

Managing groundwater extraction to limits - Presentation 3g

Exploring options in the Upper Macquarie Alluvial groundwater source



We seek your input

The department must manage groundwater extraction to extraction limits defined in water sharing plans.

Only one method is available in the Upper Macquarie

Alluvial groundwater source to reduce access if extraction by all water users exceeds the limit.

We seek your comment on how to apply that method in your area.



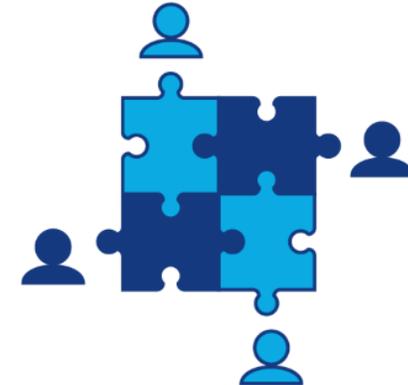
Presentation content

Presentation 1: Understanding extraction limits

Presentation 2g: Extraction patterns in the Upper Macquarie Alluvial groundwater source

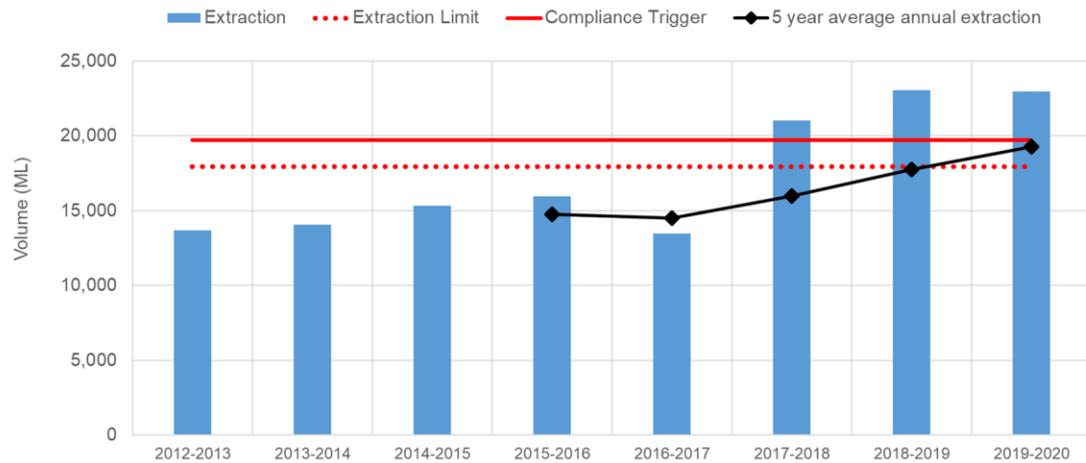
Presentation 3g: Exploring options in the Upper Macquarie Alluvial groundwater source

- **Tracking extraction – and what does it mean?**
- **Current approach**
- **Future approach**
- **Where to from here.....**



