Written evidence submission to House of Commons Environment, Food and Rural Affairs Committee

Inquiry into Wildfire Risk and Response

Submitted by the National Heat Risk Commission

Emma Howard Boyd CBE, Chair

May 2026

About the National Heat Risk Commission

1. The National Heat Risk Commission was established in March 2026. It is based at the Grantham Research Institute on Climate Change and the Environment at the London School of Economics and Political Science. The Commission is independent of government and of LSE, and is chaired by Emma Howard Boyd CBE. The Commission will publish an interim report in summer 2026 and a final landmark report in summer 2027.

Summary

2. This submission responds to the Committee's call for evidence on wildfire risk and response, part of its long-term thematic inquiry into Climate and Weather Resilience. The summer of 2022, during which UK temperatures exceeded 40°C for the first time in recorded history,[1] produced an unprecedented wildfire season: London Fire Brigade recorded 207 wildfires,[2] with a 500% increase in 999 calls and many fire and rescue services declaring major incidents in July 2022.[3] In 2025, the total area burned by wildfires in the UK had exceeded 292 square kilometres by late April, surpassing the previous annual record set in 2019, with more than 180 square kilometres consumed in the single week of 2 to 8 April alone.[4]

3. UK temperature records were set during the exceptionally hot, dry summer of 2022, when the UK first exceeded 40°C. Analysis published in *Environmental Research Letters* found that very high UK fire weather conditions like those seen in summer 2022 were made at least six times more likely by human-caused climate change;[5] the Climate Change Committee has subsequently concluded that there is now unequivocal evidence that climate

[1] Kendon, M. (2022) *Unprecedented extreme heatwave, July 2022.* Met Office. https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/weather/learn-about/uk-past-events/interesting/2022/2022_03_july_heatwave.pdf

[2] London Fire Brigade, as reported in *Emergency Services Times* (2025) *London Fire Brigade records busiest wildfire summer since 2022 heatwave.* 24 September 2025. https://emergencyservicestimes.com/2025/09/24/london-fire-brigade-records-busiest-wildfire-summer-since-2022-heatwave/

[3] Climate Change Committee (2025) *Progress in adapting to climate change: 2025 report to Parliament.* 30 April 2025. https://www.theccc.org.uk/publication/progress-in-adapting-to-climate-change-2025/

[4] Poynting, M. and Rivault, E. (2025) ' Area burned by UK wildfires in 2025 already at annual record.' *BBC News*, 27 April 2025. https://www.bbc.co.uk/news/articles/c20xq5nd9z3o

[5] Burton, C., Ciavarella, A., Kelley, D.I., Hartley, A.J., McCarthy, M., New, S., Betts, R.A. and Robertson, E. (2025) 'Very high fire danger in UK in 2022 at least 6 times more likely due to human-caused climate change.' *Environmental Research Letters*, 20(4): 044003. https://iopscience.iop.org/article/10.1088/1748-9326/adb764

change is making wildfire-conducive conditions in the UK more likely and more extreme.[6] Wildfire risk management therefore cannot be siloed from heat risk, drought risk and air quality risk: these hazards share drivers, vulnerable populations, response infrastructure and governance gaps. This submission covers some of the same issues contained in the evidence the National Heat Risk Commission recently submitted to the House of Commons Environmental Audit Committee Inquiry on Air Pollution.

4. The Commission urges the Committee to treat wildfire as one strand of an integrated extreme heat resilience agenda, anchored in existing statutory machinery (the National Adaptation Programme, the UK Climate Change Risk Assessment, and the Civil Contingencies Act framework of Local Resilience Forums) so that recommendations have a clear delivery home.

5. The Commission's specific proposals are set out in the closing recommendations section, and include: a statutory National Heat and Wildfire Resilience Plan; explicit recognition of wildfire-heat compound risk as a named risk in the fourth UK Climate Change Risk Assessment with its own chapter in the fourth National Adaptation Programme; a single accountable senior official; integration of fire weather and wildfire smoke into the Heat-Health Alert system; wildland-urban interface standards in planning and building regulations; explicit wildfire and drought resilience duties for water companies, with matching Ofwat performance measures; a wildfire and drought resilience standard within Environmental Land Management (ELM); equity-weighted adaptation funding; a national compound-event monitoring function; dedicated UKRI funding for compound-risk research; and consideration of an insurance-market backstop for high-risk areas.

6. The Commission has reviewed the Committee's questions and structured this submission thematically rather than question-by-question, in order to draw out the cross-cutting compound-risk argument.

1. Wildfire as a heat-driven compound climate risk

7. UK wildfires are a manifestation of compound climate hazard. The conditions that drive ignition and spread (high temperatures, low fuel moisture, low humidity, strong winds, and sustained dry weather) are the same conditions that drive heatwaves and drought. The 2022 and 2025 wildfire records both occurred during sustained heat episodes. The Met Office have stated that 2025 was the warmest year on record in the UK, with the warmest summer on record and an annual mean temperature of 10.09°C.[7]As at 3 June 2025, wildfires in the UK had already burned over 33,000 hectares, the largest burnt area recorded in any year since the Global Wildfire Information System's monitoring began in 2012.[8] By 12 August 2025, fire and rescue services in England and Wales had responded to 856 wildfires, with the National Fire Chiefs Council reporting that by the end of July, wildfire numbers were 33 per cent higher than at the same point in the 2022 record year and 663 per cent higher than in 2024.[9]

