

CASE STUDY OF IMPACT

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Securing the future of Australian mineral exploration

The Distal Footprints project provides Australia's mineral explorers with the tools needed to discover the continent's hidden mineral wealth

The challenge

Most of the large ore deposits found in Australia have been discovered as a result of their direct surface expression. However, two thirds of the potential ore bodies contained in Australia are under (often deep) cover, and the signs of any ore bodies are therefore hidden.

The technical risk associated with Australian mineral exploration due to this cover is reducing investment in Australia by major mining companies.

The key to the discovery of new high grade mineral deposits is the ability to detect and recognise the distal footprints of ore deposits that are hidden deep below the surface. The Australian Academy of Science High Flyers Think Tank and UNCOVER initiative is encouraging exploration geoscientists to collaborate to tackle this national challenge with focused research that can assist industry to boost its discovery rates.

The Distal Footprints toolkit provides the capacity to de-risk mining exploration.

The response

CSIRO, Curtin University, the University of Western Australia, the Geological Survey of Western Australia, and the mining industry are working together to address these challenges.

The SIEF-funded Distal Footprints project is a public-private collaboration which aims to develop a 'toolkit' of know-how, methodologies, and new field and laboratory analysis techniques to assist explorers to identify the tell-tale 'footprints' or signatures of deposits under covered terrain, thus increasing exploration success in Australia to provide the mines of the future.

This approach is unique within Australia. The research team aims to eventually provide geophysical data sets and interpretative map products across specific areas of the continent, a field guide to these areas, and an assessment of the areas' mineralogical, chemical, geophysical, and geological indicators. This toolkit will bring new data, new interpretations, new understandings, and new technologies to help discover mineral wealth deep under cover.



The impact

The toolkit of information and test results developed from this research will enable the exploration of areas where mineral detection and extraction have been previously deemed too technically difficult or not cost effective. Further, a better understanding of the mineralisation of an area could also inform decisions on how best to develop any resource that might be found.

The project has led to exploration activity with tenement uptake in at least one area as a direct result of the research. Over the next 10 years, it is anticipated that more explorers will use the data and outputs as part of their targeting activities. On a broader basis, the tools and approaches will be used elsewhere across Australia and even internationally.

Based on conservative valuations, the net present value of benefits of the Distal Footprints project to 2035-36 is \$19.2 million. The project has a benefit-cost ratio of over 5¹.

¹ ACIL Allen Consulting. 2016. SIEF Impact Case Studies. Canberra: ACIL Allen.

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This case study was developed by ACIL Allen and CSIRO in 2016 as part of an overarching review of SIEF's Impact.