



## Vulnerable communities

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# Vulnerable communities: three countries improving national awareness of wildland fire risk

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# Wildland fire-prone countries

- Wildland fires associated with United States, Australia and in Mediterranean
  - large impact
  - severe social and environmental consequences
- The Netherlands, United Kingdom and New Zealand
  - people think of flooding, severe storms, earthquakes and volcanic eruptions rather than wildland fires.

➤ *Public assume extensive wildland fires causing fatalities and destroying homes occur elsewhere.*



# Country snap shots

	The Netherlands	United Kingdom	New Zealand
Population	16.6 M	62.3 M	4.3 M
Area km <sup>2</sup>	41,500	243,600	268,000
Average annual number 'wildland' fires		90,000 (2,700)*	3000
Average area burned annually		Unknown	6000 ha
% human caused fires	Majority	Majority	99%

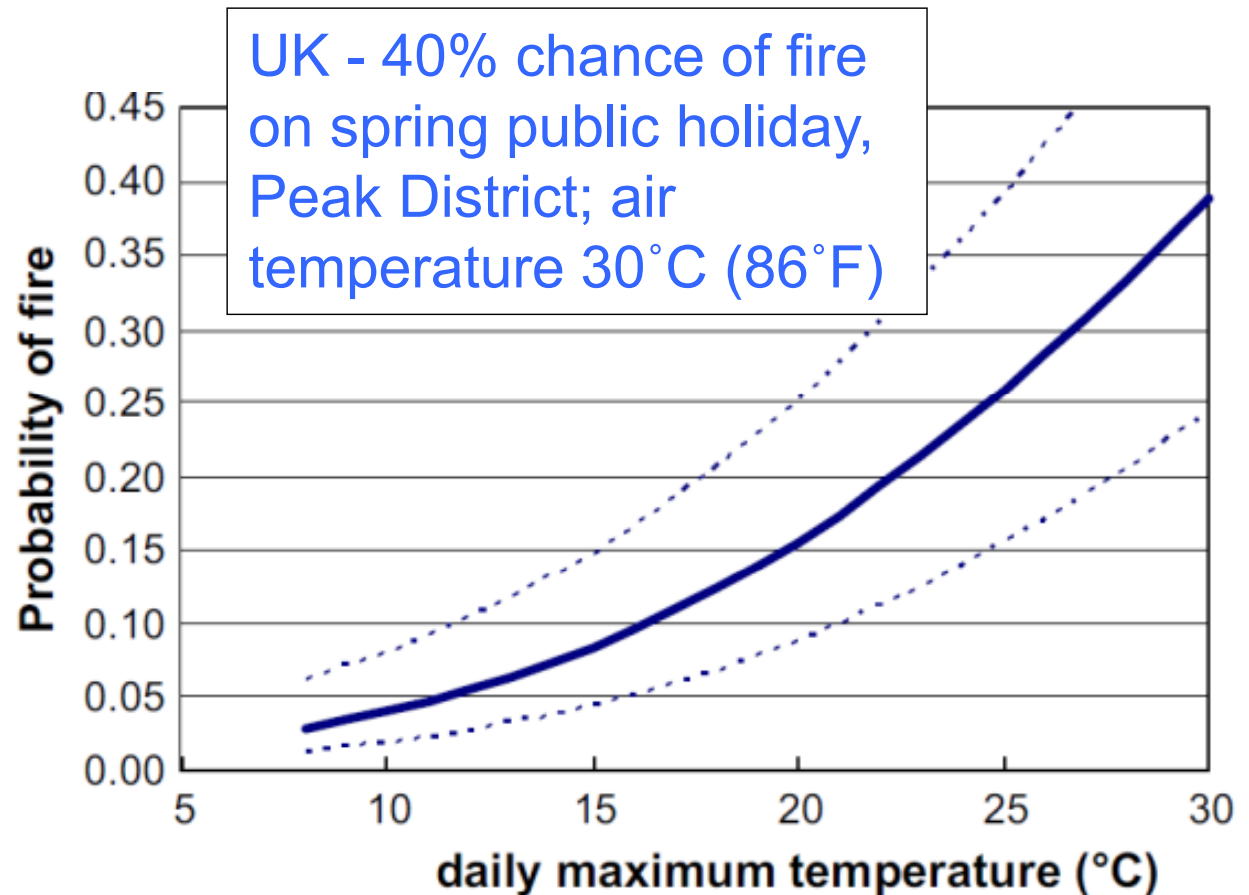
- *Number and extent of wildland fires comparatively low*
- *Underestimation of wildfire risk.*

\* 2,700 require  $\geq 5$  fire tenders.

Vegetation fires mainly on privately owned moorland and heath.

# Climate change: increasing risk

- Temperate climate
- **BUT** risk impact will increase under climate change
- Weather extremes, e.g. heat waves and severe drought, will become more frequent.



Albertson *et al.* (2009) *J Env. Management*, 90: 2642-2651.

