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A journey down the Warrego

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Abstract

“Who took the water?” said Barney from Bourke after the January 2008 flood. A half a metre of rain in Charleville and very little got into the Darling. The long and short answer is the environment got the lot, as no water was pumped out of the system in this flood event. This paper will attempt to follow a flood down the system from the rain event to where the water finished up.

Introduction

Recent upgrades by the Hydrology Department of DEEDI has enabled access to the amount of water passing measuring stations in this system. The Warrego Catchment consists of 130 450 sq km of which 67 500 sq km is in Queensland and 64 750 sq km is in NSW. About 45, 000sq km contributes most of the water to the system all from Queensland mostly above Wallen, which is situated 50km north of Cunnamulla.

There are small flows generated by local rain along the system from Wallen down but these would only put between 1-4% of total flow. The Cuttaburra channel can generate small flows from creeks entering in Queensland below Cunnamulla.

The Warrego heads in the Carnarvon Ranges NE of Charleville. The Ward/Langlo system, which heads NW of Charleville, contributes the majority of water to the system. The Angellala Creek from the NE is the only other major inflow. The Neemunmulla Creek can put in reasonable flows in a large rainfall event.

Outflow of the system on the Eastern side of the river starts below Wyandra but only in large flood events. From there down the system, the highest point is right on the riverbank and once the water goes over the bank it never returns.

On the Western side the outflow starts approximately 70 km below Wyandra on the Wallen /Baroona boundary. The outflow above Cunnamulla only occurs in large floods and, in a large flood event, massive amounts of water leave the system. The eastern side is technically the Culgoa fall (rarely gets there) and the western side is technically the Paroo fall (large volumes get there).

The Widgegoara and Cudnappa Creeks start running when the river is about 8.5m at Wallen. The Baroona out take starts running at about 7.4m. If the river rises above these heights, the amount of water leaving the system increases dramatically. Cunnamulla is effectively the end of the Warrego as a major river as water leaves the system across a vast flood plain. The Weir in Cunnamulla is the last major water hole in the system. Smaller holes do exist below Cunnamulla.

The Cuttaburra creek leaves the system just below the Cunnamulla Weir and this takes 40 – 50% of the flow. This system floods out in NSW and eventually reaches the Paroo over flow in extreme events. It starts running when the Warrego is 1 metre at that point. The river then starts to go out over a flood plain. A 10 m flood in Cunnamulla is a 5.4m flood at Rocky, which is about 40k south of Cunnamulla. Major off-takes in the river below Cunnamulla include the Thurulgoona Creek and the Tuen Creeks. The Tuen runs at very low levels – 1 metre.

Results

To summarise, the paper will show the amount of water that leaves the system in a flood event.

The January 2008 flood was selected to study as the river system was saturated, all outside waterholes were full and **NO**, I repeat, **No** water was taken by irrigators. The flood was caused by a rainfall event in mid January of 150 – 200 mm of rain across the entire catchment though most of the water came down the Langlo – Ward System (1,000,000 mega litres).

Following is the amount of mega litres at 3 major stations on the Warrego River therefore what is lost in between:

Wyandra	1,500,000
Wallen	1,388,000
Cunnamulla	1,150,000

By the time the river is at the Weir at Cunnamulla 350,000 mega litres have already “flown the coop”. The Cuttaburra leaves the Warrego just below the Weir and draws off approximately 50% of the water. At the Queensland border at Barrington No 2 station 200,000 mega litres are left in the system. In contrast the Cuttaburra at the border has about 380,000 mega litres.

In conclusion, from a starting amount of 1,500,000 mega litres only about 200,000 mega litres reaches the border and one would imagine that further reductions would occur in NSW (Fords Bridge and Fords Bridge by wash has a total of about 150,000 mega litres).

This flood was about as good as it gets as there was good rain along the whole system and soakage losses were minimal.

So next time Barney from Bourke hears about the half a metre of rain in the Charleville area, don't bother reaching for your gumboots; the environment, as usual, will suck the system dry.

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