
Land

Use this section to find out more about the geology, topography and soils of the Evans-Charlotte Vale-Eglinton sub-catchment

Topography	20
Landform and Slope	20
Soils	20
Land Classes and Uses	21
Groundwater	21
References	22

Soil type, land capability, groundwater, slopes and topography maps for the Evans-Charlotte Vale-Eglinton sub-catchment are at the end of this section.

Topography

The Evans-Charlotte Vale-Eglinton sub-catchment is characterized by high areas surrounding Newbridge, Moorilda, Fitzgeralds Mount at ~ 1000m ASL to the west and south west and relatively low areas in the centre such as Evans Plains and Dunkeld and Cow Flat. In the western and north western areas of the sub-catchment is the city of Bathurst and surrounding suburbs such as Eglinton, Kelso, Raglan and Macquarie Vale. These lower areas are a part of the valley carved out by the Macquarie River but also incorporate smaller valleys carved out by Queen Charlottes, Evans Plains and Rocks Creeks.

Elevation	Town/Locality
> 1000m	No towns but areas surrounding Newbridge, Moorilda and on the great western highway west of the The Rocks.
1000 - 750m	Newbridge, Moorilda, The Village, Brownlea
750 - 500m	Bathurst and surrounding suburbs, Dunkeld, Evans Plains, Dennis Island, Cow Flat

Landform and Slope

The majority of the sub-catchment has slopes of between 5 and 20 degrees. These areas have been formed by Rocks Creek, Queen Charlotte Creek and Evans Plains Creek, and a small proportion by the Macquarie River. In a few areas, such as Cow Flat, the upper reaches of Queen Charlotte Creek and the escarpment that forms the western ridge of the valley carved by the Macquarie River, slopes do exceed 20 degrees, but do not exceed 40 degrees. In addition, there are areas along the Macquarie River and the lower reaches of Evans Plains Creek and Queen Charlottes Creek, as well as the CBD of Bathurst itself, that are flat to very mildly sloped.

Soils

The different types of soils

There are 19 different soil types in the Evans-Charlotte Vale-Eglinton sub-catchment. Of these Bathurst (ba) is dominant with large areas also consisting of Mookerawa (mk) and Vittoria-Blayney (vb). The characteristics of soils are too convoluted to include with this chapter. If you wish to acquire more information on the soils, obtain the *Soil landscapes of the 1 : 250 000 Bathurst sheet* book from your local library or the internet (see contacts section). The map provided with this chapter should be used as an indication only as local conditions can influence soils and small patches of soils that are not shown on the map may exist within a larger area of another type. Local variability also plays a role in determining soil quality. A general rule is that ridge tops and upper slopes will differ in soil properties to the lower slopes and flats. Lower slopes and flats will

generally have better soils that have been washed down from the ridge tops leaving poorer rockier soils.

Soils erosion

Although the majority of the sub-catchment does not experience severe or even moderate soil erosion, some areas are prone to severe erosion. Certain soil types can be more prone to erosion but many factors determine soil erosion. A lack of vegetation on a slope that is exposed to a high intensity rainfall event can cause erosion. Areas where a combination of these factors *i.e.* lack of vegetation, steep slopes and erodeable soils, exist occur sporadically within the sub-catchment and are generally river/creek banks. It is, therefore, important to maintain vegetation on ground especially on steep slopes and poor soils. Obviously, steeper slopes are also more prone to erosion and patches of severe erosion occur sporadically within the sub-catchment. Similarly, small patches of severe erosion have occurred, especially in areas surrounding quarries. Also, very isolated patches of salting are evident throughout the sub-catchment.

Land Classes and Uses

The land capability classes of the sub-catchment cover all classes, from 1 to 7 (land class descriptions can be found in the Land chapter of the main toolkit). A small proportion of land is classed I or II and is suitable for cultivation. These areas are generally creek flats and are located along the Evans Creek near Evans Plains and Dunkheld plus areas upstream, along Charlotte Vale Creek and the Macquarie River. This land capability class also occurs around Moorilda, Brownlea and Raglan. These areas are used for grazing, vegetable production e.g. potatoes and dryland cropping. Areas with moderate land classes, *i.e.* classes III and IV, are interspersed throughout the sub-catchment. Although the description states otherwise, these lands are also cropped but are predominantly grazed. When cropped however these lands are not as productive as class I or III lands. Land classes are determined by multiple factors including soil type and slope. For this reason, the hilly areas of the sub-catchment where the higher elevations lead down to the creeks and rivers usually fall into the lower quality land classes, even where they might have high quality basalt soils. Much of the poorer country with lower classes has been appropriately left timbered as it holds very little agricultural value.

As was noted for the soil map, the land capability classes shown on map sc9.6 should be used as an indicator only. It is difficult to accurately map land classes so small patches of excellent land may be found in larger areas of lower classed land.

Groundwater

Although variation exists in the quality of ground water throughout the entire Evans-Charlotte Vale-Eglinton sub-catchment, nearly all is suitable for domestic use. The highest quality ground water is generally found on areas with an unconsolidated alluvial geology but also in areas with fractured volcanic rocks.

The remainder of the sub-catchment has water that is suitable for most uses and is found in areas with fractured igneous (volcanic) and metasediment geology.

References

M. Kovac, B.W. Murphy and J.W. Lawrie (1990) Soil landscapes of the 1 : 250 000 Bathurst sheet. Department of Land and Water Conservation