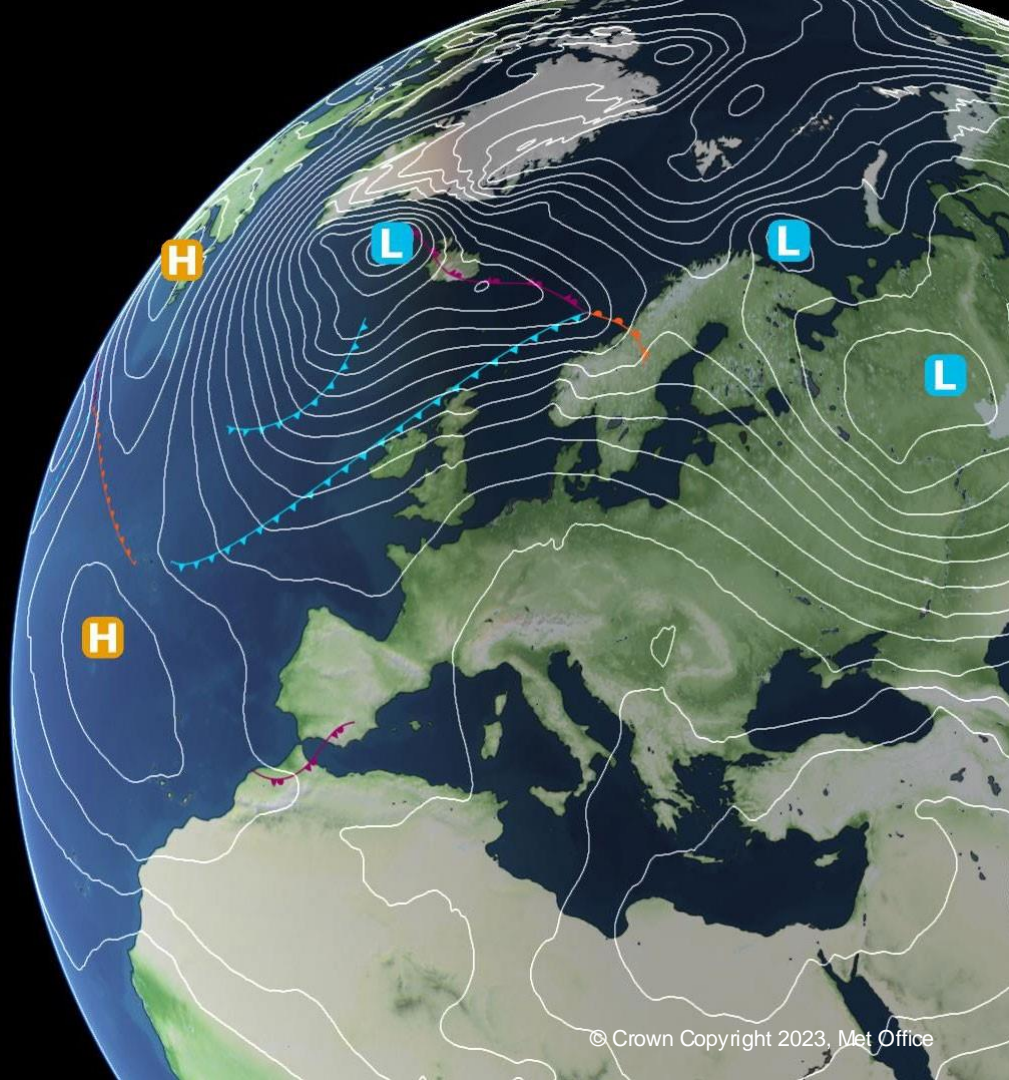


Wildfire Forecasting in an International Context and in a Changing Climate

Dr Will Lang
Head of Risk & Resilience Services, Met Office
Wildfire2024 , Aberdeen



