

Fire Interdisciplinary Research on Ecosystem Services: Fire and Climate Change in UK Moorlands and Heaths

SEMINAR 4

Economic impacts of wildfires and adaptive land management to reduce wildfire risk and impact

Losehill Hall, Peak District National Park, 13th May – 14th May 2009

Day 2: Plenary Session

Rapporteur: Will Hewson (Moors for the Future)

Colin Legg from Edinburgh University introduced the plenary session, highlighting the themes discussed at all four seminars. He then went on to elaborate on the sweeping changes in management priorities over the last 40 years, including the use and need for carbon storage on the moors today, and fire's role here. A major outcome from the FIRES seminars was seen to be that of the multitude of differing viewpoints arising from differing perspectives on the issue of wildfire. With an emphasis on ecosystem services, the present seminar highlighted the clear gaps in knowledge of the interaction of fire regime with ecosystem services – intimating that the importance of fire goes beyond simply its absence or presence – but into individual fire regimes, especially frequency and severity. There is evidently much scope for the investigation into interactions between fire regime, biodiversity, carbon, and water quality. Particularly uncertain is the role that climate change will play in these interactions – with climate change not being the actual cause of fire, but affecting the precursors of wildfire – people and vegetation.

Dr. Legg went on to discuss the greater importance attached to land use and management, as opposed to climate change, in determining the vegetation cover of a region, particularly in the heavily managed uplands of the UK. In turn, the way we respond to this perceived risk from a change in vegetation patterns will affect forthcoming fire regimes. This emphasis on management of fire in a changing climate was extended to the postulation of balancing probabilities of extreme fire events with the cost of preventing and managing them. The topic poses an intriguing question: Do we accept the regular cost of low level fires in order to mitigate the likelihood of extreme events?

The use of technology as a tool for managing wildfires, as discussed in seminar three, was touched upon. There was an acknowledgement that practitioners need simple tools, although not simplistic tools. The use of tools should be matched to an understanding of fire's behaviour, with fire behaviour models at the moment still needing some way to go before they are sufficiently accurate to be useful prediction tools for UK situations. Existing active tools such as MOFSI needed to be extended and improved upon, increasing their usefulness and providing the information fire-fighters and planners want, rather than what research is able to provide.

Julia McMorrow from the University of Manchester continued the session. An important theme from the series was the need to know more about public attitudes to wildfire, since people are the major cause of wildfires, and the importance of feeding this back into public education on wildfire.

She noted that whilst moorland fires are some of the most resource-intensive for fire and rescue services, they remain very low on Fire and Rescue Services' priority list, due to the relatively low level of risk posed to life and property, which is traditionally defined in terms of built assets. Perhaps by changing public attitudes or regarding moorland ecosystem services as assets with an economic value, the problem of wildfire can be moved higher up the agenda.

She noted parallels in the UK with land abandonment in Europe, particularly in terms of agricultural losses, posing a greater long term threat because of rising fuel load – a problem expected to increase in the UK with decreasing amounts of upland grazing, restrictions on moorland burning and declining agricultural labour force. The problem would be more acute if climate change made grouse moor management uneconomic. This then poses the question – how should we manage fuel load whilst avoiding conflicts with other ecosystem services? Research is needed on the impacts of different fire regimes on ecosystem services, since this is to partly explain conflicting evidence.

Another important issue which had emerged from FIRES was the need for better reporting of vegetation fires. The lack of an evidence base helps to explain its low priority relative to other natural hazards in the UK, but will gradually be improved since the national roll-out of the FRS Incident Recording System on 1st April 2009. There was also a need for research into wildfire behaviour for UK vegetation, national training in wildfire fighting and a national policy on wildfire.

Andy Elliott from Dorset Fire and Rescue appropriately gave a Fire Service perspective in summing up the seminar series. He detailed his experience of managed fire as a tool for fighting heathland fires, illustrating this with examples from Dorset in which inexperienced practitioners tend to do more harm than good. He then went on to highlight the benefits of managed fire in both reducing fuel load, as well as providing useful training opportunities for the FRS, and offering the opportunity for fire fighters and researchers to try out new techniques in a controlled environment.

In relation to the ecosystem services component of the seminar, FRS need wildfire impacts to be quantified. It would enable them to pass these values on in order to influence public policy. Mr. Elliott relayed his experience of wildfire models, finding them unsuited to practical applications, needing to be quick and simple, and so more applicable for large scale wildfire fire fighting. From his own work, he found that adaptive land management to reduce risk of occurrence and severity was an extremely useful tool in mitigating and fighting wildfires. From this, FRS are able to influence the frequency and severity of wildfire in Dorset.

He suggested there is now an opportunity, coincident with the culture shift in FRS, for stakeholders and the public to influence the way fire fighters operate. This important point ties in with discussions with the academic community to find out who are the clients for their research. In this sense, academics should be striving to answer the questions asked by the FRS, rather than the other way round. He had been very pleased that FIRES had actively involved FRS, which was rare. In particular, research needs to pinpoint important issues such as the critical time for fire fighters to attempt to extinguish a wildfire, rather than throwing all resources at it, all the time. Finally, he made the point that FRS are geared up to tackle structural fires and are poorly prepared to tackle wildfires. There are local pockets of excellence in wildfire fighting, but rather individual services maintaining specialist units, there needs to be national guidance wildfire fighting tactics and training rolled out across the UK.