The National Geochemical Survey of Australia (NGSA) is the first Australia-wide geochemical survey using consistent sample media and assay techniques. A digital national geochemical atlas, underpinning dataset and report was released in June 2011.

Ultra low-density sampling of catchment outlet (overbank) sediments was carried out in collaboration with State and Territory geoscience agencies.

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Sample sites were selected to be near outlets or spill points of large catchments, so that overbank sediments collected there could reasonably be assumed to represent well-mixed, fine-grained composite samples of most major rock and soil types present in the catchment. This sampling strategy cost-effectively yields meaningful geochemical patterns, as shown by the thorium map (Map).

Samples were collected from two depths: 0–10 cm below the surface (Top Outlet Sediment) and between, on average, 60 and 80 cm depth (Bottom Outlet Sediment). At each locality a detailed site description, field pH, and Munsell® soil colours were recorded. At the completion of the sampling phase (Photos), 1186 large catchments covering >80% of the continent had been sampled.

All samples were dried, split into <2 mm and <75 µm fractions, then analysed using a wide range of analytical techniques. Bulk samples were analysed for electrical conductivity and pH of 1:5 (soil:water) slurries, and were subjected to laser particle size analysis.

After 30 June 2011, the digital geochemical atlas and dataset can be downloaded, along with project reports, from <www.ga.gov.au/ngsa>. 

Collection of samples for the National Geochemical Survey of Australia.