tracks used by NYFRS to surround the fire. Location of the original fire in Langdale forest is here.

1.5.7 Further fire breaks and tactics were used to ensure that the fire did not spread beyond this area. Preferred offensive firefighting tactics were not possible as this area was previously used by the military and unexploded ordnance was found and did explode on the moorland when under intense fire and heat. This risk prohibited any NYFRS staff from firefighting on the moorland and restricted our actions to defensive firefighting from tracks and roads.

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- 1.5.8 On the 25/08/2025 at approximately 15:41 the fire breached the track in the north area of fire break in the above image and spread further north, this fire break had been strengthened using water bowsers and sections had been cut to maximize the distance between fuels. This spread meant that NYFRS had to again change tactics and no longer had the fire surrounded. The fire breached along this northern edge.

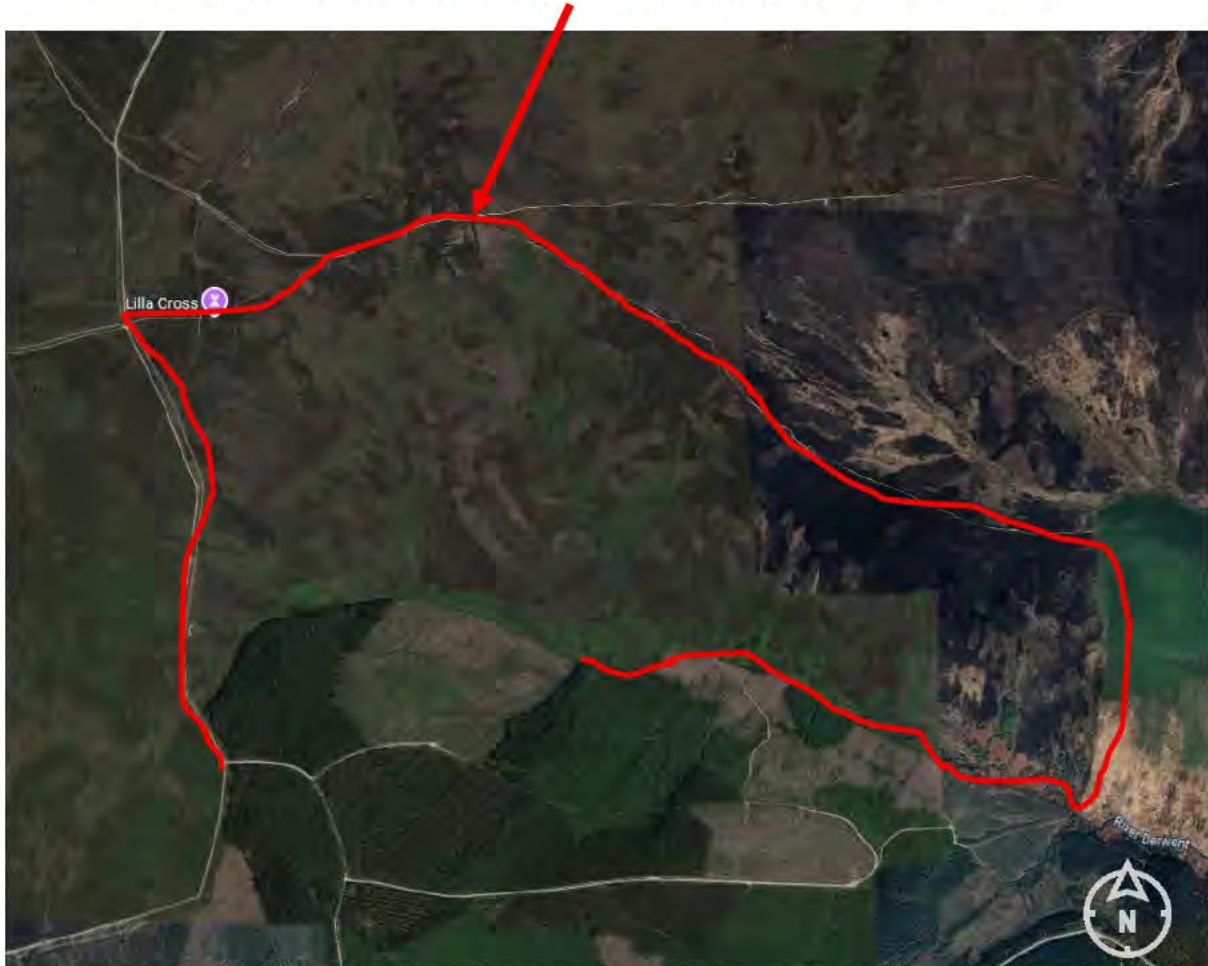


Image 7: Image from Google Maps showing the fire breaks (Red Lines) and tracks used by NYFRS to surround the fire. Northern line, which is an access track was breached by the fire due to intense fire behavior.

- 1.5.9 Following this spread NYFRS formally requested the deployment of National Assets to provide respite for our personnel, with particular consideration for on-call staff who have primary employment commitments and had already been engaged in firefighting operations at this incident for several days.
- 1.5.10 On the 28/08/2025 a Strategic Holding Area (SHA) was set up at the Galtres Centre in Pickering and resources, including pumps, Wildfire Support Officers, Wildfire Tactical Advisors, Advanced Incident Commanders, wildfire teams and wildfire vehicles were sent to support North Yorkshire.
- 1.5.11 Operational sectors were set up to the North and East where the fire was spreading towards, these were called Mine Sector, Fylingthorpe Sector, Flask Sector and Riverhead Farm Sector. The A171 which is a major road along the coast was closed for over a week and several locations were evacuated due to the growing life risk as the fire advanced across the moorland.

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1.5.12 Image 8 shows the initial area where the fire was allowed to burn in the forest and did so until 11/08/2025 until it breached and the area that was subsequently impacted by it spreading out into other areas of forest and onto the moorland to 25/08/2025.