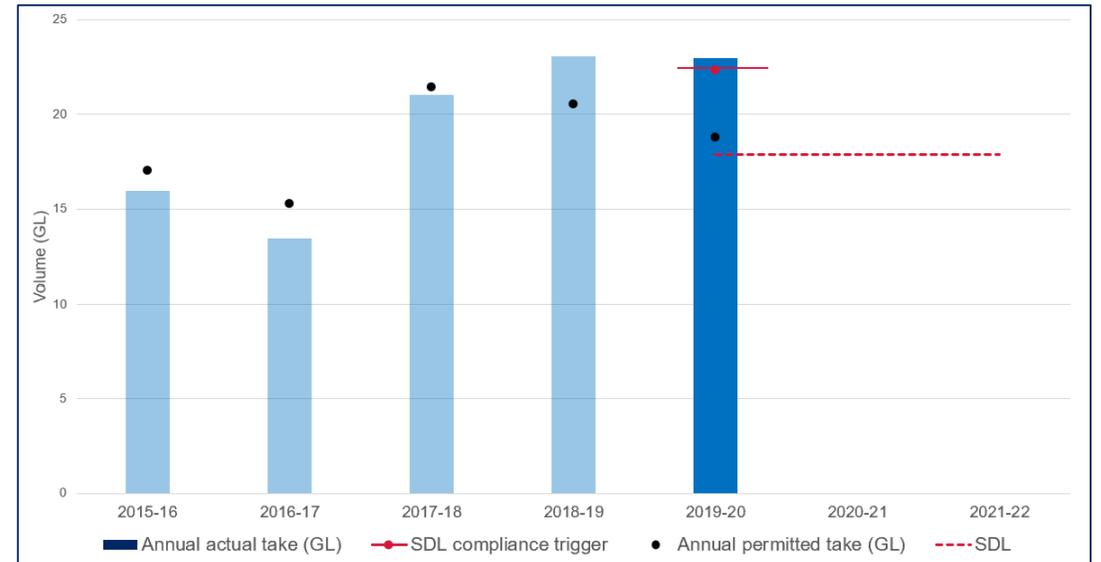
Tracking extraction against limits

Long-term annual average extraction limit



Not exceeded
(but would have if average extraction 10% more)

Sustainable diversion limit



Exceeded 2019/2020



What does this mean?

Long-term annual average extraction limit

- Users may not be compliant with the water sharing plan extraction limit in the 2020/2021 water year.
- If this occurs, NSW may need to manage access to groundwater to return extraction to the extraction limit.

Sustainable diversion limit

- NSW may be found to be non-compliant with the Basin Plan extraction limit in the 2019/2020 water year.
- If this occurs NSW will need to address this with the MDBA and take any required action

The action to be taken in both cases is reducing extraction back to the limit



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The action to be taken in both cases is reducing extraction back to the limit



Current approach

Aim

- If extraction limits are exceeded then return average annual groundwater extraction to the limits

How

- Reduce **volume going into accounts** by announcing an available water determination less than 1ML/share
- Make assumptions to predict user take and trade behaviour.

How quickly

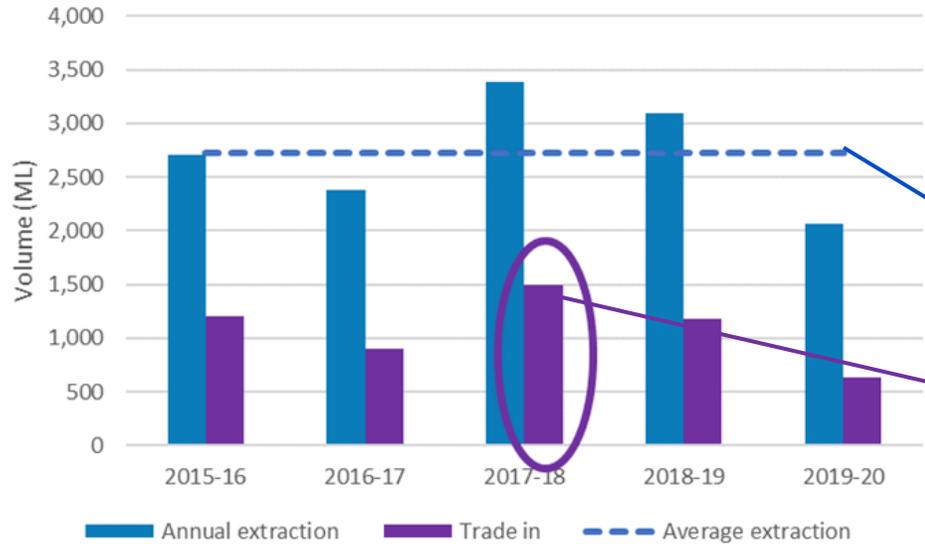
- Year 1 – return extraction back to compliance trigger
- Year 2 - return extraction back to extraction limit
- Year 3 – only if year 1 required available water determination less than 0.5 ML/unit share, only reduce to 0.5 ML/unit share in year 1 and extend time to return extractions back to limits to 3 years.



