

WA-Array

DEFINING THE SEISMIC STRUCTURE OF WESTERN AUSTRALIA

WORLD-CLASS SEISMIC DATASET | ENSURING APPROPRIATE LAND USE PLANNING
HIGH-RESOLUTION STATEWIDE CRUSTAL IMAGING

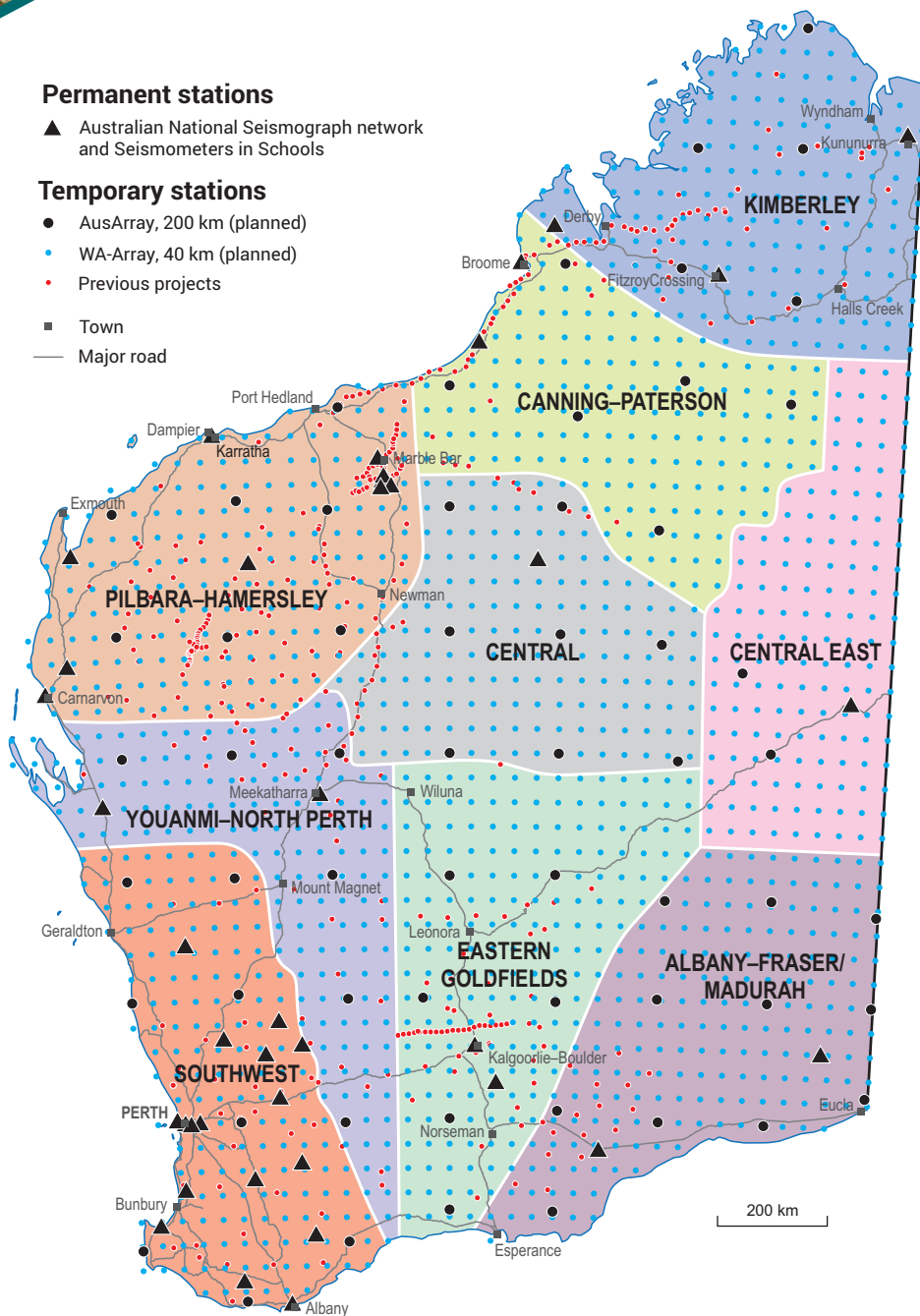
Permanent stations

- ▲ Australian National Seismograph network and Seismometers in Schools

Temporary stations

- AusArray, 200 km (planned)
- WA-Array, 40 km (planned)
- Previous projects

- Town
- Major road



Western Australia plans for the future – prospective areas safeguarded

- Maintaining the State as one of the foremost regions for mineral exploration
- Defining areas of higher mineral prospectivity under deep cover
- Evaluating future competing land uses to maximize Western Australia's transition to net zero emissions while safeguarding mining opportunities
- Imaging the crust and sublithospheric continental mantle in detail by passive seismic surveys
- Building on similar surveys across the rest of Australia, but with higher density data collection leading to more detailed products
- Sweeping across the State in nine campaigns with data and products released after each region is completed via a ten-year project
- Co-locating with magnetotelluric surveys and potentially other geophysical/geochemical surveys



