Ground Penetrating Radar Investigations of the Poonindie Cemetery to Locate Unmarked Graves

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Statement of Indemnity

- Geophysical methods indirectly measure the properties of the subsurface in a way that can be interpreted to represent unmarked graves rather than locating graves directly.
- As a result, these results should not be considered a definitive map of the location of unmarked graves but a hypothesis yet to be verified.
- Confirmation of these results is only possible through direct investigation and therefore Flinders University does not guarantee that the results accurately locate all unmarked graves on the site.
- This investigation was undertaken on a volunteer, non-commercial basis and so Flinders University will accept no liability for the findings.

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Summary of Results

- Ground Penetrating Radar (GPR) was used to locate subsurface features within an approximately square area with approximate dimensions of ~4,000 m^2 in the Poonindie Cemetery, South Australia.
- The results suggest that there are 92 possible unmarked graves in the study area.
- The results showed no evidence of unmarked graves outside of the current boundary fence.
- The subsurface of the site is extensively disturbed, data quality was low and site coverage was incomplete and so the results of this investigation should be treated with caution.

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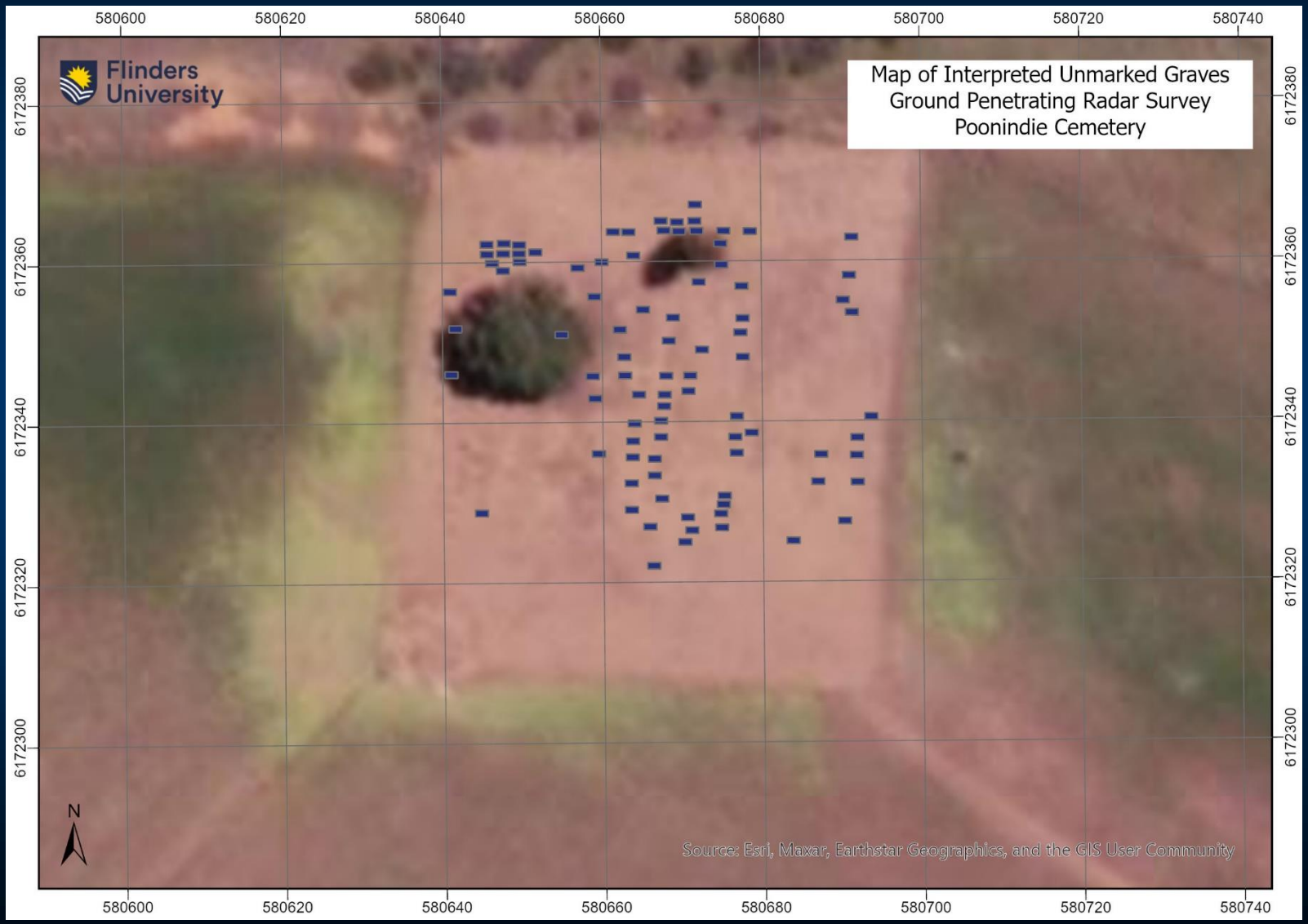
Map of Interpreted Unmarked Graves



