

Erosion & Sediment Management



Our Services

Hydrobiology undertakes investigations and provides advice on matters relating to erosion and sediment budgets at a catchment scale, riverine sediment transport and deposition, erosion and sediment management and sediment sourcing.

Skills and Techniques

Issues of erosion and sediment management are important for a wide variety of projects including erosion and sediment management at a site scale (e.g. construction and operations EMPs for minesites and infrastructure developments, instream sand & gravel extractions), at a river reach or subcatchment scale (e.g. longer term management of sediment fluxes) and at a basin scale (e.g. understanding the “source to sink” erosion & sediment transport process).

Estimates of landscape erosion are often made using USLE-type models or their more sophisticated derivatives (e.g. SedNet). Integrated erosion and sediment transport models are also available for management planning (e.g. SedCAD) and basic riverine sediment transport predictions can be made using models such as HEC-RAS or HEC-6.

Hydrobiology’s key skill is our ability to appreciate and integrate the processes of erosion and sediment transport across these different spatial and temporal scales. We are also able to integrate the various key disciplines such as soil erosion processes, fluvial geomorphology, catchment hydrology, geochemistry and channel hydraulics.

Our investigations have included field coring, soil sampling and geochemical characterisation, geomorphological field investigations, and desk-based erosion and sediment transport forecasting.

Hydrobiology works with key experts in these areas as part of our technical quality assurance process.

Applications

Typical projects have included:

- 1 Predictions of riverine sediment impacts from mining construction activities
- 2 Likely catchment erosion processes under PMP conditions for dam raising study
- 3 Developing and reviewing construction and operations EMPs
- 4 Riverine sediment transport studies
- 3 Sediment sourcing studies using fluvial geomorphology and geochemistry
- 4 Ground truthing of SedNet modelling
- 5 Sustainable methods for riverine sand and gravel extraction
- 6 Management options for riverine sand slugs



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