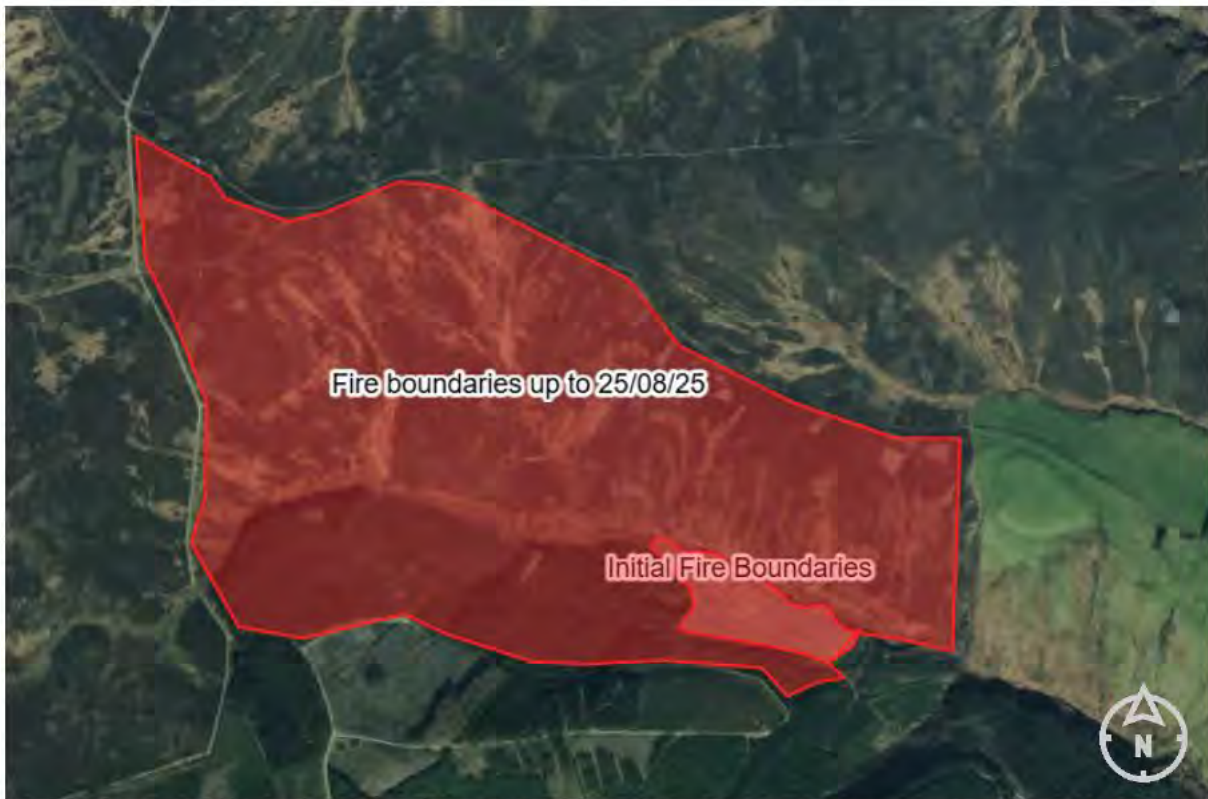


Image 8: Image from Resilience Direct showing area impacted by fire up to the 25/08/25

1.5.13 Image 9 over page shows the total area impacted by fire up to 02/09/2025 where at this point it had spread beyond the fire breaks and impacted several communities including Grouse Hill Caravan Site to the East, the Woodsmith Mine to the North and several farms to the East and Northeast.

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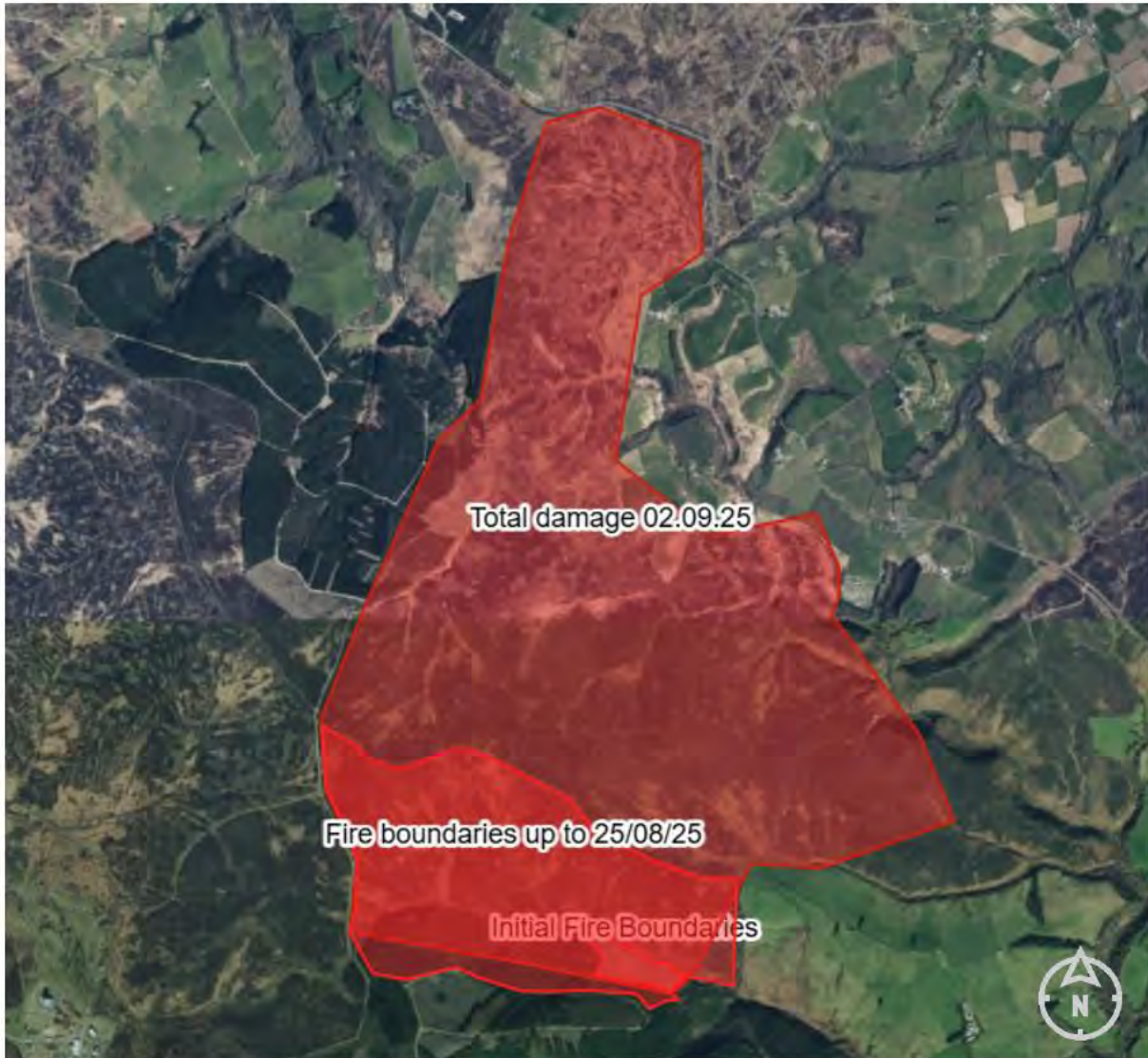


Image 9: Image from Resilience Direct showing the different areas and when they were impacted by fire.

1.5.14 In total the fire burnt an area measured to be approximately 25km² which is equivalent to 2500 hectares and similar to the built area of the City of York, it caused significant disruption to local businesses, traffic and emergency services who were supported by a long list of category 2 and volunteer responders. Woodsmith Mine to the North was evacuated and was significantly impacted, Goathland and Robin Hood's Bay were at risk of evacuation and the A171 coast road was closed due to smoke and fire spread.

