

# 2020 Announced Allocation Decision

## Daly Roper Beetaloo Water Control District – Katherine Tindall Limestone Aquifer Water Allocation Plan 2019-2024 area

Water extraction licences in the Katherine Tindall Limestone Aquifer in the Daly Roper Beetaloo Water Control District are granted subject to annual announced allocation conditions. These conditions allow me, as the Controller of Water Resources, to reduce licensed water entitlements annually, to protect the environmental, cultural and social values associated with water resources.

In determining whether to make an announced allocation resulting in a reduction of licensed entitlements for the 2020 water accounting year, I considered the following matters.

### 1. *Climate information*

The Katherine region has received below average rainfall in the 2019-20 wet season which has resulted in no significant recharge to the Katherine Tindall Limestone Aquifer (the **Aquifer**). This wet season, rainfall was below 50 per cent of the median, resulting in no significant recharge and reducing water availability in the aquifer and surface water flows derived from the aquifer.

### 2. *Modelling of 2020 dry season flows*

The Katherine Tindall Limestone Aquifer Water Allocation Plan 2019-2024 (**the Plan**), recommends the allowable level of impact on Katherine River flows. In accordance with the Plan, this is derived from the modelled natural flow at the Wilden gauging station at 1 November (see below). Modelling by the Department of Environment and Natural Resources used the Daly River Catchment Integrated Hydrologic Model. The results of predicted and actual 1 November flows in the Katherine River, derived from this model, have been correlated with a high level of confidence (based on a simple linear regression,  $R^2 = 0.97$ ).

#### Scenario 1

Modelling of natural flow (where no extraction has occurred) resulted in a predicted flow at Wilden on 1 November 2020 of 2.06 cumecs (or 178 megalitres per day). According to the Plan, this is interpreted as a 'dry' climatic or river flow scenario, in which case 80 per cent of the modelled natural 1 November flow must be sustained in terms of an annual announced allocation determination. The resultant flow at Wilden on 1 November 2020 to preserve non-consumptive use is 1.648 cumecs (or 142 megalitres per day). This is referred to as the minimum flow requirement.

#### Scenario 2

Modelling of maximum extraction of all licensed entitlements for 2020 predicted a flow rate of 1.48 cumecs (or 128 megalitres per day) at Wilden on 1 November 2020.

#### Scenario 3

Modelling of reductions in licensed entitlements in accordance with licence securities, as outlined in the Plan (a reduction of 100% of all low and medium security entitlements, 50% of high security entitlements and no reduction of total security entitlements) for the 2020 water accounting year, predicted a flow rate of 1.60 cumecs (or 138 megalitres per day) at Wilden on 1 November 2020.

## Scenario 4

Modelling of reported extraction from the 2019 water accounting year, as the modelled take for the 2020 water accounting year, predicted a flow rate of 1.60 cumecs (or 138 megalitres per day) at Wilden on 1 November 2020.

### Model

The Daly River Catchment Integrated Hydrologic Model has accurately predicted the impact of extraction on flows in the Katherine River on 1 November annually. The predicted modelled flow at Wilden on 1 November 2020 for scenarios 3 and 4 is 1.60 cumecs (or 138 megalitres per day). It differs from the minimum predicted flow required by the Plan - of 1.648 cumecs (or 142 megalitres per day) - by 0.05 cumecs (or 4.3 megalitres per day). This difference is considered to be within the margin of error of the model. Accordingly, modelling shows that both scenario 3 and scenario 4 will result in sufficient water for non-consumptive uses to protect the environmental, cultural and social values that rely on the water resource.

### **3. *Reported water use***

A principal objective of the Plan is to provide fair access to water to support ecologically sustainable regional economic development. In the Plan area, licence securities are not aligned to water usage and production data. As a result, there are a number of licences, including high security entitlements, which are underutilised; whereas a number of lower security entitlements are fully utilised for production, including the production of perennial crops.

It is a condition of all licences that licence holders report their water meter readings at the end of each month. Reported extraction of water within the Plan area across all licence securities is around 50 per cent of the volume of water held high security entitlements. Given that licences are not fully utilised, reducing licences according to licence security, as recommended in the Plan and as modelled in scenario 3, would result in the inequitable distribution of water resources away from more developed operations in the region.

