

## **Atmospheric Rivers in Australia?**

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The term Atmospheric River (AR) has never been widely applied in Australia, yet there are a number of heavy rainfall events with distinct similarities to established atmospheric river criteria, namely in the conveyance of tropical moisture to the arid interior and to sub-tropical areas. Terms such as moisture highway, north easterly feed and training effect have been used to describe heavy rainfall sourced from tropical areas.

It is this ability to move moisture to such areas in Australia on an infrequent basis that has significant implications for emergency planning and for the design and operation of dams. Recent flood events have impacted areas with rainfall totals markedly above existing records with temporal and spatial variability that has challenged existing planning and design criteria.

A number of historical, record events are examined to ascertain their characteristics in relation to established atmospheric river criteria and the use of the term in relation to Australia.

The impact of such events (whether AR's or 'AR like'), include Australia's only large scale dam failure and so are considered with regard to the operation of dams and emergency planning.

Lastly, links to established features of La Nina, El Nino, the Southern Oscillation Index and the Madden Julian Oscillation are explored.