Wildfire Research Workshop outcomes

7th June 2017

Kings College London

Objectives of the meeting

1. Preparation for Wildfire 2017 Conference, based in Dorset, 7th-8th Nov 2017

2. Possible research synergies across the themes of wildfire

3. Vegetation fire in the context of a future land use policy post-Brexit.

England and Wales Wildfire Forum priorities

1. The development of a Fire Danger Rating System that meets the requirements of Government, the Fire & Rescue Services, landowners and land managers is seen as the top priority:

- It is unlikely to be possible to develop a fully worked up system quickly due to research & resource restrictions.

- Alternative approaches should be considered that it may be possible to implement sooner, while the fully worked up system is developed.

- Alternative approaches may provide shorter-term stepping stones to a longer-term solution.

England and Wales Wildfire Forum priorities (cont.)

2. Researchers should propose other work that will contribute to the aims of the EWWF.

- Researchers from different research providers will be encouraged to collaborate to develop a coordinated programme of work.

Possible research synergies across the themes of wildfire
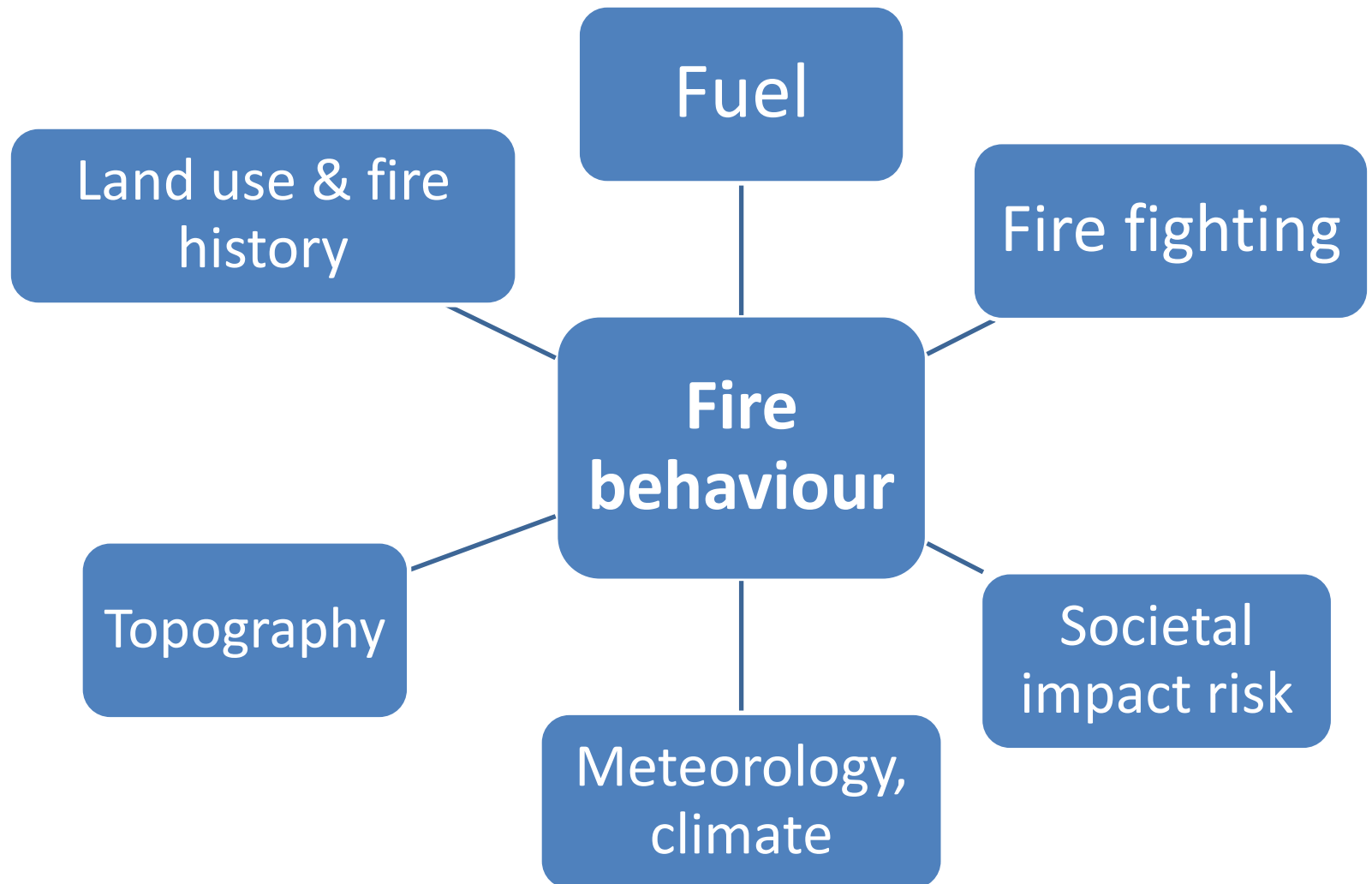
1. Integrated fire databases

