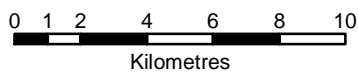


Map 7- Alstonville Plateau Groundwater Source





Name of Water Source:

Alstonville Plateau Groundwater Sources

Relevant Water Sharing Plan: Water Sharing Plan for the Alstonville Plateau Groundwater Sources gazetted on 14 February 2003 and as amended by order gazetted 1 July 2004.

Description of Water Source Area:

The Alstonville Plateau Groundwater Sources are that area of land within Northern Rivers Water Management Area as shown in Map 7.

The Alstonville Plateau basalt aquifers are an area of highland basalts that rise up above the alluvial floodplain sediments, located between Lismore and Ballina, approximately 700 km north of Sydney, covering an area of approximately 391 km².

The area stretches from a point located about 5km west of Byron Bay for approximately 35 km south west to Lismore and 20 km south east, to a point located about 5 km north of Wardell.

The aquifers cover an approximate area of 391 km² comprises a Tertiary Basalt Plateau that overlies older sedimentary rocks of the Clarence Morton Basin. This comprises the Lismore Basalt unit, which is the south easterly portion of the larger Lamington Volcanics. These Tertiary basaltic rocks form a plateau rising up to 200 m above the coastal plain sediments which generally surround the aquifer, except in the north west corner where it abuts a sub-catchment ridge of the Lismore Basalt that extend to the north west.

Definition of Waters Included:

The waters in these groundwater sources include all water contained in the Alstonville basalt aquifers.

The Alstonville groundwater sources which comprises 6 zones was defined using the basalt geological data component of the Richmond River multi attribute mapping. The northwestern boundary of the Alstonville groundwater sources was defined by the subcatchment ridgeline boundary, the remaining aquifer boundaries were defined as either the basalt contact with underlying metasedimentary rocks or where it intersected or was overlain by an abutting alluvial aquifer. The western and part of the southern boundaries occur where the basalt is overlain by floodplain alluvium, with the Wilson River Alluvium extending along most of the western boundary. Generally, the eastern boundary and part of the southern boundary is defined by where the basalt contacts the underlying metasedimentary rocks.

The Alstonville Plateau Groundwater Sources, have been divided up into 6 zones (groundwater sources) based on subcatchments draining to streams & associated rainfall recharge to each groundwater source. The groundwater sources are as follows:

Alstonville Zone 1 - Plateau aquifer defined by Alstonville subcatchment overlying basalts, bounded by Clarence Morton Basin Sedimentary Rocks to the east, the Tuckean zone to the south, the Banglow zone to the west and the Lennox zone to the north east. This groundwater source is approximately 7 km wide near the townships of Alstonville to Wollongbah and is about 23 km long in a north-south direction extending north to Newrybar.

Tuckean Zone 2 - Plateau aquifer defined by Tuckean subcatchment overlying basalts, bounded by Tuckean floodplain sediments to the south, Clarence Morton Basin Sedimentary rocks to the east, Alstonville/Banglow/Coopers zones to the north and the Wyrallah zone to the west. The groundwater source is approximately 14 km wide and 15 km long, occurring within the subcatchment located between west of Wollongbah and east of Gonnellabah and extending to the south near Rous Mill.

Banglow Zone 3 - Plateau aquifer defined by Banglow subcatchment overlying basalts, bounded by both part of the Wilsons River floodplain and the western ridge of the subcatchment divide to the west, floodplain sediments of the Brunswick catchment to the north, both Alstonville/Lennox zones to the east, and Tuckean/Coopers zones to the south. The groundwater source is approximately 5 km wide and 24 km long, occurring within the subcatchment with the township of Banglow in the north and extending to near Laureldale in the south.

Coopers Zone 4 - Plateau aquifer defined by the eastern part of the Coopers subcatchment overlying basalts, bounded by Wilsons River floodplain sediments to the north and west, both Banglow/Tuckean zones to the east and Wyrallah zone to the south. The groundwater source is approximately 4 km wide and 14 km long, occurring within the subcatchment extending from the city of Lismore to the north near Richmond Hill.

Wyrallah Zone 5 – Plateau aquifer defined by the eastern part of the Wyrallah subcatchment overlying basalts, bounded by floodplain sediments of the Wilson River to the west, the Tuckean groundwater zone to the east and the Coopers zone to the north. The groundwater source is a maximum of 5 km wide and 16 km long, occurring within the subcatchment extending from near the southern boundary of the city of Lismore further south to near Tucki Tucki.

Lennox Zone 6 – A lenticular north south ridge plateau aquifer defined by the western part of the Lennox subcatchment overlying basalts, bounded by Richmond floodplain sediments to the east and Alstonville zone to the west and to the north by the Banglow zone. The groundwater source is approximately 1 km wide and 18 km long, occurring within the subcatchment extending along the basalt ridgeline 18 km to the south.