

The University of Manchester

MANCHESTER
1824

Mapping the Spring 2011 fires

Julia McMorrow
Gina Cavan

School of Environment and Development, University of Manchester

Wildfire 2011, Buxton, Derbyshire, 14 -15 Sep 2011

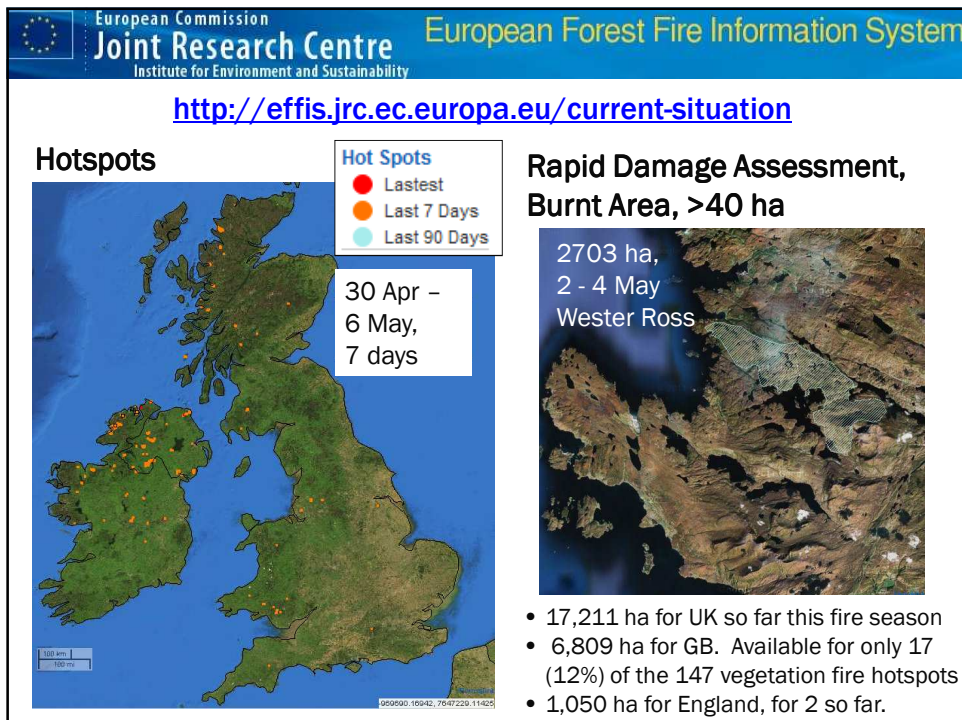
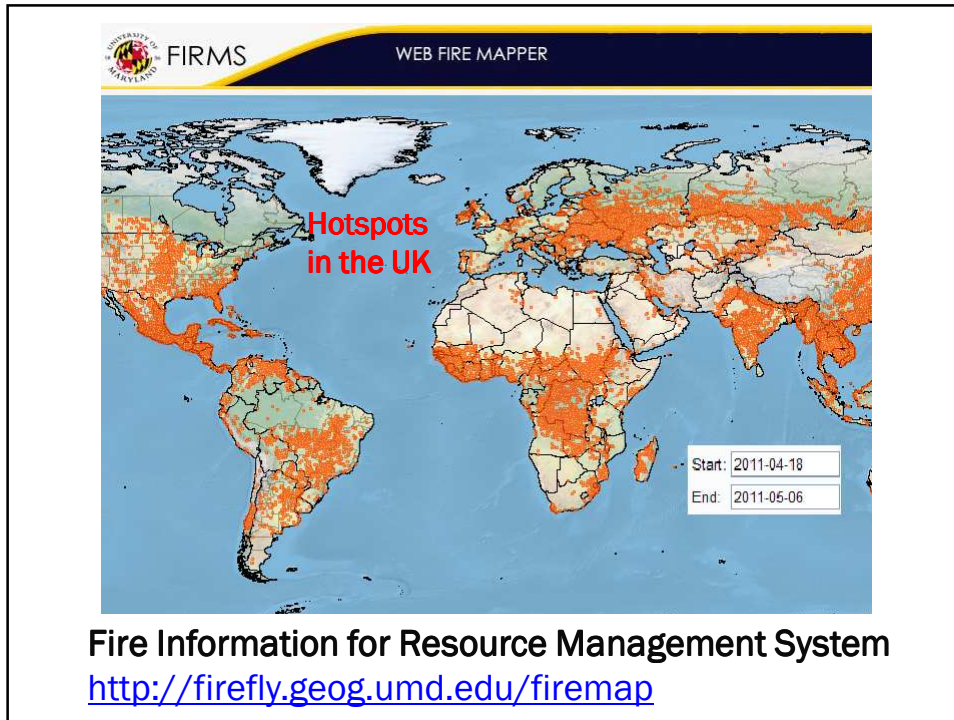
Aims and Data

