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## Warren-Donnelly Water Update

April 2020

Welcome to the April 2020 issue of the *Water Update* newsletter for Warren-Donnelly landholders and licensees.

The Department of Water and Environmental Regulation (DWER) undertakes licensing, planning and measurement activities in the Warren and Donnelly River catchments to support the equitable and sustainable distribution of water to support commercial, domestic, public water supply and environmental needs. The Department does this with input from the Warren Donnelly Water Advisory Committee. This newsletter provides an update to some important issues and continues to address some common questions raised by licensees and the community.

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### COVID-19

Please be aware that, as with everyone, we are taking proactive precautions to prevent the spread of COVID-19 within the Warren-Donnelly community. The department is seeking to minimize impacts to licensees and intends to continue with 'business as usual' within the context of State Government direction. In the short term, please be aware that the Manjimup depot is closed for public access. Please also be aware that the opportunity for officers to meet on site will also be limited depending on the progression of the State Government's response to the pandemic. Officers can still be contacted by phone in Manjimup (6364 7925) and Bunbury (9726 4111) or by email at [manjimup@dwer.wa.gov.au](mailto:manjimup@dwer.wa.gov.au) or [Bunbury.admin@dwer.wa.gov.au](mailto:Bunbury.admin@dwer.wa.gov.au).

As we face this situation together, the department recommends that all licence, permit and other approval holders create and adopt a business continuity plan to help meet their statutory responsibilities. If you anticipate any significant risk to your ability to comply with your statutory responsibilities, then you need to contact the department so that we may consider any extenuating circumstances that is likely, or prevents you from meeting your requirements of licence. For more information please see <https://dwer.wa.gov.au/covid19-update>.

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### Warren Donnelly Water Advisory Committee - Get Involved

Advertising for community members for the Warren Donnelly Water Advisory Committee closed earlier this month after advertisements were placed in the Manjimup-Bridgetown Times on 25 March 2020. The committee provides advice to the department about surface water management and allocation in the area. The committee does not make decisions on applications or policy. The committee acts to bring community views and knowledge, as well as liaise directly with landowners and licensees. The department embraces diversity and encourages applications from a diverse field. When making appointments to the committee, the department will best reflect the diversity of the community, and contribute towards the State Government's target of 50 per cent representation of women.

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### Variable take review update

The Department is now undertaking further work to verify the risks to reliability of supply to existing licensed and exempt users and the environment, streamflow at the catchment outlet and minimum flow thresholds associated with existing variable take licenses. This work will determine whether changes can be made to variable take licensing to manage these risks and consider its potential for re-introduction at a later time.



The actions identified in the previous newsletter and the progress against these are described below;

Action	Progress
Reviewing existing variable take licensing decisions to ensure consistency and accuracy of information in the model	<ul style="list-style-type: none"><li>Seven of the 29 current licenses have been formally reviewed through the model using updated streamflow information which resulted in one licence being amended.</li></ul>
Evaluating existing and new variable take bypass infrastructure for measurement against modelled outcomes	<ul style="list-style-type: none"><li>Sites ideally need to be able to measure flows by water level probes entering bypass infrastructure as well as measure flows being discharged downstream from the bypass and the spillway.</li><li>Five sites with completed and functioning bypass systems were visited late 2019 to determine suitability for monitoring.</li><li>All were found to have limitations (such as broad, shallow or poorly defined channels) which would prevent accurate measurement.</li><li>The department will continue to investigate sites for measurement during winter 2020 as works are completed and verified for compliance purposes.</li></ul>
Preparing guidelines and background information on variable take in the Warren and Donnelly catchments	<ul style="list-style-type: none"><li>A Regulatory Guideline relating to variable take has been drafted to reflect the pre-existing approach to licensing done to date.</li><li>This guideline is being amended as information comes to hand.</li><li>It is unlikely to be completed until the balance of actions have been completed.</li></ul>
Updating of the model with new flow information and surveyed dam volumes to improve accuracy	<ul style="list-style-type: none"><li>This is an ongoing process as information becomes available from our 14 long-term and additional temporary gauging stations in the Warren Donnelly; and as dam surveys are submitted by licensees.</li><li>Upgrading of the Manjimup Brook outflow gauging station, and repair of the Strickland gauging station to improve flow data collection (see below)</li></ul>
Determining any increase of unregulated take from the resource since 2012 (stock and domestic, riparian, spring exemptions).	<ul style="list-style-type: none"><li>The department commenced working systematically across all areas of the Warren-Donnelly plan area in February 2020 to identify all unregulated take in addition to any outstanding historical entitlements not captured at the time of the plan.</li><li>The project has started with the Donnelly River catchment.</li></ul>

We will continue to update you in future *Warren-Donnelly Water Update* newsletters.

