



focus on **NRM** research

Groundwater ecosystem functions & impacts

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What are you researching?

Our current project aims to establish a database of groundwater biota within the Condamine, Gwydir, Maules Creek and Macquarie catchments, allowing for a comparison of impacts on groundwater between competing landuses.

We will also test new methods devised to monitor groundwater health for the purpose of groundwater management.

What have you found?

A stygofauna and microbial species inventory is currently being compiled, with a number of microbes and stygofauna entirely new to science.

Evidence indicates structural and functional differences in groundwater communities under differing landuses, however the implications of these findings in terms of groundwater health and quality are unclear at this stage.

Using molecular techniques to sequence microbial DNA, a large number of microbes have been identified in groundwater. The functional roles of these microbes are believed to be important in influencing water quality e.g. nitrate concentrations.

A framework to measure groundwater health is currently being refined and tested. This framework will combine ecological, environmental and water chemistry measurements to monitor groundwater health.

Why is it important?

Stygofauna and microbes contribute to the maintenance of water quality and flow in aquifers.

Thus understanding factors that influence their distribution and contribution to ecosystem health is important to ensure groundwater remains suitable for drinking and agricultural purposes.

Overall this research will benchmark groundwater health in four catchments and provide of a tool by which groundwater health can be evaluated and monitored in a quick, cheap and robust way.

How can I apply the research/what should I do about it?

In these early stages of the project, the Groundwater Health Index is still being refined, and alternative techniques trialed, to produce practical and affordable tools for use by industry.

Where do I go for more information?

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