For the Upper Macquarie Alluvial: Extraction limit volume = 17,935 ML/yr Compliance trigger volume = 17,935 + 10% = 19,279 ML/yr

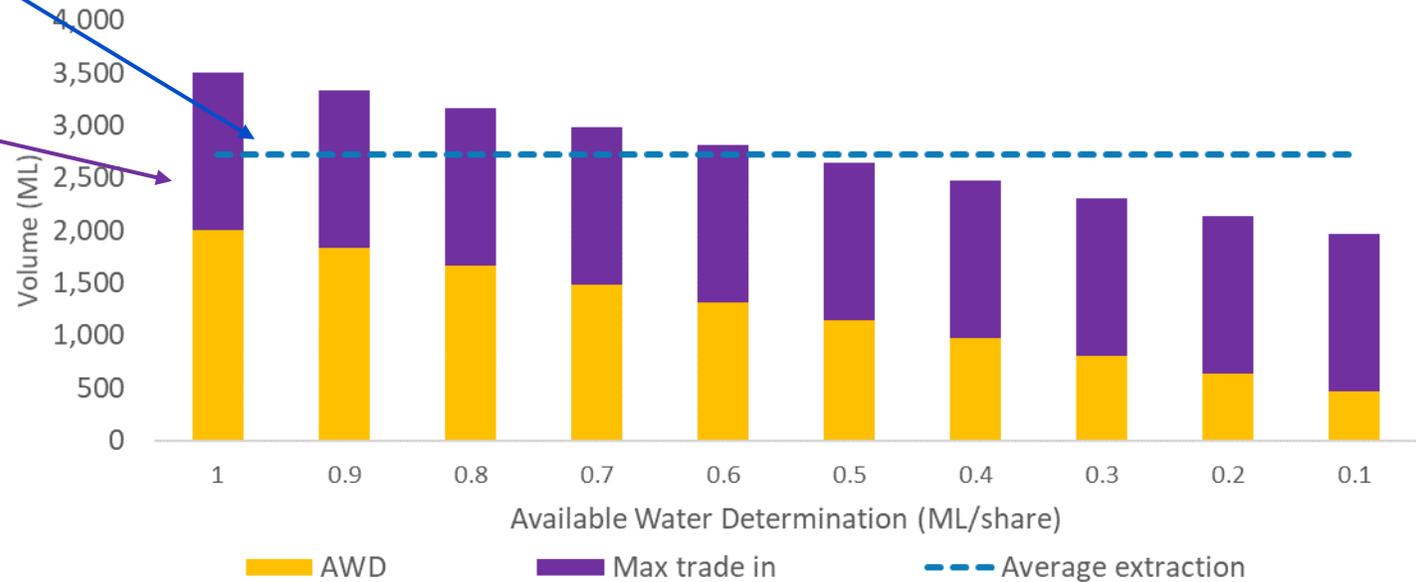


Current approach - predicting extraction behaviour



For each licence we assume:

- Likely extraction = average extraction over previous 5 years
- Likely maximum temporary trade in = maximum temporary trade in over previous 5 years



Example:

Access licence with 1,702 shares

Average usage = 2,750 ML/yr

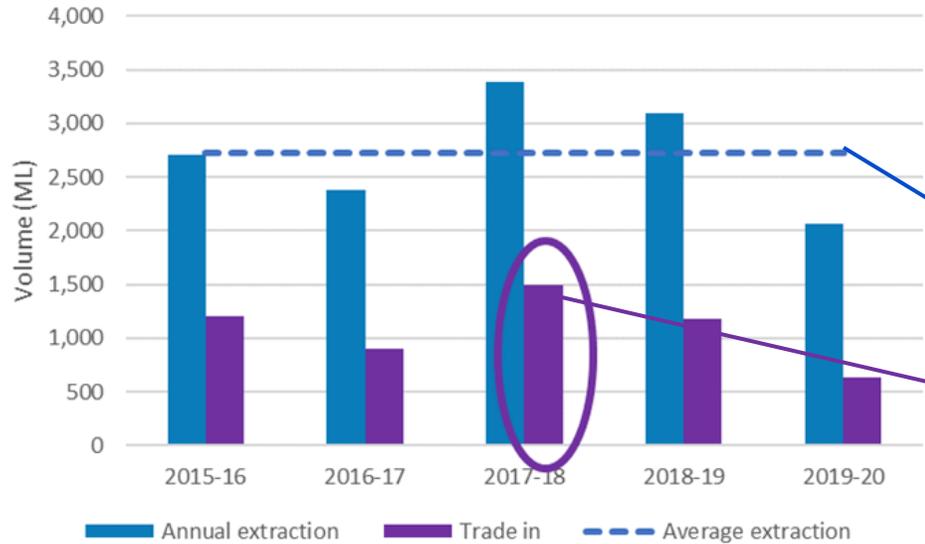
Maximum trade in = 1,500 ML



We use the result for each licence to then run scenarios to determine what available water determination will control extractions to the limit.

