HOUSE OF COMMONS

Environment, Food and Rural Affairs Committee

Oral evidence: Climate Adaptation and Emergency Response, HC 68

Tuesday 23 June 2026

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Watch the meeting

Members present: Mr Alistair Carmichael (Chair); Sarah Bool; Juliet Campbell; Charlie Dewhirst; Barry Gardiner; Ben Goldsborough; Terry Jermy; Josh Newbury; Henry Tufnell.

Questions 1 - 72

Witnesses

I: Rob Gazzard MICFor MRICS, Wildfire and Contingency Planning Adviser, Forestry Commission; Phil Garrigan OBE KSFM, Chair, National Fire Chiefs Council; and Professor Emma Howard Boyd CBE, Chair, National Heat Risk Commission.

II: Richard Bailey, Group Co-ordinator, Peak District Moorland Group; Professor Sallie Bailey, Chief Scientist, Natural England; and Henrietta Appleton, Policy Officer, Game and Wildlife Conservation Trust.

Written evidence from witnesses:

– Forestry Commission

- National Fire Chiefs Council

- National Heat Risk Commission

- Peak District Moorland Group

- Natural England

- Game and Wildlife Conservation Trust

Examination of witnesses

Witnesses: Rob Gazzard, Phil Garrigan and Professor Emma Howard Boyd.

Q1 **Chair:** Good morning, everybody, and welcome to this meeting of the Environment, Food and Rural Affairs Committee. We return to our inquiry into climate adaptation and emergency response. Given that we are sitting here with an amber warning today and red weather warnings for tomorrow and Thursday, this has turned out to be seasonal and timely.

As you will know, there are normal expectations about the standards of dress in Parliament. However, as Chair, I have some discretion and I will exercise that discretion in favour of comfort, so please take off your jacket and tie if you want—well, within the bounds of decency.

Welcome to the Select Committee. For the benefit of our own official record and for those who might be following our proceedings, I invite you all to introduce yourselves.

Professor Howard Boyd: Thank you. I feel like a living manifestation of a heatwave. I have just come over from the City of London. The tube is not working, so I had to walk.

I am Emma Howard Boyd, chair of the National Heat Risk Commission. I led the London climate resilience review for the Mayor of London, and I am a former chair of the Environment Agency.

Rob Gazzard: I am Rob Gazzard. I work for the Forestry Commission, and I am a wildfire adviser and contingency planner.

Phil Garrigan: Good morning, everyone. I am Phil Garrigan, the chair of the National Fire Chiefs Council. I represent the chief fire officers across the UK. I was previously the chief of Merseyside Fire and Rescue Service.

Q2 **Chair:** You are all very welcome. You are the first panel that we will be hearing from this morning. There will be a second panel to follow.

We have had a quite remarkable response to the call for evidence. I struggle to think of one that would compare. A number of these responses have told very directly—and occasionally quite movingly—of the very direct human impact this has had. I will give you a couple for flavour.

One comes from a gentleman who owns and manages a small moorland farm in the Peak District. He says he has counted more than 80 fires on his farm in one year. "Six of these have gone out of control to the extent that Derbyshire Fire Services were involved in extinguishing. The cost to me personally is immense", he says. "My timesheets show that we have spent over 400 hours in the year, Easter 2025 to Easter 2026, dealing with fire-related, wild camping incidents, patrolling, advising, extinguishing, and clearing. I have to take out extra insurance for helicopter cover in case of moorland fire as there is no vehicle access to the moorland."

Another piece of evidence came from a lady who is the wife of a gamekeeper. She writes, "My husband, like most gamekeepers, is always on hand to help when moors go up in flames, not only because of friendships, loyalties, and respect, but because of the sheer upset of the disaster that is unfolding on the wildlife and the beautiful landscape. Usually in these cases they do not have a phone signal—", that is where her husband is going to tackle the fire. "When challenging the fire on the Snake Pass, he left Thursday evening without any way of knowing when he would return". She says, "As a mum, you try to go on as normal. You spend the night watching the hours go by, waiting for the dreaded alarm when you have to explain to the children where Daddy is and what a great job he is doing".

We offer you that so that everybody understands that we want the focus of this inquiry to be on the very real and direct human impact of the subject at hand.

Having said that, we are going to start with the more managerial and procedural aspects. I want to look first of all at a few questions around the monitoring and understanding of wildfires. There seems to be no single definition of a wildfire. We have different definitions in different organisations and different nations even within the United Kingdom. How can we gather data on a subject like this when we are all talking about different things? Does this matter? Rob, do you want to pick that up?

Rob Gazzard: First, thank you very much, Alistair, for inviting the Forestry Commission to come to this Committee. Actually, that challenge has been at the forefront of our minds, so we have led a project in partnership with the England and Wales Wildfire Forum and a group of land managers, scientists and also the fire and rescue services and the NFCC through Dave Swallow, the deputy lead, to look at a definition, hierarchy and terminology for vegetation fires. The top class would be for vegetation fires. This is the problem we are dealing with. At the next level, class two, we have what are called burns and then we have wildfires. The definition for burns is a new one that we have brought forward.

In essence, the definition we have used for wildfires since the 2013 Scottish wildfire operations guidance is any uncontrolled vegetation fire that requires a decision or action regarding suppression.

Class three then moves on to the different types of burns we could have. We could have burns such as controlled burns or prescribed burns as part of our operations. We could have burns also for research and for exercises. We can also have burns such as the tactical use of fire during wildfires as a tool to suppress fires. More on the wildfire side, we have the different causes of fires because that is relevant in that particular class.

At the final class level, class four, we have the different sizes of fires. They range from very small, under a hectare, all the way up to landscape

scale. That was based on a project that I led back in 2008, the UK vegetation fire standard, which has been agreed several times over with various organisations.

In England, we put this proposal to MHCLG and DEFRA, and we are awaiting their direction and guidance. That would take us into the world of integrated fire management, bringing all the fire types together in a nice, co-ordinated, clear and structured approach.

Q3 **Chair:** That sounds dangerously sensible. Why has it not happened?

Rob Gazzard: In essence, in the Forestry Commission, our job really is to make sure that we have a very clear approach to how this happens in forestry. We have been very clear in ensuring that fire is within the UK forestry standard. However, we have no legislation to drive forward wildfire, not in prevention, preparedness, response or recovery.

Professor Howard Boyd: I think a common theme is a lack of overall and overarching grip of the issue, and how you are often facing into different Departments. Even today, when we face different high alerts from a health perspective, from a heat perspective and knowing where we sit on wildfire, it is that communication of preparedness to the general public and others to get ready.

A lot of my work on wildfires comes from the work I did for the Mayor of London, the London climate resilience review. The reason we focus on heat specifically at the National Heat Risk Commission is because it is a metonym for all the impacts around a heatwave. One of the impacts of the July 2022 heatwaves was the ring of fire around London.

In the numerous times I have given evidence either to this Committee or to the Environmental Audit Committee, I have found that some of the most powerful testimonies are from individuals. I am really grateful that you started with those powerful testimonies, because it really brings to the fore that, if you are an individual whose house is about to burn down or whose farmland is about to burn down, you need those warnings that you need to get ready so that we can put in place some of the prevention measures.

Q4 **Chair:** It is worth saying—you referenced the Mayor of London—that this is not just a rural problem. Rob, did you want to come in?

Rob Gazzard: I think one of the challenges we have is that, historically, we have looked at fire very functionally. We have said, "Right, the fire service will put the fire out"—and they do some amazing work in doing that—"and then this body here will do the prevention, this body there will do the preparedness and so forth." When you look at countries such as Australia, the United States or what they are doing in Europe, the working is much more integrated and everyone shares those different prepare, prevent, respond and recover aspects.

Q5 **Chair:** We are all familiar with the concept of siloed government, and

here we see poorer outcomes for citizens as a consequence.

Phil, in the context you have heard from Rob and Emma, would there be a benefit to you and your service in the operational aspects of this?

Phil Garrigan: A consistent definition, to directly answer your question, does it matter? Yes, it does. It matters because it means that we are all talking about the same subject matter in the same way. Certainly from the panel's perspective, you would want to know whether wildfires are increasing or decreasing, and then the activities that we would then want to direct at preventing or mitigating would be absolutely clear.

I think landing on a clear, defined definition of what a wildfire looks like and feels like for communities, as well as the responders in the broader sense of the system, is absolutely pivotal to taking things forward.

Equally, if I pick up on Emma's points, it also allows us to start to understand where the problem is increasing and how the interventions need to be reflective of the circumstances at the time.

We are very supportive of the systemic approach. To answer your question about why that kind of consistency of definition has not been delivered at this point in time, I suppose that is why we are here. I feel, for the first time for a long time, that we have Government Departments starting to talk about the issue of wildfires. They are really starting to see and grasp the risk. Collectively, as key stakeholders, we understand and recognise the importance of defining wildfire and taking action together to address it.

Q6 **Chair:** When you talk about the where, one of the recurring themes in the evidence that we got was the need for wildfire risk and response maps. Is that a feasible proposition? What would you put in it if you could have one?

Phil Garrigan: That is something we would have to explore, because it aligns to the tactics that are deployed by other key partners. From a fire and rescue service point of view, it also determines the community risk management plans that fire and rescue services would put in place to support and protect their communities. That then allows other partners to be part of that because they have visibility on what the interventions look like and what the risk looks like. I absolutely think it is something that we would look to try to define with some support, some research and some academic rigour being applied to it. It would allow us to direct resources more effectively, in my view.

Q7 **Chair:** Emma, we have something called the fire severity index. Is that a useful tool for focusing on prevention and the response to wildfires?

Professor Howard Boyd: Absolutely, but I think we need to go further in terms of the communication to the general public.

I am not doing a plug for this book, which is excellent, but its first chapter is called "London's Burning". The book is called "The Response" by David Shukman, and I think he gave evidence to the Committee.

I want to channel some of the human responses and impacts of the ring of fire. Because I have come here in a slight rush, I have forgotten the precise name of it, but there is a preparedness alert system that a group of—

Rob Gazzard: The daily hazard assessment.

Professor Howard Boyd: Yes, the daily hazard assessment. If that were translated or put out in public at a time like now, maybe some of the people whose homes burned down in 2022 would have been better prepared in that incident. I am keen that, while everything has to be grounded in the right level of academic rigour, we also work at pace.

Having talked to the former London Fire Commissioner, the current London Fire Commissioner and the Deputy Fire Commissioner about how they were responding in 2022 and the fires that they are now seeing around London, this is a new world that we are operating in. The number of wildfires, whether they are in rural areas or that rural-urban interface, is growing.

On 19 July 2022, I think there were 15 different fires, 15 different small incidents, so the Commissioner called a major incident. Because there were 15 other incidents around the country, they could not bring any additional resource into London. I think every single fire engine was deployed somewhere around London. It was the busiest day of callouts since the second world war, and had any other major hazard taken place, I know that the Commissioner has put on record that it would have been an extraordinary event to manage.

