



*Supplement of*

## **A strontium isoscape of northern Australia**

**Patrice de Caritat et al.**

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## **1 Introduction**

This Supplementary Material file contains several additional high-resolution maps to assist the reader of the main article:

- Figure SM1: Geological region groups
- Figure SM2: Geological region domains
- 5 • Figure SM3: Detailed surface geology map 1
- Figure SM4: Detailed surface geology map 2
- Figure SM5: Detailed surface geology map 3
- Figure SM6: Detailed surface geology map 4
- Figure SM7: Detailed surface geology map 5

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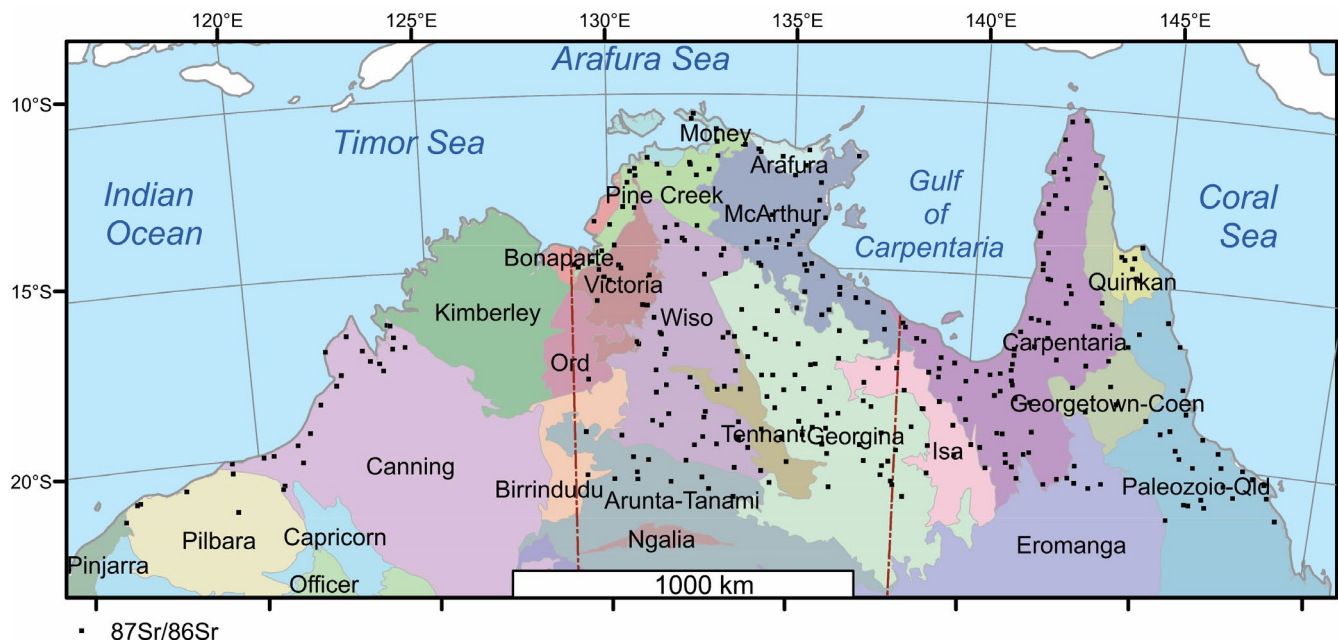
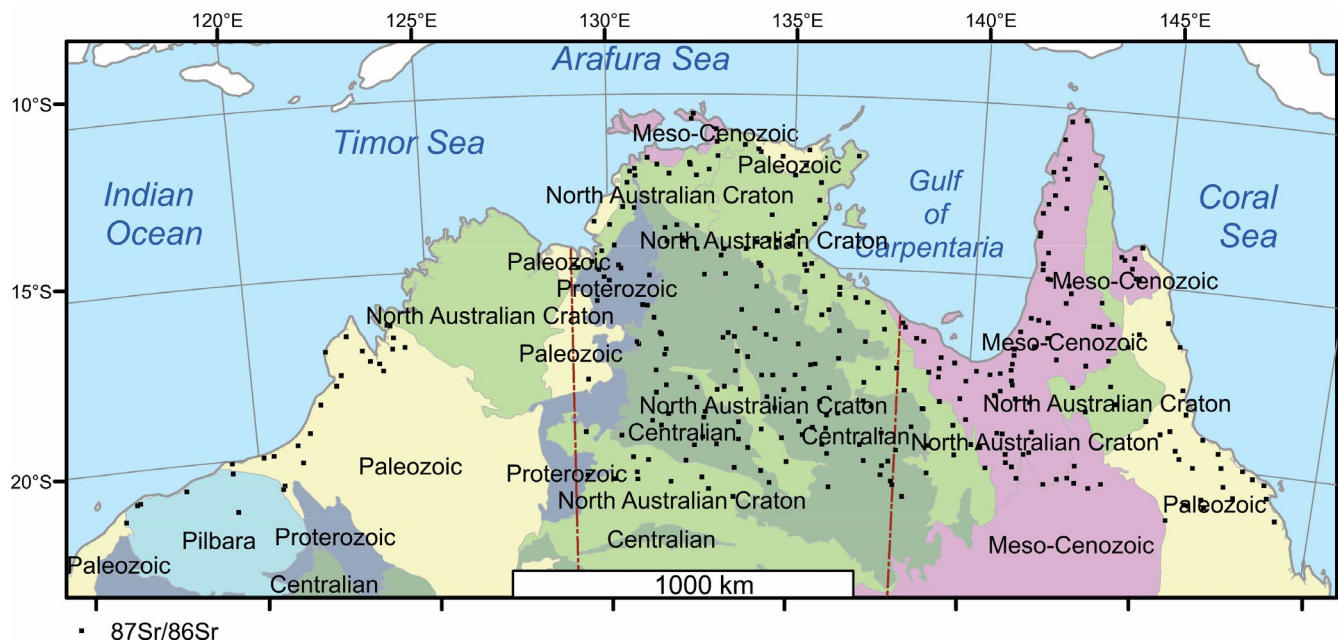
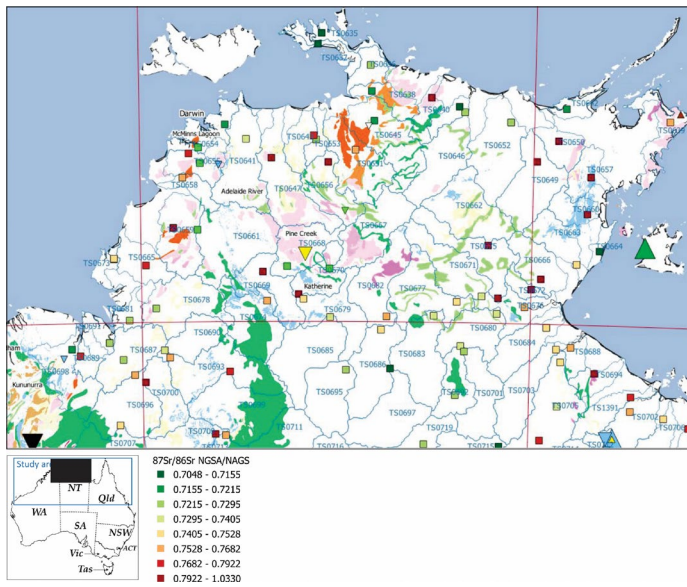