➤ *Number and extent of wildland fires likely to increase.*

# Increasing WUI, especially NZ and NL

- Significantly expanding WUI, e.g. NZ – projected 21% population increase on urban fringes by 2021
  - *Increasingly significant risk of wildland fires with social and economic impact.*



WUI, Nelson, NZ, 2009, 30ha,  
200 homes evacuated,  
houses destroyed/damaged



Dune fire Schoorl, NL, 2009,  
150ha dunes, elderly  
evacuated from rest home.

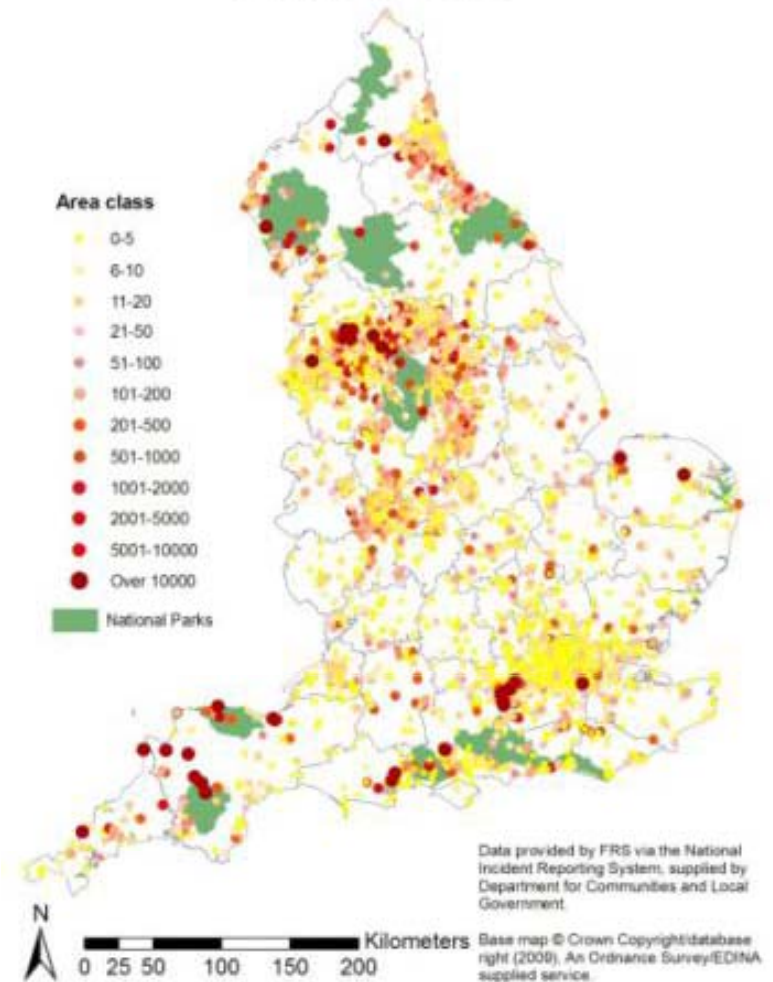
# Moorland fires, UK

- Large vegetation fires in remote moorlands seriously challenge operational strength and resilience of emergency services
  - *Increasingly significant social and economic impact.*



Spring 2011: 250 significant fires in 20 days in England alone - homes evacuated, roads and schools closed; wind turbine shut down.

Outdoor Fires by area class  
18 April - 6 May 2011



# Barriers to prepared communities and emergency services



- Not technological issues to resolve
- Socio-economic issues
- Mental barrier exists
  - *Prevent acknowledgement that wildland fires are serious risk*
  - *Under-estimation of wildland fire risk has led to:*
    - *under preparedness*
    - *vulnerable communities and*
    - *vulnerable emergency services.*



# Increased acknowledgement needed

- Increased need for wildfire-aware communities and policy makers
- Increased need for active mitigation to address issues

E.g. mitigation for increased recreational use of fire and arson

- *Recognise wildfire risk management on checklist of ecosystem services*
- *Acknowledge synergies and conflicts with other emergency services.*



