



Wildfires in Wales:

Executive Summary

Matthew Jollands, Jake Morris and Andy Moffat

The 'Wildfires in Wales' project sought to characterise and understand the problem of wildfires in the South Wales Valleys region and to offer recommendations for appropriate management and policy responses. The project was delivered by Forest Research and funded by the Forestry Commission, South Wales Fire and Rescue Service, and Mid and West Wales Fire and Rescue Service. This Executive Summary outlines the issue, gives an overview of the research findings and sets out the resulting recommendations. A full report is available online at:

www.forestry.gov.uk/fr/wildfiresinwales.

Scope of the problem

Wildfires are a persistent, widespread, costly and dangerous issue in South Wales. Between 2000 and 2008 there were over 55,000 recorded grassfires and nearly 550 forest fires in South Wales; this equates to eight times more per unit area than in the United Kingdom as a whole.

It is estimated that each wildfire costs between £1,000 and £1,950 in Fire and Rescue Service time and resources. South Wales Fire and Rescue Service estimate an annual cost in their service area of around £7m due solely to wildfires. Added to this is the fact that firefighters engaged in extinguishing wildfires are unavailable to respond to other emergency calls, meaning lives are potentially put at risk.

Location – where do wildfires occur?

Year-on-year there are predictable patterns to areas of wildfire occurrence. The map in Figure 1 shows the locations of wildfires that occurred in South Wales between 2000 and 2008, based on data provided by South Wales Fire and Rescue Service and Mid and West Wales Fire and Rescue Service. The darker areas represent higher incidence. Recorded fires include all outdoor fires in vegetation.

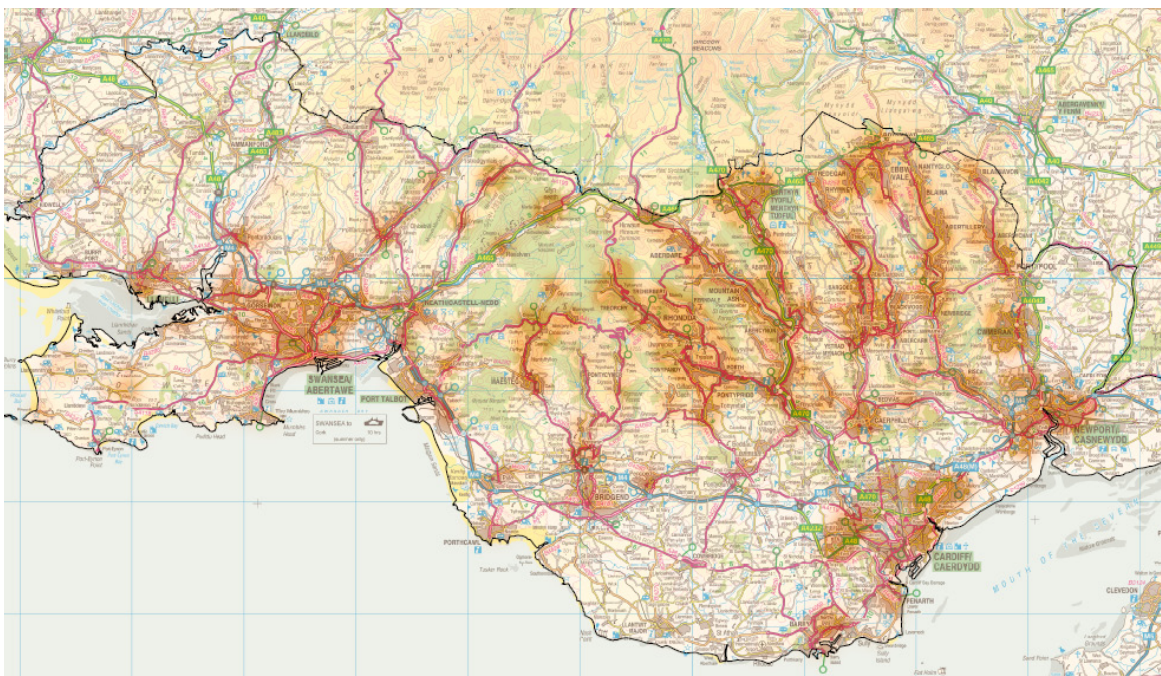


Figure 1. Locations of wildfires 2000–2008.