Figure SM1: Geological region groups (Blake and Kilgour, 1998) over the study area.

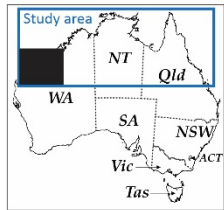
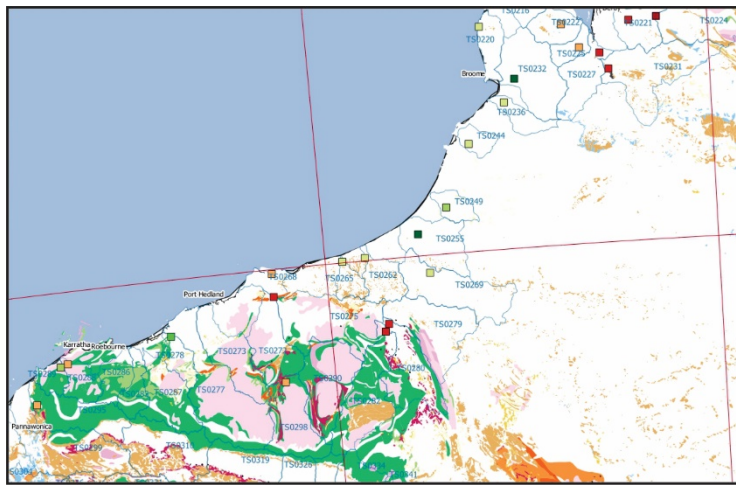


15 Figure SM2: Geological region domains (Blake and Kilgour, 1998) over the study area.

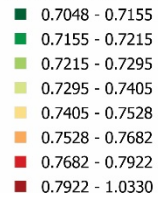




**Figure SM4: Detail of the surface geology (Raymond et al., 2012) and Sr isotope data (squares) for the northern part of the study area.**