I really hope that the work you are doing will link up to other inquiries that are taking place across Government on national preparedness, because this is such a risk that the country is facing.

Rob Gazzard: There are three points: risk mapping, a fire danger rating system and statistics.

First, on risk maps, we are working with Scottish Forestry to develop a wildfire risk map for the UK. That is for the forestry sector, so we can make evidence-based decisions about lots of different issues, whether it is promoting incentives, helping our resilience colleagues to understand from local resilience forums where the risks are, working with our fire and rescue service colleagues to highlight areas where they may need to focus with communities, and so forth.

That tool is fundamentally important to us in understanding the challenge that we face. I would like to highlight the work of the University of Manchester and LSE, which have been working on this as a project within "Toward a UK Fire Danger Rating System".

When it comes to the fire danger rating system, we currently have the FSI. That engine, in essence, drives the daily hazard assessment, but the FSI is only really used to deploy the CROW Act to close open-access land in exceptional weather, so it has a very limited role and function for that specific means. A fire danger rating system would be a step change.

The Australian system, which was developed by the Australasian Fire Authorities Council and, I believe, the rural fire service in Victoria, allows them not only to warn and inform the public; they have spent a significant amount of money understanding how people react to warnings. It was a big piece of social science work, and it was fundamental to improving how they made people evacuate early so they are safe. I cannot underline this enough. It is a mixture of good social science and good hard science coming together to have really good outcomes, and that was an outcome of the Royal Commission.

The final point is on statistics, and we have some challenges here. I class wildfire scenarios into three types. First, we have normal wildfires. Around 97% to 99% of wildfires are roughly under a hectare, and that is because of the excellent work that Phil's ladies and gentlemen do. It is also to do with the fact that maybe there is not enough vegetation to burn, or the weather on the day was not conducive to the fire spreading. That is just to do with fuel condition. That is a really important factor, and that is what is changing the ratio.

That takes us to the next scenario type. Challenging wildfires. The Langdales, the Winter Hills, the Saddleworths, the Swinley Forests, the Wareham Forests—very challenging and if we have multiple ones of those, it becomes a capacity issue.

Finally, we have the extreme wildfire scenario, the 19 July 2022. Mediterranean weather. The same fire weather conditions as Spain and Portugal, which we are going to be experiencing this week. Those extreme scenarios are going to be very challenging. In essence, it might challenge our capabilities and our capacity.

What we know from the Forestry Commission's analysis of fire and rescue service data of the last 12 years—2018 was the last period we analysed and that was really challenging—it was not the large wildfires that were eating the capacity of the fire and rescue service. It was the small wildfire incidents, disproportionately so. What Phil's colleagues were doing was making sure that those small fires did not become big fires, and that is the big resource draw upon our services.

Q8 **Chair:** You have referenced Australia and Scotland. Are there other international or domestic influences that you would want us to follow, Phil?

Phil Garrigan: We do a fair amount of work with the USA as well. You will have seen some of the significant wildfires they have experienced more recently, particularly in LA. We have had the chief fire officer for LA come across and talk about the prevalence of wildfire and the risk that it

presents. There is a lot of international exchange to try to inform the UK position, and we will continue to explore those things. We have the World Fire Congress coming up in 2026, where wildfire will be a focus. That is in London in September.

Taking it back a couple of steps, with regard to contextualising where I think we are, the references to a couple of the significant events that have happened in the UK over the past number of years are interesting.

At the time, I was fire gold at Merseyside Fire and Rescue Service, which still provides national resilience. It mobilises all the resources across the whole UK for large events, not just wildfire. Saddleworth Moor and Winter Hill were the first ones that probably put wildfires significantly on the agenda. That brought resources from far and wide, as far as Tyne and Wear, into Scotland and as far down as London. There were firefighters on the hills from those respective services and everywhere in between. That was the first challenge to ensure that the mutual aid arrangements were effective and co-ordinated.

Then we fast-forward a little into 2022, which was the first time we experienced 40° temperatures in the UK. I think it was on 21 July that we had 14 major incidents declared across the UK, London being one example. London's major incident was declared because, for the first time in London for sure, we saw fire spread from the rural environment into the urban environment. We saw 16 homes lost and the devastating impact that it can have on communities. However, that is not just London. It is happening up and down the country, Norfolk being probably another example of that.

Chair: We are going to be teasing out some of this later in the session. So I am trying to keep it fairly tight for time at the moment.

Q9 **Barry Gardiner:** I have two brief points. Professor Howard Boyd, you spoke about the daily hazard assessment. The fire severity index puts that into the Natural Hazards Partnership, but it is not made publicly available. Would it be helpful if it were one of the recommendations of this Committee that that information should be made publicly available? That is the first question.

The second question is in relation to the monitoring that you talked about. I think the NFU has suggested that there should be greater integration with the European Forest Fire Information System. We had something that was called FireInSite, which was a project by NERC, which was supposed to be looking at how we could get that satellite data and all that information massed in one place, as it were, to warn people in advance, but it seems to have died a death. Can anybody tell us what has happened with that? Was it just a project that reached the end of its time, or are there some practical recommendations that we could take forward coming out of that?

Professor Howard Boyd: To the first question, just to be brief, I would say yes. In a week like this, being able to get information so that people

are making the right decisions about preparation is incredibly important, and I think it will make a massive difference. I cannot speak for you all, but I feel this would be really important. I would be making that recommendation public as soon as possible, given the week and the alerts that we are facing.

Phil Garrigan: I was just going to reinforce the point. I think that is a key aspect. People's behaviour changes when they have the information readily available to them. We rely on the public making the right decisions based on the information that we present to them. If we do not present them with the information, we do not highlight the risk and then they cannot take the appropriate measures, even if it is not to have a barbecue or light a fire in the back garden. Those interventions allow them to think about it, and it puts it to the forefront of their minds. So yes, absolutely, I agree.

Chair: I mean, it is a recurring theme of so many of the evidence submissions that people are being threatened. The first farmer I quoted was threatened by people who were having barbecues on his land, and he was trying to tell them not to. I do not know how you legislate for that. The best code of conduct in the world will never make a difference there.

Anyway, we are going to move on to some questions on ignition sources.

Q10 **Charlie Dewhirst:** Phil, could you talk about the challenges of identifying the source of fires and how easy it is for the fire services to do that?

Phil Garrigan: Not that easy, on occasion. We still believe that most significant fires are down to human behaviour, to be perfectly honest with you. It is very infrequent that we would have lightning like we had over the last 24 hours that might result in a significant wildfire, but you will understand that as the fire develops, and as the speed and pace develops, sometimes it is difficult to go back to the source of where it started. Some indications suggest that it is disposable barbecues and fires started by wild campers. Other fires are deliberate and with malicious intent. Self-evidently, we would try to explore that to the best of our ability, but the scale of a wildfire is quite a challenge for us, although we know it is something that we need to focus on.

Q11 **Charlie Dewhirst:** It is very challenging to try to track down any individual who may have caused the fire in the first place. By the time it is finished, and you have dealt with the fire—

Phil Garrigan: You are probably more reliant on the vigilance of members of the public to identify individuals in the proximity at the time, rather than taking the fire indicators leading you back to the cause. A combination of factors would still form part of the investigation, but it is more of a challenge than it would be in a domestic property.

Q12 **Charlie Dewhirst:** We have mentioned how Australia and the United States are much better on public campaigns and public signage. You see

the fire risk indicators everywhere in Australia. There is signage all over the roads in the US, in certain states. Should we be doing more given the extreme weather we have faced in recent years?

Phil Garrigan: I will answer that very quickly: yes.

Professor Howard Boyd: Yes.

Rob Gazzard: Yes, and I think the Australians have learned the lesson. They have simplified their system, and it has been more effective. This goes back to social science, understanding and changing behaviours.

Also, your point about ignition is really important. Until we understand the cause and motive of wildfires, that will limit the effectiveness of our prevention and communication measures.

The Forestry Commission undertook a report, which we sent to the Committee. An excellent gentleman, Rhodri Jones from Greater Manchester Fire and Rescue Service, undertook a report for us looking at the issue of cause and motive. The issue is that we do not have enough data, which is why we have been developing a wildfire investigation training course to build the capacity so that, in future, we can be much more effective in defining what the cause and motive of these wildfire incidents are. At the current time, I think deliberate and accidental is as far as I can go. Anything beyond that could be speculation at the moment.

We are very keen to get this course up and running. That way we can train both the fire services and land managers, because protecting the evidence is critical to any prosecution we may wish to bring. That is the first part of our training. The second part is the unique skills of that fire investigation. Two of my contractors have just passed their training in the United States, so we are ready to move that forward as and when it is required. We think that could be a massive step change.

Q13 **Charlie Dewhirst:** As for what local authorities could do using the powers they have, is it a case of needing more powers, or is it a simple fact that they are not actually implementing those powers for, say, banning barbecues, and so on?

Rob Gazzard: The issue is what is the problem, and when we understand what the problem is, we can actually work on it. Currently, we place a lot of weight on things such as disposable barbecues, cigarettes or broken glass, for example. I do not have any scientific evidence that they are the causes, and that is the problem. Until we identify exactly what these trends are—and these small, little wildfire incidents are critical because it builds up a series of trends, which will then sometimes result in a big wildfire happening—then we can be specific about what powers we need and what we need to ban. As you will understand from Australia, California and other parts of the world, they have days where they ban certain activities. Well, we need to do

that, but with an evidence-based approach so we are not disproportionate, and we focus on the key problem.

Q14 **Charlie Dewhirst:** What is preventing us from building that evidence base now? Is it the challenge of simply physically being able to identify them?

Phil Garrigan: That is part and parcel of the process, trying to establish the evidence base to inform decisions. As Rob has alluded to, we have an idea of some of the causal factors, the predominance being human behaviour, but we do not have the detail.

In a fire investigation, the cause is one thing; how fire is then developed and spread is another. You asked what local authorities can do, and we talk at length about defensible space. We need to start thinking about how we recognise wildfire as a risk. Certainly, the preponderance of wildfires takes place in rural communities, and we have heard examples of the devastating impact that has on people's lives and livelihoods, but there is also an urban-rural interface where you can recognise there are things that people can do, if it is part of their psyche, they are thinking about this as a local authority to prevent fires spreading when they do occur, firebreaks and defensible spaces being examples of that.

Professor Howard Boyd: This is incredibly important when we look at the role of green infrastructure, greening our spaces to act as both sponges for floods and cooling during heatwaves. Often local authorities will lack the ongoing funding for the maintenance of these really important solutions, which if not maintained properly, particularly during a heatwave, can become the issue. We need to have a really clear understanding of when you are in an emergency situation, like we are this week, what are those sensible, precautionary things you should be doing in that urban-rural interface, so that you are going to be protecting those homes and preventing those fires from igniting in the first place, and doing that in a way that allows all the greening that we want to take place to take place.

