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Abstract

Wildfire is a pressing environmental issue within the UK, and it is increasing in frequency and severity year-on-year. The current structure of wildfire governance in the UK has been questioned as to how effective and able it is to handle growing wildfire risk. This study aims to explore the current state of governance and responsibility amongst UK wildfire stakeholders and aims to present complex stakeholder dynamics visually to further explore wildfire governance in the UK. This study used semi-structured interviews with wildfire stakeholders to inform the discussion and the production of a visual mapping of wildfire stakeholder relationships in wildfire governance. Findings indicate that current wildfire governance is fragmented, with a lack of coordination and cooperation leading to blurred responsibilities and ineffective governance. It finds that there is a large knowledge gap, both professionally and publicly, which is contributing to the shortcomings of wildfire governance. It also finds that there are key issues with funding and the provisions of services, which, if addressed, would allow UK wildfire governance to advance and become more effective. These findings indicate an overall need for addressing shortcomings in wildfire governance, moving away from the current short-sighted, reactive state of governance.

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List of abbreviations

EWWF - England & Wales Wildfire Forum
PPE - Personal Protective Equipment
CC - Climate Change
IPCC - Intergovernmental Panel on Climate Change
NFCC - National Fire Chiefs Council
UK - United Kingdom
FRS - Fire & Rescue Service
FBU - Fire Brigades Union
LGA - Local Government Association
MHLCG - Ministry of Housing, Communities and Local Government

ADHD - Attention Deficit Hyperactivity Disorder
AI - Artificial Intelligence
DEFRA - Department for Equipment, Foods and Rural Affairs
NWS – National Wildfire Strategy
NRR - National Risk Register
DCLG - Department for Communities and Local Government
ATV - All Terrain Vehicle
GP - General Practitioner

1 Introduction

Anthropogenic influence has unequivocally warmed the "atmosphere, ocean and land" (IPCC, 2023, p.5), with global temperatures reaching 1.5°c above pre-industrial levels in 2024 (Copernicus, 2025). Increasing temperatures and climate change in general have led to an increase in environmental hazards, such as wildfire (Mudhar et al., 2024). Wildfires is defined by the EWWF as fires that "burn vegetation, such as grass, heather, woodland, crops and scrubland" (2025, para. 1). Wildfire is a pressing issue globally, causing extensive damage both physically and economically, with £1.78bn of losses being recognised in the 2025 California wildfires alone (Kolloewe, 2025). Whilst many of the devastating examples of wildfire we see are abroad, in areas such as California, Australia and Hawaii, there is an increasing risk of wildfire faced by the UK (MacCarthy et al., 2025). Wildfire incidents in the UK are increasing in frequency and severity, and incidents such as the 2018 Saddleworth Moor and Winter Hill wildfires, 2022 London wildfires, and the broader 2025 UK wildfires demonstrate this (FBU, 2023). Challenges associated with this increase are prevalent and pressing, with frontline services being "pushed to their limits" (Vinter, 2025, para. 2), key resources such as PPE and personnel not being provided (FBU, 2025d; Stafford, 2025), and UK wildfire governance being a "fragmented chain", not able to adequately deal with the risk (Gazzard et al., 2016).

This increase in UK wildfire and associated governance questions and challenges creates a pressing need for an increase in knowledge and a nuanced debate and exploration of the current state of wildfire governance in the UK. Currently, in-depth academic literature surrounding the topic of UK wildfire governance is limited and restricted to a few key academics such as Gazzard et al. (2016) and McMorrow (2011; 2018). Knowledge production regarding UK wildfires has seen a "significant development" (p.23); however, this production is increasingly slow (Watts, 2023). This is in part due to funding cuts for doctoral studies, which are seen as "key contributors in science" (Rossello, 2025, p.1). This pressing need for knowledge and increasingly slow production of academia creates a gap in the literature, an

avenue for further nuanced exploration of wildfire governance in the UK, and this is what I aim to address within this dissertation. I will be shaping my research around a central research aim, which is:

This research aims to explore the governance and responsibilities of UK wildfire stakeholders, and to visually present the complex stakeholder relationships associated with wildfire resilience.

I will be approaching this research aim through the use of semi-structured interviews with a variety of UK wildfire stakeholders to understand wildfire governance through the eyes of those who are key players in the field of wildfire in the UK.

I will begin with a methodology, outlining the structure of my research, providing further insight into my decision-making. Within this section, I will also discuss my analytical techniques and sampling methods. I will also give due attention to the ethical considerations of my research and my personal research philosophy. I will follow this with my literature review, a section aiming to provide an academic basis to my research, delving into pre-existing literature surrounding the topic as a means of understanding the current state of UK wildfire academia and finding key shortcomings and gaps that I seek to address within my results and discussion section. This literature review will be structured through three key sections: UK Wildfire Risk, UK Wildfire Stakeholders and Challenges to UK Wildfire Resilience. Within these sections, I will be delving into the intricacies of UK wildfire governance through a series of sub-headings to provide a holistic understanding of the current UK wildfire literature. The final section will be my results and discussion, in which I will utilise my semi-structured interviews to critically discuss UK wildfire governance, seeking to answer my three research questions, which will be outlined before the methodology. The results and discussion will be separated into three main sections: Stakeholder Dynamics in Wildfire Governance, Perceptions of Wildfire Responsibilities and Strengthening UK Wildfire Resilience.

1.1 Positionality

I'm located in North-West England, an area which has been affected by wildfire (GMFRS, 2020), meaning I have some prior knowledge and opinion on the subject. Additionally, I have achieved a BSc in Sustainability and Environmental Management, meaning I have prior knowledge regarding environmental contexts, both scientific and social. This may cause problems with subjectivity as the interview questions are influenced by my own understanding and knowledge of wildfire. However, I aim to address this within my methodology.

2 Literature Review

2.1 UK Wildfire Risks

2.1. 1 Climate Hazards in the UK

The general consensus within academia surrounding CC is that anthropogenic influences have had an unequivocal impact on rising temperatures and other climate-related hazards (IPCC 2023). 2024 was the first calendar year that reached more than 1.5°c above pre-industrial levels, complicating global CC mitigation policies, such as the Paris Agreement (Copernicus, 2025; UNCC, 2015). The aforementioned IPCC (2023) is one of the many organisations that has highlighted the connection between CC and increasing environmental hazards faced that "impact both natural and human systems" (Mudhar et al., 2024, p.5). The IPCC further highlights the potential risks to "transportation, water, sanitation and energy systems" (p.6), causing additional socio-economic and intersectional challenges, due to the disproportionate effects on people from lower economic backgrounds, facing marginalisation (IPCC, 2023). The UK is facing a multitude of climate-influenced hazards, such as flooding, droughts, storms and most importantly for this dissertation, wildfires (CCC, 2025; EA, 2025). The impacts of these hazards have been noted, with heatwaves in 2022 causing nearly 3,000 deaths, droughts in 2025 affecting five areas of the country, with reservoir levels receding "putting more pressure on already struggling public water supplies" (EA, 2025, para 5). The Environmental Agency and the Climate Change Committee have presented data suggesting that houses and farmland are increasingly at risk because of these hazards (EA, 2025; CCC, 2025). Wildfire has been an increasingly pressing issue in the UK, with the NFCC (2024) noting that their onset has become earlier, fires have burned for longer, and they are posing a novel threat to most areas of the UK. They attribute these changes to higher temperatures and the increasingly blurred boundaries of the rural-urban interface, which threaten the livelihoods and infrastructure of local communities (NFCC, 2025a; Belcher et al., 2021). Mudhar et al (2025) further this argument, describing the impact of "milder and wetter" (p.25) winters, and their impact on plant growth, creating further fuel for wildfires later in the year. These points are supported by global data on increasing temperatures, and increasing wildfire risk faced internationally, especially in areas such as Europe, Canada, USA, and South America (MacCarthy et al., 2025).

2.1. 2 Wildfire Risk Factors in the UK

Bosher et al (2021), (as seen in Figure 1) describe the "ideal scenario" (p. 7) concept of disaster risk management and the positive impacts effective governance can create due to "risk reduction interventions" (p. 7) over time. Figure 1 emphasises the positive long-term risk reduction impacts when risk reduction activities, such as structural adaptation or contingency plans, are implemented

before the incident which ultimately increases overall resilience (Bosher et al., 2021). The blue arrows represent productive pre-emptive "disaster risk reduction and preparedness activities" (p. 7), which reduces future disaster impacts over time. The red arrows represent proactive post-incident recovery and rehabilitating activities, which impacts future potential events by reducing the risk (Bosher et al., 2021).

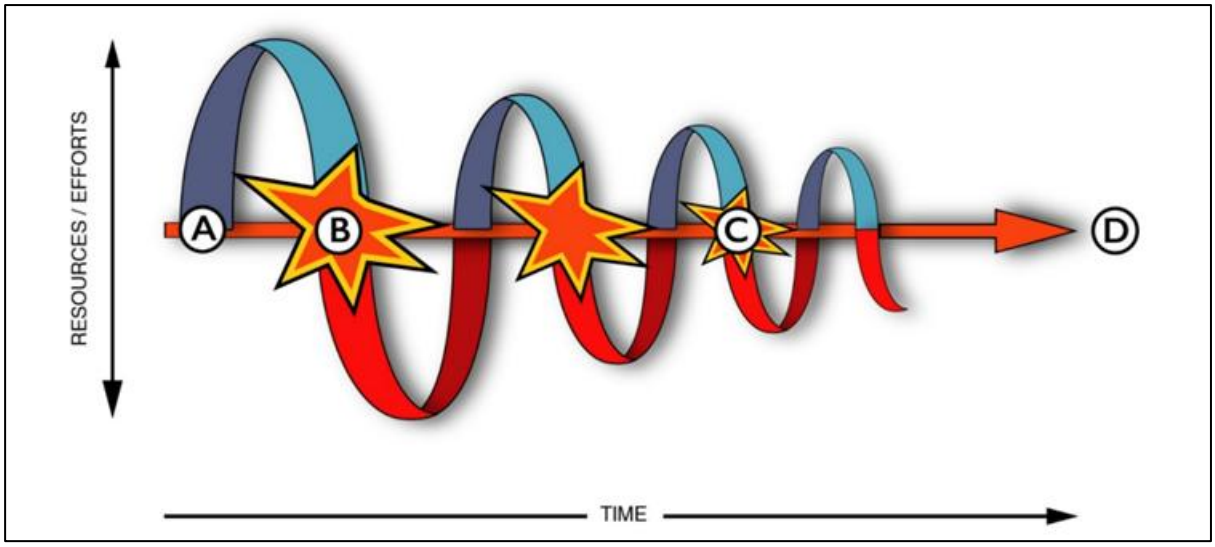

Figure 1 - Bosher et al's (2021) "helix diagram illustrating a reduction of risk over time (due to risk reduction interventions)" (p. 7).

Mudhar et al (2024) describes the concept of an individual's risk as, vulnerability x exposure + hazard = risk, meaning systemic influences and climate impacts influence an individual's overall risk for a hazard. The concept has been discussed in literature regarding disaster management for some time, such as Wisner et al's (2004) pressure & release model. Wisner et al's (2004) model describes a multitude of factors which influence an individual's risk for a disastrous event, especially when vulnerability is closely intertwined with governance and socioeconomic situations. In the context of wildfire, the increased rural-urban interface has influenced overall wildfire risk due to the constant urbanisation and a lack of overall governance (McMorrow, 2011). These challenges and dynamics will be discussed further in sections 2.2 and 2.3.Wildfire has historically been a natural occurrence and has impacted the original ecological structure, becoming an underappreciated element which naturally influences vegetation structure, therefore "playing a key role in ecosystem composition and distribution" (Bond et al., 2005; Pausas & Keeley, 2009, p. 593). Despite the natural occurrence, Pausas & Keeley (2009) argue that there is a "profound need" for a holistic balance between the use of fire in land management, and the maintenance of sustainable ecosystems (p. 600), the lack of which ultimately increases the hazard risk (Mudhar et al., 2024).

Wildfire in the UK has been deemed a "semi-natural" (p. 2) hazard, due to the anthropogenic ignition sources of arson and accidental fires being the majority cause of present-day wildfires (Gazzard et al.,

2016). Belcher et al. (2021) provide further examples of said human-induced wildfire ignition, them being: discarded cigarettes, barbecues, sparks from power lines or vehicles, and poorly managed prescribed burns. They further the argument by claiming that the "intermixing of high-risk wildland/semi-natural fuels and the built environment" (p.57), has exacerbated this problem due to the rural-urban interface (NFCC, 2025a). Belcher et al (2021), explain that a combination of "fuel (load and type), weather, and ignitions" (p.26) are major factors that have influenced increased wildfire activity. Changes in weather due to CC have previously been discussed, so understanding the role of fuel sources and management is key to gaining a broad understanding of the risk. The UK has a vast variety of "semi-natural ecosystems" (McMorrow, 2011, p. 44) due to the centuries-old process of natural and anthropogenic burning and grazing management techniques (Davies et al., 2008). Heather moorlands have been adapted through anthropogenic prescribed burning, similarly to semi-natural moorlands, and have become widely known locations to regularly have wildfires (McMorrow, 2011). UK moorlands are found mostly in the north and west of England (NE, 2024), incorporating inaccessible landscapes, large fuel sources and areas with "blanket bog on deep peat" (p. 44).

2.1. 3 UK Wildfire Case Studies

The previous sections have discussed the rising wildfire risk faced by the UK, finding reasons and theories as to why this is the case, analysing risk factors and CC related issues. It is important to apply this discussion to real-world examples, demonstrating the severity of current-day wildfire scenarios.

Saddleworth Moor & Winter Hill Wildfires 2018

Throughout June and July of 2018, two large-scale wildfires occurred in the Northwest of England, specifically Greater Manchester and Lancashire (Sibley, 2019). The Fire Brigade Union (2023), states that more than a thousand calls a day were taken by control staff throughout a three-week period, peaking at 3,000 calls on the 2nd of July. The FRS' response required 30 fire engines, and more than 150 firefighters, calling on cross-border help from multiple regional FRS, including the London Fire Brigade, Northumberland and Nottinghamshire to deal with the simultaneous incidents in West and East areas of Greater Manchester (FBU, 2023). Military assistance was also required, and the Mayor of Greater Manchester requested 3 helicopters, which United Utilities provided to support the FRS (GMFRS, 2020). The Saddleworth Moor wildfire incident burnt up to 8km² of moorland, becoming the largest recorded urban-rural wildfire in the UK (UKHSA, 2023), with the Winter Hill wildfire reaching a similar scale (LRF, 2025). Evidence found after the incident proved the environmental loss, especially with biodiversity impacts and peatland loss, which could take up to 200 years to regenerate (Newsround, 2024; Bond, 2024). Both wildfires produced a smoke plume that spread across the West Greater Manchester area, "extending as far as the West coast of England and the North coast of Wales" (FBU, 2023, p.8). Hazardous pollutants exposed people up to 100km downwind, leading to the air quality being comparable to that of a power station (Graham et al, 2020). The response to the wildfire has been

criticised, particularly the reliance on top-down management for "basic errors of judgement" (BBC News, 2018, para.5), leading to FRS being at risk, with a lack of basic necessities, such as food, water, and PPE (BBC News, 2018). Wildfires were reported in many other areas of the UK during this period, appearing across all four constituent countries of the UK, burning moorland, grassland and peatland, many becoming major incidents (Sibley, 2019).