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1.6 Purpose of the report

- 1.6.1 The purpose of this report is to provide an explanation for origin, cause and development of fire as well as to provide some comments on the consequences of the incident, as well as those consequences that may have occurred, but for the actions of equipment and individuals involved.
- 1.6.2 This report also considers those factors that contributed to the fire progressing in the way it did, in line with the statutory powers of Section 45 of the Fire and Rescue Services Act 2004. (FRSA 2004)

1.7 Investigation methodology

- 1.7.1 The methodology used in this investigation is the Scientific Method, (NFPA, 2024). This is a systematic, seven stage process accepted as best practice for all investigative type work. It effectively requires collection of relevant facts and subsequent analysis.
- 1.7.2 The Scientific Method requires that all feasible and potential causes are considered on their own merits and only discounted where the evidence does not support their validity. In most cases the Scientific Method should result in one outstanding theory for the most probable cause of the fire. Where one or more theories cannot be discounted these should be explained in detail and the cause of the fire recorded as undetermined. Otherwise, the fire should be recorded as accidental or non-accidental (deliberate).
- 1.7.3 The Scientific Method is an internationally recognised seven step systematic process, which when properly followed and applied will formulate, test and validate a hypothesis of the cause, origin and spread of a fire.

These steps are:

- Recognising the need
- Defining the problem
- Collecting data
- Analysing the data
- Develop a working hypothesis
- Testing the working hypothesis
- Selecting a final hypothesis.

1.8 Summary of conclusions

- 1.8.1 The area of general fire origin is a small opening near to the where the River Derwent and the forest meet, South of the river and Fylingdales Moor. There were no other credible sources of ignition found or evidence of other causes of fire located which would explain the area and damage sustained.
- 1.8.2 In my opinion the cause of fire is cooking using a naked flame such as a campfire or gas burner.
- 1.8.3 The fire spread from this area underground into the peat which covers the whole area, in some areas up to 50cm deep and spread into the surrounding vegetation which included thick bracken and heather to the North near the river and coniferous and deciduous trees of varying ages and sizes to the South. Limited/difficult access to the fire meant that firefighting and containment tactics were challenging to put in place. The fire spread quickly due to dry vegetation and other environmental factors such as wind, humidity and topography.

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1.9 Statements/documents relied on

- 1.9.1 In preparing this report I have relied on statements in so far as they relate to the matter I have been asked to consider.
- 1.9.2 I have referred to photographs taken by Crime Scene Investigator [REDACTED], Fire Investigation Officers [REDACTED] and from attending crews to the incident.
- 1.9.3 I have referred to drone footage taken by the aerial photography team from North Yorkshire Police.
- 1.9.4 I have referred to documents and maps prepared and used by Forestry England when looking at the area of the fire and the *fire breaks* used (natural and engineered).

2.0 Issues

2.1 Statement of instructions

- 2.1.1 A tier two fire investigation is not routinely required for moorland and heathland fires and following NYFRS procedure the automatic trigger for a tier two investigation had not been met. Following the spread and impact of this fire a decision was made by the senior leadership team that a robust fire investigation with specific terms of reference should be undertaken. Following this decision on the 18/08/2025 I put together a team to investigate the fire at Langdale Forest, and a Terms of Reference was published on the same date.
- 2.1.2 As a tier two investigation was not automatically instigated for this incident there was a period of time between the ignition and investigation which made fact finding and scene excavation difficult. The amount of interference in the scene and regrowth from nature made looking for *post fire indicators* and directional *antecedence and loss* challenging.
- 2.1.3 The Terms of Reference detailed the purpose as 'to establish the cause, origin, and contributing factors of the fire at Langdale Forest. The findings will support accountability, future prevention, and potential legal, operational, or environmental responses.'
- 2.1.4 Due to the development of the fire and extended period of time with multiple activities by the operational crews attending. The gathering witness testimony proved challenging, and the accuracy of information had to be confirmed.

2.2 Issues and key questions

- 2.2.1 The key questions I have considered are:
- Where was the point of origin of the fire?
 - What is the most probable cause of ignition?
 - What environmental and meteorological conditions have contributed to the fire?

2.2.2 The areas in scope for this investigation include.

- Physical site inspection of the burned area and suspected point(s) of origin.
- Forensic analysis of fire patterns, ignition sources, and material residues.
- Meteorological data review at and around the time of ignition.
- Interviews with relevant individuals (e.g. witnesses, first responders, land users).
- Review of CCTV footage, drone footage, or other surveillance if available.
- Review of land use and land management practices prior to the fire.
- Assessment of credible ignition sources.
- Collaboration with Police, other Fire and Rescue services and other relevant agencies and experts.
- Preparation of a final Fire Investigation Report, including conclusions and learning.

2.2.4 The areas out of scope for this investigation include.

- Assigning legal liability or criminal prosecution
- Assessment of ecological damage beyond what directly informs the fire's spread and behaviour.
- Post-incident recovery planning, habitat restoration, or compensation.
- Operational activity of the emergency services (unless directly relevant to fire development and spread)
- Media communications, except to provide factual summaries upon request via official channels.
- Speculation where evidence is lacking — conclusions will be based solely on verifiable data.

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3.0 Facts

3.1 Facts obtained

- 3.1.1 Peat depth in this area ranges from 10cm to 50cm depending on its location, this is shown in image 10 where you can see the river and RAF Fylingdales. The darkest areas of colour denote the deepest peat depth.

