

Catchment Overview



The Diamantina River rises in the Swords Range, some 70 kilometres south-west of Kynuna and flows initially in a north and easterly direction before changing to a south-westerly direction 70 kilometres west of Winton.

Major tributaries joining the river are Mills Creek, Nesbitt Creek, Oondooro Creek and Jessamine Creek, east of Winton as well as Wokingham Creek and the Western and Mayne Rivers north of Diamantina Lakes, and Farrars Creek south of Monkira.

The Diamantina sprawls out into true channel country south of Diamantina Lakes.

The river does not have a well-defined main channel but consists generally of a series of wide, relatively shallow channels. South of Winton, the principal town on the Diamantina is the remote outpost of Birdsville, and it receives waters from ten local government areas. From Birdsville, the Diamantina crosses the border into South Australia and flows into Kati Thanda-Lake Eyre - the lowest natural point in Australia.

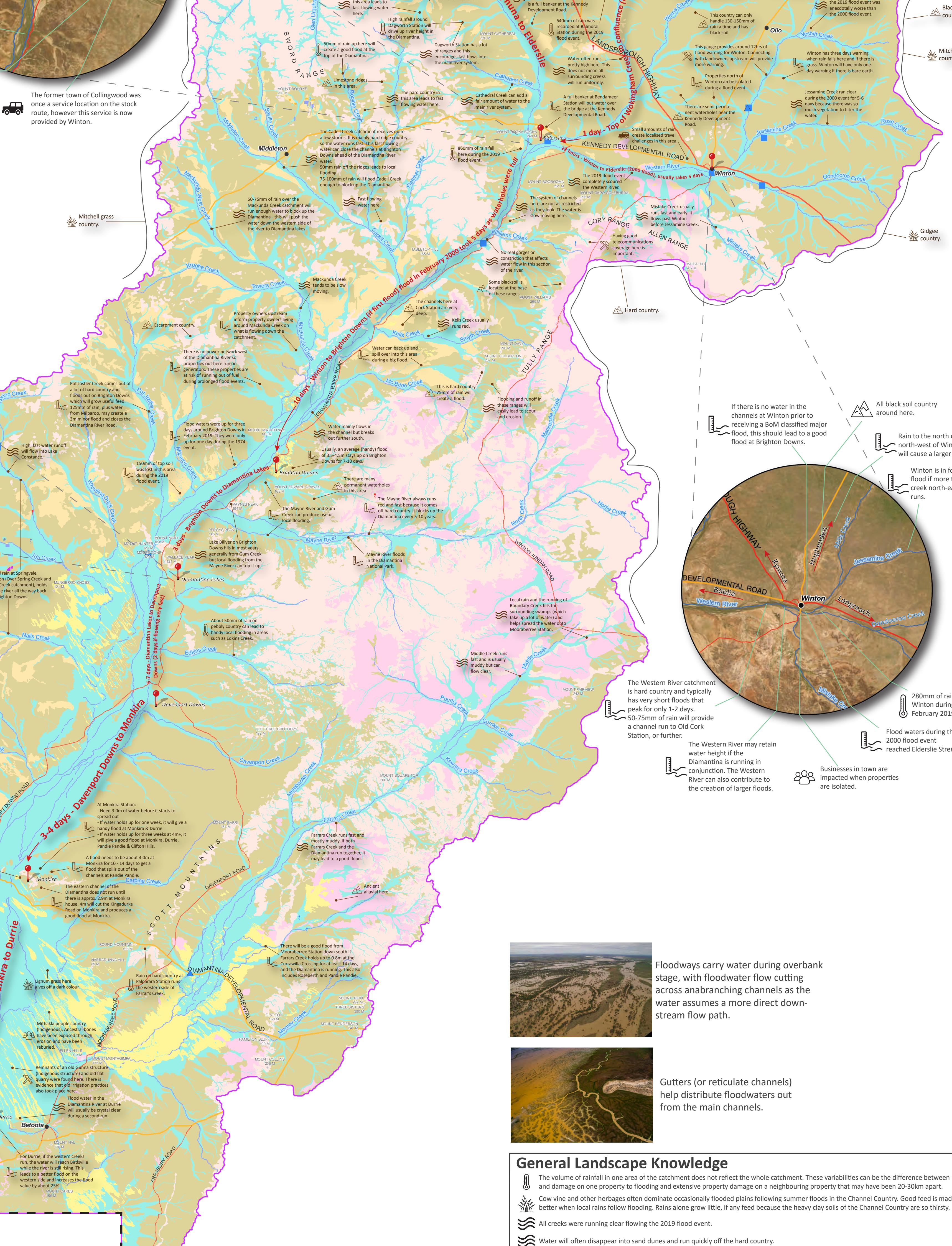
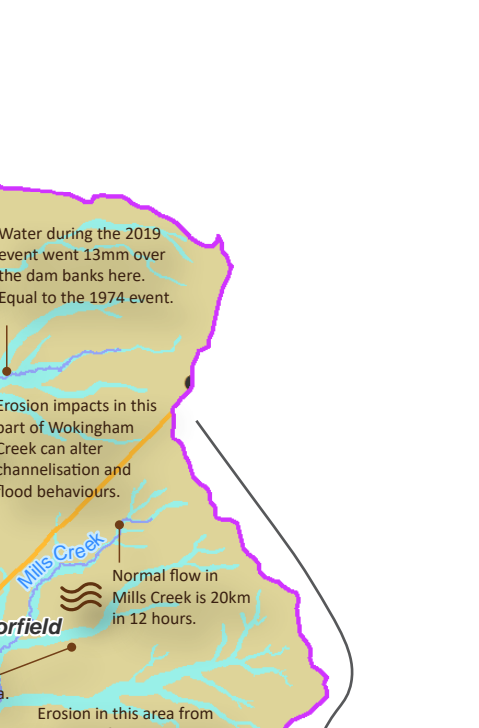
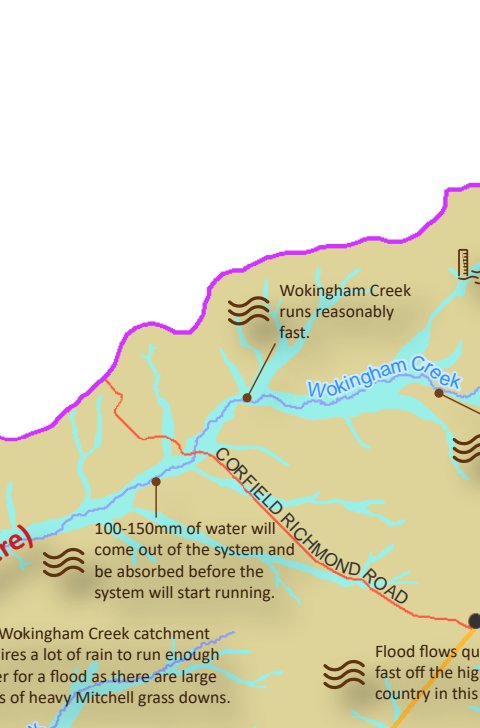