# Binding theme – 3 countries

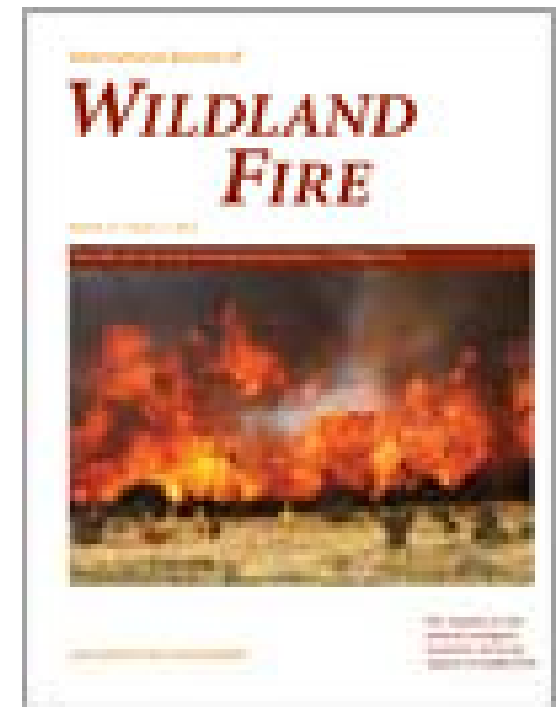
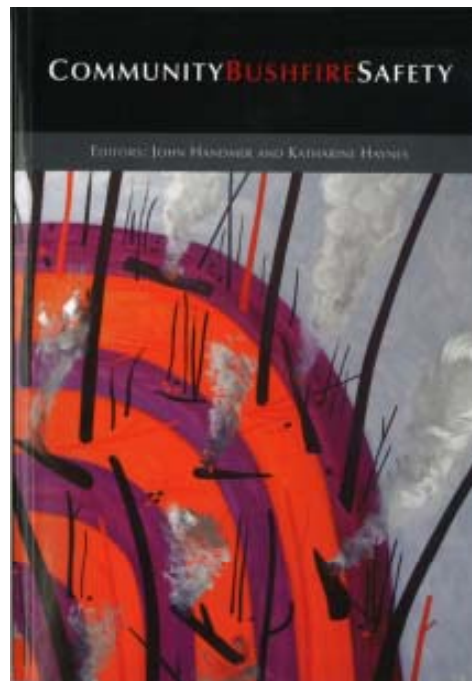
- Low awareness of wildland fire risk
- Relatively poor preparedness
- Less efficient fire response
  - *Need increased agency and community responsibility*
  - *Need increased community preparedness.*

**BUT** much knowledge can be gained from examining international experiences.



# International literature

- Wildland fire preparedness
- Community resilience
- Adaptive capacity
- Risk perception and mitigation in wildland-urban interface
- Etc.



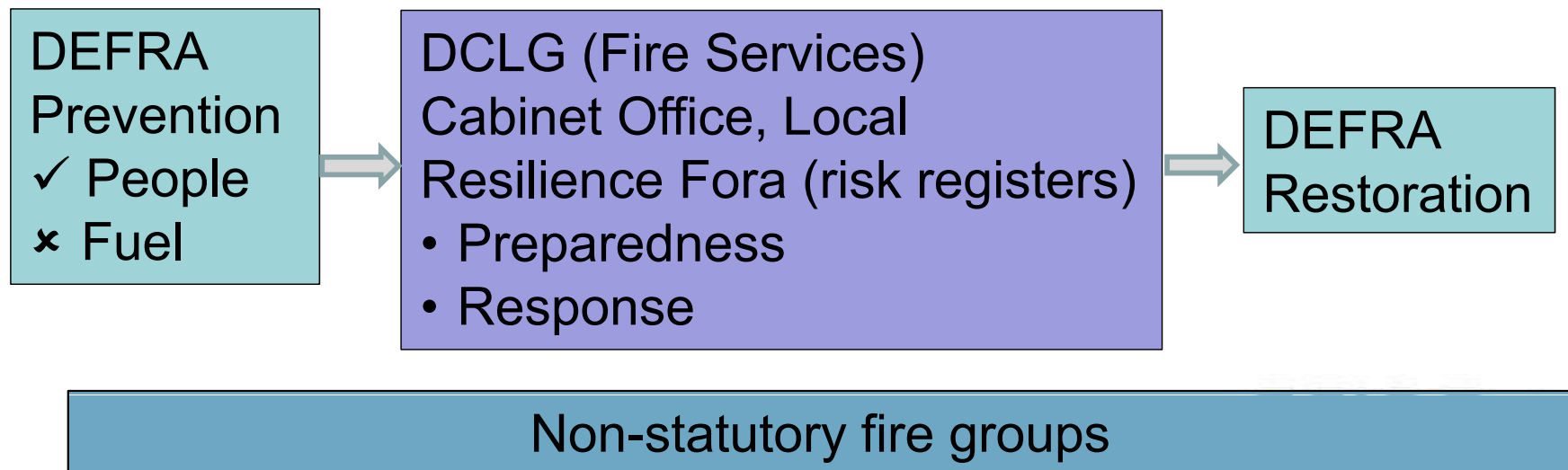
# Knowledge gaps

- **Lack of research on raising awareness of wildland fire risk in less fire-prone areas**
- **Discrepancies between how people interpret risk and how they adapt behaviour.**



# Future challenge

- Bring together vulnerable communities and policy makers from different sectors to mitigate against increasing wildland fire risk
- E.g. Netherlands WF Interagency Collaboration Project
- E.g. UK fragmented approach to WF risk management filled by non-statutory local fire groups.



# How do we address challenges?

- Research on preparedness and mitigation in less-fire prone countries and regions
- Share research – conferences, publications etc.
- Collaborative research and knowledge exchange
  - E.g. Australia and New Zealand Effective communication project – Bushfire CRC
  - Study leave – e.g. USDA Forest Service staff to New Zealand
  - Natural Environment Research Council (UK) *Knowledge for Wildfire* Knowledge Exchange Fellowship (JMCM).
- Discussion sessions/ongoing dialogue.

# Discussion session and contacts

- ***Discussion session: Different risks, different solutions? Thursday 3.10pm.***

- Lisa Langer, New Zealand  
[lisa.langer@scionresearch.com](mailto:lisa.langer@scionresearch.com)

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