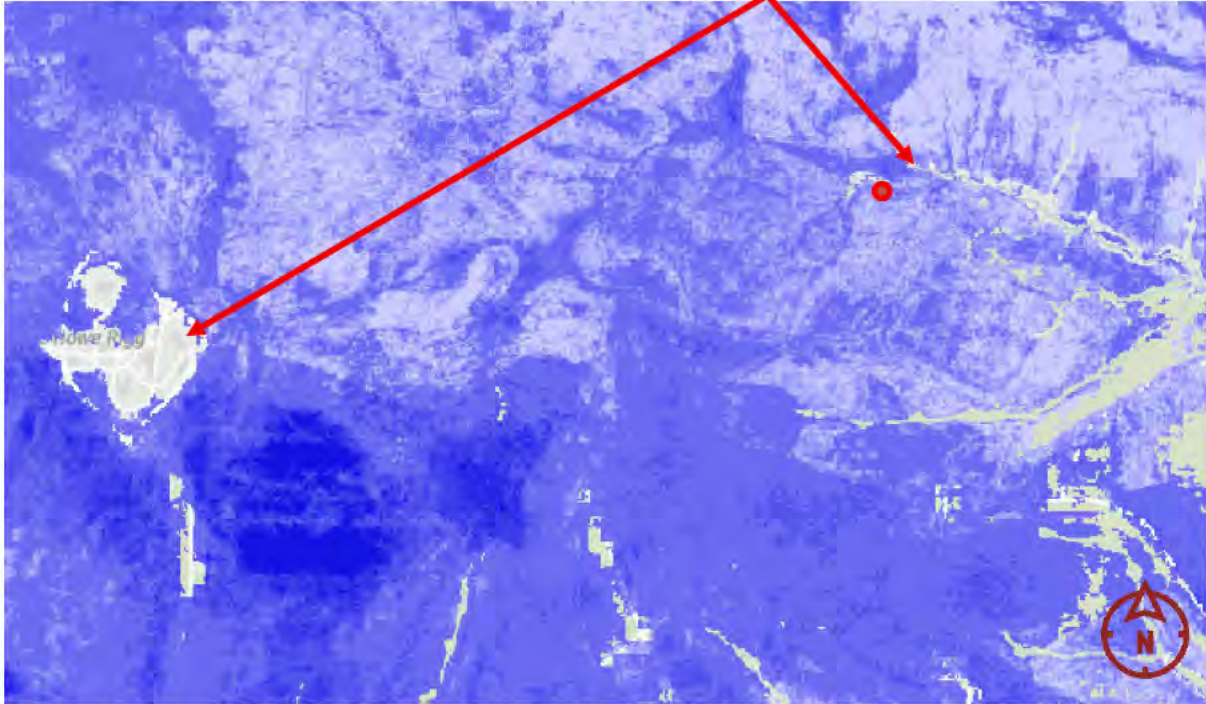


Image 10: England Peat map from Natural England showing RAF Fylingdales on the left, River Derwent on the right, showing area and depth of peat. Location of fire marked by red dot. Image taken from web portal on 24/09/25.

- 3.1.2 **Met Office's Fire Severity Index (FSI).** This is an assessment of how severe a fire could become if one were to start. It is not an assessment of the risk of wildfires occurring. The **FSI** in North Yorkshire during June was **FSI** level 4 which is classified as 'very high fire severity'. This was classified as the driest spring in 132 years, only 15cm of rain fell between February and June, this is less than half that expected in an average year.
- 3.1.3 The **FSI** rating is calculated using six other indexes, one of which is the Fine Fuel Moisture Content (FFMC). This is a key indicator of a fire's ability to spread and represents the moisture content of dead, fine forest fuels like pine needles and leaf litter. The FFMC is signified by a range of one to five. One being 'ignition is unlikely' and five being 'extreme fire behaviour'. On 26/06/2025 the FFMC at Langdale Forest was three 'Fires able to spread', on the 12/08/2025 this had increased to four 'Fires spread easily'. See appendix G for details.
- 3.1.4 Another index in the **FSI** is the Initial Spread Index (ISI), this predicts the potential rate of fire spread immediately after ignition, combining fine fuel moisture content (FFMC) and wind speed into a single index. On 26/06/2025 the ISI at Langdale Forest was three 'Onset of crown fires', on the 12/08/2025 this had increased to four 'extreme fire behaviour'. See appendix G for details.

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- 3.1.5 North Yorkshire Police investigated the fire and determined there was no evidence to show there was any third-party involvement in the fire cause or spread.
- 3.1.6 The fire was first reported to NYFRS via a 999 call on the 26/06/2025 but locally it was known prior to this date. [REDACTED] and [REDACTED], local residents and Shepherd on the land, saw the fire on the 22/06/2025 and originally reported the fire to their neighbours.
- 3.1.7 The fire was handed over to Forestry England on the 04/07/25 and between this period and the 11/08/25 the fire was contained within the boundaries of the **fire breaks**. See appendix F for External Handover Form given to Forestry England by NYFRS.
- 3.1.8 On the 11/08/25 at 18:33 Crew Manager [REDACTED] who attended with Goathland Crew confirmed the fire had breached a **fire break** and was now affecting one to two acres of forest on fire outside of the confines of the **fire breaks**.
- 3.1.9 On the 12/08/25 and 08:49 it was confirmed by attending crews that the fire was now on the moorland moving North towards Lilla Cross and the track that runs towards the East.



Image 11: Image from near Lilla Cross taken on the 12/08/25 at 08:49 looking South towards the forest and the river Derwent.

- 3.1.10 No other contactor activity, including hot works was conducted in the area before the fire started and was reported to NYFRS on 26/06/2025. Forestry England confirm that they have not completed any works in the area of the initial fire and that they don't allow smoking on site.

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- 3.1.11 No military activity or training exercise were carried out in the area other than business as usual activity from RAF Fylingdales and routine patrols, as confirmed by Military Police on the 23/09/2025.
- 3.1.12 Due to risks to the environment and habitats Forestry England do not allow campfires or barbecues in their forests at any time. Forestry England did confirm that they have found and documented evidence of campfires and barbecues across their estates in recent years and in forests near to Langdale.
- 3.1.13 Langdale Forest has multiple public access routes in and out of the forest and is a popular place for people to visit, cycle or walk through.

3.2 Facts in documents

- 3.2.1 KIRKS Fire Investigation 8th edition, Chapter 4, section 5.1 refers to the travel distances involving windblown sparks. In this section it states that 'Tests by DeHaan demonstrated that burning wood chips and straw could be carried up to 15m from their source in a 20mph wind to ignite cloth, straw and wood shavings target. Light items will rarely travel as much as 6m except under significant wind conditions. Distances in excess of 9 to 12m are to be accepted only with the greatest caution.
- 3.2.2 KIRKS Fire Investigation 8th edition, Chapter 4, section 4.8.2 refers to the lightning as a source of ignition. This section states that 'Lightning only occasionally strikes trees which depend upon their susceptibility to combustion. An old, dead, dry trunk is more likely to catch fire than a living tree, which is both a better conductor and less flammable. In general, many bolts of lightning will strike for every fire that is initiated.

3.3 Literature or research

- 3.3.1 I have referred to several published works. These are listed in appendix B.

3.4 Assumed facts

- 3.4.1 There was no other contractors on the land not employed by Forestry England around the time the fire was first seen or reported.

4.0 Opinion

4.1 Summary of range of opinion on fire location

- 4.1.1 The general area of fire origin was located following witness testimony from the crews who attended and located the first incident on the 26/06/25. This location has been corroborated by multiple witnesses and attendances of the first incident and pointed the fire investigation team towards an area close to the Northern border of the forest

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Image 12: Area Fire Investigation Team were taken by Crew Manager [REDACTED] on 19/08/25, this was to show the team where the fire was on the 26/06/25

4.1.2 Whilst in this area the Fire Investigation team looked for areas of most fire damage, given that 54 days had passed at this point a lot of the area had begun to see regrowth of vegetation like bracken. It was at this point that the team discovered an area heavily damaged by fire underneath but had new growth on top.



Image 13: New bracken growth with burnt vegetation and terrain underneath

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- 4.1.3 Further investigation in this area and through use of a drone showed the area of new vegetation growth aligning to the forestry area which showed older damage. This area was consistent with where landowners, Forestry England and operational fire crews confirmed the fire to be, and this became the area known as the general area of fire origin.

