

Chapter 2

Fire Indices

This chapter presents the long-term statistics for the four fire danger indices calculated from the ERA-I data. Monthly values for maximum, median, 95th and 99 percentiles have been contoured and are displayed in panels of 6 months. Only data for 0300 UTC are presented here as CFWI is only valid for 1 time. Daily cycles of statistics for the other fire weather parameters can be found in chapter 3.

2.1 FFDI

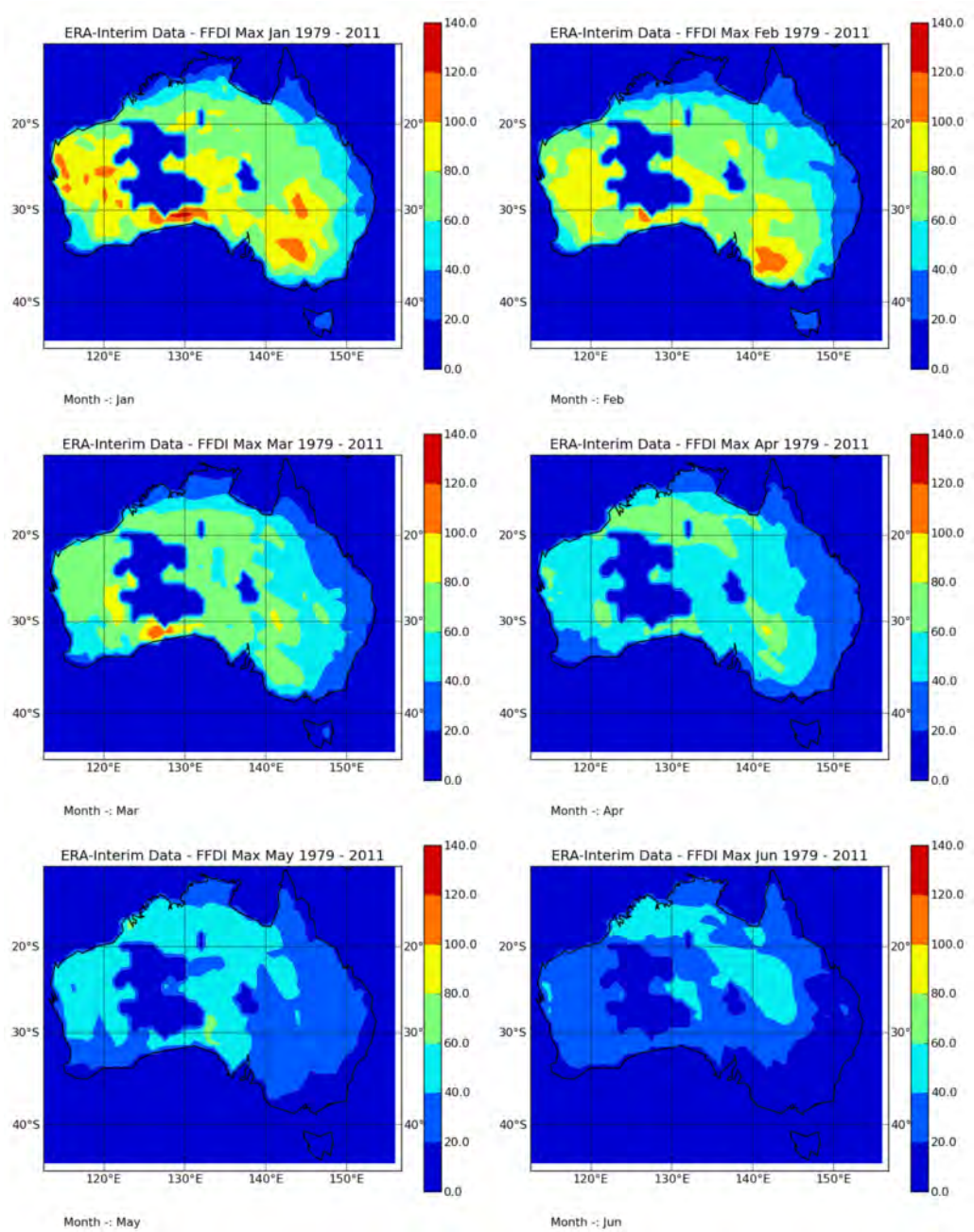


Figure 2.1: Maximum FFDI by month, 0300 UTC, January to June

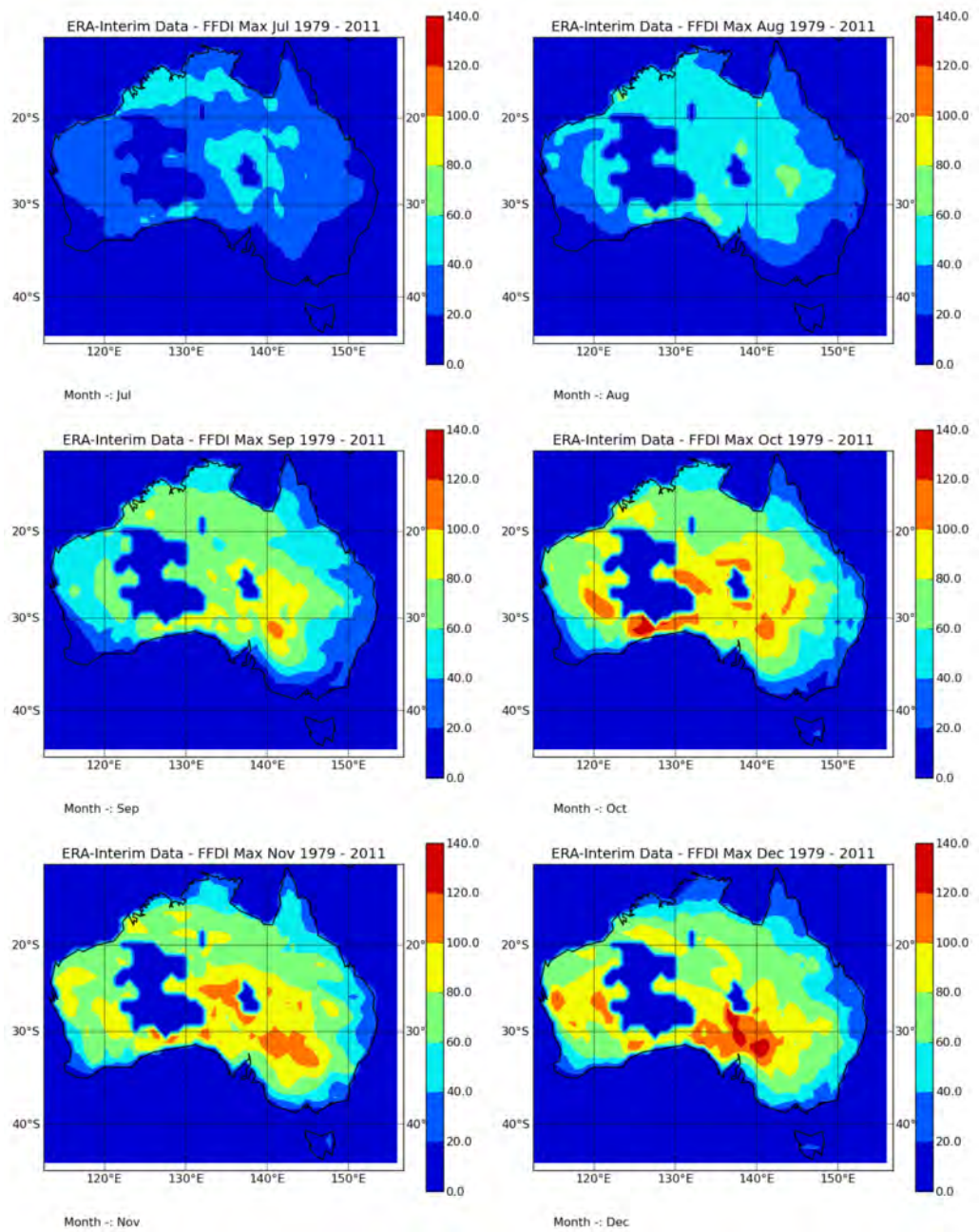


Figure 2.2: Maximum FFDI by month, 0300 UTC, July to December

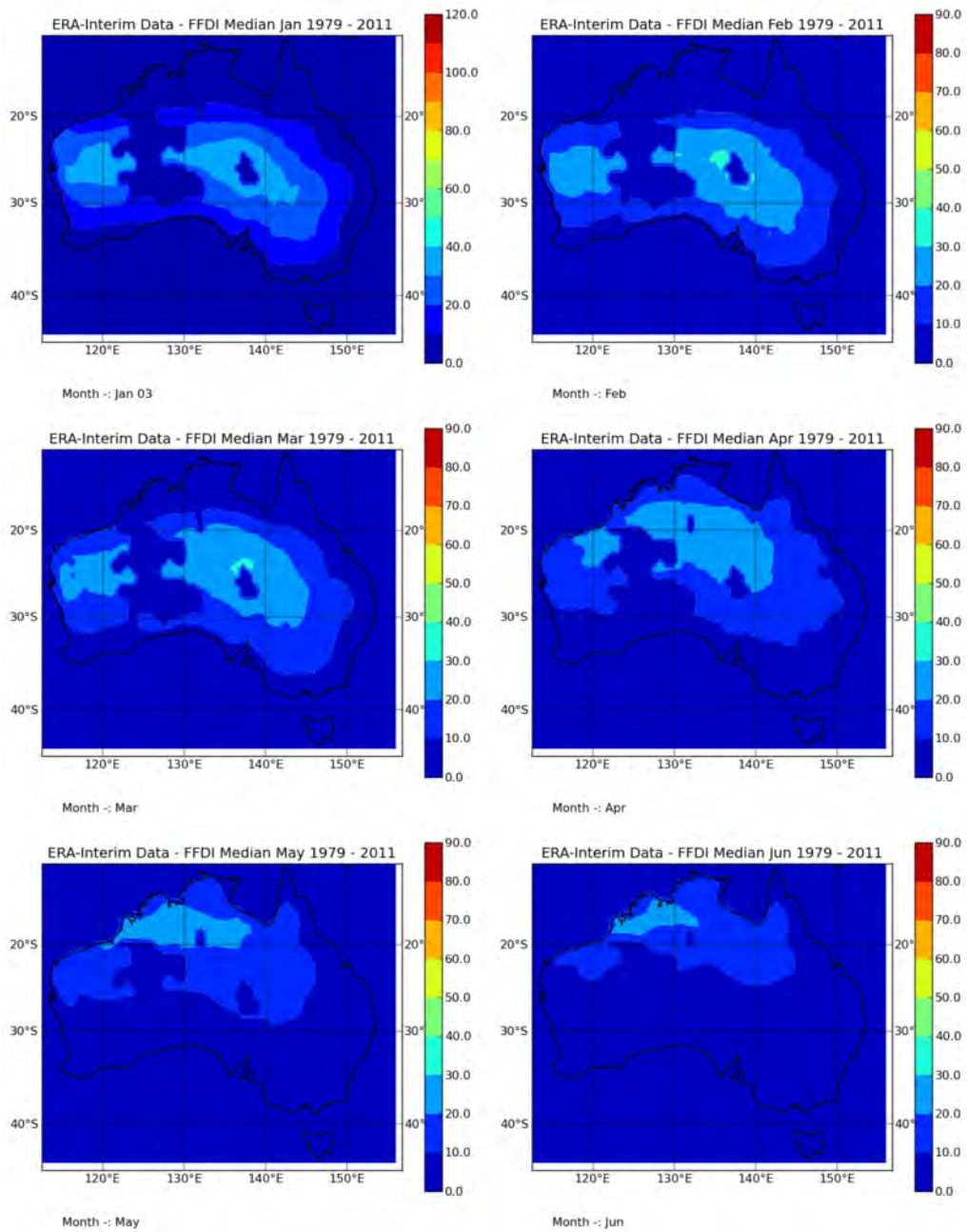


