

Stormwater Design and Erosion Control

Earth Systems provides leading edge stormwater water management services for resource industries including modelling, design, monitoring, analysis, and treatment for mining, hydropower, municipal, and development sectors.

Our staff are experienced in hydrological modelling, geomorphological assessment, sediment transport and monitoring for turbidity and dispersive erodible soils. Earth Systems staff include civil engineers that design sedimentation and stormwater treatment systems and hold current stormwater certifications with Enviro Cert: Certified Practitioner in Erosion and Sediment Control (CPESC), Certified Compliance Inspection of Stormwater (CCIS), and Certified Preparer of Stormwater Pollution Prevention Plans (CPSWPPP) for water sensitive urban design (WSUD) projects.

We have used our advanced modelling capability to provide clients with the best practice engineering solutions that saves time, resources and costs while delivering sustainable and environmental outcomes. Earth Systems skills also extend to water quality and habitat assessment providing an understanding of key ecological function to allow the allocation of restoration techniques or to assess the performance of mitigation strategies.

SERVICES PROVIDED

- Catchment and drainage network design
- WSUD and natural stream design
- Wetland design for stormwater treatment
- Stormwater system design, sediment/detention basin design
- Erosion and sediment control (ESC) planning
- Sediment transport and erosion modelling
- Landform stability and fluvial erosion modelling
- Hydrodynamic water quality modelling 1D-3D
- Stream flow gauging, flow hydrograph development
- Flow event analysis, return interval determination
- Flood analysis and modelling (1D–2D) for asset protection
- Water quality sampling and reporting, physical and chemical
- Biological water quality assessment (marine systems)
- Stream/river health assessment (AUSRIVAS)
- Aquatic habitat assessment and modelling
- Nutrient cycling and algal growth risk assessment
- Ecotoxicity assessment
- Subsidence effect assessment (hydrographic, flood)

- Mixing zone and outfall design, multiple lines of evidence and compliance monitoring
- Training of staff for stream flow gauging, water management

PROJECT EXPERIENCE

- Mount Nimba Iron Ore Project, Guinea. Construction and Environmental Management Plans focused on minimising stormwater impacts, sediment transport modelling and sediment basin loading design (CAESAR, RUSLE, WEPP).
- Tynong Quarry stormwater system design, flocc dosing system, hydrology and water quality modelling (SWMM), feasibility level design of treatment wetlands.
- FerrAus Iron Ore Project stormwater system design (HECRAS, SedBasin), Eastern Pilbara, Australia.
- San Francisco-Oakland Bay Bridge East Span Project, San Francisco and Alameda Counties, California. Developed Stormwater pollution prevention plans and managed erosion and sediment control planning, implementation and monitoring efforts.
- Kings Meadows Rivulet Stormwater Design and Options Assessment, source identification, water quality targets, stormwater treatment design (MUSIC, SWMM) Launceston, Tasmania.
- Yarwun Rio Tinto Aluminium Refinery Erosion and Sediment Control Planning. Conceptual and detailed ESC design and planning of mine borrow pit and tailing dam construction.
- Casey Growth Corridor Stormwater Design, treat at source and central basin treatments compared for cost and water quality outcomes, sediment transport and basin design, Victoria.

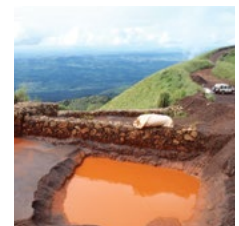
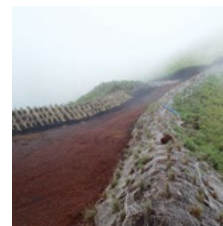
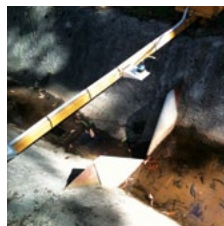
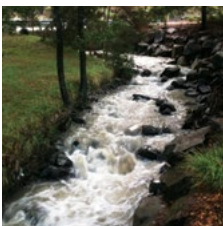
Our stormwater and sediment transport modelling capability is comprehensive and includes:

Hydrologic modelling: SWMM, AWBM, Source, HEC-HMS, SHE, IHACRES, SYMHYD, Sacramento, TANK, TauDEM, IFD

Sediment transport: HEC-RAS, SWMM, RMA11

Landform stability/erosion: RUSTLE, GeoWEPP, CAESAR

Stormwater treatment: SedBASIN, SWMM, MUSIC



AUSTRALIA

earthsystems.com.au

MELBOURNE

14 Church St
Hawthorn, 3122
Victoria
+61 3 9810 7500

PERTH

Suite 5
1200 Hay Street
West Perth, 6005
Western Australia
+61 8 6161 4194

BRISBANE

PO Box 541
Lutwyche, 4030
Queensland
+61 7 3129 6075

DARWIN

PO Box 1228
Nightcliff, 0810
Northern Territory
+61 423 618 124

AFRICA

earthsystemsafrika.com

DAKAR

3ème étage
Route de l'aéroport
Ngor, Dakar
Senegal
+221 3386 83023

KIGALI

25 Benjamina St
(KG412),
Gacuriro, Kigali
Rwanda
+250 787 807 499

ASIA

earthsystemsasia.com

VIENTIANE

Suite 502, 23 Singha
Road, Ban Nongbone,
Xaysetha, Vientiane.
Lao PDR
+85 621 454 434

CHINA

earthsystems.com.cn

SHANGHAI

19F World Plaza
855 Pudong South Rd
Shanghai, 200120
China
+86 216 887 2968

EUROPE

earthsystemseurope.com

BRISTOL

Suite 104, CityPoint
Temple Gate
Bristol, BS1 6PL
United Kingdom
+44 117 373 6153