Ground Penetrating Radar (GPR)

- Measures dielectric permittivity (effectively conductivity) of the subsurface
- Detects most forensic and geological features
- Produces 2D or 3D data
- Processing intensive but produces high value data

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Methods

- Data was collected using a Malå Mira HDR Ground Penetrating Radar with a 500Mhz antenna containing 12 receivers and 11 transmitters mounted on a John Deere 1550 tractor.
- Data was collected with a line spacing of 6.5cm and a trace increment of 5.6cm using 288 samples and a time window of 56.25 ns
- Positioning was provided by a Lecia GS16 RTK using a Smartnet correction.

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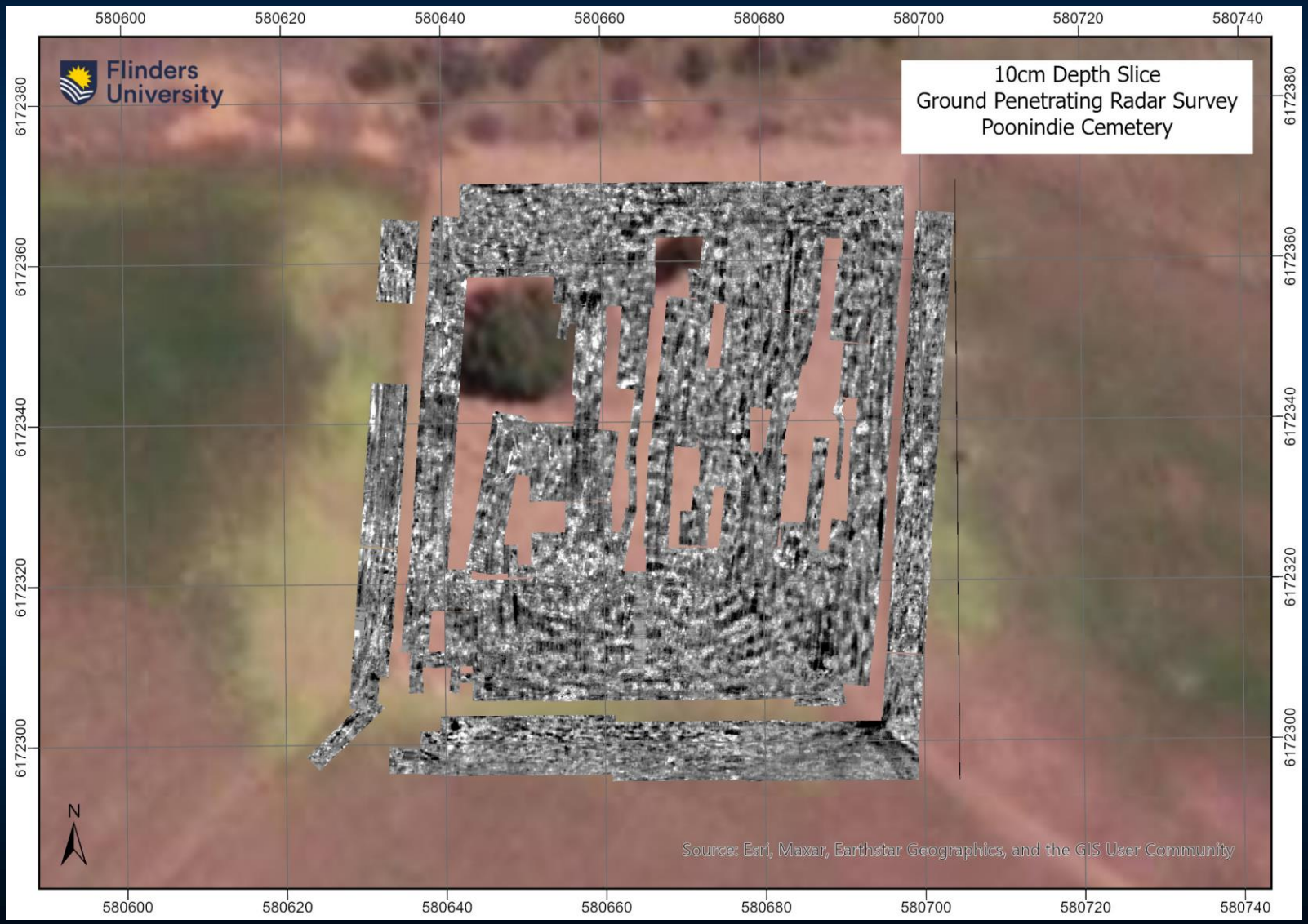
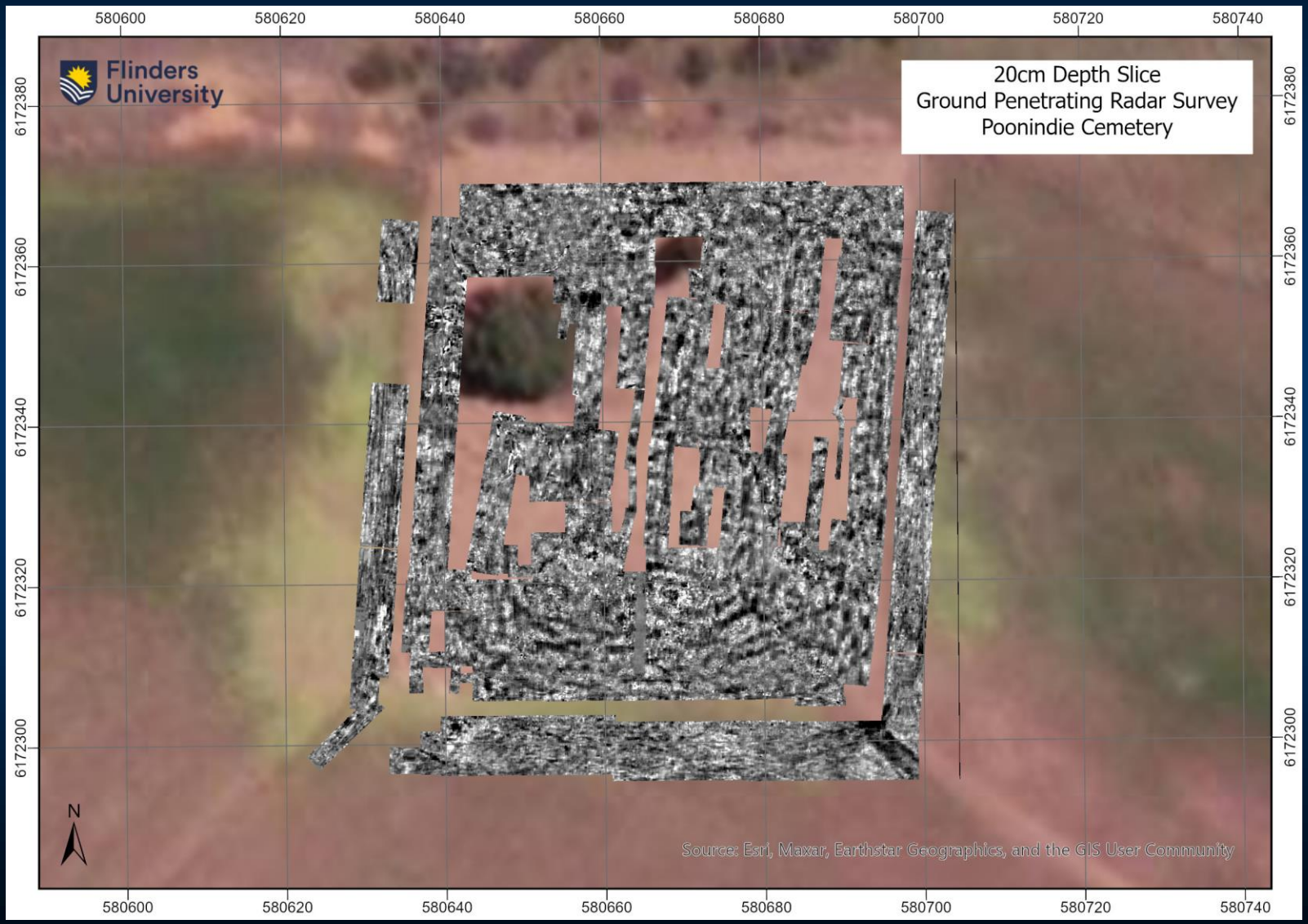
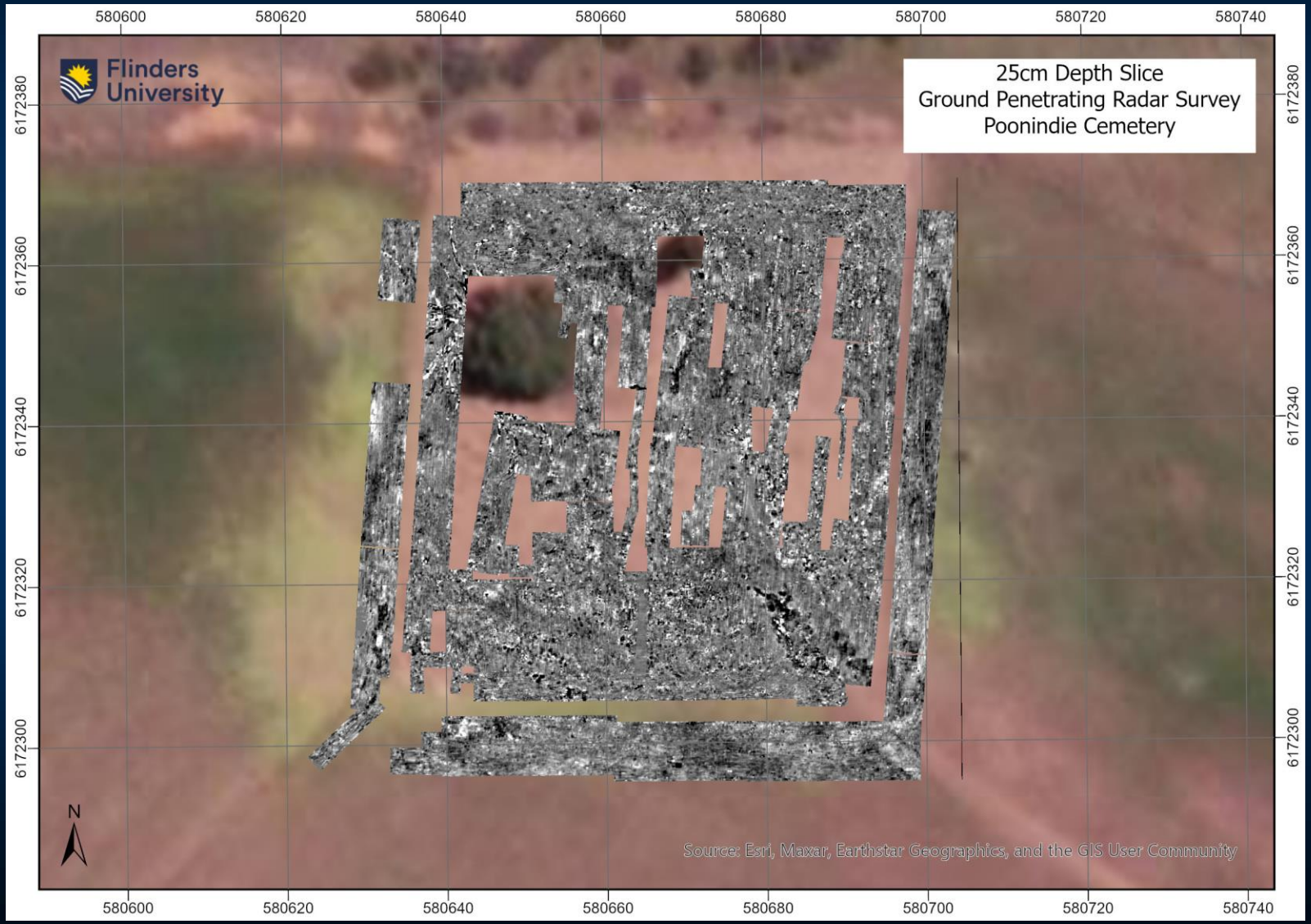
GPR Depth Slice at 10cm Depth