Figure 2.3: Median FFDI by month, 0300 UTC, January to June

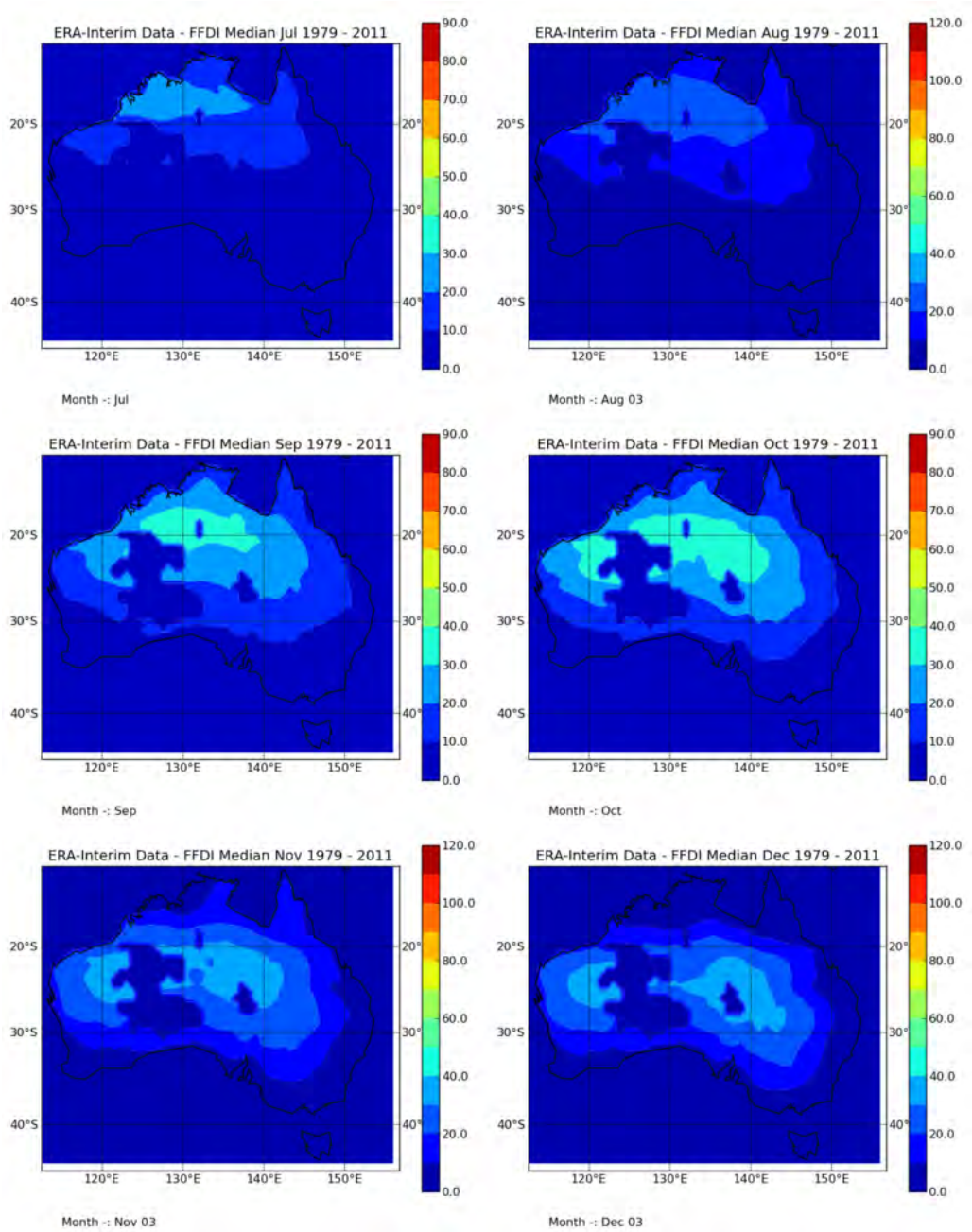


Figure 2.4: Median FFDI by month, 0300 UTC, July to December

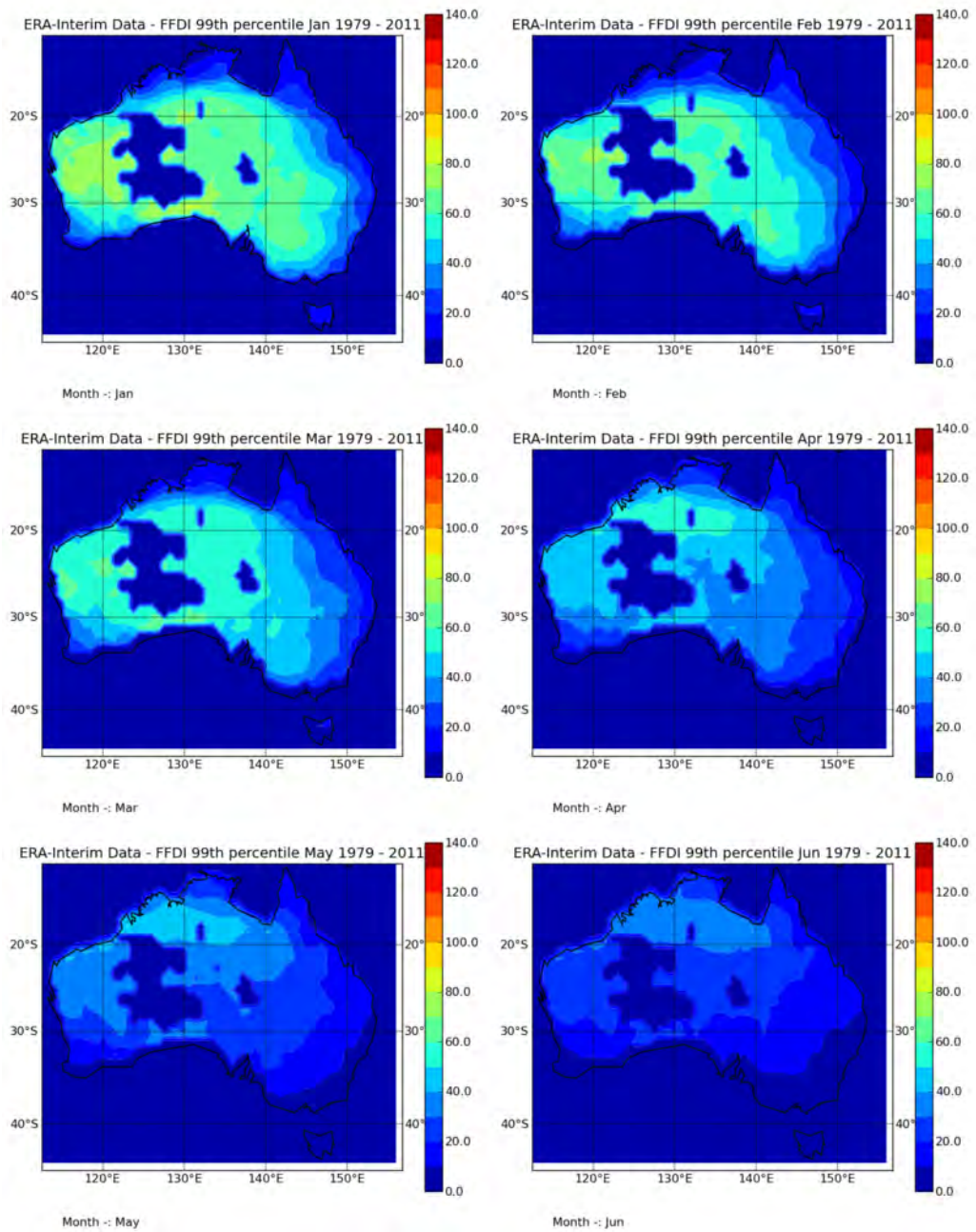


Figure 2.5: 99th Percentile FFDI by month, 0300 UTC, January to June

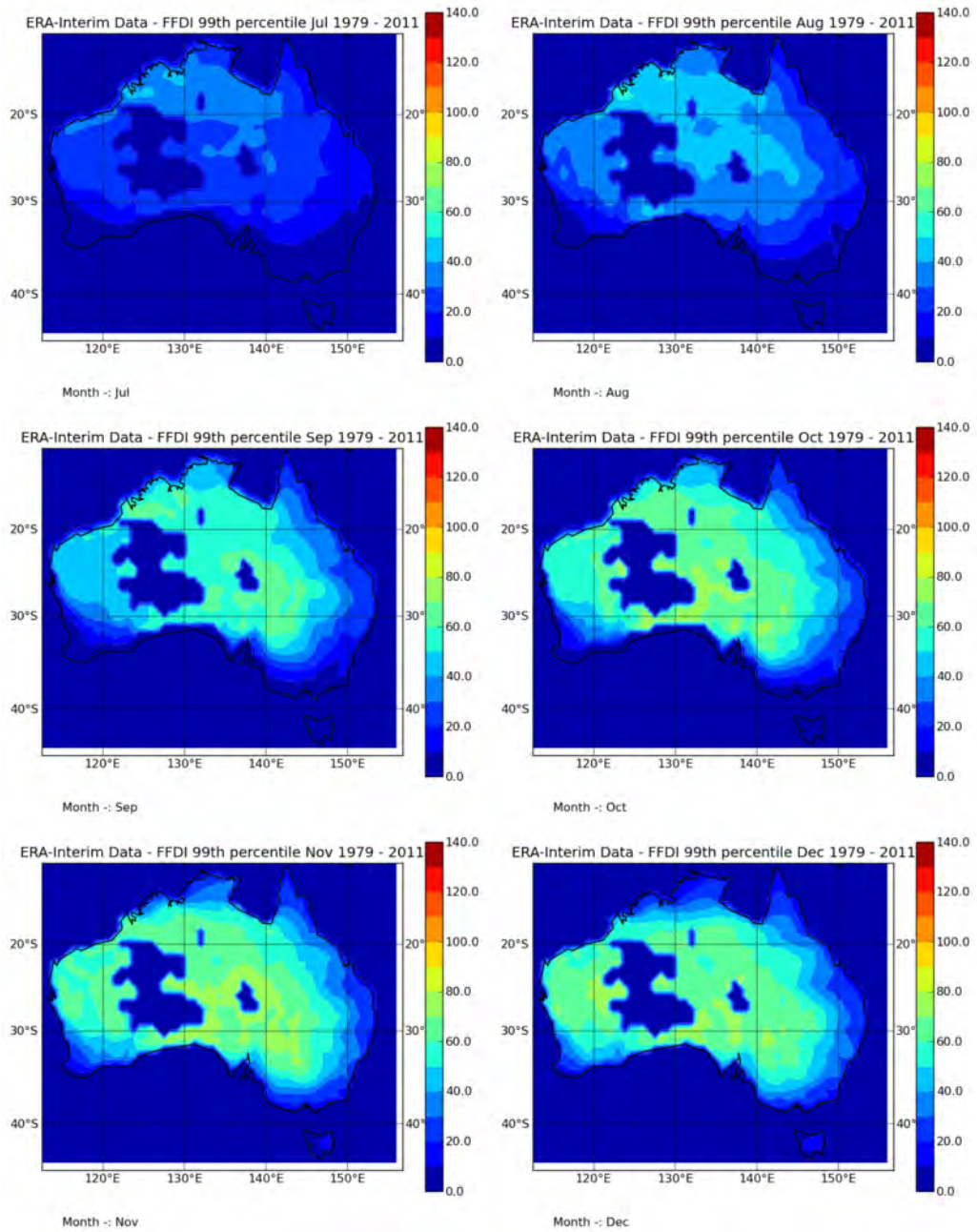


Figure 2.6: 99th Percentile FFDI by month, 0300 UTC, July to December

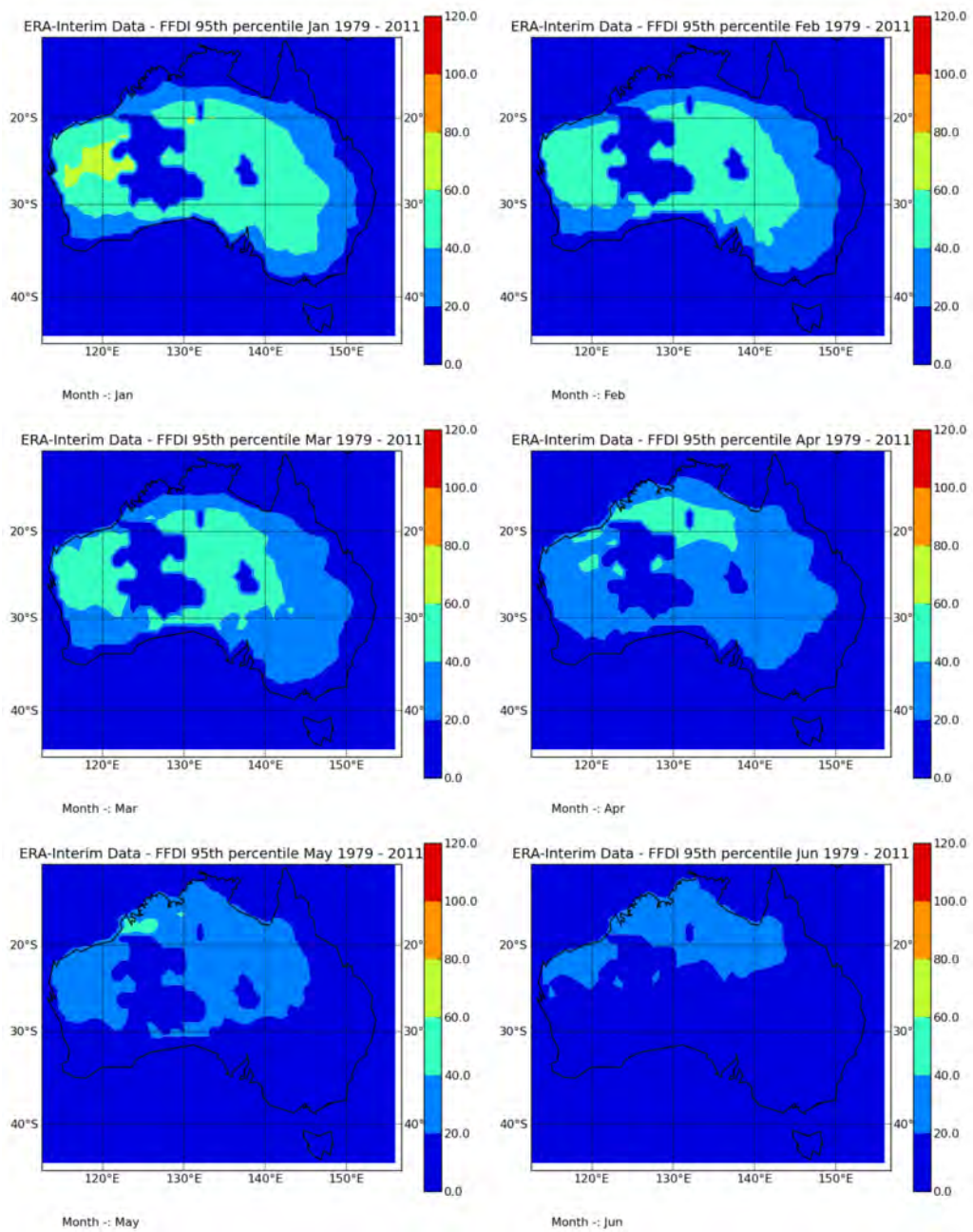


Figure 2.7: 95th Percentile FFDI by month, 0300 UTC, January to June

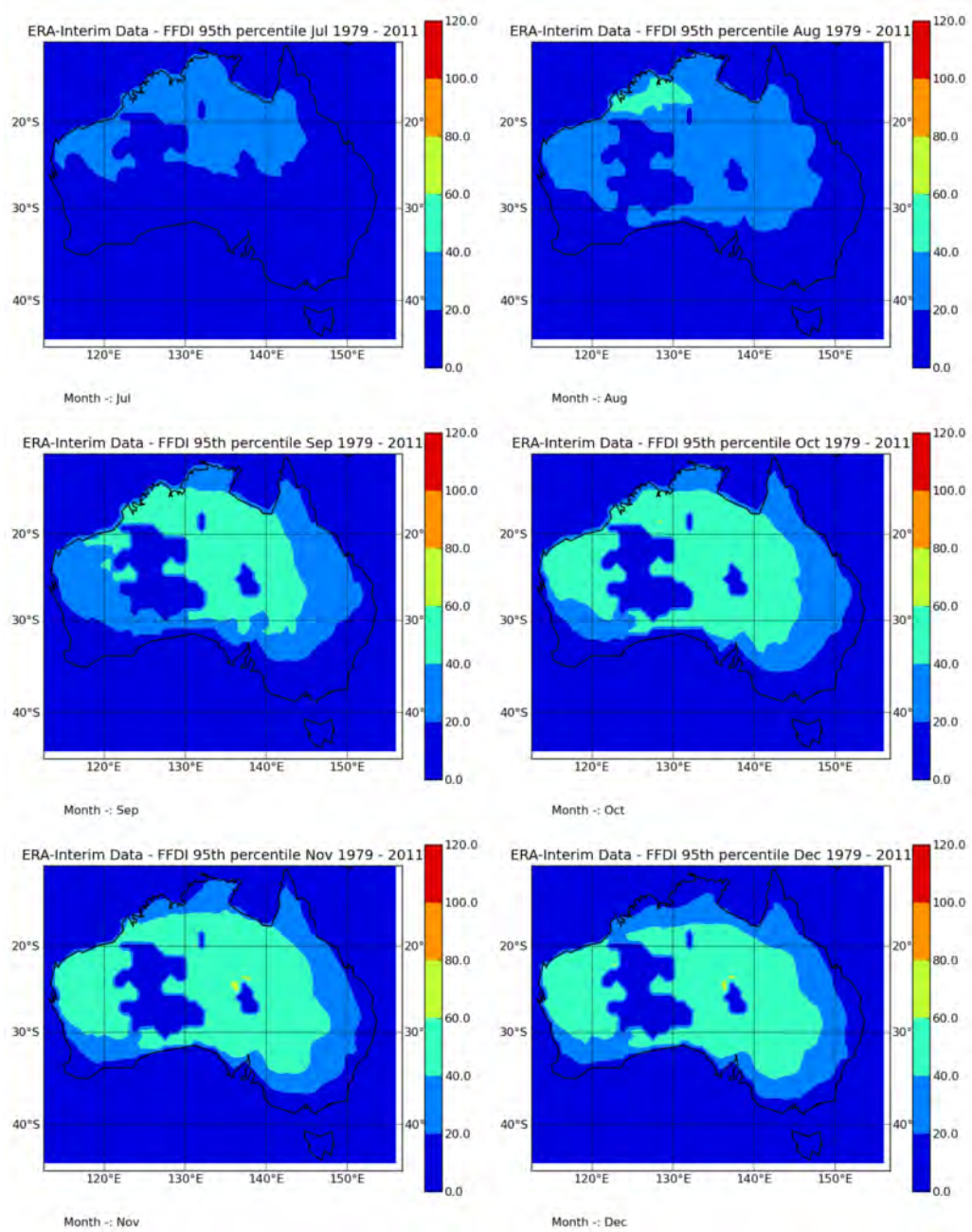


Figure 2.8: 95th Percentile FFDI by month, 0300 UTC, July to December

2.2 CFWI

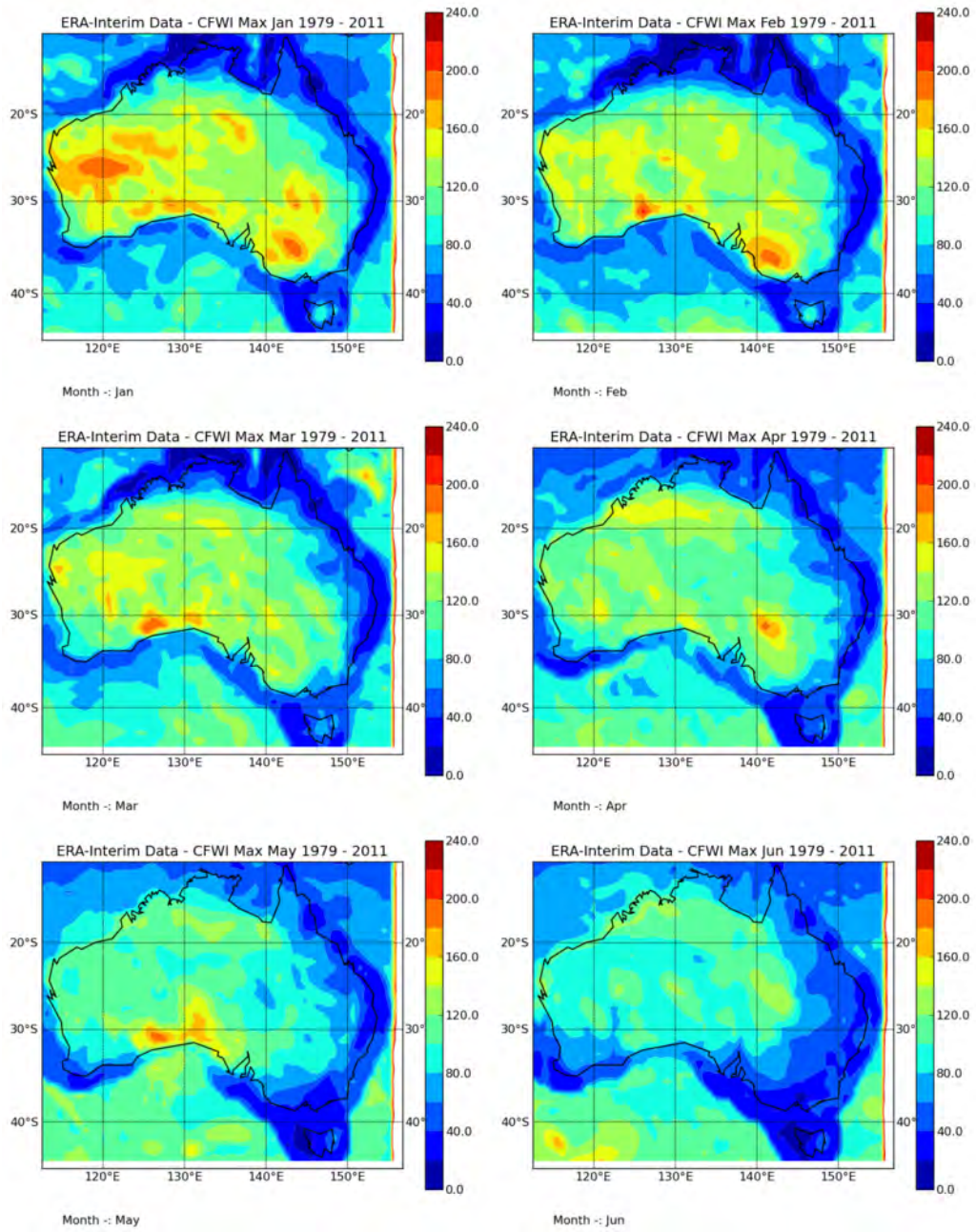