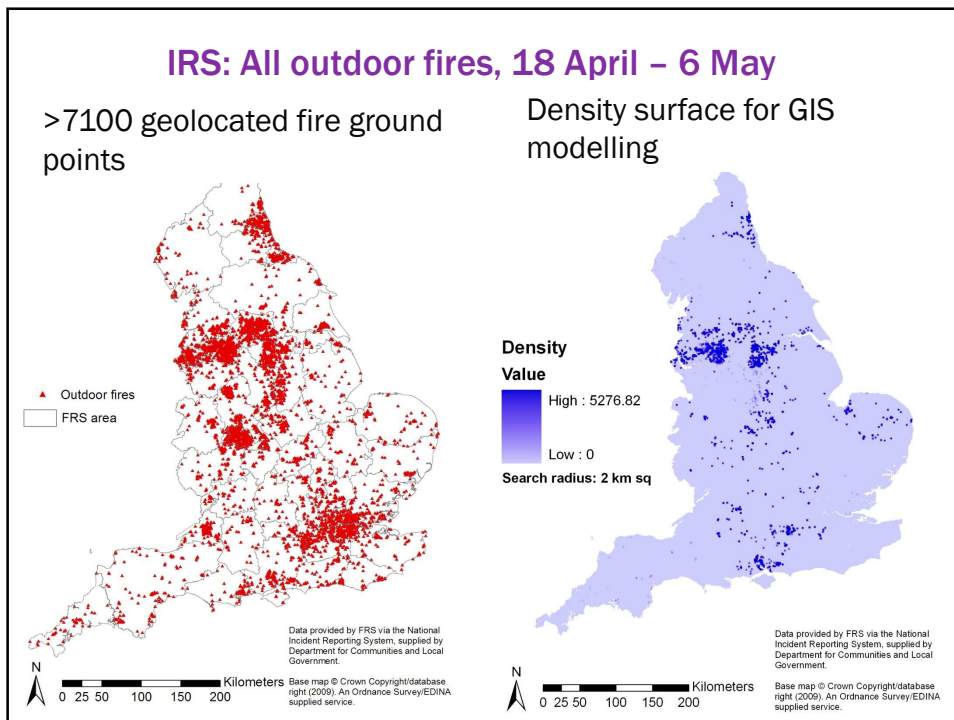
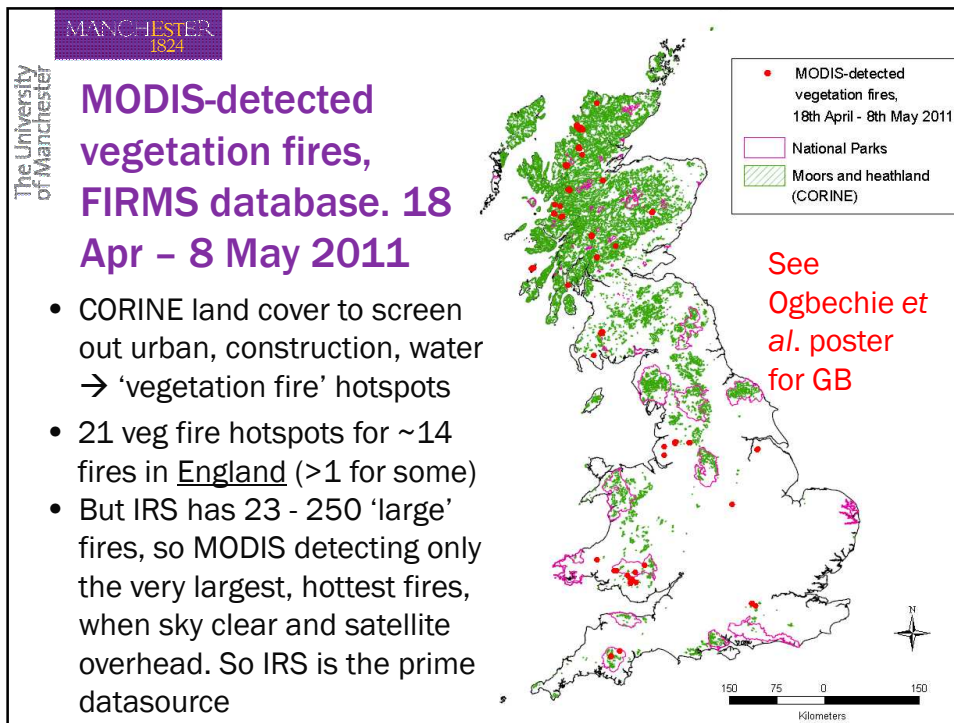
Aims

