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Oral Presentation – Abstract

Resilience of temporary wetlands in production landscapes and potential impacts of climate change

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Increasing rates of water extraction and regulation of hydrologic processes, coupled with destruction of vegetation, pollution and climate change, are jeopardizing the future persistence of wetlands and the ecological and socio-economic functions they support. Today in Australia, an estimated 50% of wetlands have been destroyed since European colonisation. In some regions, loses are as high as 98% and in settled agricultural areas, losses of 70% are common. Wetlands that do remain are suffering from severe degradation and their resilience and ability to continue functioning and adapt to hydrologic changes and land use changes that could result from climate change may be significantly inhibited as a result. Information on temporary floodplain wetlands, such as billabongs, is often sparse and knowledge of how ecological functioning and resilience may change under future land use intensification and climate change is lacking in many landscapes. These knowledge gaps pose significant problems for the future sustainable management of biodiversity and agricultural activities which rely on the important services supplied by these wetland ecosystems. This research evaluates the impact that hydrological variability and land use context has on the fringing vegetation of wetlands in a production landscape, the Condamine Catchment of south-east Queensland. An understanding of the relationship between hydrologic variability, land use and wetland vegetation will then be used to investigate how resilient these systems will be to different potential scenarios of climate change.