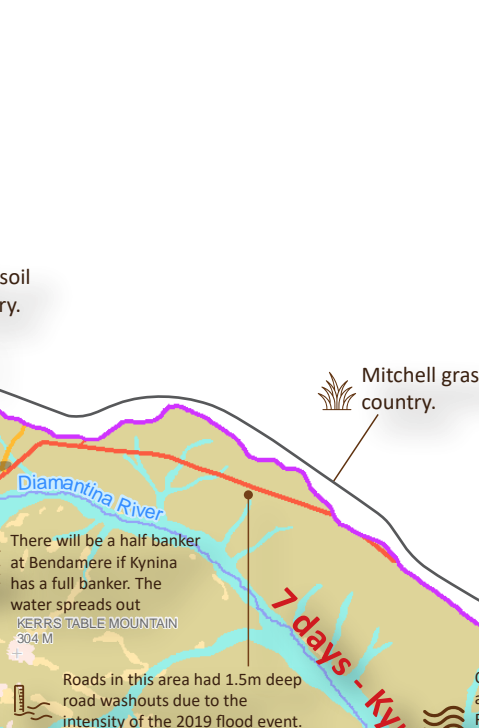
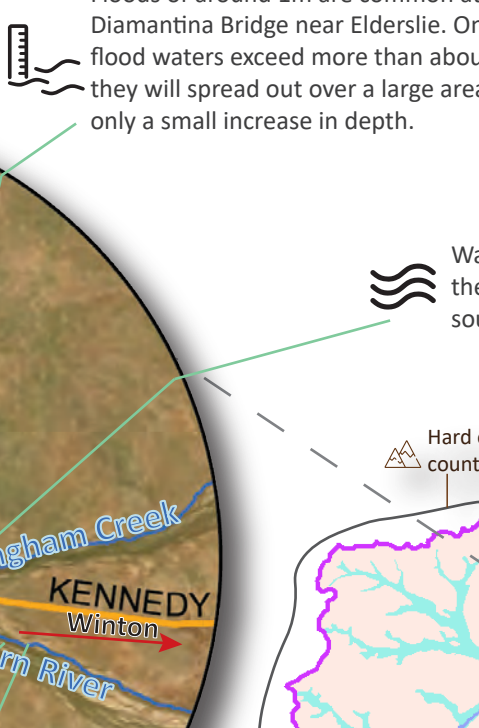
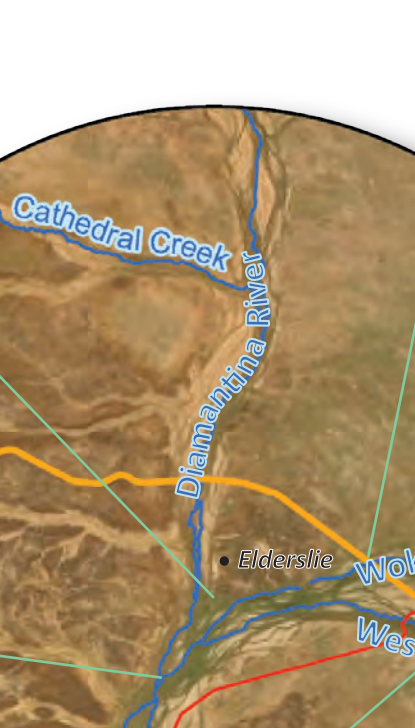
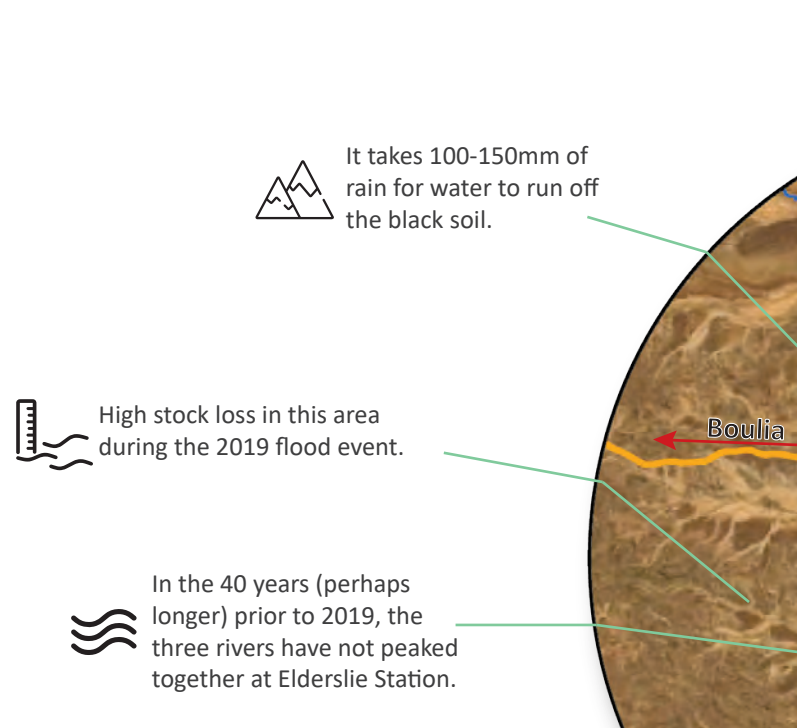
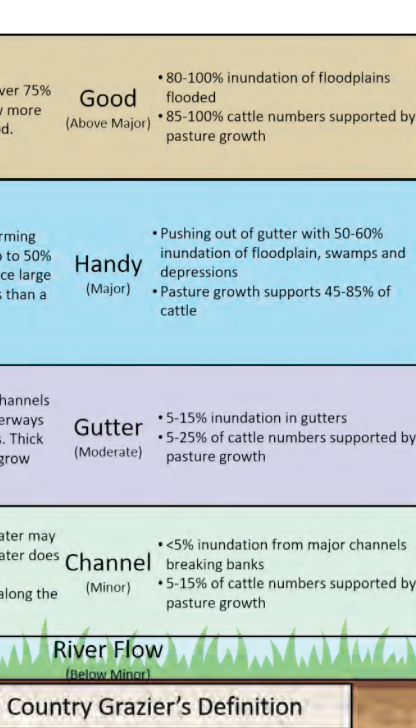
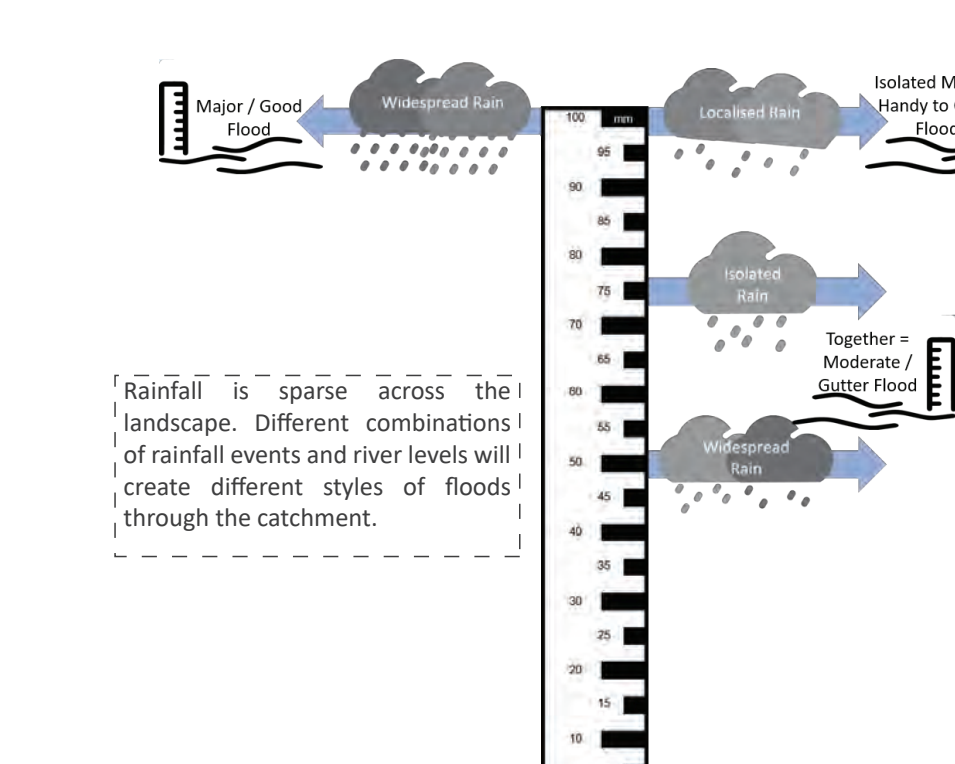
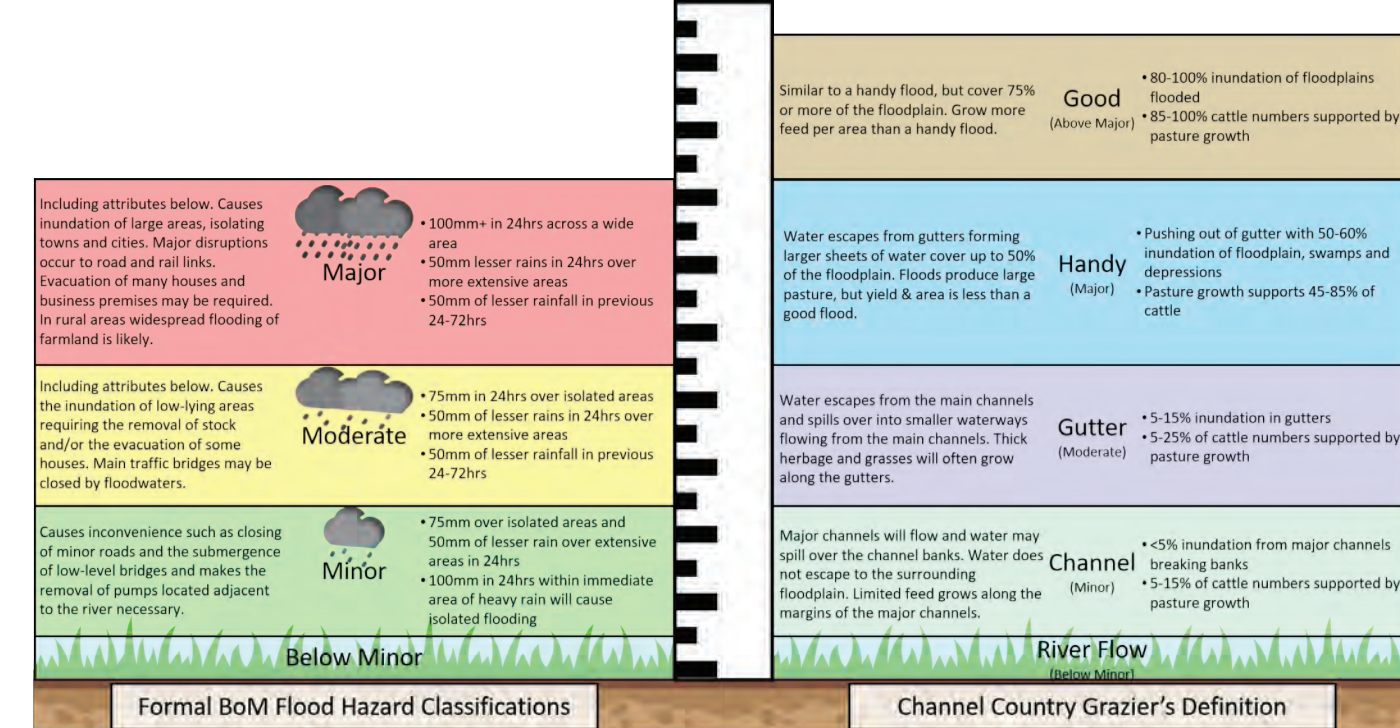