In 2018 and 2019, licences in the Katherine Tindall Limestone Aquifer were subjected to a review process resulting in the return of unused licensed water entitlements. This required licence holders to submit revised development plans for their operations. As a result of this process, development consistent with those plans will be reflected in the usage results for the 2019 water accounting year.

### **4. *Protection of non-consumptive water requirements***

Principal objectives of the Plan include meeting the environmental water requirements of water dependent ecosystems, and to protect Aboriginal cultural values as well as community values of the water. These objectives represent non-consumptive uses of the water.

Non-consumptive requirements are protected through ensuring the modelled extraction does not exceed the limits established in the Plan. This is achieved by limiting the allowable reduction in flow at Wilden gauging station. As described in scenario 1, for the 2020 dry season, modelled flow at Wilden must be at least 1.65 cumecs on 1 November 2020.

Scenarios 3 and 4 both result in protection of non-consumptive water requirements. These scenarios result in a modelled flow at Wilden of 1.60 cumecs on 1 November, underachieving the required minimum flow by 0.05 cumecs (4.3 megalitres per day) which is within the error margin of the model. Therefore, non-consumptive requirements are not predicted to be at risk provided extraction is consistent with either scenario 3 or 4.

## 5. *Public water supply*

A principal objective of the Plan is to ensure security of supply for public water supply. The Plan indicates that water extraction licences for the beneficial use category of public water supply should not be subject to annual announced allocations.

Public water supply licences were assigned a total security value when undertaking the modelling. Therefore, all the modelled scenarios (except scenario 1, natural flows) are based on Power and Water Corporation extracting the full volume of its licensed entitlements. This approach best protects public water supply through the annual announced allocation process. It is acknowledged that due to a number of constraints and public water supply demand, Power and Water Corporation is unlikely to extract its full entitlements in the 2020 water accounting year. Reducing maximum entitlements for the 2020 water accounting year in line with scenarios 3 and 4 does not present a risk to public water supply for the Town of Katherine.

## 6. *Other factors*

Maintaining local food production and economic activity, where feasible, is particularly important for the 2020 water accounting year due to the impacts of the COVID-19 pandemic. This global health crisis has had, and will likely continue to have, significant impacts on the Territory and Australian economies. The pandemic has highlighted community concern regarding the value of secure, local food production, to which the Katherine region makes a significant contribution. Access to water is vital to support agricultural food production and economic activity in the Territory.

## Conclusion

I have determined that a reduction of licensed entitlements within the Katherine Tindall Limestone Aquifer plan area is necessary to maintain the environmental, cultural and social values of the water resource.

In determining to limit extraction of licensed entitlements, I accept that the model shows that to achieve a predicted river flow on 1 November 2020 that protects non-consumptive uses, either scenario 3 or 4 needs to be applied. These scenarios equate to the removal of around 20,000 megalitres of licensed entitlements.

I have formed the view that it is preferable that unused water entitlements are reduced, rather than entitlements that are being fully utilised for production, in part because reducing licences for the 2020 water accounting year based on licence security would not support economic and social activity or ongoing food production in the region (and the Territory).

Accordingly, I have decided that all licence holders within the Daly Roper Beetaloo Water Control District - Katherine Tindall Limestone Aquifer Plan area will be permitted to extract no more than the volumes of water stipulated in the attached table of licence allocations. These volumes have been assigned based on consideration of the level of reported water extraction in the 2019 water accounting year and the development plans of licence holders, which have been validated by on-ground activity.

In applying licensed entitlement reductions in this way, licence holders who have invested in irrigation and other infrastructure will have the opportunity to utilise similar water entitlements in the 2020 water accounting year.

The licence entitlements allocated are consistent with the modelling results in scenario 4, which showed that extraction of reported 2019 volumes could occur while protecting minimum flows in the Plan area (within a margin of error) and is within the parameters set in the Plan. Therefore, percentage allocations as per the table will protect the environmental, cultural and social values of the water resource and achieve the same predicted flows as applying reductions by licence security categories.

In determining these allocations, I have also considered protection of public water supply. I am satisfied that the allocations will not pose a risk to public water supply for the Town of Katherine.



Joanne Townsend  
Controller of Water Resources

29/4/2020