



Student SURVEY Expeditions

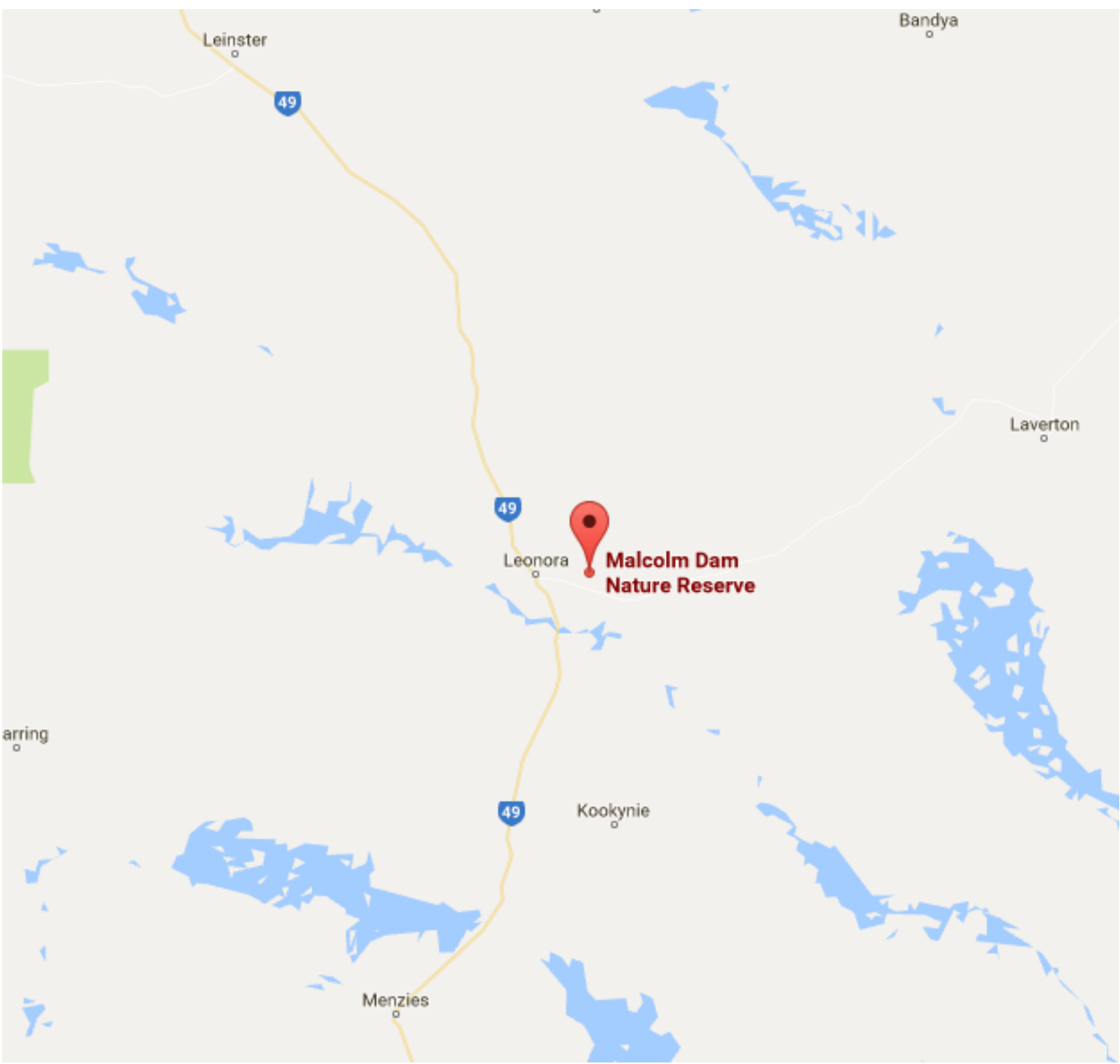
Malcolm Earth Dam and Abandoned Rail Bridges

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History

Malcolm Dam is a dam located to the east of Leonora, about 3km north from the road that connects Leonora and Laverton. It was dug out in 1902 to service the steam trains in the area (Goldfields). It now serves as a free campsite and is also a haven for the local bird life.

In 1905 the railway line from Malcolm to Laverton was opened. This was the last of the major extensions of the railway network of the gold boom era. It was completed in a mere 6 months which is remarkably quick considering the conditions under which the construction teams had to work.