---

[6] Climate Change Committee (2025) Progress in adapting to climate change: 2025 report to Parliament. 30 April 2025 (n 3)

[7] Met Office (2026) 2025 is double-record breaker: UK's warmest and sunniest year on record. https://www.metoffice.gov.uk/about-us/news-and-media/media-centre/weather-and-climate-news/2026/2025-is-double-record-breaker-uks-warmest-and-sunniest-year-on-record

[8] House of Lords Library (2025) Wildfires: Reducing the risks and mitigating the effects. Briefing for House of Lords debate, 4 June 2025. https://lordslibrary.parliament.uk/wildfires-reducing-the-risks-and-mitigating-the-effects/

[9] National Fire Chiefs Council (2025) Record numbers of wildfires are putting services under huge strain, warn Fire Chiefs. Press release, 13 August 2025. https://nfcc.org.uk/record-numbers-of-wildfires-are-putting-services-under-huge-strain-warn-fire-chiefs/

8. Attribution science is now sufficiently advanced to anchor the policy case. Peer-reviewed analysis using the UKCP18 regional climate-model ensemble projects that, at 2°C of global warming relative to 1850–1900, the frequency of summer days on which at least 5% of England and Wales experiences very high or extreme fire danger roughly doubles compared with the 1981–2010 historical period, rising to about five times the historical frequency at 4°C of global warming.[10] The same heatwave saw the UK exceed 40°C for the first time, with a peak of 40.3°C in Lincolnshire, and almost 3,000 excess deaths recorded in England across the five summer heatwave periods.[11]

9. Research published in 2025 found that the annual chance of summer temperatures in the UK exceeding 40°C has risen from below 0.2% in the 1960s to 4.2% in 2023, with a 50% chance of 40°C being reached again by 2035, and a temperature as high as 46.6°C now considered plausible.[12] The Climate Change Committee has warned Parliament that climate hazards including heatwaves, droughts and wildfires are becoming more frequent and intense, and that the UK remains inadequately prepared, with adaptation progress too slow.[13]

10. The Commission's distinctive contribution to this inquiry is to argue that wildfire risk management cannot be siloed from heat and drought risk management. They share drivers, exposed populations, response infrastructure and governance gaps. The 2025 incident totals confirm this is now a recurring rather than exceptional pattern. The Committee's findings will be more durable if framed within an integrated extreme heat resilience agenda.

2. The rural-urban interface and built environment risk

11. Approximately 54.4 per cent of wildfire incidents attended by Fire and Rescue Services in England during the twelve financial years 2009-10 to 2020-21 occurred in built-up areas and gardens.[14] On 19 July 2022, the Wennington fire tore through 40 hectares, destroying homes, garages, stables and cars,[15] and London Fire Brigade dealt with more than 1,146 incidents, its busiest day since the Second World War, with more than 40 houses and shops destroyed across locations including Wennington, Dagenham and Kenton.[16] A 2026 simulation study by Thomas Smith (LSE) using the Prometheus wildfire spread modelling software with the Dagenham fire as a base case found that a wind shift of only a few degrees in one scenario could have allowed the fire to threaten between 90 and 120 properties rather than the 14 lost; the 2022 losses therefore reflected favourable wind rather than the limit of what the fire could have done in alternative wind conditions.[17]

---

[10] Perry MC, Vanvyve E, Betts RA, Palin EJ (2022) Past and future trends in fire weather for the UK. Natural Hazards and Earth System Sciences, 22, 559 to 575. https://nhess.copernicus.org/articles/22/559/2022/

[11] Greater London Authority (2024) The London Climate Resilience Review, final report. https://www.london.gov.uk/sites/default/files/2024-07/The_London_Climate_Resillience_Review_July_2024_FA.pdf

[12] Kay, G., Dunstone, N., Smith, D.M., Brown, S.J., Kent, C., Lockwood, J.F. and Scaife, A.A. (2025), Rapidly increasing chance of record UK summer temperatures. Weather, 80: 268-276. https://doi.org/10.1002/wea.7741

[13] Climate Change Committee (2025) Progress in adapting to climate change: 2025 report to Parliament. 30 April 2025 (n 3)

[14] Forestry Commission (2022) Forestry Commission wildfire statistics for England: report to 2020 to 2021. https://www.gov.uk/government/publications/forestry-commission-wildfire-statistics-for-england-report-to-2020-21

[15] London Fire Brigade, 'Large fire involving houses and scrubland - Wennington', 19 July 2022. https://www.london-fire.gov.uk/incidents/2022/july/large-fire-involving-houses-and-scrubland-wennington/

[16] London Fire Brigade (2022) Firefighters' heroic actions prevented fatalities on Brigade's busiest day since World War Two. Press release, 20 July 2022. https://www.london-fire.gov.uk/news/2022-news/july/firefighters-heroic-actions-prevented-fatalities-on-brigade-s-busiest-day-since-world-war-ii/

[17] Shukman D (2026) The Response: A Story of Fire and Flood in Britain's New World of Extremes. Witness Books / Ebury, London. https://www.penguin.co.uk/books/469146/the-response-by-shukman-david/9781529144284

12. Three structural features of the UK built environment compound this exposure. First, urban heat island effects intensify ignition risk at the rural-urban interface: surface temperatures in densely built areas during heatwaves can be 10 to 12°C higher than greener parts of the city,[18] and inner-London areas with fewer trees were up to 5°C warmer than greener areas during July 2022.[19]

13. Second, the UK has no wildland-urban interface (WUI) standards comparable to California, Australia or Mediterranean Europe: Building Regulations and the National Planning Policy Framework do not require ember-resistant construction, defensible space, or vegetation management on plots adjacent to high-risk land. The London Climate Resilience Review recommended a National Wildfire Strategy and Action Plan supported by a real-time England Wildfire Risk Map, neither of which currently exists.[19].