Figure 2.9: Maximum CFWI by month, 0300 UTC, January to June

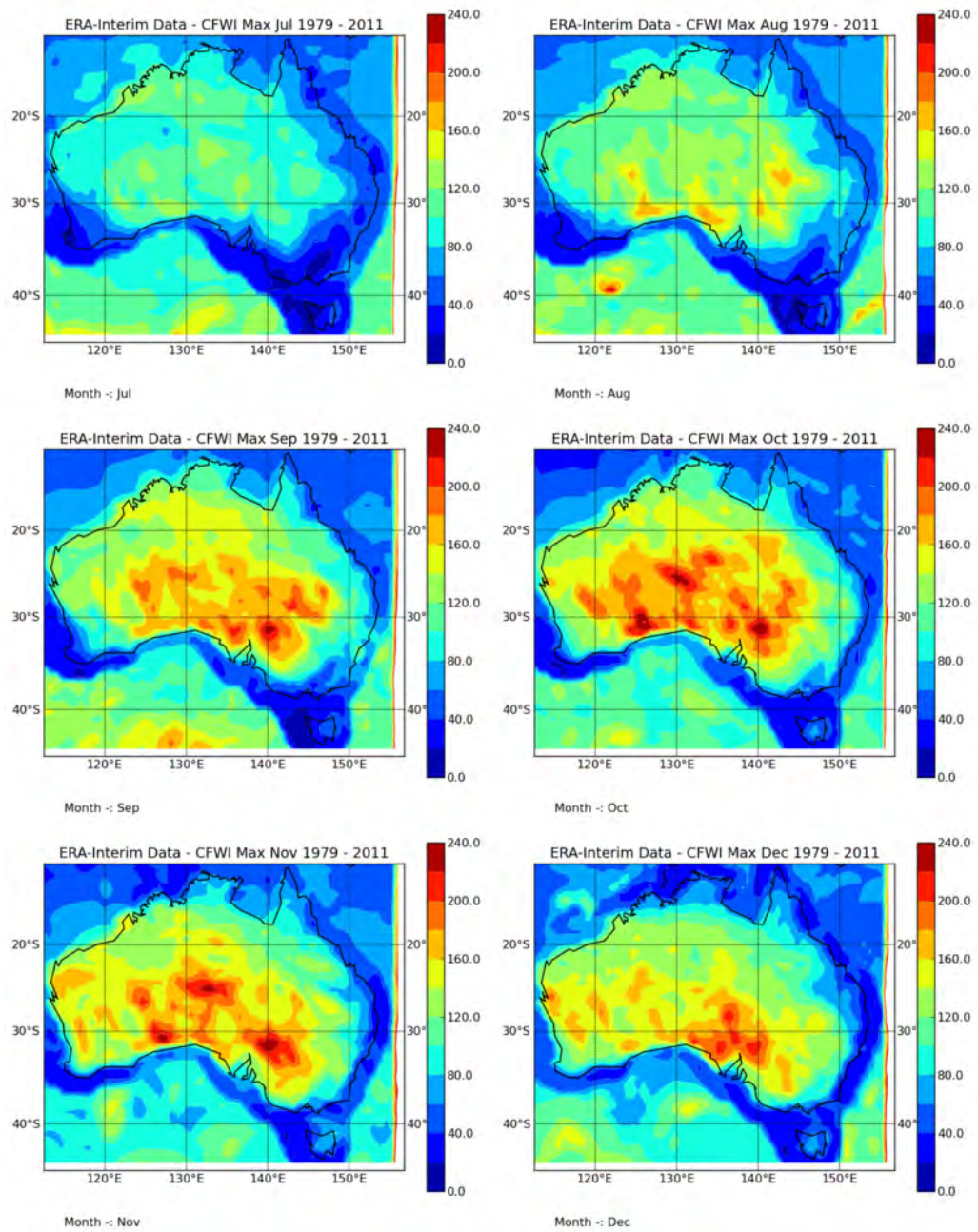


Figure 2.10: Maximum CFWI by month, 0300 UTC, July to December

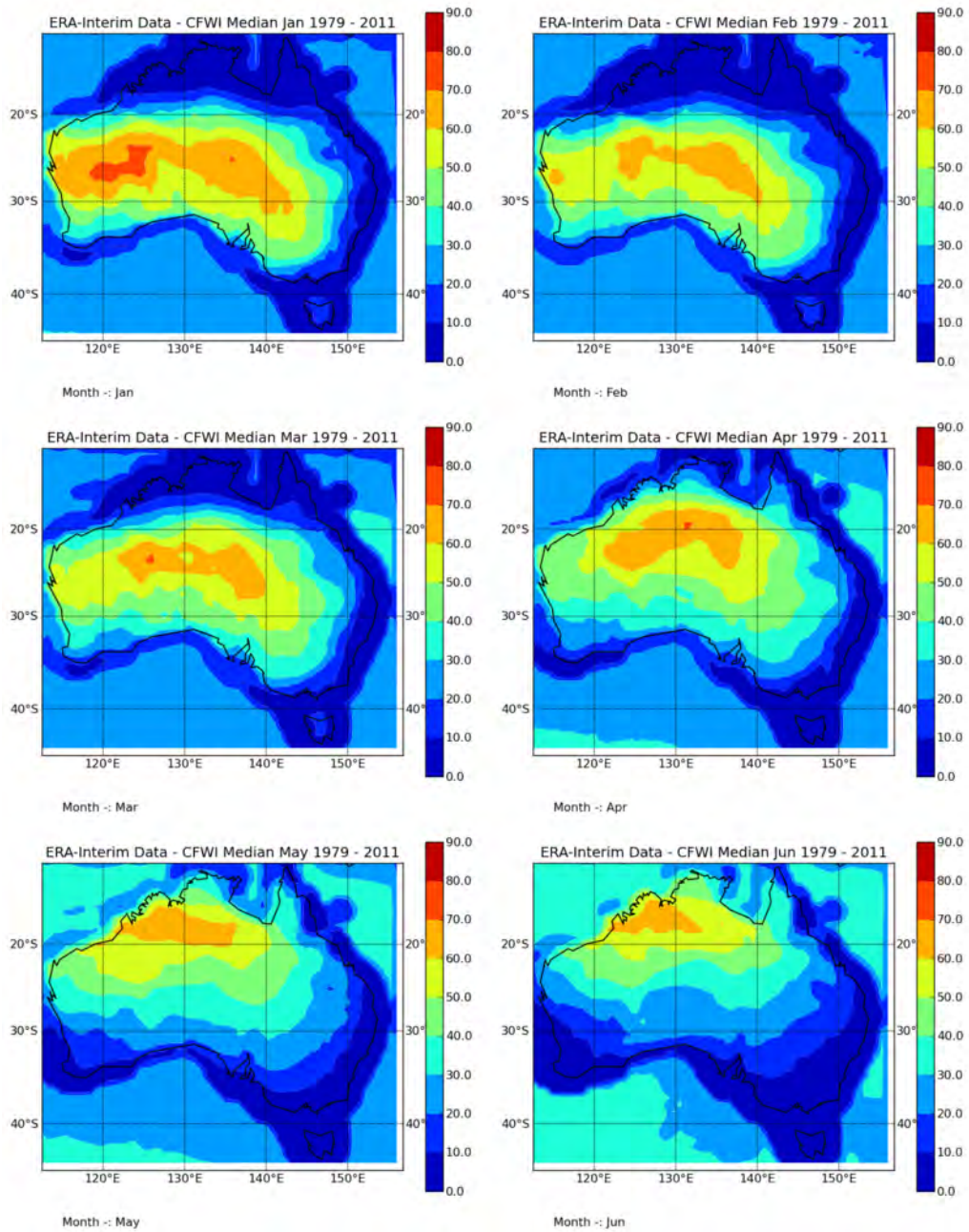


Figure 2.11: Median CFWI by month, 0300 UTC, January to June

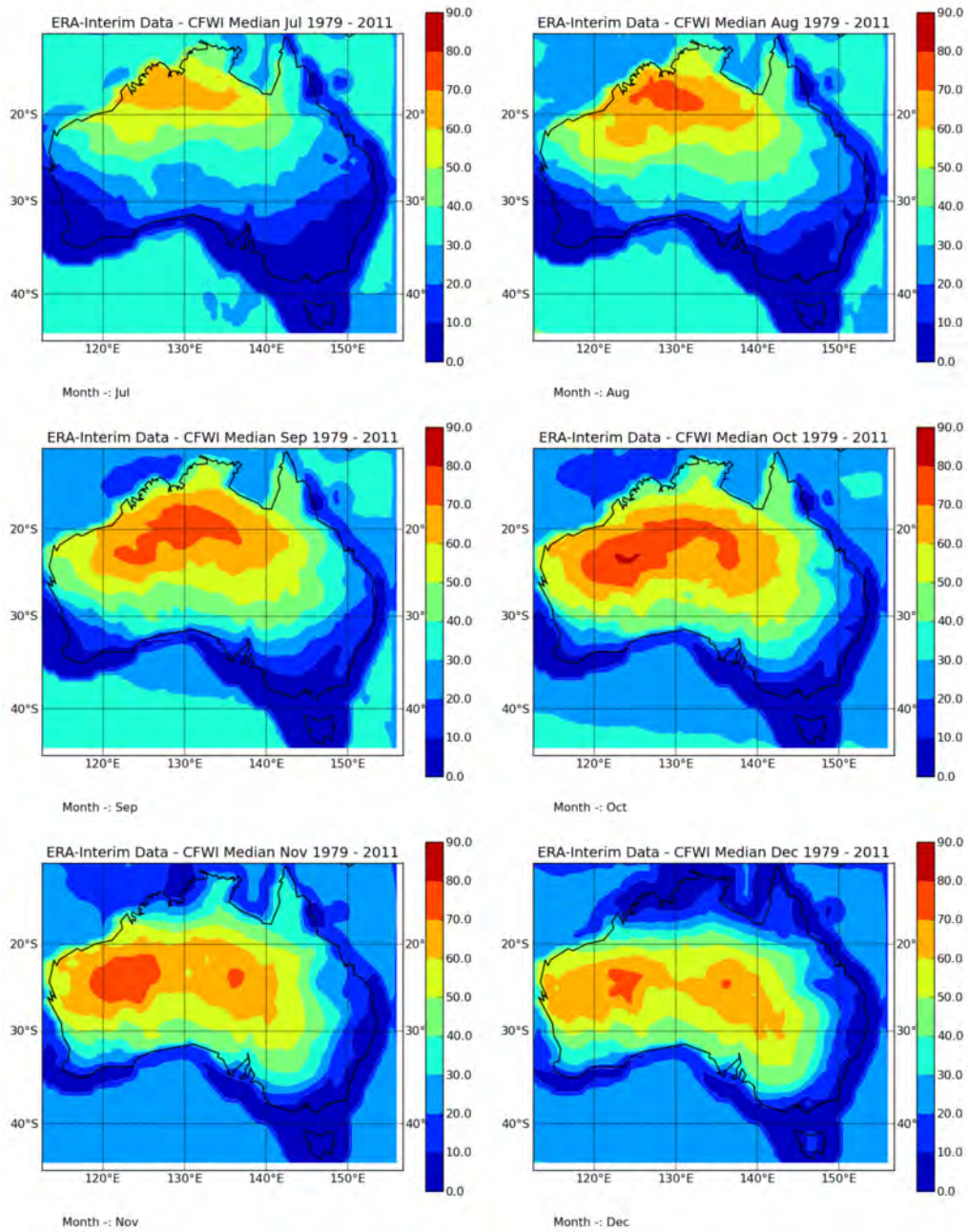


Figure 2.12: Median CFWI by month, 0300 UTC, July to December

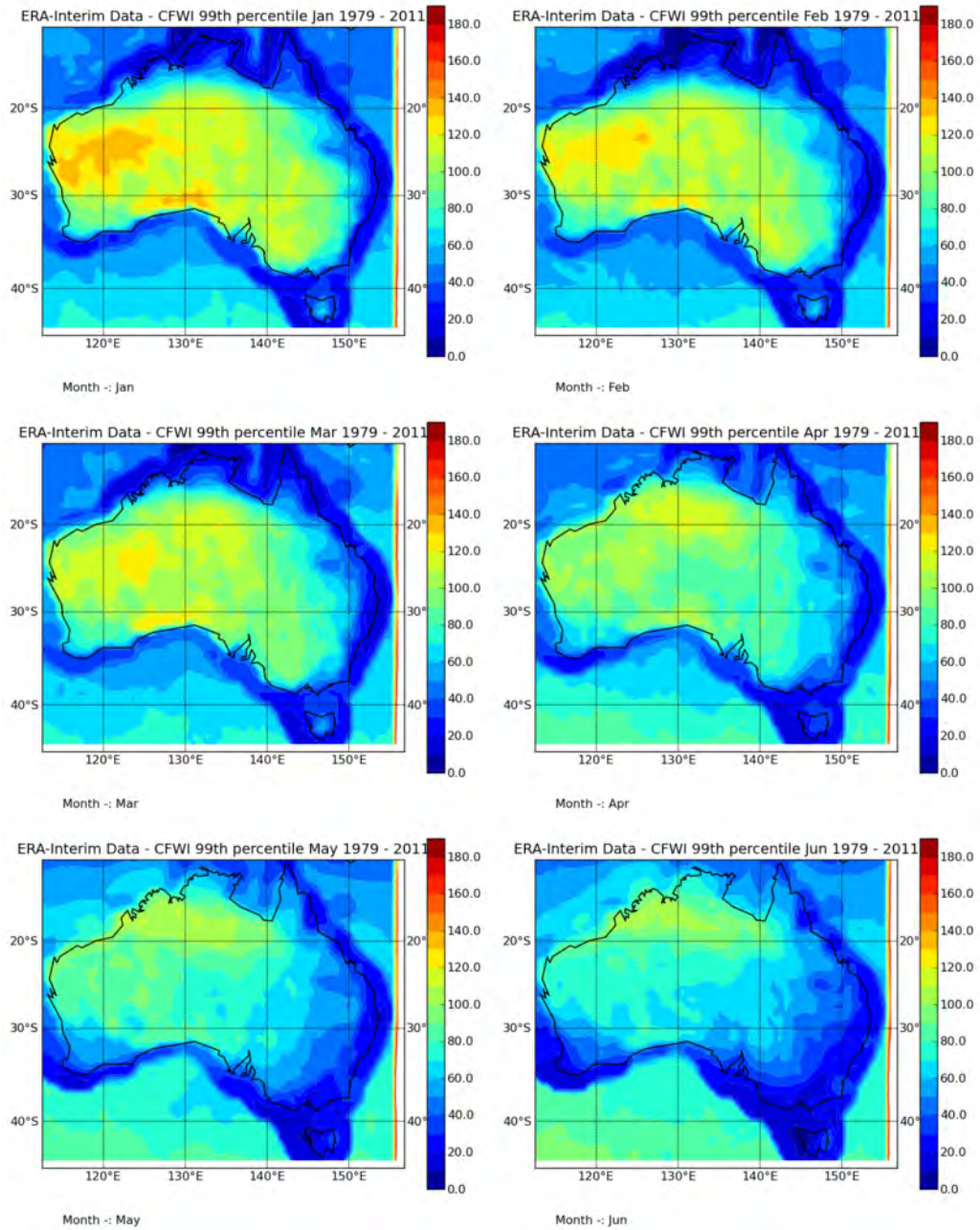


Figure 2.13: 99th Percentile CFWI by month, 0300 UTC, January to June

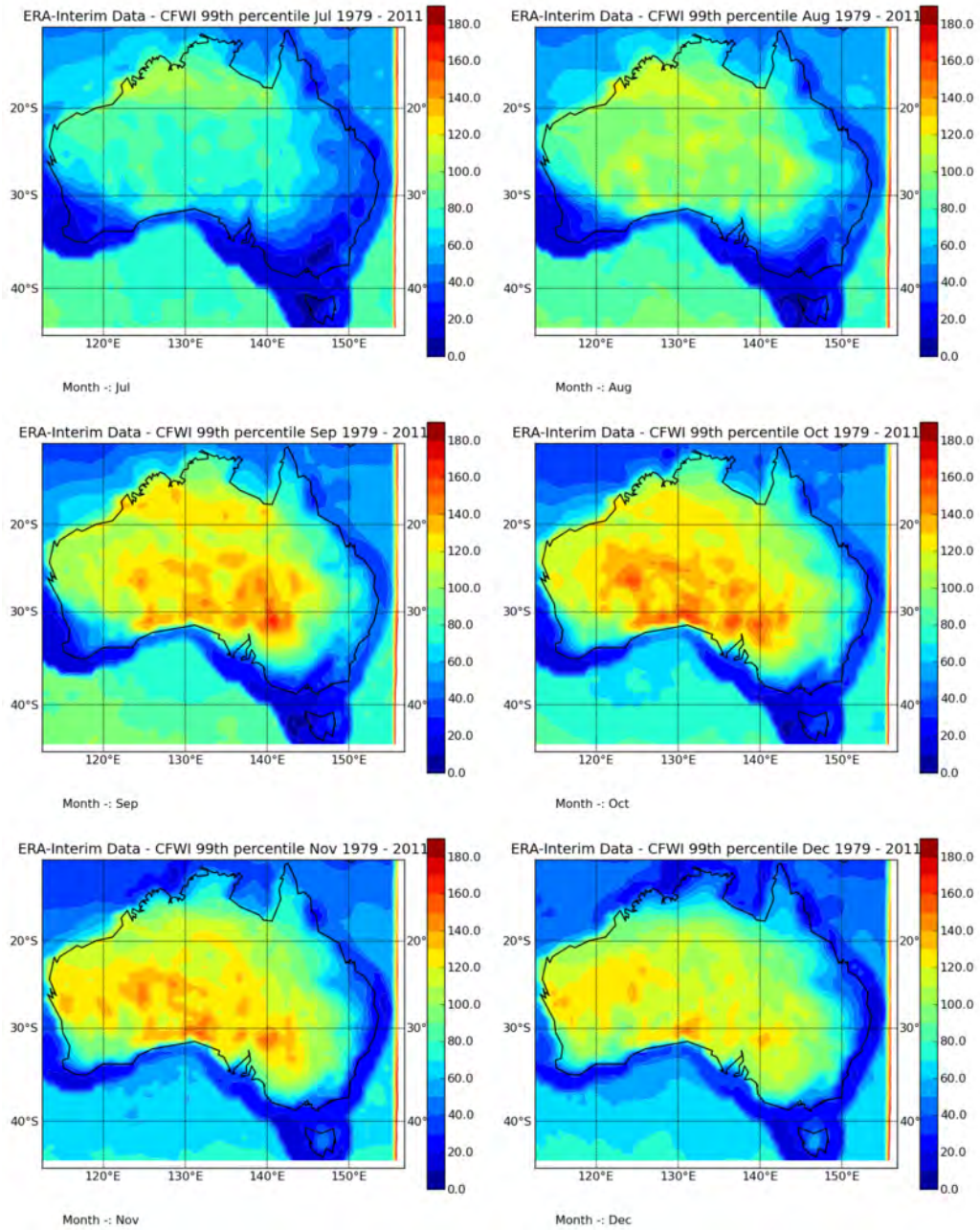


Figure 2.14: 99th Percentile CFWI by month, 0300 UTC, July to December

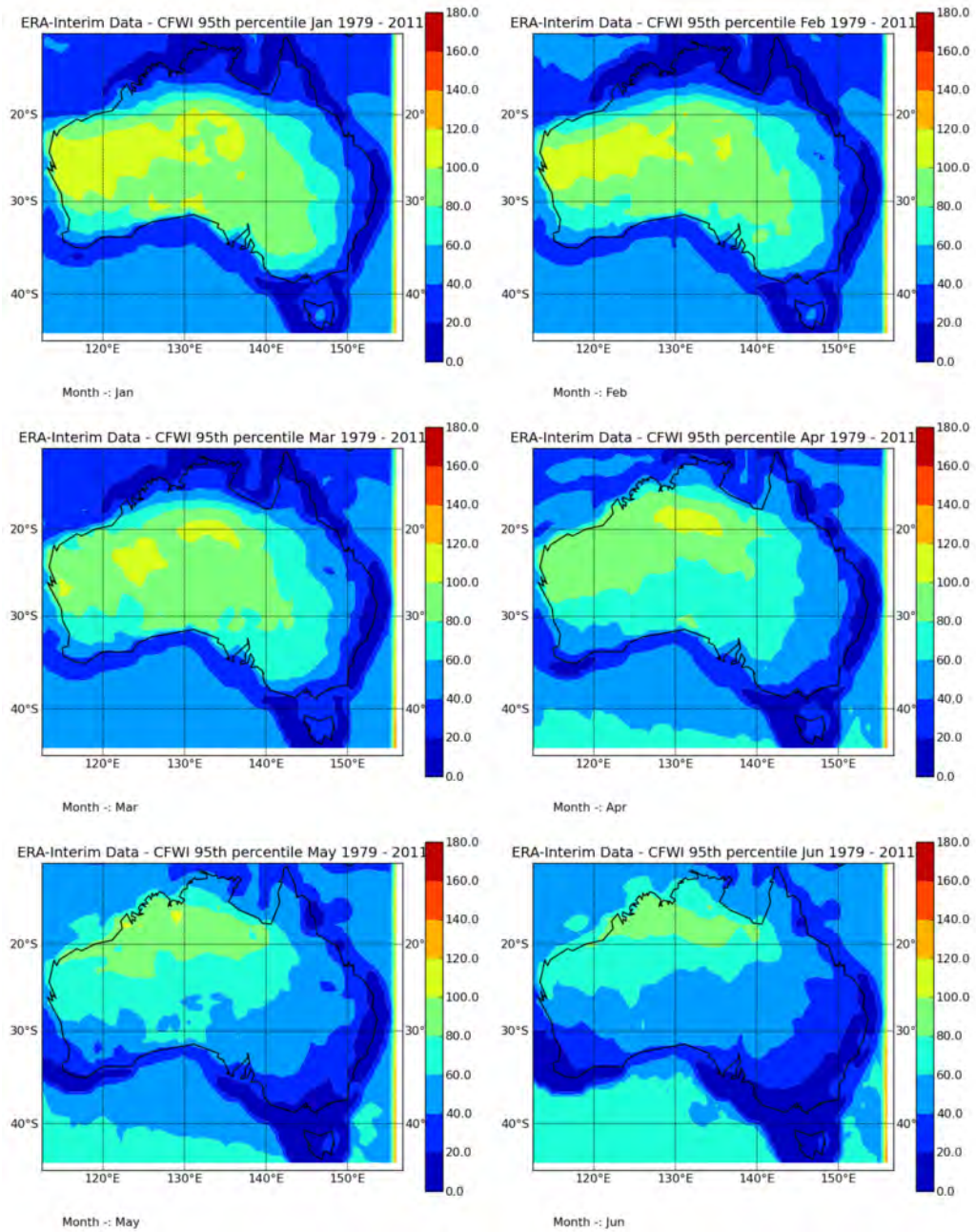


