Soils provide the substrate upon which vegetation grows, and different soil conditions influence the distribution of vegetation communities and their condition. Soils are also important because they also influence the movement of water across the landscape. The type of soils in the region reflect the weathering of underlying rock types in the catchment, and a host of other physical processes.

Our Study

163 sites were sampled and the following parameters measured: texture, organic matter, pH, colour mechanical properties (plastic and liquid limits) and geochemistry (15 elements were determined). Samples were collected from each site, represented on the map below. Surface samples were collected from each corner and at the centre of each 5 m x 5 m square. These sub-samples were then combined to make up one sample.

Soil Characteristics

Texture is a measure of the particle sizes within the soil.

pH is a measure of the acidity and alkalinity which influence fertility and plant growth.

Plastic limit is a measure of when a wet soil reaches a pliable state; it is an indicator of water holding capacity and stability.

Liquid limits measure how much water the soil can hold before it behaves as a liquid.
Soils within the Narran Ecosystem vary from sticky black clays to red and yellow sands, cobbles and sandy loams. The floodplain and lake soils are different to the dry surrounding red soils and in particular, they vary from cracking dark to lighter grey clays which are highly alkaline, with pH readings as high as 10 being recorded. The clay soils expand visibly upon wetting, some swelling by up to 40%. The Narran Science Team has classified the soils according to their content of sand, silt and clay.

Spots in the Ternary Diagram show the range of soil types found in the Narran Ecosystem.

Soil samples represented by blue or green spots had 70-90% silt, 10-40% sand and around 20% clay, while at the other end of the diagram the orange spots are largely sand (60-80%) with very little silt (0-40%) or clay (20-40%).

The soils of the Narran Ecosystem are highly variable and productive due to regular floods depositing nutrient laden sediment.

Soil variability across the landscape is reflected in the vegetation patterns found within the ecosystem.