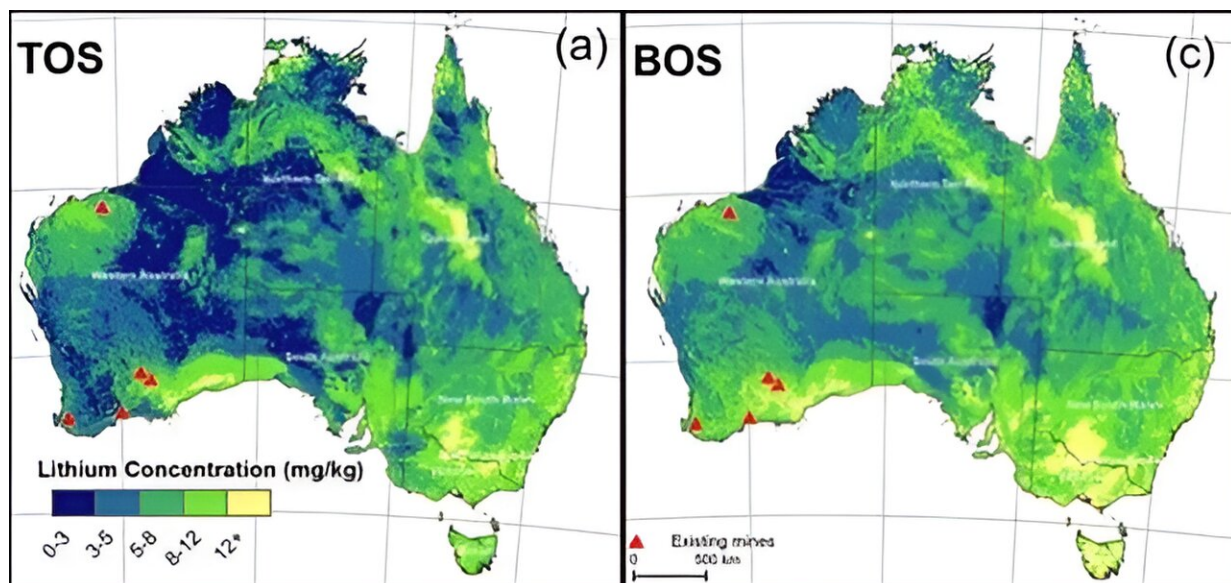


Mapping Australia's hidden lithium reserves

August 31 2023, by Philip Ritchie



Map showing predicted lithium concentrations in upper sediment (TOS) 0–10 cm and lower sediment (BOS) 60–80 cm. Credit: *Earth System Science Data* (2023). DOI: 10.5194/essd-15-2465-2023

New research has pinpointed the concentration and distribution of lithium across Australian soil, providing crucial insights for identifying potential reserves in the country.

Australia's lithium exploration has predominantly centered in Western Australia, but this research indicates the potential of other Australian regions, including Queensland, New South Wales and Victoria, that

display elevated predicted lithium densities.

Lithium is a valuable mineral increasing in global demand for its applications in batteries, phones, laptops and electric vehicles.

The study, published in the journal *Earth System Science Data*, was led by researchers at the University of Sydney with co-authors from Geoscience Australia.

Lead author Dr. Wartini Ng, a Postdoctoral Research Fellow in Soil Security from the School of Life and Environmental Sciences, said, "Our research not only opens up new possibilities for Australia's lithium industry but could also advance our path towards a low-carbon economy, a critical step in curbing greenhouse gas emissions."

Senior study author Professor Budiman Minasny, one of the leading international scientists in [soil](#) mapping and modeling, said that the findings could have significant implications for the lithium industry in Australia.

"We've developed the first map of lithium in Australian soils which identifies areas with elevated concentrations," Professor Minasny said.

"The map agrees with existing mines and highlights areas that can be potential future lithium sources."

Professor Minasny is from the University of Sydney's School of Life and Environmental Sciences, and a member of the Sydney Institute of Agriculture, China Studies Center and Sydney Southeast Asia Center.

The study indicates the highest lithium concentrations are found near the Mount Marion deposit of Western Australia, with elevated concentration across the central western region of Queensland, southern New South

Wales and parts of Victoria.

The team used digital soil mapping techniques developed at the University of Sydney to gauge extractable lithium content present in [soil samples](#) collected across Australia.

The research paints a comprehensive overview of [lithium](#) distribution across the continent, which is influenced by a variety of environmental factors including climate, geology and vegetation.

More information: Wartini Ng et al, Digital soil mapping of lithium in Australia, *Earth System Science Data* (2023). [DOI: 10.5194/essd-15-2465-2023](#)

Provided by University of Sydney

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