Outline

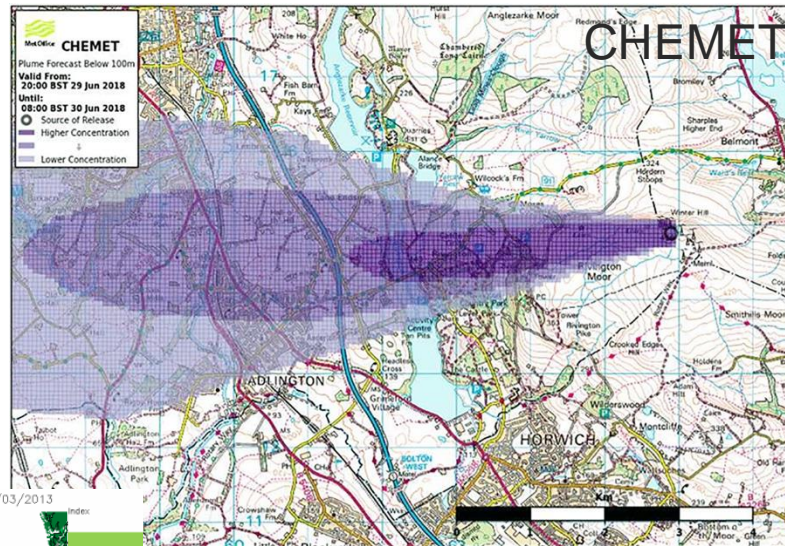
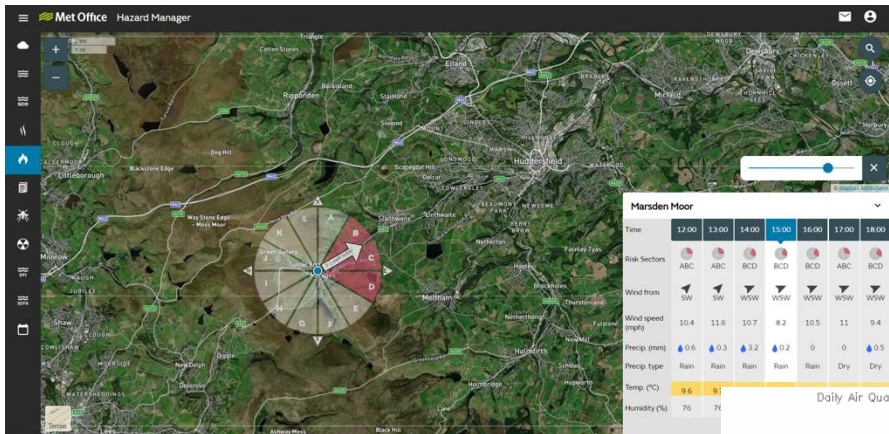
- Met Office support to the wildfire community
- New climate science
- The international angle



The Met Office and Wildfire

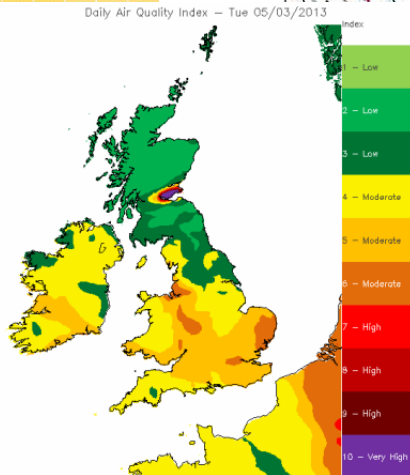


- The Met Office has no formal UK responsibilities for wildfire!
- However, we play a big part in the wildfire services ‘landscape’
- Operational support from Civil Contingencies Advisors, EMARC and ADAQ teams, including input into cross-governmental response to wildfire and/or extreme heat
- Online wildfire training for responders
- ADAQ and Climate Services research
- CHEMET, FireMet and Air Quality forecasts
- Met Office Fire Severity Index
- Wildfire component of the NHP Daily Hazard Assessment