Figure 2.15: 95th Percentile CFWI by month, 0300 UTC, January to June

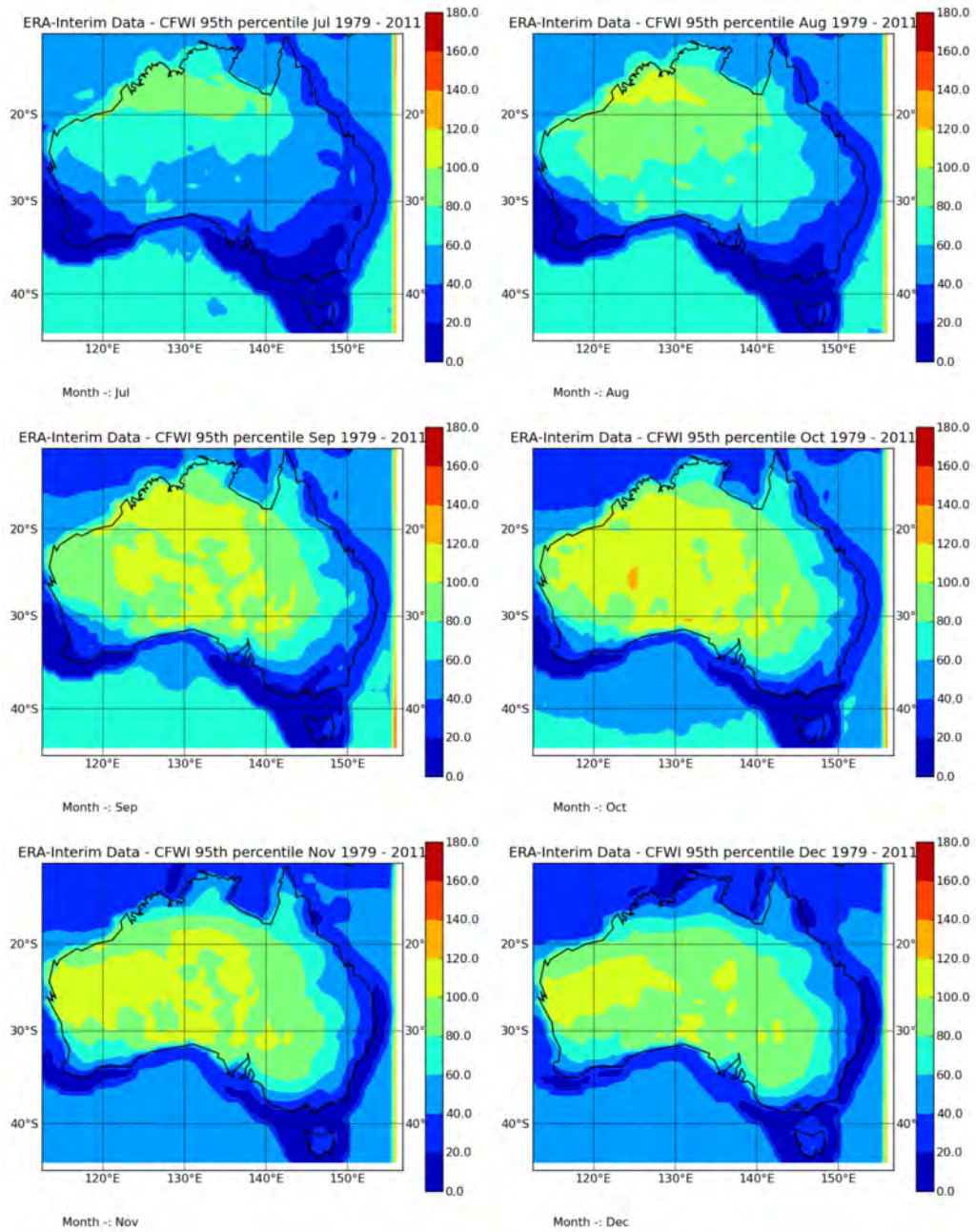


Figure 2.16: 95th Percentile CFWI by month, 0300 UTC, July to December

2.3 GFDI

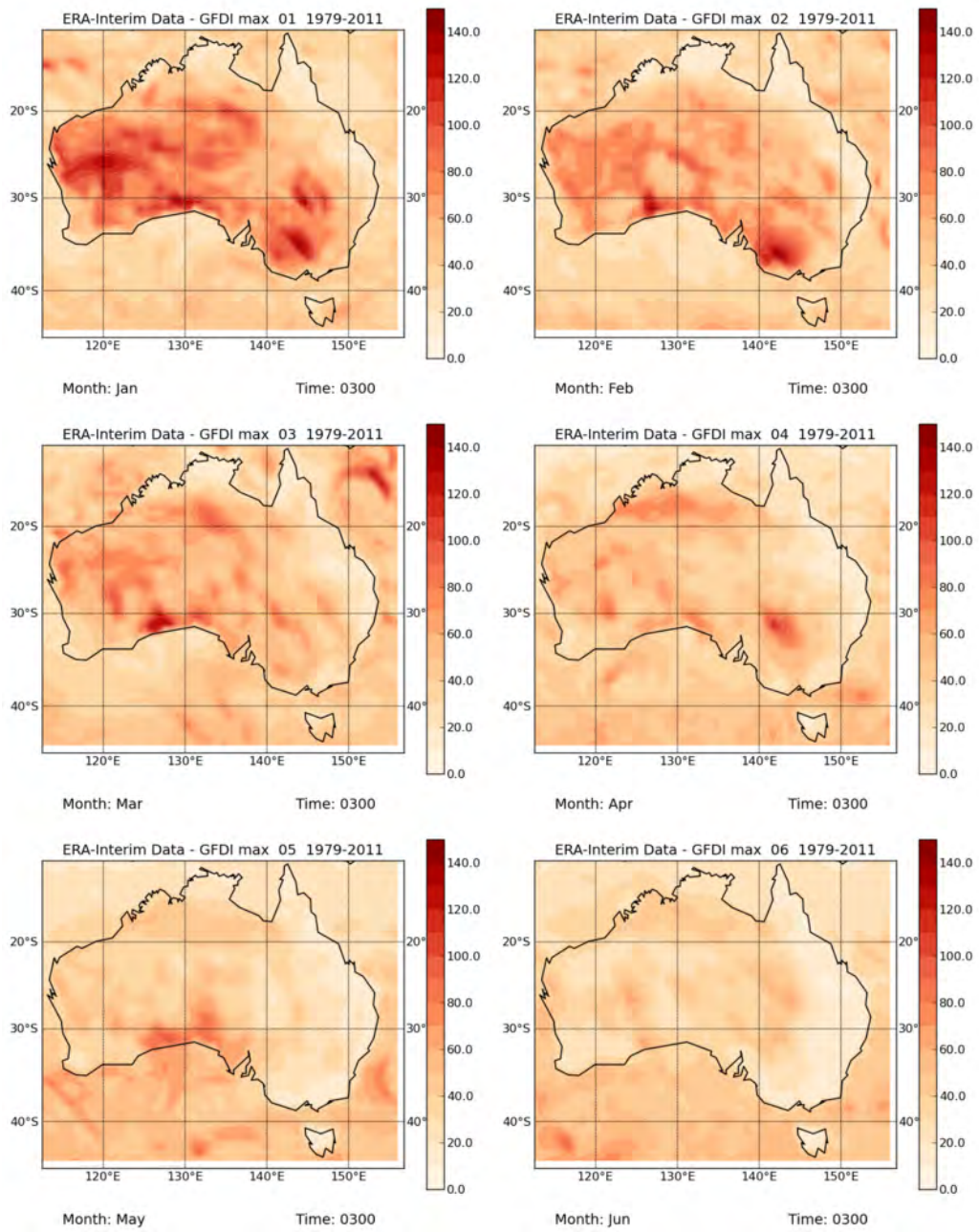


Figure 2.17: Maximum GFDI by month, 0300 UTC, January to June

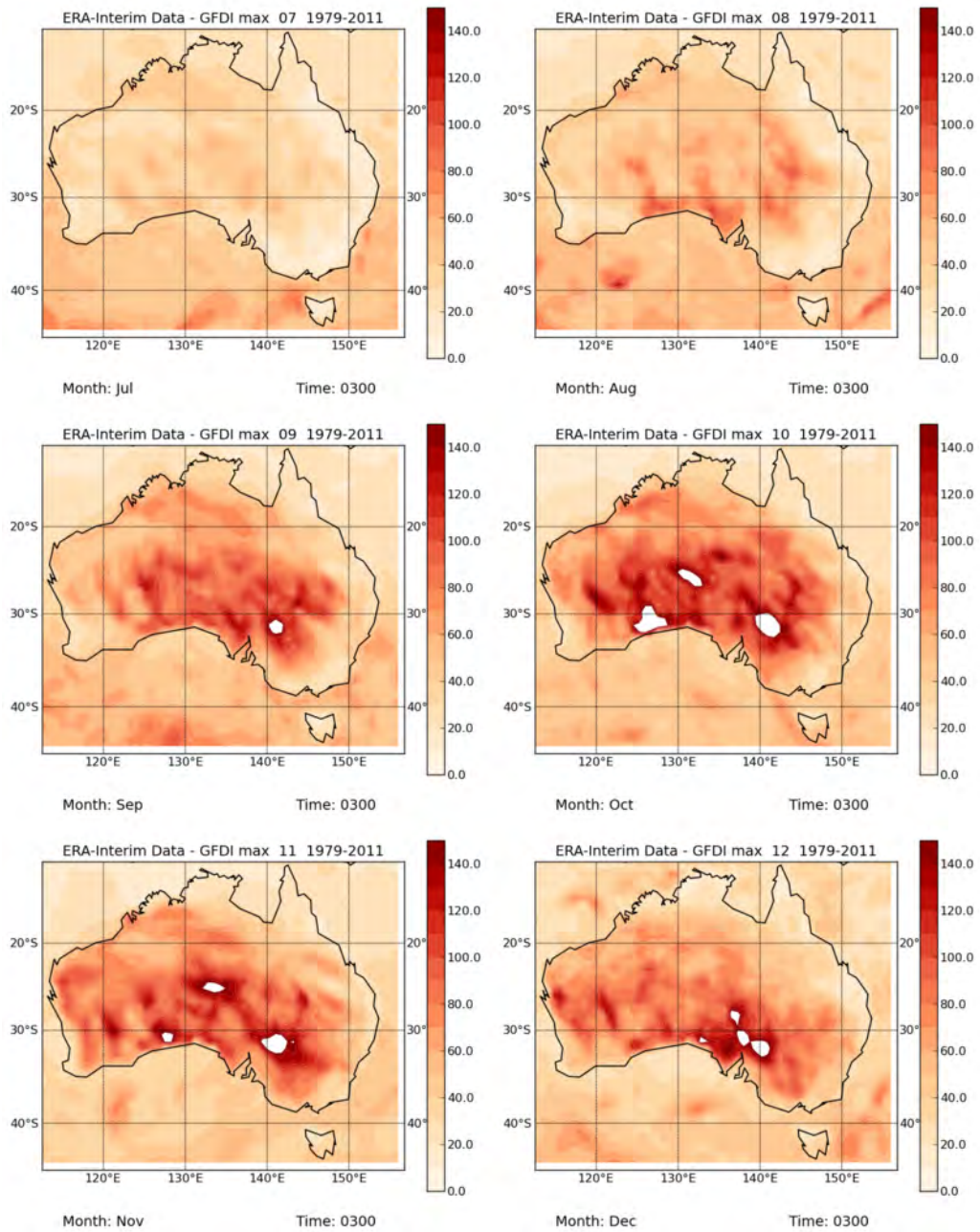


Figure 2.18: Maximum GFDI by month, 0300 UTC, July to December

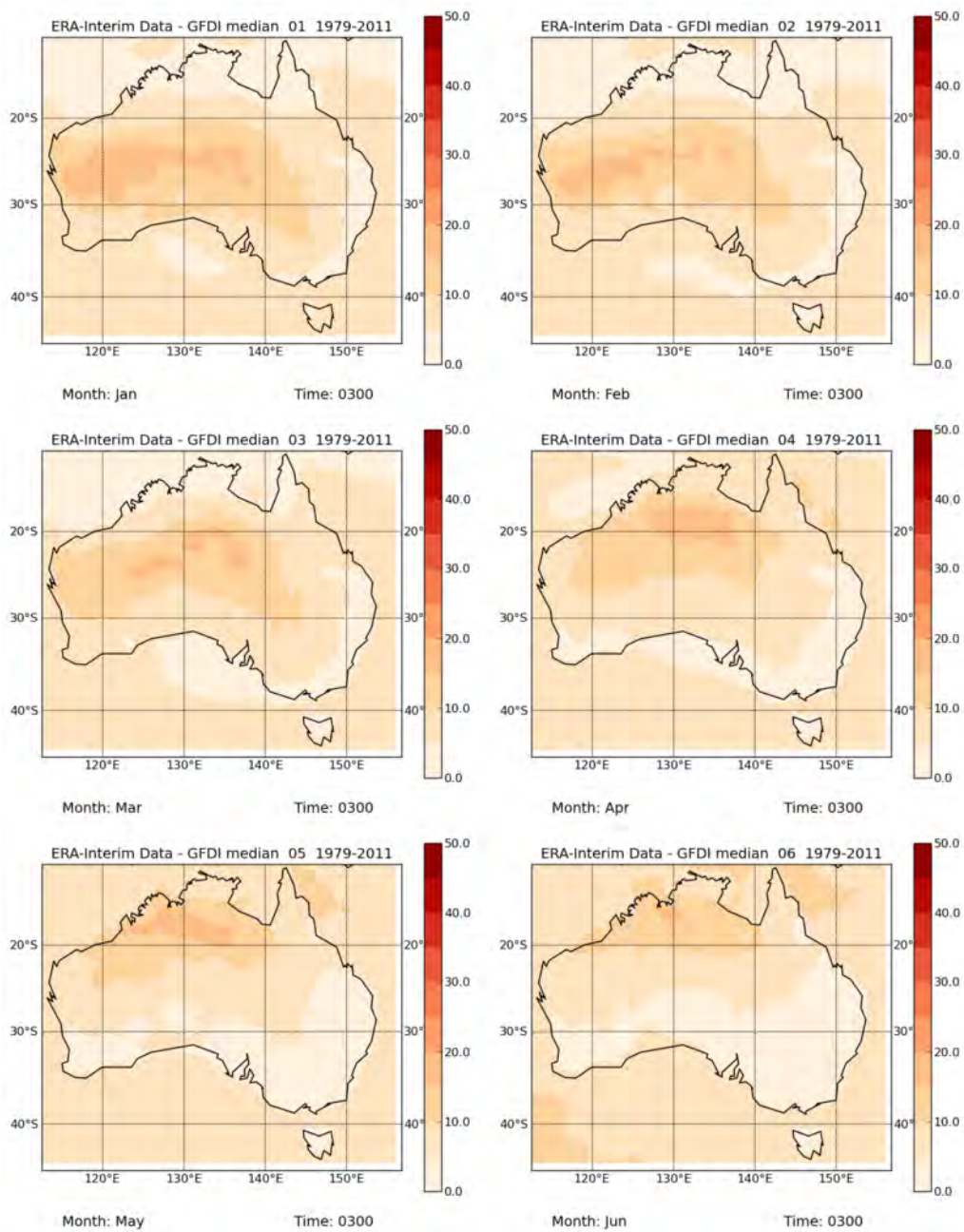


Figure 2.19: Median GFDI by month, 0300 UTC, January to June

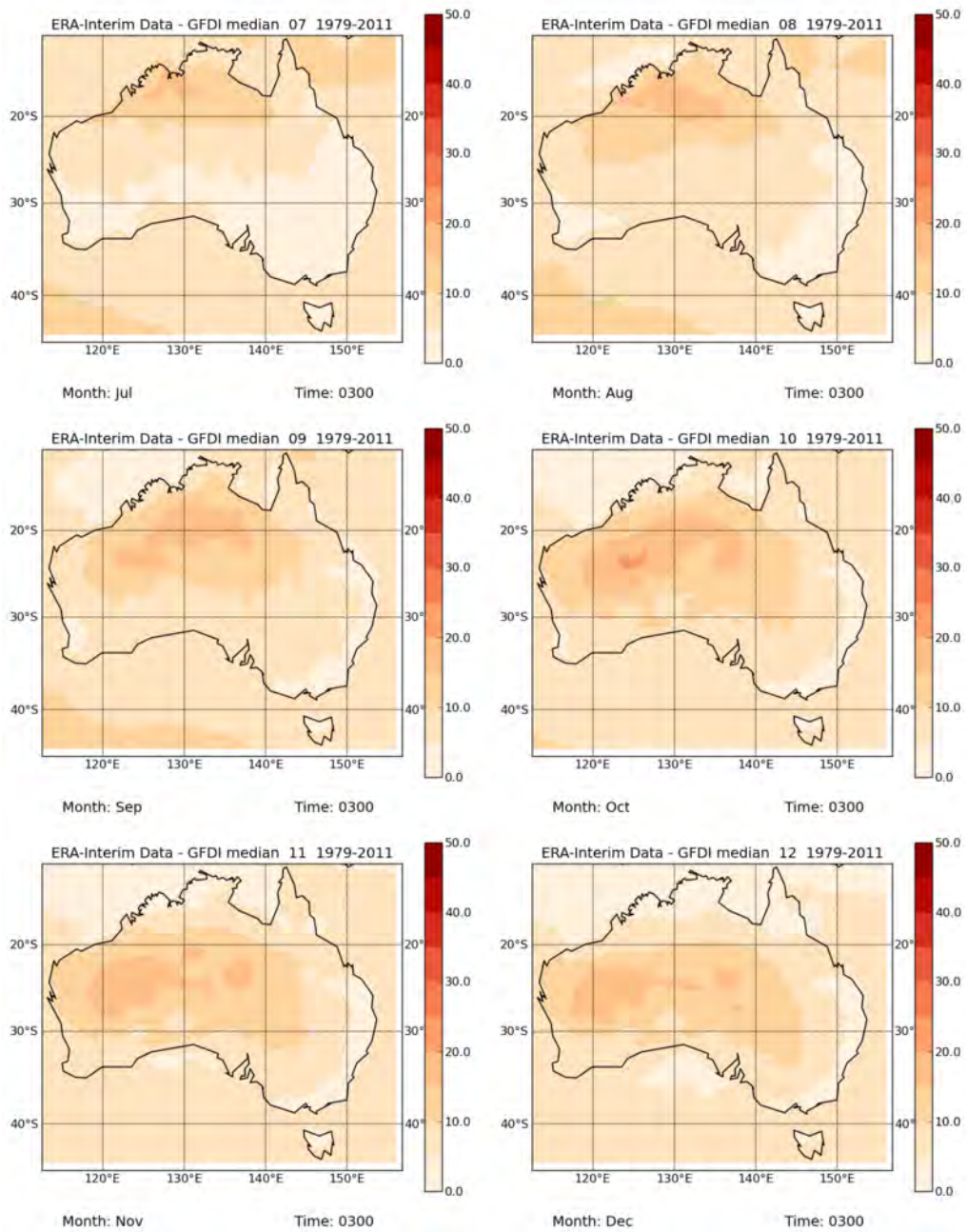


Figure 2.20: Median GFDI by month, 0300 UTC, July to December

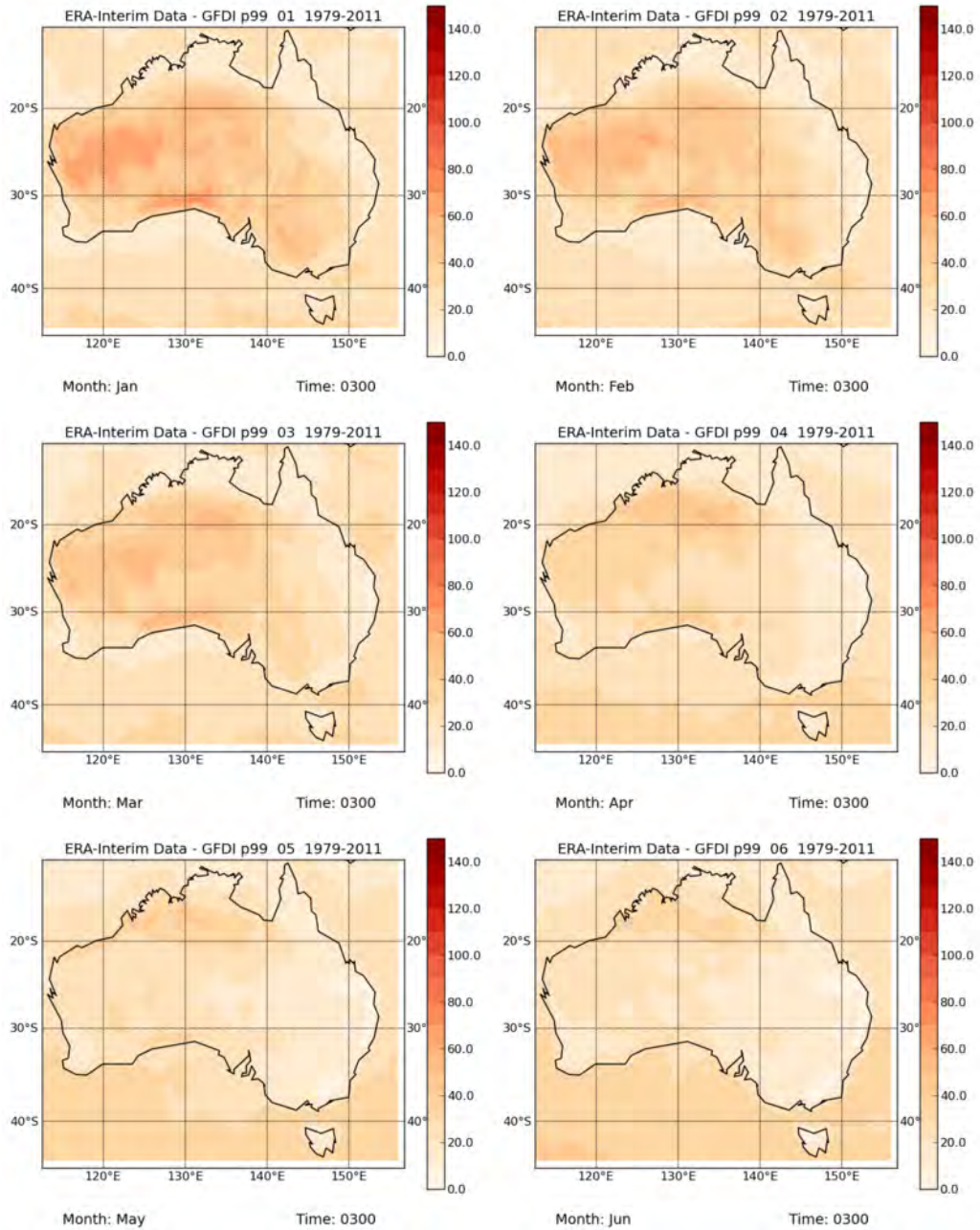


Figure 2.21: 99th Percentile GFDI by month, 0300 UTC, January to June