- Many separate data sources, e.g:
  - Fire service Incident Recording System (IRS); point data
  - Water companies; fire perimeters
  - National Park rangers
  - Forestry Commission
  - Other land managers
  - Remotely sensed data (e.g. MODIS, VIIRS, radar)
  - UVA data
- Start with archive data. Then, ideally, near real-time
- Combine data on prescribed fire and wildfire for better understanding of fire regime
- Important to manage the data; spatial data infrastructure

Possible research synergies across the themes of wildfire (cont.)

2. Practitioner science

- Aim is to increase the number, type and geographic coverage of fires recorded

- Record fire behaviour, pre- and post-fire conditions at wildfire incidents and prescribed fires

- Carried out by volunteers from the fire service and land management community

- Photographs; showing scale and location (e.g. geotagging)

- Simple experiments co-devised by practitioners and researchers

- Database of local researchers to assist

- Key sites which can act as useful natural laboratories

- Can link to larger models (e.g. Met Office forecast)

Possible research synergies across the themes of wildfire (cont.)

Fuel

Land use & fire history

Fire fighting

Fire behaviour

Topography

Societal impact risk

Meteorology, climate

Possible research synergies across the themes of wildfire (cont.)

- **Trade-offs between impact** of prescribed burns and potentially much greater (but lower probability) impact of wildfires

- **Impacts of fire** (prescribed & wildfire) on ecosystem services (e.g. carbon storage, water quality and supply, biodiversity, recreational value). Key knowledge gap on link between fire severity and combined fire history (prescribed + wildfire). Insufficient evidence makes any action for land management bodies and legislators difficult.

- **Wider knowledge base**: scientific and indigenous knowledge learning from each other

- **Good social science base** in the UK, but not yet in support of fire science

Possible research synergies across the themes of wildfire (cont.)

- Fuel
- Meteorology climate
- Topography
- Fire Fighting
- Environmental impacts
- Societal perceptions of risk and impact

Vegetation fire in the context of a future land use policy post-Brexit

- Wildfire fire risks and impacts are likely to increase due to:
  - increased fuel loads; land abandonment, reduced grazing, increase in forest plantations
  - growth of housing in rural urban interface
- Hence climate change and Brexit may be compounding factors

Vegetation fire in the context of a future land use policy post-Brexit (cont.)

Research synergies should therefore support '**fire resilient landscape design'**

- with a focus on fire risk forecasting, fire prevention, detection, suppression and limitation of negative direct and indirect impacts;

- and involve planners, policy makers, managers, engineers, natural and social scientists.

Vegetation fire in the context of a future land use policy post Brexit (cont.)

Opportunities exist to improve links between:

- Fire danger indices

- Fire spread modelling for UK vegetation

- Environmental conditions and impacts; modelling information on vegetation, soils, litter, hydrology

- Fire evacuation and preparation models

- Emissions information from UK fires