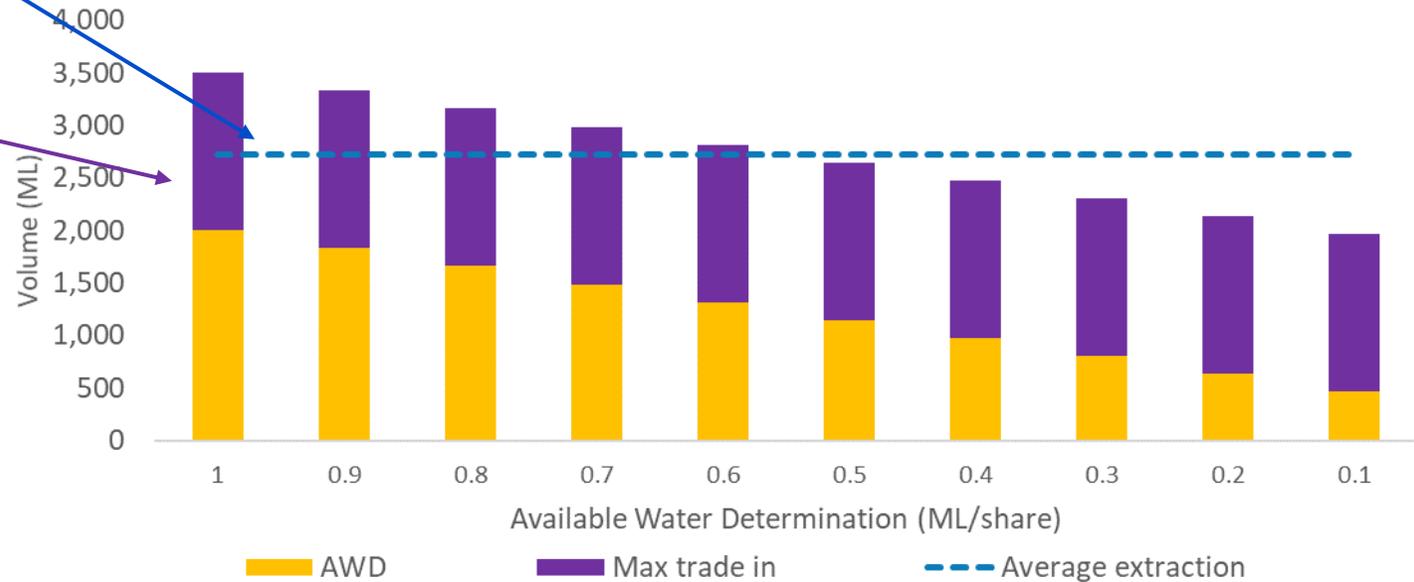


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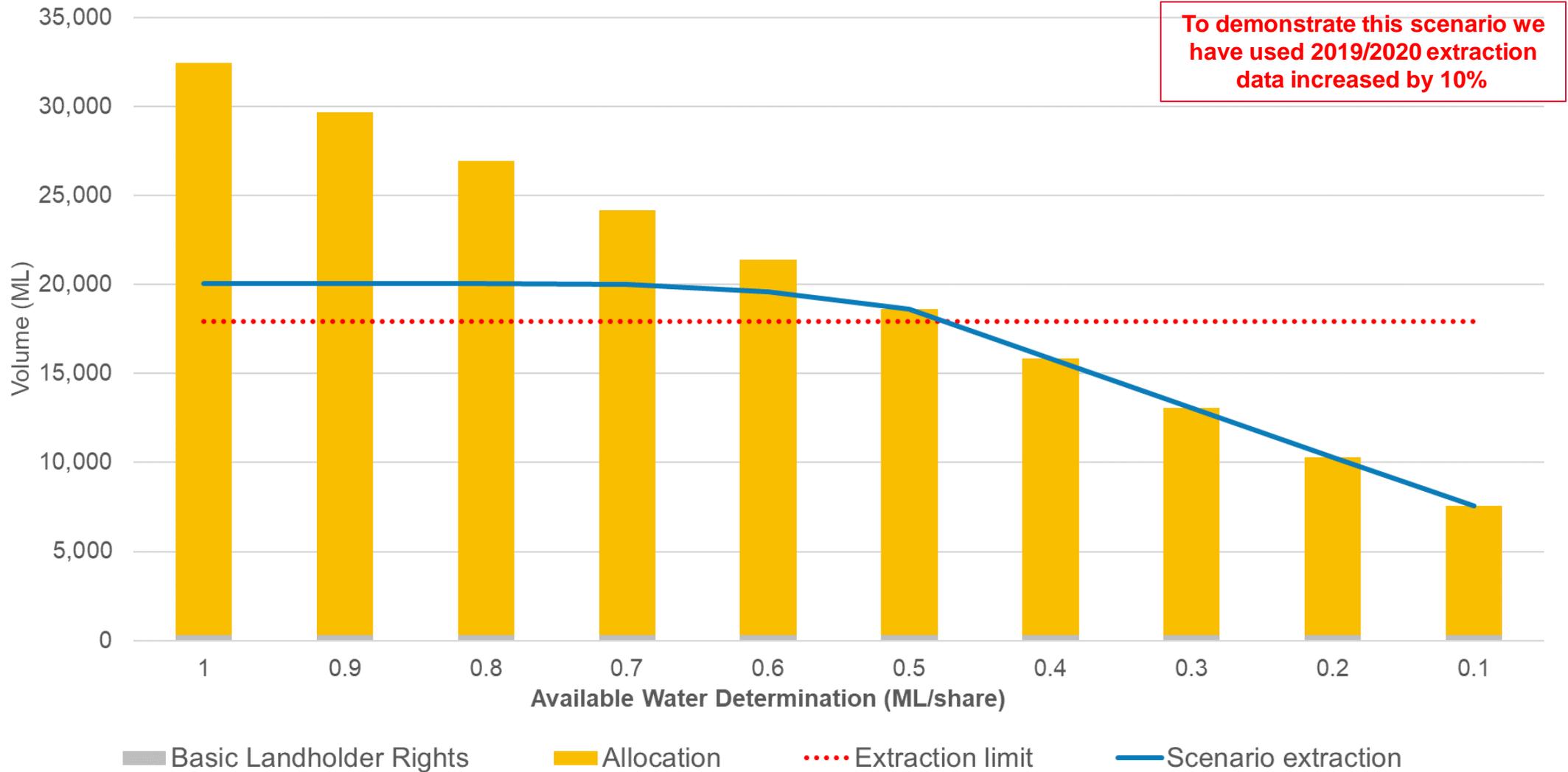