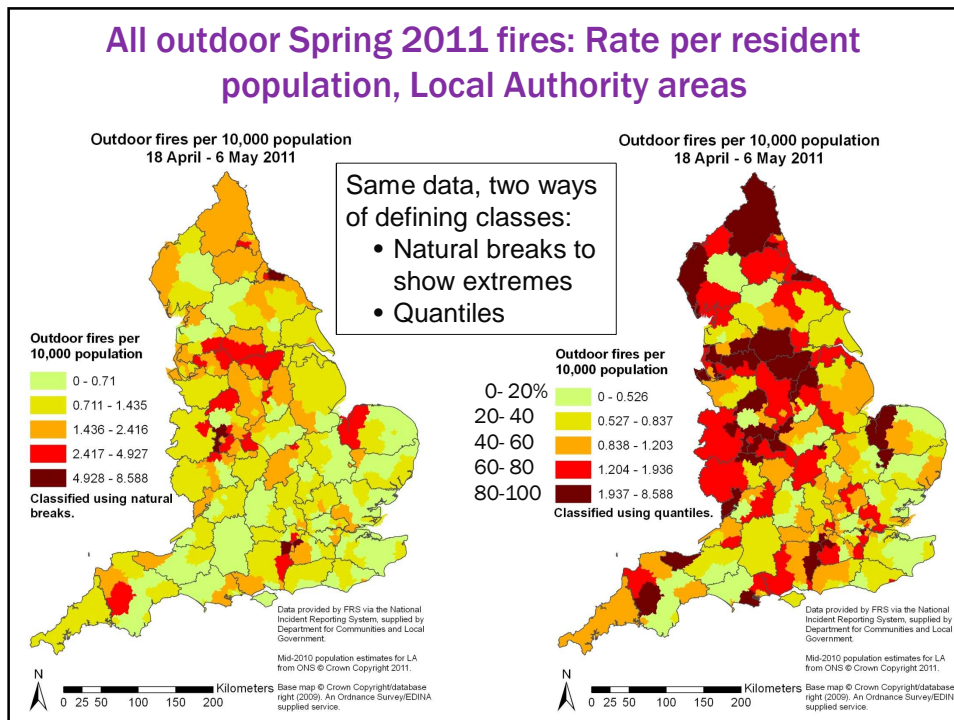
- To produce a map of 'wildfires' for the England and Wales Wildfire Forum (EWWF)
- To scope data-handling issues for future GIS analysis using Incident Recording System (IRS) data, to answer simple 'where & when' questions [and eventually 'why, what if']

Data

- **Satellite databases:** MODIS (Moderate Resolution Imaging Spectrometer) on Terra and Aqua satellites. **See poster**
- **Raw IRS data** from Department of Communities and Local Government (DCLG); 18 April – 6 May, all 14 classes of outdoor fires