How to use this guide:

The information below provides local knowledge on landscape characteristics and flood behaviour. This is provided for local land managers, Council staff, and Government Agencies to better understand the Diamantina River Catchment and its unique characteristics. This guide has used the best available information at present derived from updating a previous map developed and significant local input from a series of community meetings with locals in 2019. It is intended to help you assess what type of flood is likely to occur in your area and indicate what amount of feed you might expect. You may wish to record your own flooding and landscape characteristics on the map.

Timeline of Flooding within the Diamantina River Catchment

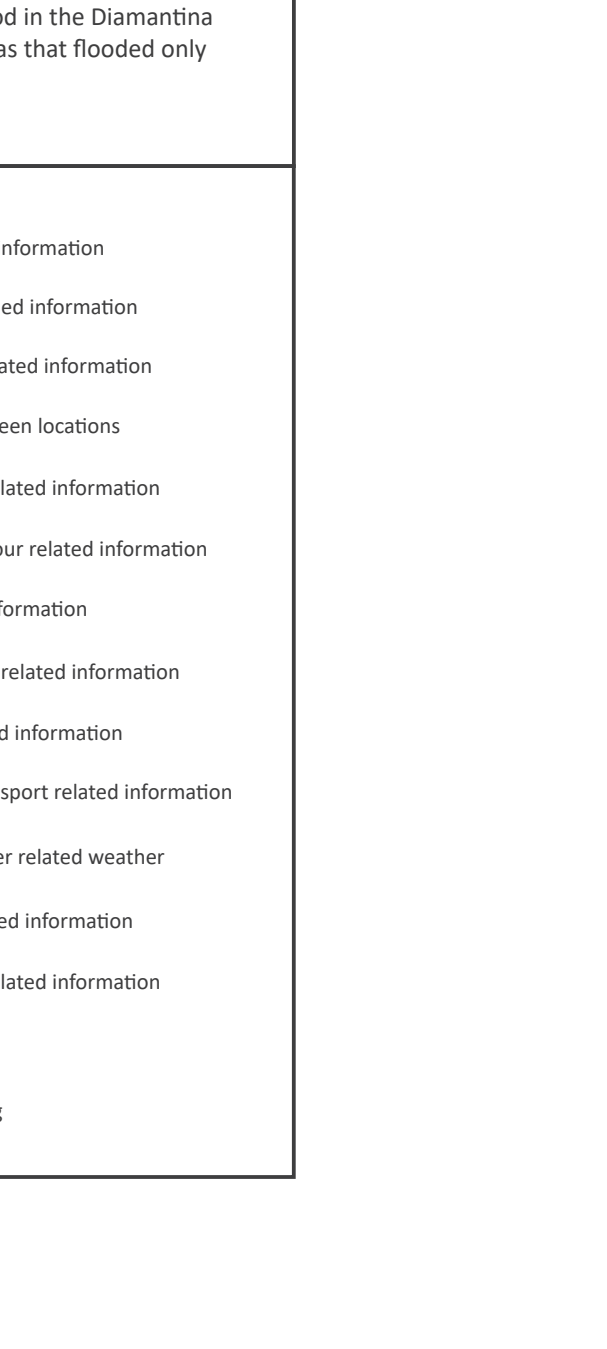
Year	Grazer Flood Definition
1876	Handy
1879	Handy
1880	Handy
1882	Handy
1887	Handy
1890	Handy
1893	Handy
1894	Good
1895	Good
1899	Channel
1903	Channel
1904	Good
1906	Handy
1907	Handy
1908	Good
1910	Handy
1912	Handy
1913	Channel
1914	Channel
1916	Channel
1917	Handy
1918	Good
1920	Handy
1922	Handy
1925	Handy
1926	Channel
1930	Handy
1932	Handy
1934	Channel
1935	Handy
1937	Good
1940	Handy
1941	Handy
1942	Handy
1949	Handy
1950	Good
1953	Handy
1955	Handy
1956	Handy
1967	Handy
1968	Good
1969	Handy
1970	Good
1971	Good
1972	Handy
1973	Good
1974	Good
1975	Handy
1976	Good
1977	Good
1978	Handy
1979	Channel
1980	Handy
1981	Good
1982	Handy
1983	Handy
1984	Good
1985	Handy
1986	Handy
1987	Handy
1988	Handy
1989	Handy
1990	Handy
1991	Handy
1992	Handy
1993	Handy
1994	Handy
1995	Good
1996	Handy
1997	Handy
1998	Handy
1999	Good
2000	Good
2001	Handy
2002	Handy
2003	Handy
2004	Good
2006	Handy
2007	Handy
2008	Handy
2009	Good
2010	Good
2011	Handy
2012	Handy
2013	Channel
2014	Handy
2015	Handy
2016	Good
2017	Handy
2018	Good
2019	Good