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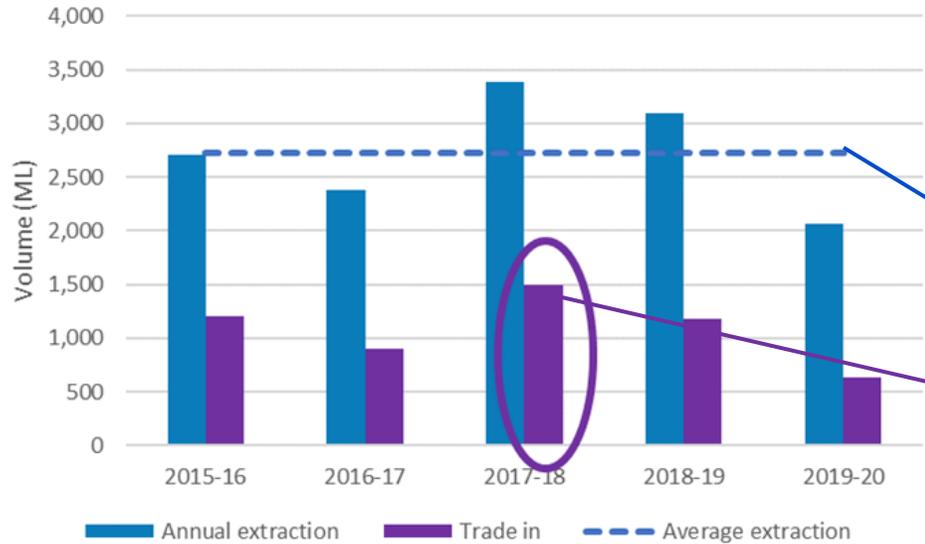
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Current approach – projected results