Charlie Dewhirst: That is a perfect segue into the next section on rural-urban benefits.

Professor Howard Boyd: You would have thought we had rehearsed it.

Q15 **Barry Gardiner:** I just wanted to pick up on some of the things you were saying there and do that transition.

What about the evidence in the database? The New Forest has done some data collection, and they said that the banning of barbecues, which they have already implemented in the New Forest, was a success, and that the evidence suggested it had considerably reduced the number of outdoor fires. Do we really need to just go on collecting data? Can we not act on the data and on what, for most people, would be common sense? Do not light a bloody barbecue in a forest.

Phil Garrigan: Absolutely. In the nicest possible way, the evidence gathered underpins the decisions, but I could give you numerous examples of where fire investigations have been to the scene and have found disposable barbecues. Evidentially, they have been the cause of a wildfire, a developing fire that has caused impact on a community. Of course, we would want to prevent that from occurring in the first instance.

If I link back to the warning or rating system, there is a point at which that feels appropriate. If the warning is at "very high" or "extreme", my view is that restrictions should be implemented at that point. It might not be specific to barbecues or disposable barbecues; it might extend to open fires or restrictions on the movements of people.

Q16 **Barry Gardiner:** Mr Garrigan, if we were to frame that in terms of a recommendation from this Committee, what would it look like?

Phil Garrigan: Instantly, you would want to introduce a rating system for fire risk. For members of the public, we would go to defined areas and identify the high risk of fire and the significant vulnerability, and as a result a number of restrictions would follow in that area.

Q17 **Barry Gardiner:** Public space protection orders at that point?

Phil Garrigan: Yes.

Q18 **Barry Gardiner:** Great. That depends, presumably, on making sure that people are aware. I know that electronic road signage has been used that can say you are now entering an area of heightened risk, and these controls are in place. Is that something that this Committee should be talking about recommending?

Phil Garrigan: Yes.

Barry Gardiner: Thank you very much. That is really helpful.

Professor Howard Boyd: There is a lot to borrow from other parts of the world, and if it is working there and we have similar issues, let's start making this practical and real. While also building up that evidence, let's get on and start warning and informing, and banning the obvious things.

Q19 **Barry Gardiner:** Moving on now, I want to look at that interface between the rural and the urban, the boundary and the challenges there. You have alluded to a number of those already, Professor Howard Boyd.

What I want to ask you, though, is when you have extreme heat and you have the risk of wildfires, how does that risk interact with other challenges that are associated with extreme heat? I am thinking about the Saddleworth event. Obviously, fire in itself is a huge risk to life, but 4.5 million people were then exposed to heightened air pollution and particulate matter, causing bronchial and cardiovascular problems, and we know that air pollution leads to between 30,000 and 40,000 deaths every year. When we think of wildfires, we tend to think only that it could

destroy property or kill somebody, without thinking of the other impacts. Can you talk us through that, when you have those interfaces between the rural-urban population where there is huge exposure?

Professor Howard Boyd: You have given a very eloquent example of how these different hazards come together to affect people from a health perspective, and the effect can spread from a long way away. I think there is even evidence that wildfires overseas, in the US and Canada, have spread to New York, and have spread across to Europe as well. This is another function for this Committee, working with other Committees, to join up these dots. Air pollution is being looked at by the Environmental Audit Committee at the moment. Heat is a force multiplier of air pollution. Fire is added into the mix. We are just layering the different risks that individuals are facing, and I do not think that the impacts on health in surrounding areas are properly communicated when you have these hazards coming together. Often we are looking at what is happening in the place where the fire is.

I think this is something that your colleagues in the fire service are looking at for the safety of firefighters, looking at the uniforms that are being worn to fight fires in 40° heat—uniforms that are fit for purpose for fighting fires in really hot houses. You need completely different equipment. This speaks to a range of other ways that emergency service providers need to get ready, trained up and learn from other parts of the world.

All of that comes with costs. I know that colleagues gearing up for this season, the next fire season, see this as the new normal, and they are having to dig into resources to get different types of firefighting equipment. Again, we have so much to learn from how other countries are doing this, understanding how you will have people going in for an hour and then taking breaks, because heat affects decision-making capabilities, so making sure that your people are ready for those fires.

Phil Garrigan can speak far more eloquently about that.

Phil Garrigan: It is interesting. If you went back probably 10 years, we would be having a conversation on wildfires around a table of fire officers, to be perfectly honest with you, but the question recognises the scale of the impact that a wildfire has on the broader community, such as the health implications for members of the public of a fire burning for five, six or seven days without being extinguished. Those implications extend to the responders to these types of incidents, my firefighters and other key partners dealing with the issues. We know there are implications for the wellbeing of response staff, too. You are also right about how we would be using those individuals in wildfires during extreme weather. The actions we take as part and parcel of this group are part of climate adaptation.

Q20 **Barry Gardiner:** I want to get as specific as we can, Mr Gazzard. I want to ask you about woodland management and how we can manage our

woodland better, particularly when it is on that interface with an urban population, to ensure that conflagrations do not start—so species of tree being planted, firebreaks—and access is much easier if it is right next to an urban population, so you are expecting more people going through. How can you manage that better?

Rob Gazzard: First, we have written a practice guide. We have made sure we have some really good evidence, and we are currently reviewing that practice guide. We have been working with the Polish Forest Research Institute to look at things such as improved fire and fuel breaks, which has significantly challenged us to understand that quite a lot of firebreaks and fuel breaks that are correct in forestry, do not function and work effectively in other habitats, particularly for protection.

Q21 **Barry Gardiner:** Can you give examples?

Rob Gazzard: For example, the width of the firebreak has always been a really important understanding, but we have never used professional judgment. Now using FireInSite, a tool you mentioned earlier, we have been using the calculations and projections for things like fireline intensity and flame length to start determining that a firebreak is not wide enough. More importantly, we have been understanding that the adjacent fuel to the firebreak is fundamental to its success.

Q22 **Barry Gardiner:** So don't plant pine trees on either side of your firebreak?

Rob Gazzard: Mature pine trees are actually quite resilient. In fact, they are designed to deal with fire. The whole arboreal ecology of most of northern Europe is designed around pine trees surviving through fire. They are well adapted to a fire environment. We need to choose the right species, you are correct, and we are looking at those particular issues.

We need to understand how we plan our sites, so we are doing a lot of work on wildfire management plans to understand how we can get a better response. We are also thinking about how we help the fire and rescue services to respond. Tactical decision making could be made in a prevention sense in the wildfire management plan, and that will help the response of the fire service to be more effective with what is called initial attack, keeping the fires small.

Q23 **Chair:** We will come to this later, but land management and fire management seem to be hand in glove. It is all very well having a firebreak, but if you have vegetation sitting on either side of it, waiting to go up—

Rob Gazzard: In essence, wildfire is about land management. It is a fundamental principle in other countries. In the United States, CAL FIRE, the California Department of Forestry and Fire Protection, is essentially a federal forestry management organisation, and in Australia, forestry in Victoria and South Australia have been really important in creating a step change in how they manage their landscapes by using land management

knowledge and applying that to the wildfire regime. Because they respond to incidents and understand how they work, they are able to take that information and make better recovery post-fire but also to learn for prepare and prevent. One of the benefits I have had in my career is that I have attended lots of wildfires not only in the UK but internationally. I have taken that experience, and I have built it into prevention and preparedness. We need to build a culture of fire in the land management organisations.

Q24 **Barry Gardiner:** The evidence that the Forestry Commission has submitted to us says that there are no legal responsibilities for wildfire in terms of forestry. Some land managers have said that mandatory clearance of brash after felling would be a good idea. First, is that something you would support? Secondly, what are the implications of clearing brash for wider biodiversity in the woodland and the forest? That brash has been there for millions of years, and it has done very well for the biodiversity. How do you trade those things off against each other?

Rob Gazzard: That is a really good point. You will know that in forestry we are trying to balance many different things. We have a duty to look after soils, water, carbon, heritage, access and landscapes, and so on. Forestry is about finding a balance against our statutory duties and those that the UK forestry standard outlines. You are right that brash is an important factor in biodiversity. As it deteriorates, it helps our soils to regenerate, so it is a really important thing. In essence, we have to be proportional to the risk.

In our practice guide we invented the concept of wildfire management zones, four different zones that we use in forestry, a bit like flood zoning. The asset zone is where we have buildings, critical national infrastructure or other services is where we probably will not have any brash. It is proportionate and reasonable not to have it there. We also might reduce the amount of brash, for example, in the buffer zone, zone B. Again it is proportionate to reduce the amount there. In zone C, we can do what we want to do, because that is normal forestry management. We have applied that concept to development planning as well, and it has been used by Surrey Heath borough council, and the same concept of zoning has been used for the first time in new housing developments.

Q25 **Barry Gardiner:** Should this Committee consider recommending that that becomes a legal obligation on land managers?

Rob Gazzard: As a civil servant, I am unable to suggest that, as you know, so I can only give you the facts.

Barry Gardiner: Maybe I should ask that of Professor Howard Boyd and Mr Garrigan.

Phil Garrigan: My perspective on what Rob just said is that it needs to be deliberative. People need to think about how they are managing and mitigate against the risk. Rob has quite eloquently given a number of

examples of where the tactics that are deployed, whether clearing or not, is suitable given the set of circumstances.

So what would I want? I would want a land management plan, with which I would want an assessment of the risk and mitigations against those risks to assure myself that someone has deliberately thought through the implications and captured that in a way that is sensible, logical and legitimate.

Q26 **Chair:** Land managers do not always have a free hand. They have regulatory influences on them as well.

Rob Gazzard: That is why we use the concept of wildfire risk assessment within the wildfire management zone to get the proportionality to ensure that the hazards can clearly be identified and we can have appropriate control measures based against the risk rating that occurs.

Professor Howard Boyd: The Chartered Institute of Housing has just launched a consultation on wildfire guidance for housing providers. I think it is really important that we bring in the people and the homes as well, with over 4.1 million social homes in England, making sure there is the right kind of interface between the urban and the rural environment makes sense, particularly when we look at housing, and social housing in particular. They have only just announced this consultation, but it might be worth the Committee having a look. I am very happy to send it in, or to ask them to send it in.

Chair: We have entered a field of infinite complexity, but we have limited time, so I am going to push on.

Q27 **Terry Jermy:** I want to follow up very quickly on one of the points that Barry raised with Rob. Thetford Forest in my constituency is the largest lowland pine forest in the UK. It is incredibly dry most of the year, but particularly so at this time of year. We have just had the first wave of forest concerts, which are incredibly popular—sold out. I think it was Nile Rodgers last week. Do you have a view on the tension between the need for forestry to increase income—we have had significant cuts in funding to the Forestry Commission over the years—and the push towards diversification and concerts to generate money. There is a risk from that. We are talking about thousands of additional cars, additional people in Thetford Forest and other forests. How does that tension play out? You have to earn some money, income is important, but it does increase the fire risk.

