PHYSICAL STREAM PROCESSES

Alluvium is a national leader in geomorphology and related stream restoration advice. We understand river systems and the concepts of an integrated approach to systems repair.

Our team of fluvial geomorphologists and environmental engineers have assessed hundreds of rivers across Australia, the Pacific, Asia and South America. We specialise in combining our knowledge of landscape geomorphology with expertise in river engineering. We have a detailed understanding on how the complex interactions between flow, sediment, and vegetation impact on stream function.

We are innovators in leading waterway repair. Our work with longwall mining and land subsidence lead to a new way of thinking of recreating beneficial variation bed habitat in waterways. We lead the national thinking on waterway sheer stress and erosion potential.

Why Alluvium

Multi-disciplinary approach

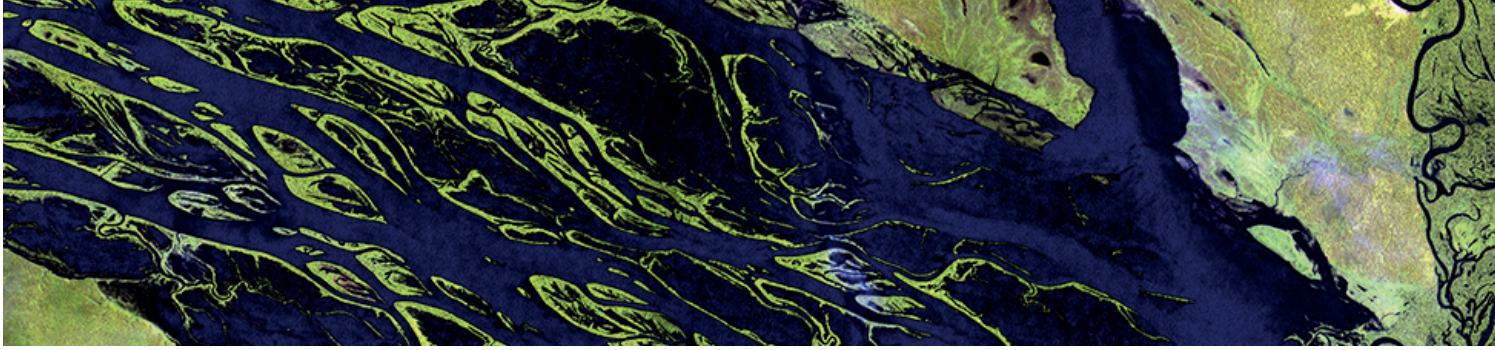
We have a complete in-house team to respond to system repair challenges. We combine the diverse skillsets within Alluvium to help solve a range of waterway issues including waterway rehabilitation, sediment management, water quality improvements, asset protection, flood recovery, and environmental watering.

In-house database of stream stability criteria

Our staff have undertaken geomorphic and stream stability assessment across Australia for the past three decades. During this time we have developed a detailed database of hydro-geomorphic parameters (i.e. stream power, bed grade etc.) for different stream systems which have shown variable levels of resilience/resistance to flood events. We draw on this database to help assess the future trajectory of streams and determine the likelihood of success of different management interventions.

Hydro-geomorphic and geospatial modelling

We combine our knowledge of physical stream processes with higher level expertise of hydrodynamic modelling, sediment transport modelling and geospatial analysis. This allows us to quantify and predict rates of geomorphic change.



Stream stability assessments
We apply a range modelling techniques to reach scale assessments of stream stability. We are able to assess historical changes and predict the future trajectory of the stream to inform management.

Waterway condition assessments
Specialist GIS skills which allow us to assess waterway stability and condition across large river basins. This helps identify priority regions for more detailed assessment and management.

Sediment dynamics
Detailed understanding of sediment source, transfer and accumulation processes within catchments and stream systems. We combine this with our catchment modelling and sediment transport skills.

Urban streams
We work with our urban water and environmental flows specialists to devise stormwater management programs which protect the physical form and ecology of urban stream systems.

Community consultation
Our team specialise in communicating complex stream processes in layman terms. We regularly conduct community consultation to inform waterway management programs or during flood recovery programs.

Training and capacity building
We regularly conduct training courses for people working within, or close to, the NRM industry. The training aims to inform on the waterway management issues often encountered in their day to day roles. We support organisations build capacity to ensure long term success.

Rapid flood recovery
Following floods we can mobilise quickly to help clients assess flood damage, identify high risk zones and provide information to help inform disaster funding applications.