



SMEDG

SYDNEY MINERAL EXPLORATION DISCUSSION GROUP

To all SMEDG members - this should be a fantastic talk, at Club York and on Zoom. ASEG talks are always worthwhile attending.

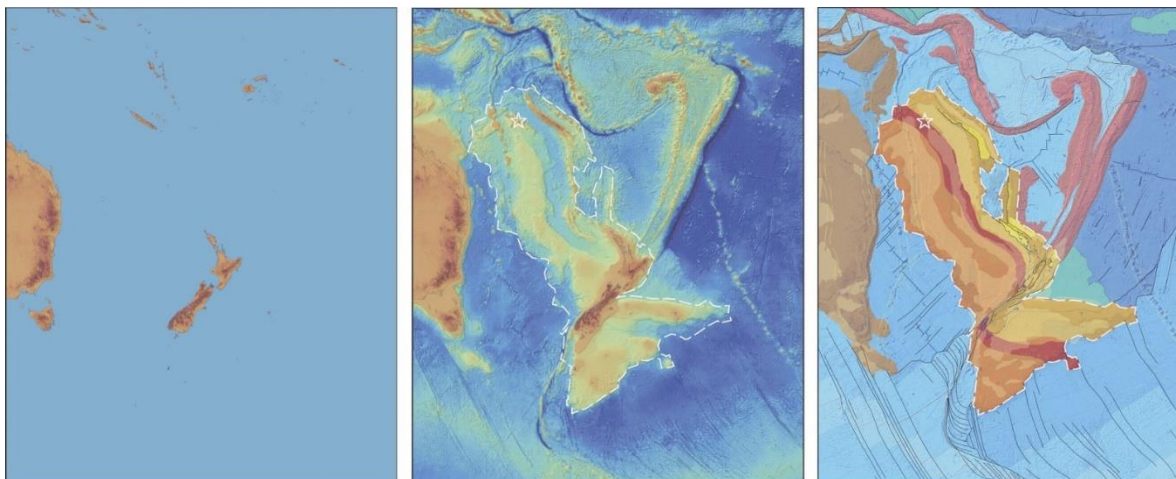
Dear ASEG (NSW) Member

We have our next technical meeting scheduled for Wednesday, 17th July. This month's event talk is by Dr Maria Seton, an Associate Professor and Associate Head of Research in the School of Geosciences, University of Sydney, on "The tectonic and volcanic history of Northern Zealandia".

Time: 5:30 for 6 pm start.
Address: Level 2, Club York (99 York St. Sydney. Room: 'Bass Suite').
Speaker: Dr Maria Seton (University of Sydney).
Topic: The tectonic and volcanic history of Northern Zealandia

Zoom link: Please click [here](#) to register for the zoom event..

Abstract:



A defining characteristic of the southwest Pacific is the significant amount of continental crust and volcanism distributed throughout the region. This includes the world's largest submerged continent, Zealandia, which separated from eastern Australia and Antarctica in the Cretaceous during the final phase of Gondwana break-up. A large knowledge gap in the tectonic and volcanic history of Zealandia has been the location and continuity of the Mesozoic subduction related magmatic arc and the Late Cretaceous to Eocene rift-related volcanics. In addition, widely distributed, intraplate Cenozoic volcanism, which appears to pockmark much of

Zealandia, has been difficult to explain via existing models. To address these gaps in our understanding, we conducted several research voyages on the RV Investigator and its precursor, the RV Southern Surveyor. We undertook a series of dredges, informed by seismic reflection profiles, to target places where basement outcrops at the seabed. We performed detailed geochronological and geochemical analysis of these samples and combined this with regional geophysical data interpretation to determine the location and orientation of the Mesozoic Gondwana magmatic arc axis (Median Batholith) from New Zealand through to the northern reaches of Zealandia. We further mapped the extent of Late Cretaceous to Eocene rift-related volcanics and their relationship to strong positive magnetic anomaly signatures in the region as well refining the age and extent of plume related volcanism within Zealandia. Our work has provided the first offshore reconnaissance geological mapping of the Zealandia continent, of critical importance for understanding the Mesozoic geological history of pre-breakup Australia, New Zealand and New Caledonia, which in turn is the basis for exploring the mineral potential hosted within these regions.

Bio:

Maria Seton is an Associate Professor and Associate Head of Research in the School of Geosciences, University of Sydney, and a former ARC Future Fellow and Australian Postdoctoral Fellow. Her research focuses on using the marine record to understand global to regional plate motions, the relationship between deep Earth processes and those happening at the surface and the role of tectonics in modulating Earth's long-term climate. She has been involved in several marine expeditions and leads research projects with university, government and industry partners. Maria has a passion for science communication and has received extensive coverage for her research in the media. She also has a passion for changing the public perception of the Australian continent, from one that ends at the coastline to one that extends hundreds of kilometres offshore, and where vital information about the evolution of our continent can be found.

Pizza and a bar tab will be provided on the night, as usual!

Upcoming events (may be changed or extra events may arise - keep an eye on the website, as well as emails):

- **Regular meetings (4th Thursday of the month, may be changed if necessary) - August 22, September 26, October 24, November 28 - note that the March and April meetings will be held on the 3rd Thursdays due to Easter and Anzac Day respectively**
- **David Timms Christmas Harbour Cruise - Friday December 15**
- **Mines and Wines, Albury - Thursday September 5 to Friday September 6, with optional field visits and wine tour before and after. Details on the Mines and Wines [website](#)**
- **Mineral Industry Group North Sydney (MIGNS, a SMEDG subsidiary) Friday lunches, generally on the first Friday of the month at Arrin Thai in Milsons Point - if you wish to be included in the WhatsApp group for lunch notifications please contact Murray Hutton at Geos Mining**

[SMEDG website](#)

- A treasure trove of current and historic information, including updated events schedules - well worth exploring!

Club York and Regular Meetings

- Regular SMEDG meetings are held in the Club York Function Centre, located on Level 2 of the Club, 95-99 York Street, just north of the Market Street intersection.
- These are also broadcast through Zoom, for which registration is required, with details on the notice of meeting email
- Entry is usually through the lifts located in the building foyer immediately to the left (south) of the Club entrance, however if for some reason the lifts are locked, entry can be gained through the Club - just let the concierge know that you are attending a function, and you will be let through. After meeting dinners are usually held at the Zabou Bistro on Level 1, however we sometimes go to Primi Italian for pizza on the ground floor.
- The bar is open at meetings, and we shout each attendee one drink upon arrival.

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