Rob Gazzard: Yes, and I think the Forestry Commission is quite a unique organisation because we balance economic, social and environmental with climate change. That is part of our core business, and it gives us unique understandings. We work in a global forestry market, and I think that helps us to understand this challenge of wildfire very well.

In terms of things like Forest Live, only a month ago, before Forest Live, Forestry England undertook an exercise with Norfolk and Suffolk Fire and

Rescue Services to simulate the evacuation of 3,000 people from Thetford High Lodge and that is part of our commitment, trying to understand the challenges we have and testing our systems.

We have an incident management system. That system we use at the national level—it has been stood up today ahead of the potential risk of wildfires—at the local level and at the site level. That is us demonstrating, working with our colleagues in the fire and rescue service, how we are making sure that we are much more integrated so that when we do have these challenges, such as mass evacuation of an area, we can respond to them.

That is our early preliminary finding. We are working on the evidence that has been provided and the lessons learned. Similarly, we are bringing out a paper, hopefully in the next few weeks, in partnership with our colleagues in the United States, looking at how we address the issue of the urban-rural interface. We have had the pleasure of working along with NFCC colleagues on the Chartered Institute for Housing's excellent paper. We have added and contributed to that, and our paper will be taking it the next step further forward.

We are looking at it in greater depth, not just from the point of view of forestry planning—which is a fundamental issue for us, and we can look 50 to 100 years ahead in some cases—but also how we do that in partnership with our resilience colleagues in local resilience forums and how we do it in partnership with our colleagues in local planning authorities. All these things need to integrate, and also with building control, particularly as we have no performance standards for wildfire in our buildings.

That is an example of us trying to have a very collaborative approach in how we address the growing risk of wildfire, and protect the visitors who come to our sites, as they are the most important part of our business.

Q28 **Sarah Bool:** It has been interesting. There seem to be lots of different holistic approaches to this and lots of different groups working together, but we need that one vision, I guess. My questions are coming from what the Government and national policy are doing.

I think I know the answer, but do you think that planning policy and the law currently include sufficient measures to reduce the risk of wildfires?

Rob Gazzard: Since the NPPF was developed, we have been suggesting or advising Government that wildfires are a critical element within the climate change section. I believe there is a wildfire policy in the draft that has been produced. We have commented to MHCLG, both on the planning side and on the fire directorate side, to highlight the importance of longer-term planning, this connection of the local planning authorities to the local resilience forums, which currently does not happen and which we think is fundamentally important. The community risk registers and the CIRMPs from the fire and rescue service inform that working. We have also developed a new approach of 10 new tools that could potentially be used to significantly improve both the adaptation of new

properties, but also the potential retrofitting of existing developments as well. We can send you a copy of that report if you fancy.

Those 10 issues are based on a lot of work from America, particularly from the Camp fire and the Palisades fire, things such as structure separation distance, which we think is fundamentally important to protecting things, and things such as moving beyond single curtilage. The concept of defensible space, which Phil highlighted earlier, is based on putting a gap in a forest. We know that what burned in 2022 were terraced houses and other connected properties, and that highlights what is called wildfire pathways. I talked about vegetation fires and wildfires. Well, actually, things like gates, cars, decking, all those kinds of things can also become a fire pathway, through which a wildfire may have spread. Similarly, those things may also create wildfires themselves. It works both ways.

Other things we are looking at are sheltering and evacuation. How do we improve on that, because when we have extreme wildfires, that is potentially going to be one of the only tactical decisions we can make? So, that needs to be really thought through. We also need to work across the planning, resilience, forestry, land management and other sectors to ensure that approach is going to be effective.

Professor Howard Boyd: Very briefly, I think it can be strengthened. Across all the resilience aspects, certainly when I last looked at work in this area, things from a flooding perspective were being watered down. This is becoming critical and needs to be designed in from the start. Strengthening is where I would urge the Committee to focus.

Phil Garrigan: Not to go into a lot of detail around the thinking behind the decision making, the bit that I am drawn back to is the cross-governmental application of powers, strengths, knowledge and understanding. Like anything else, if we get the governance right with regard to the oversight of wildfires and the risk, everything else flows from underneath it. So, ensure that MHCLG, my respective Government Department, and DEFRA are working together to own the issue and come up with mitigations to support communities.

Talking about green shoots, I think some of that stuff is starting to come to fruition now. I think there is a cross-governmental conversation taking place. More latterly, we are seeing investment from MHCLG in a wildfire capability, which will be deployable nationally. Again, it is really strengthening the position and the understanding of wildfire and the response from the fire and rescue service.

Q29 **Sarah Bool:** Yes, I think you are right. At the moment, as I understand it, there being no statutory duty to consider wildfire risks in land management is one of the big problems. Another question is: do we think there should be a national wildfire strategy in England, just to make sure that everyone is supported on all levels? I am sure you will probably welcome that more than anything else.

Rob Gazzard: What a strategy could do is address the adaptation issue, which is in essence what this Committee is about. We are currently doing mitigation, which is excellent work that Phil's colleagues are doing. That should not be undermined, as it is really important. However, we are currently reactive and what we want to be in this is proactive and, in essence, transformational.

What Australia, New Zealand and Europe are going through is transformational. They are looking at much more integrated working across the fire, forestry, land management and resilience sectors, and so on. They are joining them all up, and that is really, really powerful. I think that is potentially what we need to start moving towards, that transformation.

In essence, it is underpinned by what is called integrated fire management. It is a very holistic approach to fire, bringing all the best component parts out. You will expect to see in Australia, the United States, Canada or any other country, land managers in the same incident management teams as the fire and rescue services, working collaboratively to get really great outcomes. We understand land use; they understand fire. When you bring them together, you have a very powerful thing and you can take that powerful thing, not just into response but into prepare, prevent and recovery.

Recovery is the fundamental thing, because if we do not get recovery right, we create the next fire for the future. We can make some really good decisions on suppression of fires in the response phase, but it could be a thousand years before we are able to recover the damage that is done. If we had a different decision in the response phase, we could have just a few years' recovery. This is fundamental, particularly protecting natural capital. The Forestry Commission has tens of billions of pounds' worth of natural capital in our estate that we look after on behalf of the Government and the public. That is hundreds of millions of pounds of natural capital, particularly carbon store, that we need to protect across the whole land management sector.

Professor Howard Boyd: I think the overall vision strategy is incredibly important, but we must lock in the statutory duties so that this is something that is done and is seen as absolutely critical. Then there is looking at some powers that already exist, adaptation reporting powers, making sure that there is a strong focus on wildfires.

Going back to what I said earlier, make sure that this is linked to national preparedness. Too often, the work that we are doing around preparing from a climate change perspective is seen as being part of the responsibilities of DEFRA and DESNZ. It is every Department's responsibility to get this right across all of the hazards. It has a massive health and economic impact. We have seen, I hope, from the evidence we are all giving how it touches on all of these different areas. Yes, the more that this is locked in, both in terms of locking in the resilience

rather than the vulnerability, locking it in from a statutory perspective, the more we are going to be prepared.

Rob Gazzard: The strategy will also give us the opportunity to look at monitoring and reporting, and it would be really important to see what is successful and what is not. Also, if we are not being successful, what changes do we need to make? The strategy has those benefits as well.

Phil Garrigan: All I would add is that I think introducing a strategy allows it to surface areas where there is potential conflict or potential implications. I give the example of the wilding programmes. I fully understand about the biodiversity, but understanding the implications from a fire and rescue service point of view and a response perspective allows us to get visibility on that at a sufficient point in time to ensure that the policies that we are adopting, which we would be supportive of, are considered in that context. If you have a strategy, you write some of this stuff down, and that allows people to steer or shape the final product.

Q30 **Sarah Bool:** That is an interesting point. You were talking about the firebreaks and understanding the fuel behind them, linking that information together and how that works. As you said, communication is key. I think we assume that we are just a cold country and that we are never going to have any problems and that fires are abroad, not here, but it is a real risk.

Rob Gazzard: I think that is the other challenge. We perceive wildfire as a threat because there are heatwaves and extreme hot temperatures, and so on. We have had wildfires that affected residential property in minus 2° in February 2018, in Sussex. It is about the condition of the fuel. There are subtleties and nuance about wildfire, which we need to bring out and discuss. Otherwise, we will make decisions or take, I suppose, a strategic direction that may inhibit us from being fully resilient to the challenge.

In essence, wildfire is interconnected and interdependent with other natural hazards like flooding, storms, pests and diseases, which the Forestry Commission is a control authority for, and we are seeing a massive increase. We have to juggle the balance that I talked about earlier. If we do not get those interdependencies with other natural hazards understood and how they interrelate, wildfire will become an increasing problem to us.

Let us take Storm Ophelia, which happened in Portugal in 2016. That merged with a wildfire, resulting in 66 people dying. This interdependency is fundamentally critical. Northumberland Fire and Rescue Service responding to wildfires in Kielder Forest, which were affected by Storm Arwen, finding progress incredibly hard to undergo. Again, this is the relationship between land management issues and wildfire, and we need to focus on the capabilities, capacity and assets we

require to ensure that we can support our colleagues in the fire and rescue services.

Chair: Moving on, we are going to look at some questions around response.

Q31 **Josh Newbury:** My constituency of Cannock Chase is obviously named after the former royal hunting forest, but it is now a patchwork of public and privately owned land. We have plantations, ancient woodland, heathland, a quarry, tourist attractions and so much more, so the risks are numerous and are obviously growing because of these hot, dry summers that we are increasingly having now.

I have personally been in Cannock fire station when crews were called out to fires in the forest, and I have spoken to firefighters in my area about this. For the benefit of our inquiry, I would like to drill into the risks that fire and rescue services are facing when they go out to these wildfires. Phil, could you tell us what those main challenges are, and how that varies across different parts of the country?

Phil Garrigan: It does vary across different parts of the country. We have talked about metropolitan areas like London, and then rural areas that are served by fire and rescue services. The risk to firefighters is broadly the same if they are responding to the same incident type, but the demands placed on the service may be slightly different, having a wholetime capability as opposed to on-call provision.

A lot of the firefighting response in rural environments is provided by volunteers on a retained basis. They have a normal working day and then they give up their time, so the impact is huge, not only on the organisation that allows them to help and support its communities, but over a protracted period—and I use Saddleworth Moor or Winter Hill by way of an example—we had firefighters on the hill for six, seven days. In rural areas, to retain firefighters for that length of time is a challenge, not only in regard to the demands placed on them as individuals, but also in regard to the physicality of the role.