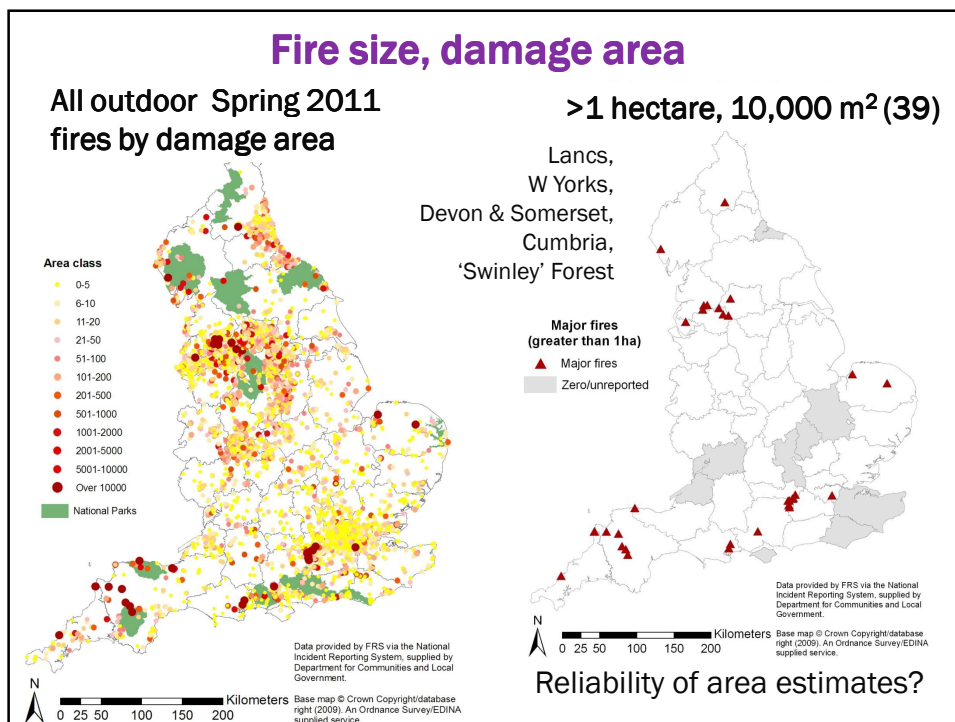
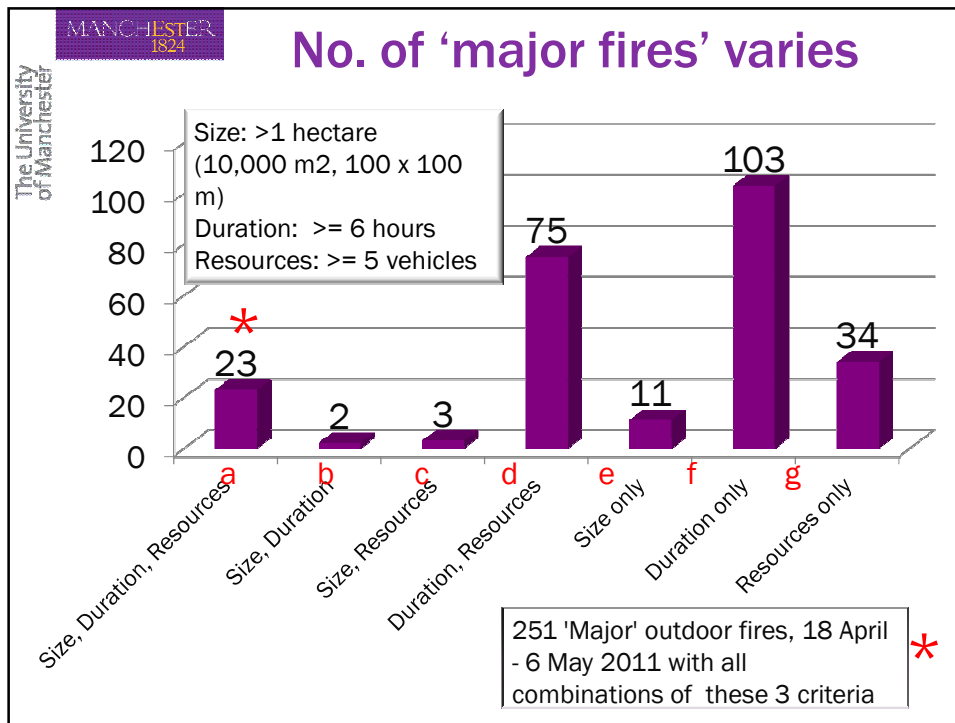
The University of Manchester