14. Third, The 19 July 2022 London wildfire response exposed gaps in the governance and recording of wildfire risk at London's rural-urban interface. LFB's response involved numerous grass and wildfires across London, including Wennington, Dagenham, Upminster, Harrow and other locations, with incidents affecting grassland, scrubland, parkland, farmland, railway-adjacent land, residential and commercial property. LFB's own review found that open spaces likely to be prime sites for grass and wildfires were not normally retained in its Operational Risk Database, and that a multi-agency asset register for London should be considered. Wider London climate resilience evidence points to fragmented roles and responsibilities across local authorities, the Mayor, government departments, infrastructure providers, landowners and other public and private organisations, and recommends a shared evidence base, clearer responsibilities, and a national wildfire strategy and action plan.[20,19]

15. Heat-driven failures also amplify response challenges. In July 2022, lift failures in social housing tower blocks in Hammersmith and Fulham trapped residents in overheated buildings[19], and around 65 per cent of UK office space relies on air-conditioning that can fail when most needed.[21] Compound events therefore combine wildfire impacts with simultaneous failures of cooling, evacuation and shelter infrastructure.

3. Critical national infrastructure, water, and cascading risk

16. Wildfire response depends on water, and water systems are themselves under strain during the same compound events: heatwaves drive demand spikes just as drought reduces reservoir levels, river flows and groundwater recharge. LFB reported that, during the July 2022 extreme heat major incident, water authorities reduced water pressure in some areas without informing the Brigade, which affected its operations.[22] The 2025 UK National Risk Register separately recognises the same risk interaction at national level, stating that drought conditions can increase fire risk while reducing the ability to fight fires because of water scarcity.[23] Public First estimates projected water deficits could block up to £10.1 billion of economic growth by 2035 across 95 local authorities, with a two-day curtailment during

[18] Shade the UK (2024) Building Heat-Resilient Neighbourhoods. https://www.shadetheuk.com/building-heat-resilient-neighbourhoods

[19] Greater London Authority (2024) The London Climate Resilience Review, final report. (n 11)

[20] London Fire Brigade, Major Incident Review: Extreme Weather Period 2022, report date 30 January 2023. https://www.london-fire.gov.uk/media/7882/lfc-23-014a-mirt2200024reviewdraftv70002_redacted.pdf

[21] Shade the UK and Feldberg Capital (2026) Overheating Adaptation Guide for Offices. https://www.shadetheuk.com/overheating-adaptation-guide-for-offices

[22] London Fire Brigade, *Freedom of Information request reference number 76671*, 2 August 2023. https://www.london-fire.gov.uk/media/4esjb2ov/foia-76671-response-draft.pdf

[23] Cabinet Office (2025) National Risk Register, 2025 edition. https://www.gov.uk/government/publications/national-risk-register-2025

severe drought costing businesses an average 23.2 per cent of revenue.[24] Wildfire planning should therefore be embedded in regional water resource management plans, drought plans, Local Resilience Forum risk registers and water company resilience duties, with Ofwat performance measures linked to climate resilience, emergency water availability and leakage reduction.

17. Critical national infrastructure exposure is broader than water: wildfires threaten electricity transmission as well as railway and road networks, telecoms and the defence estate. National Grid reports that, during the 2022 wildfires, multiple circuits were switched out of service to protect firefighters, reducing network resilience.[25] National infrastructure assessments warn that severe climate hazards could trigger cascading disruptions across interconnected energy, water and telecommunications systems.[26] The July 2022 heatwave demonstrated this across multiple sectors simultaneously: rail buckling on the East Coast Main Line, an estimated £8 million in lost London Underground revenue, hospital operating theatres rendered unusable, and operations cancelled because of IT server failures.[27] The National Energy System Operator, established in October 2024, has statutory responsibilities for whole-system energy resilience;[28] with a new water regulator due and the railways re-nationalised, this approach should be extended across all regulated sectors. Wildfire-heat compound risk should be a named consideration in sector resilience plans across Defra, DESNZ, DfT, DSIT and the Ministry of Defence, with scenario-based exercises modelled on London's 2024-25 Exercise Helios[29] and consistent use of climate cost frameworks such as the London Climate Ready Partnership's Climate Costs Guide.[30]

4. Health, smoke, and the heat-air pollution nexus

18. Wildfire smoke is a heat-amplified, partly transboundary source of fine particulate matter (PM2.5) and a precursor to ozone formation. The current UK framework does not formally treat wildfire smoke as a routine emission source or operate transboundary smoke surveillance and alerting. The Commission considers this a material gap.