Our research indicates that the areas of South Wales that are particularly prone to wildfire arson are:

○ Rhondda Valley, especially:

- Tonypany
- Treorchy
- Porth
- Treherbert

○ Afan Valley, especially:

- Cymer
- Glyncorrwg
- Maesteg

The Unitary Authorities most prone to wildfires are (in order of decreasing total number of wildfires between 2000 and 2008):

1. Rhondda Cynon Taff
2. Swansea
3. Caerphilly
4. Neath Port Talbot
5. Bridgend

Wildfires are more likely to occur in the most deprived areas of South Wales, as measured by the Welsh Index of Multiple Deprivation. Patterns of incidence in relation to deprivation indicators are shown in Figure 2.

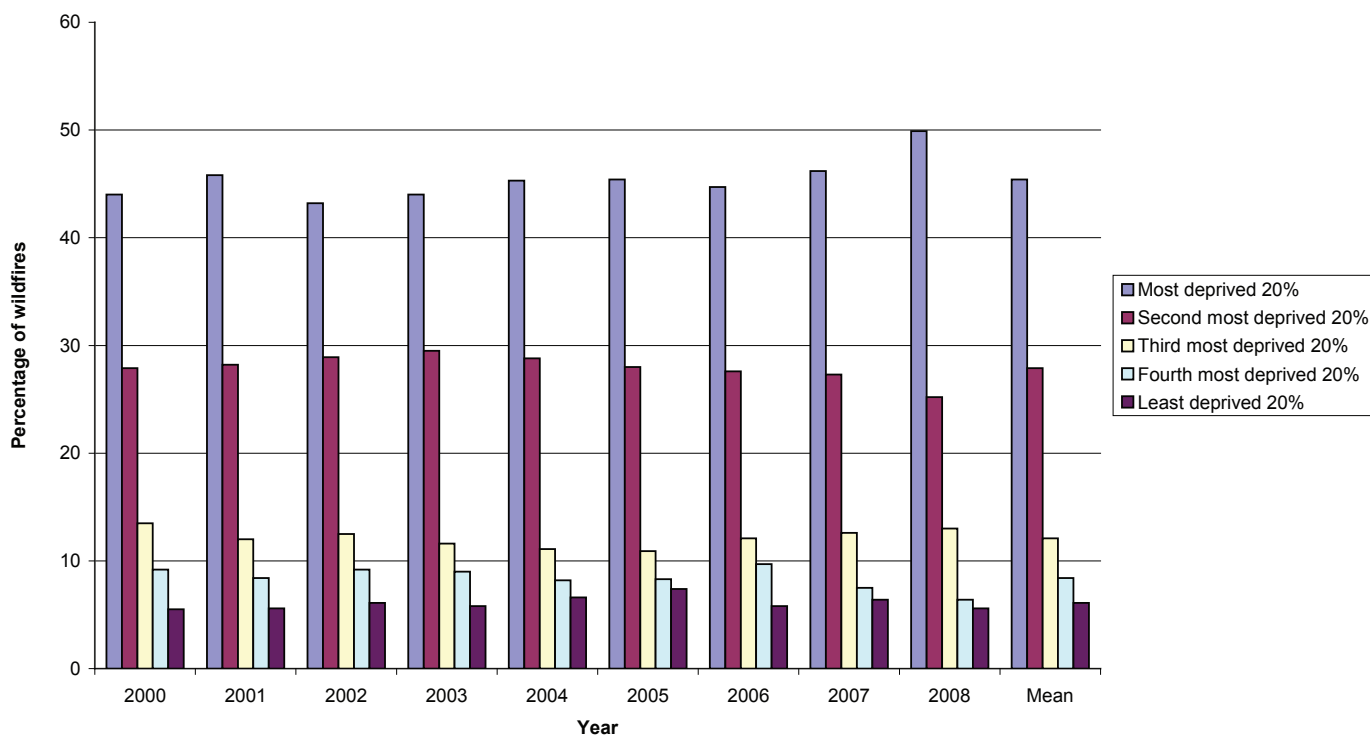


Figure 2. Wildfire occurrence by area of deprivation 2000-2008.