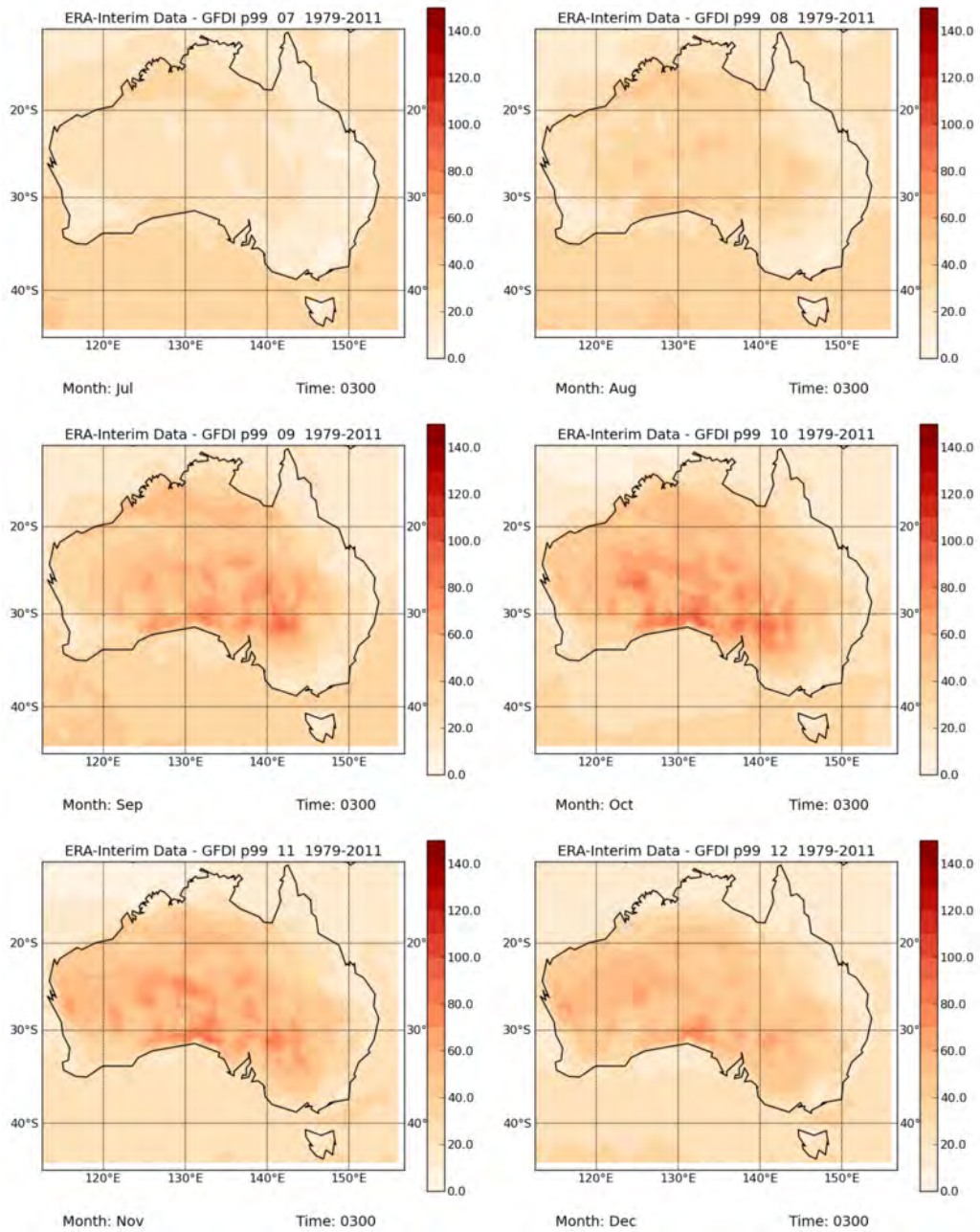


Figure 2.22: 99th Percentile GFDI by month, 0300 UTC, July to December

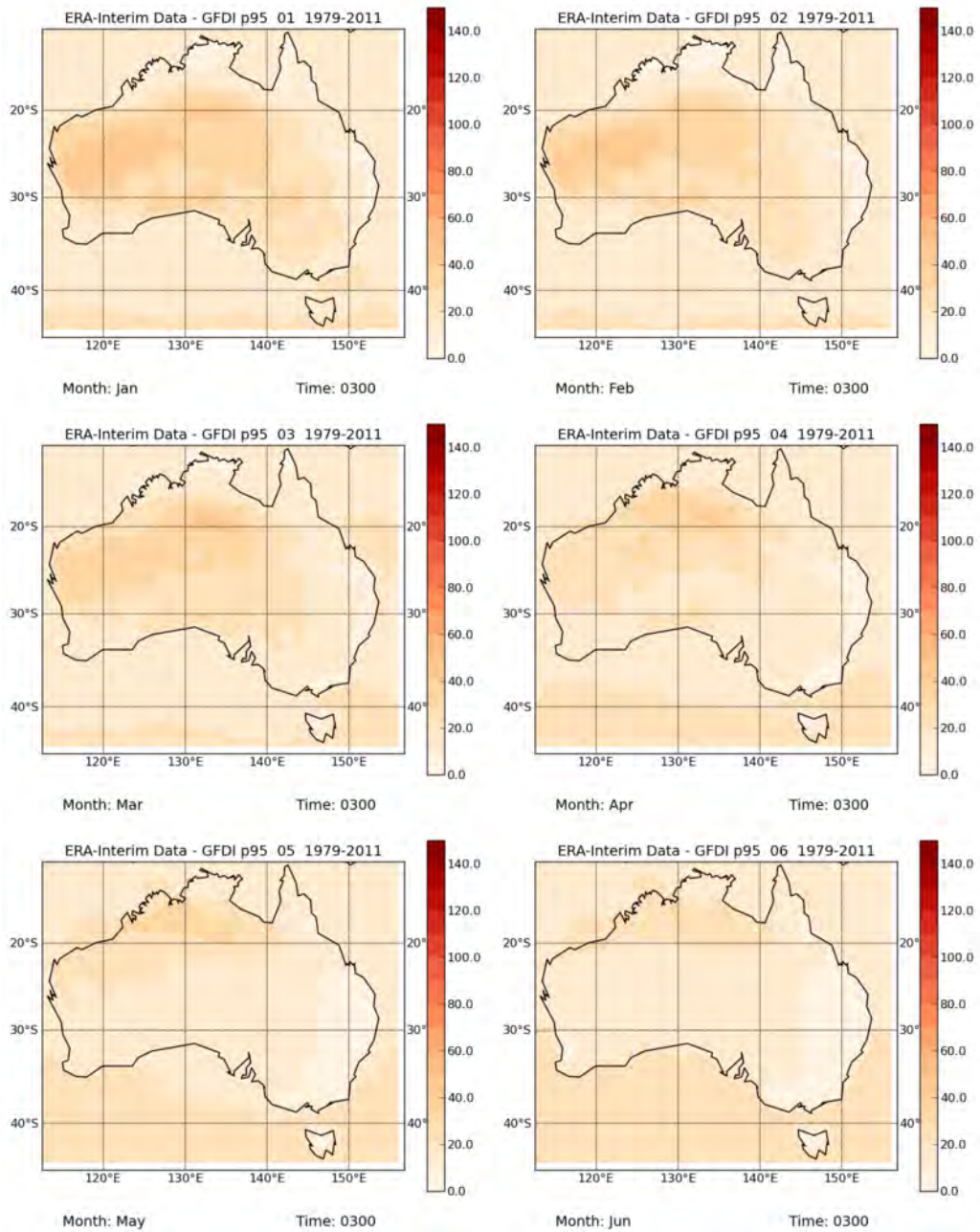


Figure 2.23: 95th Percentile GFDI by month, 0300 UTC, January to June

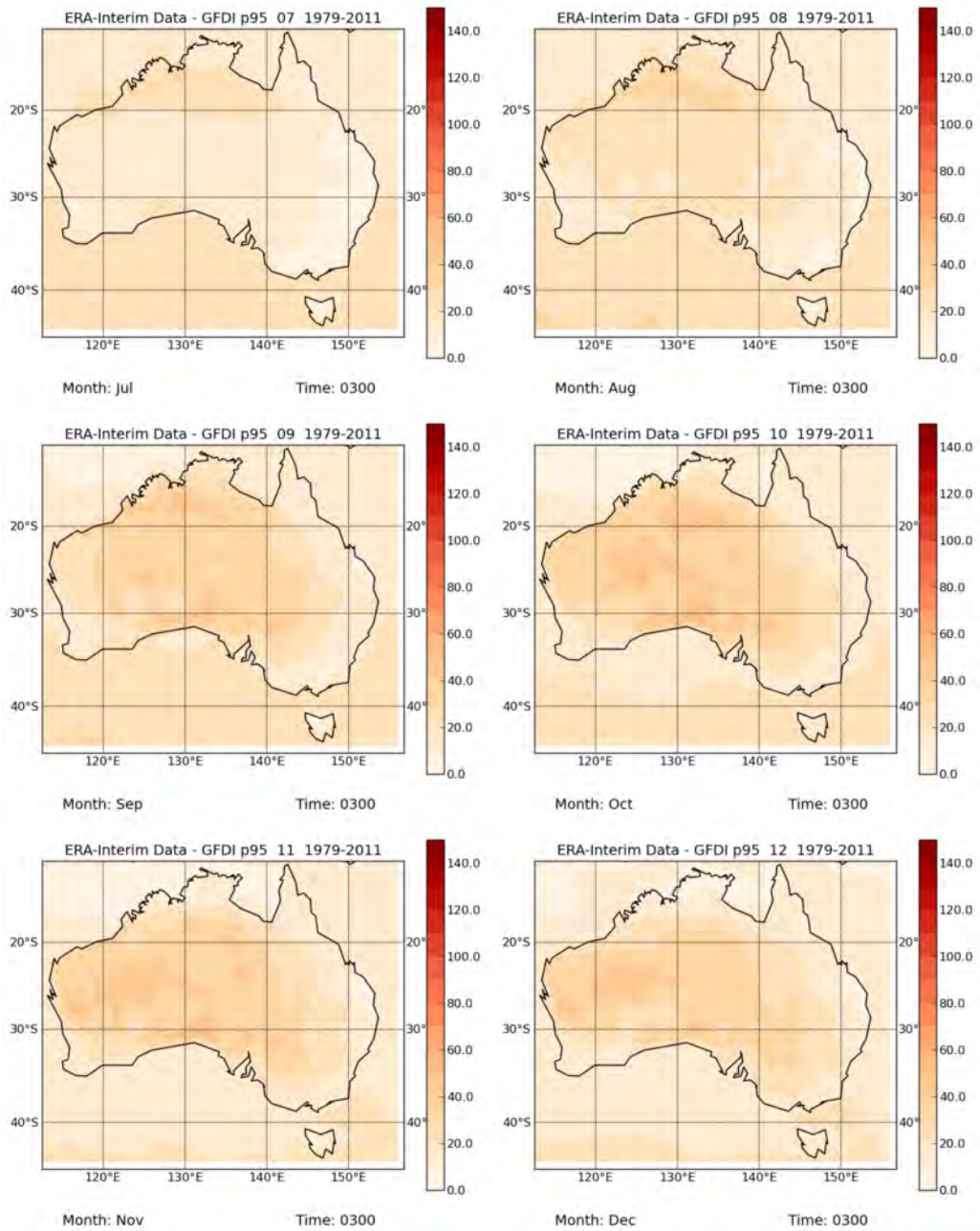


Figure 2.24: 95th Percentile GFDI by month, 0300 UTC, July to December

2.4 Sharples FDI

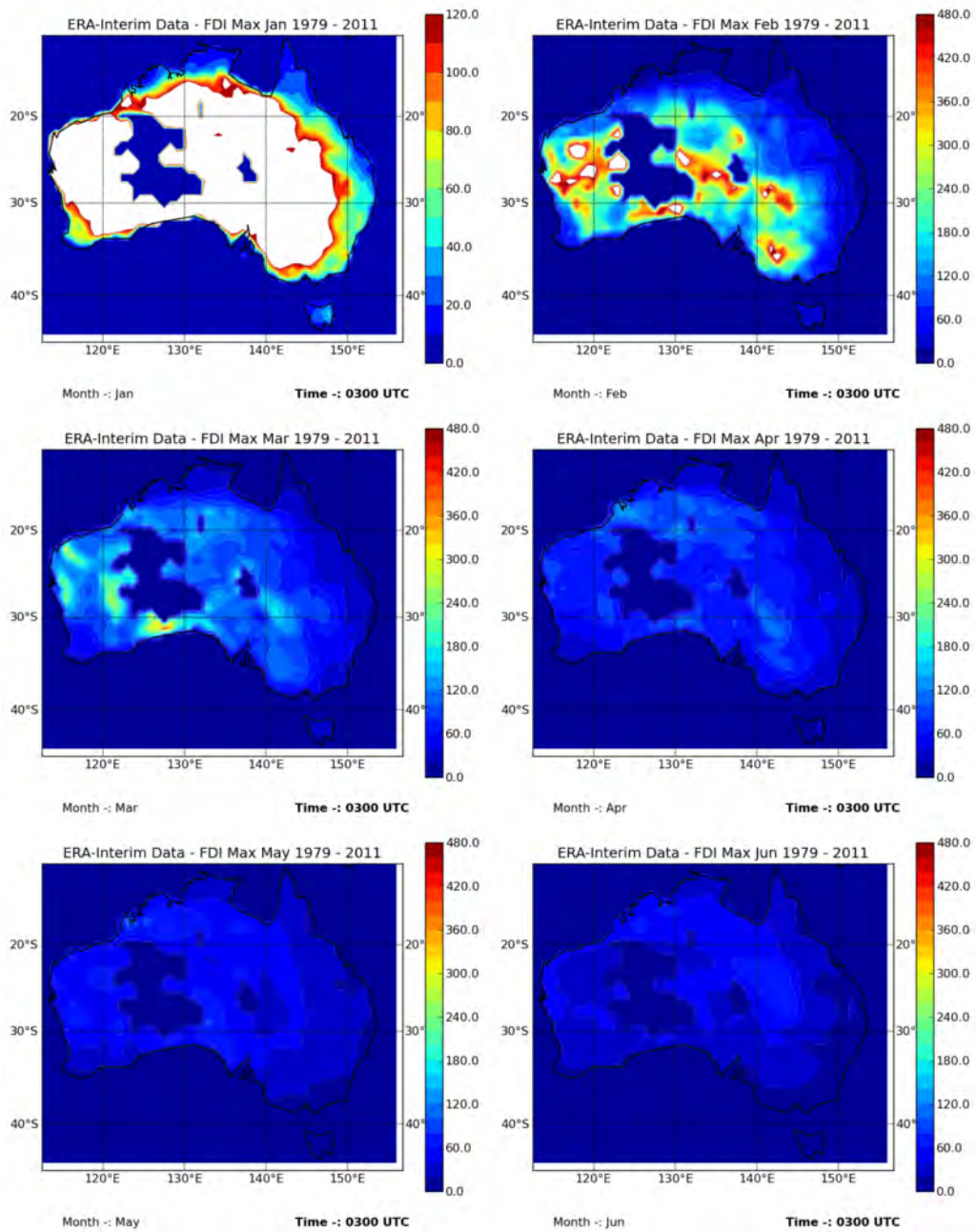


Figure 2.25: Maximum FDI by month, 0300 UTC, January to June

2.5 Histograms

Histograms of the 4 fire danger indices calculated were compiled for a number of locations around Australia.

- Alice Springs N.T.
- Big Desert Vic
- Canberra A.C.T.