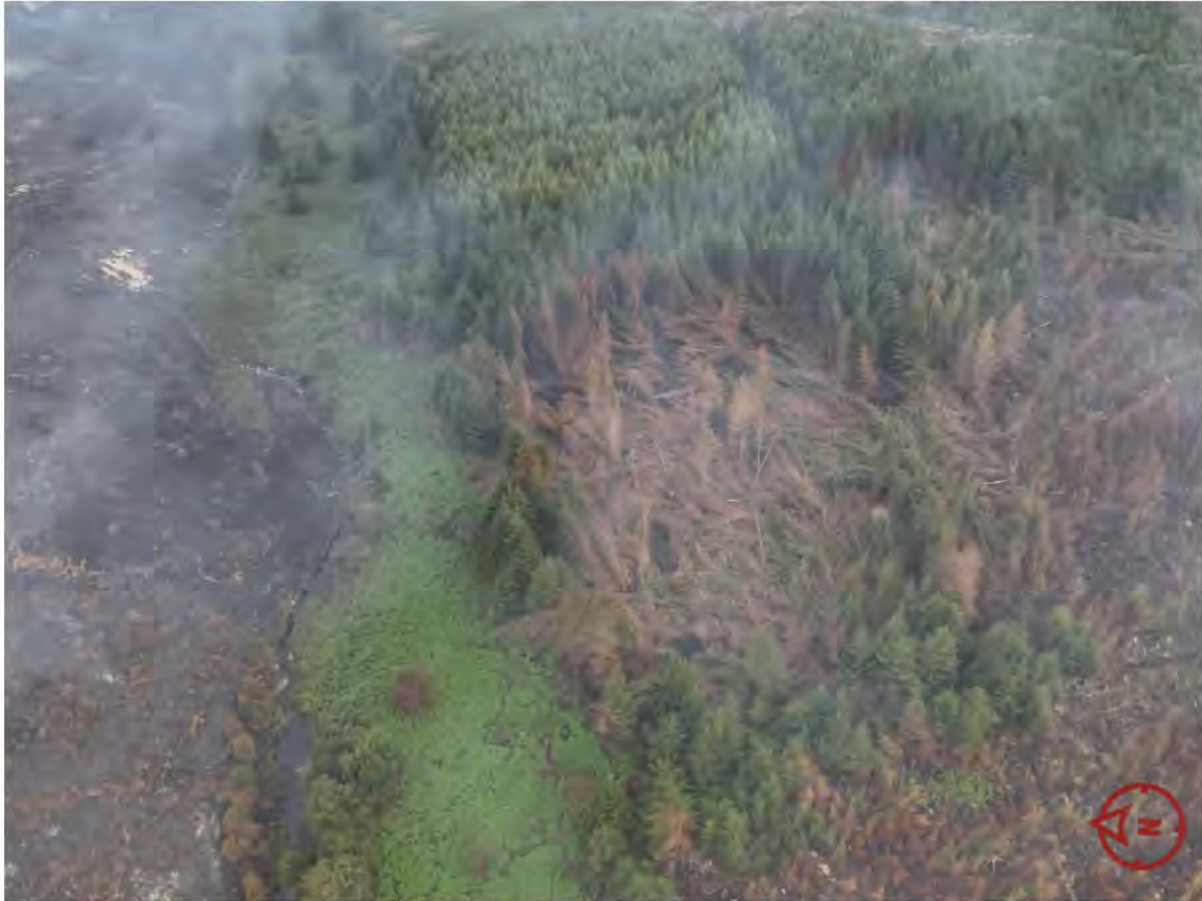


Image 14: New growth area adjacent to an area of forestry where damage was substantial and older.

4.2 Summary of range of opinion of cause of fire

- 4.2.1 There was no evidence of any smoking materials found in the area of origin or anywhere on site. Smoking as a cause was discounted.
- 4.2.2 There was no other fires reported in the area, controlled or otherwise, that could have spread through a flying ember to this location.
- 4.2.3 There was no contractor work conducted in this area before the fire, this includes any hot works or any works whereby a spark could have been created.
- 4.2.4 The nearest railroad is the North York Moor Railway, this is heritage railway running steam and diesel trains and is known to have caused fires in the past, this is 7km away from the area of origin and has been ruled out as a potential cause.
- 4.2.5 There are no utilities or powerlines in the area which could have caused a spark or ignition through a fault or bird strike, this has been discounted as a potential cause.

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- 4.2.6 On investigation there was no reports or evidence to suggest fireworks or incendiary devices was a viable cause to this fire, therefore this can be discounted.
- 4.2.7 There were no reported military exercises in the area whereby military flares or tracer rounds could have been used and caused a fire.
- 4.2.8 Light refraction which is where focused sunlight passes through glass objects like bottles, concentrates heat onto vegetation can cause fires and was considered. No evidence of this was found at the scene and was therefore discounted.
- 4.2.9 Lightning strike was considered as a possible cause and 30 days' worth of lightning strike data was collected as suggested by the National Wildfire Coordinating Group (2025) Guide to Wildland Fire Origin and Cause Determination. Information from The Met Office and <https://www.lightningmaps.org/>. Were used to collect data on lightning strikes.

No strikes were found in the area during the 30 days prior to 26/06/2025 and no physical evidence was found on scene. Lightning strike was therefore discounted as a possible cause.

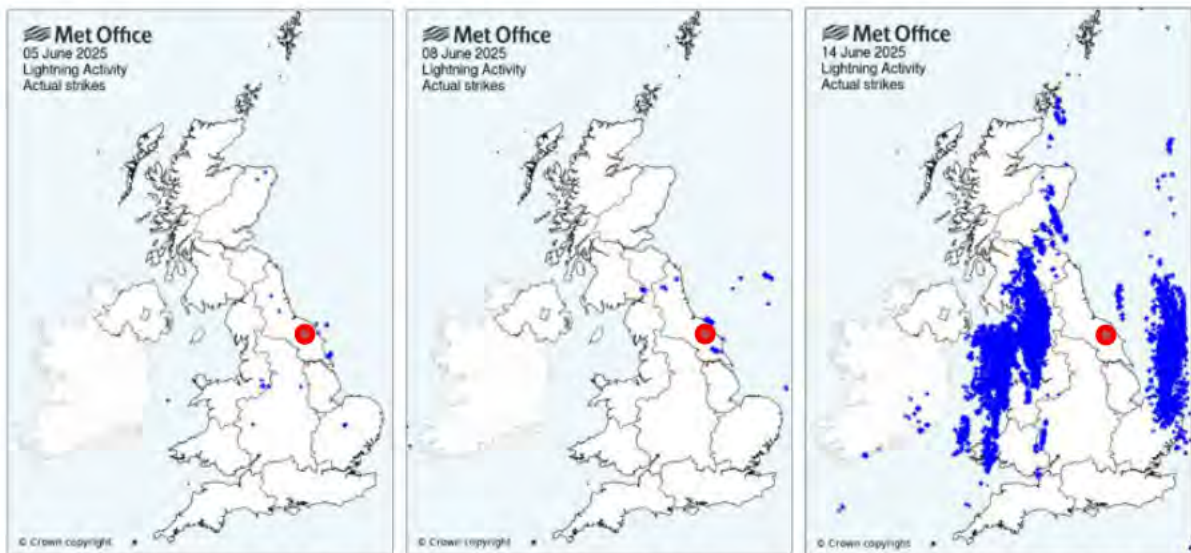


Image 15: Lightning Activity information from Met Office for 30 days prior 26/06/25, no evidence showing lightning strike on Langdale Forest. Location of fire marked as red dot.