19. Analysis in Nature estimates that the 2023 Canadian wildfires increased annual mean PM2.5 exposure in Europe by 0.41 micrograms per cubic metre through long-range transport, exposed 354 million people in North America and Europe to at least one day of wildfire-related PM2.5, and were attributable to approximately 64,300 chronic deaths.[31] The 2022 UK heatwave triggered a UK air pollution event with ground-level ozone exceeding WHO guidelines,[32] and wildfire-specific PM2.5 is more toxic per unit mass than typical urban

[24] Public First (2026) Risking Growth: The Impact of Water Deficits on Business. https://www.publicfirst.co.uk/risking-growth-the-impact-of-water-deficits-on-business.html

[25] National Grid Electricity Transmission, *Climate Change Adaptation Report*, December 2024. https://www.nationalgrid.com/document/357171/download

[26] Joint Committee on the National Security Strategy (2022) Readiness for storms ahead: Critical national infrastructure in an age of climate change. https://publications.parliament.uk/pa/jt5803/jtselect/jtnatsec/132/summary.html

[27] Greater London Authority (2024) The London Climate Resilience Review, final report. (n 11)

[28] Department for Energy Security and Net Zero (2024) Designation of the National Energy System Operator (NESO). https://www.gov.uk/government/publications/designation-of-the-national-energy-system-operator-neso

[29] Greater London Authority (2025) Exercise Helios: an Extreme Heat Exercise for London. Post Exercise Report. https://www.london.gov.uk/sites/default/files/2025-03/Ex%20Helios%20Post%20Exercise%20Workshop%20-%20last%20updated%20Mar-25.pdf

[30] London Climate Ready Partnership (2026) Climate Costs Guide. https://climatelondon.org/projects/climate-costs-toolkit/

[31] Wang J, Lu X, Zhang Q et al. (2025) Long-range PM2.5 pollution and health impacts from the 2023 Canadian wildfires. Nature. https://www.nature.com/articles/s41586-025-09482-1

[32] National Centre for Atmospheric Science (2022) How UK's record heatwave affected air pollution. Analysis led by Professor James Lee. https://ncas.ac.uk/how-uks-record-heatwave-affected-air-pollution/

PM2.5.[33] Hot, sunny and stagnant conditions can worsen air quality by increasing ozone formation and allowing pollutants or their precursors to accumulate through reduced dispersion;[34] ozone concentrations during the July 2022 Greater London heatwave were 17 per cent higher than in summer 2003,[35] and across 35 European countries from 2003 to 2020, heat-ozone compound days rose 2.6 days per decade, with nearly 235 million Europeans experiencing such episodes annually.[36]

20. The mortality consequences of joint exposure are compounding rather than parallel. The largest study to date, of 22.6 million deaths across 620 cities in 36 countries, found heat mortality amplified at higher fine particulate matter, larger particulates, nitrogen dioxide and ozone concentrations,[37] and a Navigation Guide systematic review of 56 studies concluded combined heat-pollution health impacts may be larger than separate estimates suggest.[38] Vulnerable populations are largely the same across heat, air pollution and wildfire smoke: older people, those with cardiovascular and respiratory disease, pregnant women, infants and young children, low-income communities, those in housing prone to overheating or poor air quality, and outdoor workers.[39,40,41] Compound episodes create a ventilation paradox – opening windows worsens indoor air quality where outdoor pollution is high, while closing them worsens indoor heat – and the net-zero retrofit programme will deepen this trade-off unless overheating and indoor air quality are treated as joint design considerations.

21. UKHSA recorded 1,504 heat-associated deaths in England across five heat episodes in summer 2025, concentrated among older adults; the modelled estimate of 3,039 was 1,535 higher than observed, suggesting the Adverse Weather and Health Plan and Heat-Health Alert system may be reducing mortality.[42] Heat-associated deaths in England could triple to around 7,000 over the next 30 years without further adaptation [31], with projected costs of approximately £6.4 billion per year this decade.[43] Wildfire smoke should be integrated into the Adverse Weather and Health Plan and Heat-Health Alert system as a heat-amplified pollution source,[44] with integrated heat-smoke surveillance, protection of indoor air quality in schools, care homes, social housing and outdoor worker settings, and – drawing on Copernicus Atmosphere Monitoring Service capabilities – formal forecasting, monitoring and

---

[33] Aguilera R, Corringham T, Gershunov A, Benmarhnia T (2021) Wildfire smoke impacts respiratory health more than fine particles from other sources: observational evidence from Southern California. Nature Communications, 12: 1493. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7935892/

[34] Air Quality Expert Group (2025) Differentials in air pollutant exposure across communities and regions in the UK. https://uk-air.defra.gov.uk/assets/documents/reports/cat05/2507241354_AQEG_Differentials_revised_240725.pdf

[35] Simpson CH, Brousse O, Heaviside C (2024) Estimated mortality attributable to the urban heat island during the record-breaking 2022 heatwave in London. Environmental Research Letters, 19. https://iopscience.iop.org/article/10.1088/1748-9326/ad6c65

[36] Chen Z-Y, Achebak H, Petetin H et al. (2025) Trends in population exposure to compound extreme-risk temperature and air pollution across 35 European countries: a modelling study. The Lancet Planetary Health, 9 (5): e384 to e396. https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(25)00048-8/fulltext

[37] Stafoggia M, Michelozzi P, Schneider A et al. (2023) Joint effect of heat and air pollution on mortality in 620 cities of 36 countries. Environment International, 181: 108258. https://www.sciencedirect.com/science/article/pii/S0160412023005317

[38] Anenberg SC, Haines S, Wang E, Nassikas N, Kinney PL (2020) Synergistic health effects of air pollution, temperature, and pollen exposure: a systematic review of epidemiological evidence. Environmental Health, 19: 130. https://ehjournal.biomedcentral.com/articles/10.1186/s12940-020-00681-z

[39] UK Health Security Agency (2024) Heat summary: Health Effects of Climate Change (HECC) full report. https://www.gov.uk/guidance/heat-summary-health-effects-of-climate-change-hecc-full-report