Handy Catchment Tips

- 1** All channels, even those in the hard country, can experience significant silting.
- 2** The level of the Diamantina River drops 1m between Diamantina Lakes and Monkira. The river level drops a further 1m from Monkira to Durrie.
- 3** If there are 3-4 runs in the Diamantina prior to the main water flowing in December, it generally will not stop flooding until April or later once the catchment is wet.
- 4** Little floods can make big floods. The little floods and local rain fill waterholes and swamps, prevent the ground and channels before the flood waters arrive. This will enable the next flood to go and spread further.
- 5** Where floods occur in succession, the second flood will travel slower due to vegetation that has grown from the first flood. The second flood will often flow clearer, because of the vegetation filtering more sediment out and slowing water flow.
- 6** Flood travel times are dependent on many different variables. These include when and where the water hits the catchment, how wet the catchment was beforehand, whether there is vegetation in the catchment, recent modifications to the channels and throughout at the catchment, and water flowing in from other places.
- 7** Outside Country: The pastures in the outside country are dominated by deep-rooted perennial grass and perennial browse species, some other perennial and annual herbage species. Additional species may include: Mitchell grasslands; spinifex grass; mulga woodlands; and Gidgee woodlands. Pasture production in these areas is influenced primarily by local rainfall receiving an annual rainfall average less than 175mm per year, but is subject to wide variation.
- 8** Mitchell Grasslands: Mitchell grasslands are treeless or sparsely timbered, and occupy cracking clay soils where average annual rainfall is between 200-500mm. Average annual rainfall decreased from east to west, but it is still highly variable, affecting both pasture yield and composition. The dominant perennials in these pastures are the desirable Mitchell grasses. Barley Mitchell grass is dominant on pebbly clay soils.
- 9** Spinifex Pastures: Spinifex pastures occur either as a naturally open grassland, or as an understorey within eucalypt and acacia woodland. Spinifex pastures generally grow in infertile acid sand, loam or duplex soils and are prevalent throughout much of Australia's dry interior. Spinifex pastures occur in the upper Diamantina catchment, on residual outcrops around Winton.
- 10** Hard range country can be a major driver of floods in the Diamantina.
- 11** Big floods can start at the top of the Diamantina River catchment and not just via other creek systems that join and feed the lower section of the system.
- 12** Grass fires are common when grass is available.
- 13** Water moves faster across bare earth and can strip top soil.
- 14** The 2019 flood event was a short, sharp, pulsing and intense which did not stay up long after reaching its peak. Creeks in the south-eastern part of the catchment also did not run.
- 15** Local rain can keep flood peaks up.
- 16** The Flinders, Cooper and the Diamantina catchment headwaters meet in a relatively small area and rainfall can flow into any catchment.
- 17** The eastern part of the catchment from Elderslie will be slowed down if there is water in Wokingham Creek and the Diamantina River.
- 18** Location and characteristics of waterholes are very site specific and this influences the water flow and behaviour.
- 19** A more significant flood at Brighton Downs, such as the 2000 flood event, will register 5m at Diamantina Lakes.
- 20** There is a cycle of flood to fodder to fire in this country.

Diamantina River Catchment Bioregions



South Australia



General Risk Awareness Information

- 1** Rain recorded over 12 days during the 2019 flood event was equal to the rain recorded over a month during the 1974 flood event.
- 2** Flood water during the 2019 event came up a lot faster in certain areas than it has done so before.
- 3** There are many variables which may contribute to a flood event before the catchment receives heavy rain. E.g. Prior to the 2019 flood event, the ground was already wet, there was no sun, and the wind was blowing non-stop.
- 4** There was significant cattle loss north of Winton during the 2019 flood event. All white stock was also lost throughout the catchment, whereas darker coloured stock (such as British breeds) suffered lower losses.
- 5** Drought can be observed to increase silting and scouring during future flood events. Silting is particularly more evident during more intense flood events as rainfall and flow behaviour scours watercourses and topsoil.
- 6** Isolated properties may have to wait several days or weeks before having access to a sealed road in some cases.
- 7** Fires in spinifex, sandhill country can be blown by the wind and jump from the top of a sandhill to another. Sometimes fires will jump between sandhills without burning in between. Jump-ups and sandstone ridges may contain iron ore and similar metals that can attract lightning and start fires. Mitchell grass must be at least 300mm to burn to reduce fuel load.
- 8** Areas in the lower Diamantina experience what is known as 'dry flooding'. The local iron ore and similar metals with no rain, as large volumes of floodwater move down the catchment from rainfall occurring upstream. Floodwaters from upstream may travel hundreds of kilometres downstream before the water evaporates, soaks into the floodplain soils, or is diverted into swamps and lakes. Dry flooding is vital for the economy in these areas. Areas like this experience floods more than they experience rain.

