

# Land

Use this section to find out more about the geology, topography and soils of our district.

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Soil type, land capability, groundwater, slopes and topography maps for the Bell River sub-catchment are at the end of this section.

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## Topography

The Bell River sub-catchment is formed by the Mullion ranges to the east, the northern slopes of Mt Canobolas to the south and the Catombal Range to the west. The highest points in the sub-catchment are Mt Meehan located north-east of Mullion Creek with an elevation of 1021m and the northern slopes of Mt Canobolas with a maximum elevation of 1395m. The sub-catchment forms a basin that follows the Bell River in a northerly direction.

Elevation	Town
> 1000m	No town but areas in the vicinity of Mt Meehan near Mullion Creek
1000 - 500m	Mullion Creek, March, Clergate, Molong, Nashdale, North-West Orange, Borenore
< 500m	No town but areas downstream of Molong on Molong Creek and the Bell river. Areas in the vicinity of Laras Lee.

## Landform and Slope

The drop from the higher elevations at the head of the sub-catchment to the lower reaches of the Bell River gives the majority of the sub-catchment slopes of between 5 and 20 degrees. The main streams in the region have carved some valleys around Belgravia and Kerrs Creek that have slopes of up to 30 degrees and some areas on the northern slopes of Mt Canobolas are similarly sloped. Areas around the locality of Three Rivers, Boomey and Amaroo do, however, have low slopes and open plains.

## Soils

### *The different types of soils*

There are 27 different soil types in the Bell River sub-catchment. Of these 27, five are dominant. These are Mullion Creek (mu), Molong (mo), Mookerawa (mk), North Orange (no) and Manildra (mn). The characteristics of soils are complex and are not presented here. If you wish to obtain more information about the soils, check the local library for the *Soil landscapes of the 1 : 250 000 Bathurst sheet* or *Dubbo sheet*, or go to the website (see contacts section). The map provided 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. For example, the lower slopes of both Mullion Creek and Mookerawa soils have yellow soloths whereas the upper slopes and crests have red podzolics.

### *Soils erosion*

The majority of the sub-catchment does not experience severe or even moderate soil erosion. Some areas are however 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. Obviously, steeper slopes are also more prone to erosion. It is, therefore, important to maintain vegetation on the ground, especially on steep slopes and poor soils.

### Land classes and uses

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The land capability classes of the sub-catchment cover all classes, from 1 to 7 (more information on land classes is available in the main Land chapter ). Most of the land suited to cultivation is found immediately west and north-west of Orange and in a band that runs north-south located just to the east of Molong. The best land is generally found on river flats that occur on Molong Creek and the lower reaches of Bell River.

The higher parts of the sub-catchment around Mullion Creek are generally poorer soils and can be identified by the absence of white and/or yellow box. Much of the poorer country has been appropriately left timbered as it holds very little agricultural value. Some areas west of Molong, those steeply sloped, have also been left timbered.

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.

### Groundwater

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The entire sub-catchment has groundwater that is suitable for domestic use though the water in some areas is better than others. For example, to the north-west of Mullion Creek is very good quality, as is the water in the vicinity of Molong. There are areas around Amaroo, The Shades and Three Rivers that has excellent water quality. Total dissolved salts (TDS) are used to determine water quality and the higher the TDS the harder the water. The yield also varies within the sub-catchment. As would be expected, the rain forming properties of Mt Canobolas gives surrounding areas high yields. Other areas in the district have low yields.

### References

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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

B.W. Murphy & J.W. Lawrie (1999) Soil landscapes of the 1 : 250 000 Dubbo sheet. Department of Land and Water Conservation