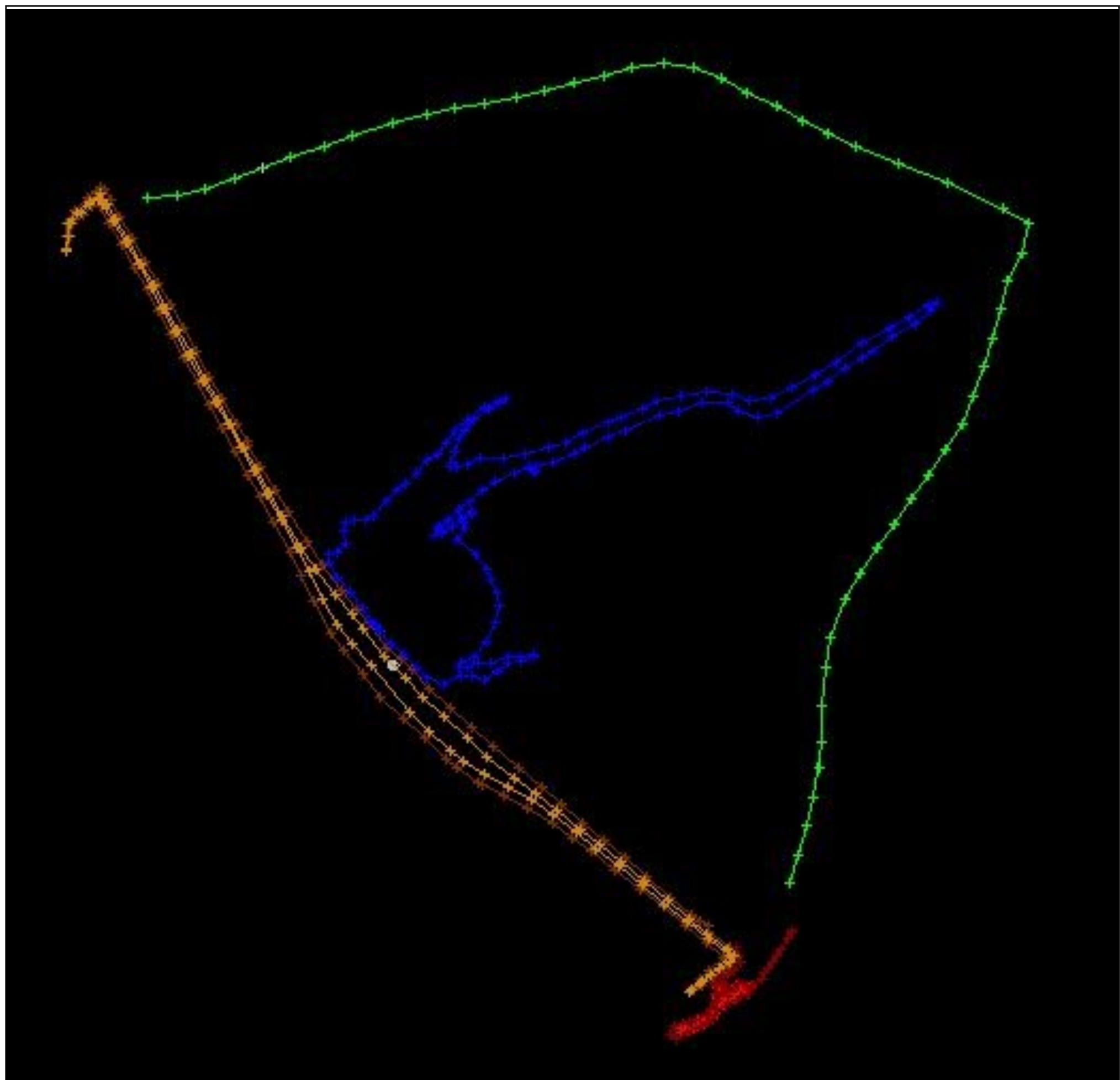


Aim

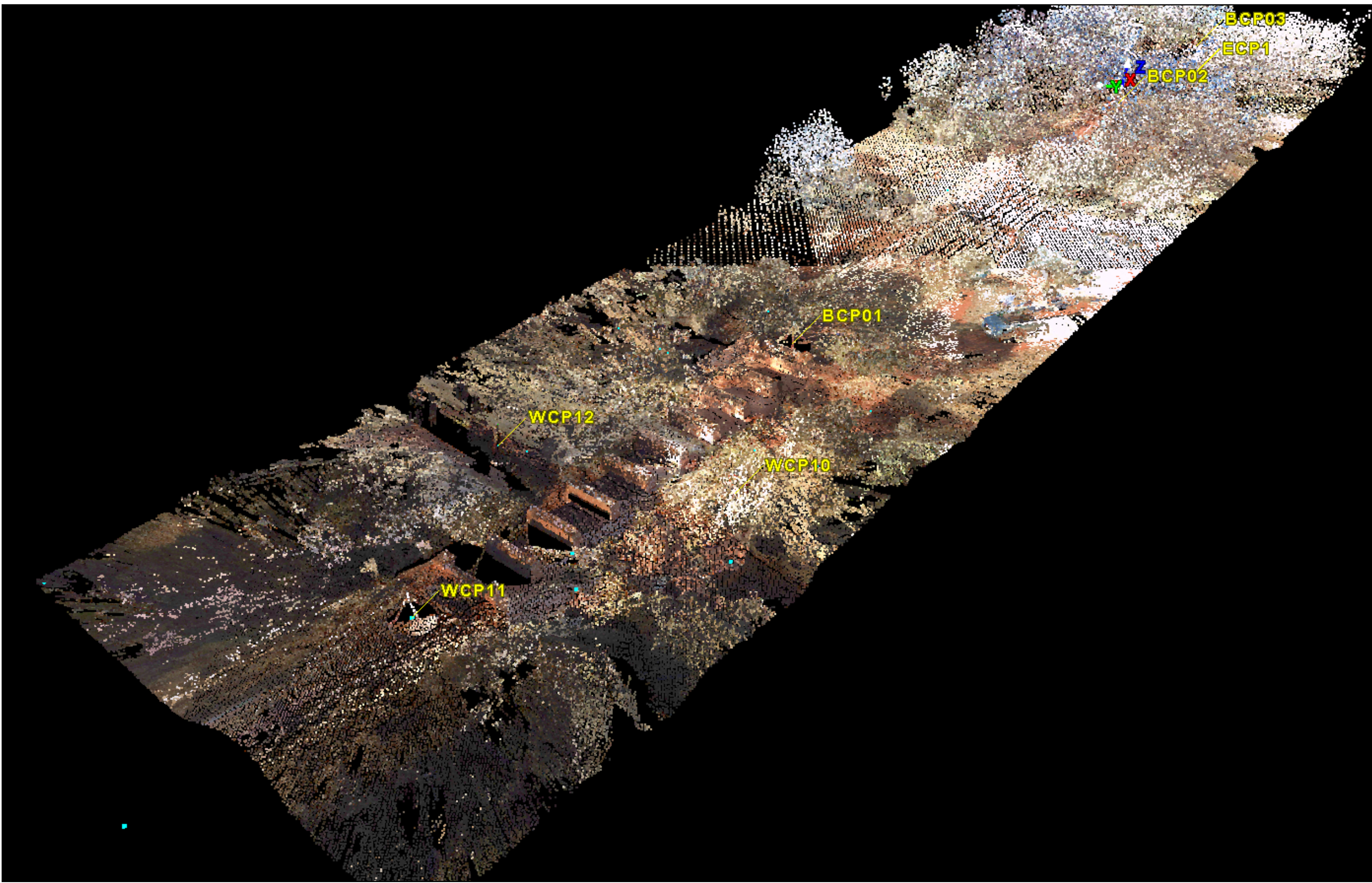
The primary objective concerning the dam was to perform a Real Time Kinematic (RTK) survey. This survey method involves using GPS receivers and radio transmitters to give real time precise (relatively) coordinates. This is method can survey a large open area such as the Malcom Dam relatively quickly.

Along the old Malcolm-Laverton railway a number of abandoned railway bridges are still around which were scanned with a Leica P20 Terrestrial Laser Scanner. The resulting point cloud has then be used to create a 3D model to serve as a historic record or a walkthrough can be produced for tourist purposes e.g. on a website.

Results



RTK Survey of Malcolm Dam in MAGNET.



Cleaned up Point Cloud Of Abandoned Rail Bridges in Cyclone

Conclusion

I am very grateful for the opportunity to go out into parts of WA which I have never experienced before and partake in numerous interesting surveys.

I learnt a lot, especially from the experienced mentors who had plenty to share. The ability to get hands on experience with a wider range of equipment and techniques that what is experienced at university was very valuable.

Acknowledgements

I wish to acknowledge the support given by the supervisors of this project, Senior Lecturer at Curtin University Tony Snow and Director of RM Surveys Geoff Robb. I would also like to express my thanks to the students who assisted with all field work components on the expedition. I would also like to extend gratitude towards other academic staff at Curtin University who assisted with the data processing component of this project, namely; Dr David Belton and Dr Petra Helmholtz. And of course a special thanks to the sponsors.



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