Facts

- The 20% most deprived areas in South Wales are nine times more likely to experience wildfires than the 20% least deprived areas.
- Over 90% of grassfires are recorded within 100 m of a road or public right of way (PROW); 99% occur within 500 m of a road or PROW.

Timing – when do wildfires occur?

As well as following a predictable geographic pattern, wildfires also follow a temporal pattern. The majority happen in March, April and, to a lesser extent, May. There is some variation between years, which is a result of external factors, namely rainfall and temperature. Figure 3 shows the distribution of grassfire incidences throughout the year based on eight years' data. The black bars show yearly variation and the blue bars represent monthly averages.

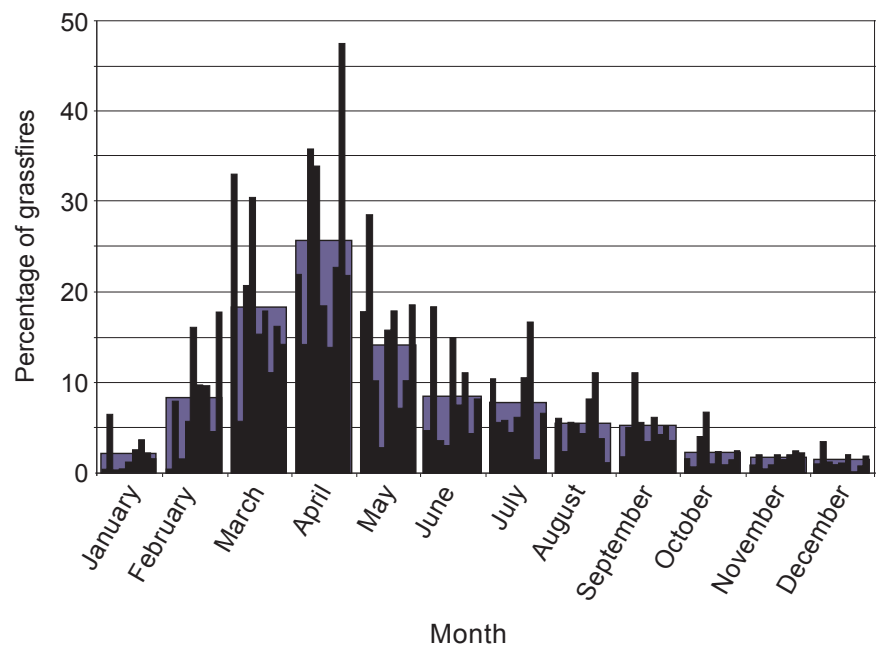


Figure 3. Incidences of grassfires by month 2000–2008.

Facts

- Over 60% of wildfires occur between the hours of 1600 and midnight.
- On average 44% of wildfires occur in March and April.
- 18% of all wildfires occur on Sundays.

Perceptions of wildfires

As part of this research, we investigated community and institutional stakeholder perceptions of wildfires. Over 1000 residents of South Wales were surveyed about wildfires and related issues. The survey revealed that there is low public awareness of wildfires in South Wales, with most people not recognising them as posing a problem to themselves or their communities.

All of the stakeholder groups interviewed considered that wildfires are deliberately caused, yet this did not translate into them perceiving wildfires as being an important issue.

Facts

- Only 33% of respondents believe that South Wales has a problem with wildfires.
- Only 18% of respondents believe that wildfires are a problem in their local area.
- 65% of respondents believe that wildfires are deliberately caused.

Who is perceived to be responsible?

Young people are regarded as primarily responsible for committing wildfire arson in South Wales, although in areas to the west of Coed y Cymoedd, stakeholders are more likely to blame farmers or land owners.

Motivations for wildfire arson

There are a variety of motivations for wildfire arson in South Wales and recognition of this is key to finding a solution. As a result of interviews and literature research, we have compiled a list of motivation types. The primary motivations for wildfire arson are that it is carried out:

- as a method of relieving boredom;
- as a result of socio-economic factors;
- as a method of land clearance;
- for fun;
- as part of associated criminality;
- as an act of rebellion;
- due to psychological pressures, i.e. mental health issues;
- with an unclear motive.

