

AQUATIC  
SCIENCE

# SOIL & SEDIMENT SOLUTIONS



Loss of soil from the land and its transfer to aquatic environments is an issue of national importance. Our Soil & Sediment team offer applied solutions to the problem of erosion and sedimentation. By recognising the sediment continuum of source-transport-fate, we can advise on better land management, erosion control practices, and minimising the effects on aquatic environments. With a focus on applied solutions we look to identify the source, quantity and type of sediment, then investigate practical ways to keep it where it belongs.

## Land Management Advice

The rehabilitation of disturbed and degraded land is often necessary to satisfy regulatory requirements. Advice provided to our clients will save them time and ensure compliance. Management guidance can be provided for all scales of enterprise – from individual cases to regional issues – in the form of:

- assessment of erosion risk and advice on necessary soil amendments,
- sampling of soil material to assess chemical and physical properties,
- provide advice on suitable vegetation to inhibit erosion and protect land,
- field investigations to define erosion processes contributing to sedimentation,

- management techniques to reduce agricultural soil degradation,
- assessment of damage and loss due to large storms resulting in erosion.

## Erosion Control Advice, Studies & Auditing

Without suitable forward-planning earthworks during construction, development or mining can lead to soil erosion issues. Erosion – and the subsequent sedimentation – can cause damage to infrastructure, create onsite health & safety risks, and offsite environmental impacts. Regulatory bodies are increasing conscious of consent holders environmental obligations in respect to erosion and sediment control.

We can provide:

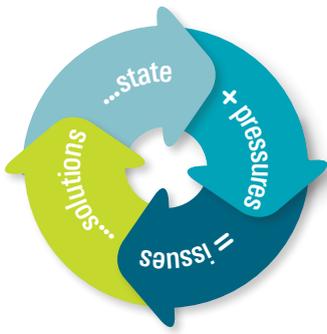
- assessment of site soil properties and conditions potentially leading to erosion issues,
- draft site-specific erosion and sediment control plans,
- site inspections and audits for regulators and developers,
- cost effective solutions to manage erosion and sedimentation issues,
- recommendation for chemical stabilisation and flocculent use,
- advice on the environmental impacts from erosion events.



**“EOS Ecology recognises the interlinked process of erosion and sedimentation causes irreparable damage and, ultimately, detrimental flow-on effects for ecology.”**

Thomas Adamson  
Soil & Sediment Scientist  
EOS Ecology





## Catchment-wide Sediment Studies

Catchment-wide studies use an integrated approach to assess the effects of erosion and sedimentation on the entire catchment. This information provides support for stakeholders experiencing environmental erosion from degradation. Recommendations from catchment-wide ecosystem assessments can provide solutions which provide social-, economic- and political-benefit.

Catchment-wide studies can include:

- individually designed and run suspended sediment studies (including assessment of data produced),
- landscape mapping to characterise sediment source areas and define priority areas for remediation works,
- modelling of catchment sediment flux,
- estuary studies – including sediment coring and sediment texture mapping,
- working with landholders to implement catchment-scale mitigation measures.

## Measuring & Monitoring of Sediments & Pollutants

Quantifying environmental hazards is often necessary to maintain cost-effective best-practice, and meet environmental restrictions. EOS Ecology's Technical Services Team can implement programs to monitor environmental impacts as stipulated in consent conditions. Our skilled staff can also design and test the effectiveness of erosion/sediment products for use in specific applications, including:

- water quality and sediment sampling programs fit for specific situations,
- sampling, analysis and interpretation of water and sediment samples,
- testing of soils physical properties, chemical makeups and nutrient quantities,
- mapping of sediment cover and embedness in waterways,
- sediment sampling for geochemical and lithological analysis.

## GIS Spatial Analysis & Mapping, Land Use Capability & Erosion Mapping

By using a combination of field investigation and desktop studies the EOS Ecology team can provide GIS services at any scale. Our environmental focus provides digital output used to delineate areas of resources or degradation. GIS is rapidly being integrated into all environmental science-based applications. We can produce:

- mapping of land forms, land management units and resources,
- delineation of degraded land such as erosional features,
- landform mapping of environmental resources such as wetlands and waterways,
- soil mapping for agricultural or contract application,
- GIS derived solutions for land managers looking to reduce sediment run-off from land,
- specialised spatial analytics.