We remind you that opportunities exist to move and use under-utilised water through provisions for the permanent (trading) or temporary (agreements) while the review and evaluation of variable take is being undertaken.



## Update on Manjimup Brook outflow gauging station

In the previous newsletter, we identified that the Department is upgrading the current temporary gauging site at the Gregory Road bridge site of the Manjimup Brook to a permanent station with full telemetry capability which will allow the real time collection and availability on streamflow.

The Department has secured a number of approvals required to complete the works. We recently conducted a successful Aboriginal heritage consultation and survey on site with seven Traditional Owners. Advice following this consultation in early February 2020 indicated that the proposed project was deemed to have no undue risk of breaching Section 17 of the *Aboriginal Heritage Act 1972*. We are awaiting the final report from the consultant. Land access has been provided by the Department of Biodiversity, Conservation and Attractions.



*Above – Aboriginal Traditional owners meeting with departmental staff at the proposed gauging station site at Gregory Rd Bridge.*

We are working as quickly as possible to have everything ready for this year's winter flows. We are currently scheduling a two phase construction plan to provide us information on site specific power management and some contingency planning given the current COVID -19 situation which may disrupt the availability of staff or contractors.



*Above – Temporary floatwell installation completed 9 April 2020 at Manjimup Brook outflow*

**Phase 1** – The floatwell infrastructure was completed this month to securely house our power management recording unit used to assess the incoming solar potential and power availability to run the technology associated to the site. It is ready to house a telemetered data logger to be put in place for this upcoming winter if full construction is not possible before the commencement of winter flows. This represents an increase in accuracy over existing data collection via the temporary gauge.

**Phase 2** – Progression of engineering, tender and procurement for full scale construction ready hopefully for winter 2020. Subject to any delays, final construction will be completed in the 2020/21 summer window.

### Other Monitoring Activity

The department also continues to review and monitor our other stations on a regular basis. In doing so, it identified that the concrete weir at Strickland Farm on the Donnelly River required repair, likely as the result of water ingress and scouring over a long period of time. This work was recently completed included sealing leaks and recoating the concrete weir wall to extend its life. These improvements will help improve the accuracy of the stream flow information provided from the site.





Above – Strickland Gauging station before (left), during (center) and after (right) remedial works had been completed to repair cracking, undercutting and wear.

The department undertook a bathymetric (depth) survey of the Donnelly River Estuary in late March as part of the Regional Estuaries Initiative (<https://rei.dwer.wa.gov.au/>) (see right). Hydrographers were able to achieve 90% of the survey at high accuracy at 100m intervals along 17km of the estuary and lower Donnelly River and Estuary. This information will contribute to a hydrodynamic model for this area which will assist the department in understanding the contribution of both groundwater contribution and surface water flows to the system.



Detailed assessments of river health were conducted at 16 sites across the Warren and Donnelly river systems in February 2020. Assessments comprised measures of aquatic biota (fish/crayfish and qualitative assessments of water rats, mussels etc.), water quality, riparian/fringing vegetation, aquatic habitat, hydrology, land use and physical form. Short summaries of river condition will be provided on the healthy rivers website in coming months (<https://rivers.dwer.wa.gov.au/assessments/results/>). This information supports our monitoring of waterways health and can support our decision-making.

## How is water allocated?

Some of the queries we have are in relation to how the department determines how much water can be allocated, in what order are applications assessed, and why can't I capture the water generated off my property? The information provided below addresses these questions.

The total volume of water available from a given resource is made up of a number of components represented in the diagram below taken from the *Warren-Donnelly surface water allocation plan* (2012). The first is what's referred to as the Ecological Water Requirements which reflects the volume of water required to sustain the environmental and social values of the resource based on ecological studies and social values assessment undertaken with the community. This community consultation occurred in 2010/11 and informed the development of the plan.