2022 London Wildfires

Due to an unprecedented heatwave in the summer of 2022, where temperatures reached 40◦C in some places, there were an extraordinary number of wildfires, with an increase of 663% from the previous year, with 24,316 being recorded between June and August alone (Burton et al., 2025; NFCC, 2025a; Jones, 2023). The specific case study focuses on the wildfires faced by London in this year, as they dealt with more than 1,146 incidents, receiving 2,670 calls on the 19th of July, their "busiest day since World War II" (LFB, 2022, no pagination). Figure 2 presents the extent of the wildfires, and the scale of the response required.

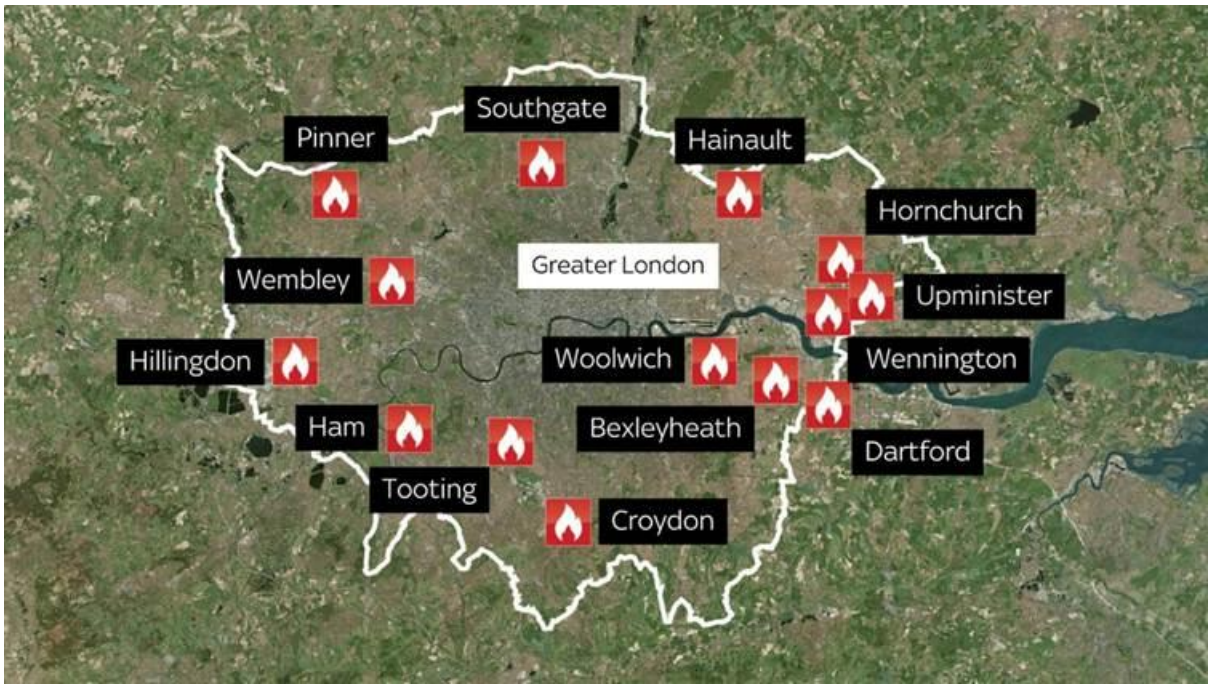

Figure 2 - This image shows a screenshot of the fourteen wildfire incidents across Greater London on the 29th July 2022 (Sky News, 2022).

The impacts of the wildfires were vast, with 19 houses being destroyed in Wennington, East London, and 16 firefighters being injured, with 2 hospitalised during the entire emergency intervention (FBU, 2025b; FBU, 2023). The wildfires were not limited to London however as on the 19th of July, "fifteen FRSs declared major incidents due to wildfire" (FBU, 2023, p.7), spanning the breadth of England. This incident demonstrates the direct correlation between CC and an increase in wildfire across the UK, as

previously mentioned. The FBU (2025b) were particularly keen to warn that this was not an isolated incident, and was not unpredictable, claiming that this was the "tip of an iceberg" (p.13) when it came to the wildfire impacts and risk faced by the UK. As a result of these incidents, it was brought into question by the FBU (2023a) as to whether FRS are adequately equipped to deal with this growing threat, highlighting that the London Fire Brigade "lacked any wildfire tactical advisors" (p.8), who could provide key "command and control in wildfire situations" (p.8). The tactical advisory structures will be discussed further in 2.2.1 and further discussions of these challenges will be addressed in 2.3.2.

2.2 UK Wildfire Stakeholders

Whilst researching existing academia on the subject of UK wildfire stakeholders, it became clear that there is limited understanding and awareness of the complex dynamics among wildfire stakeholders, which will be further explored in the following literature review. Importantly, due to the lack of academia, the literature accessed is not solely academic, and is derived through additional online articles, blog sites and stakeholder websites. This lack of literature will become apparent when discussing stakeholders, as it is informed predominantly through Gazzard et al's (2016) research. This demonstrates a clear gap in the literature, and a need to expand further on the subject, which I aim to do within this project. This section will focus on the three key stakeholders: the FRS, the government, and landowners. The existing literature mainly addresses the functions of said stakeholders, paying little attention to the wide variety of people and organisations who play a key role in the prevention, preparedness and recovery of a wildfire incident.

2.2. 1 Fire and Rescue Services

Fire England state that, as of 2022, there are 44 FRS in England, and all have a "fire and rescue authority who is responsible for fire and rescue in that area" (2022, para. 1). Figure 4, a map produced by the Local Government's Association, presents the FRS authorities in England, showing the differing governance structures that are present for each service.

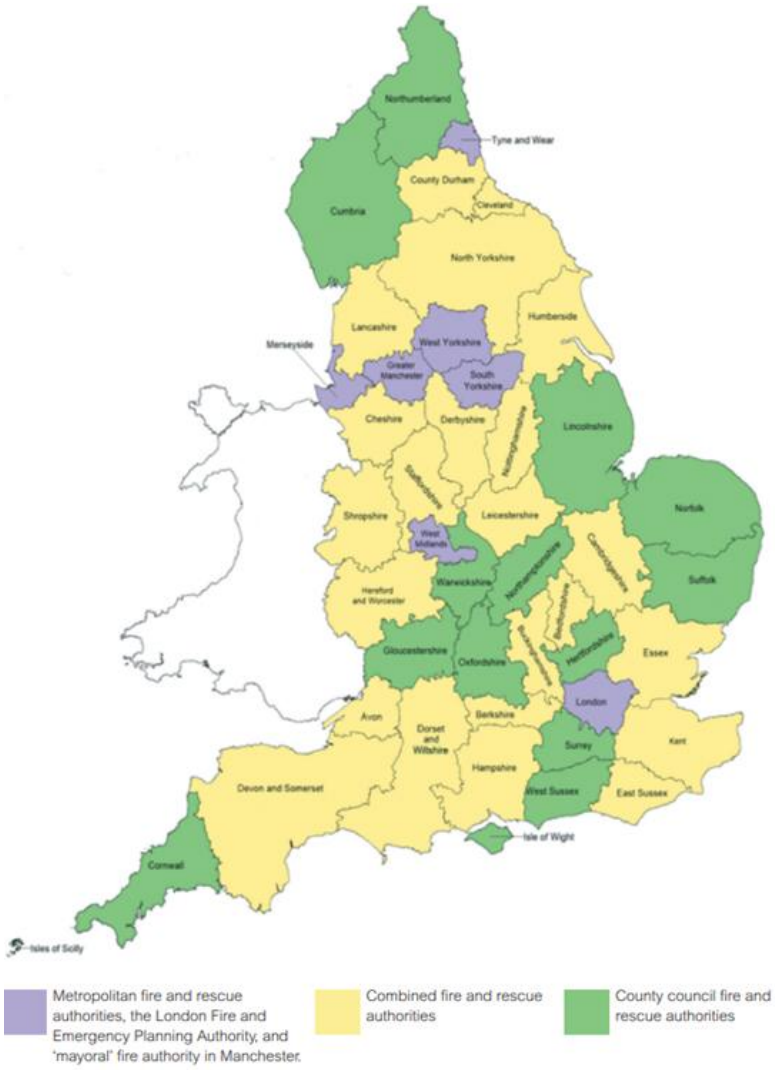

Figure 3 - This image shows the different FRS authorities across the UK (LGA, 2017, p. 19).

Figure 3 demonstrates the decentralisation of English FRS authorities and the complex differences in structural governance between each authority. The LGA (2017), explains this decentralisation as a means of allowing each authority to provide contextualised community-based support and governance to the issue of wildfire through "prevention, protection and emergency response" (p.15).In terms of FRS roles, they are designated as either "grey book" or "green book" staff (Home Office, 2024). Grey book staff are "all operational and control room staff" (Home Office, 2024, para. 47), this includes firefighters, crew managers, station and brigade managers namely (FSAC, 2011). Green book staff are those who "perform administrative, technical and community work" (Home Office, 2024, para. 48). In regard to wildfire specifically, there is training policy in place for different FRS authorities. Taking the Northumberland FRS as an example, they have different levels of wildfire training, these include: level 1, foundation training for all grey book personnel, level 2, wildfire operator training, level 3, wildfire support officer training, and finally level 4 national wildfire tactical advisor training who can be deployed all over the UK (Stacey, 2025). Each authority is bound by national legislation which outlines

their roles and responsibilities, especially for response, prevention and preparation (Gazzard et al., 2016). Gazzard et al. (2016) highlight the structure of UK wildfire response, stating that although responsibility does not lie with a specific organisation or agency, "statutory responsibility rests with individual FRS under the FRSs Act 2004" (p.4). The FRSs Act 2004 (Section 7) specifies the requirements of each service, importantly, their response to any fire incident, the protection of property and life, and the provision of personnel, necessary equipment, services and training. This is imperative when responding to a multitude of incidents and emergencies that threaten or causes serious damage to human welfare and/or the environment (*Civil Contingencies Act 2004, section 1*), and may require additional support from cross-boundary FRS (*Fire and Rescue Services Act 2004, section 12*). The aforementioned Northumberland FRS wildfire training levels are not currently required for all UK FRS, and some may not know or have had said training, especially when each FRS respond to a variety of "incidents spanning the full range of environmental risks" (Hill, 2022, para. 3).FRS also have a responsibility to provide preventative and preparedness measures to their local communities (Hill, 2022). A key preparedness measure, in relation to wildfire, is two wildfire forums, the England and Wales Wildfire Forum (EWWF) and the Scottish Wildfire Forum (Gazzard et al., 2016). The EWWF is currently run by the Northumberland FRS (Gazzard et al., 2016). These forums are primarily a platform for knowledge sharing between organisations and multi-agency stakeholders namely the Forestry Commission, Natural England, private land management groups and researchers, among others (Gazzard et al., 2016).

2.2. 2 Government

The Government department responsible for wildfire-related issues and policy has changed twice over the last ten years. In 2016 the responsibility transferred from the Department of Communities and Local Government (DCLG) to the Home Office, who held the responsibility until the 1st April 2025, when it transferred to the current MHLCG (Gazzard et al., 2016; *The Transfer of Functions (FRSs) Order 2025)*. These governance changes describe an ever-changing responsibility for wildfires over a decade and may be a key change that impacts the long-term trajectory of this project. Gazzard et al. (2016) argues that "management is functionally fragmented" (p.4) within Governmental departments, claiming that they each operate in their own "policy silo" (p.4). A key example of this, which Gazzard et al. (2016) present, is that of land management. Policies that impact wildfire within the UK include those concerned with land management and the wider environment are formed and are the responsibility of the Department for Environment, Food and Rural Affairs (DEFRA) (Gazzard et al., 2016). This presents a key issue, with there not being a holistic approach to wildfire management in all its stages in Government, hence the description of a "policy silo" (Gazzard et al., 2016, p.4). A current example of this is presented by Cobham (2025), who states that rewilding proposals, led by DEFRA, will "enable wildfires to break out" (para.1). This example demonstrates the key fragmentations within Government when it comes to

holistic wildfire policy. A key area of Government responsibility, as noted through the literature, is that of the NNR. The NRR began in 2008, as a means of highlighting natural and environmental risks within the UK through their likelihood, and their potential impact (HM Government, 2025). Wildfires across the UK in 2011, following "unprecedented dry weather" (Carter, 2011, para.1), led to incidents such as the "largest [wildfire] in Berkshire's history" (BBC News, 2011, para.1) at Swinley Forest. As a result of this period, "severe wildfire was included in the NNR for the first time in 2013" (Gazzard et al., 2016 p.2), changing to just "wildfire" in 2017 (Cabinet Office, 2017). The NRR for this year (shown in appendix G) states that wildfires have a low likelihood (0.2-1%), and a limited impact, costing up to tens of millions of pounds in economic cost (HM Government, 2025). It could be argued that this is an underestimation, as McMorrow (2011) states that the definition of property is "narrow" (p.53), leading to an undervaluation of damage. Issues with the NRR will be discussed further in the challenges section.

2.2. 3 Landowners

The literature suggests that landowners play a crucial role in the prevention, adaptation, preparedness, response and recovery of a wildfire incident (Gazzard et al., 2016; Elliott, 2021; McMorrow, 2011). Whilst the FRS have a "de jure" (p.4) responsibility for wildfire, it is also a "land and people management problem" (Gazzard et al., 2016, p.4), hence the emphasis placed on landowners as a key stakeholder. Elliot (2021) provides a non-exhaustive list of landowner capabilities in wildfire scenarios, citing their "invaluable local knowledge", "specialist equipment and machines", experience in rural working conditions, and their position as a "positive assessed…if they become embedded into the Incident Command System" (p.4). Literature on UK landowners' position in the UK wildfire discourse is limited and predominantly focused on land management and environmental conservation practices, whilst not paying adequate attention to the other key roles and services they can provide before, during and after a wildfire incident. Top-down land management policies, such as fire suppression techniques and conservational measures, created by government departments such as DEFRA, are criticised due to their lack of integration of landowner, and indigenous people knowledge (Rodriguez et al., 2023; Gazzard et al., 2016). The land management technique which is most often discussed in regard to landowner involvement is prescribed burning. It is noted that internationally, prescribed burning is a historical technique utilised by indigenous populations throughout history for anthropogenic means "providing protection from out-of-control wildfires" (Christianson, 2015, p.191). The use of prescribed burning a means of wildfire prevention and preparedness has brought about "strong and polarized opinions" (McMorrow, 2011, p.51), with Rodriguez (2023) noting that a "conservationist discourse" (p.103) often appears after wildfires, diminishing the support for prescribed burning as a preventative measure. It is important to note that much of the prescribed burning literature is concerned with international examples, with UK literature revolving around issues with CO2 release and conservation (Harper et al., 2018). The previously mentioned Labour policy demonstrates this, seeking to ban winter

burning from half of the country's peatlands as a means of "rewilding", a move which landowners have warned could lead to wildfires breaking out that may be "too large to fight" (Cobham, 2025, para.1). A colonial aspect to opinions on prescribed burning has also been argued, with Christianson (2015), stating that fire was seen as "one-dimensional" (p.191) to the colonisers and a threat to their "timber supply" (p.191), an argument which mirrors previously mentioned discourse surrounding conservation and CO2 release (Harper et al., 2018).

2.3 Challenges to UK Wildfire Resilience

The final section will focus on challenges to UK wildfire resilience, separated into 3 sub-sections: Governance, FRS, and Wildfire Perception.