There is a reason we are on a hill because it is extremely hot and they are dealing with a wildfire, so there are obvious risks to their wellbeing, to stay hydrated and ensure that they are effective in their role, and the ability to stand them down over a period of time. But, like many people have said, if it is your community that you are seeing burning, you are keen to remain at the forefront of the response.

It is challenging. The circumstances and resourcing are arguably different, but you will equally understand, and I referenced this earlier, having a national capability to support communities across the whole of England allows us to be able to mobilise resource. We have mutual arrangements in place for fire and rescue services to be moved from one place to the other, but if I use the example Emma provided previously, there are occasions when the UK is hot. The UK is at an extreme level, 2022 was an example of that. We are seeing this become more frequent.

I sat as the gold commander for the UK's response in 2022, where you had 14 major incident declarations that we would normally resource into, but we were in a position where we could not. We could not move fire appliances or firefighters from anywhere in the UK to support some of the other services. They had to deal with the resources that they had. Without making it overly political, we have seen the number of firefighters reduce significantly over the last 10 years as the number of wildfires increased.

The on-call system, the system that is the underpin for a lot of these rural communities, has become more challenging to sustain. It has become more fragile, and that is a cause for concern for me and the fire chiefs in those particular areas. There are implications to the health and wellbeing of the responders. They know what they sign up to, but equally over an extended period, it has implications. There are implications based on the operating model to their normal lives and the kind of contribution they make.

There is also that foreseeable future for us where wildfires are more prevalent, burn longer and are fiercer. Whether we have the requisite capabilities and numbers to be able to deal with those eventualities is to be debated.

Q32 **Josh Newbury:** You picked up on something that I wanted to ask you about around volunteers and reliance on on-call. Obviously, that is always going to be there, but in areas of the country like mine, but particularly like North Yorkshire where you see this happen quite often, does the response from the community grow when you have wildfires, in terms of the number of people coming forward, or is the reverse true that people are put off when they see what they are having to deal with? Like you said, they are well trained, but they are volunteers.

Phil Garrigan: It is interesting. I turned the telly on this morning, and it was reflecting back to 1976, given the significance of the heat, and it showed images of firefighters dealing with a wildfire surrounded by members of the public. You fast-forward to where we are now and the litigious environment that we operate in, fire and rescue services would be reluctant to use members of the public on the frontline to deal with incidents in case they hurt themselves or inadvertently hurt someone else.

There now becomes a balance that draws on other stakeholders who are more familiar with the risk and can complement the command system. For me, the use of volunteers and the community is part and parcel of the solution, maybe not necessarily immediately in the response, but certainly in the preventive measures that you would want to put in place at a community level to prevent a fire from occurring in the first instance. What is evident to me is that the best way to deal with wildfires is to stop them starting in the first instance.

What I would say, and I will close on this point, is that where we have had large, sustained events or incidents, the community has been nothing but supportive. While they have not necessarily landed on the frontline, fire stations have been full of drinks, water and food because they recognise that the crews are away for long, extended periods of time and they are coming back, and they are looking to recognise the contribution that those teams are making within those communities. The public recognise the role of a firefighter in that sense.

Q33 **Josh Newbury:** Fantastic. Just on resourcing, we saw that last December the National Fire Chiefs Council put out a statement calling for those fire and rescue services like mine that are frequently having to deal with wildfires, to have additional funding, and you mentioned things like PPE, off-road vehicles, detection systems and joint working with land managers to prevent risk. How would you like to see that wildfire-specific support work, and how flexible should it be? You mentioned national resource, should it be on that level or should there be a formula that recognises risk at an individual service level?

Phil Garrigan: If I am honest, it is both. We talk about the national risk, and the national risk is distilled down into local areas and the fire and rescue services come up with their community risk management plans. For example, Merseyside might look significantly different from North Yorkshire. You would expect wildfire to be a higher consideration in North Yorkshire, and the kit, equipment and training that firefighters have are reflective of that risk, to a degree. It probably warrants more investment in those areas.

Equally, there is the escalation; the large-scale event that overwhelms the provision within a particular fire and rescue service, and how that is supported through mutual aid arrangements. The development of that capability is key. I made reference to MHCLG and the investment it has made more latterly in the development of a wildfire capability. It is at a pilot stage at this moment in time. There are five fire and rescue services, six teams, being developed. What I would hope to see is an evaluation of the pilot, a recognition of the future requirements of the sector, then to build on the pilot, sustain it and embed it within the operating principles of the national resilience capability.

Q34 **Josh Newbury:** The announcement that came out on Saturday, does that give you some hope that the additional resource is going to be sufficient? Is it very much to be seen how much of an impact that has?

Phil Garrigan: I suspect it is to be seen. That is only because it is a pilot, and like any pilot, you would want it to be sustained in the first instance, but extended because it is obvious within the conversations we are sharing today that the threat and the risk is increasing, and the significance of the capability needs to reflect the risk that is placed on the fire and rescue service.

Q35 **Josh Newbury:** On aerial firefighting, we know that is not as well-

resourced or co-ordinated as it is in southern Europe, for example. Rob mentioned earlier that we are experiencing Mediterranean weather this week. Do you feel that aerial firefighting is an area that should have more focus at a national level at this point?

Rob Gazzard: Land managers are currently resourcing that asset and capability. My experience of working in the US and Europe, particularly with the EU civil protection mechanism, is that aerial assets have to be managed by people who are trained and competent, because they are a high-risk, although high-benefit, resource. It requires centralised working to make the best out of the asset. We use them a lot for normal forestry, and land managers will use them a lot for normal land management practices.

But when you switch over to wildfire, you need specialist people who understand this. It particularly needs ground units that can take advantage of what the aerial assets are delivering on the ground. That is where our colleagues in Spain, particularly the Ministry of Agriculture, have a good example of how they are using their national pool of assets through the Ministry to help resolve some very serious wildfires throughout Spain.

The other challenge here is that the contribution of land managers needs to be represented and recognised. If we look at Langdale, Swinley and Wareham Forest, the Forestry Commission put huge amounts of resource in cutting firebreaks—what is called an indirect attack—that we are specialised and competent to do, to remove the fuel so the fire service can be successful in their fire suppression. We saw that through gamekeepers at Saddleworth and Langdale, and also the farming community at Langdale.

This indirect attack that land managers deliver, and are very well placed to do, is an asset that we need to recognise. This goes back to an integrated approach to working, with everyone bringing their best assets and skills together. You might touch more on that issue with the second panel.

Chair: We will.

Phil Garrigan: That is a capability gap for the UK fire and rescue services. While there is provision out there, we do not find ourselves in a position where we can direct a firefighting capability, and on occasions that is a necessity.

Q36 **Josh Newbury:** The final question is about water availability. This is something that we have looked at a lot as a Committee. We have many parts of the country that are drought stricken now. Is there any overlay between those parts of the country and the risk of wildfires? Are we seeing water constraints being an issue in tackling wildfires?

Phil Garrigan: Water constraints are an issue for tackling all fires, irrespective of whether it be in a rural or urban setting. It is a problem.

More often than not, fires develop more rapidly than we would want them to because of limited water supplies. It is the kind of conversation that we continue to have and hold with utilities companies. In 37 years of being a firefighter, I have seen the challenges around water become more prevalent. That is maybe a separate issue, but it is certainly a challenge for the sector.

Professor Howard Boyd: When we had the Wellington fire, when the fire brigade arrived there, the water pressure had been lowered. There is uncertainty as to whether it was because we had a sudden spike because of the heatwave; 50% increase in water usage around London; whether it was reducing the water pressure to help minimise and lower usage; or whether there were some tests going on, but there was a delay. Again, this alert that there is a fire risk and making sure that, as soon as there is a fire, there is the best ability to get the water supply. There was a delay of many hours before the water was at the pressure needed. So, this is something to be looked at.

Rob Gazzard: We also find that we are now moving to less water-based systems of suppression, because moving water around a fire ground is one of the biggest logistical challenges that we can do. We are looking to adopt practice from Europe, United States, Canada, New Zealand and Australia, where they use far less water in response to their wildfires. That is why the Forestry Commission sits on the Environment Agency's national drought group to understand these challenges.

We have been seeing this challenge since 2016 right until the present. The wildfires we are suffering now took two or three years to develop. We used to have wildfires that were episodic, once every few years in five years of wet period. We have had prolonged wildfires since 2018 to present. That is unprecedented for us at this moment in time in the UK. That is creating a big challenge.

Chair: We could carry on this conversation all day, I have no doubt about that, but we are time limited and we have another panel from whom we need to hear. Thank you for your attendance. You have been enormously helpful. We will move to the next panel. I am not going to suspend; we will make as quick a transition as we possibly can. My colleagues will bear in mind that, because I have not suspended, the microphones remain live. Thank you.

Phil Garrigan: Thank you very much.

Professor Howard Boyd: Thank you very much.

Rob Gazzard: Thank you.

Examination of witnesses

Witnesses: Richard Bailey, Professor Sallie Bailey and Henrietta Appleton.

Q37 **Chair:** Thank you all very much. You heard the first evidence session.

Good morning and welcome to you all. Just for the benefit of the record and those following our proceedings, can I invite you to introduce yourselves to the Committee?

Richard Bailey: I am Richard Bailey. For over three decades I have worked as a gamekeeper, predominantly in the uplands. I am here today as a co-ordinator of the Peak District Moorland Group. We are often the first responders to wildfires, so we are motivated to stop them. It was brilliant hearing you read that opening statement, Chair. Unless Westminster stops deliberately building up huge fuel loads of vegetation, it is only a matter of time before somebody is killed.

Chair: You may have noticed that we love building up our fuel loads in lots of different ways. Thank you for that, you are very welcome to the Committee.

Henrietta Appleton: I am Henrietta Appleton, the Game and Wildlife Conservation Trust's Policy Officer, with a special interest in the uplands. I have been looking into wildfire policy since the 2023 wildfire workshop that the trust ran with the Climate Change Committee.

Professor Bailey: I am Sallie Bailey. I am here on behalf of Natural England, who are the Government adviser on natural environment and nature recovery. We help people access nature and benefit from it. As chief scientist, I ensure that we are an evidence-powered organisation, using the best science, evidence and analysis to inform our advice to Government on developing guidance and decisions.

Chair: Thank you all very much, you are all very welcome. We are going to start with the examination of wildfires in rural communities. Ben, welcome to the Committee. You are going to lead the questioning in this part.

Q38 **Ben Goldsborough:** Thank you very much, Chair. My South Norfolk constituency is blessed with broads, grassland, large arable, ancient woodland and heritage sites like the Roman town of Venta Icenorum. We know all too well the threats that wildfires bring to our neck of the woods. For the benefit of the Committee, I would be interested to hear your experience of what the different impacts would be from wildfires on those rural communities, be it environmental, economic, health or social.