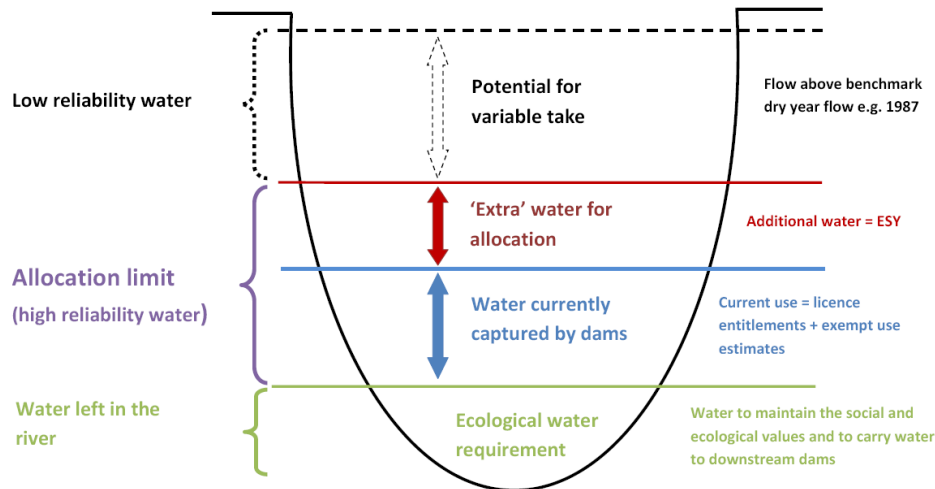
The second component reflects the allocation limit for the resource. The department sets allocation limits for each of the 25 resources in the Warren-Donnelly which is the total amount of surface water that can be sustainably taken for consumptive use at the most downstream point of the subarea, thereby identifying the volume that can be captured from the subarea. Each allocation limit includes a number of components;

- Water that is available for general licensing (self-supply for commercial purposes)



- Water that is exempt from licensing (stock and domestic, riparian rights, forest use, and spring exemptions)
- Water that is reserved for public water supply

It is important to recognize that when allocation limits were determined, there was already a proportion of that water being captured and used by landholders. Additional water that can be sustainably taken is determined through what's referred to as Ecological Sustainable Yield (ESY) which is a modelled outcome based on real gauged stream flow data and the benchmark minimum flow year described for each resource in the plan. The flow in these years (generally 1987 in the Warren and 2001 in the Donnelly) is used to provide a high reliability for water users and protecting the environment in dry years.



The presence of existing use at the time of the plans development prevented a decision to be made around allocating water per property or per unit of area as some have suggested. In the absence of any use, the department may have been in a position to undertake an alternative allocation method. Therefore, in fully allocated resources, some landholders will not be able to capture water generated off their property for commercial use as that water is required to maintain the reliability of supply of existing downstream users. Trading or temporary use arrangements under agreements can be used to move part or whole entitlements to these otherwise dry blocks.

The acknowledgement of this historic use is consistent with the long-standing and well understood first-in first served approach taken by the department. At present, licensed water entitlements are issued up to the allocation limit. The allocation mechanism is by first-in-first-served, which means that applications to take water from a particular water resource are assessed in the order in which they are received. A public review of this approach in 2011 resulted in general support for the continuation of first-in-first-served.

The last component is those flows which occur above those of the benchmark dry year. These differ within and between seasons in their volume and intensity and as such are unreliable in nature. This is the portion of the flow which licensees in some resources have access to variable take entitlements. The variable take licensing regime, as commented previously, is under review.

More information is available in the *Warren Donnelly water allocation plan (2012)* - [https://www.water.wa.gov.au/\\_data/assets/pdf\\_file/0013/1633/102034.pdf](https://www.water.wa.gov.au/_data/assets/pdf_file/0013/1633/102034.pdf) - and the associated *Methods Report* - [https://www.water.wa.gov.au/\\_data/assets/pdf\\_file/0014/1571/102036.pdf](https://www.water.wa.gov.au/_data/assets/pdf_file/0014/1571/102036.pdf)



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## What about water drawn from plantations?



Forests, including commercial plantations, intercept rainfall and use soil water and shallow and deep groundwater which otherwise might be discharged to rivers. Plantations may therefore affect the amount of water available for surface water users and the river environment.