[40] Royal College of Physicians and Royal College of Paediatrics and Child Health (2016) Every breath we take: the lifelong impact of air pollution. https://rcp.ac.uk/media/jzul5jgn/every-breath-we-take-the-lifelong-impact-of-air-pollution-full-report.pdf

[41] Ferguson L, Taylor J et al. (2021) Systemic inequalities in indoor air pollution exposure in London, United Kingdom. Buildings and Cities. https://journal-buildingscities.org/articles/10.5334/bc.100

[42] UK Health Security Agency (2026) Heat mortality monitoring report: England 2025. https://www.gov.uk/government/statistics/heat-mortality-monitoring-report-england-2025

[43] House of Commons Environmental Audit Committee (2018) Heatwaves: adapting to climate change. https://publications.parliament.uk/pa/cm201719/cmselect/cmenvaud/826/826.pdf

[44] UK Health Security Agency (2026) Adverse Weather and Health Plan: protecting health from weather-related harm, 2026 to 2027. https://assets.publishing.service.gov.uk/media/69cbbd2b024cdf09254f3f57/Adverse_Weather_and_Health_Plan_2026_2027.pdf

alerting on wildfire smoke episodes including long-range transport from continental Europe and North America.

5. Vulnerable populations and equity

22. Wildfire risk in the UK is socially patterned. Deprived urban and peri-urban communities, Gypsy, Roma and Traveller communities on some sites, agricultural and other outdoor workers, people in cold, damp or poorly insulated housing, and people in poorly ventilated homes are disproportionately exposed to environmental health risks including air pollution, flooding, heat, damp, mould and other indoor air hazards. Equity also runs through the water-system argument: drought-related restrictions and service interruptions disproportionately affect those who cannot easily relocate, cool their homes or buy filtration. The same compound-vulnerability geography applies to heat: older people, young children, those with underlying health conditions, outdoor workers and those in poorly ventilated housing face the greatest risks, alongside heightened physiological vulnerability among pregnant women and those affected by the menopause or menstrual cycles. Socioeconomic disadvantage and limited urban green space compound these risks,[45] and heat exposure also worsens mental health,[46] High temperatures and PM2.5 often spatially coincide;[47] there is evidence that socioeconomic disparities in exposure to outdoor NO2 and PM2.5 are predominantly an urban phenomenon,[48] and access to cooling green infrastructure is itself unequal.[49]

23. Public awareness remains uneven: a Grantham Research Institute survey of 1,750 UK adults found that while three-quarters recognised heatwaves can be life-threatening, only 19 per cent believed their own health would be affected by heat within five years, and 68 per cent believed Government is not prepared.[50] Wildfire risk perception is even less well surveyed; this is itself an evidence gap. The Commission recommends adaptation funding and public communication be designed around these populations, with vulnerability mapping combining heat, drought, wildfire, smoke, water supply, health, social and emergency-access dimensions. NAP4 wildfire content should be assessed against equity criteria.

6. Land management, nature-based solutions, and water retention

24. Land management is central to UK wildfire risk because risk depends on fuel loads and on whether land retains or loses moisture during heat and drought. Relevant interventions span peatland rewetting, wetland restoration, natural flood and drought management, targeted grazing, dry-vegetation and scrub management, fire breaks and low-fuel zones, woodland restructuring, soil health improvement, and maintaining access routes and water points for fire crews. Each is well established in the literature but not consistently delivered through Defra funding schemes. Nature-based solutions deserve honest treatment: they reduce wildfire risk where they improve soil moisture and reduce fuel continuity, but poorly designed

[45] UK Green Building Council (2025) UK Climate Resilience Roadmap. https://ukgbc.org/our-work/topics/resilience-roadmap/

[46] Baeker L, Iyengar U, del Piccolo MC and Mechelli A (2025) Impacts of Extreme Heat on Mental Health: Systematic Review and Qualitative Investigation of the Underpinning Mechanisms. The Journal of Climate Change and Health. https://pmc.ncbi.nlm.nih.gov/articles/PMC12851232/

[47] Cole R, Simpson CH, Ferguson L et al. (2024) A population-level framework to estimate unequal exposure to indoor heat and air pollution. Buildings and Cities, 5(1), 562 to 580. https://journal-buildingscities.org/articles/10.5334/bc.425

[48] Air Quality Expert Group (2025) Differentials in air pollutant exposure across communities and regions in the UK. (n 34)

[49] Beswick A, Howarth C and Love A (2024) Scoping out a new overheating index for buildings in the UK. Grantham Research Institute on Climate Change and the Environment and Shade the UK. https://www.lse.ac.uk/granthaminstitute/news/scoping-out-a-new-overheating-index-for-buildings-in-the-uk/

[50] Howarth C, Zamzow H, McLoughlin N and Shreedhar G (2025) Gaps in public perceptions of extreme heat highlight UK's lack of preparedness. Environmental Science and Policy, Volume 170. https://www.sciencedirect.com/science/article/pii/S1462901125001170

planting, lack of funding for ongoing maintenance and rewilding, or inaccessible restoration can increase fire behaviour risks if fire planning is not integrated. The Commission recommends wildfire risk assessment be embedded in Local Nature Recovery Strategies, ELM, peatland restoration, woodland creation, biodiversity net gain, catchment planning and protected landscape management, with Defra payments rewarding measurable risk reduction including a wildfire and drought resilience standard within ELM.