2.3.1 Governance

The initial challenge often discussed within literature is the previously mentioned decentralised nature of wildfire governance in the UK. Decentralisation can provide benefits to wildfire response, such as a focus on community-based support and multi-agency response (LGA, 2017). Lagos-Penas et al. (2025), argue the benefits of decentralisation in "addressing events with diverse regional causes and effects" (p.1), shown in the example of Local Resilience Forums which can create tailored contingency plans and local risk registers for their area (FBU, 2023). Whilst the benefits of decentralisation are visible, the challenges in regard to wildfire are ever-present. Issues of fiscal capacity, inter-governmental coordination and policy alignment are further stressed during times of extreme events (Lagos-Penas et al., 2025). This raises concerns about whether a decentralised structure is the optimal way to manage wildfire incidents, including preparation, response, and recovery efforts before and after.. Climate resilience, and by association wildfire resilience, has been described as "fragmented" (para.10) with strategies on a "national, regional, and local" (para.10) level not always aligning (Atkins, 2025). The Climate Change Committee (2025) has highlighted this, advising the government to "improve coordination across government" (p.10), as climate risks are only "weakly" (p.10) incorporated into Government policy and resilience plans. A point raised by Hill (2022), is that a knowledge base is not consistent across differing structural levels as CC "is mostly understood on a national or global level" (para.5), highlighting the inconsistencies between national and local government, bringing into question the efficacy of a decentralised response. There have been plans put in place to improve this coordinated response, with the government creating the "Resilience Action Plan" (Cabinet Office, 2025) which aims to improve "coordination across departments and agencies in the event of a major conflict impacting the UK" (para.14). The National Preparedness Commission (2025) praises the intention of the plan

highlighting its "tremendous potential" (para.14), however they raise concerns as to whether it is achievable or comprehensive enough (ICE, 2025).

Concerns have also been raised surrounding the Government's approach to wildfire governance, and their lack of incorporation of stakeholders outside of the FRS into their wildfire plans. McMorrow and Aylen (2018) highlight this, describing the need for the Government to support local and national partnerships, seeing "wildfire as more than a fire service problem" (para.2). They further their argument by stating that wildfire risk is not merely tackling fires as they happen, rather it involves "cooperation of many diverse interest groups" (para.3), who can aid the FRS as it would be "impossible for FRSs to attempt to address the risks in isolation" (Scottish Government, 2013, p. 35). A coordinated response is often hindered due to the Government's emphasis on environmental conservation, such as the Government's plan to ban winter burning, as a means of rewilding (Cobham, 2025). Dempsey (2021), argues that the focus of conservation is "compositionalist" (p.2), meaning the focus is on individual parts of each ecosystem, rather than a holistic focus on the ecosystem as a whole. This ties back into wildfires, as it would explain why policies are focused on suppression of fire, rather than understanding the complex dynamics of wildfire processes and how they can impact entire ecosystems. The final point to raise in terms of governance challenges is legislation. The *Civil Contingencies Act 2004* lays out emergency preparedness and response, and the legislative framework in place for this. The National Preparedness Commission (2022) argue that the act is outdated as the "world has changed over the past 20 years" (p.4), with a "pressing need to modernise some duties" (p.12), engaging a wide range of stakeholders to address issues within emergency response and preparedness. This highlights an intrinsic challenge in wildfire response, as the legislation is not up to date and fails to reflect the dynamic partnerships and processes required to maintain civil contingency (NPC, 2022).

2.3. 2 Fire and Rescue Service

The FRS are facing an ever-evolving issue when it comes to climate hazards as eight of the risks mentioned in the current NNR are CC related events, set to be more "frequent and extreme as global temperatures rise" (NFCC, 2025c, para.1). This places the future of the FRS at the forefront of discourse as Hill (2022) states that the "future of the FRS looks much busier" (para.3). Hill (2022) further describes the FRS' duties, stating that they are not merely a responder, they also have statutory preventative duties within local communities. These claims bring into question as to whether the FRS has the capacity and resources to handle the worst-case scenario when it comes to wildfire.HM Government (2025), describes the current "worst-case scenario" (p.128) as requiring "multi-agency attendance over 4-7 days" (p.128), with "mutual aid from unaffected FRSs" (p.128) being necessary. Whether the FRS has the capacity for this is questioned. A recent case, involving the Dorset and Wiltshire FRS, highlights insufficiencies in personnel as the service was involved in the fighting of a number of wildfires, Holt Heath being the largest (Stafford, 2025). 46 out of the 50 stations in the service were actively recruiting crew members

to aid the response, demonstrating a lack of personnel, especially as these firefighters needed to be on-call for "a minimum of 40 on-call hours per week" (Stafford, 2025, para.2). The Holt Heath example also emphasised resource deficiencies, namely PPE. The FBU (2025d) stated that a "large number of the firefighters who attended" did not have adequate wildfire PPE, or wildfire training, leading to firefighters being at "an increased risk of heat stroke, exhaustion and burns" (para.4). The FBU (2023) addressed this insufficiency in 2023, stating that "investment into personal protective equipment and welfare facilities for firefighters tackling wildfires" (p.25) was necessary. The overarching theme of this is a lack of funding for the FRS, an issue which Hill (2022) expands on, claiming that the FRS "receives the smallest amount of money across emergency services" (para.4), with a lack of attention from "politicians and the public" (para.4). The FBU (2025c) provides a example of this, highlighting "£1.6 million of proposed frontline cuts" (para.1) to the Hampshire and Isle of Wight fire authorities, a case which is representative of FRS as a whole, whose "ability to respond" (Hill, 2022, para.4) to extreme weather events will further be inhibited. A final, often overlooked, challenge for the FRS is safeguarding the health and wellbeing of its personnel As previously mentioned, a lack of adequate PPE and training led to detrimental health effects for FRS members, namely "exhaustion" (FBU, 2025d, para.4). This area of literature has received limited attention to date; however, this is beginning to change, with a survey led primarily by Nottingham Trent University (and a more recent national survey undertook by the University of Central Lancashire) analysing the wellbeing of first-responders in the face of increasing risk (Hill, 2022; FBU, 2025e). The findings suggest that "as the planet gets hotter and fires occur more often" (Hill, 2022, para.13), the well-being of first responders will be heavily impacted, presenting an interesting avenue of conversation in regard to the increasing risk of wildfire and subsequent effects on well-being.

2.3. 3 Wildfire Perception

Wildfires are considered a "semi-natural hazard" (p.4), as they are often a result of anthropogenic means, whether that be land management or human ignition (Belcher et al., 2021; Tasker & Wentworth, 2024). Tasker & Wentworth (2024) state that there is "poor public awareness of wildfire risks" (p.1), bringing to light issues with public perception of wildfires in the UK. Studies on public perception of wildfire in the UK is nearly non-existent (Kim et al., 2021), with Watts (2023) providing one of the only extensive pieces of literature on the topic. Watts (2023) highlights a wide variety of her findings, stating that there are many misconceptions amongst the public such as the country being "too wet" (p.246) for wildfires, they are only caused by natural means, and they are limited to remote areas. Her study provides a basis to expand on a gap in the literature and will inform part of my discussion in regards to responsibility and improvements for engagement. An important part of Watts' (2023) study and public perception as a whole revolves around land management practices and techniques for wildfire prevention and preparedness. Watts (2023) discusses the perception of prescribed burning in her research, highlighting

public wariness on the method due to uncertainties about "outcomes, controllability, and negative impacts on nature, people, and climate" (p.242), stating that "persistence of notions of fire as wholly negative are pervasive" (p.247). There have been recent discussions in Parliament which challenge this notion, with Baroness Jones (2025), stating that DEFRA recognises that "in certain circumstances, prescribed burning may be the most important tool" (c.1681), alluding to a potential recognition of prescribed burning's positive potential. Qiu et al. (2025) expands on this claiming that policymakers should prioritise strategies to increase resilience, including the potential use of prescribed fires. An area of literature which alludes to wildfire perception is surrounding academic and educational challenges. Rossello (2025), highlights the importance of PhD students and their research, as they contribute to "one-third of scientific publications" (p.1). However, there have been financial cuts to PhD programs, which Rossello (2025) argues will lead to lower research productivity. Watts (2023) states that knowledge production regarding wildfire academia has been slow, leading to a stakeholder and public reliance on research from "outside of academia" (p.23). This highlights a key gap in the literature in regards to research on UK wildfires, furthering the importance of the research I have undertaken in exploring key areas of holistic wildfire preparedness and management. Wildfire perception is also closely linked to economic factors. The 2025 NNR perceives wildfire to be a 2 on their scale of impact, estimating that economic loss would be "Tens of Millions £" (HM Government, 2025, p.14). To counter this, the Moorland Association (2025) released a paper in May of this year, stating that wildfires had already cost "more than £350 million so far this year" (Beeson, 2025, para.2). This highlights a large discrepancy between perceived economic cost and actual economic cost. This may provide a key factor in altering public perception on wildfires. This changing public perception of economic cost can be seen through the insurance industry as Guy (2025) describes a "rising demand" (para.15) in wildfire insurance for homes and businesses in the UK. One area of cost that may not be easily quantifiable in economic terms is the loss of "natural capital" (Dempsey, 2021), which assigns economic value to nature, which he argues "increases understanding of the environment's value" (p.2). Although this has been criticised as it "oversimplifies ecosystems and undermines nature's inherent, unmeasurable value" (Dempsey, 2021, p.2).

3 Research Aim and Questions

3.1 Research Aim

This research aims to explore the governance and responsibilities of UK wildfire stakeholders, and to visually present the complex stakeholder relationships associated with wildfire resilience.

3.2 Research Questions

Q1 How can data collected through semi-structured interviews present wildfire stakeholder dynamics and provide a visual understanding of the complexities of current wildfire governance?

Q2 To what extent do wildfire stakeholders perceive wildfire awareness, management and response as their responsibility?

Q3 What areas of improvement are necessary to tackle the shortcomings of current UK wildfire resilience?

4 Methodology

4.1 Research Philosophy

The researcher adopts a pragmatic philosophy for both their epistemological and ontological approaches, which is often used in a qualitative project, and improves the subjectivity of this social research (Leavy, 2017). Epistemologically, a pragmatic paradigm allows a combination of practical and known problems, with ontological societal realities and experiences which influence personal perspectives (Saunders et al., 2022). Using a pragmatic approach addresses the high valued data, utilising multiple methodological techniques to address the research questions created by the researchers' beliefs and assumptions (Saunders et al., 2022).

4.2 Sampling

The specific criteria required to be a participant in this research is described in the participant information sheet, found in Appendix A. The necessary criteria which needed to be met by all participants were described as: fire and rescue service professionals and/or experts, and individuals, both academically or professionally, who research wildfires or are climate experts. The additional wording of 'are not limited to' allowed potential participants to contact the researcher regarding the study, after which the researcher decided whether their academic, or professional experience aligned with the sample criteria and research aim, and the researcher ultimately chose who fit the criteria for this research (Meuser & Nagel, 2009). There were ten participants in total who matched the participant criteria during the two-month response time to join this research, and all were chosen by the researcher purposefully

based on their profession or expertise (Babbie, 2021). The timescale and word-count limitations for this dissertation meant a large-scale, nationally representative sample was unachievable for this research.

Participant Number	Wildfire Expertise	Job Role
Participant 1	Environmental Governmental Sector Employee	Civil Servant
Participant 2	Northern Fire and Rescue Service Wildfire Representative	Wildfire Lead
Participant 3	Environmental Charity Representative	Health and Safety
Participant 4	Midlands Fire and Rescue Service Firefighter	Crew Manager
Participant 5	Northern Landowner	Private Long-Term Landowner
Participant 6	Southern Fire and Rescue Service Firefighter & Wildfire Representative	Wildfire Lead
Participant 7	Northern Academic Researcher	Professor
Participant 8	Midlands Fire and Rescue Manager Representative	Station Manager
Participant 9	Environmental Insurance Broker	Climate Researcher
Participant 10	Environmental Governmental Sector Employee - Wales	Public Servant

Table 1 - The table lists each participant's identification number, expertise, and job role, highlighting their inclusion as stakeholders and summarizing their relevance to the study, which is expanded on in the results.

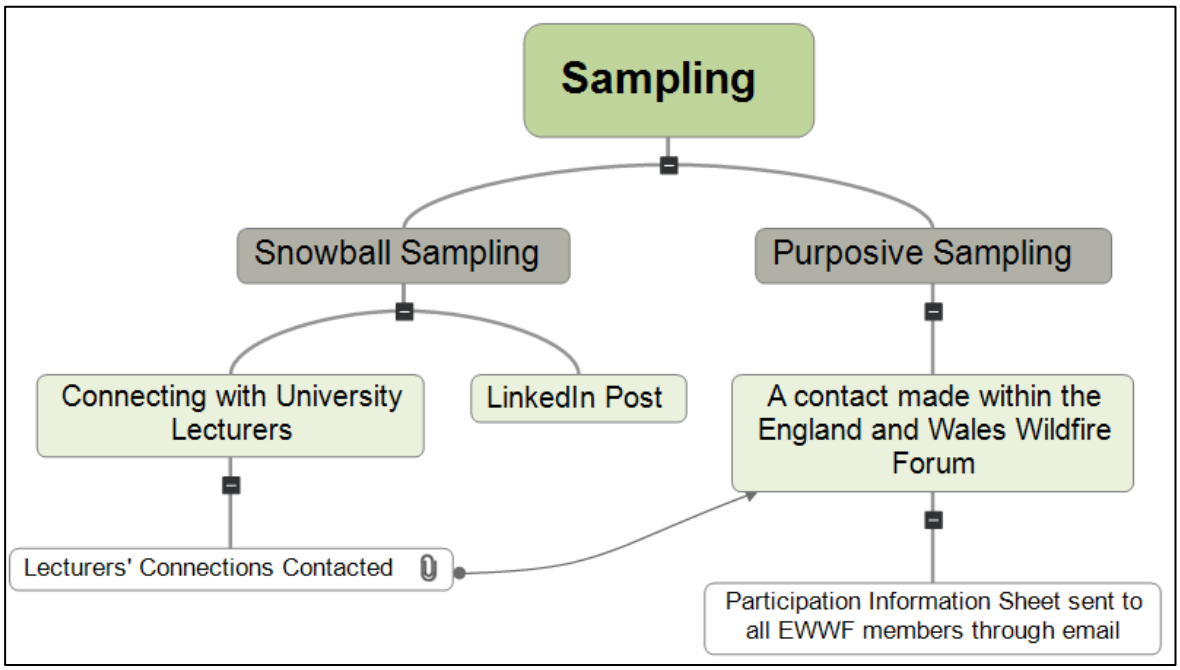

Figure 4 - This flowchart shows the sampling processes, which combined snowball and purposive techniques to recruit participants.

Snowball sampling was used initially. Two participants were recruited through the researchers' academic connections, who then shared the opportunity for participation within their networks (Babbie, 2021). A LinkedIn post (2023), shown in Appendix B, was also created on the researcher's profile and subsequently reposted thirteen times, generating one additional participant. Purposive sampling then strengthened the process. An early contact facilitated access to a professional wildfire forum (EWWF), which proved essential for this research. This contact directly contributed eight participants and distributed a mass email to forum members with the study information. As a result, twenty members expressed interest, though only eight ultimately participated after returning the consent form (Appendix C). Five additional responses were received through LinkedIn after the participation deadline of July 22nd 2025. In total twenty-five individuals responded to the study, and sixteen participants were included. This broadened the representation of wildfire stakeholders across the UK. Relying on snowball sampling alone proved too slow for the project's two-month timeframe, and was unable to match the project's workload or the word count needed to adequately represent the potential amount of qualitative data. The deadline for this research meant highly relevant participants had to be dismissed, making this research less-representative, yet upon reflection, snowball sampling may have been beneficial for a study with a long-term data collection time. Purposive sampling therefore ensured a denser and more relevant sample within the time constraints. While snowballing may have been more effective for a longer-term study, purposive sampling provided access to highly relevant stakeholders in line with the project's scope.

