

## Media Release

### Chiefs of Staff, News Directors

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## Honours student unearthing geological mysteries of the North-West

An Earth Science Honours student from the University's School of Physical Sciences is working to improve mapping of remote and rugged parts of Tasmania by implementing a non-invasive technique that can "see through" trees to identify an area's geology.

The project is being conducted by Declan Radford with the support of Mineral Resources Tasmania, and has potential to forge significant economic outcomes for the state's mining sector by pinpointing the geology in areas previously difficult to explore.

Mr Radford has been analysing aerial radar maps of the North-West region collected by NASA almost two decades ago with the help of "machine learning," a computer processing technique that recognises patterns in large datasets.

This week, the Honours student returned from a fortnight working in the field where he explored areas around Balfour, and also Heazlewood near Waratah.

Mr Radford said radar was a useful environmentally conscious tool for mapping remote areas with a high annual rainfall and dense impenetrable vegetation such as Tasmania's rugged West Coast, and hoped his work would improve the state's geological maps in hard to reach locations.

"Aerial radar maps are collected through a remote sensing system which uses microwave radiation to create an image of the earth's surface. Radar can 'see through' clouds or vegetation and is unobtrusive unlike building roads, drilling holes or felling trees to assess an area's geological composition," Mr Radford said.

"During my field work I assessed whether the patterns identified in radar maps of the North-West matched the geological terrain in each area through field observations and collecting rock samples. The most exciting result however was discovering a new zone of ultramafic rocks, rare masses once located beneath the ocean floor but emplaced onto Tasmania more than 500 million years ago. This new evidence suggests three previously mapped ultramafic areas may in fact all link up to form the one zone."

Project Supervisor Dr Matthew Cracknell, Centre of Excellence in Ore Deposits Research Fellow at the University of Tasmania said the project was significant because it forged a better understanding of geology in the North-West which could lead to economic outcomes if the mapped areas uncovered economic mineralisation.

“Up until now gaining insight into the geological make-up of some parts of the North-West has been a difficult prospect. Declan’s project is paving the way for the University of Tasmania in partnership with Mineral Resources Tasmania to make the next big discoveries through a method that is environmentally conscious and of minimal cost,” Dr Cracknell said.

Mr Brett Stewart, Director of Mines at Mineral Resources Tasmania said the project had provided Declan with valuable professional experience while allowing the Division to improve and add to its existing dataset of Tasmania’s geology.

“This particular project is of interest to Mineral Resources Tasmania because the combination of remote sensing methods that Declan is using have the potential to be very useful for our ongoing regional mapping programs. The 1:25,000 regional geology maps produced from this work will be used to identify areas that are more geologically complex and which have the potential to be of interest to the mining and exploration industries,” Mr Stewart said.

Mineral Resources Tasmania has supported this project with funding of \$5,000 towards field work costs, and provided geology and remote sensing data to form the basis of Mr Radford’s research. A geologist from MRT also spent several days in the field with Mr Radford.

Mr Radford will present his findings at the *Tasmanian Geoscience forum on Exploration, Mining and Research* during December in Strahan.

**Information released by:**

University of Tasmania, Communications and Media Office  
Phone: 6430 4966  
Email: [Media.Office@utas.edu.au](mailto:Media.Office@utas.edu.au)