Professor Bailey: We heard a lot in the first session about the impacts on people. The risk felt first of all, fundamentally, is risk to life, which we of course take very seriously; risk to property, businesses and livelihoods; the secondary effects of wildfire in terms of air quality; those secondary stresses to life, impact on communities in terms of stress; impacts on our wildlife and nature; and I would also add the release of carbon. We are here on what is possibly going to be a red day, and tomorrow certainly will be a red warning on heat. The more we release carbon dioxide into the atmosphere from fires, the less we are doing to abate the driver for the significant increase in wildfires that we are seeing through climate change.

Richard Bailey: We have heard about the 2018 Saddleworth Moor fire. We have had wildfires forever, but 2018 was when it really kicked off and entered the public arena. Being a gamekeeper in the Peak District, we seem to be the boiling pot for all of these moorland wildfires, and the socioeconomic and environmental impacts are not just on the wider public, but on the communities that are on the ground. They are crucial in maintaining that feel. We get a lot of visitors to the Peak District, the first national park, and in the first session we heard that with that comes these antisocial problems.

We have so many red and amber-listed ground-nesting bird species that nest on moorland. Predominantly, April and May is when all these birds and the mountain hare are nesting and breeding in the Peak District. The fire season is changing to be earlier now, from February, whereas before it was April. The landscape-scale wildfires are devastating.

Knocking on to the local economy, six weeks ago we had the Snake Moor fire. We were really lucky that it did not burn across the A57, the main Snake summit road. If that had crossed there, and it was a matter of metres, there is no way we would have stopped it. The entirety of the Derwent area, all the way up to Sheffield, would have gone up in smoke. It cannot carry on. This fuel load issue is devastating.

Henrietta Appleton: I would agree with both Richard and Sallie on the broad effects. I would like to raise a supplementary point that, while we mention all these costs, we do not know what all of the costs are. We do not know what the effect of a wildfire is on our biodiversity. There are estimates on carbon losses and that sort of thing. We tend to quantify wildfire in terms of area burned rather than the impacts.

Going back to a point you discussed with the first panel, the definition of wildfire, I would like to flag that the United Nations Environment Programme, in its rapid response assessment of wildfire, back in 2022, proposed a definition of wildfire as follows: "An unusual or extraordinary free burning vegetation fire which may be started maliciously, accidentally or through natural means, that negatively influences social, economic or environmental values". That is important because it highlights values other than just carbon, and therefore the need for prevention and not just suppression.

Q39 **Ben Goldsborough:** That is a really important point, Henrietta. We have written testimony here that is important to read out. It is from a gamekeeper. It says: "When the flames are gone, you walk around the ground. The devastation is total. Where there should be birds calling, there is silence. Habitats are destroyed and wildlife is lost. These are the things that you never forget." We are also talking about that mental health aspect of this. We are talking about the cultural impact, because these are people's jobs that have probably been passed down through generations.

One thing I would be interested to hear is that some evidence we have

been given has talked about how there is a long-term impact. It is not just the immediacy of the wildfire that you have to deal with, but it is issues such as insurance. It is becoming inadequate or unaffordable for businesses or homeowners in those areas. Would you say that rural areas are paying a rural premium for living in these places because of the threat and changing climate? I would be interested in your views on that.

Henrietta Appleton: I cannot comment particularly on insurance, but picking up on the longer-term impacts, as you rightly say, we look at the immediate impact of a wildfire and we look at, for example, the carbon losses, the smoke impacts, at that moment in time. When it comes to the ongoing impacts, you have what you might call the legacy impacts of the wildfire. If it has been severe enough to create a bare landscape surface, you are going to have ongoing issues of wind and water erosion of the carbon. When it comes to air quality, the smoke particles can have secondary effects, so that you end up with additional air quality impacts like ozone.

We look at the two to three weeks of the wildfire—in the case of Langdale it was five months—we look at the immediate impacts, and we do not look at the longer term. The other point I would make is that the impact of a severe wildfire affects the ability to restore that site. That has longer-term impacts, not only on the carbon in that peatland soil, but also the surface habitat, biodiversity and the broader recreational value, and that sort of thing.

Richard Bailey: I would just like to add that we have talked about the severity of wildfires. We have to remember that a lot of these wildfires, we have used prescribed burning, and I am sure you have had loads of responses about why we are not doing more prescribed burning. The early wildfires that do not affect the peat level, it is damaging. We have heard from Henrietta that it is damaging on a larger scale, but because it is not burning the peat, it is like a prescribed surface fire, flashing off the surface. It is when the peat is drying out and starts igniting, like we had at the Snake Moor fire.

This is an area that was rewetted over 13 years before. We had plastic dams trying to rewet that moorland and it was the best site, deep peat, owned by National Trust. Within two yards of these dams, there was peat burning. We were putting out peat. That is the damage we have to mitigate against. This continual increase in surface fuel load is having these much hotter fires. I am biased. We need to go back to prescribed burning in a sensible fashion at the right time of year. The top scientists from Exeter and York back this up. It is totally at odds with what Natural England is saying and what they have implied to us.

Q40 **Chair:** Richard, you are a gamekeeper yourself. You are part of a team of how many?

Richard Bailey: We represent 50 in the Peak District.

Chair: I am just talking in the moorlands.

Richard Bailey: When I was a gamekeeper, it was a team of three.

Q41 **Chair:** How long have you done that for?

Richard Bailey: It was 32 or 35 years, depending on YTS years.

Q42 **Chair:** So you have seen quite a change of activity?

Richard Bailey: Yes, absolutely.

Q43 **Chair:** You have your own personal, first-hand experience of being out as a first responder? I do not want to put words in your mouth.

Richard Bailey: Yes, absolutely. Moving to the Peak District, it is a boiling pot.

Q44 **Chair:** Sallie, there was quite a direct challenge to you there, talking about land management. We heard from the first panel that land management has to be fire management.

Professor Bailey: Yes. I would like to respond to that. Absolutely, land management is part of the response. A lot of that, talking about all habitats, is ensuring that there is a diversity of habitats to make sure that they burn at different rates. Prior to ourselves, we heard a lot of talk about the value of bringing in a diversity of habitats, not having monocultures of any species. I would suggest that Molinia and common heather are a monoculture in some circumstances. They are very flammable species, and they will, again, lead to a lack of break in a fire that enables it to burn through.

Q45 **Chair:** You get a lot of Molinia on Dartmoor, do you not?

Professor Bailey: There is a lot of Molinia in Dartmoor and many other upland areas.

Q46 **Chair:** One of the effective controls for Molinia would be the Dartmoor ponies?

Professor Bailey: It would, yes.

Q47 **Chair:** You will have seen the coverage recently of Natural England and the possible consequences for its regulatory regimes for Dartmoor ponies. Have you any views on that?

Professor Bailey: I can absolutely comment on that. It is not in Natural England's gift or desire to look at culling Dartmoor ponies.

Q48 **Chair:** There is a reason why people think that might be necessary, and it is about the limitations on the availability of grazing on Dartmoor.

Professor Bailey: Yes. There are a number of stresses in Dartmoor, with overgrazing in some areas and undergrazing in others. Dartmoor ponies eat young Molinia as they are less selective than other species that are grazing on Dartmoor. They are less selective, and they will eat young

Molinia. They will not take mature and dry Molinia, so they are part of the solution. Natural England does not advocate the culling of Dartmoor ponies.

Q49 **Chair:** Having the ponies is good for—

Professor Bailey: Having grazing is good—

Chair: Having grazing is good.

Professor Bailey: —in terms of reducing fuel load. Looking at all habitats, and I will come to uplands in a minute, having water in the landscape—again, we heard that the requirement for access to water is important in terms of wildfire suppression and response, access to the land itself is a key challenge. Coming to water, we know that healthy peatlands are wet environments, and because they have a high water table, the sphagnum that dominates those environments does not burn.

Within those environments you will have some occurrence of heather, but the heather and Molinia occurs when those peatlands have been drained and the water table is reduced, and where there have also been prescribed burns on those moors. As we heard from Henrietta, burning on moorlands can set off a chain of negative feedback where the peatland becomes damaged and desiccated and where vegetation is lost, which increases erosion that has the impact of further peatland washing off and eroding, creating hag and having impacts on water, drinking water. Also, the bogs lose their ability to retain water.

We are talking about climate change today in the context of global warming, but another consequence of global warming is increased intensity of rainfall events, as some of us felt in London last night. If we damage the peatland or bog's ability to act as a sponge, it loses that ability to mitigate floods. Noting that if the peatland has become dried and damaged, you are more likely to get a fire that goes down into the peat, rather than a flash fire, the consequences of burning are significant, releasing more carbon and making those habitats even harder to restore. We are all in agreement that rewetting is a step in the right direction.

Q50 **Chair:** Richard gave us the example a few minutes ago of the Snake, which was rewetted peatland.

Professor Bailey: Yes, I would like to know more about that example, because certainly the examples that we have seen where there is rewetting taking place show a direct response in terms of being a firebreak. Effectively, a wet sponge cannot burn.

Richard Bailey: I would love to comment on that. I have seen lots of the images, some of which Sallie has shared on the Natural England blog. We hear those phrases about rewetted areas putting out fires, being green oases because of sphagnum abundance, but I have never been on a wildfire where we have looked at the incident command and said we do

not need to put direct resources into those areas because rewetting has been carried out.

The trouble is that, because sphagnum is wet, as any gardener will know, a seed will germinate and grow if you put it in a medium of peat and it remains wet. We are getting a huge build-up of vegetation in areas that we previously have not had it, and that is due to the reduction of grazing and prescribed burning in a controlled manner.

Q51 **Henry Tufnell:** Can I touch on this point about the licences and the changes in the peat depth. It has gone to less than 30 cm compared with the previous 40 cm. I understand that a lot of that change was underpinned by Natural England's evidence review. I should declare an interest that my dad has been a non-executive board member of Natural England since summer 2024. In terms of the scientific evidence underpinning those restrictions, the Committee has had evidence to suggest that the transparency and methodology behind it should be questioned. Sallie, are you able to comment on that?

Professor Bailey: First, on the 30 cm point, it has changed over time as more evidence has come to light in terms of the hydrological functioning of peat. It is deemed now that hydrological functioning can happen at 30 cm, so that has driven the change.

Q52 **Henry Tufnell:** The Future Landscapes Forum claimed there was no published scientific evidence supporting the claim that 30 cm is superior to 40 cm.

Professor Bailey: We can provide more information on that.

Q53 **Henry Tufnell:** Do you think that is wrong?

Professor Bailey: Yes. Turning to Natural England's evidence review 155, which I think is the document you are talking about.

Henry Tufnell: Yes.