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FireMet

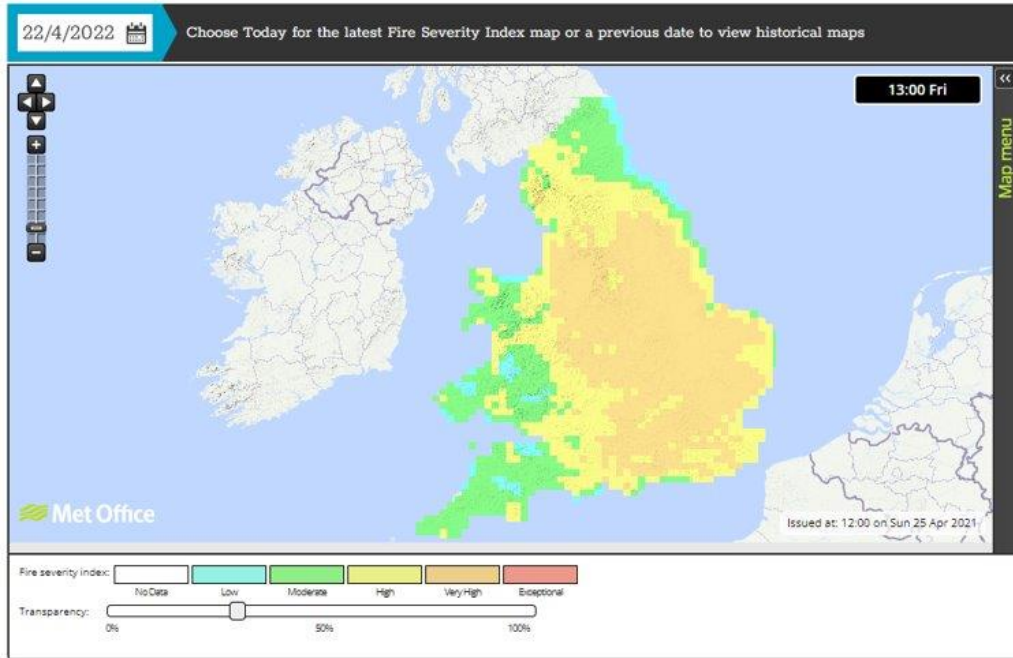


Defra Air Quality

Fire Severity Index

<https://www.metoffice.gov.uk/public/weather/fire-severity-index/>

England and Wales Fire Severity Index



- 5-day forecasts
- Based around Canadian WF model - not entirely applicable in UK context!
- Natural England/NRW funded, to inform fire prevention restrictions under the CRoW Act.
- **IS** a Fire Severity model
- **IS NOT** a Fire Risk model
- **IS NOT** a Fire Propagation model

Wildfire – NHP Daily Hazard Assessment

	Wildfire
Green	Elevated wildfire conditions not forecast – low likelihood of wildfires.
Yellow ¹	Elevated wildfire conditions forecast – likelihood of manageable wildfires.
Amber ²	Severe wildfire conditions forecast – likelihood of difficult to control wildfires.
Red ³	Extreme wildfire conditions forecast – likelihood of severely disruptive wildfires.

DAILY HAZARD ASSESSMENT

Issued on Monday, 19 August 2024 at 11:35 Local time



Wildfire



Monday 19th to Friday 23rd August (left to right):

Elevated wildfire conditions are expected across large parts of England through the start of the week with dry conditions in central and eastern parts being and fresh to strong winds. In the east, where temperatures remain warm and conditions stay dry, an area of severe wildfire conditions are forecast from Tuesday onwards.

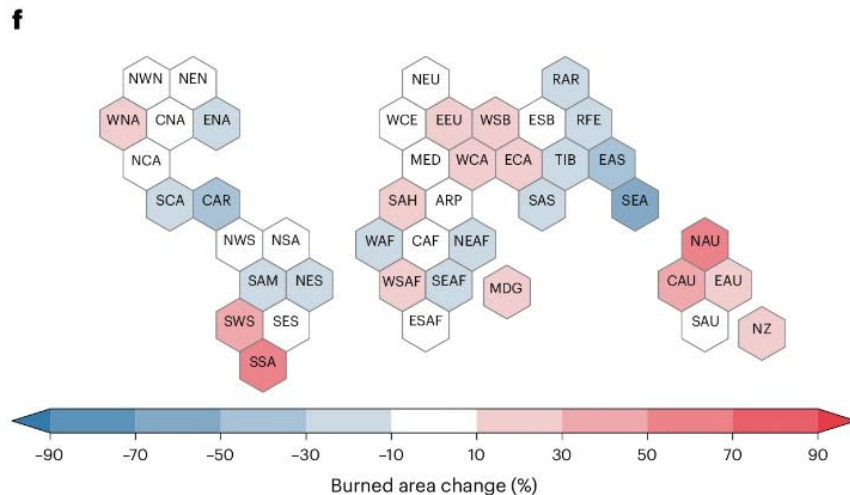
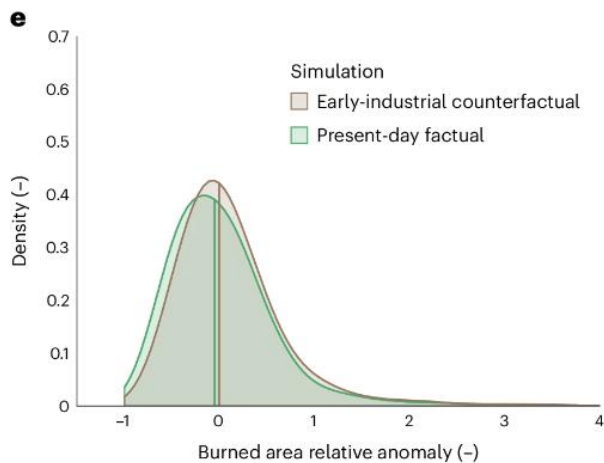
The assessment of wildfire conditions provided within the NHP Daily Hazard Assessment (DHA) summary is based on expert analysis of multiple Fire Severity Index model fields to produce a Green-Yellow-Amber-Red fire danger rating assessment for the UK.