4.3 Semi-Structured Interviews

Qualitative semi-structured interviews were used to conduct data collection for this research (Babbie, 2021). This method provides verbalised, rich data that facilitates the participants' use of free speech, personal experiences and perspectives whilst collecting data relevant to answer the research questions (Galletta, 2013; Flick, 2018). The criteria describing professional or expert participants are required, and experts are defined as individuals "with a high level of knowledge or skill relating to a particular subject" (CUPA, 2025), specifically wildfires for this research. Semi-structured interviews were the most appropriate for this research as they provided large quantities of qualitative, in-depth data during a short collection and interview duration timeframe (Jamshed, 2014). Semi-structured interviews were used because they balance guidance with flexibility, allowing key topics to be explored consistently while giving participants space to discuss sensitive professional experiences in depth, unlike structured interviews, which are rigid, or unstructured interviews, which may lack focus. An alternative, but related, method not selected for this research was expert interviews. This approach involves interviewing individuals in higher-level or specialized positions, allowing direct access to expert knowledge (Meuser & Nagel, 2009). Meuser and Nagel (2009) specifically define an expert as a person who can influence institutions to fabricate parts of reality. Expert interviews would have benefited research specifically

regarding the Fire and Rescue Service or governmental institutions, however, participants such as landowners may have not met the "expert" criteria due to minimal institutional authority. While this would have ensured insights from experts themselves, it may have resulted in a smaller sample and limited the diversity of perspectives within the study.

Consent forms were sent digitally to all participants. Once signed and returned, participants were contacted to confirm their availability. Interviews were arranged according to both participant and researcher schedules and were conducted between 09:00–18:00, Monday to Friday. Each session was scheduled for 1.5 to 2 hours, allowing time to address any technical issues for online interviews and to facilitate introductions and build a rapport for in-person interviews (Schmid et al., 2024). A tailored interview guide was created for each participant to ensure questions were relevant to their stakeholder role (Jamshed, 2014). For example, participants from the Fire and Rescue Service were asked a consistent set of base questions, while others received questions adapted to their profession (Appendix E). Although the guide was initially intended to be sent one week before the interview, this proved impractical alongside the researcher's academic workload, so all participants received the questions during the interview. By maintaining a core set of questions for every participant (Appendix D), the interviews remained focused on the research questions without following a rigid structured format, allowing for a more natural dialogue.

4.3. 1 Online Interviews

Online interviews were utilised when participants were in areas inaccessible to the researcher. Microsoft Teams was used for each interview and facilitated the recording process. Each interview was recorded and transcribed using the built-in AI and once the interview ended, the AI would provide a full transcription and the video and audio recording of the interview. All participants were told that the interview recording would be deleted once the transcription had been re-transcribed and deleted from Teams, something they were able to visibly see from the Teams app providing extra assurance of deletion. The AI transcriptions were re-transcribed by the researcher during the initial coding process and made completely anonymous by the removal of their names. The researcher amended each interview during the initial coding process by re-listening to said interview, making corrections and then editing the word document, after which the recording was deleted from the researcher's Teams OneDrive and SharePoint (Microsoft, 2025).

4.3. 2 In-Person Interviews

As the researcher had access to a car, in-person interviews were a practical option for participants within reachable locations. This accessibility enabled deeper engagement with participants, fostering open dialogue and providing further insight into stakeholder perspectives through personable experiences

(Flick, 2018). The exact number of in-person interviews will not be shared to maintain anonymity; however, minimal participants attended an in-person interview. The researcher met the participants at a pre-decided meeting place and began setting up the interview room. The researcher's Samsung tablet had the interview questions accessible from the pre-downloaded Word document and allowed notetaking during the interview with the Tablet's pen. The interview audio was recorded using the researcher's personal Samsung mobile with a built-in voice recorder (SE, 2025) which all participants provided verbal consent to before the interview began. Participants were informed that once the interview had been correctly transcribed, the recording would be deleted off the researcher's phone. Utilising both in-person and online interviews provided greater flexibility for the researcher and participants, while also supporting replication in future research. Online interviews offered efficiency and convenience, although their rapid start and end sometimes limited the depth of interaction. In-person interviews, while occasionally challenging to schedule, allowed more time to build rapport with participants and fostered richer engagement. Overall, semi-structured interviews provided flexibility in engaging individuals who influence wildfire discourse, allowing the researcher, who is not an expert, to gather insights from stakeholders who may offer a more representative perspective.

4.4 Thematic Analysis

A thematic analysis was used to generate the results for this project. Each interview was conducted and recorded through Teams and the AI built into the software generated the original transcription. The AI transcription created incorrect quotations from each participant, so the researcher began their analysis during the process of re-listening and correcting each participant's interview transcript, so the quotations were correct and familiarisation with the data could occur. During the corrections, initial codes were highlighted in specific colours and copied and pasted into an Excel document where each quote was specified alongside each participant. The first coding round was completed and the researcher made sure to re-read each transcript until all patterns within the data were colour coded and accessible in the Excel document. Any data not inputted into a specific code were identified with a green highlight on each original transcript document. Each code group was re-read and refined, allowing each code to be chosen and organised into colour-coordinated broader themes. Once the broader codes were defined, they were organised into larger themes that were created by the specific codes, addressing the broader meanings within the research questions and the aim of this research.

Finally, each theme and code represented in the Excel document was then sifted and organised for what should be represented in the results section by how it would impact the overall research aim and questions. The final codes were organised by each overarching theme and finally displayed to the reader in the results section. Importantly, throughout the immediate coding process the researcher maintained an unbiased decision-making process of which pieces of data would be represented as a code. Utilising

the thematic analysis technique allows the researcher to mitigate positivist research perspectives through assumptions, subjectivity and bias by making systematic choices on which the specific codes used instead of basing this decision on the participants themselves (Roulston & Shelton, 2015). Using the semi-structured interview technique allowed the researcher to code and analyse the qualitative data based on the research aim and questions, instead of basing data analysis on existing theories or problem-centred techniques, which may have changed the trajectory of this research (Doringer, 2021). Additionally, data collected from specific interview questions and the coding process allowed the researcher to develop a UK wildfire stakeholder relationship mind-map on the software MindView 9.0 (Appendix F). This mind-map visually showcases the complexity of each stakeholder relationship and the overall dynamic of category 1, category 2 and all other stakeholders represented. All data for this mind-map was generated through data collected in the interviews and is a visual representation of each stakeholder, whilst also providing the reader with additional information regarding the range of stakeholders represented within this national hazard framework. The mind-map was created using primary data which supports the validity and comprehensiveness of the data represented as they were identified by experienced and expert participants within their own field.

4.5 Ethical Considerations

This project uses social research, meaning the ethical principles and limitations from this research need to be addressed, especially when the information regarding the participants' professional or academic lives are being researched (Babbie, 2021). Firstly, it is important for the research to disclose neurological disability, ADHD, which means additional support software was given from the Disabled Student Allowance. The software includes a Grammarly subscription, MindView 9.0 and an Everway subscription which means AI may have been used to support spelling and grammar. The only AI used in this project was the AI in Grammarly and the AI transcription software, both of which assisted the researcher in managing their disability. Secondly, this research gained ethical approval from the Northumbria University ethics committee on the 14th of April 2025 (Appendix G), and all data collection occurred after this date. The researcher stored all dissertation data and digital written work on their Northumbria University OneDrive, and work that includes participant transcripts will be deleted on the 15th October, other than the final dissertation draft. The consent forms were completed before any data collection occurred, providing digitally written consent and the researcher requested verbal consent at the start of each interview. Participants were reminded through the participant information sheet and verbally before the interview began of their anonymity and confidentiality (Babbie, 2021). Although the researcher has taken all precautions to maintain participant anonymity within this research, utilising the EWWF to gain most participants creates a risk of anonymity by other EWWF members recognising said participants. All precautions have been taken within this research to maintain stakeholder identity whilst anonymising the participants, especially by using identifiers such as “northern” or “southern firefighter”.

Additionally, the data analysis timeframe took longer than expected, meaning some interview recordings were available on Teams for longer than a week, yet the researcher made sure to completely delete each recording after analysis was completed. The researcher understands the potential subjectivity of themselves due to choosing each participant through purposive sampling, which may subsequently create subjective participants based on their personal objectives (Babbie, 2021). However, the researcher reassures that an objective, pragmatist perspective has been maintained throughout this research, and the researcher's positionality and academic experiences provides background understanding for the creation of an objective piece of work. Finally, using semi-structured interviews brings a potential researcher bias as the interview questions were based on their own understanding and knowledge of UK wildfire hazards and stakeholders, and may be catered towards the specific outcome to answer the research questions (Laryeafio and Ogbewe, 2023). This has been mitigated by providing open-ended questions, allowing the participants to answer the questions broadly and freely, not leading them to feel constrained when answering each question to benefit this research (Tracey, 2024).

4.6 Limitations

The greatest limitation for this research was the dissertation due date timescale and the word count. The dissertation due date was six months after ethical approval, causing a potential rushed data collection period when this qualitative research needed longer data collection times. Secondly, the dissertation word count is fifteen thousand words and interview data provide large quantities of data to be analysed. The limited timeframe, word count and quantity of data provides the largest limitation within this research. The method of semi-structured interviews has benefited this research yet expert interviews may have offered specialised data regarding stakeholders and agencies and provided broader evidence to a research area unknown to the researcher. Semi-structured interviews have provided data necessary for this research, however, conducting questionnaires or surveys as the chosen method may have provided a different and broader sample size. Applying for ethical approval in March limited the researcher's method choice to an accessible collection method for their timeframe. If ethical approval was sent before the University Christmas time-off period, this may have allowed questionnaires, focus groups and interviews as potential forms of data collection, allowing for broader and more in-depth data and stakeholder representation. The researcher relied on the EWWF for most of the participants in this research, however, wildfire stakeholders may have been better represented if there were more governmental, multi-agency and first responders represented in the sample size. This requires a larger sample size and participant collection timeframe, including an overall longer research duration, similar to a PhD research project. The next section is the combined findings and discussion which will present the data collected for this research alongside the broader discussion.

5 Findings and Discussion

This section will cover the findings from the thematic analysis, resulting in 3 overarching themes: stakeholder dynamics in wildfire governance, perceptions of wildfire responsibilities, and strengthening UK wildfire resilience, and three subthemes under each overarching theme. The organisation of themes was guided by the three research questions; research question one was answered in 5.1, research question two was answered in 5.2, and research question 3 answered in 5.2.

5.1 Stakeholder Dynamics in Wildfire Governance

The stakeholders mentioned in the literature review have been important in gaining an understanding of the complex dynamics surrounding national UK wildfire governance. Yang et al (2022) describe the "key" (p. 1) for resilience during a crisis as understanding the relationship dynamics of the varied stakeholders both before and after the incident. Aforementioned, Gazzard et al's (2016) literature has proven singular for peer-reviewed evidence surrounding UK NWS, and the challenges addressed nearly a decade ago are prevalent in wildfire governance. UK wildfire stakeholder relationships are important to understand as cross-sector and cross-agency networks are continuously depended on to produce prevention, preparedness and response governance (Gazzard et al., 2016). Figure 7 displays a broad overview of UK NWS in a mind-map, which was created from a combination of participants' job sectors and their answer to a question regarding under-recognised stakeholders. The mind-map visually reflects the complex and varied stakeholders in UK wildfire risk and management. Each stakeholder has been colour-coded to display their role during a wildfire response, and whether this is recognised within legislation and policies surrounding wildfire management and incident response. The dark grey colour defines each sector or agency in which each stakeholder is organised. The red stakeholders reflect agencies that would respond to a wildfire incident, especially due to their statutory requirements within the *Civil Contingencies Act 2004*. Stakeholders highlighted in orange are stakeholders who also respond to wildfire incidents, which may be because they own and/or manage the land, or additional resources are required that they can provide. The green colour represents the Scottish and Welsh government sectors, which provide additional support to FRS in England and were discussed during certain interviews. Although this research predominantly focuses on English stakeholders, as that was the base for most participants, it is important to incorporate all stakeholders that arise during my data collection, as they should be represented. Finally, the stakeholders with no colour reflect sectors, organisations and individuals who do not respond to wildfire incidents but have an involvement in wildfire policy, management, land management and overall knowledge-sharing of the hazard.

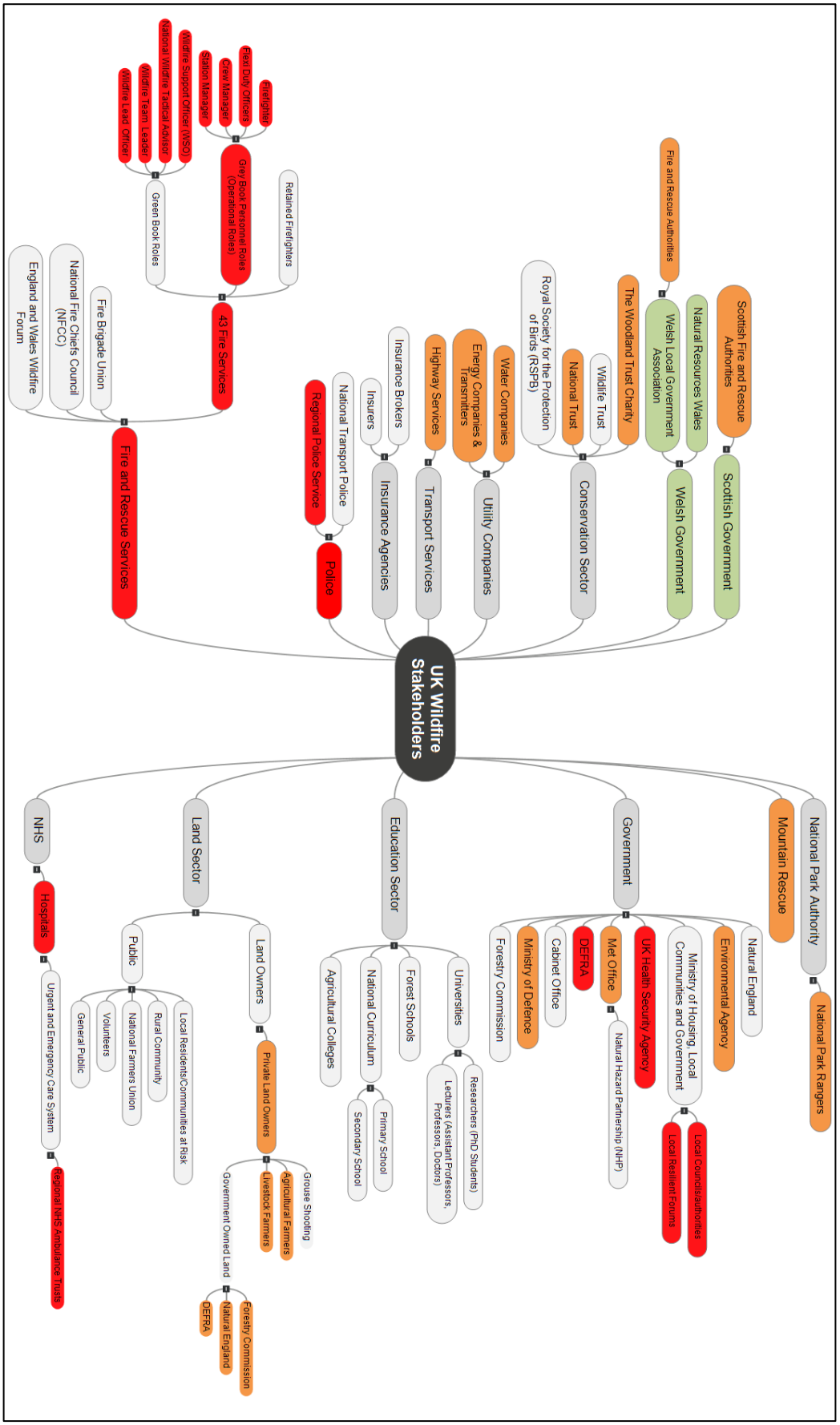

Figure 5 - A mind-map identifying wildfire stakeholders across the UK.