Professor Bailey: That document was an evidence review that built on an evidence review done in 2013, looking at additional evidence that has been published since then. It was done following the PICO method. That is a methodology used to determine the method of searching literature, grading literature according to its quality, and it is used by NICE for clinical excellence and also the Cochrane review. That methodology was then scrutinised by our Natural England science advisory committee, who are a group of independent experts that advise Natural England on its science. Following the guidance in NEER001, by Stone in 2013, which we use to develop all our evidence reviews that are published, we also ensure that we are following that rigorous standard.

Q54 **Henry Tufnell:** The big complaint was that there was no comprehensive assessment of cutting or non-management scenarios in respect of the evidence base that you set out.

Professor Bailey: We developed those exam questions to follow the PICO methodology, based on the question that was directly being answered, around burning.

Q55 **Henry Tufnell:** So you would dispute the fact that you did not assess those two situations in terms of cutting and non-management?

Professor Bailey: I would have to look at the document, and I can give you that answer in a follow-up.

Henrietta Appleton: The point I would like to make is that it is important that we get a balance here. The evidence review focused on managed burning. We need to look at a much more holistic approach when we are considering assessing the management tools that we are going to use. There will be a tool that is appropriate for one site and not appropriate for another, so it is important that we take the evidence that we have to evolve and improve our practices, rather than necessarily saying this one is good and that one is bad. By doing that, we will balance more of the outcomes that we want for our uplands, and not just focusing on carbon.

Q56 **Henry Tufnell:** Building on what Henrietta just set out, evidence has been submitted that the licence process is overly complex, slow and impractical, and that it had to go to Ministers for personal approval in order to get that through. That does not necessarily sit well with what Henrietta just set out. Can you comment on that, Sallie?

Professor Bailey: I can comment that DEFRA owns that process, so it would be for DEFRA to comment. Both Natural England and the fire and rescue service advise on licence applications.

Q57 **Henry Tufnell:** Does that concern you?

Professor Bailey: It is something to learn more about, yes.

Richard Bailey: It is interesting hearing that DEFRA is now coming into it. With regard to NEER155, I emailed you all on Sunday afternoon or Sunday evening. One of the reviewers admitted that he could not pretend to have read it end to end. Another said their brain could not keep track. The reviewers were given no written brief or terms of reference, no templates or scoring systems.

It goes on to say it was so bad that DEFRA has disowned the report. Having told Parliament that it had been rigorous, it now says its inaccuracies are matters for Natural England. It is a complete mess. It does not have to be so difficult. We can have agricultural implications and agronomists having the diversity of vegetation without what we are seeing at the moment, which is these huge wildfires. It is just getting worse. It does not have to be like that.

Q58 **Chair:** Sallie, I will bring you back in. Let us just remember that we are here to talk about wildfires. Obviously, controlled burning is one aspect of

that, but I want to keep it on wildfires.

Professor Bailey: First, we all received a strong selection of views on Sunday night. I am not sure how that fits into the usual consultation process. My second point, which I was going to raise a little while ago, is around further developing that evidence base. Natural England is starting an evidence review on nature-based solutions for wildfire. The first focus of that will be in the uplands. Henrietta and I discussed that at the end of last year, and we are looking to bring in experts, as appropriate, from external sources. That is under way, and there will be further discussion around that.

Chair: Henry's declaration of interest prompts me that I should have declared that I own and farm land on Islay, some 400 acres of which are probably the sort of land we are discussing. In terms of the Select Committee, we are not a court of law, so we will all bring our own background and whether it is emails on a Sunday evening or any other source of information, we all have our own backgrounds and information.

Q59 **Henry Tufnell:** As a Welsh MP, I want to bring in this aspect around devolution. Keeping with controlled fires and prescribed burning, obviously you have different regimes. In Wales, we have a burning season. As Natural England, how do you interact with those devolved regimes, and how do you learn from them? What is that process like?

Professor Bailey: We do our utmost to share evidence, but policy is a matter for each country.

Henry Tufnell: It sounds like a very minimum interaction.

Professor Bailey: Natural England does not set policy.

Q60 **Henry Tufnell:** Sure, but in terms of gathering evidence, understanding what is going on, looking at different ways to approach this issue?

Professor Bailey: We have a chief scientist group where we look at evidence across the piece to ensure that we are all using the best evidence available.

Q61 **Chair:** And come to different conclusions.

Professor Bailey: I am not going to comment on that.

Q62 **Barry Gardiner:** Mr Bailey, when we were looking at this aspect of wildfires in the Environmental Audit Committee, we heard that there had been a wildfire that came up against a properly rewetted peat bog in Wales, and it had then been extinguished adequately. I wanted to ask you, because you probably accept that it seems incongruous to suggest that, by setting a fire, you are doing something to stop wildfires; we have been talking about barbecues and not having fires. We understand what you are saying about the fuel load on the landscape, but when you have those controlled burns—you mentioned the impact of wildfires on birds, invertebrates and biodiversity—what is the impact on biodiversity of that form of controlling the fuel load?

Richard Bailey: If you want to look at areas that have historically used prescribed burning, when I first started in my career, it was before the days of mechanical tractors cutting, so prescribed burning was a way of getting this uneven aged mosaic across the countryside. It is why a lot of the most loved moorland sites are designated SSSIs, SPAs, ESAs, simply because of the diversity of wildlife. It is because of that historical management that you have this massive diversity.

Q63 **Barry Gardiner:** I asked you specifically about the impact of controlled burns. You were suggesting that wildfires have an adverse impact on biodiversity. I am asking you why controlled burns do not have the same impact on biodiversity.

Richard Bailey: Yes, sorry. Simply because, as you were saying, we have a burning season, October to 15 April, and that is when the peat is wet. When I first started burning, we wanted hot fires so that you burned all the stick vegetation. Now, we have gone to cool burns that are low-intensity burning, so you are flashing the leaf and dead matter off the surface. That is leaving the sphagnum and mosses behind.

Q64 **Barry Gardiner:** Two things follow from that: one is that it was a good way of getting the excess fuel load off the land, so presumably grazing or cutting then clearing would be equally effective. I am quite sure you will respond. Also, the purpose of doing it as a controlled burn is actually for grouse management, is it not, and the green shoots that are then coming up after—

Chair: I am sorry, Barry, but this is taking us off wildfire. We all know there are multiple reasons, and of course driven grouse shooting is one of them. There are other reasons, and you are now going to take us into a debate around driven grouse moors. I am absolutely not going into a debate on driven grouse moors.

Richard Bailey: Could I just add that you made the comment, and it was very well put, about why do we not just use cutting and removing the cut trash off the site. That does occur. The issue is that you have these huge tractors accessing sensitive peat areas. The whole structure of peat is getting damaged. We use dual wheels on the cutting machines because peat is wet and they get stuck, and when you get multiple vehicles stuck, you make a right mess. The trouble with cutting is that you scalp the ground, so all that microtopography is then like a billiard table, which is bad for water run-off and for plant and invertebrate diversity.

It is an option in some circumstances, as Henrietta said, but it does not work where there is exposed rock because you are breaking machinery. If you do not remove the trash, like we saw at Snake six or seven weeks ago, the smouldering brash that was left was igniting the peat, because you have a surface fire, all that fuel load sat on top of the surface, and that smoulders and burns the peat. We like cutting, but it needs to be in the toolbox with other methods, grazing and burning.

Professor Bailey: We also like cutting. Sorry, I misunderstood your previous question about cutting, as I thought you were talking about peat cutting. Yes, cutting and mowing are one of the tools in the toolbox. It is one of the most useful tools, noting that some topography will restrict it and noting that the regularity in the way that cutting is done will serve as a viable suppression of fuel load, as will grazing where appropriate.

The benefit they have is that they do not damage the peat surface in the way I described earlier. I am not convinced that cutting is always done on saturated bogs; it is done on drier bogs as well, those that are already damaged and drained. It is about being judicious in the choice, but if the cutting is done in a regime to suppress fire, it is a viable alternative.

Chair: I am going to move on, because I am making a dreadful job of chairing this and we are meandering all over the place, but we will get there in the end. Terry, you were going to look at the rural response.

Q65 **Terry Jermy:** The problem is, when you get the late stage, lots of this has already been covered but it is a good opportunity to confirm knowledge. Richard, we heard from Phil in the earlier session what the role of the fire and rescue services is in detecting and responding to wildfires. I wondered if you could outline, or add anything to what you have already said, of what the role is of your own group or perhaps other groups? It is a wide array of responses, and it is important that we document that.

Richard Bailey: Because you have that rural community network, living and working on the moors, in those places, they are never off duty. Their families and friends are never off duty. The first little whiff or sign of smoke, you make the phone call. It is that rural network that you cannot buy from a fire and rescue service point of view. Because of the infrastructure of grouse shooting, it was mentioned before, you have that investment in fire fogging equipment when we have used it for prescribed burning, which the fire service has now replicated in their strike teams.

We have WhatsApp groups. One example is Fiddle Moor fire in April 2025, in the Goyt Valley next to Buxton. Within two hours, there were 14 estates from the Peak District all mobilised to help put that fire out. It was a big fire, but fire and rescue services said they could not have responded, and they highlighted the input that the rural communities and gamekeepers had with their kit. I did a financial audit, and for that half a day, there was just short of £1 million-worth of assets brought from the private sector at no cost to the public. You cannot get that from any fire service.

Q66 **Terry Jermy:** Much of what you describe there seems very organic, and rural communities have a very strong sense of community. Do you think there is a need to drive some of that support through policy? How do we capture that best practice?

Richard Bailey: We need to protect these rural communities and rural ways of life, because if we keep regulating them, they will go elsewhere.

Areas will close down and we will have a different model on moorland. Be careful what you wish for with regard to policies. We work very heavily with the fire operations group. I submitted in my initial response to the consultation various biographies from the fire service and the Peak District national park who just said we cannot manage without the gamekeepers fighting these fires.

Q67 **Terry Jermy:** Henrietta, what role do you think land managers have in preventing ignition and in early detection? What specific roles should they have? Clearly, they have a vested interest.

Henrietta Appleton: There are two points I would like to make. First, there is already a lot being done by land managers to increase awareness of wildfire risk. For example, I know from being up in the Peak District with Richard that there are signs everywhere warning people of the risk, to try to reduce that ignition source. If we put that to one side and say that is being addressed, the role of land managers is to be identifying where the greatest risk is when it comes to wildfire.

A lot of them are doing wildfire risk assessments; they are doing it at estate level. If I may just flag this one, which was done in the Peak District wildfire risk assessment. It was done over the Derwent valley area, and it was done at landscape scale. The idea was to identify where fire pathways were. Fire pathways can cross from one estate into another, across a farm into another estate, so it involves multiple landowners. The importance of those landscape-scale risk assessments where land managers and owners have come together is a very important point. That is something that policy needs to reflect.

May I just add a point to what you asked Richard? The point I would like to make is that, given the increased focus on some of the other tools to manage vegetation, a lot of the young gamekeepers coming into the profession do not have the skill that some of the more experienced gamekeepers have in terms of understanding fire. It is that prescribed burning practice, which has evolved over time, that the fire service is now employing, using and learning from to address wildfires. That is a very important service that is perhaps being missed.