- DHA is produced by the Natural Hazards Partnership
- Wildfire component is from the Met Office
- RAG-status risk assessment to inform planning rather than an official warning service
- Based in part on FSI but also other models and expert judgement

What Next for Met Office Wildfire Services?

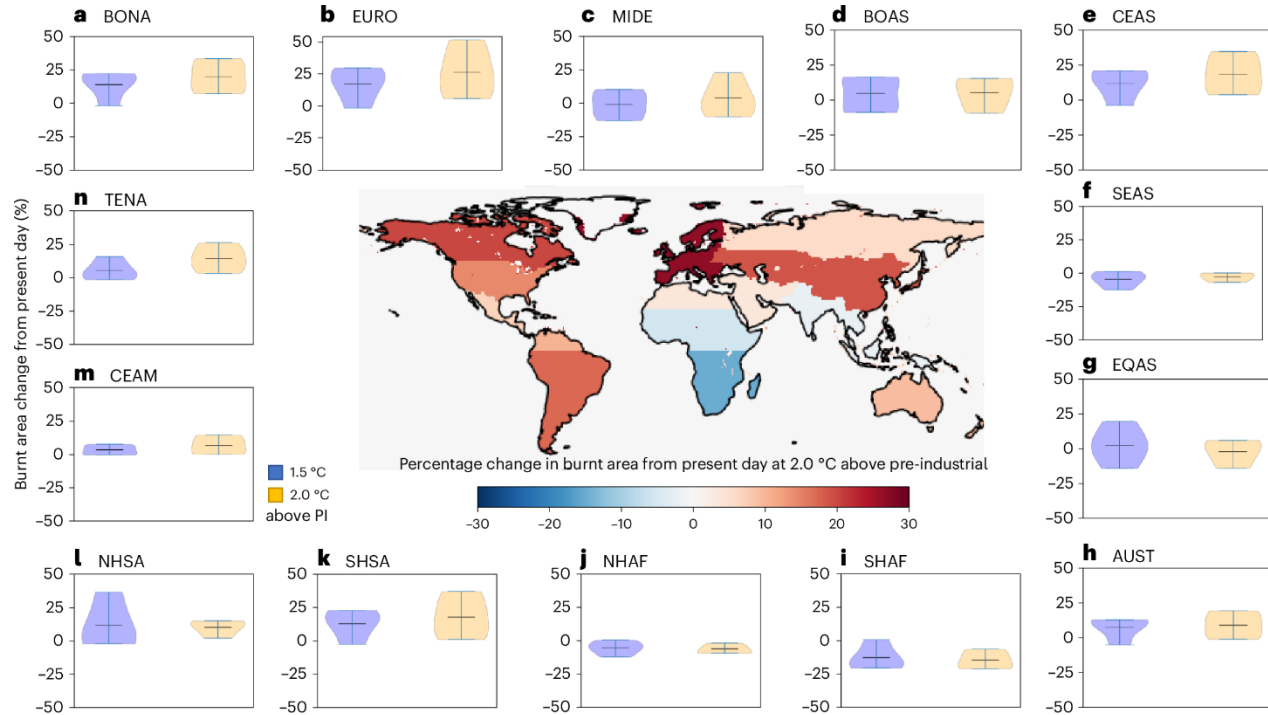
New Climate Science on Global Wildfires

- ‘State of Wildfire 2023-24’ report (ESSD, 2024) – ‘Climate change contributes to the increased frequency and intensity of wildfires globally’
- ‘Global burned area increasingly explained by climate change’ (Burton, Lempe, Kelley et al, Nature Climate Change Oct 24)