25. The wider biodiversity case reinforces this approach. The Government's nature security assessment recognises ecosystem stability as a strategic national interest and warns biodiversity loss increases vulnerability to climate shocks and may contribute to geopolitical instability.[51] Nature-based adaptation also delivers cooling co-benefits in the same heatwave conditions that produce wildfires,[52,53] alongside economic and employment co-benefits: the Warm Homes Plan is projected to create 180,000 additional jobs by 2030,[54] with comparable opportunities in green infrastructure, urban forestry and ecological restoration.

7. Monitoring, data, and a compound-event evidence base

26. UK wildfire monitoring has improved but remains fragmented. The Forestry Commission and National Fire Chiefs Council collect incident-level data through fire and rescue services, satellite burned-area monitoring has been available through the Global Wildfire Information System since 2012, and the Met Office produces fire weather indices. Academic capacity sits with the Leverhulme Centre for Wildfires, Environment and Society and a small number of UK universities. Even so, wildfire definitions and recording remain inconsistent across the four nations and there is no integrated compound-event monitoring infrastructure.

27. The Commission's value-add is to argue for compound-event monitoring infrastructure, not single-hazard upgrades. Relevant linked datasets include fire and rescue incident data, satellite burned-area data, fire weather indices, drought and soil moisture indicators, river flow, reservoir and hydrant pressure data, smoke and air quality data with wildfire-attribution capability, hospital admissions and excess mortality data, and insurance and infrastructure loss data. The Commission recommends a national wildfire observatory, hosted within an existing arms-length body, drawing these datasets together for attribution, forecasting, public alerting and policy evaluation. Wildfire-heat compound risk should be explicitly named in CCRA4, with its own chapter in NAP4. UK wildfire research capacity is thin compared with the US, Australia and Mediterranean Europe; dedicated UKRI funding for compound-risk research and fire-service skills development is needed. The UK should align with Copernicus, the European Forest Fire Information System, and the European Environment Agency's first European Climate Risk Assessment (2024), which identified 36 climate risks that have in many cases already reached critical levels.[55]

8. Governance, devolution, and cross-departmental coordination

[51] Department for Environment, Food and Rural Affairs (2026) Nature security assessment: global biodiversity loss, ecosystem collapse and national security. https://www.gov.uk/government/publications/nature-security-assessment-on-global-biodiversity-loss-ecosystem-collapse-and-national-security

[52] Shade the UK (2024) Building Heat-Resilient Neighbourhoods (n 18)

[53] Greater London Authority (2024) The London Climate Resilience Review, final report. (n 11)

[54] Department for Energy Security and Net Zero (2026) Warm Homes Plan. https://www.gov.uk/government/publications/warm-homes-plan

[55] European Environment Agency (2024) European Climate Risk Assessment (EUCRA). EEA Report 01/2024. https://www.eea.europa.eu/en/analysis/publications/european-climate-risk-assessment

28. UK wildfire governance remains cross-cutting and fragmented, but the central UK Government lead for fire and wildfire response in England now sits with MHCLG, following the transfer of fire functions from the Home Office on 1 April 2025.[56] Wildfire risk still depends on coordination with Defra, Natural England, the Forestry Commission, the Environment Agency, the Met Office, Cabinet Office, DHSC/UKHSA, DESNZ, water companies and devolved administrations, because prevention, land management, climate adaptation, public health, infrastructure resilience and emergency response sit across different bodies. The Climate Change Committee has concluded the UK is not adequately prepared with adaptation progress too slow,[57] and the Joint Committee on the National Security Strategy has warned severe climate hazards could trigger cascading disruptions across interconnected energy, water and telecommunications systems.[58] Devolution adds complexity: “Scotland, Wales and England operate under distinct upland land-management and heather-burning regimes, while wildfires that cross administrative borders can create practical issues around mutual aid, interoperability and incident command.

29. The Commission recommends a single accountable senior official or statutory lead for wildfire, integrated with heat governance, mirroring the case for a National Heat Risk Plan and a lead Minister for heat resilience. Explicit duties on water companies for emergency water demand, statutory data-sharing between water companies, fire services and Local Resilience Forums, and engagement with the devolved picture are essential. Climate resilience is increasingly integrated in statutory frameworks – including the Health and Care Act 2022,[59] the Skills and Post-16 Education Act 2022[60] and the Levelling-up and Regeneration Act 2023[61] – and building on this pattern would help provide the policy coherence and long-term certainty needed for resilient investment.

30. Alignment with European climate adaptation policy is a practical opportunity. Europe is warming at approximately twice the global average rate since the 1980s,[62] and the EU is developing an integrated climate resilience and risk management framework to be proposed in 2026, requiring all Member States to assess and report on macro-fiscal climate risks in budget documents.[63] Alignment with the European Civil Protection Mechanism and Mediterranean wildfire coordination structures would also support mutual aid in cross-border smoke episodes and major fires.