Installing seismic station at Brookton, Western Australia



Government of Western Australia
Department of Mines, Industry Regulation and Safety

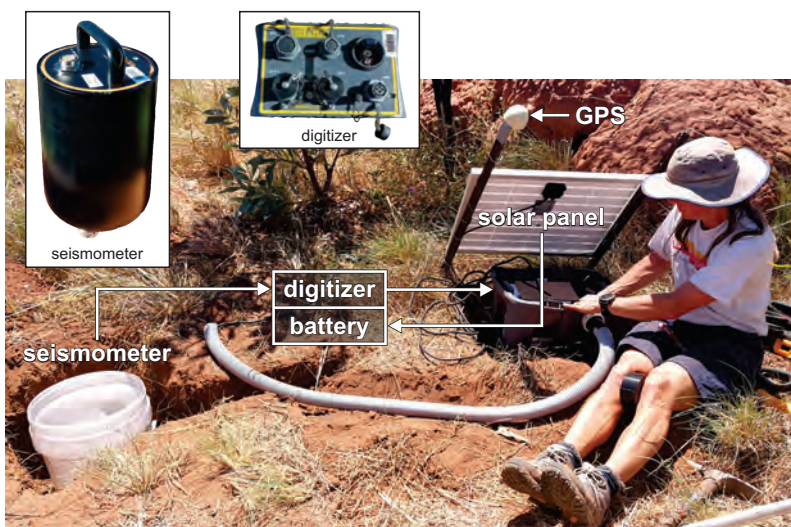
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Geological Survey of
Western Australia





Field deployment by helicopter in remote areas (image courtesy Geoscience Australia)



WA-Array sensors being installed in the Ord Ranges, Kimberley, Western Australia

WA-Array

Passive seismic monitoring records all vibrations including local and far-field earthquakes and background noise:

- One year data recording at each deployment site
- 1500 broadband stations
- Nine regions, 165 instruments per deployment
- Raw data available one year after data collection for each region is completed

Products include:

- Depth to Moho
- Maps of local seismicity
- Crustal structure
- Depth to lithosphere/asthenosphere boundary

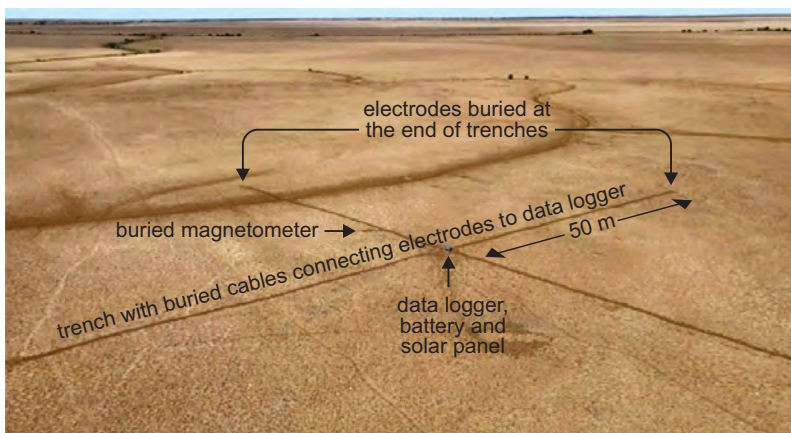


Diagram of the set up of a magnetotelluric survey (image courtesy Geoscience Australia)

AusLAMP

Magnetotelluric equipment measures the natural magnetic and electrical currents in the Earth.

These experiments are conducted by Geoscience Australia and will:

- Occupy same sites as WA-Array
- Have a deployment duration of one month per site

Products include:

- Phase tensors and induction arrows to highlight major conductivity features
- 3D conductivity models of the crust and subcontinental lithospheric mantle

For more information



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