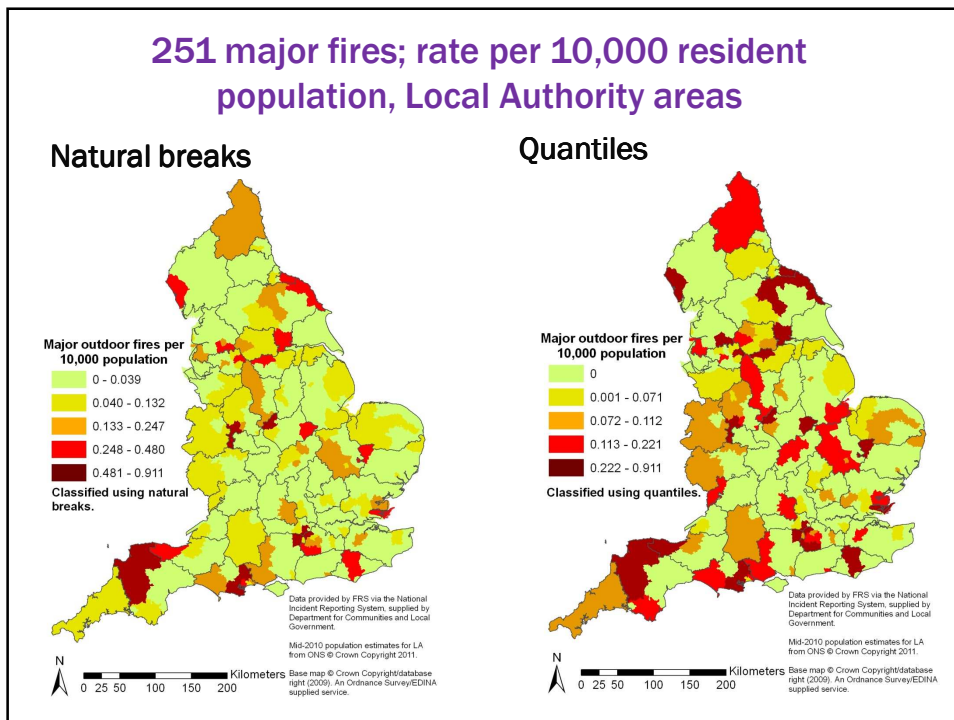
How many were 'major fires?' ...what is a 'major fire'/'wildfire' in IRS??