9. Economics, insurance, and the protection gap

31. The economic case for action is now strong. Hot days in Great Britain caused estimated annual GVA losses of £1.2 billion over 1998 to 2021;[64] the OBR has estimated potential

---

[56] Responsibility for all fire functions moves to MHCLG https://www.gov.uk/government/news/responsibility-for-all-fire-functions-moves-to-mhclg?utm_source=chatgpt.com

[57] Climate Change Committee (2025) Progress in adapting to climate change: 2025 report to Parliament. 30 April 2025 (n 3)

[58] Joint Committee on the National Security Strategy (2022) Readiness for storms ahead (n 26)

[59] National Health Service Act 2006, section 13NC, inserted by the Health and Care Act 2022. https://www.legislation.gov.uk/ukpga/2006/41/section/13NC

[60] Skills and Post-16 Education Act 2022, section 1. https://www.legislation.gov.uk/ukpga/2022/21/section/1

[61] Levelling-up and Regeneration Act 2023, section 94. https://www.legislation.gov.uk/ukpga/2023/55/section/94

[62] European Environment Agency (2024) European Climate Risk Assessment (EUCRA). EEA Report 01/2024. (n 55)

[63] European Commission (2025) EU Climate Action Progress Report 2025. https://op.europa.eu/en/publication-detail/-/publication/2d756cf5-c4f4-11f0-8da2-01aa75ed71a1/language-en

[64] Office for National Statistics (2024) Impact of hot days on productivity in Great Britain: methodology. https://www.ons.gov.uk/methodology/methodologicalpublications/generalmethodology/onsworkingpaperseries/impactofhotdaysonproductivityingreatbritainmethodology

direct fiscal costs from heatwaves over the next 50 years at £49 billion to £64 billion;[65] NFU Mutual reported that UK farm fire claims involving crops, buildings and farm equipment totalled £83.5 million in 2022, a year marked by exceptionally hot and dry harvest conditions;[66] and water-deficit losses alone could block up to £10.1 billion of economic growth by 2035.[67] Prevention and adaptation spending is an order of magnitude cheaper than response and recovery: benefit-cost ratios for early adaptation are estimated at 2:1 to 10:1,[68] with heat alert and heatwave planning generating returns above 10:1.[69] At European level, S&P Global Ratings estimates annual adaptation investment needs could reach €69 billion and generate up to €1.2 trillion in net present value to 2050.[70] The Commission recommends a costed National Heat and Wildfire Resilience Plan with explicit cost-benefit analysis of preventative investments at scale.

32. Insurance is the next-order question. International experience indicates that wildfire risk is reshaping property insurance markets, with evidence of reduced availability, premium increases and knock-on housing-market or mortgage-related consequences in jurisdictions including California, Australia and southern Europe.[71] The deeper question is whether UK property and agricultural insurance will remain available and affordable in high-risk areas, and what role government should play; a Flood Re analogue is the obvious comparator. The Commission recommends HM Treasury, working with the PRA and the insurance industry, examine whether an insurance-market backstop is needed for high-risk wildfire areas before market withdrawal becomes a fait accompli. Industry coalitions are already raising parallel concerns on flood.[72] Post-fire economic and environmental recovery costs – soil degradation, water contamination after burn-then-rain events, peat carbon loss, livestock loss, farm business interruption, and mental health impacts on affected communities – are also material and under-quantified, and should be developed within the same monitoring infrastructure outlined above.

10. Public communication, behavioural risk, and international lessons

33. Almost all UK wildfires are caused by human action, whether accidental or deliberate, with ignition sources including disposable barbecues, campfires, cigarettes, garden bonfires, fireworks, arson and visitor pressure on protected landscapes.[73,74] Public communication on wildfire should be linked to the Commission's wider work on heat communication. Trust in government as a heat-risk communicator is currently low, with 68 per cent of Grantham

---

[65] Office for Budget Responsibility (2024) Fiscal Risks and Sustainability, September 2024. https://obr.uk/docs/dlm_uploads/Fiscal-risks-and-sustainability-report-September-2024-1.pdf

[66] Ulster Farmers Union, 'NFU Mutual raises awareness of farm fires', 13 November 2023, https://www.ufuni.org/nfu-mutual-raises-awareness-of-farm-fires/

[67] Public First (2026) Risking Growth: The Impact of Water Deficits on Business. (n 24)

[68] Global Commission on Adaptation (2019) Adapt Now: A Global Call for Leadership on Climate Resilience. https://gca.org/wp-content/uploads/2019/09/GlobalCommission_Report_FINAL.pdf

[69] UK Health Security Agency (2026) Adverse Weather and Health Plan (n 44)

[70] S&P Global Ratings (2026) Mercury Rising: European Entities Show Some Adaptation Gains As Physical Risks Mount. https://www.spglobal.com/ratings/en/regulatory/delegate/getPDF?articleId=3536929

[71] OECD (2026), 'Insurance coverage for wildfire risk', in Financial Protection Against Catastrophic Risks. https://www.oecd.org/en/publications/financial-protection-against-catastrophic-risks_32a3acd7-en/full-report/insurance-coverage-for-wildfire-risk_f5877210.html

[72] Association of British Insurers (2026) Joint letter on updated National Planning Policy Framework proposal, 9 March 2026. https://www.abi.org.uk/globalassets/files/publications/public/abi/jointletterupdatednationalplanningpolicyframeworkproposalmarch2026.pdf

[73] Greater London Authority (2024) The London Climate Resilience Review, final report. (n 11)

[74] National Fire Chiefs Council (2025) Record numbers of wildfires are putting services under huge strain, warn Fire Chiefs. Press release, 13 August 2025 (n 9)

survey respondents believing the Government is not prepared for heatwaves,[75] and parliamentary scrutiny has concluded that heat-risk communication and public engagement need to be strengthened, including through clearer heat-health messaging and a Minister-led public information campaign.[76] The Commission recommends an integrated public-facing system covering heat-health alerts, fire severity warnings, air quality alerts including wildfire smoke, and water demand messaging, modelled on the joint Met Office and UKHSA Heat-Health Alert system extended to include wildfire and air quality.

