

Media release

Flinders researchers tap into Ti Tree Basin

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Groundwater experts from Flinders University are setting up one of the world's largest arid zone groundwater studies in the Northern Territory.

Up to \$2.3 million worth of infrastructure – including 100 bores, three weather stations and 20 river sensors – has been installed on Pine Hill Station in the Ti Tree Basin, 150km north of Alice Springs, by a team of Flinders hydrologists, PhD students and postdoctoral researchers.

Professor Peter Cook, Deputy Director of the University-based National Centre for Groundwater Research and Training (NCGRT), said the equipment would be used to measure groundwater levels in the Ti Tree Basin and to determine how water flows in and out of the aquifer.

Groundwater is found in aquifers which are made up of porous rocks and gravel. These aquifers saturate and store water, almost like a sponge, so that water can be extracted in the summer months when it is needed most and replenished in winter.

Professor Cook said that despite advancements in groundwater research, scientists were not entirely sure how groundwater in arid areas is replenished, and where the water goes.

“The Ti Tree Basin receives just 250mm of rainfall per year which helps supply water to the small town of Ti Tree, the Indigenous communities living in the area and various horticulture developments,” Professor Cook said.

“Researchers think groundwater in arid areas such as the Ti Tree Basin gets replenished when there's a big rainfall, which occurs maybe once or twice a year, making the rivers flow and seep down into the aquifer,” he said.

“But it's rarely measured and while we think that's where the water comes from, we don't really know.”

Professor Cook said the second aim of the study was to determine where the water went once it seeped into the aquifer: “What we're trying to work out is where it's going, and most of our early results are showing that the trees lining the basin are taking a lot of the water out.”

He said findings of the project, which is a collaboration between the University of Technology, Sydney, the University of New South Wales and the Northern Territory Government, would help inform groundwater research worldwide.

“If we can work out where the water comes from then we will know how much we can sustainably extract without drying up the aquifer.”

“Often with groundwater studies we're limited with resources but now we have the infrastructure to better understand groundwater in arid areas, which is extremely important to a country like Australia where water is scarce.”

The project is part of a wider grant awarded to the NCGRT from the Federal Government's Education Investment Fund to measure groundwater flow across a number of sites, including the Willunga Basin.

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