The FRS is mainly highlighted in red due to their statutory responsibility to respond to wildfire incidents (Gazzard et al., 2016). Four participants work for the FRS, yet their responsibilities both before and after an incident were mentioned by all participants. The FRS, landowners and government stakeholders mentioned in the literature review are discussed within the literature, yet this research has highlighted the variety of sectors, organisations and agencies that are not commonly mentioned in wildfire discourse. Stakeholders mentioned were insurance agencies, utility companies and the rural community. Participant 5 explains the rural community is often "overlooked", especially regarding the "grouse land management" in said communities that provide "all sorts of public goods and services". The importance of understanding local communities before and after a wildfire incident is reflected by the available community participation resources regarding flooding hazards, which provide accessible information regarding stakeholder engagement (FH, 2018). Preparedness, management and engagement about a potential hazard risk and community engagement activities improve resilience (FH, 2018). Participant 1 describes wildfire governance and stakeholders identification as being "30 years behind" flooding governance, going on to say,

"I think flooding would be your kind of model for where wildfire should be" Participant 1

The wildfire knowledge gap is shown by a lack of basic national data collection, said data which the MHLCG intends to begin collecting through the new FRS wildfire incident reporting tool (Taylor, 2025). Critically, the implementation of this tool, which subsequently followed the UK's worst year on record in 2022 (which has been surpassed by 2025), supports the idea of the UK being "30 years behind" (Participant 1) as flood incident data reporting began in 1946 (NFCC, 2025d; EA, 2025). This displays the disproportionate scientific evidence and national hazard understanding, potentially due to disconnected, top-down wildfire governance, which is a topic discussed further with most participants. Understanding wildfire stakeholders may be imperative for achieving wildfire preparedness and resilience nationally. Wildfire stakeholders, specifically "Landowners, land managers and wildlife specialists" (para. 3), have been mentioned in parliament surrounding DEFRA-led workshops to discuss wildfire risk policy options prior to the MHLCG transfer (Taylor, 2025). The government-led workshops with wildfire stakeholder participants potentially continue underlying tokenism and the reproduction of "dominant hegemonic agenda" (Cahill, 2007, p. 269), with the research outcome still being considered due to the MHLCG transfer. Although governmental research in this topic displays its increasing interest and priorities surrounding the wildfire hazard, the lack of social research surrounding UK wildfire hazards impugns the government's capacity to represent all necessary stakeholders (Smith-Carrier & Tuyl, 2024). The government's capacity for accurate representation is further doubted due to the fragmented wildfire management process, which advances the siloed policy development for each department (Gazzard et al., 2016). This process of governance may reinforce the aforementioned hegemony of governmental power dynamics and minimise stakeholder representation during a top-down

policy process. Participant 1 describes the "functional way we do things in the UK", which provides many benefits to wildfire management but may cause issues when "cross-departmental boundaries" need to work together. The requirements of cross-department effective governance prove difficult due to each having its own purview, as described by participant 7;

"If you're natural England, you're interested in the biodiversity and the environmental impact, if you're the fire and rescue services, you're probably interested in the operational benefits of figuring out how to stop fires, if you're the forestry commission, you're interested in trees, obviously everyone comes at it from their own perspective" Participant 7

The government's functionality regarding wildfire risk management is presented through the decade-long, ineffective wildfire governance, which derived from a disconnection between departments and top-down assumptions. Participant 7 describes the responsibility of wildfire risk management as;

"a combination of everybody at different points in that cycle, and I think the worst thing that you could do is have it so siloed that nobody talks to each other in those different phases" Participant 7

Although wildfire risk management requires a holistic cross-departmental and multi-stakeholder approach, "fragmented responsibility for wildfire at different phases of the hazard chain" (p. 16), and current governance processes reproduce the challenges continuously mentioned throughout the literature and will be discussed further in section 5.2. The discussions throughout this section display the need for novel wildfire stakeholder identification and understanding. The use of a mind-map to display WS in Figure 7 was originally made to help the researcher understand wildfire management complexities, yet conducting interviews and academic literature highlighted a potential gap in evidence. Figure 7 displays a broad overview of UK wildfire stakeholders in a visual and accessible way and may be the only evidence in the UK that identifies said stakeholders this way. Importantly, presenting the identified stakeholders in a mind-map may prove to be a beneficial resource as mapping concepts support "critical thinking and problem-solving" (Aljamal et al., 2025, p.2), something top-down wildfire governance processes may require when adapting to effective wildfire governance.

In conclusion, section 5.1 has effectively displayed the wildfire stakeholders identified during my semi-structured interviews. The current structure of wildfire governance is complex, with a diverse array of stakeholders and intricate dynamics between them. Presenting these stakeholders and dynamics with a mind-map has uncovered the complexities of these relationships, revealing hidden actors who may not be appreciated or represented, often with their roles not understood. The use of a visual representation allows this knowledge to be accessible and easily digestible. Further discussions of these dynamics reveal a fragmented system, with a structural hegemony in place regarding top-down management.

5.2 Perceptions of Wildfire Responsibilities

The differing perceptions for wildfire responsibilities are presented from the answers given to: Who do you believe holds the primary responsibility for managing wildfire risk in the UK? Participant 3 answered by separating the responsibility between stakeholders, explaining that "prevention and land management [responsibility] lies with the land manager", whilst FRS "equipment, training and response, that's the government". Similarly, Participant 7 describes the shared responsibility across "multiple agencies, parliament, both nations", presenting the aforementioned fragmented responsibility across sectors that may not regularly work together. Interestingly, Participant 6 mentions the FRS' responsibility for the hazard, considering "it's a fire risk, then it's the fire and rescue services", yet Participant 1 describes their "inferred responsibilities" as they have no "legal responsibility". The comparison of differing perspectives provides an insight into perceived responsibilities across differing stakeholders and suggests that guidance specifying individual stakeholder responsibility may provide role coordination and statutory requirements across stakeholders. The next sub-section will delve into broader perception themes found through thematic analysis.

5.2. 1 Awareness of Wildfire Risks

Wildfire awareness among the UK public, or lack of, can be assessed by the fact that the public are the main wildfire ignition source (Rowlatt, 2025). Participant 7 describes the reasons why the public ignite fires in at-risk places, explaining,

"Some of its land management burning that gets out of hand, some of its accidental, but some of its deliberate, some of it is accidental in terms of negligence" Participant 7

Participant 2 answered similarly, explaining the "negligence or accidental" behaviour associated with wildfire ignition as "people are just not aware of what they're doing". Interestingly, Participant 1 describes the difference between being aware of something compared to knowing it effectively, "and in there lies the problem" and highlights an awareness in the public and media, yet "it's whether or not they're actually accurate". Hazard and disaster misinformation has proven to negatively impact the preparedness, response and recovery stages, causing decreased trust in "official communications" (p. 2) and ineffective response, and stresses the need for improved hazard education and community engagement (Hilberts et al., 2025). A lack of wildfire awareness is not limited to the public, as insufficient understanding within areas of the government arises during Participant 4's interview, stating "there might be a lack of knowledge at government level… They are very much reliant on a small group

of people". Participant 2 describes the government's reliance on wildfire experts who provide "advice and experience", yet "would be a bit stuck" without them. The five-year political cycle has been a challenge for wildfire governance (McMorrow, 2011), as Participant 2 describes the urgency to address "lessons learnt from the likes of the state" and create long-term resilience strategies, instead of potentially reinforcing individual, hegemonic agendas. Participant 3 similarly describes the five-year political cycle and the different perceptions that join during the change of power dynamics, explaining the,

"Complete change, completely different people, different priorities…. It all depends, I suppose, on the experiences and the perspective of the people that come into power…. If they've been involved in dealing with horrible tragedies or they're well aware… then they may still continue having it as a priority" Participant 3

The lack of policy-level awareness can be assessed by the unchanged worst-case wildfire scenario in both the 2023 and 2025 NRR (HM Government, 2023), which describes an incident lasting longer than 4-7 days, requiring multi-agency response, cross-boundary FRS support, and significantly impacts resilience (HM Government, 2025). Participant 7 criticises the 2025 NRR, mentioning "is that really still the best reasonable worst case scenario…. there's enough vagueness in the language to account for that". Interestingly, the worst-case scenario has seemingly already occurred with the 2018 Saddleworth Moor wildfire lasting three weeks, the 2018 Winter Hill wildfire lasting six weeks, and the recent 2025 wildfires that have pushed Dorset and Wiltshire FRS to potentially close fire stations due to the lack of resources (FBU, 2023; Holliday, 2025). Participant 7 described the lack of risk awareness in the NRR, explaining,

"But given that we are likely see more increasing events, particularly where you've got events going on at the same time, drawing resources all over the place, that's probably not properly accounted for in the risk register" Participant 7

Finally, the limited hazard awareness within government can be seen in the *Building Safety Act 2022,* which was only implemented after the tragic Grenfell Tower incident in 2017, caused by dangerous cladding, which had previously been warned against following a tragic cladding fire in 2009 (Lamble, 2021). Both Participant 4 and 7 used the Grenfell incident as an analogy to describe the lack of governance or legislative change until a disaster has occurred. Although these changes may have occurred after increased risk awareness at policy level, the minimal preventative and preparedness levels nationally, reflected in the 2025 NRR, show negligence and are described below,

"I'll guarantee you they won't spend the money until they have a huge outcry from the public, and that will only happen when a few deaths have happened, unfortunately" Participant 4

Both the public and policy-level wildfire awareness are concerning and create questions regarding the long-term preparedness on a national scale. Participant 7 describes the need to "bridge together technical knowledge and know-how with the human geography and social science approaches to understanding…. I don't think we're there yet". This suggests that an increase in national wildfire knowledge and awareness may reduce negligent or accidental wildfire ignitions; however, this will be discussed further in section 5.3. 2.

5.2. 2 Approaches to Management

This section will delve into wildfire management approaches between different stakeholders. FRS across the UK have a statutory responsibility to advise, prepare and respond to wildfire incidents (*Fire and Rescue Services Act 2004, c. 6)*. However, the lack of investment, preparation and NWF is straining the services resources, and both the unpreparedness and deficient risk awareness holistically alienates potential resilience (FBU, 2023b; NFCC, 2025d). Participant 1 describes the historic advancements in building and property fire resilience, which have "various legislation…guidance… and codes" to protect and prepare for fire incidents. Albeit the advancements have proven to increase building resilience, Participant 1 compares the evolution of building safety to the negligible evolution of safety in the natural environment, describing why safety advancements occur in the anthropogenic world,

"Through decades and decades and decades of work and experience and science, evidence…. that's not yet where we're at with wildfire" Participant 1

The under-prioritisation of wildfire resilience nationally is therefore reflected in the policy-level governance of the FRS. FRS fragmented governance can be discussed by the changes in statutory responsibility, said responsibility of the FRS was with the erstwhile DCLG until 2016, when the responsibility transferred to the Home Office (Gazzard et al., 2016). Said responsibility has now transitioned back to the MHLCG in April 2025 *(The Transfer of Functions (Fire and Rescue Services) Order 2025)*, and the potential impacts of this change remain unknown to regional wildfire risks. Participant 2 describes the department's "bigger vested interest in that the Home Office would have done". This supports the aforementioned challenges in the five-year policy cycle and has impacted FRS wildfire resilience throughout the decade due to regular governance destabilisation of an already fragmented emergency service (FBU, 2023b). Currently, wildfire training and individual tactical advisers for each FRS are not a mandatory requirement, suggesting culture change within the FRS may be achieved in the long term. However, Participant 7 explains that the "chief fire officers and the budget

holders" will only invest in wildfire preparedness if their services face wildfire risk, which may impact their capacity perception if it impacts their overall "reward ratio". Participant 8 describes their wildfire training as premature and mentions that the "Northumberland [FRS] are probably the leads in the country", with Participants 6 and 8 describing their personal benefits to attending Northumberland FRS' wildfire training. The Northumberland FRS additionally have maintained the EWWF since 2010 (Gazzard et al., 2016), creating a "voluntary strategic body" (para. 2) which provides wildfire preparedness through training and knowledge share whilst promoting joint effort and partnership (NFRS, 2022a). The required training for wildfires and governance change is mostly discussed by the FRS, FBU and stakeholder engagement in the media and through academia, yet their advice and recommendations have been neglected whilst their resilience depletes. Additionally, questions regarding the FRS' responsibility for wildfire management arise as Participant 7 mentions,

"What is the fire service's responsibility… after a wildfire event or any event, who's to blame, who should I be sending my insurance bills to?" (Participant 7)

Participant 2 discusses the inferred responsibility surrounding wildfires with their "all-hazard approach" as they respond to "fire…which is one element but rescue" which stretches their statutory responsibility to protect life when the government supplies funding "to put out the fires". This constrains the FRS' capacity to respond to each wildfire incident as they are "really unique types of incidents" which is "not a typical fire in another environment, and it pushes our resilience" (Participant 2). In retrospect, FRS are required to prepare, prevent and respond to complex and varied incidents which require them to adapt and learn, as shown through the EWWF resources and FBUs communication, yet are consistently disregarded in the top-down policy-level approaches. Cross-departmental disconnect reinforces challenges in wildfire management, as each department has statutory and inferred responsibilities. An example of this disconnect is found in DEFRA, Natural England and other departments' "responsibility for land management policy" (p. 4), which impacts national land management processes such as conservation and vegetation (wildfire fuel) management (Gazzard et al., 2016). Interestingly, Participant 1 describes the "myriad" of hazards that require regular attention alongside other land use management, which includes,

"Biodiversity with all the legal requirements, heritage, landscapes, soils, water, climate change, people and good practice…so wildfire has to find its place…. against those eight different criteria which we are obliged to deliver" Participant 7

The diverse range of responsibilities within governmental departments suggests that the top-down management structure burdens more than the responding wildfire stakeholders. Participant 1 mentions the complexities of working in government, describing that "more resources… time…legal reasons to

do so" impact how they address their role, yet until that happens, "we can't move out of our lane". Similar to the FRS, governmental departments that work with wildfire risk seem to be stuck in their capabilities associated with their legal responsibilities, yet must also work in an uncoordinated, cross-departmental management process. The governmental disconnect from the vast variety of wildfire stakeholders is reflected in the challenges faced by the landowners or managers themselves. The aforementioned responsibility of landowners for wildfire management is focused on their fuel load management. Participant 5 describes the importance of land management, and as a landowner themselves, describing,

"There's an absolute limit to what you can do to stop an ignition source being introduced…. there's absolutely nothing you can do to remove oxygen that leaves you with only one other tool to play with, which is fuel… and you've got to manage that fuel load in order to do it" Participant 5