- 4.2.10 Deliberate cause of fire was also considered by the Fire Investigation Team. [REDACTED] from Crime Scene Investigation and [REDACTED] who is a Detective Inspector at the Scarborough Investigation Hub, both assisted with the scene examination on 09/09/2025. No Evidence was found to substantiate deliberate as a cause of fire. I collaborated with NYP Specialist Intelligence Unit who also concurred that there was no evidence that a third party was involved in the cause to the fire or subsequent development.
- 4.2.11 Conducting a scene examination around the area of general fire origin highlighted an area which was open enough for human activity to happen. This area was close enough to a water source where fresh water could be obtained and used, sheltered from wind and rain through a tree canopy but not in dense vegetation where it would be difficult to move and operate in.

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Image 16: Image taken on 09/09/2025 showing the Waterfall in the foreground of the image, forest in the distance where area was found.



Image 17: Image from Resilience Direct showing the areas where the crews were first fighting the fire on the 26/06/2025, the waterfall and the general area of fire origin.

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4.2.12 This area was along the Northern side of Langdale forest, across the border of the forest is a small area of land which consisted of smaller vegetation such as bracken and heather, a small fence separates to two areas from the forest.



Image 18: Image taken from drone on the 18/08/2025 showing the waterfall, the general area of fire origin and damaged forestry. Fence is located between the forest and the greener vegetation.

4.2.13 On the forest side of the fence an area with deep burns into the ground was identified, a small food waste area was found which indicates that someone had been here and left some items, these were found in a deep hollow near some tree roots.

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Image 19: Image taken on 09/09/2025 showing the area found in general area of fire origin just on the border of the forest and the south bank of the river Derwent.

4.2.14 In total, two aluminum food cans were found, charred remains of three peppers, a teabag, a coffee sachet, a chocolate bar wrapper, a melted plastic bottle and the top of an onion were found within a 2m radius.

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Image 20: Image taken on the 19/08/2025 showing where items were found near roots of tree. Items indicate human presence.

4.2.15 Image 21 over page shows the pepper and vanilla coffee sachet highlighted in the red circle.

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Image 21: Image taken on 19/08/2025 showing pepper and vanilla coffee satchet.

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Author: [REDACTED]

4.2.16 Evidence was also found of a branch which had been hacked off a tree, this was different to other tree surgery found in the forest as the other evidence found appeared to have been a clean cut to remove a branch, whereas this looked as though several attempts were made to chop the branch off. Forestry England confirm this is not their work.



Image 22: Image taken on 09/09/2025 showing a branch of a tree chopped off indicating someone other than Forestry England had been here.

4.2.17 The depth of the burn and damage in this area was of particular note to the Fire Investigation team, it appeared to be very deep here, in places up to 50cm indicating that it may have been burning here for some time.

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Image 23: Image taken on 09/09/2025 showing the measurements between the floor and the top of the peat, taken to show the depth of the burning in the area.

4.3 Summary of range of opinion of fire spread

- 4.3.1 The fire was contained through manufactured and natural **fire breaks** and allowed to burn under supervision and monitoring from Forestry England, this was done using a recognised external handover form (See appendix F)

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*Image 24: Image taken from Forestry England document dated 17/07/2025, Red Line shows the **fire breaks** created, green area shows the fire location, thin green line shows the river Derwent. Blue and Purple lines are Forestry England zoning and plots.*

- 4.3.2 I was asked to report on if the fire on the moorland reported on the 12/08/2025 was a separate incident or if it had spread from the fire in the forest, following information obtained and stated in 3.1.6 it was confirmed by Crew Manager [REDACTED] the fire had breached the **fire break**.

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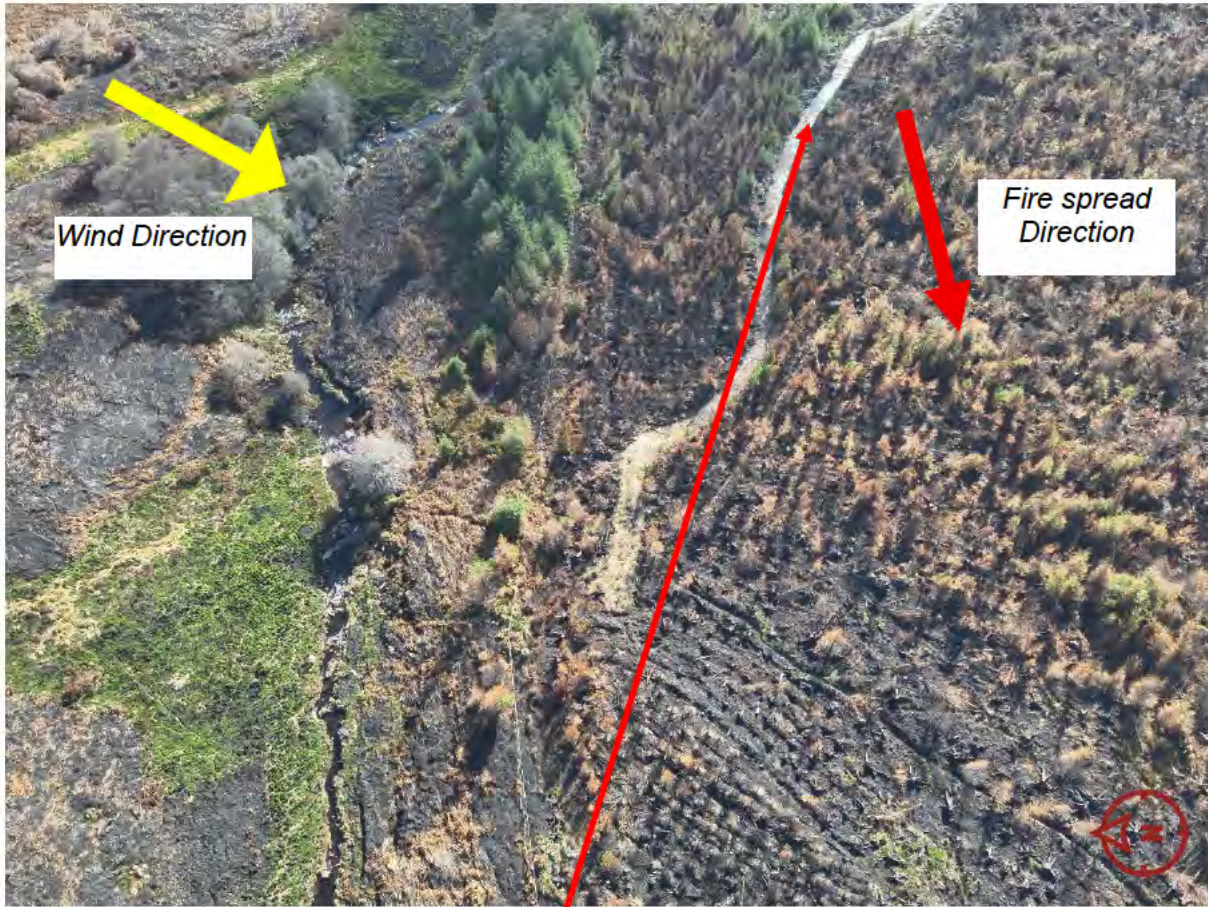


