

2010 / 2011 Announced Allocations Report

Water Allocation for the Tindall Limestone Aquifer, Katherine

Introduction

Integrated ground and surfacewater modelling of the Daly Basin, estimates the Tindall Limestone Aquifer (Katherine), has an average recharge of 74,000ML* each year. This water comes from rainfall that seeps down into the aquifer through the soil profile and directly through sinkholes. Further water enters the aquifer from the sandstone plateau East of Katherine.

Every year on May 1st, the total amount of water available for consumptive uses in the relevant water accounting year will be announced by this department. To determine this, a computer model is used to predict late dry season flows from the Katherine River, using the amount of rainfall received over the previous wet season.

*This figure may be adjusted as data becomes increasingly reliable and / or as climate change occurs.

Announcement

Modelling of the Tindall Aquifer within the Daly basin has been finalised for the 2010 / 2011 water accounting year. Due to the high amount of rainfall and recharge over the 2009 / 2010 wet season this Department is announcing that allocations under the Water Allocation Plan for the Tindall Limestone Aquifer, Katherine will be **100%** across all licence securities. This can be seen in the table below.

Licence Security	2010 / 2011 Allocation (%)
Total	100
High	100
Medium	100
Low	100

Determination

The extraction limit is determined by predicting the late dry season flow in the Katherine River at the Katherine Railway Bridge on 1 November. At this time, almost all flow in the Katherine River is sourced from Tindall Aquifer discharge. The prediction is made by inputting the previous wet season rainfall into the Daly Basin model, and using it to calculate recharge into the aquifer and subsequently discharge to the Katherine River. Based on the predicted flow level, a certain proportion of the Tindall Aquifer discharge to the Katherine River must be protected for environmental purposes, with the remainder available to be shared between licence holders.

If the extraction limit is calculated to be greater than the total annual licence limit and total security demand, then the announced allocation will be 100% of the maximum annual licence volume for all licences for that year.

The Plan stipulates that AA is to be made on May 1. Under the Plan the maximum extraction limit for the Tindall Aquifer is 35,631ML or >2.1 Cumecs at the KRB on November 1st. After modelling the predicted flow at the KRB for the 2010/11 water accounting year the forecast is that the flow will be 2.14 Cumecs. The extraction expected in the 2010/11 water accounting year from all licensed use is only 28,072ML. Therefore the volume of water required under licenses for the 2010/11

water accounting year may be issued in full whilst not compromising late dry season flows in the Katherine River.

The below graphs show the predicted flow and observed flow at two points along the Katherine River within the Plan area. The graphs demonstrate that the observed gaugings are in sequence with the predicted gaugings, therefore, the modelling of the system can be used as an effective tool for announced allocations.