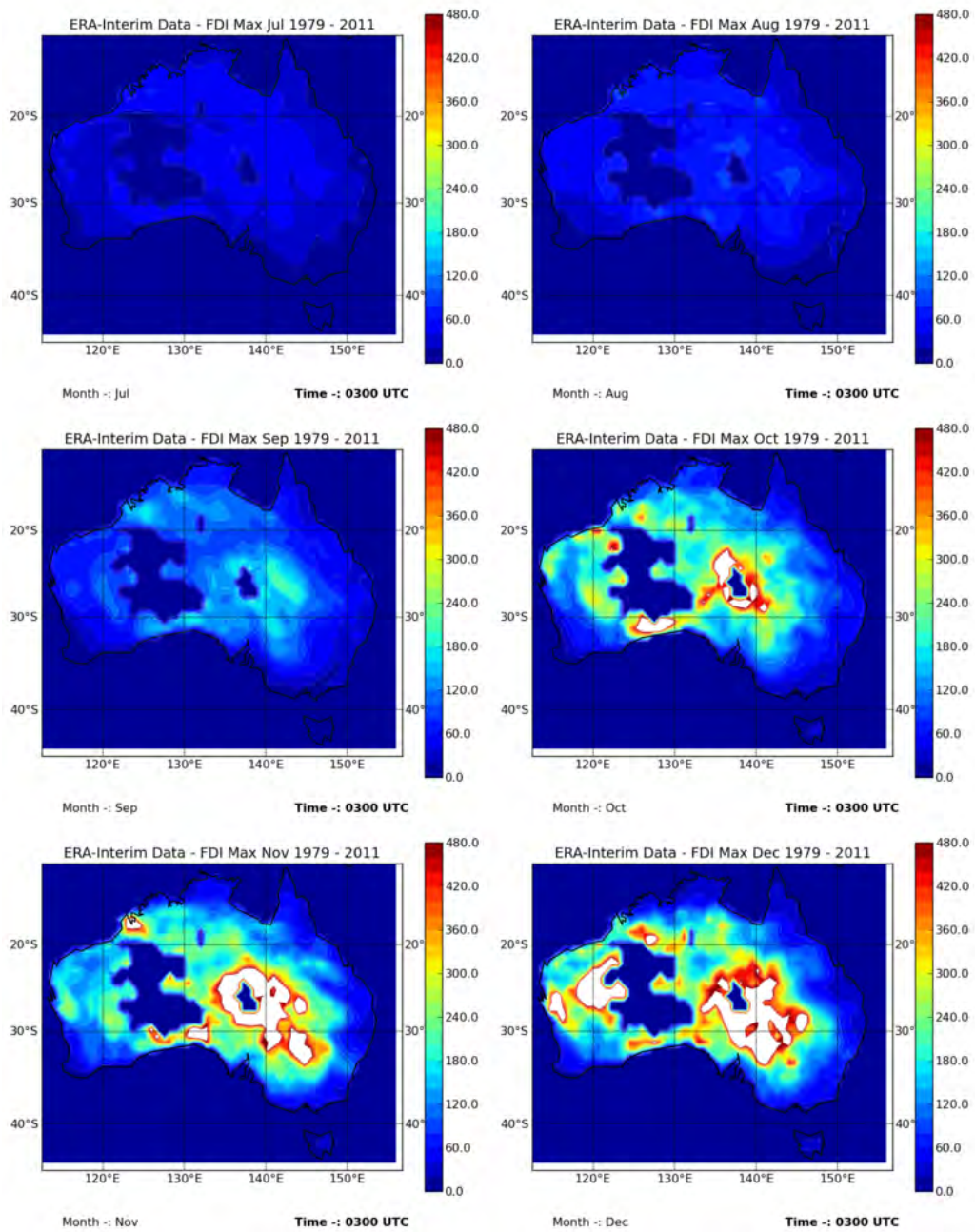


Figure 2.26: Maximum FDI by month, 0300 UTC, July to December

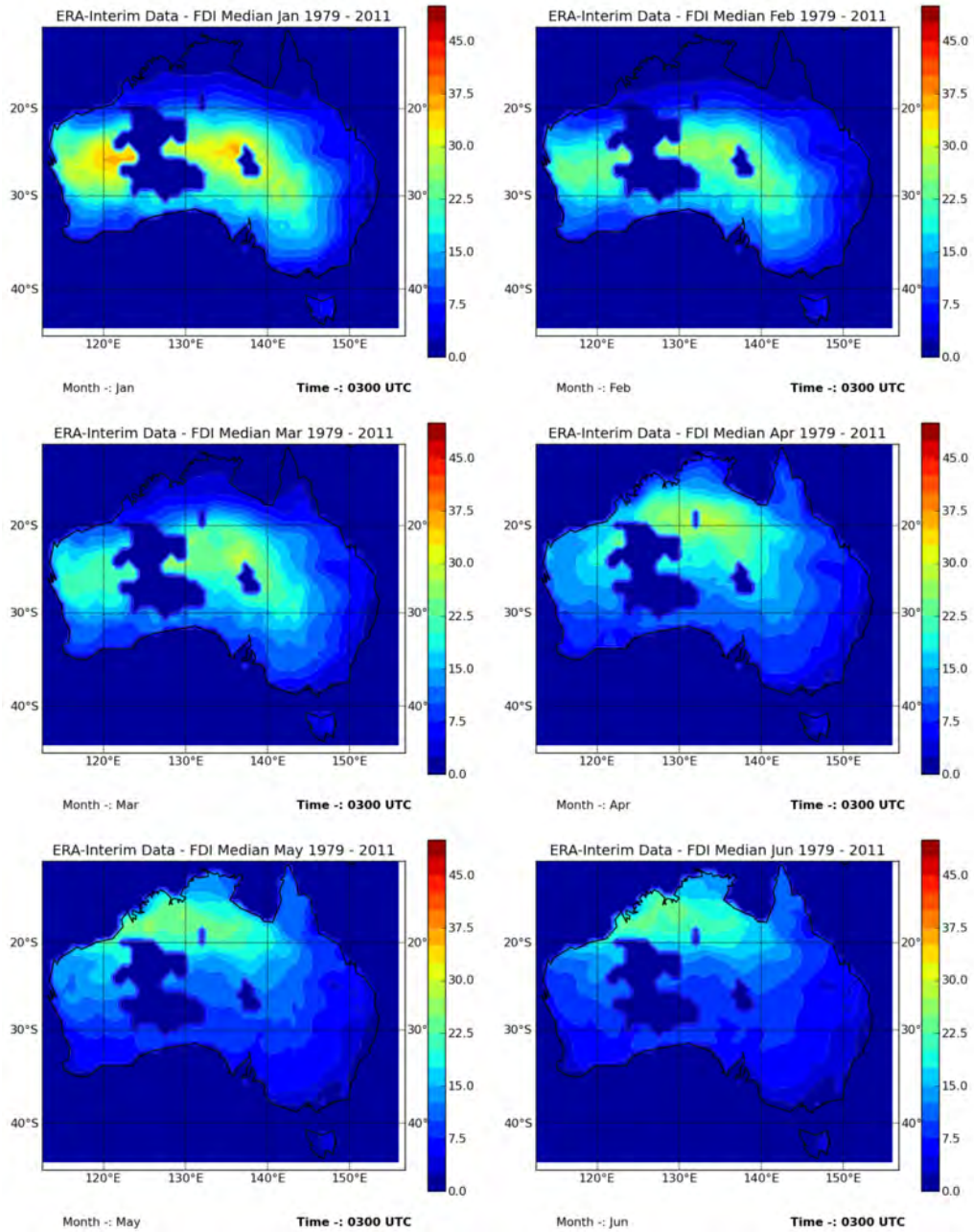


Figure 2.27: Median FDI by month, 0300 UTC, January to June

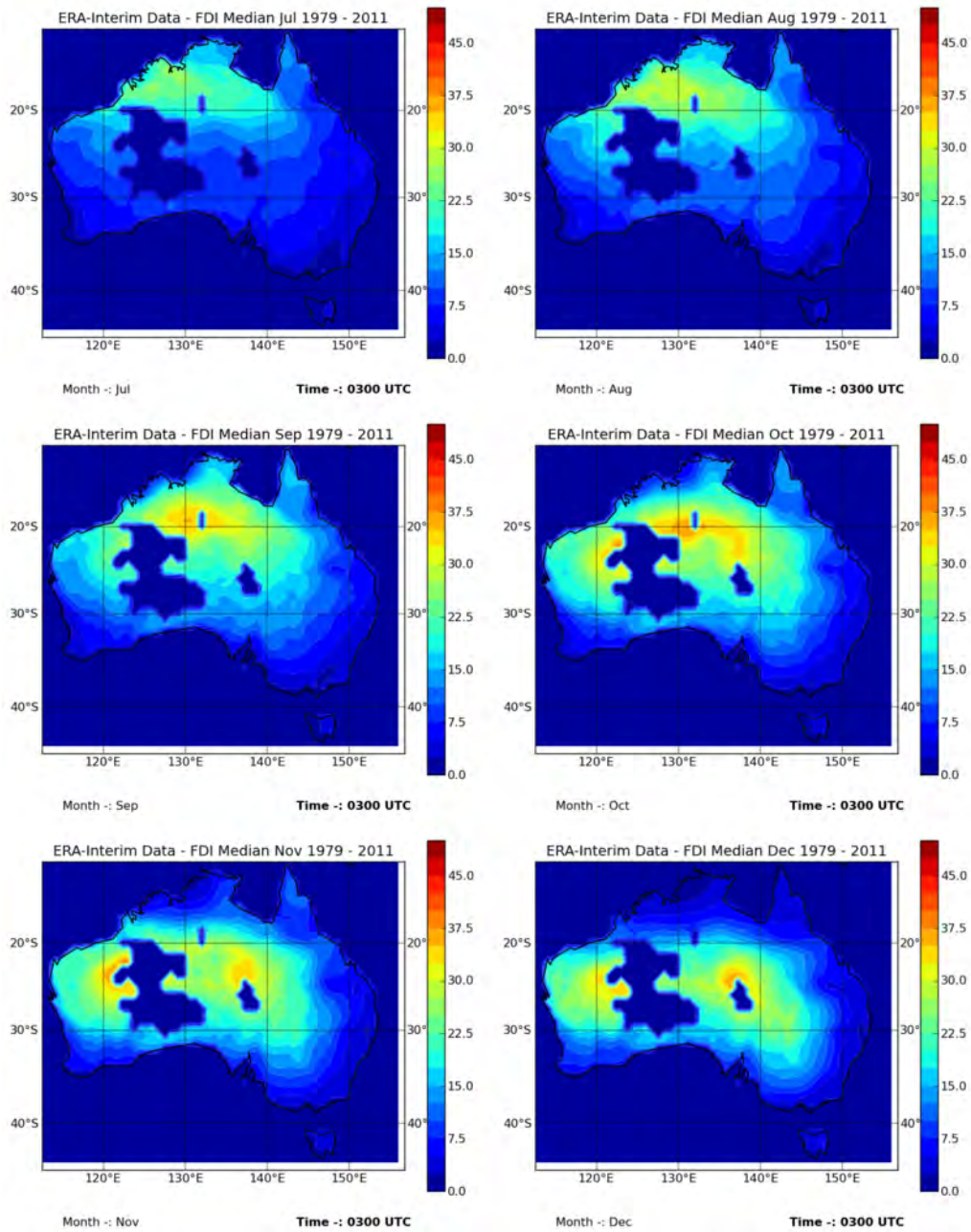


Figure 2.28: Median FDI by month, 0300 UTC, July to December

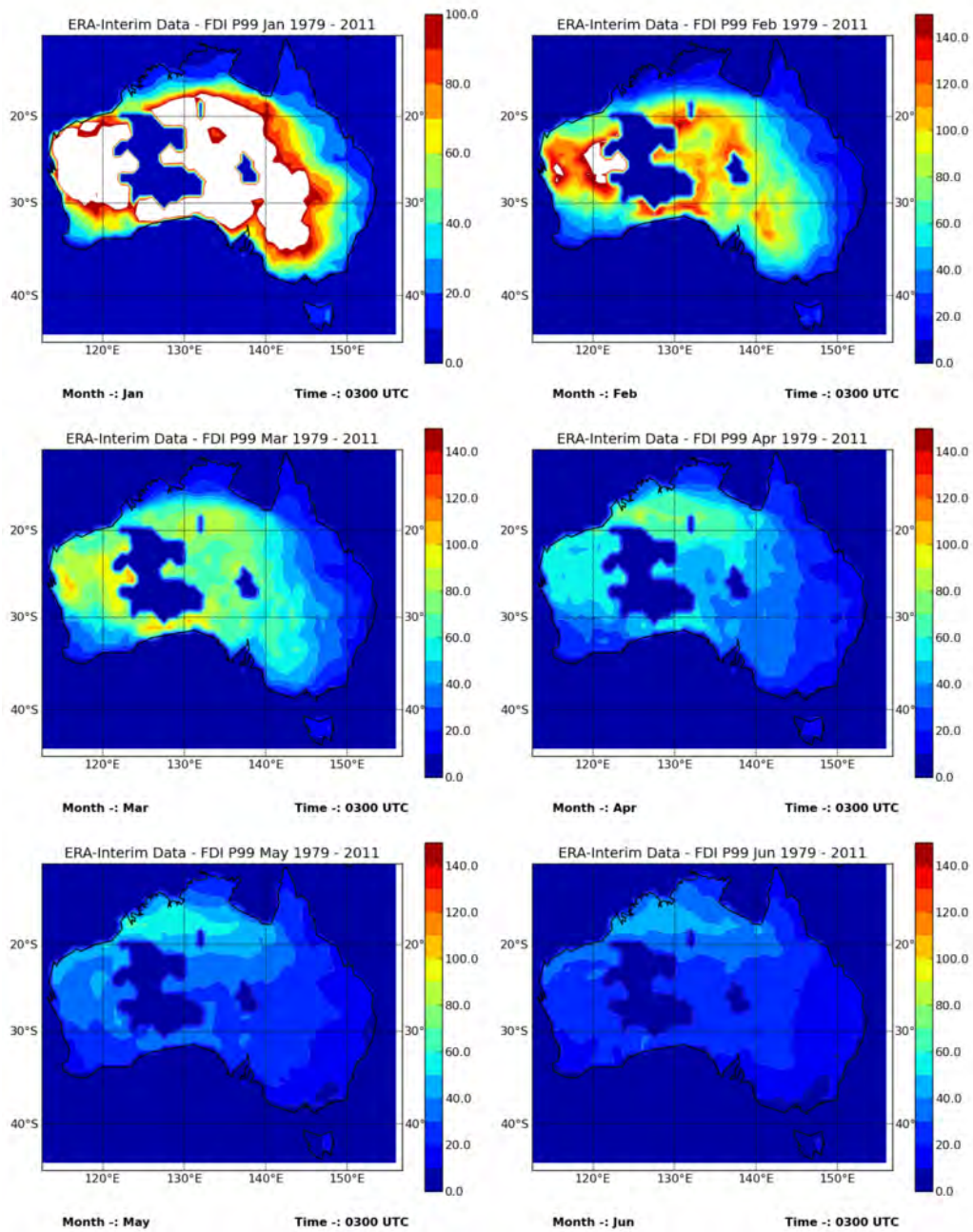


Figure 2.29: 99th Percentile FDI by month, 0300 UTC, January to June

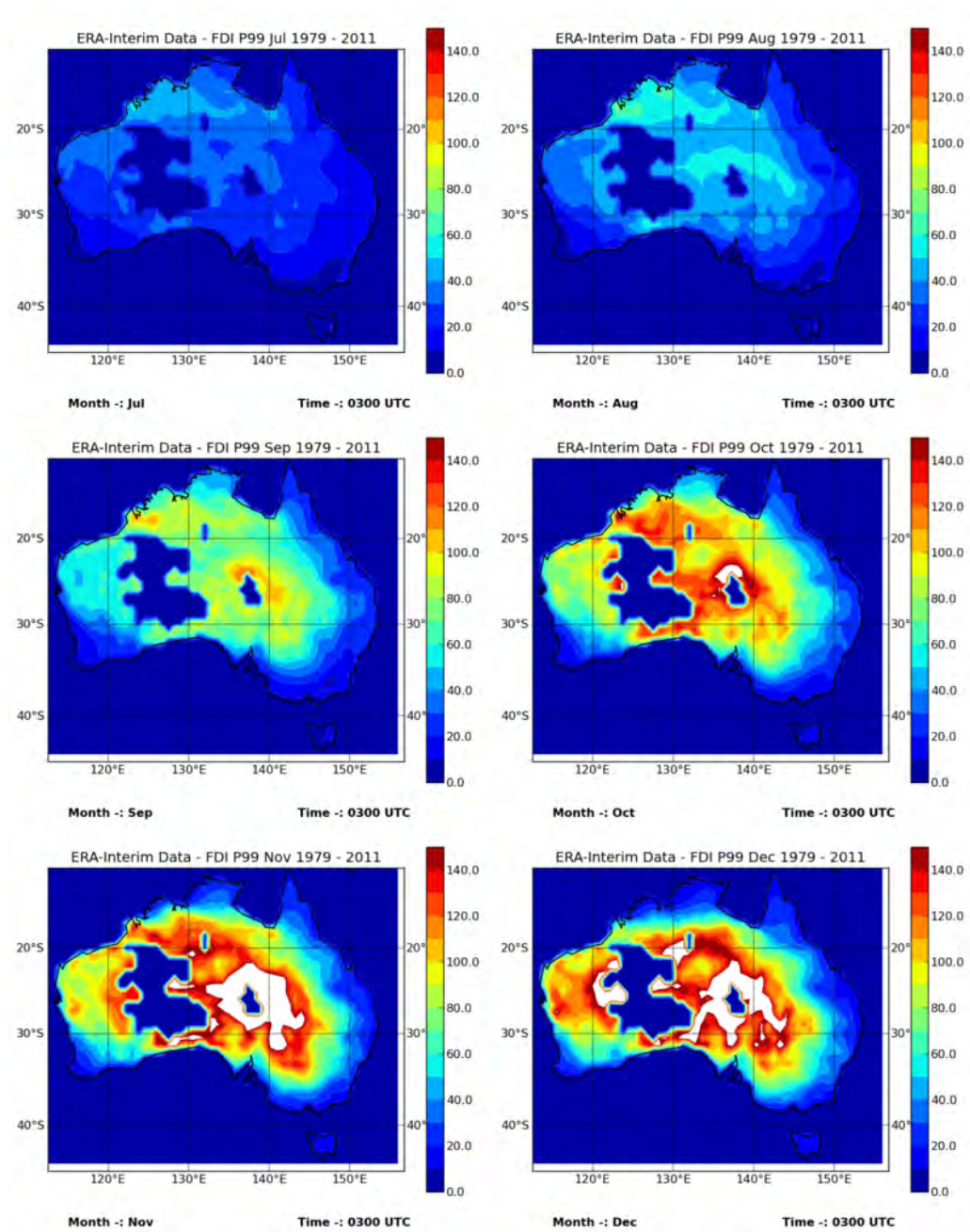


