

The National Geochemical Survey of Australia

Geoscience Australia and the States and Northern Territory geoscience agencies commenced a collaborative project in 2007 aimed at delivering a layer of pre-competitive geochemical data at the national scale.

The resulting dataset will provide the energy and mineral exploration industry with a picture of the background geochemical concentration levels and patterns in Australia.

The sampling strategy is based on using natural weathering and transport processes to produce well-mixed, fine-grained samples representing as much as possible the average composition of large catchments (Figure 1). To this end outlet sediments, which in most cases are similar to floodplain or overbank sediments, are collected at ~1400 target sampling sites determined by terrain and hydrologic modelling. The resulting average sampling density is ~1 site/5500 km².

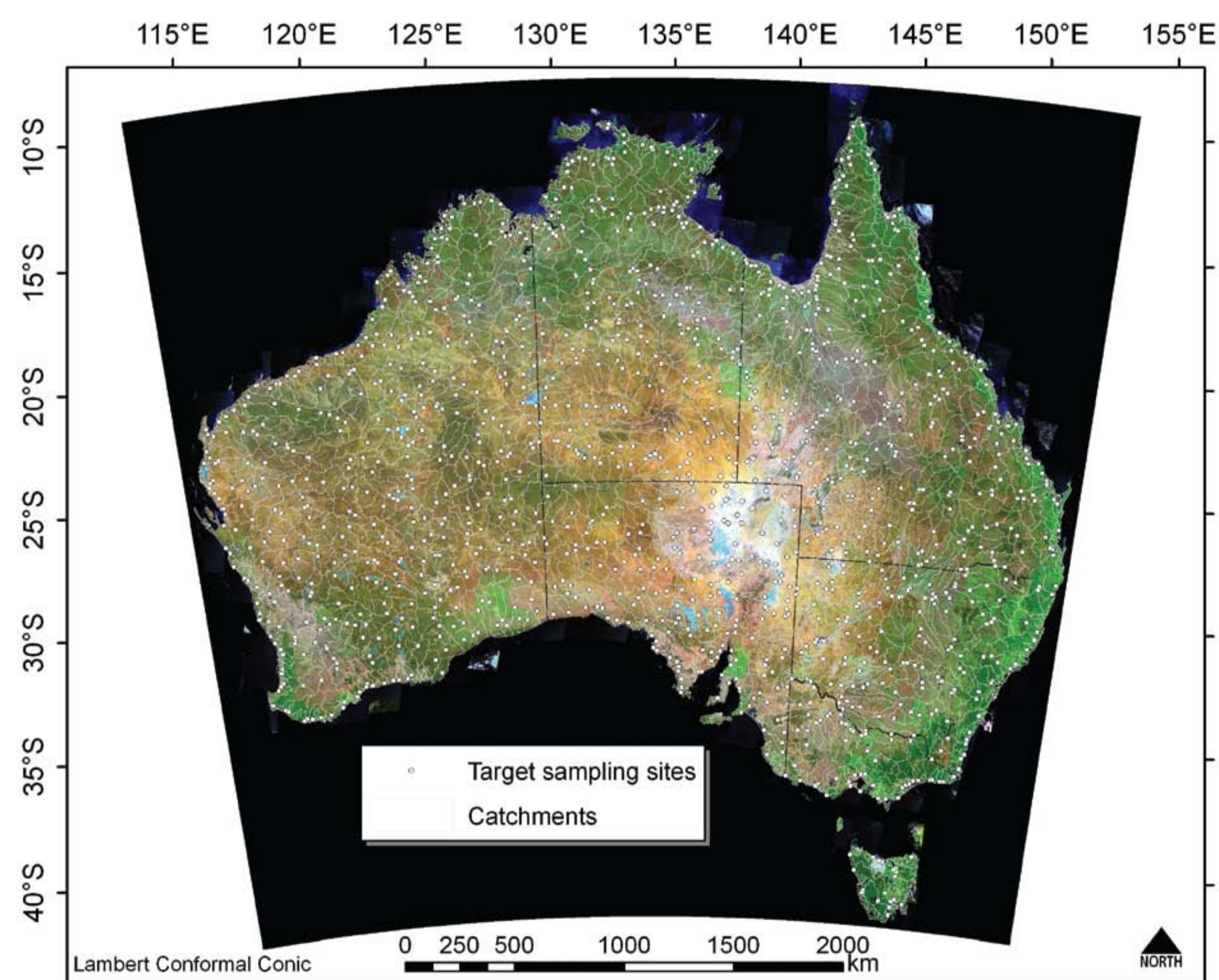


Figure 1. Catchments and target sampling sites for NCSA.

At each site, sampling teams (Figure 2) collect outlet sediment samples from the surface (0-10 cm) and from a deeper level (between ~60 and 80 cm) using centrally provided equipment (Figure 3) and following a detailed set of instructions. Field data, e.g. GPS coordinates, soil colour and pH, are measured (Figure 4) and recorded digitally.



Figure 2. One of the field teams finishing a successful sampling trip.



Figure 3. Sampling equipment and consumables provided to all field teams.



Figure 4. Auger holes, field pH, soil colour and sample bags.

In the laboratory, the collected samples are dried, split and sieved before being submitted to analysis for more than 60 elements/parameters.

The data, geochemical atlas and reports resulting from this project will be made available via the GA website. The project finishes in June 2011.

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