Abstract title:	Riparian woodland dysfunction is driven by groundwater decline in a northern Murray-Darling intensive production landscape
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Riparian woodland dysfunction is driven by groundwater decline in a northern Murray-Darling intensive production landscape

Altered hydrological regimes are significant drivers of ecosystem change in riverine, riparian and floodplain ecosystems. This study has found that declining condition in *Eucalyptus camaldulensis/E. tereticornis* riparian woodlands of the highly-modified Upper Condamine floodplain, southern Queensland, is predominantly linked to falling groundwater levels associated with extraction for irrigation. Evidence of dieback in this species complex increases with groundwater depth falling below 13-16m, and community composition (functional group diversity) is strongly associated with both groundwater depth and tree condition. These findings contrast with studies in Murray River floodplain woodlands where poor tree health is associated with soil salinisation associated with rising water tables and/or altered flood regimes.

Results from this study are summarized in a semi-quantitative resilience-based State-and-Transition model, identifying critical thresholds for the persistence of this essentially groundwater-dependent ecosystem. Such systems, currently existing close to ecological thresholds, contribute significantly to our understanding of how ecological systems respond to change, and of how major disturbances such as climate change may play out across landscapes.