Figure 2.30: 99th Percentile FDI by month, 0300 UTC, July to December

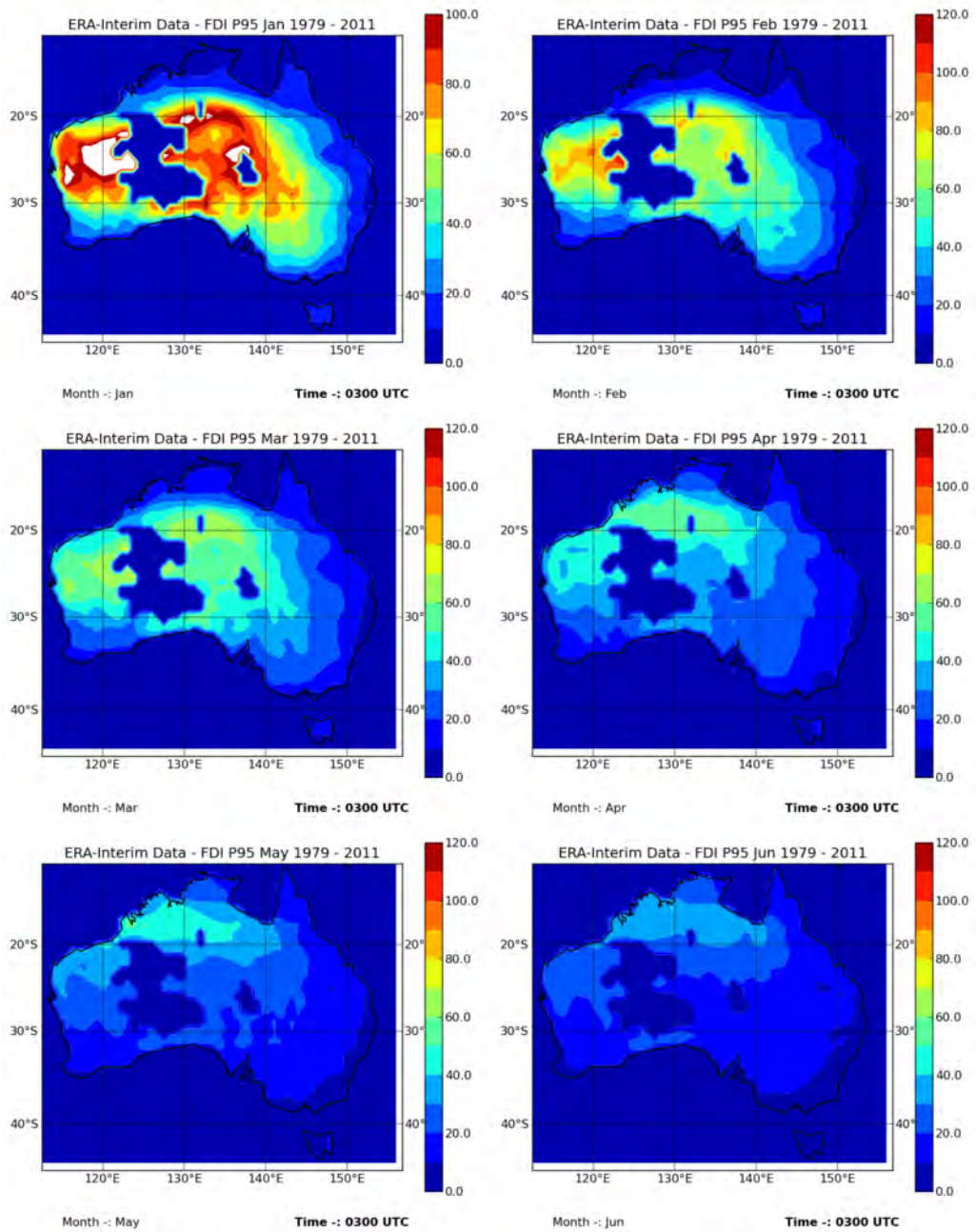


Figure 2.31: 95th Percentile FDI by month, 0300 UTC, January to June

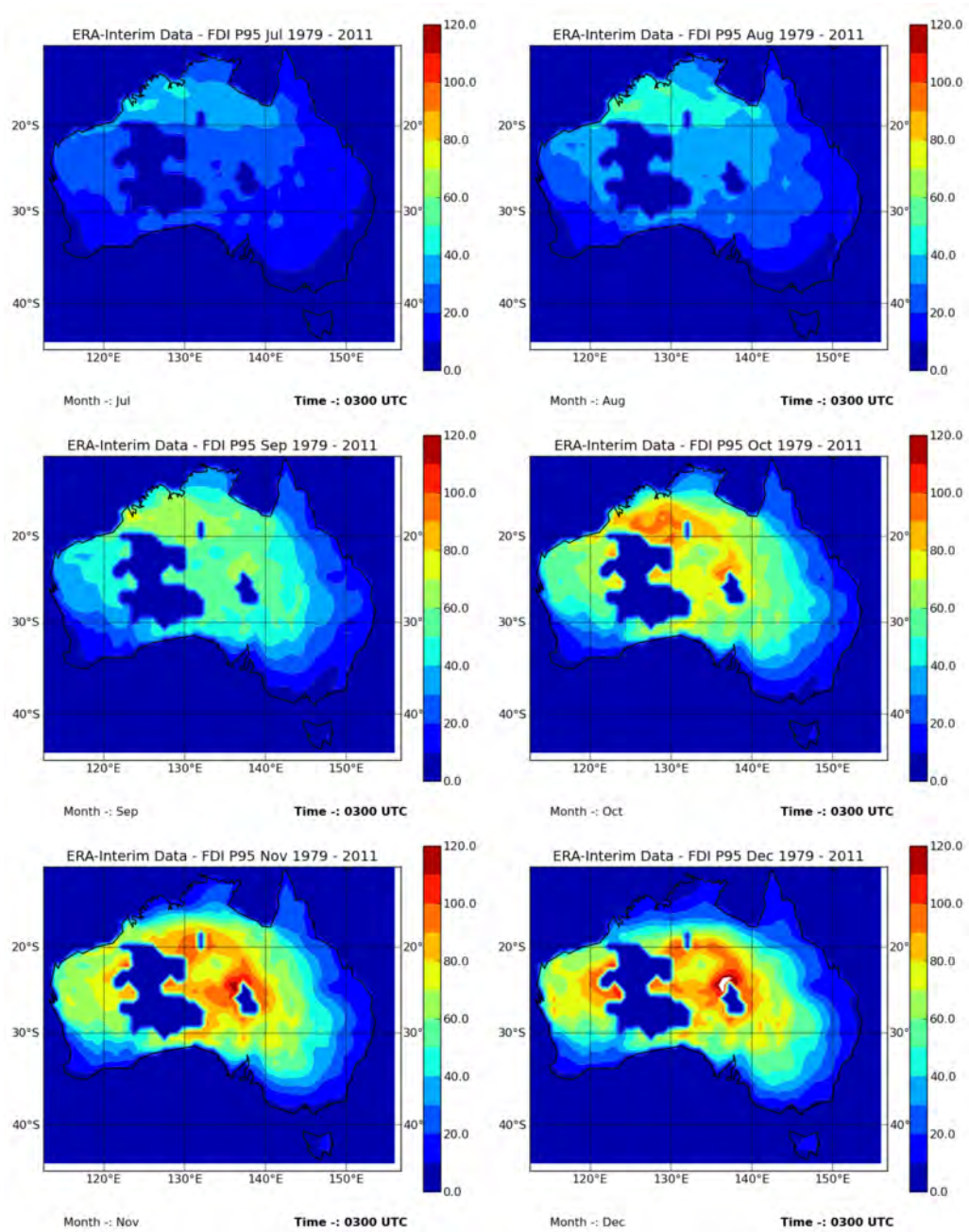


Figure 2.32: 95th Percentile FDI by month, 0300 UTC, July to December

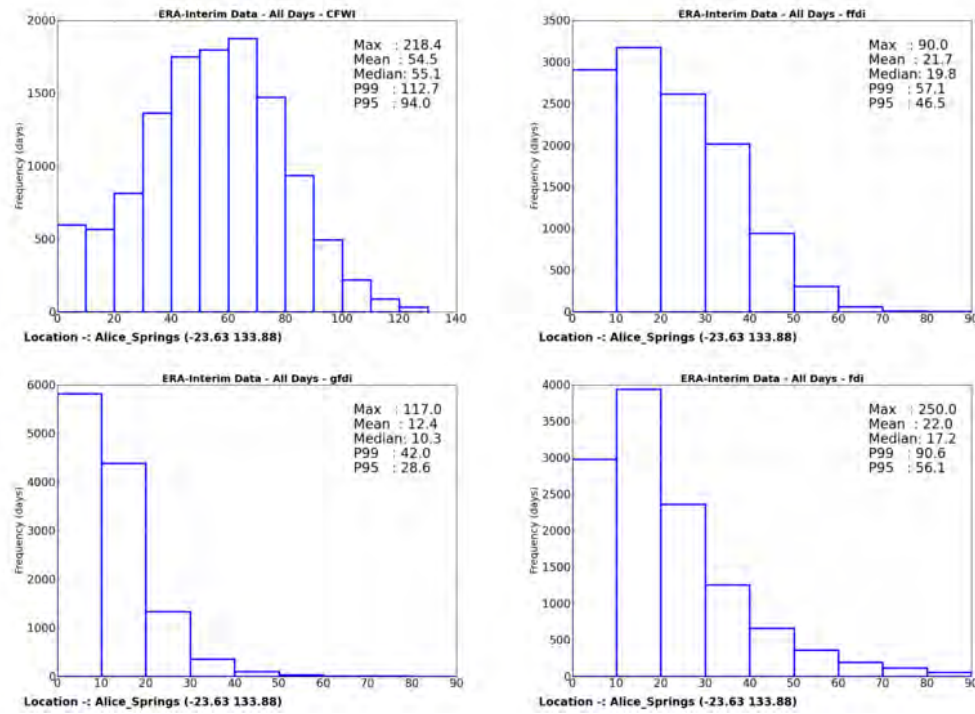


Figure 2.33: Histogram -Fire Danger Indices Alice Springs N.T. 1979-2011

- Dalby Qld
- Hincks Conservation Park S.A.
- Kununurra W.A.
- Manjimup W.A.

