

2013 / 2014 Announced Allocations Report

Water Allocation for the Tindall Limestone Aquifer, Katherine

Introduction

Integrated ground and surface water modelling of the Daly Basin, estimates that the average annual recharge to the Tindall Limestone Aquifer (Katherine) is 74,000ML. 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 or by May 1st, the total amount of water available for consumptive uses in the next water accounting year will be announced by the Controller of Water Resources. 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.

Announcement

Modelling of the Tindall Aquifer within the Daly basin has been finalised for the 2013/14 water accounting year. Based on the amount of rainfall and recharge over the preceding wet season the Controller of Water Resources is announcing that allocations under the Water Allocation Plan for the Tindall Limestone Aquifer, Katherine will be **100%** for all licence security categories, as shown below.

Licence Security	2013/14 Allocation (%)
Total	100
High	100
Medium	100
Low	100

Determination

The Plan stipulates that announced allocation is to be made on or by May 1. Under the Plan the maximum extraction limit for the Tindall Aquifer is 35,631ML or when Katherine River flow exceeds 2.1 Cumecs at the Katherine Railway Bridge on 1 November.

After modelling, the predicted flow at the Katherine Railway Bridge for the 2013/14 water accounting year, the forecast is that the natural flow will be 2.23 Cumecs. The licensed extraction for the 2013/14 water accounting year from all licensed use is only 29,961ML and it is anticipated that unlicensed extraction for rural stock and domestic and other small volume groundwater uses will not exceed 2,000ML. Therefore the volume of water required under licenses for the 2013/14 water accounting year may be issued in full whilst not compromising late dry season flows in the Katherine River.

The following graph shows the predicted flow after domestic, stock and licenced extraction is accounted for, and observed flow at the Katherine Railway Bridge. The graph demonstrates 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. The variation between the gauged flow and predicted flow in late 2011 can be attributed to early localised rainfall events around that time.

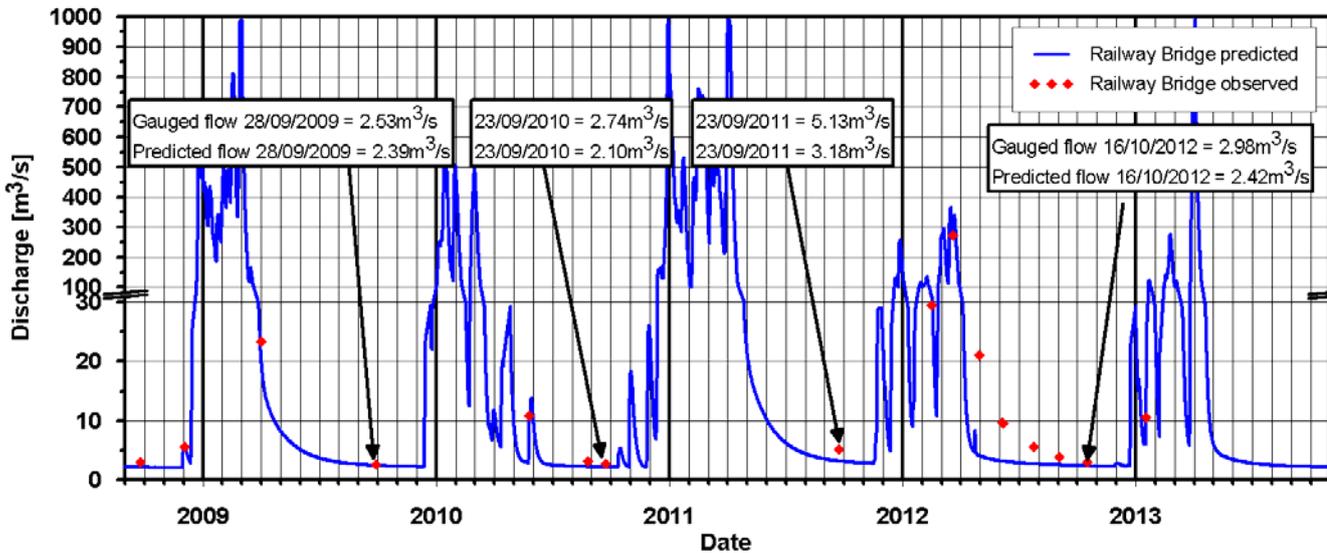


Figure 1: Observed and predicted discharge of the Katherine River at the Railway Bridge from mid-2008 to mid-2013.

Water Licensing & Compliance

For the 2012/13 water accounting year, the following table details the volume of water extraction, current level of compliance and the type and nature of trades.

Reported water use*:	9,780ML
Rural stock & domestic use**:	1,568ML
Number of new S&D bores drilled:	5
Compliance inspections undertaken:	90%
Number of permanent trades:	0
Number of temporary trades:	0

*Reported water use represents actual water use as supplied to this Department by 89% of licensees, plus estimated water use based upon previous usage or in line with original property development plan for those licensees that failed to supply all or part of their annual water use records.

**Rural stock and domestic use has been estimated based on the number of domestic and stock bores extracting from the Tindall Limestone Aquifer within the Plan area at that time.

Monitoring & Evaluation

Within the 2012/2013 water accounting year (1st May 2012 to 30th April), this Department has undertaken the following assessments and monitoring observations;

Groundwater Level Monitoring:

The groundwater monitoring program for the Water Allocation Plan, Tindall Limestone Aquifer, Katherine consists of 44 monitoring bores, 38 of which are equipped with data-loggers recording water level every 2 hours. This data is validated by standing water level measurements which are manually measured using

a dip tape. A total of 108 manual readings were undertaken throughout the water accounting year.

Groundwater (spring) discharge:

Manual gaugings of groundwater discharge into the Katherine River were undertaken at the Katherine Hot Springs three times during the year; in August, October, and December 2012. On each occasion the flow was measured at 360 l/s.

Surface Water Flows:

Continuous water level data was collected at the 4 primary gauging stations within the Plan area. To verify the modelled flows, a number of spot gaugings were also performed at the gauging stations during the water year:

<i>Station</i>	<i>Number of gaugings</i>	<i>Time of gaugings</i>
G8140535 (Ironwood)	5	June, July, Sept, & Oct
G8140001 (Katherine Railway Bridge)	6	June, July, Sept, & Oct
G8140222 (Low Level)	6	June, July, Sept, & Oct
G8140536 (Wilden)	8	June, July, Sept, & Oct

Groundwater Quality & River Health:

Basic physical and chemical water quality parameters were measured at selected sites in conjunction with groundwater level, spring discharge monitoring and manual river flow gaugings. The results from this sampling will be reviewed during development of a river health monitoring program and to assess trends, if any, over time.

A report detailing the results of a project undertaken in the previous water accounting year is now available. This project involved trial monitoring for pesticides and polycyclic aromatic hydrocarbons (PAHs) in the Katherine River using passive samplers. The report from this trial monitoring can be found at www.lrm.nt.gov.au/water/aquatic/publications