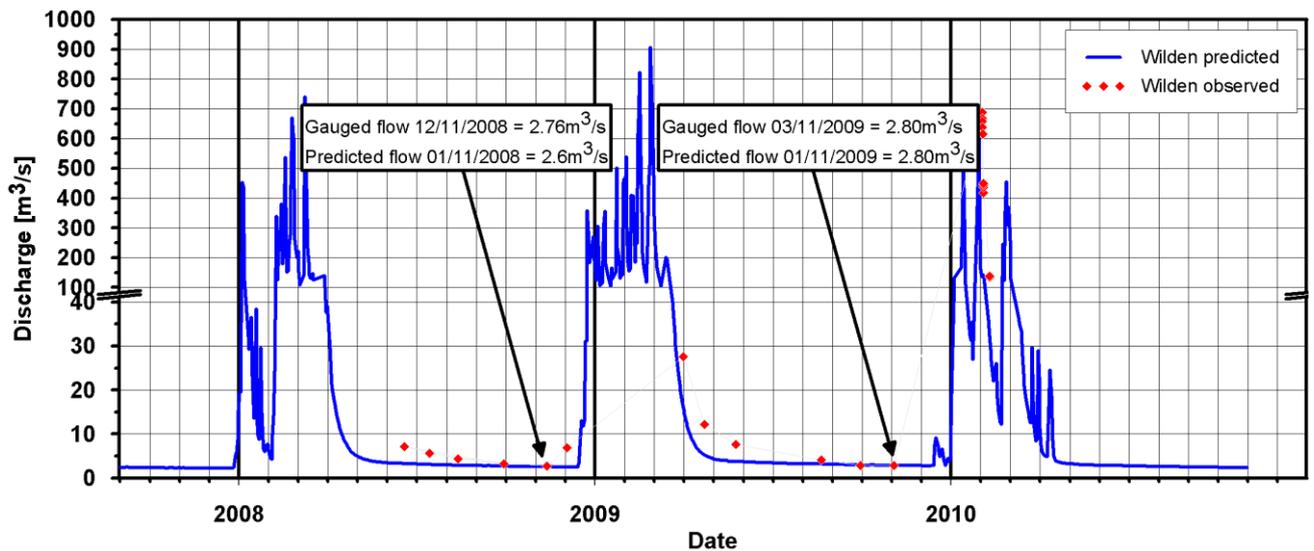


Figure 1: Observed and predicted discharge of the Katherine River at Wilden Gauging Station from mid 2007-mid 2010.

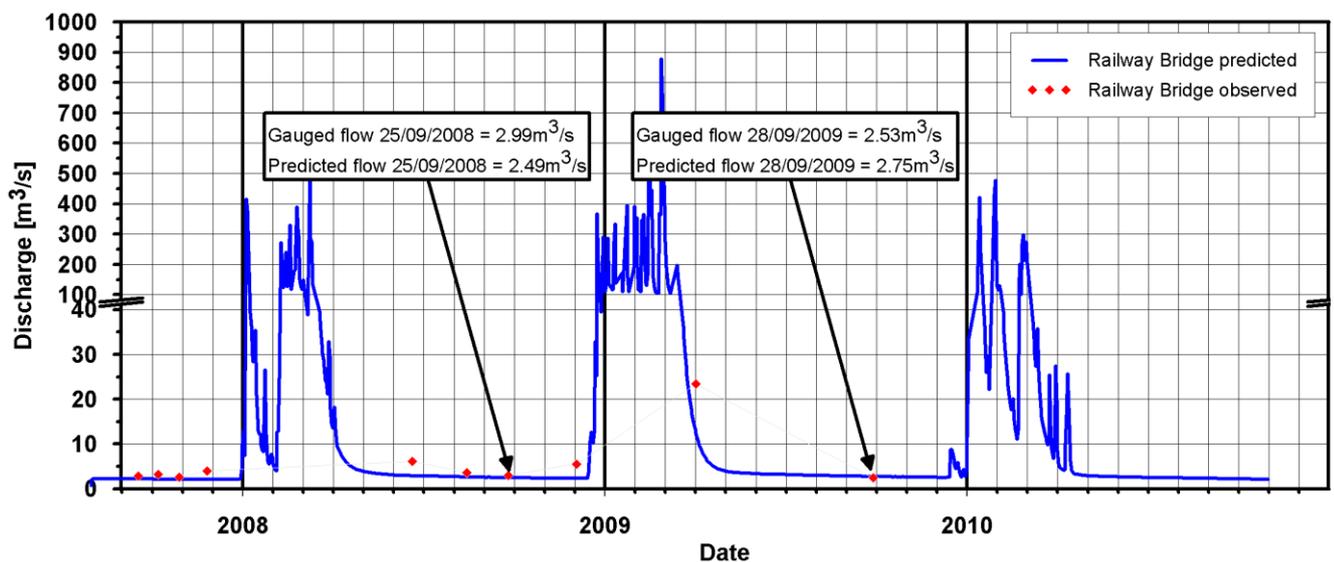


Figure 2: Observed and predicted discharge of the Katherine River at Railway Bridge from mid 2007-mid 2010.