All histograms show CFWI in the upper left panel then clockwise FFDI, Fd, and GFDI.

The Manjimup histogram (Fig. 2.39) apparently shows problems with indices using DF as only the CFWI has more than 2 bins in the distribution and the maximum values of GFDI FFDI and Fd are comparatively low. The model grid point is on land but is surrounded by water. Model temperatures appear lower than observed. For example, in January 2003, observations at Manjimup record more than 10 days with a maximum of 30 C or greater. On Jan 10 2003 the maximum observed temperature was 38.9. The maximum model temp was only 30.4 at 0600. Observational data shows the 0400 Temperature was 33.3°C and the dewpoint 10.0°C.

The equivalent model data for 0300 is 26.7°C and 19.48°C. The RH of 47.3% in the model data compares to the observed value of 24%. The FFDI calculated from the 0400 observations is 21.4 This compares with a model value of 8.7(which is in the 95th percentile for this location!)

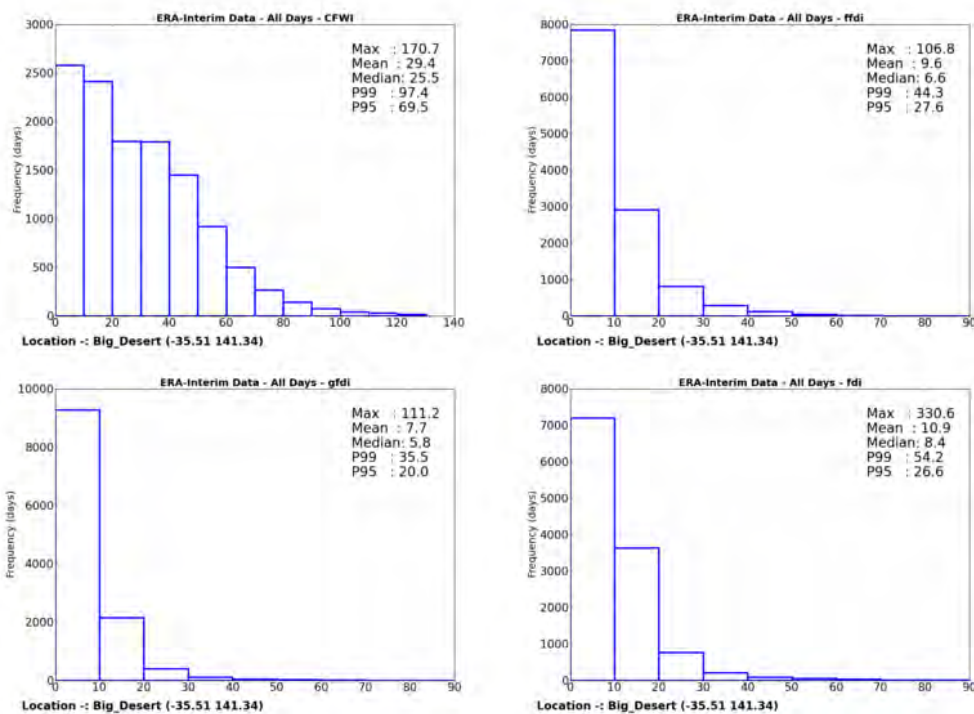


Figure 2.34: Histogram -Fire Danger Indices Big Desert Vic. 1979-2011

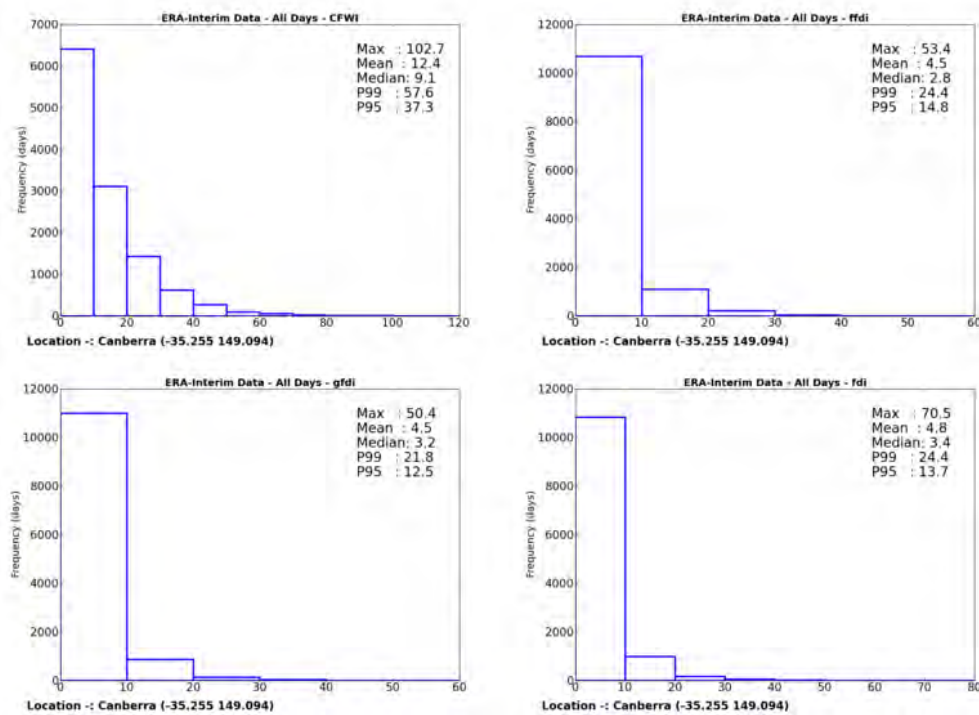


Figure 2.35: Histogram -Fire Danger Indices Canberra A.C.T. 1979-2011

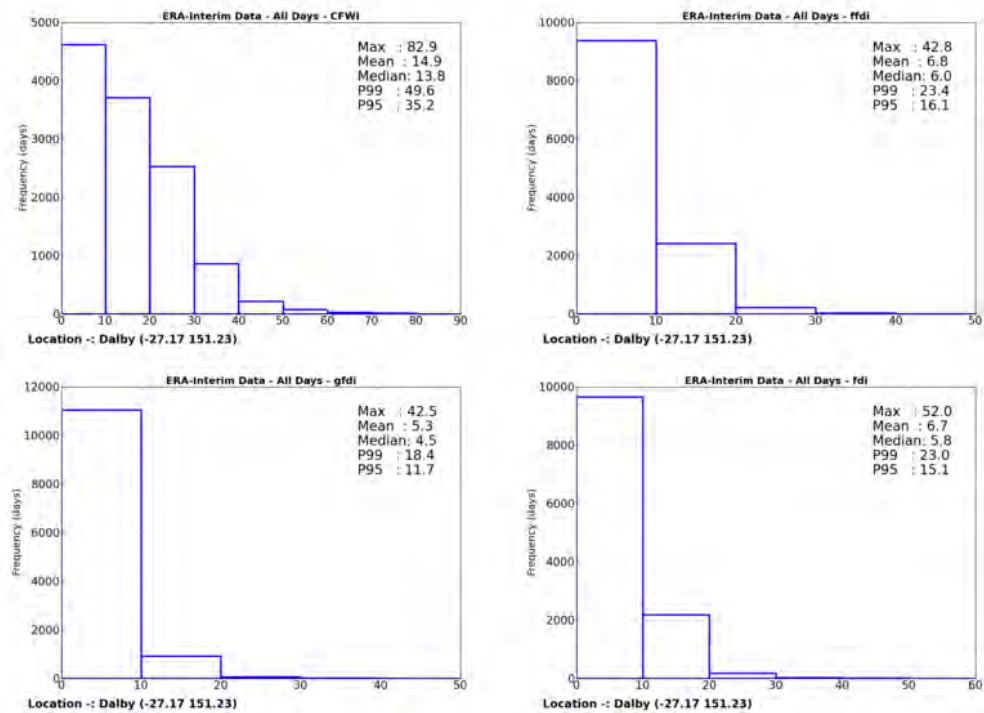


Figure 2.36: Histogram -Fire Danger Indices Dalby Qld. 1979-2011

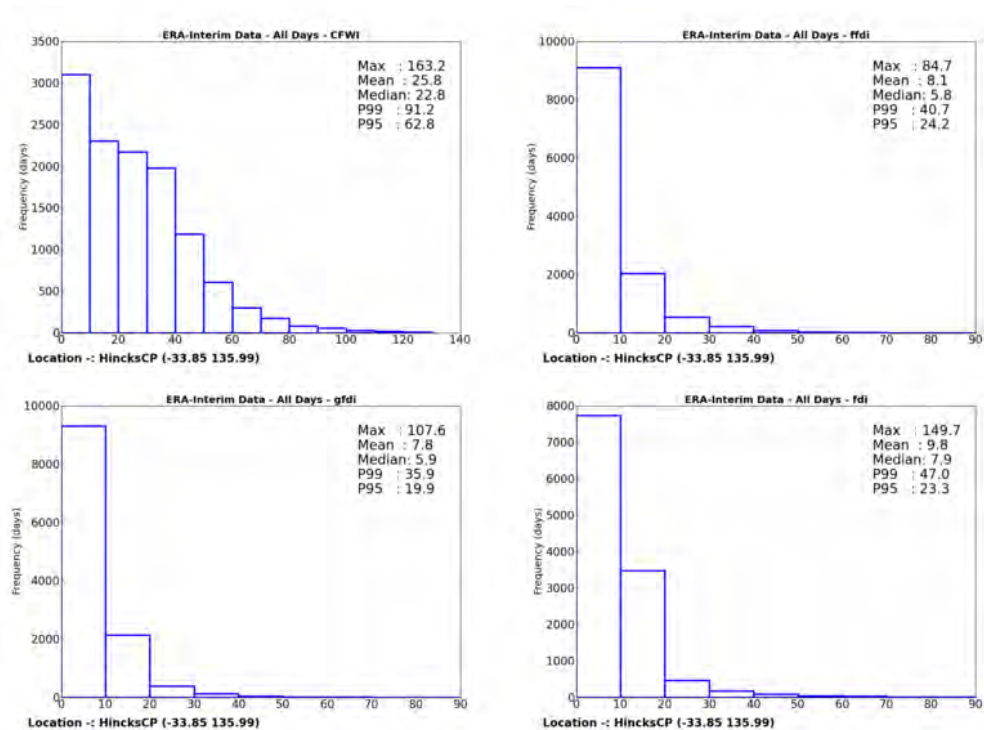


Figure 2.37: Histogram -Fire Danger Indices Hincks Conservation Park, S.A. 1979-2011

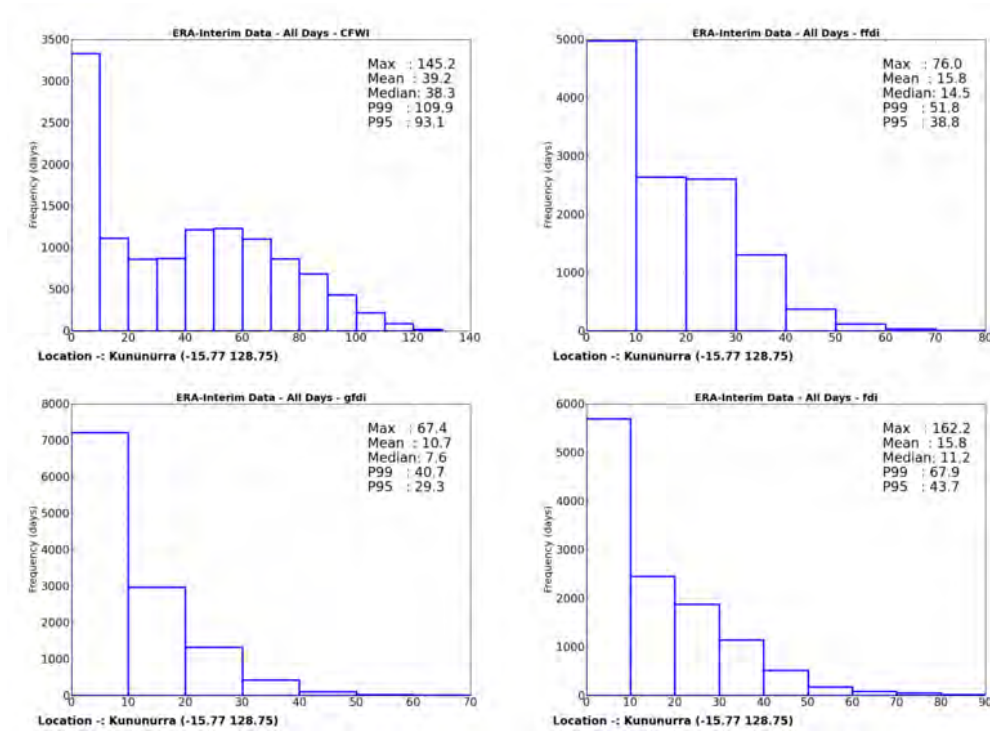


Figure 2.38: Histogram -Fire Danger Indices Kununurra W.A. 1979-2011

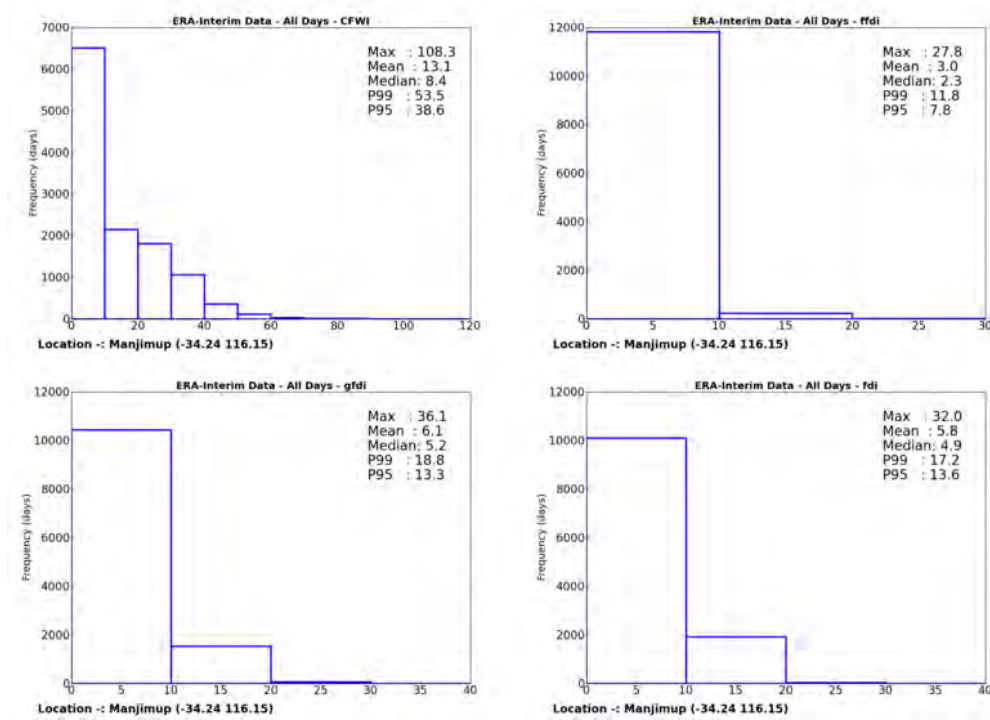


Figure 2.39: Histogram -Fire Danger Indices Manjimup W.A. 1979-2011

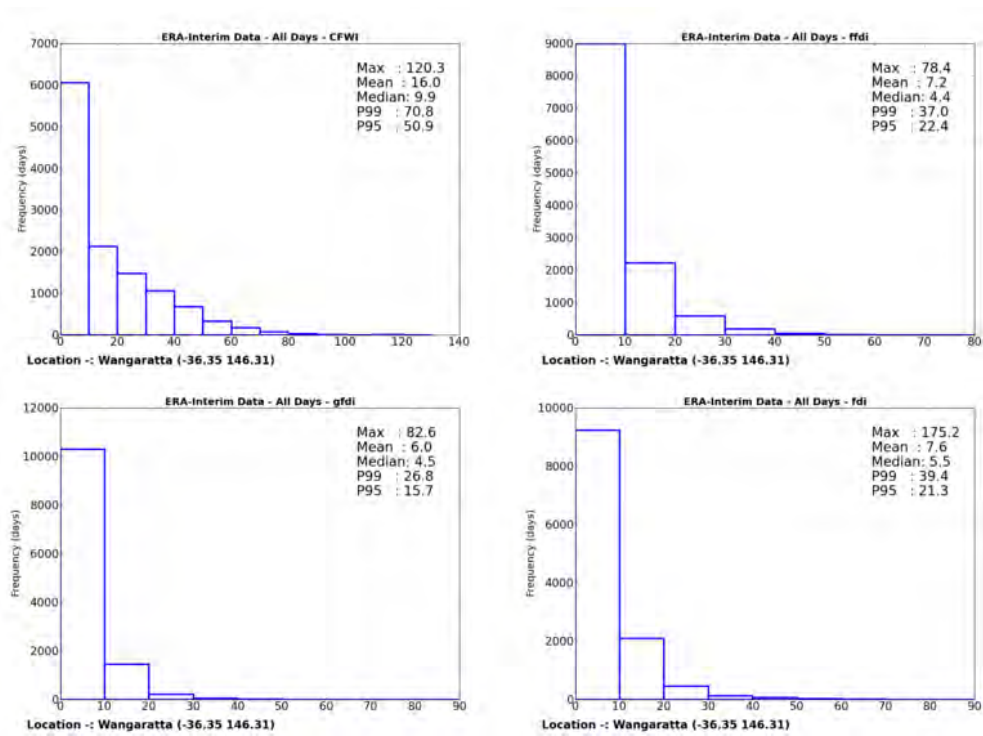


Figure 2.40: Histogram -Fire Danger Indices Wangaratta Vic. 1979-2011