

FROM LITTLE THINGS, BIG THINGS GROW.... OR DO THEY? A ONE-EYED VIEW ON AIRBORNE EM IN ENVIRONMENTAL MANAGEMENT OVER THE LAST 20 YEARS

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Through the mid to late 1980's, the application of airborne electromagnetics for environmental management was limited to small surveys, and in Australia their primary purpose was aimed at encouraging the wide take-up of the technology by the natural resource management (NRM) community. This technology-led push fed off a growing national awareness of the threat of land salinisation, and AEM was principally marketed as the panacea to this threat. Unfortunately the early promises did not live up to expectations, in part reflecting the limitations of the technology at that time, particularly the inability to map conductivity reliably in the top 5 m of the land surface. Throughout the 90's, applications continued on a piecemeal basis with small surveys being the norm. In the early 2000's, Federal Government-led initiatives, particularly the National Action Plan for Salinity and Water Quality, constrained by State representation, prompted a more considered, targeted approach for AEM applications. Projects in South Australia and Queensland revolutionised the way these technologies were used. Helping achieve this were significant developments in AEM system technologies, including the definition of system geometry and calibration, all contributing to the better definition of near surface conductivity. Coupled with advances in data processing and inversion, the derived information has become much more relevant. Under the NAP some of the largest surveys ever flown in Australia have now been completed. Delivery of relevant products, not just maps of conductivity, which can be incorporated into predictive tools represent the way forward for AEM in environmental management.

PRESENTER PROFILE

Tim Munday is a Principal Research Scientist with CSIRO. He is currently working in the CSIRO-led Water for a Healthy Country Program and is concerned with the application of geophysical technologies in groundwater characterisation.

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