Image 25: Image taken on 29/09/2025 showing area indicated by Crew Manager [REDACTED] as where the fire breached the **fire break**

- 4.3.4 The image above shows the area indicated by Crew Manager [REDACTED] where he noticed the fire was on both sides of the **fire break** on the evening on the 11/08/2025 and where he viewed the fire to have breached the **fire break**.
- 4.3.5 The wind on the 11/08/2025 at 1800 was recorded as blowing from the Northeast which is indicated using the yellow arrow above. Due to natural geography of the land and the various valleys that run through the area, the forecasted wind and actual wind direction can be different and change dynamically throughout the day.
- 4.3.6 The fire had now spread further west but was still south of the River Derwent and still in Forestry land. Image 25 shows the area in which the fire was now spreading along the south banks of the River Derwent and the northern edge of Langdale Forest. The blue line shows the River Derwent, red arrow showing the direction of the fire spread.
- 4.3.7 The fire had now burned outside of the constructed **fire break** area the only **fire break** left was the natural **fire break** of the River Derwent indicated by the blue line in Image 26. At points the River Derwent was only two metres across and had vegetation hanging over the banks.

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Image 26: Image taken on the 23/09/2025 from forest and river looking over towards Lilla Cross.

- 4.3.8 Image 25 (taken on the 29/09/2025 via drone) shows the area where the fire was moving indicated by the red arrow. It is difficult to show exactly where the fire spread across the river as there is fire damage along several hundred metres of the river on both sides.
- 4.3.9 No evidence was found to show that this was a separate fire and burn patterns were found along multiple contact points between the forest and the moorland indicating that the fire did spread and could spread due to the terrain, fuel and distance between either side of the River Derwent. Windblown sparks are a reasonable and tested method of fire spreading up to 9 metres. This is mentioned in KIRKS Fire Investigation 8th edition, Chapter 4, section 5.1.
- 4.3.10 It is difficult to state the exact point where the fire breached from the forest and onto the moorland on the North side of the river, but it is reasonable for me to summarise that the fire spread in this area from forest to moorland due to the evidence of fire patterns. This was aided by the width of the **fire break**, the environmental conditions and the natural geography of the land.
- 4.3.11 The weather and FSI during this period was 'Very high fire severity' and the FFMC was classified as 'Fires Spread Easily'. These two pieces of information indicate to me that the weather had a big impact on the fire and gave it the necessary momentum to breach the **fire breaks** and spread in the way that it did.

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6.0 Statement of compliance

- 6.1 I understand that my duty as a witness to the court is to provide independent assistance by way of objective unbiased opinion in relation to matters within my expertise. I will inform all parties, and where appropriate the court, in the event that my opinion changes on any material issues.

7.0 Statement of truth

- 7.1 This report is prepared in good faith, with the sole purpose of assisting the reader to understand the circumstances that led to the fire Langdale Forest and spread onto Fylingdales Moor. This report is prepared with the information available at the time and evidence provided to the author. The author reserves the right to reconsider these conclusions if significant and relevant information subsequently comes to light.

8.0 Conflict of interest

- 8.1 I confirm that I have no conflict of interest of any kind, other than any which I have set out in this report. I do not consider that any interest which I have disclosed affects my suitability to give evidence on any issue on which I have given evidence, and I will advise the party by whom I am instructed if, between the date of this report and the trial, there is any change in circumstances which affects this statement.

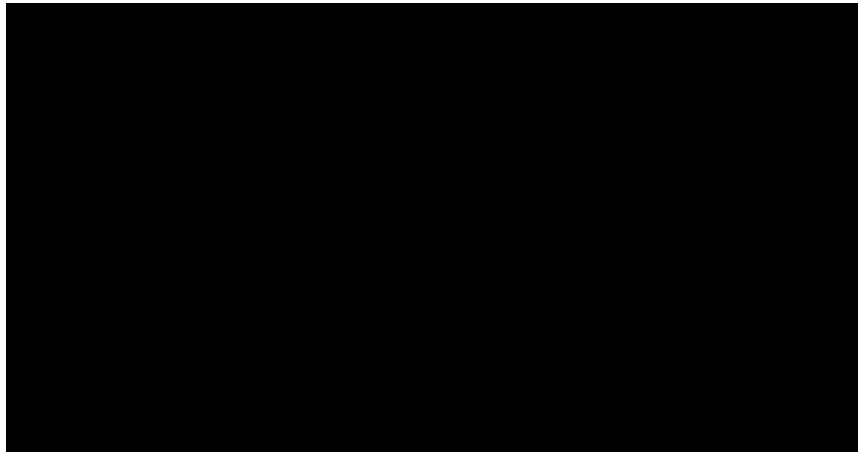
9.0 Appendices

- A Experience, qualifications and training
- B List of documents considered
- C Glossary of technical terms
- D Witness Testimony
- E Incident Timeline
- F External Handover Form
- G Email Communicating External Handover Form

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Appendix B - List of documents considered

Fire Service statements/comments taken post incident from the following people:



Photographs taken by: Crime Scene Investigator [REDACTED], Station Manager [REDACTED]
[REDACTED] Station Manager [REDACTED] Station Manager [REDACTED] Drone
images from North Yorkshire Police Drone unit.

Published works referred to:

National Fire Protection Association (2005) User's Manual for NFPA 921: Guide for Fire and Explosion Investigations (2nd Edition). London: Jones and Bartlett.

