

## Erodibility Measurement

There is an important distinction between erosion and erodibility. For monitoring purposes, measurement of erosion is useful. But for landform design and the consideration of a range of options, **erodibility** parameters for a well-validated and relevant computer model are essential. Derivation of erodibility parameters still requires measurement of erosion, but with the erosion being measured in such a way that parameter derivation is possible.



For material characterisation, simple comparative measurements of erosion are of limited value at best. They are often misleading, as the processes and conditions studied experimentally are seldom (if ever) the same as those occurring in the field. Ability to extrapolate from experimental conditions to field performance is crucial.



**Landloch Pty Ltd is the only organisation in Australia that routinely measures erodibility of soils and mine wastes.** With equipment based in Western Australia and Queensland, and capability to mobilise staff and equipment to remote sites, Landloch is able to assist clients anywhere in Australia. We use a range of well-established methodologies to suit various materials and locations, and to deal with constraints due to time and logistics. As well, we have an extensive database of materials (mine wastes and topsoils) and their properties, and years of experience with application of soil erosion models to design sustainable minesite landforms. Our Principal Consultant – Dr Rob Loch - has been involved in soil erodibility research and erosion prediction in Australia for over 30 years.



The potential benefits of erodibility information are considerable. Information and associated modelling can enable sites to:

- Set priorities for material handling and placement;
- Adopt defensible landform designs with drastically reduced risk of failure; and
- Reduce rehabilitation costs by minimising costs of rehabilitation repair and by selecting materials to make rehabilitation easier and cheaper.



In some instances, simply by defining what is possible, erodibility measurement can assist mines to refine long-term strategies and designs and to achieve significant cost reductions.

(Erodibility measurement is a major component of the characterisation of wastes and topsoils, with all aspects of material characterisation being important.)

Erodibility assessment for wastes and topsoils is strongly recommended for new minesites, for sites where rehabilitated landforms and rehabilitation costs are potentially large, and for sites where current rehabilitation success is unsatisfactory.

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