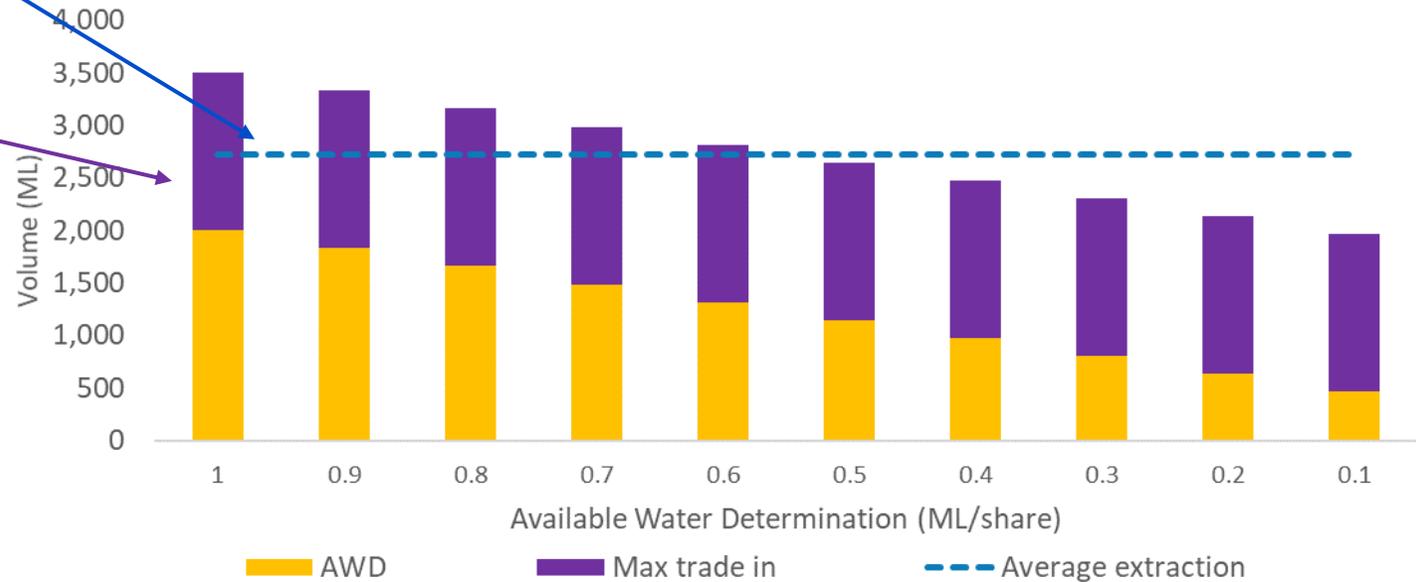


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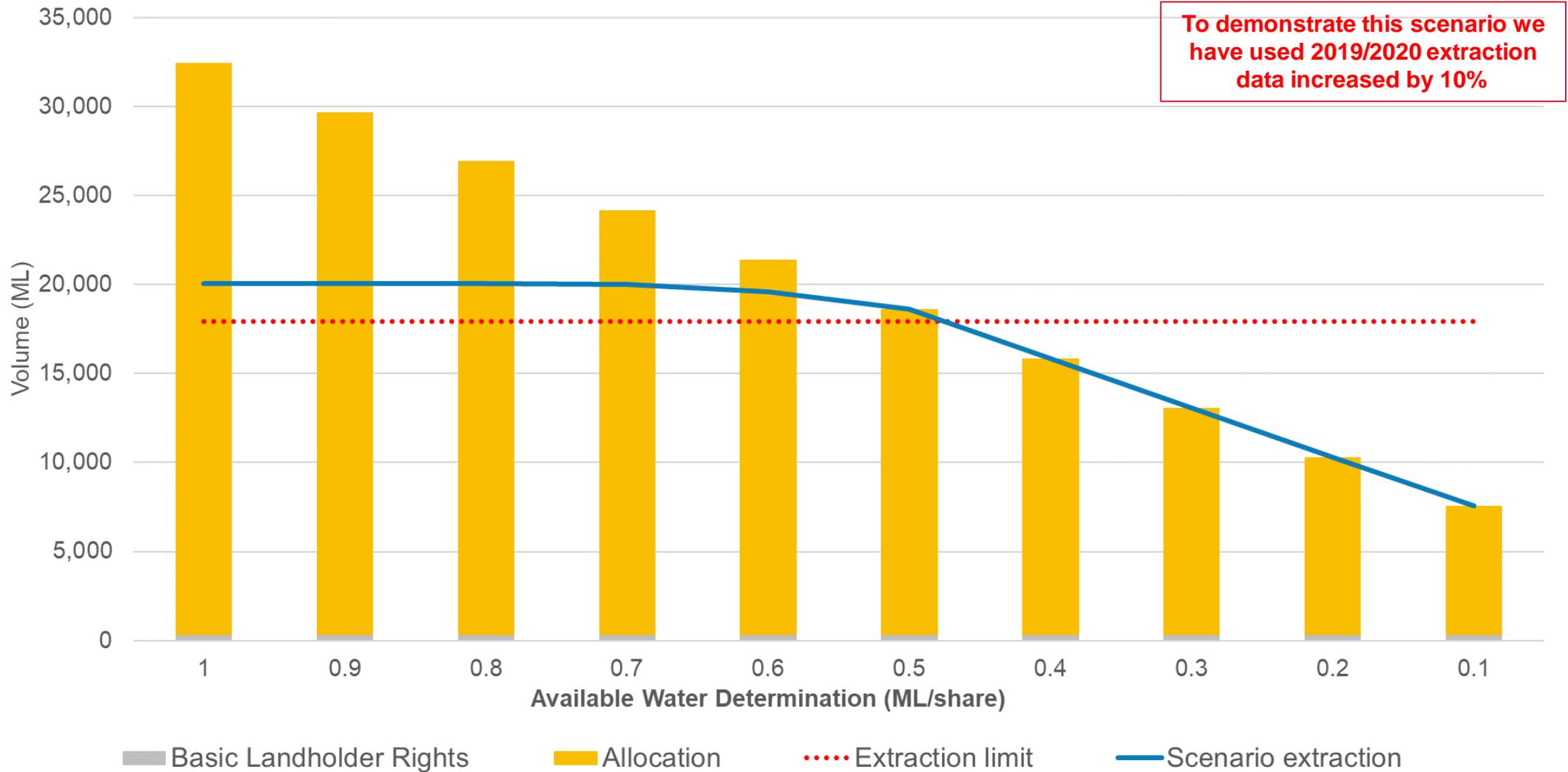