DeHaan, J.D. (2007). Kirk's Fire Investigation (8th Edition). New Jersey: Brady Fire

National Wildfire Coordinating Group (2025) Guide to Wildland Fire Origin and Cause Determination

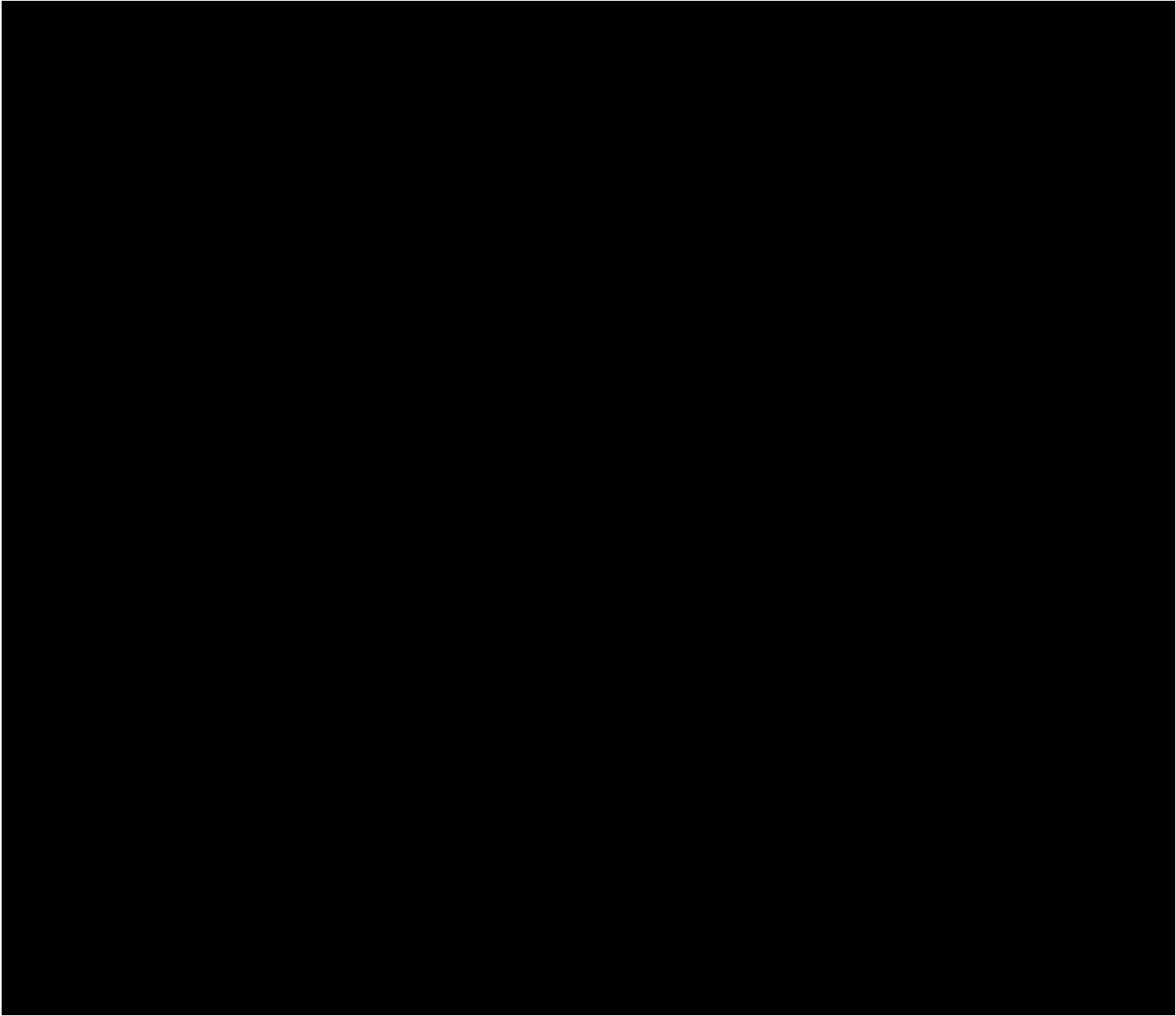
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Author: [REDACTED]

Appendix D – Witness Testimony



Appendix E – Timeline

Date	Time	Commentary
22/06/2025		██████ and ██████ saw smoke coming from the Langdale Forest and mentioned it to a neighbour.
26/06/2025	18:38	First 999 call received for Incident DNDN009958-26062025, reported as F22 - Fire - Smoke/Fire Sighted in the open.
26/06/2025	20:20	Scarborough appliance ██████ in attendance at incident, Crew Manager ██████ as officer in charge.
26/06/2025	21:44	Duty Tactical Officer ██████ asked to control to assign Station Manager ██████ to incident after ██████ were going to leave the incident until morning.
26/06/2025	22:40	Station Manager ██████ arrived at the incident.
26/06/2025	23:11	Assistance message from Station Manager ██████ - Make Pumps 1, Bowser and Argocat.
27/06/2025	00:28	ETHANE message from Station Manager ██████, reported Fire as 7 acres in size.
27/06/2025	01:27	Drone requested by Station Manager ██████.
01/07/2025	09:23	Forestry England were on site with heavy machinery to create a fire breaks.
01/07/2025	17:35	Informative message from incident confirming that a fire break had been completed.
04/07/2025	10:54	Control record that handover form has been completed by Station Manager ██████.
04/07/2025	16:42	Handover form sent electronically to Forestry England - ██████.
08/07/2025	15:57	Incident DNDN009958-26062025 closed by Control.
09/07/2025	11:22	New incident created on Vision for fire DNDN010718-09072025, following call from member of the public at 15:01. ██████ attended and left incident open for revisit the next day.
10/07/2025	13:13	Group Manager ██████ and ██████ attended the scene and confirmed fire was within confines of the Fire Breaks. ██████ informed all tactical and strategic officers in North Yorkshire Fire & Rescue Service group detailing that the incident has been handed over to the Forestry England and NYFRS will only attend if request is made from Forestry England.
02/08/2025	20:34	Forestry England confirmed they had been on site but stated no Fire Service attendance was required.
11/08/2025	17:05	NYFRS Control receives a call from Crew Manager ██████ from Defence Fire Service at Raf Fylingdales. States Military police have patrolled perimeter of base and seen smoke to the east in woodland. Advised that we have an open inc for this location and will pass all details on to forestry who will then request NYFRS if needed to attend.
11/08/2025	18:33	Goathland Landrover (██████) Attended after passing the area and confirmed via informative message that the fire has jumped the fire break, approximately 1-2 acres on fire.
11/08/2025	20:12	Drone requested again via NYP.
12/08/2025	08:49	Fire had breached fire break and had spread onto Fylingdales moor, witnessed by the crew
13/08/2025	12:22	Incident declared a Major incident via METHENE message and RMCI notification. Make Pumps 20 was requested.
25/08/2025	15:41	Fire jumped/travelled across sector 3 and 4 track and into moorland on the other side.
28/08/2025	08:30	Strategic Holding Area set up at Pickering Showground Galtres Centre.
04/09/2025	18:00	Strategic Holding Area Stood down at Pickering Showground Galtres Centre following scale down of the incident.

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Author: ██████████

