ERIC
RESOURCE APPLICATIONS

Environmental Research &
Information Consortium Pty Ltd
(ABN) ACN (81) 055 194 771
PO Box 132 Braidwood 2622
Ph 02 4842 8182
Ph 02 6161 3716
Fax 02 4842 8183
info@eric.com.au
www.eric.com.au

BACKGROUND TO ERIC SOIL & SALINITY MAPPING

The ERIC capability for soil and salinity mapping originated with research conducted for Defence that commenced around 1987. The most comprehensive study is presented in a joint CSIRO-ERIC report on the Singleton Army Training Area. The component papers provide a detailed numerical implementation of Soil Landscape Mapping, identification of major deficiencies in the Soil Landscape Map results, and soil property mapping using airborne radiometrics. Despite the very low quality of the Singleton radiometric data the results were much more detailed and reliable than with the Soil Landscape Mapping. The radiometric soil mapping method was commercialised by ERIC as SoilMap in 1992 and is now further developed and renamed as SoilSelect.

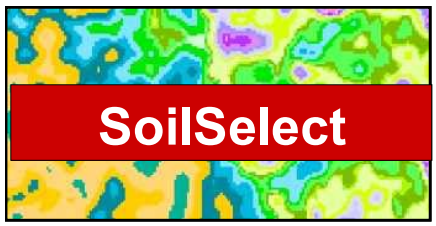
The SoilSelect development addressed the provision of soils information to determine soil effects on native biota and for use in land management. The design parameters were:

- Provide site-specific information (not probabilistic as with Soil Landscapes).
- Derive the mapped information independently of other factors used in biophysical analysis.
- Map the soil physical and chemical properties rather than soil types defined by a prior classification.
- Allow for routine tests of reliability.

None of these design parameters are addressed by traditional soil mapping methods but all are necessary for scientific evaluation and reliable application.

The SoilSelect method has been successfully applied across Australia in the Kimberley, Northern Territory, Queensland, NSW, Victoria and South Australia. The sizes of the areas range from over 10,000 km^2 to less than 100ha. The applications encompass agriculture, dryland salinity, forestry, viticulture, military land use, mineral exploration, waste water disposal and rural residential development.

A full implementation of the SoilSelect method incorporates a statistical test of data to assess map reliability. However, the value of the test is limited by the statistical model and it underestimates the value of results. Independent assessments have included comparison with soil pits dug on a 100m grid in a 500ha landholding and comparison with salinity observations across a 5,000 km^2 region.



SoilSelect provides paddock level detail across large regions. These results vary with the characteristics of the region and the quality of the data but the results always have greater detail and reliability than those produced from other methods, and at a lower cost.

The SoilSelect technology has received a number of awards and recognitions won in competitive situations involving independent assessment.

- Finalist in the 1999 Australian Technology Awards
- Show-cased by Business Australia and Environment Australia, at the 2000 Sydney

Australian Government Endorsed Supplier Supporting Australian Business

1999 FINALIST Australian Technology Awards

Featured in the Australian Technology Showcase

BEST EMERGING PRODUCT IN ENVIRONMENTAL INDUSTRIES

Olympic Games

- Member of the Australian Technology Showcase.
- Business development support by AusIndustry under the COMET scheme.
- Nominated by Murdock University as a Sunrise Technology
- Winner of the environmental category of the inaugural ACT business R&D awards

The SalinityMap development derives from SoilSelect and represents a means of identifying a specific salinity signature in the radiometrics. This has not yet been commercialised as further work is required to identify the most appropriate data specifications and analysis. Access to public and other funds for this development is currently stifled by adverse comment by public scientists that claim such results cannot be theoretically achieved. The denigration in the 2005 Spies Woodgate Salinity Mapping Report promotes only technologies where public science has a vested interest. Public science agencies cannot produce scientific evidence that SoilSelect does not work.

The results from SoilSelect are seldom provided in isolation from other information. ERIC develops a wide range of map products to provide the baseline information required for effective land use and management. This is integrated with existing information to provide cost-effective solutions. Development involves numerical analysis of a diversity of remotely sensed and/or ground data. The products address climate, terrain/ drainage, and land cover/ vegetation.

These broad categories contain many sub-divisions, ie. with vegetation information being used to address crops, native vegetation and fire hazard as well as impacts such as burning and land clearing. The products are used to underpin consultancy services that address business as well as the environment requirements.

ERIC has led in the commercial provision of detailed and reliable baseline information to improve land use and management. While all developments involve modern technology SoilSelect is unique and highly cost-effective. This has resulted in suppression by public scientists and administrators that seek to continue their monopoly in the provision of such services and research.

ERIC has developed copious background material that addresses the criticisms and this is freely available on the ERIC web site. This includes detailed theoretical analyses of process, particularly for dryland salinity. The challenge given to the denigrators is for them to examine the evidence and explain any deficiencies as this is how science is conducted. To date there has been no response other than the use of theoretical modelling to attempt to negate an observation, which is scientifically invalid. Despite this the generalised derogatory comments continue to be given from behind the protection of their statutory status.

These actions of public scientists limit ERIC's commercial activities but they also disadvantage the Australian community. Necessary information is not being made available because of the high cost and limited applicability of the alternatives promoted by public science agencies. The public is forced to continue to rely on public organisations when the development of a viable industry would reduce this cost impost and provide an opportunity to generate export income.

The situation must change but will only change through public, industry and political pressure. Change has to arise because of the conflict-of-interest that arises when public scientists and administrators set the regulatory requirements, define the means by which they must be addressed, provide services against the regulations and act as judge, jury and executioner as currently occurs. Landholders are increasingly becoming aware that they can no longer afford to trust public scientists to operate in their interest or for the public good. Public research is increasingly being used to generate income for public agencies and suppress industry innovation and growth in the delivery of natural resource management solutions.