New Climate Science on Global Wildfires

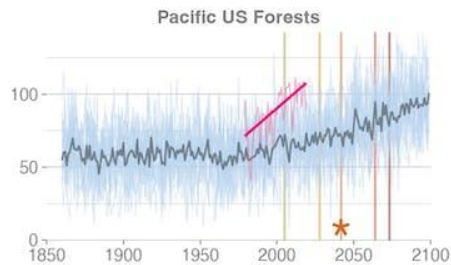
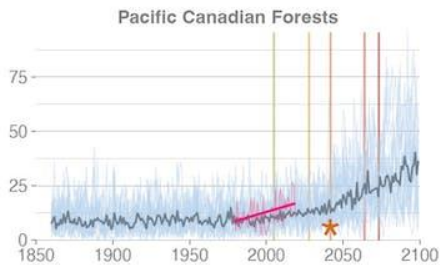
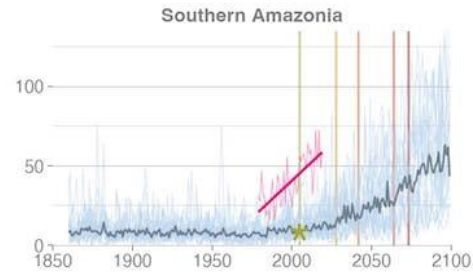
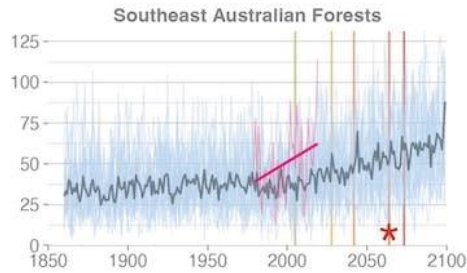
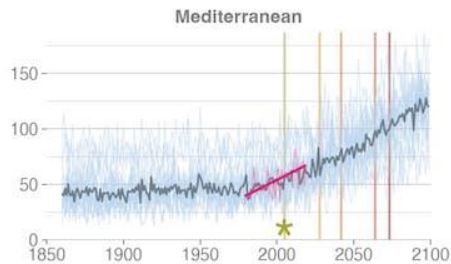
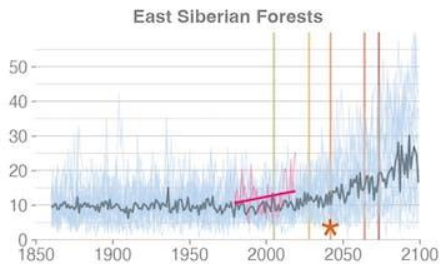
- Wildfires are accelerating carbon loss from ecosystems, reducing the planet's ability to store carbon and complicating efforts to meet climate change targets – *(Burton, Kelley et al, Oct 24, Nature Geoscience)*



Length of Fire Weather Season

Length of the Fire Weather Season

Days per year



Jones et al (2022).

Wildfire and WMO



- Part of the UN ‘Early Warnings for All’ (EW4All) initiative
- New Task Team within the WMO Services Commission (SERCOM)
- Terms of Reference include:
 - Consolidating good practices for strengthening the value chain on all aspects of fire weather services, from fire risk prediction, fire detection and monitoring, fire propagation, fire smoke and ash emissions and their consequences on air quality, health, etc.,
 - Assessing and demonstrating the socioeconomic benefits of fire weather services delivery,
 - Advising on the development and optimization of WMO supportive frameworks for National Meteorological & Hydrological Services
 - Advising on advocacy and capacity development activities needed to support WMO Members in operational fire weather services delivery.
- Key Deliverable: *Develop recommendations for the development of or strengthening of fire weather services that leverage existing partnerships and resources such as the World Meteorological Organization-United Nations Office for Disaster Risk Reduction (WMO-UNDRR) Centre of Excellence for Climate and Disaster Resilience and the Copernicus Emergency Management Services and submit to SC-DRR*

Thanks to...

- Chantelle Burton, Ian Lisk, Matt Hort and the EMARC team (Met Office)
- The partner organisations of the NHP

Any Questions?