General Landscape Knowledge

- 1** The volume of rainfall in one area of the catchment does not reflect the whole catchment. These variables can be the difference between no rain and damage on one property to flooding and extensive property damage on a neighbouring property that may have been 20-30km apart.
- 2** Cow view and other herbage often dominate occasionally flooded plains following summer floods in the Channel Country. Good feed is made even better when local rains follow. Rains alone flow little, if any feed because the heavy clay soils of the Channel Country are so thirsty.
- 3** All creeks were running clear following the 2019 flood event.
- 4** Water will often disappear into sand dunes and run quickly off the hard country.
- 5** Grass seeds will be dormant and are self-regenerating after a flood event. If there is no rain, there will be no Mitchell grass. Gidgee grass grows near water courses and Mulga grows in the harder country.
- 6** Floodplain soils is self-mulching. It cracks open and crumbles, before falling back inside the cracks created. These cracks are deep and as the flood arrives, the cracks will close up while keeping the soil moist. Floodwater which disappear into these cracks will re-emerge up to 300m downstream.
- 7** Floodplains can be covered by a single sheet of floodwater spread as wide as 70km during major floods.
- 8** Creeks and tributaries provide a sizeable input into the system.
- 9** Gutters (or reticulate channels) help distribute floodwaters out from the main channels.
- 10** Combo waterhole at Kynuna is one of the few permanent waterholes in the upper catchment.

Tips for Graziers

- 1** Q Fever concerns arose from the 2019 flood event and led to vaccinating the community. Vaccination facilities were set up on the side of the road.
- 2** Feral pigs are a problem as they are attracted to permanent waterholes. They will usually erode and degrade the soil surrounding these waterholes.
- 3** A handy flood is made better if there is local rain after the flood, a lot more feed will grow.
- 4** A winter flood does not grow as much feed as a summer flood and the feed does not last as long, but it usually has higher protein and lots over the full winter until dry winds start in early summer. Water needs to hold up at a decent (gauge) height for a sustained period of time to create a 'good' flood. This helps ensure more country and grow more feed. Less frequently flooded ridges provide refuge and feed during flooding events.
- 5** Agriculture practices influence the sediment in waterholes and the water infiltration in the area. Sediment can also impact groundwater infiltration. Cattle and water are also mainly responsible for the spread of weeds and seeds.
- 6** Grasshopper plagues often occur after floods to feed on new growth. They generally come from north of the catchment and travel south.
- 7** Cattle will be fat after a winter flood, but will have soft hides and hooves. They will need to put on the outside country to harden them up before sale.
- 8** Cattle will not graze in flood waters because the flies and sandflies are overwhelming. As the waters recede, cattle will move into the waters to feed. If the cattle have a diet of only waterweeds then they can sometimes lose their hair. Cattle will not normally feed in just flooded areas, they will still feed in the sand dunes.
- 9** Compacted and wet blacksoil can limit tree maturation and is generally a poorer quality soil that can cause cracks often metres deep. Blacksoil may also inhibit plant and root growth, foster drier soils and expose tree roots. Floodplain soils are moderately fertile, but limited by the high clay content, cracking and high alkalinity.
- 10** Less frequently flooded ridges provide refuge and feed during flooding.