However, in accordance with the *Rights in Water and Irrigation Act 1914*, the department cannot and does not license the water used by plantations and it is therefore considered an exempt use under the *Warren-Donnelly surface water allocation plan*. This exempt use, as well as other exempt uses such as stock and domestic uses are accounted for in the department's streamflow records which support the determination of allocation limits for surface water resources.

In response to broader landscape changes such as clearing, including the removal of plantations, these would be considered through the department's future allocation planning processes, and incorporated once the land change has occurred and the impact of that change on streamflow and water availability change is understood to remain stable. Any changes in hydrology will also depend on the crop type or land use the plantation is replaced by. This is why the Department re-assesses land use types periodically as it reviews allocation limits. Hydrological modelling to determine water required for the environment and water available for use is decided at a catchment scale rather than a property scale. This is done to ensure the cumulative effect of multiple water users is managed and that adequate water is left in the river to protect the reliability of supply for uses including the environment. Any amendments to water availability would then be considered under contemporary circumstances and climate.

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## Just how dry was 2019 in the end?

At the time of the last newsletter in October, Manjimup rainfall was about 18% (or 130mm) less than the same time in 2018. This resulted in the stream flow gauging at Strickland (on the Donnelly River) and Rainbow Trail (on the Lefroy Brook) both identifying that cumulative flows will be close to or below the minimum flow year as used in the *Warren-Donnelly surface water allocation plan* on which allocation limits are based. Total rainfall for Manjimup in 2019 was 676mm, about 33% down on the long-term average, but wasn't enough for both gauges to record streamflow above the plan minimum flow years.

Gauging Station	Minimum Flow Year in Plan	Total Flow in Minimum Year (Gigalitres)	2019 Total Flow (Gigalitres)	Other years below minimum flow year
Strickland (Donnelly)	2001	22.76	19.46	2010, 2012, 2015
Rainbow Trail (Warren)	1987	11.79	11.74	2010, 2012, 2015

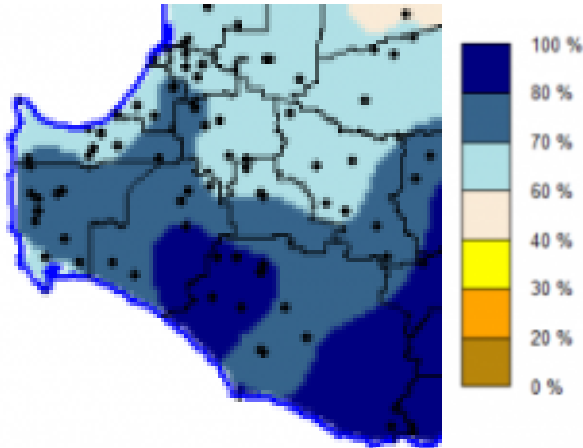
In years below the benchmark minimum flow years described in the plan, the impacts that may be felt by licensees are reduced reliability of supply of their entitlements. Similarly the environment also is impacted through reduced flows and the environment downstream of the last dam or take point in the subarea is likely to be most impacted by declining flows. However, the department considers that impacts on licensees overall in 2019 was likely minimal as a consequence of the high proportion of un-used entitlements or latent water in the system and the resultant filling and spilling of dams.



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## Looking forward

As of 31 March 2020, Manjimup had 98.9mm of rain, over double last year's total at this time. February rainfall was above average for the majority of the South West Land Division (SWLD) due to ex-tropical cyclone Damien and a period of sustained thunderstorms late in the month.



The comparison of streamflow generated by this rainfall to date against the benchmark minimum flow year is shown for Rainbow Trail Gauging Station on the Lefroy Brook and Strickland Gauging Station on the Donnelly River on the following pages.

The 3 month seasonal outlook from the Department of Primary Industries and Regional Development (DPIRD) for Autumn (March to May) is predicting greater than 60% chance of exceeding the median rainfall in the south of the SWLD over this period (left).

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## More information

We will continue to keep licensees informed of developments as they occur through future *Water Updates*. In the meantime, if you have any questions, please contact;

- For general licensing matters – please contact the DWER office in Manjimup on (08) 6364 7925, or Bunbury office on (08) 9726 4111.
- For contact details of members of the Warren-Donnelly Water Advisory Committee, please contact DWER in Bunbury on (08) 9726 4111.