$^{87}\text{Sr}/^{86}\text{Sr}$  NGS/NAGS



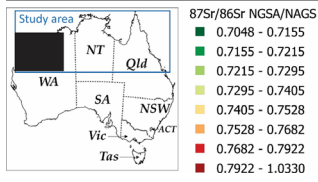
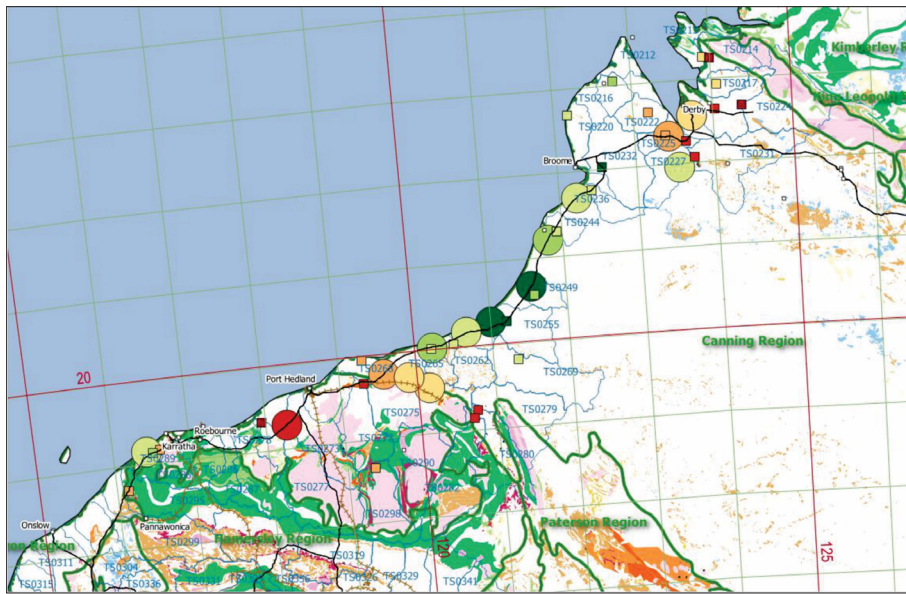
#### Bedrock Units

- Sedimentary and low-grade
- Felsic
- Felsic to intermediate
- Felsic to mafic
- Mafic
- Mafic to ultramafic
- Medium-grade
- High-grade

#### Sedimentary Units

- Carbonate
- Siliciclastic
- Quartz-rich arenite to rudite
- Felds- or lithic-rich arenite to rudite
- Argillaceous (detrital)
- Regolith (undifferentiated)

Figure SM5: Detail of the surface geology (Raymond et al., 2012) and Sr isotope data (squares) for the northwestern part of the study area.

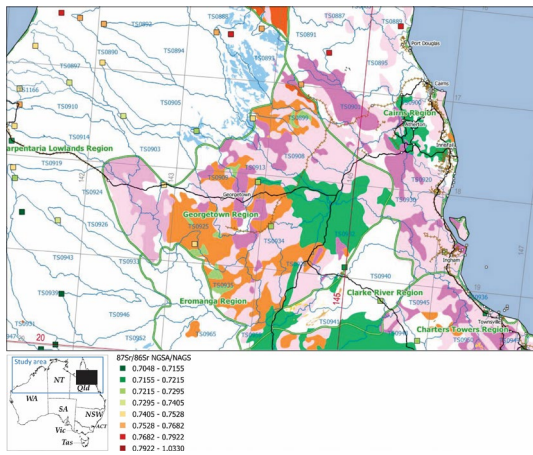


- | Bedrock Units             | Sedimentary Units                       |
|---------------------------|---|
| Sedimentary and low-grade | Carbonate                               |
| Felsic                    | Siliciclastic                           |
| Felsic to intermediate    | Quartz-rich arenite to rudite           |
| Felsic to mafic           | Felds- or lithic-rich arenite to rudite |
| Mafic                     | Argillaceous (detrital)                 |
| Mafic to ultramafic       | Regolith (undifferentiated)             |
| Medium-grade              |   |
| High-grade                |   |

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Figure SM6: Detail of the surface geology (Raymond et al., 2012) and Sr isotope data (squares) for the northwestern part of the study area, overlain on the airborne dust Sr isotope data (large circles) by De Deckker (2019).





### Bedrock Units

- Sedimentary and low-grade
- Felsic
- Felsic to intermediate
- Felsic to mafic
- Mafic
- Mafic to ultramafic
- Medium-grade
- High-grade

### Sedimentary Units

- Carbonate
- Siliciclastic
- Quartz-rich arenite to rudite
- Felds- or lithic-rich arenite to rudite
- Argillaceous (detrital)
- Regolith (undifferentiated)

35 **Figure SM7: Detail of the surface geology (Raymond et al., 2012) and Sr isotope data (squares) for the northeastern part of the study area.**



## References

- Blake, D. H. and Kilgour, B.: Geological Regions of Australia 1 : 5000 000 scale, Geosci. Austral., Canberra [data set],  
40 <http://pid.geoscience.gov.au/dataset/ga/32366> (last access: 27 February 2023), 1998.
- De Deckker, P.: OZ-3 northern Western Australia sampling trip and analysis: strontium, rubidium and neodymium isotopes, Pangaea, <https://doi.pangaea.de/10.1594/PANGAEA.907689> (last access: 27 February 2023), 2019.
- Raymond, O. L. (Ed.), Gallagher, R. (Ed.), Shaw, R., Yeates, A. N., Douth, H. F., Palfreyman, W. D., Blake, D. H., and Hight, L.: Surface Geology of Australia 1 : 2.5 million scale dataset 2012 edition, Geosci. Austral., Canberra [data set],  
45 <https://doi.org/10.26186/5c636e559cbe1> (last access: 27 February 2023), 2012.