PROGRAM A

A comparison of the McArthur Forest Fire Danger Index and the Canadian Fire Weather Index.

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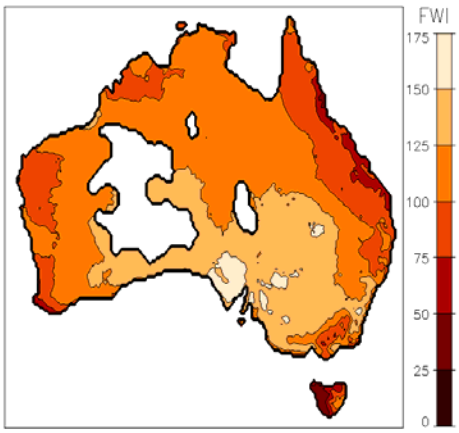
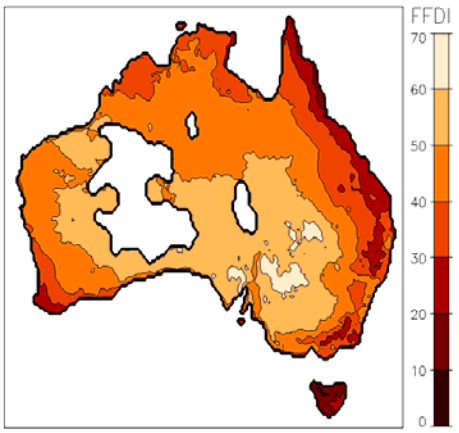
Eight years of gridded data throughout Australia are used to examine the Canadian Fire Weather Index (FWI) and the McArthur Forest Fire Danger Index (FFDI).

- FWI is found to be more sensitive to wind speed and rainfall, and less sensitive to temperature and relative humidity, than FFDI.

- Similar on a broader scale: both indices are most sensitive to wind speed, then secondly to relative humidity, thirdly to temperature and least of all to drought.



99th percentiles of the FWI



99th percentiles of the FFDI

CASE STUDIES

Six recent major fires are examined:

- 25 December 2001 at Warragamba (NSW)
- 18 January 2003 at Canberra (ACT)
- 11 January 2005 at Wangary (SA)
- 23 March 2005 at Bridgetown (WA)
- 2 April 2005 at Wilsons Promontory (VIC)
-11 December 2006 at Scamander (Tas)

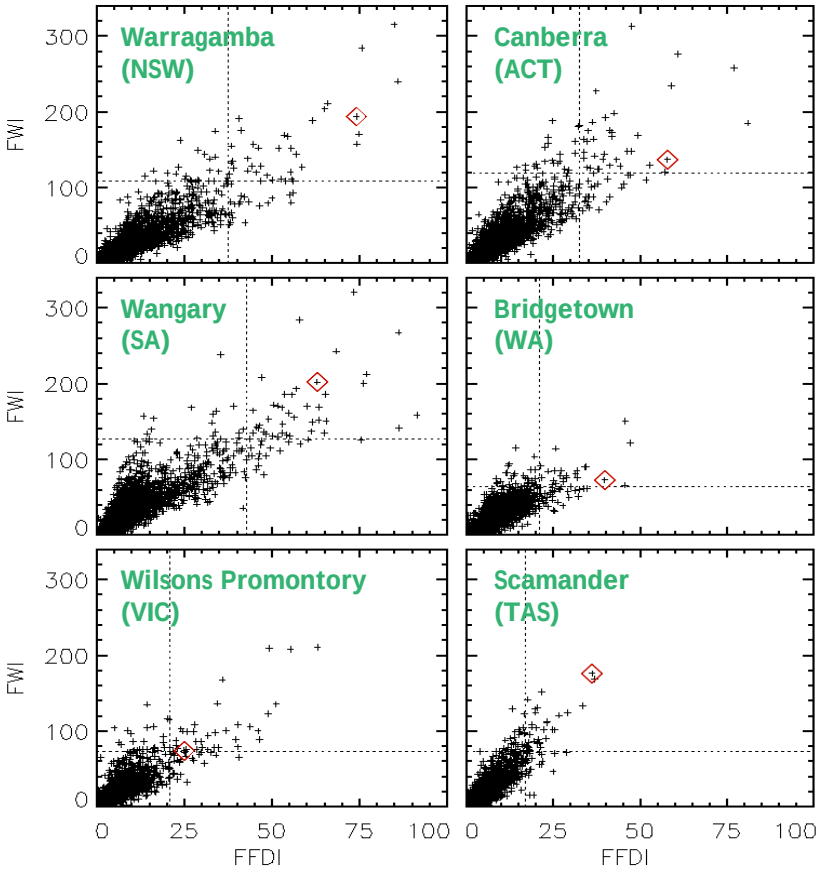
Differences between the indices relate to sensitivity differences (as described above):

- for example, the Scamander event was largely driven by strong winds and dry fuel (rather than high temperatures or low relative humidity) which favours high FWI values.

Index percentiles could be a valuable tool for fire managers:

- Index percentiles provide a consistent indication of the extreme nature of the events, being above 98 for all six events.

- In contrast, index values vary by a factor of about three between the six events.



Scatter plots of FWI vs. FFDI (from 2000-2007). Dotted lines indicate 98th percentiles. '◊' indicates the fires which are examined.

References: Dowdy, A. J., Finkele, K., Mills, G. A. and de Groot, W. J., Australian fire weather as represented by the McArthur Forest Fire Behaviour Index and the Canadian Fire Weather index, *CAWCR Research Report*, in press.