

Land

Use this section to find out more about the geology, topography and soils of the Fish River sub-catchment

Topography	2
Soils	2
Land Classes and Uses	3
Groundwater	3
References	4

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

Topography

Approximately two-thirds of the Fish River sub-catchment has an altitude of approximately 1000 m above sea level (ASL) or greater. These areas are found in the north around Meadow Flat (between Bathurst and Lithgow on the Great Western Highway) and Rydal, further south around areas such as Jerry's Meadows, Mt Bindo, Hazelgrove and Oberon and in the very south of the sub-catchment around Edith. The very southern border of the sub-catchment is along the Great Dividing Range at Shooters Hill and some areas here are greater than 1300 m ASL. Such a large proportion of the sub-catchment is at this altitude because it makes up the northern extremity of the Oberon Plateau. From the southern areas of the sub-catchment the Fish River flows to the north to Tarana before turning west. The elevation of the sub-catchment drops along the Fish River until it reaches the lower areas of the sub-catchment, which are found on the eastern boundary of the sub-catchment where the Macquarie River begins (i.e. the confluence of the Fish and Campbells River). Other lower areas in the sub-catchment are found around Glanmire (on the Great Western Highway), Gemalla, Tarana Quarry and Carlwood. Solitary Creek, which starts in the higher areas to the north-east around Rydal, has also shaped the sub-catchment by creating a valley that runs to the west.

Elevation	Town/Locality
> 1000m	Mt Bindo, Edith, Shooters Hill, Oberon, Meadow Flat, Rydal, Honeysuckle Flat, The Meadows, Jerrys Meadows.
1000 - 600m	Gemalla, Tarana Quarry, Honeysuckle Falls, Sodwalls.

Soils

The different types of soils

There are 26 different soil types in the Fish River sub-catchment. Of these four dominate the sub-catchment; Bathurst (ba), Rocks (ro), Oberon (ob) and Mayfield (mf). The soils of the sub-catchment are derived from a range of rock types including igneous (granite and tuff), conglomerate (greywacke and limestone) and metamorphic (andesite). 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.

Soil erosion

More than half of the sub-catchment does not experience erosion however large areas of minor sheet and rill erosion exist as do very small patches of moderate, severe and very severe sheet and rill erosion. In the north-west corner of the sub-catchment there exists a large amount of very severe gully erosion on the hilly areas around O'Connell and Glanmire. It is likely that the soils here are very poor and prone to erosion. Thankfully, these areas have been left timbered for if they had been cleared the erosion may have been much worse. Not only are certain soil types more prone to erosion, many other 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.

Land Classes and Uses

The land capability classes of the sub-catchment cover all classes (land class descriptions can be found in the Land chapter of the main toolkit). Patches of land classed I or II are located sporadically throughout the sub-catchment and are found around Glanmire, O'Connell, along Saltwater Creek and the Fish River near the confluence of the two streams, to the north of Oberon, surrounding the town of Edith, the upper reaches of the Duckmaloi River and along the Fish River near the Mozart Road and Murray Lane junction. These areas can be used for grazing, vegetable production e.g. potatoes and dryland cropping. In this sub-catchment, however, they are generally used for pasture production. Areas with moderate land classes, *i.e.* classes III and IV, are interspersed throughout the sub-catchment. These areas are suitable for grazing and that is their predominant use however these lands are also cropped, although the description states otherwise. When cropped these lands are not as productive as class I or III lands and may need higher inputs of fertilizer and/or lime. Land classed VI - VIII is also found in the sub-catchment as is non-agricultural land. The non-agricultural land makes up a significant proportion of the sub-catchment and is predominantly pine plantations. 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.

Groundwater

Although variations exist in the quality of ground water throughout the entire Fish River sub-catchment, the majority of the sub - catchment has water of moderate quality. High quality water is found along the upper reaches of the Duckmaloi River, to the south of Oberon, and along the Fish River where it meets

Saltwater Creek. Poor quality water is found in the north of the sub-catchment around Glanmire, Meadow Flat, Tarana Quarry and Rydal. The highest quality ground water is generally associated with an unconsolidated alluvial geology but also in areas with fractured volcanic rocks. Moderate water quality is associated with fractured igneous geology and fractured metasediment. Poor quality water is associated with fractured metasediment geology also.

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