34. International comparisons are instructive when selected for governance rather than ecology. France has long treated heat as a civil-protection and public-health risk through its national heatwave and health alert arrangements, while also maintaining a developed forest-fire prevention and response system. Greece has sought to strengthen wildfire management following severe fires in 2018, 2021 and 2023. Australia's post–Black Saturday reforms show how land-use planning, emergency management and public communication can be reshaped after catastrophic wildfire, and Australian public-health agencies now issue guidance for prolonged bushfire-smoke events. California combines electricity-system wildfire prevention measures, including Public Safety Power Shutoffs, with wildfire-smoke guidance for public health officials. These examples do not provide ecological analogues for the UK, but they do show a governance trend: wildfire, heat, infrastructure and health are increasingly managed as connected policy domains. On that institutional benchmark, the UK appears behind the direction of travel.

35. Recent forecasts also indicate a material probability of a significant El Niño event in the latter half of 2026: NOAA's Climate Prediction Center now expects El Niño to develop soon, with an 82 per cent probability of El Niño conditions during May–July 2026, and to persist through the Northern Hemisphere winter of 2026–27. NOAA also notes that the eventual strength of the event remains uncertain, and that stronger El Niño events make some impacts more likely but do not guarantee them.[77] Public communication infrastructure on wildfire and heat should be operational in advance of the 2026 summer.

Recommendations

36. The Commission will make full recommendations in its final report in 2027. The following recommendations follow directly from the evidence above and are anchored in existing statutory machinery so that they have a clear delivery home.

    1) Bring forward a statutory National Heat and Wildfire Resilience Plan, integrating heat, drought, wildfire and air quality, with a clear funding settlement and accountability mechanism to Parliament.

    2) Recognise wildfire-heat compound risk as a named risk in the fourth UK Climate Change Risk Assessment (CCRA4), with its own chapter in the fourth National Adaptation Programme (NAP4), supported by a costed implementation plan.

    3) Identify a single accountable senior official or statutory lead for wildfire, integrated with heat governance, supported by a lead Minister for heat resilience and clarified

[75] Howarth C, Zamzow H, McLoughlin N and Shreedhar G (2025) Gaps in public perceptions of extreme heat highlight UK's lack of preparedness. Environmental Science and Policy, Volume 170 (n 50)

[76] House of Commons Environmental Audit Committee (2024) Heat resilience and sustainable cooling. Fifth Report of Session 2023 to 2024. https://committees.parliament.uk/work/7811/heat-resilience-and-sustainable-cooling/publications/

[77] NOAA Climate Prediction Center/NCEP/NWS, El Niño/Southern Oscillation (ENSO) Diagnostic Discussion, 14 May 2026. https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/ensodisc.pdf

departmental responsibilities across Defra, the Home Office, MHCLG, the Department of Health and Social Care, UK Health Security Agency, the Department for Energy Security and Net Zero, the Cabinet Office, the Forestry Commission and Natural England.

4) Integrate fire weather and wildfire smoke into the joint Met Office and UK Health Security Agency Heat-Health Alert system, with consistent advice for the public, health and care providers, schools and outdoor workers, and supporting Local Air Quality Management duties.

5) Introduce wildland-urban interface (WUI) standards in the National Planning Policy Framework and Building Regulations, including ember-resistant construction, defensible space requirements, and vegetation management standards on plots adjacent to high-risk land.

6) Place explicit wildfire and drought resilience duties on water companies, with matching Ofwat performance measures linked to climate resilience, emergency water availability for fire suppression, and leakage reduction.

7) Deliver the National Wildfire Strategy and Action Plan and a real-time England Wildfire Risk Map committed to in NAP3, with explicit treatment of the rural-urban interface, of compounding risks such as reduced mains water pressure under drought, and of the air quality and public health consequences of wildfire smoke.

8) Introduce a wildfire and drought resilience standard within Environmental Land Management (ELM), and embed wildfire risk assessment into Local Nature Recovery Strategies, peatland restoration, woodland creation, biodiversity net gain, catchment planning, and protected landscape management plans.

9) Design adaptation funding and public communication around equity, with vulnerability mapping that combines heat risk, drought exposure, wildfire hazard, smoke exposure, water supply vulnerability, health and social vulnerability, and emergency access constraints.

10) Establish a national compound-event monitoring function, drawing on Copernicus Atmosphere Monitoring Service capabilities and aligned with the European Forest Fire Information System, that integrates fire and rescue incident data, satellite burned-area data, fire weather indices, hydrological data, hydrant pressure data, air quality data, health data and loss data.

11) Provide dedicated UK Research and Innovation funding for compound-risk research and for skills development in fire and rescue services, including the Leverhulme Centre for Wildfires, Environment and Society and partner UK universities.

12) Examine the case for an insurance-market backstop for high-risk wildfire areas, drawing on the Flood Re comparator, before market withdrawal becomes a fait accompli.

37. The Commission stands ready to provide further evidence and to engage with the Committee on the design and delivery of these recommendations.

Declarations

38. AI use disclosure: Generative AI tools were used to assist in drafting and researching this submission. The National Heat Risk Commission takes full ownership and responsibility for the contents.

39. The views expressed in this submission represent those of the author and do not necessarily represent those of the host institutions or funders. The author declares no conflict of interest in the preparation of this submission.

Suggested citation

40. Howard Boyd E (2026) Written evidence submission to the House of Commons Environment, Food and Rural Affairs Committee inquiry into Wildfire Risk and Response. London: National Heat Risk Commission.