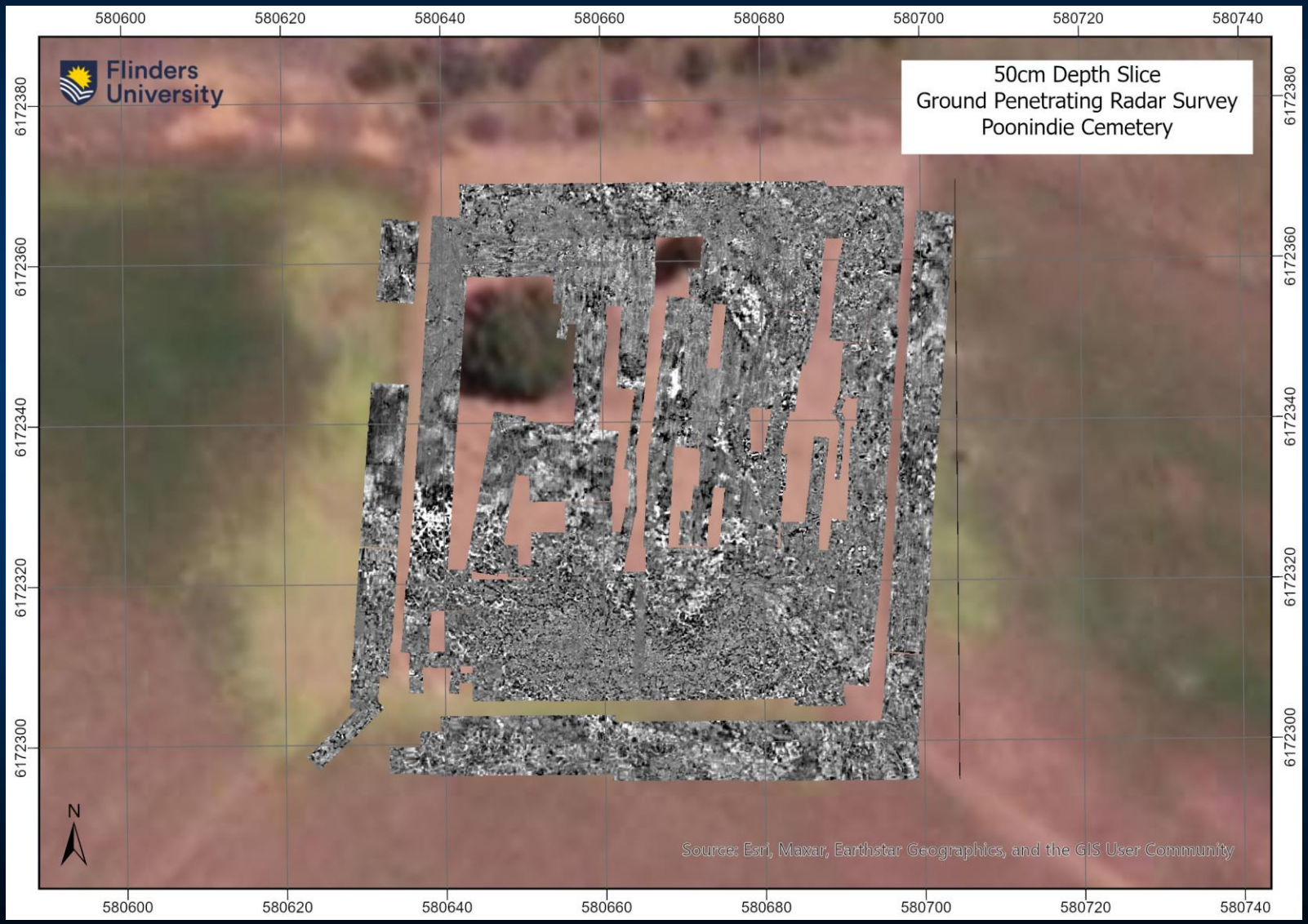
GPR Depth Slice at 20cm Depth



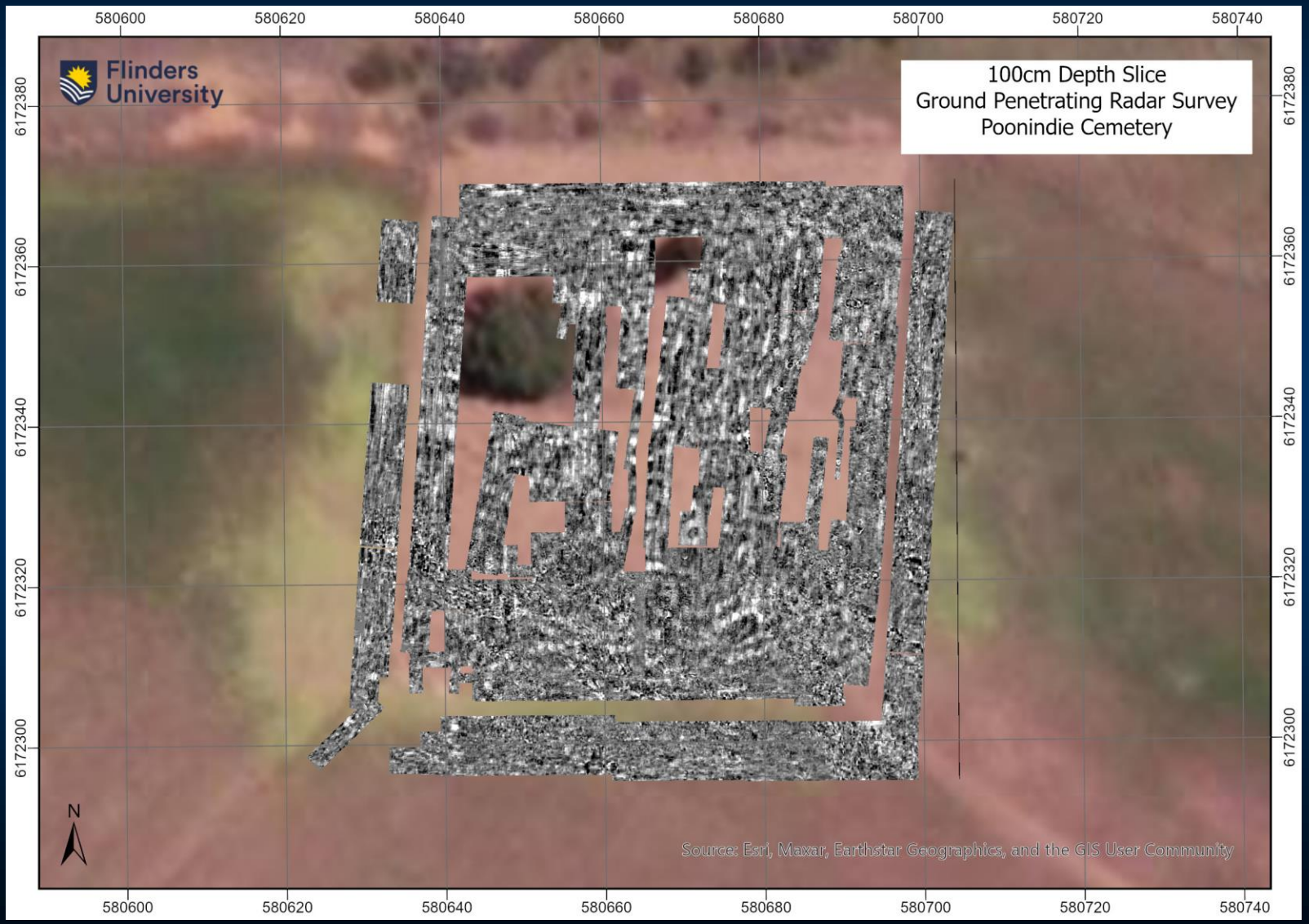
GPR Depth Slice at 25cm Depth



GPR Depth Slice at 50cm Depth



GPR Depth Slice at 100cm Depth



Conclusions

- 92 unmarked graves were interpreted to exist on the site, based on the GPR data.
- No graves are interpreted to exist outside of the modern boundary of the cemetery.
- The subsurface of the site is extensively disturbed, data quality was low and site coverage was incomplete and so the results of this investigation should be treated with caution.

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