Understanding these categories will help inform future mitigation strategies. Firesetting in South Wales appears to be tied to wider socio-economic problems and should be seen as part of broader issues around deprivation and a comparative lack of financial and service investment in the area.

Current strategies to mitigate wildfires

Mitigation strategies currently employed in South Wales take different forms and can be categorised as 'educational' or 'operational'. These strategies can be either proactive (prior to an incident of wildfire arson) or reactive (in response to an incident of wildfire arson). All strategies evaluated as part of this research had both positive and negative outcomes.

There is little strategic planning involved in the majority of attempts to mitigate vegetation fires. However, there are individual examples of good practice that should be taken into consideration before engaging in any new interventions. Our research highlights the need for a coherent and over-arching mitigation strategy that takes into account all aspects of wildfire arson; this could then form the basis for the design of individual projects.

Recommendations

For all key stakeholder organisations

Short term

- Awareness of wildfires among the general public should be increased.
- Partnership working between organisations should be encouraged and adequately resourced.
- Preventative measures should be focused on areas of high incidence rather than as a blanket approach across the region.
- Low-key approaches to tackling wildfires may reduce the thrill factor for some perpetrators.

Long term

- Financial partnerships should be created between landowners and the fire service to share the cost of helicopter provision.
- Community organisations, with support from stakeholder organisations, are well placed to deliver anti-wildfire education and messages.

Forestry Commission Wales

Short term

- Forestry Commission Wales (FCW) should consider different approaches to the management of areas that are prone to wildfires.

- FCW should maintain and increase their partnership working, especially with the Fire and Rescue Services.
- Educational initiatives need to be more focused and integrated into FCW's wider skills and educational programmes, and should undergo monitoring and evaluation.

Long term

- FCW should seek to better integrate their forest management decisions with the desires of local community groups through improved consultation procedures.
- The Forest District planning team should incorporate fire risk into their long-term forest design plans to reduce the risk of fires spreading in a changing climate.

Fire and Rescue Services

Short term

- Helicopters need to be available for firefighting earlier in the year.
- Greater co-operation between the agencies in South and mid and West Wales, especially on the border, will improve the ability of both organisations to fight wildfires in a co-ordinated manner.

Long term

- Working with the Police should be improved, such as during the South Wales Fire and Rescue Service 'Bernie' project ([see page 10](#)). Adding the Police's legal backing to mitigation strategies will improve them.

Welsh Assembly Government

Short term

- The Welsh Assembly Government should be kept more fully informed of the problem of wildfires in South Wales.
- Any mitigation strategy that is funded with public money should be properly evaluated. Failure to do so could result in wasted resources and a reduced capacity to learn from experience.

Long term

- All mitigation measures should be integrated into projects and programmes for the wider regeneration of the South Wales region.
- The National Farmers Union and Farmers' Union of Wales should be integrated into research and decision-making regarding wildfire prevention. This should be encouraged by the Welsh Assembly Government.

Research

- There is a need for empirical research into wildfire ignition causes in the UK and Northern Europe to better understand the environmental context in which it is most likely that wildfires will occur.

South Wales Fire and Rescue Service

'Bernie' Reports

This work was carried out in conjunction with a project by South Wales Fire and Rescue Service entitled 'A social marketing project to reduce the incidence of deliberate grass fires in Wales, UK', which aimed to reduce wildfire occurrence in the Valleys town of Tonypany. The project was nicknamed 'Bernie' after the cartoon sheep mascot used as a marketing tool. Progress in the social marketing project was well documented and reports on this work can be found at:

<http://tinyurl.com/6kv5x55>

There are five reports covering all stages of the project:

- 1: *Summary Report of Scoping Phase*
- 2: *Summary Report of Development Phase*
- 3: *Summary Report of Implementation Phase*
- 4: *Evaluation*
- 5: *Follow up*

If you need this publication in an alternative format, for example in large print or another language, please telephone us on **0131 314 6575** or send an e-mail request to: **diversity@forestry.gsi.gov.uk**

Published by Forest Research © Crown copyright 2011