

South East England Wildfire Group Fire and Rescue Statistics User Group



Smarter Climate change - risk change - service change!



Climate change - evidence











Climate change - impacts



Weather impact





European 2003 summer temperatures: normal by 2040s, cool by 2060s





UK impacts Heatwave: Summer 2003





Climate change - adaptation



Mitigation and adaptation

Mitigation involves taking actions to reduce greenhouse gas emissions and to enhance sinks aimed at reducing the extent of climate change.

This is in distinction to **adaptation** which involves taking action to minimise the effects of unavoidable climate change.



Mitigation and adaptation





Climate change - response





UK precipitation change

UK temperature change





Climate Impact & Risk assessment Framework (CIRF)





Climate change impacts Bangladesh

1970 Cyclone Bhola: 500,000 people killed





Climate change impacts Bangladesh

2007 Cyclone Sidr: 3,300 people killed





Hazard

Distribution of outdoor fires in the WMFS region



Outdoor fires: temporal distribution

• Total outdoor fires for whole region compared to weather indicators





Outdoor fires: peak demand

 On high incident days in summer (30 or more incidents per day), vegetation fires account for up to 70% of total reported secondary fires.

Month - Year	Total monthly incident count	Vegetation-related incident count (% of total)
July 2006	3970	2487 (63%)
Aug 2003	3095	1541 (50%)
Sept 2003	3064	1531 (50%)
April 2003	2880	1349 (47%)
Oct 2003	2784	1174 (42%)
July 1999	2490	1187 (48%)



Outdoor fires: baseline risk

 Closely correlated with weather. Dry days in last 30 good indicator of daily fire risk. Variation of Vegetation-related incident count



number of dry days in last 30 days



Vulnerability

Population density and other factors that may influence magnitude of risk



 Occur most frequently in south east Wolverhampton, east Birmingham and north east Coventry.





- 65% of the spatial variation in incident count can be explained by variation in the population density.
- Map shows vulnerability corrected for spatial differences in population density



Less incidents than explained by population





More incidents than explained by population



Current and Future Risk



Probability of a high risk day

- Probability of high incident days calculated for each season
- Future risk calculated from these seasonal probabilities and **UK** Climate **Projections**





Spring: Probability of high or low daily incident counts given different periods of dryness



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> Autumn: Probability of high or low daily incident counts given different periods of dryness



High incident count = high risk = more than 30 incidents per day



- High incident count days are projected to increase by approximately 36% by the 2050s, from an annual average of 36 to 49 days
- Largest increase in high incident days is projected during summer





Projected seasonal changes in days of high incident count





Adaptation options?

- Adaptation management through IRMP process
- Improvements in -
 - data collection and quality from Incident Reporting System (IRS)
 - tactics
 - equipment
 - information
- Training
- For more information, please attend the Wildfire Prediction System (WPS) workshop hall C





Contact tim.donovan@metoffice.gov.uk or 07753-880260