Participant 7 explains land management specifics as the "decisions that land managers make in order to manipulate vegetation for a particular benefit", with the most controversial topic being prescribed burning, particularly in grouse moor management. There are different land management processes to reduce wildfire risk which involve,

"Cutting or burning or mowing or rewetting on the long-term or restoration on the long-term. It's going to be so science-specific. And making that decision isn't always easy" Participant 7

Importantly, this research focuses on wildfire stakeholders and not land management controversy, yet it is important to reflect the discourse surrounding the topic. Participant 2 described the complexities of seeing the "different sides of the argument" with the FRS "treed the middle ground…. But prescribe/control burning can help us a lot". However, an important sociopolitical aspect to include in this controversial discourse is the price difference between implementing long-term wildfire mitigating activities compared to the cheaper, yet riskier if done incorrectly, prescribed/controlled burning, which Participant 7 explains,

"It's the cost of some snuff and paraffin drip torch at the end of the day. Whereas a mower or a cutter is more expensive. There's the diesel, the management, cost of the flail at the moment" Participant 7

5.2. 3 Preparedness and Response

The EWWF, FRS', and proactive governmental departments such as the Forestry Commission have led the recent wildfire preparedness and education in the UK. The underestimated wildfire risk in the NRR (HM Government, 2025) reflects the lack of awareness at a policy level as their worst-case scenario

prediction similarly represents past incidents throughout a decade. The continuous recommendation for the implementation of a NWS over the last decade proves the lack of awareness, as stakeholders advised that a strategy is a necessity to improve overall governance and capacity, yet this has still not been implemented (Khan, 2025). Participant 2 describes the "disconnect within government departments" with resilience sitting "in one area" whilst the "risk in terms of the vegetation sits elsewhere" and could be "more cohesive and more strategic" if a national strategy was established. Similarly, Participant 7 discusses the benefits of said NWS by setting "certain targets and measurables" which can be upheld holistically and addresses the lack of accountability "in terms of someone to be accountable within government". This suggests that an established strategy to address and manage wildfire risk could improve national wildfire governance and resilience. Implementing a NWS may provide structure to fragmented wildfire management, but an efficient strategy requires wildfire stakeholders to be fully identified (Belcher et al., 2021), which has not been assessed recently until this research project. The NWS has recently been discussed in parliament, yet the complexities surrounding wildfire risk and land management require further inquiry with the MHLCG, DEFRA and additional departments (Khan, 2025; Hay, 2025; Jones, 2025), and again suggests a lack of policy-level wildfire awareness.

Wildfire management without a strategy has negatively impacted government departments' management capabilities and affected the FRS' capacity to fulfil the *Fire and Rescue Services Act 2004* requirements. The FBU (2023a) have vocalised the challenges faced by the FRS and describes the current wildfire response as a "postcode lottery" (p.24), which increases cross-boundary reliance and may cause preventable harm. Participant 8 explains their fears regarding wildfire knowledge in the fire service explaining,

"One of our biggest risks really is if our firefighters don't understand wildfires, then we could get caught out quite easily, and that's where we could easily lose a firefighter" Participant 8

Participant 3 addresses their similar concern as wildfire risk is often misunderstood, meaning "it will probably take something horrible for us to get serious", linking to Participant 3's reflection in section 5.2. 2 regarding the Grenfell tragedy and subsequent policy change. Participant 1 mentions the long-term and coordinated approach required to facilitate a change in FRS response, describing that the majority of FRS' are still "emerging" in their wildfire awareness and training. Participant 8 explains the "need to change the mindset across our services of how we tackle and deal with wildfires", which would change dangerous "habits" that impact adaptation and response. Participant 8 continues, stating "we need that support and funding" to adapt to wildfire risks and incidents in the FRS', something that should be addressed alongside training in a NWS (FBU, 2023a). FRS' adaptation is not limited to their response, as cultural change is required to reduce superiority complexes within certain FRS', as Participant 10 mentions, "they keep thinking they're the best", which causes them to isolate themselves to be open and embrace knowledge transfer.

Current FRS procedures create questions surrounding national resilience during a multiple major incident scenario, as tactical advisors are required to "move around the country when times are particularly bad". The aforementioned 2022 London wildfire case study proves that this structure negatively impacts response, capacity and resilience, as a tactical adviser was not on site or available to provide support on the 19th July (FBU, 2023a). Participant 7 mentions,

"Whether MHLGC and the national fire chief's council wants to mandate that every service needs to have a trained wildfire tactical advisor, be interesting to see where they'd map onto" Participant 7

Suggesting that even if a tactical advisor is legally required for each FRS', it may add to the existing governance complexities and suggests again that a NWS may provide insight on structural change.

Landowner and land manager practices regarding land management were discussed in 5.2. 2, however, there is minimal discourse surrounding their involvement in incident support and response. Participant 2 explains the reliance on farmers to "help with a lot of equipment and logistics", especially when firebreaks are required to combat the wildfire as,

"Farmers have a lot of equipment as well, so you know, there's, and that's a lot of equipment that we could use that we don't have readily available" Participant 2

Participant 5 explains the adapted training for landowners to coordinate a holistic approach to incident response, as shown, they provide additional resources and personnel when the FRS requires, so training them in the "same language as them" allows a joint response. Participant 2 supports this, mentioning that landowners and managers "know their land best", whilst participant 5 describes the increased land knowledge as "They know where they're going to get stuck, where they're not going to get stuck, where the bogs are, where the crossing points are". Although the FRS recognise the value in landowner resources and knowledge of the land, it is important to mention that this highlights the lack of resources, personnel and awareness in some incidents. For example, the joint FRS and farmer response to a recent wildfire in Yorkshire proved strategically complex to combat due to unexploded World War II bombs, which increased wildfire risk immensely (Dale, 2025). Participant 10 describes similar concerns regarding staff who have previously fought fires with the FRS and just want to help yet specifies "leave it to the professionals". However, it is important to recognise that unless wildfire governance improves or a strategy is released, at least inter-reliance between the FRS and public wildfire stakeholders will continue to fill an ever-growing resource gap.

To conclude section 5.2, the overwhelming perception of responsibility between stakeholders is that it is fragmented and shared, as different areas of governance are the responsibility of stakeholders. This

fragmentation has led to some confusion, especially with a lack of clear statutory guidance. In terms of risk awareness, the public has a responsibility to be informed about these hazards; however, wider responsibility may lie with the government, ensuring they are adequately informed and aware of wildfire risk in their decision-making and policy. Management is also a seemingly shared responsibility as FRS' have a statutory duty to respond and protect; however, this is not always possible due to issues with resources and wider governance. The government's management system is fragmented, and due to competing priorities, a focus on wildfire may be diluted. Landowners also bear responsibility regarding land management; however, this again is limited. In terms of preparedness and response, there are severe gaps in national resilience, with no NWS and a lack of important resources. There is a heavy reliance on a variety of stakeholders, such as cross-boundary wildfire experts and landowners, who can provide necessary equipment and knowledge.

5.3 Strengthening UK Wildfire Resilience

Wildfire has been described as a "wicked problem" (p. 241) due to the sociopolitical, technical, geological and long-term timescales that create challenges in governance (Carroll et al., 2007). Participant 3 mentions that the "fire season is blurred" with more than a thousand wildfire incidents reported in England and Wales by September this year (NFCC, 2025d). Land management practices have limited UK-based evidence, allowing common discourse to state that said management practices "can get quite heated at times" (Participant 7). However, participant 5 describes the implications of not managing vegetation, explaining,

"If you double the fuel load, you quadruple the fire intensity, and fire intensity is to do with the heat that is generated, to do with the flame length that is generated, and once those two get beyond certain parameters there's nothing you can do" Participant 5

This means that more understanding and knowledge transfer may benefit UK wildfire resilience, as there are learning opportunities by "exchanging knowledge between countries" (Participant 7). The sections below will delve into UK resilience in depth and describe potential shortcomings in achieving this.

5.3. 1 Systemic Governance Change

The aforementioned fragmentation of wildfire responsibility between government, decentralised local governments, and the FRS' has impacted UK wildfire resilience significantly. Siloed government departments are responsible for the prevention stage, including the required vegetation management of landowners and managers (Gazzard et al., 2016). The decentralised MHLCG are responsible for the

FRS' who deal with wildfire preparedness, prevention and response, alongside additional support from members of the public, whilst the MHLCG, governmental department and landowners deal with the recovery stage (Gazzard et al., 2016). Participant 7 mentions the "longer fire seasons, more intense fire events, more frequent loss of property", and the current systemic structure to wildfire management and lack of national risk awareness, suggesting that the UK is nationally underprepared and is not resilient to said risk. Participant 1 describes people at the policy-level becoming accustomed to "working in a particular methodology", which can be a "weakness" for individuals and organisations; whilst the biggest challenge is "the culture change of the people involved". Convery-Fisher (2025) states that "Fire isn't the enemy. Poorly understood, unmanaged fire is" (para. 15), which brings into question the ineffective governance structure being influenced by "fear of the unknown" due to a "lack of knowledge" (Raub, 2021, p. 400). Participant 2 mentions locational differences impacting personal experiences, describing the impact of Storm Arwin to North England and Scotland as "really bad but other areas didn't get touched by it at all". They describe the regionally disproportionate impacts of Storm Arwin as "being a surprise to the government", explaining,

"We had some officials from the home office who were our lead agency at the time, were showing them, this is what happened, you know, a month or two ago. And this is the effect on our wildfire risk, and they just have no sense of that from London, cause it hadn't affected them" Participant 2

This suggests that wildfire governance decisions made nearer to London may be subjectively based on personal experience and limited risk perception. Additionally, there is a negligible amount of research to make scientifically informed decisions regarding wildfire risk management, as Participant 7 describes research gaps below,

"We have little on economics, insurance sector, perceptions, governance arrangements, law, legality" Participant 7

The quote above proves there is a great deal to be done before achieving effective wildfire governance, let alone national resilience, whilst Participant 3 describes the reinstated MHLCG and potential positives in future governance, saying "if it's one effectively and they have the right people, it probably will make a difference…. More local knowledge, you'll have more local care… but again, it remains to be seen". Alongside the political shortcomings to wildfire resilience, Participant 2 describes the fifty tactical advisors that travel nationally to provide support to FRS' yet have "no actual big bit of kit or deployable teams". Participant 2 continues to describe the shortcomings in the FRS' response capacity,

"If anything goes really big, we call you in and you can provide us with advice. We would like national burn teams, tactical burn teams as a national capability so that we would have a number of fire and

rescue services around the country who are formally trained and equipped to then go out and use fire as a tactic… But it's not formal, we have to fund it ourselves…. but that's not within our funding to do it so" Participant 2

Participant 2 delves into resource capacity within the FRS and the aforementioned reliance on partners' "equipment and logistics". However, some landowners and managers are "cutting back" on prescribed/controlled burning, meaning essential resources previously used, such as ATVs with fog units that help identify burnt land, may be discarded "so there's a little bit of concern" (Participant 2). Participant 7 mentions the "weak" evidence in wildfire "economic costing" impacts, especially direct data for agencies or landowner losses, saying "they aren't really factored in, we've got no good quality costings on things". This suggests a significant scientific gap which may systematically impact wildfire governance and management if the economic costing and liability are not truly understood. Participant 7 continues describing the current data capacity surrounding a "little bit on health impacts, the Saddleworth Stuff" from the 2018 incident, and nothing on "GP admission costs…or long-term health and psychological impact". The existing evidence regarding the economic loss post-wildfire incident may be subjective based on the "natural capital losses" that "depend on who you are, you might go for the biggest number possible", suggesting economic liability to date does not reflect the actual loss holistically. Participant 2 agrees, mentioning "we've got no real way at the minute of quantifying what the real cost of wildfire is" and suggesting the only evidence available is the cost for the "fire and rescue to respond but the actual damage side is really hard". Participant 6 also discusses the economic loss for individual farmers as yet another limited evidence base whilst "the loss for one farm is catastrophic" but in the "grand scheme of things in the economy, probably not", suggesting that a lack of understanding of the economic loss nationally impacts national resilience as farmers may not financially recover from said incidents. Participant 5 describes the socioeconomic and environmental loss after a major peat fire, explaining

"Not only do you lose your soil, you lose all the dormant seed layer that sat within it, which is unique to that particular area… it's massive loss and of course the peat is becoming much more valuable as a carbon store and being valued as that. So that's essentially what you are guarding against, is the arability" Participant 5

This is similar to Participant 8's discussion regarding the impact on wildlife during and after these incidents and suggests that over time, animals on the "red list" may "change" depending on how fire is managed if said species require protection. Wildlife and the environmental loss that occurs after a wildfire incident also lack data and address the aforementioned economic loss linked to "natural capital" (Dempsey, 2021, p. 2), which has limited scientific evidence regarding the socioeconomic impacts. Interestingly, Participant 7 links this economic limitation back to the NNR, which provides informed

risk analysis based on expert and scientific evidence (HM Government, 2025). Linking the lack of economic evidence to the NNR, which measures the impact through indicators (Appendix G), but the fatality/casualty risk will always be a low "fatality risk", compared to losses from international incidents. Continuing, the indicators for economic loss may be systematically complex to accurately reflect the true economic liability as,

"It's likely to be increased when it comes to infrastructure damage or disruption, and the environment and both are those poorly constrained" Participant 7

This suggests that the NNR does not reflect the true national economic risk a wildfire may cause; however, international economic loss is more accurate due to the fatality and infrastructure loss for each disastrous incident, with the 2025 California wildfire's financial damage estimated between $250 to $275 billion (FBU, 2025b). The UK faced infrastructure damage during the 2022 Wennington wildfire, with nineteen homes destroyed, yet residents have faced complications in the rebuilding process with a lack of support from a perplexed council and some residents with no insurance coverage (Kelly & Magill, 2023; Vickers, 2023). Economic liability or lack of it is mentioned by Participant 3, who says

"There is probably more that insurers could do with homeowners so that when you take out your insurance policy…. there's probably more pressure that insurers could put on people to, you know, go back to the very early part of this conversation, just do things properly" Participant 3

The aforementioned Figure 7 shows insurance agencies and brokers as wildfire stakeholders due to the potential impact they could have for generating certain aspects of economic loss and by raising awareness. Participant 9 describes the neighbourhood disconnect for practising "good land management", which is where the insurance sector may influence said land management processes by "providing that kind of incentivisation for good land management". Participant 9 describes the international insurance complications found after the 2025 California wildfire due to insurance companies "pulling out" (Participant 9) of insurance agreements and raising insurance prices (DS, 2025). This suggests that future complications surrounding wildfire risk and economic loss may be faced cross-sectionally between stakeholders. However, the aforementioned incentivisation in the insurance sector may promote accountability and liability associated with wildfire events, whilst also requiring further understanding and evidence of the economic loss linked to wildfire incidents. Participant 9 describes the required change in the insurance sector and homeowner incentives to reduce their risk and price of said insurance, suggesting

"What we can be doing is saying, well actually, if you clear out all the dead vegetation from your house and also the community does it, then yes, we can provide you coverage, and maybe we can give you a discount on your premium so that you are covered for that eventuality" Participant 9

5.3. 2 Education, Training, and Knowledge Exchange

The lack of wildfire awareness and knowledge has been prominent throughout each section of the findings and discussion and suggests public education and wildfire training may be necessary to bridge the current knowledge gap between wildfire experts and unknowing members of the public. Participant 3 explains the dynamic of "two sorts of education", one is educating children about the importance of "not setting things on fire" and secondly, the education of adults, "just because you want a BBQ, you shouldn't necessarily have one". Participants 2 and 7 also agree with the need for more public education on wildfire risk. Participant 2 mentions the generational "knowledge and experience" that should be looked at in the UK context, describing

"I think that's one of those things that we need to kind of build, you know, through education through an early age, and that will help and that will be a gradual process" Participant 2

Participant 7 mentions the lack of scientific evidence required to understand education and the influence of wildfire risk in the UK context. However, this is not the case internationally as certain countries that face intense wildfire risk have conducted research surrounding the influence of education and risk perception (Restaino et al., 2024). Restaino et al. (2024) conducted research in Nevada, America, with students under eighteen, and found that incorporating wildfire knowledge into the curriculum increased their awareness and the capacity for co-existing with said wildfire risk. Although there were certain challenges in implementing accessible forms of scientific information, the benefits of informing the students proved to increase their prevention knowledge and their wildfire preparedness (Restaino et al., 2024). Participant 7 explains that "we teach road safety, we teach water safety, I hope", suggesting that wildfire should be taught in the national curriculum to achieve full generational knowledge transfer. Participant 2 describes that there are "a number of sectors" that have growing interest and awareness of wildfires, such as the "forestry commission" and "to some degree some policymakers", yet there is still a "very small community". Adapting the UK national curriculum to reflect "locally-relevant hazards" (Wisner, 2006, p. 75) has the potential to influence national risk awareness, causing a productive impact on individual hazard perception, preparedness and a greater understanding of preventative measures (UNICEF, 2012).