Q68 **Terry Jermy:** That is one of the themes for the Committee to pick up on: how do we document and get into policy some of that intergenerational knowledge and experience. It is definitely interesting to look at. The responses for land managers that you described, for example signage, there is a cost to all of this. Some of it is privately owned; some of it is publicly owned. Who should meet the cost of prevention and early detection?

Henrietta Appleton: That is a good question. There are opportunities within the environmental land management schemes to support some of these measures in terms of, perhaps, a facilitation fund for farmer groups to deliver environmental outcomes. Perhaps that could be used to fund a wildfire expert who could do an assessment across the landscape. Within

ELMs and SFI, perhaps there could be options to allow for the risk assessments to be converted into actual management outcomes. There are an awful lot of assessments going on, but not so many managements or not so much action. That is the first thing.

The second thing is slightly picking up on something that Barry Gardiner mentioned earlier. Obviously, there are other socioeconomic models operating in the uplands, not just the conservation model, which relies on public funds. Richard identified it with regard to the support that private estates gave to the Fiddle wildfire. These are co-benefits of some of these socioeconomic models like farming and grouse shooting.

Professor Bailey: I would like to respond to that question as well, because I would like to underline the importance of the fire operations groups in terms of that collaborative effort of all landowners and managers. In the Peak District one, we have, of course, the landowners and managers of private. We also have the NGOs in the shape of the RSPB—there is a wildlife link there—and Natural England. What we see there is a real value in all groups coming together to consider a response to wildfire, and come together in that collaborative, shared-effort fashion.

Richard Bailey: I would agree with Sallie on the fire operations group in the Peak District, but one thing we cannot agree or discuss civilly, and we have decided to put it to one side, is fuel load management. It is all right having all of the responses, we can have all of the kit, everything else, we need to stop these fires starting. You have asked how we can go forward. Reinstate the countryside code. Let us have a big push out to youngsters, using social media, all the modern ways that young people interact.

I have just short of 400 children coming to me, up into the moorlands, talking about wildfires and all the different stakeholders, on Thursday and Friday. I am concerned. They are all emailing me at the moment asking how I am going to mitigate the hot weather. It is ironic that we are worried about weather. We put fire signs out, and it is for every group to do their bit, but there needs to be more education. You will not stop the idiots who are coming, and we have lots of idiots, unfortunately. All of us sitting here are law-abiding.

Q69 **Terry Jermy:** I am sure that is a countrywide problem. Finally, Sallie, Natural England has a role across the whole country. One would hope that you have examples of best practice where groups of landowners are working particularly well with local fire and rescue services, and that sort of thing. How do we identify that best practice? As a Committee, how can we make recommendations for how that is adopted more widely?

Professor Bailey: That is a very good point. I will come to it in a second, but I would just like to echo what Richard was saying in an area that we can agree on, which is around playing to our strengths. You mentioned the benefit of talking with different voices to different groups that are visiting our beautiful upland and lowland places. There is a role

for us all to play to our strengths in terms of how we use social media, having different influencers involved, and that educational role. There are areas where we can talk directly to children, which it sounds like Richard is going to do imminently. There is influencing those people who visit, and we gained good experience through covid across the UK in this space.

To come to your second question, it is about learning what we had to put in place very quickly in difficult circumstances during covid in terms of people visiting the countryside and our beautiful rural areas who did not normally visit, with the inadvertent and sometimes conscious behaviours that we saw in our areas, and the rapid stand-up that we had to do to think about how we act differently.

One of the best practices we learned in covid was the value of wardens: having people out and about, looking and scanning for those puffs of blue smoke that put the fear into all of us as land managers, but also educating people on the ground and intercepting people who may be lighting disposable barbecues or doing other high-risk activities. That is one collective area of learning that we have. There are others, and it may be that we provide more detail on that, based on our experience.

Terry Jermy: That would be very useful. Thank you very much.

Q70 **Juliet Campbell:** Peatland restoration and rewetting are widely supported as long-term environmental objectives, improving biodiversity, erosion control and peat condition. However, their effectiveness as a standalone wildfire mitigation strategy is strongly contested. How can peatland restoration be used to mitigate the impact of wildfires, and what is the evidence for this?

Henrietta Appleton: Let me begin. Thank you. As I have hopefully made clear—

Juliet Campbell: You touched on it a little bit before.

Henrietta Appleton: Yes. We see all the tools as having a place. There is a concern that we do not know exactly the area of peatland that can effectively be rewetted, and I use the word "effectively". There are climate change predictions that suggest that a lot of our southern peatlands will simply not be in a suitable climate window to be able to function effectively. While that might suggest that you need to rewet sooner and restore sooner, you have the wildfire implications that blanket bogs naturally drop 20 to 30 cm of their water table depth in the summer. A lot of the most severe and destructive wildfires are in the summer. That is just one consideration. Projections are for climatic conditions to be a challenge in 2061, which is not that far away, bearing in mind that restoration timescales are about 50 years or so.

The second point I would like to make about rewetting is that, yes, where the peat substrate is wet, the surface fire will remain on the surface, and therefore a lot of our spring wildfires are of that nature in the uplands,

but that is very much a carbon argument. Protecting peat is very much focusing on net zero and carbon. We are losing the surface vegetation, and that—as all of us have indicated—supports a wide variety of biodiversity. When it happens in the spring, which is a key period for ground-nesting birds, eggs, chicks, slow-moving insects and all sorts of things are lost. There is a wide impact. It has a benefit in protecting the underlying peat, but it does not necessarily stop a wildfire taking the surface vegetation.

Professor Bailey: Thank you for the question. First of all, developing micro-diversity of habitats in our deep peat and our wetlands is absolutely critical. That means there is not a dominance of heather or Molinia, because they are fire-driven species that are flammable. Where we have a high water table, that dominance is removed so you have less fuel load. Also, if that water table—noting that there is a gap in restoration to success—stays high, we are in a position where we are failing to ignite a wet habitat.

To increase the evidence base around this—I have already mentioned the research project that is now under way—we can look to international examples. This is not just a nature-based solution that has been tested in the UK; there are examples in Indonesia, northern Europe and Russia where the observation is that peatlands are failing to burn where there has been successful restoration. It is ensuring that we further develop that evidence base and look at all the nature-based solutions that we have in our toolbox to ensure that we are rewetting to enable those peatlands to function not only to mitigate wildfire but also to mitigate flooding when we have extreme rainfall events.

Henrietta Appleton: I tried to make a point, which I am not sure has necessarily been addressed, about when the water table will be restored to its natural level and the timescale for that. Natural England commissioned a report that looked into wildfires on three of its nature reserves, including a raised bog, and one of the recommendations was that there needed to be additional tools employed to manage the fuel load during the restoration process. Firebreaks also need to be maintained, particularly those in inaccessible areas. There is a gap between what is happening now and the ambition of a fully restored peatland, and the wildfire risk in that gap is ever increasing.

Richard Bailey: I think we have to be realistic here. I can understand that Sallie's end goal, or Natural England's end goal, is to have everywhere wet and everywhere to be blanket bog, so that you jump on it and the whole area will bounce like a trampoline. That does not happen in reality. You have underlying rock and natural peat pipes that drain water away.

I am not using climate change as a crutch to get out of jail, but we have just had one of the wettest winters. With the hot weather this week, these sphagnum-dominated restoration areas will be bone crisp now. We

need to have a whole suite of management on the ground. Restoration is part of it, but it is not the golden bullet or the silver bullet.

Q71 **Juliet Campbell:** Sallie, you talked about nature-based solutions that other countries have done. Could you tell us a little more about that, so that we understand the evidence that is out there?

Professor Bailey: The examples that I cited are rewetting of peatlands. That is the primary nature-based solution I was citing in those examples because this is not just science that is being developed in the UK; this is science that is being developed internationally.

Richard Bailey: There are Government-funded studies that have found that winter burning makes the ground significantly wetter and does not damage long-term carbon stores. There is all this contested evidence. I know from being a land manager on the ground what works, as a farmer would in the fields that he spends all of his time in.

Q72 **Juliet Campbell:** Talking about rewetting landscapes that may still be dry during periods of extreme heat, particularly in upland areas, how should this be managed?

Richard Bailey: If we are going to keep to the topic of wildfires and you want to reduce wildfires, we have to manage the fuel load effectively. We have to have fuel and fire breaks, we have to have grazing interventions, we have to have cutting where it is appropriate, mechanical cutting, and prescribed burning. The restoration will follow, but at the moment, with this continual increase of fuel loads, all we are getting is a damaging wildfire every so often that burns the peat and chucks everything out of the window.

Professor Bailey: The best way to reduce the fuel load is to no longer have monocultures of heather and Molinia, which as I have said, is about rewetting, acknowledging that we need to mind the gap. That is where alternatives come in, such as cutting.

The risk with burning to reduce fuel load, as I described at the start, is that it starts to perpetuate the damage to the surface of the peat by impacting the sphagnum that is forming the peat, therefore leading to a hydrophobic layer of peat at the top, exacerbating erosion. That is the key cause of piping as well.

Chair: I think we are going to become circular soon. I am beginning to identify familiar patterns in arguments.

Henrietta Appleton: Could I cite Benjamin Franklin and say, "An ounce of prevention is worth a pound of cure"?

Chair: Absolutely. We are talking about wildfires here. We had a quite extraordinary response. Normally, when we put out a call for evidence, we will get the campaign groups, the NGOs, the professional bodies and all the others. We got a quite remarkable range of views from ordinary people with no skin in the game—probably, I suspect, people who have

never before and never again will submit evidence to a Select Committee. That is published. If it is not all on the website yet, it will be very soon. Can I recommend that you all take a bit of time to consider that?

Sallie, it is as clear as day that Natural England has set its face against burning and will hear no arguments to the contrary. We got that from your chair and your chief executive a few weeks ago. However, when you read the evidence that we have had, it is equally clear that you have not taken people in the upland communities with you. They are simply not persuaded, and that is relevant to this inquiry because we are talking about wildfires.

I take you right back to the evidence I read at the beginning. It is about the people in these communities who are living with this and who are the first responders. It is the gamekeepers, the shepherds and the upland farmers who are the people who will go out and tackle this. If Government—whatever arm of Government it is going to be—does not engage with sufficient respect to take communities with them, the day is going to come when they look out the window, they see the smoke and they just draw their curtains, and that is to nobody's benefit.

I am enormously grateful to you. It has not been an easy conversation all the time, but this is not going to get any easier for being ignored. Thank you all for your very different contributions this morning, or this afternoon now. We will be returning to this, and I am certain we will want to issue a report at some time. In the meantime, you all participate in this and you all have a role to play in it that is valuable, so we thank you for that and we thank you for your evidence today.