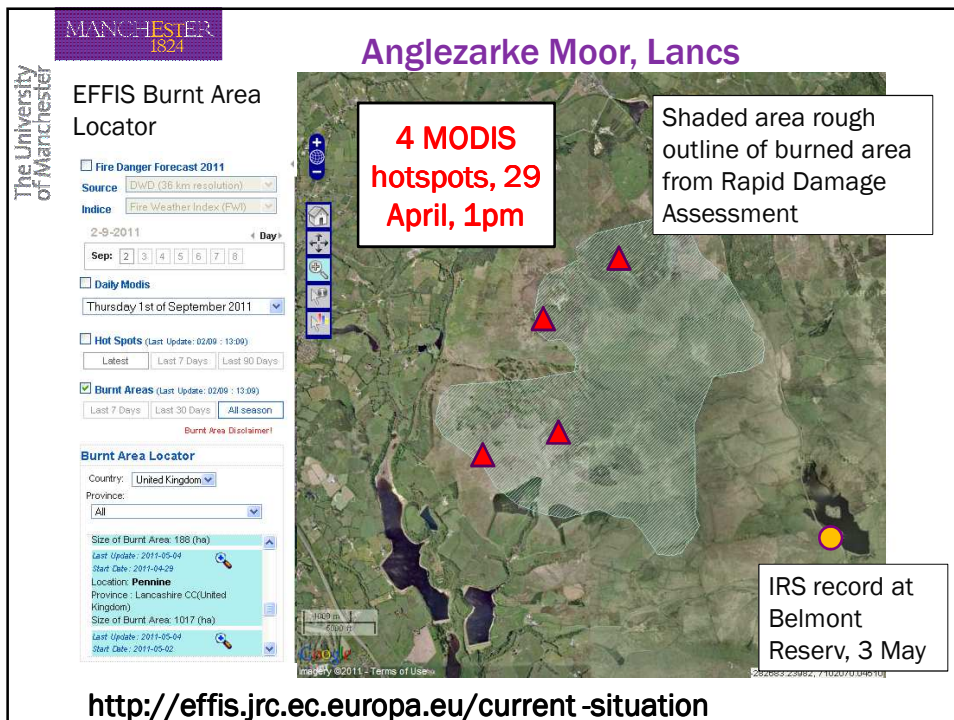
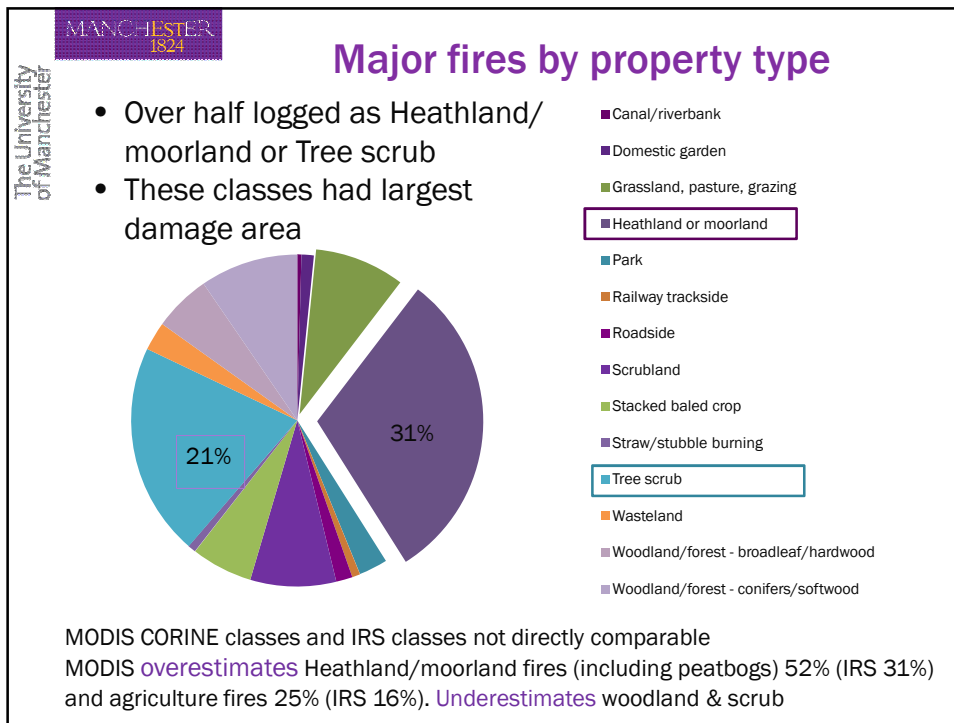
Decisions (in consultation with EWWF)

1. Data fields
 - Size (damage area), Duration (call-out to close), Resources (vehicles, crew), [Primary fire, others?]
2. Thresholds
 - >1 ha, >= 6 hours call-out to close, >= 5 vehicles
3. Combinations of criteria
 - E.g. All 3 criteria (AND), any of the criteria (OR), etc
4. Or devise a single new combined criterion?
 - weighted combination of unthresholded IRS data?

- Each produces a different set of fires to map
- So further consultation and consensus is needed
- and what to call them







The University of Manchester

MANCHESTER
1824

IRS issues & recommendations

- **How to define major fires** → Further consultation required. Regional criteria to allow for size-time–resources tradeoffs?
- **Damage area:** accuracy → Further QA, training
- **Location:** ignition/centre? MODIS records fire front →
 - Include in operational procedure e.g. 1st arrival on fire ground record co-ords.
 - Include degree of confidence field.
 - Fire perimeter would give area & centre pt, recurrence analysis, costing etc.
- **Property classes** → Review
 - Should include veg fires which damage structural property
 - Accuracy → QA against land cover in GIS. Could auto-fill from GIS database.
- **Multiple records:** re-ignitions on FC land (Swinley), peat, record overflows (Simonswood, Lancs)

The University of Manchester

MANCHESTER
1824

Conclusion

- Despite these issues, IRS has good potential for GIS analysis of wildfire regime, relative risk, and resource resilience.
- In return, GIS and satellite data can help QA of IRS data
- Further partnership research is justified.

Acknowledgements

- Department of Communities and Local Government, Fire Statistics for IRS data
- EWWF and FRS officers for data and advice
- Olisa Ogbechie for analysis of FIRMS data
- School of Environment and Development, University of Manchester for funding.