The impact of education is not limited to the national curriculum, as wildfire training is increasing throughout the UK. Participant 2 describes the current UK wildfire "base level E-Learn training", continuing to explain,

"We need that core foundation level wildfire training for all firefighters, and that is rolling out across the UK more…. so at least across every service there is some good quality foundation training to give the basic principles so we can keep firefighters safe that way" Participant 2

However, Participant 1 describes the complexities surrounding wildfire knowledge and response in the FRS, stressing that there are 43 FRS yet "43 different ways of doing the same thing, but slightly differently". The aforementioned lack of wildfire training requirements in the FRS suggests that E-Learning is a proactive way to disseminate necessary information to increase firefighters' preparedness and response capability. Participant 1 mentions the training is "not just about having a nice shiny document" but about "actually bringing that to life by training people to an accredited level" which "is another bit of a step change" considering there is no NWS to hold training standards accountable. Additionally, Northumberland FRS and the EWWF have taken the lead in providing accredited wildfire training standards across the UK (NFRS, 2022b). Critically, Participant 10 explains the financial burden surrounding the fees due to the additional travel and accommodation costs required to attend said training in the North-East, explaining, "from our perspective it's very expensive… on hard costs to send somebody on these courses". This suggests that if the government recognised the importance of mandatory wildfire training for all relevant stakeholders, with the additional (hypothetical) hazard risk within the national curriculum, national resilience and firefighting capabilities will increase significantly. Alongside national education and required training, international experience and knowledge transfer can offer opportunities to increase wildfire risk preparedness and improve response. Participant 7 explains that whilst the types of fires internationally are different to UK wildfires, "there is a lot to be learned by exchanging knowledge between countries". Wildfire conferences, EWWF meetings and EWWF UK conferences offer wildfire stakeholders the opportunity to share information and experiences, ultimately improving wildfire knowledge transfer (IAWF, 2025; NFRS, 2022a). Collaborative knowledge transfer has proven to improve flooding preparedness with stakeholders and scientists combining their knowledge to increase flood risk and adaptation information (Pasquier et al., 2020). Participant 8 explains that,

"A lot of the stuff that you'll see being developed in this country has come from learning from around the world… we'll adapt it to our vegetation and geography, but a lot of the learning is coming from across the world and tactical advisors… that do go out to those countries sometimes…. picking up that learning and understanding" Participant 8

This suggests that knowledge transfer in the UK heavily relies on stakeholder engagement, specifically the FRS and the EWWF. Participant 2 explains the inferred responsibility of said stakeholders' engagement in sharing wildfire knowledge, explaining, "we're trying to push from the bottom-up all the

time, so we need that to kind of meet us in the middle". Participant 2 continues to explain education "from the [Northern] counties like our own up to London" that cooperation and partnerships have "an awful lot they can help us with and bring us", explaining,

"Sometimes that can actually reduce the number of resources we require, because they can do some of that support function for us. And but I think for us it's important being dynamic… because we've got that much variation of what can happen. But if you set up safe systems, you can keep everyone safe, just bring in what you need when you need it" Participant 2

5.3. 3 Learning from Past Incidents

This final section addresses governance adaptation and the trajectory of the UK's wildfire resilience. Participant 8 describes the UK's infrequency of wildfires and the increase in national discourse, saying "we capitalise on these periods of busy times", explaining,

"Don't want them to be happening because it impacts our community, but on the other hand, it'll help us to get the equipment and skills that we need to deal with it moving into the future" Participant 8

This reflects the government's understanding of wildfire risk, as awareness only increases when an incident forces them to be aware, suggesting the funding cuts to the FRS occur because the national understanding of said risk is ineffective and incorrect. The unacknowledged response efforts that landowners and stakeholders represented in Figure 2 consistently provide seem to be obscured by the debates surrounding controversial land management. The continuous discourse and lack of scientific research into land management techniques reinforce unproductive debates that involve disconnected and uninformed top-down decision makers. Participant 8 describes a personal wildfire incident experience and the impact on the response, explaining

"I think we had five tractors with bowsers on all the local farmers just arrived, and that wasn't through a pre-plan, that was purely through landowners turning up wanting to help. So we managed to get them with bowsers and they're able to drive along the road and dump all the water down onto the onto the wildfire for us" Participant 8

Presenting the complexities surrounding wildfire governance has been difficult throughout this project, especially due to the lack of social and scientific research in the context of the UK. Figure 6 describes the aforementioned disaster helix but shows the worst-case scenario due to ineffective governance. Figure 6 presents four major wildfire incidents between 2011 and 2025. The red lines represent the effectiveness of the pre-incident prevention activities and incident response (Bosher et al., 2021), which

had large quantities of responding resources due to intermittent wildfire events in 2011, alongside the minimal risk reduction activities, making the incident more intense. The red line's progression over time represents the impact of ineffective risk reduction activities, depleting resource and response levels, due to wildfire events frequently increasing, and a lack of effective governance. The progression of intensified events is shown in Figure 6, displaying large-scale incidents and annual record-breaking fires, which will continue unless wildfire governance is improved. Importantly, the blue line represents the recovery and preparedness stage, which is inherently impacted by resource levels and the depleting timeframe to prepare for wildfire incidents.

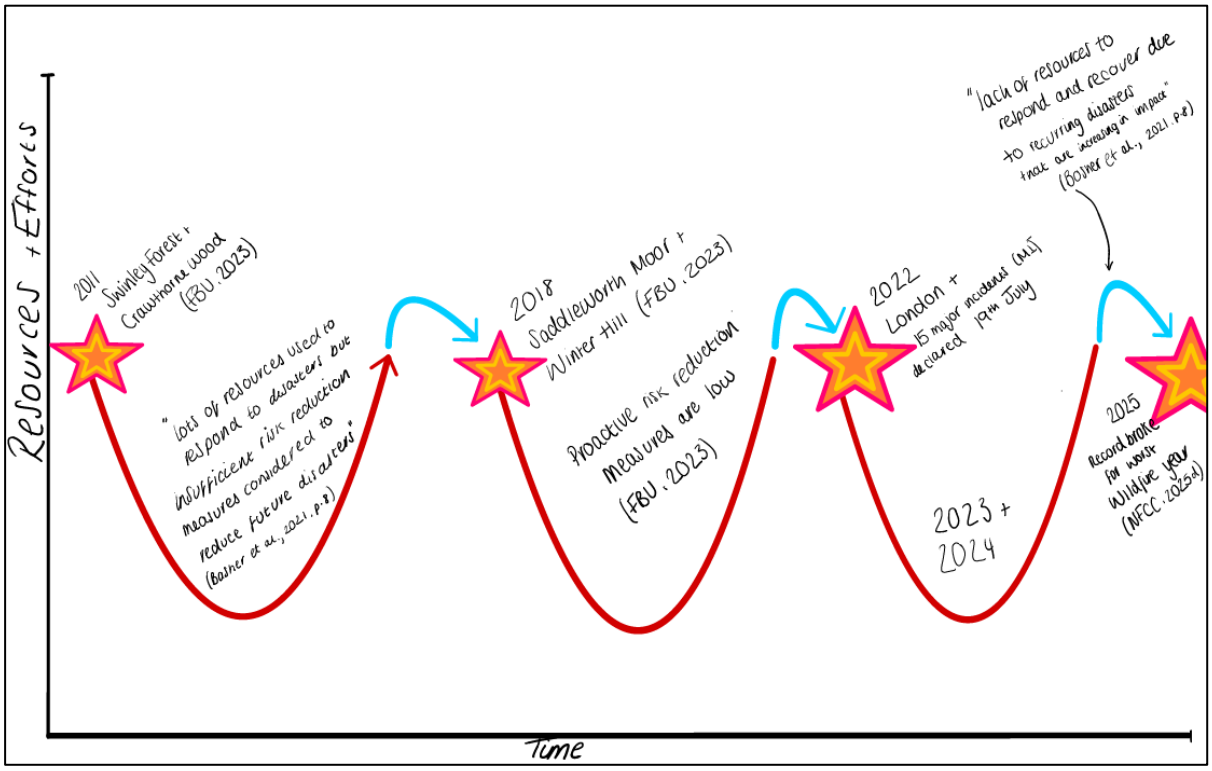

Figure 6 - The worst-case scenario disaster helix (Bosher et al., 2021) re-made by the researcher to present the progression and increase of incident intensity over time.

Although the UK does not face disastrous risks associated with disaster risk reduction models, the researcher understands the importance of communicating the increasing risks that wildfires pose to the UK. The disaster helix is used to communicate the intensifying risks faced by the government, stakeholders and public if ineffective governance and national lack of awareness continue. Participant 2 stresses the importance of understanding wildfire risk in the UK as the hazard is "interconnected" with other hazards, explaining

"So, you can have a big wildfire, and then if you have a rainstorm, you get flooding afterwards because it's taking away the vegetation that would have held back that water. Then you've got big storms that knock down the trees that die and then dry out and become a massive wildfire source" Participant 2

Participant 2 continues by mentioning the progress made through the EWWF that brings "people together for these difficult conversations", especially due to the "divergent views" within the forum. However, the aforementioned ineffective governance is limiting the progression through the government's "top-down, strategic approach to it", which uses short-term agendas on long-term hazards.

In conclusion to 5.3, there are key areas of wildfire governance that require improvement. Initially, the fragmentation of wildfire governance needs to be resolved, as policy silos and weak coordination are abundant. There are gaps in both policy and research, which weaken overall national wildfire resilience due to uninformed governance. A key area of improvement would be the provision of resources to an underfunded FRS with a lack of necessary personnel and wildfire-centric resources. Economic structures need to improve in regard to calculating the true cost of wildfire, allowing for wildfire to be understood as a long-term threat to resilience. Knowledge and education are key to the improvement of wildfire resilience, as there is a severe lack of data on surrounding issues, such as aforementioned cost, and the health of first-responders. Education is necessary, in both public and professional situations, with a wider understanding of wildfire risk in the public being a key opportunity to improve resilience. Wildfire training is necessary to equip first-responders with the knowledge and tools necessary. Finally, it is important to learn from past incidents, adapting accordingly, rather than continuing the ineffective governance, which is short-sighted and reactive.

6 Conclusions

This research aimed to explore the governance and responsibilities of UK wildfire stakeholders, visually presenting the complex dynamics which are at the core of wildfire resilience. This was achieved through the use of semi-structured interviews with a variety of wildfire stakeholders, with the information gained being used throughout the discussion and in the making of the stakeholder mind-map. The literature review provided a basis for this research by presenting and reviewing pre-existing yet limited academic literature on the subject. Context was provided within the literature review, as IPCC (2023) reports showed the ongoing impact of CC caused by anthropogenic means, and the influence this has on increasing the frequency and severity of semi-natural hazards, such as wildfire (Gazzard et al., 2016). Whilst there was some academia on UK wildfire governance, it was limited, presenting a gap in the research for me to address. Discussion of literature surrounding the knowledge gap in UK wildfire

resilience furthered this, demonstrating the importance of a nuanced exploration of UK wildfire governance.

Through the semi-structured interviews, I created a mind-map, which identified underrepresented stakeholders and how they coordinate and interact with other stakeholders. This visual aid allowed for a nuanced discussion of wildfire stakeholder relationships, presenting the current state of wildfire governance as complex and fragmented. The wide variety of stakeholders demonstrates that this is not a single organisation's issue, bringing into question concepts of responsibility, which were addressed in section 5.2. Further issues surrounding decentralisation became apparent within the second part of my discussion, with a lack of coordination and proper statutory guidance confusing responsibilities between these stakeholders. There is no one-size-fits-all approach to wildfire responsibility, and this was reflected through the interviews, where it became apparent that a holistic multi-agency approach was necessary to effectively govern and manage wildfire. Landowners emerge as a key stakeholder within these first two sections, with their responsibilities regarding land management being seen as key to the aforementioned holistic response. A reliance on the FRS is short-sighted, as they lack the key resources and capabilities to be able to provide an effective response to wildfire (FBU, 2023b), without adequate multi-stakeholder cooperation and coordination.

Issues with knowledge and education became apparent on a public, professional and governmental level. Further education for the public would allow for a collective, responsible understanding of the risk of wildfire. Research, such as this dissertation, would help bridge the knowledge gap between wildfire experts and the government, who currently respond to wildfires in a short-sighted, reactive way. Debates surrounding issues of land management techniques (such as prescribed burning) have become a smokescreen for the wider institutional shortcomings that have come about in part due to a lack of awareness and understanding. A better understanding of the risk, coupled with a coordinated governance response, would be a key driver in improving overall wildfire resilience in the UK. Further funding for the training of the FRS and relevant stakeholders is of paramount importance to address the knowledge gap in the professional setting. Other key areas which were identified as important to address often surround funding, provision of resources, and a top-down appreciation of the EWWF, and the coordination that it brings. With increasing wildfire risk, the lack of funding and provision of resources becomes apparent, potentially putting both the FRS and the public at risk. Without adequate personnel and equipment, this will become an increasingly pressing issue, an idea represented by the worst-case-scenario disaster helix, as seen in Figure 8.

Through the mapping of stakeholder relationships and the conduction of in-depth interviews, the institutional and knowledge gaps become glaringly apparent. This research has contributed a critical insight into the present and future of wildfire governance, presenting necessary areas of improvement

which are of high importance to the future of wildfire resilience. Wildfire resilience is not merely a short-term problem, and cannot be produced and maintained through reactive means. Collaboration, coordination, and a holistic strategy are not only desirable, but they are necessary, and investment into services and knowledge production is key for preparedness and effectively addressing a pressing hazard, in an era of ever-accelerating CC.

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8 Appendices

Appendix A: The participant information sheet, used in the data collection process and distributed to members of the EWWF and other potential participants, to support their decision regarding participation in this study.

You are being invited to take part in this research study. Before you decide if you would like to take part, it is important that you read this document so you understand why the study is being carried out and what it will involve. Reading this document, discussing it with others, or asking any questions you might have will help you decide whether you would like to take part.

Dissertation Title:

An exploration into the capacity and responsibilities of wildfire stakeholders in the UK.

What is the Purpose of the Study?

The purpose of this study is to explore the capacity and responsibilities of the fire and rescue services (FRS) in the UK and to understand the wildfire risk through identified stakeholder relationships. The stakeholders will be identified in an integrated emergency management relationship map that will visually show the multi-agency links.

Research Aim:

This research aims to explore the capacity and responsibilities of FRS in the UK and to understand wildfire risk through stakeholder relationships associated with the increasing and intermittent risk of wildfires. This research will develop a visual stakeholder relationship map based on existing data and semi-structured interviews, and aims to enhance understanding of FRS responsibilities and capacity to manage future wildfire risk effectively.

Research Questions:

1. How can a wildfire stakeholder relationship map be developed using existing data and semi-structured interviews, and what insights can this map provide in understanding and managing wildfire risk in the UK?
2. To what extent do the FRS in the UK have the capacity, equipment and training to effectively manage the intermittent and increasing risk of wildfires?
3. To what extent do FRS authorities and stakeholders perceive wildfire risk and response as their responsibility?

Why have I been invited?

You have been invited to take part in the study as you have an academic or professional experience and/or understanding of wildfires, the Fire and Rescue Service, climate change impacts, and may be a potential stakeholder within multi-agency relationships regarding wildfires. Examples of potential participants include, but are not limited to:

- fire and rescue service professionals/experts
- wildfire researchers, experts in both academic or professional fields
- climate experts, professionals or academics

Participants must be over 18 and have at least a functional or moderate understanding of wildfire risk, preparation or response. If you have limited experience with wildfires but understand future climate change risks, this is also needed for this research.

You have indicated that you are interested in taking part in this study, and your experiences, perspective and opinion are highly relevant to this qualitative research. There is limited UK wildfire research and your participation may offer valuable data for this research.

Do I have to take part?

No, it is up to you as a potential participant if you would like to take part in the study. The participant information sheet is here to help you make that decision. If you decide to take part in this study, you are welcome to withdraw at any time before the withdrawal deadline. ***Withdrawal deadline: Friday 1st August 2025***, unless there is an agreement between the researcher and participant on the signed consent form. This is to protect the researcher's master's dissertation from being affected close to the assessment deadline: Monday 15th September 2025. The researcher is welcoming to discuss participant withdrawal through email or Teams.

What will happen if I take part?

After receiving this document and deciding to participate, you will be sent a consent form. This research will be flexible to you, your availability, and your location. Once you read the research aims and objectives you will have time to reflect on your career, research and/or experiences regarding UK wildfires. You will have the researcher's email, at the end of this document, to contact for any pre-interview enquiries.

Once you've completed and returned the consent form via email, the interview will be scheduled through the Teams calendar. All interviews are planned to take place between Monday 2nd June and Thursday 31st July, with flexibility around the data collection deadline, depending on availability or other circumstances. This can be discussed between each participant and the researcher as timescales and availability may vary.

If the participant is in Newcastle, Manchester or a city location between, we can discuss whether you would want an in-person or online interview, depending on accessible and private interview space. Participants in alternative locations are welcome to join this study; however, the interviews will have to be conducted online via Teams. The participant will have the option to have their camera on or off for the interview, however, the researcher will always have the camera on. The use of a borrowed audio-recorder from Northumbria University to record the interviews, and recording through the Teams app will be used as a back-up recording option in case the audio-recorder fails. Importantly, if the interview recording is through the Teams app, participants will have the option for the researcher to record the interview with the camera On or the Camera Off. Teams does not allow audio recording only so the researcher will have to record both the audio and visual parts of the interview.

Offering online interviews provides flexibility in scheduling and helps ensure the research fits around your professional and personal schedule during the summer months. One week before the scheduled interview you will be sent; *interview agenda, topic summary of the interview questions, signed consent form and the participant information sheet.*

Each interview will last approximately 1.5 to 2 hours, allowing time for both pre-interview discussion and answering questions. The full interview time may not be necessary and is a precaution due to the use of semi-structured interviews as the data collection. The choice of semi-structured interviews allows you to answer each question with flexibility and to have more of a conversation with the researcher. A second interview may be required if all questions have not been answered or if your availability limits the interview time to an hour.

Although the researcher would prefer an interview for data collection, if participants require further time to answer questions, there is an option to send the unanswered questions to the participant via email. The questions will need to be sent back to the researcher by a mutually agreed deadline. The interview questions being sent to you would be a last resort form of data collection. You will be anonymous in this research and the data will be confidential.

What are the possible disadvantages of taking part?

One disadvantage of taking part in this research would be the use of your time. This would begin when we begin communicating through email to sign the consent form, scheduling the interview and the interview itself. From the moment you may choose to be a participant the researcher will prioritise your availability and be flexible to potential schedule changes. This means any time taken from your day will be utilised and not wasted.

A second disadvantage of taking part in this research may be the technical difficulties from organising and conducting the interview through Microsoft email and Teams. This may be a disadvantage for both you and the researcher. Strong and reliable internet connection and an updated Teams app is a recommendation before the interview takes place, and to ensure communication is effective.

Another disadvantage may be the potential emotional distress or triggers of the topics discussed or your experiences regarding wildfires, fires in general or governmental procedures. To prevent the potential for this, you have the option to skip the question, pause or stop the interview, or I can reword the question to avoid previously mentioned topic.

Other potential issues with this research have been addressed in a risk assessment produced by the researcher. This includes participant confidentiality and anonymity, and assuring the Chatham House Rule with all information collected. All sensitive and identifiable information, including recordings and transcripts, will be stored on the researchers University OneDrive account, on a password-protected device, and will be fully deleted once transcribed, and once the dissertation has been handed in. You have a right to withdraw at any point until August 1st, unless discussed with the researcher.

What are the possible benefits of taking part?

The possible benefits of taking part in this research may be the potential to further understand gaps within the wildfire preparation in the UK. A wildfire stakeholder relationship map may prove to be a useful tool in identifying important multi-agency responsibilities and capacities in UK wildfire risk. The results and research may provide evidence for further wildfire research in the UK.

Will my taking part in this study be kept confidential and anonymous?

Yes. Your name and full professional details will not be written on any data used within the final dissertation. During the interview and transcribing of said interview, you will not be anonymous to myself as the researcher. However, each interview will be transcribed anonymously within a week post-interview in the researcher's private accommodation, and any identifiable data will be deleted post-transcription. Completed interview transcript data will be stored on the researchers University OneDrive, and will be accessed on a password-protected, personal device or university computer. These precautions will be assured, and your name and identifiable details will not be written on typed up interview transcripts or any further research.

The consent form you have signed will be stored in a password-protected file stored separately from your other data and will have no written information that may be identifiable, such as profession or specific location you are based. The data collected from you in this study will be confidential. Please contact the researcher regarding any questions or concerns regarding anonymity and confidentiality.

What will happen to the results of the study, and could personal data collected be used in future research?

The dissertation may be published and/or general findings might be reported in a scientific journal or presented at a research conference. However, the data will be anonymized and you or the data you have provided will not contain any personally identifiable information. The findings may also be shared with other participants,

organizations/institutions that have been involved with the study. We can provide you with a summary of the findings or the full dissertation if you email the researcher at the address listed below.

How will my data be stored, and how long will it be stored for?

All electronic data**,** including consent forms, recordings and transcripts from your interview, will be stored on the Northumbria University OneDrive, and may also be accessed securely from the researcher's password-protected personal laptop once the data is anonymous. Identifiable data will be stored for seven days post-interview, during transcription and transfer into an anonymised Word document, with no identifiable data and to maintain the principles of 'data minimisation'. The use of your profession title and UK will be an identifier in this research, for example, Northern Firefighter, Midlands Climate Researcher or Southern Wildfire Expert. This will ensure anonymity and confidentiality, whilst keeping key identifiers to why your data relates to this study.

Finally, no identifiable data will be written on paper. If any is, it will be kept in locked storage, and all data will be stored in accordance with Northumbria University guidelines and the Data Protection Act (2018).

What is the legal basis for processing personal data?

GDPR requires researchers to be transparent about the legal basis for undertaking research which will collect and process personal data. I will not be using your personal data for this study, however, will be using your email to contact you if you decide to participate in this research. For legal reasons, any research to align with GDPR requirements would be Article 6(1) (e) "processing is necessary for the performance of a task carried out in the public interest". However, there will be no recipients of your personal data and only the researcher will know your name, email and full profession; and other forms of information like consent forms will be deleted on **Monday 15th September 2025**.

Who has reviewed this study and what are my participant rights?

Before this study could begin, permission and approval were given by the Northumbria University's Ethics team through an online system, and the project identification number is shown below. It has been reviewed to safeguard your interests and have granted approval to conduct the study. *Dissertation Project ID Number:* ***9151***

As a participant, you have rights under the UK GDPR act. These include:

- a right of access, including a copy of the information comprised in your personal data (to do so individuals should submit a subject access request). Further information can be found here, Subject Access Request
- a right in certain circumstances to have inaccurate personal data rectified
- a right to object to decisions being taken by automated means

Under the EU's General Data Protection Regulation, your email is the only personal data that the researcher would have. However, this will not be a direct form of data in this research and will only be used to contact you during the data collection process.

Please be aware that if you are dissatisfied with Northumbria University's processing of personal data, you have the right to complain to the Information Commissioner's Office. For more information see the ICO website.

Contacts for further information:

Researcher (Daisy) email: w23037371@northumbria.ac.uk

Supervisor email (if applicable): jason.luger@northumbria.ac.uk

Name another person who can provide independent information or advice about the project:

Simon Griffiths **Email:** simon.griffiths@northumbria.ac.uk

Name and contact details of the Records and Information Officer at Northumbria University, Duncan James (dp.officer@northumbria.ac.uk).

You can find out more about how we use your information at our GDPR webpage.

Appendix B: The LinkedIn post published on the researcher's account to facilitate snowball sampling.

To whom this may concern,

I am looking for participants for my master's dissertation research project. Please find the project title below,
An Exploration into the capacity and responsibilities of wildfire stakeholders in the UK.

This research aims to provide further understanding of UK wildfire stakeholder relationships associated with the increasing and intermittent risk of wildfires, and requires participants for semi-structured interviews. As a participant, you will be anonymous, and a brief professional title (such as southern firefighter) will be used as an identifier.

Individuals who have academic or professional experience and/or understanding of UK wildfires, the fire and rescue service, and climate change impacts may be stakeholders within multi-agency relationships regarding wildfires. Examples of potential participants include, but are not limited to:

- Fire and rescue service professionals/experts
- Wildfire researchers, experts in both academic and/or professional fields
- Climate experts, professionals or academics

Please contact me through private message on LinkedIn if you would like to receive further information as a potential participant.
Alternatively, please share this post with connections who may be interested in being potential participants.

Kindest Regards,
Daisy
#UKWildfires #firerescue #FireAndRescue #FireService #UKFireAndRescue #UKClimateChange #NFCC

Appendix C: The consent form distributed to all participants who consented to take part in this research.

Faculty of Engineering and Environment

Department of Geography and Environmental Sciences

Project Title: *The capacity and responsibilities of the FRS in the United Kingdom, and a wildfire stakeholder relationship map.*

Name of Researcher: *Daisy Irwin*
Researcher email: *w23037371@northumbria.ac.uk*

Dissertation Supervisor: Simon Griffiths

Data Protection Information:

I understand how Northumbria University will process my personal data, and that this information will be used only for the purpose(s) set out in the Participant Information Sheet supplied to me, and my consent to participate in this study is conditional upon the University complying with its duties and obligations under the Data Protection Act 2018 which incorporates General Data Protection Regulations (GDPR). You can find out more about how we use your information here Research Participant Privacy Notice.

Participant Consent	*Please initial this box to confirm consent*
I have read and understood the purpose of the study and have had the chance to ask questions about the study and these have been answered to my satisfaction	
I understand that my participation is voluntary and that I am free to withdraw at any time before the 1st August 2025, unless alternative situation is discussed with researcher	
I understand the processing of my personal information required as part of my participation and the lawful basis for processing, as described in the Participant Information Sheet.	

I consent to a broad title of my profession, expertise or academic role as stakeholder identifier.	
I consent to meeting with the researcher in-person or online until all interview questions have been answered	
I understand that my research data may be published as a report.	
I consent to the retention of my personal information, email and job title, until the 15th September 2025, for the purpose of being re-contacted	
(If appropriate) I consent to being [audio and/or video] recorded and understand that the recordings will be deleted 7 days after the interview, and once they have been anonymously transcribed.	
By signing this Consent Form, I confirm that I am willing to take part in this research study.	

SIGNATURES

Name of Participant in full	Signature of Participant
Date of Participant's signature	

Appendix D: Condensed interview transcript containing the questions asked to all participants

1) Can you tell me a little about your current role and how it relates to wildfires or wildfire risk/management in the UK?
2) How frequently do wildfires feature in your professional work?
3) Have you observed changes in wildfire frequency or severity in recent years?
4) Who do you believe holds the primary responsibility for managing wildfire risk in the UK?
5) I am looking at building a stakeholder relationship mindmap, do you have any stakeholders in mind which may not be prioritised?
6) Is there anything else you'd like to share about your experiences with wildfires or inter-agency collaboration?

Appendix E: Sample questions asked to Fire and Rescue Service participants.

1) Can you tell me a little about your role and how it relates to wildfires or wildfire risk/management in the UK?
2) How frequently do wildfires feature in your professional or academic work?
3) How would you describe the current level of wildfire risk in the UK?
4) How well do you think this risk is understood by different stakeholders, including the public, emergency services, and policymakers?
5) Who do you believe holds the primary responsibility for managing wildfire risk in the UK?
6) Do you think the current responsibilities of FRS align with the reality of wildfire risk?
7) Are there any regional differences in preparedness or capacity that you've noticed or experienced?
8) From your experience, how would you assess the current capacity of UK FRS to respond to wildfires (e.g., training, equipment, personnel)?
9) Could you describe how your organisation collaborates with other agencies or groups during wildfire planning or response?
10) Are there any gaps, overlaps, or conflicts in responsibilities among stakeholders in wildfire response?
11) What data or information do you share with other stakeholders, and how is it shared?
12) What stakeholders do you believe should be represented in a UK wildfire stakeholder map?
13) What improvements would you like to see in the way the UK prepares for or responds to wildfires?
14) What support or resources would enhance your organisation's wildfire response capability?

Appendix F: This provides a list of the software used for data collection, data analysis, and the presentation of results.

Microsoft 365:

https://www.microsoft.com/en-us/microsoft-365/download-office

Excel

Word

Outlook

OneNote

Teams

SharePoint

MindView 9.0:

https://www.matchware.com/mind-mapping-software

Voice Recorder (Samsung Electronics Co. Ltd.):

https://play.google.com/store/apps/details?id=com.sec.android.app.voicenote&hl=en_GB

Appendix G: The graph illustrates the 'example impact scale indicators for fatalities, casualties and economic costs' (HM Government, 2025, p. 14).

	Impact				
	1	2	3	4	5
Fatalities	1-8	9-40	41-200	201-1,000	>1,000
Casualties	1-18	17-80	81-400	400-2,000	>2,000
Economic cost	Millions of £	Tens of millions £	Hundreds of millions £	Billions of £	Tens of Billions £

The indicators for the example impact scale in the 2025 edition of the NRR, which are reviewed by academics, charities and industry professionals (HM Government, 2025).