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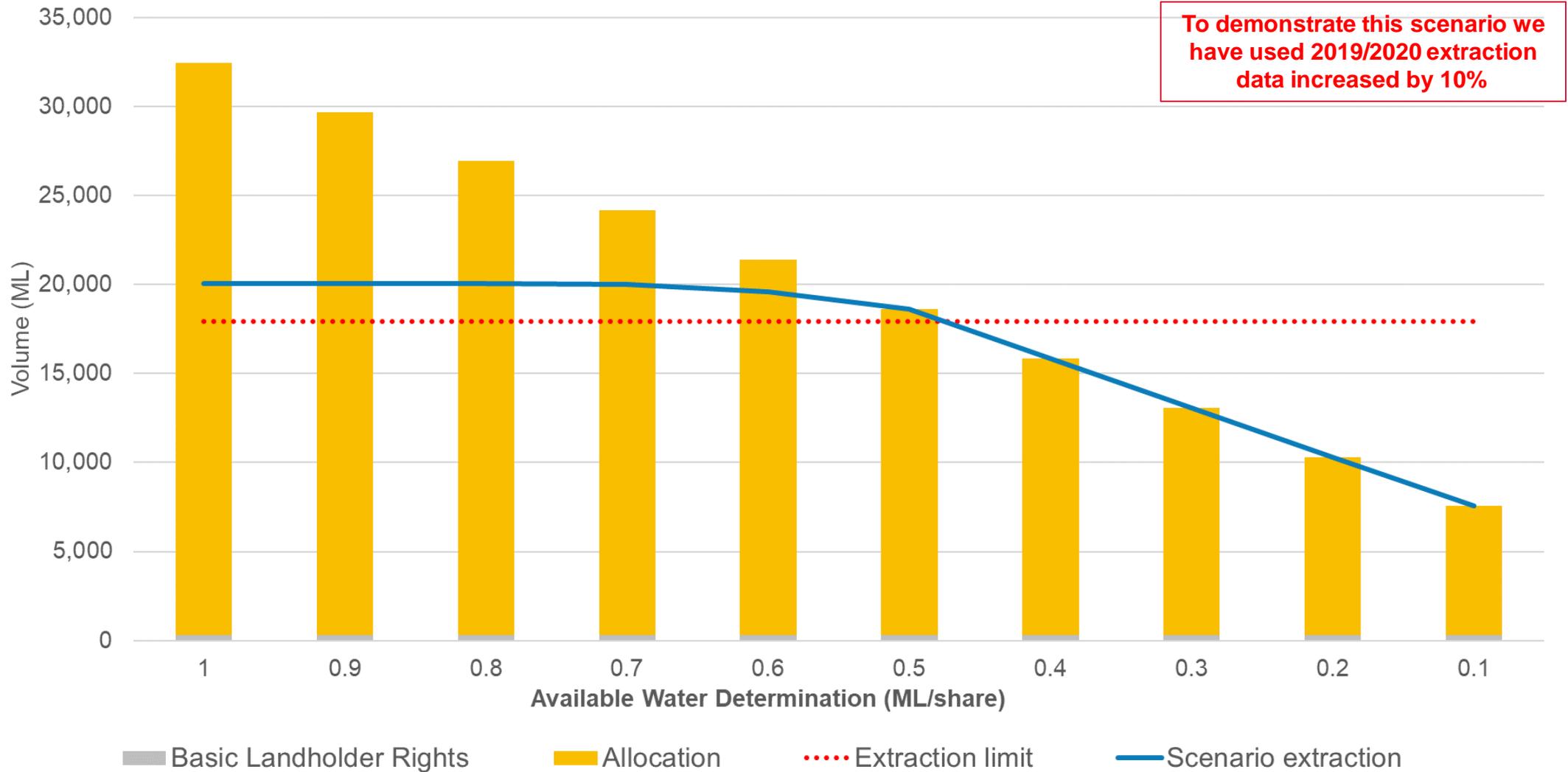
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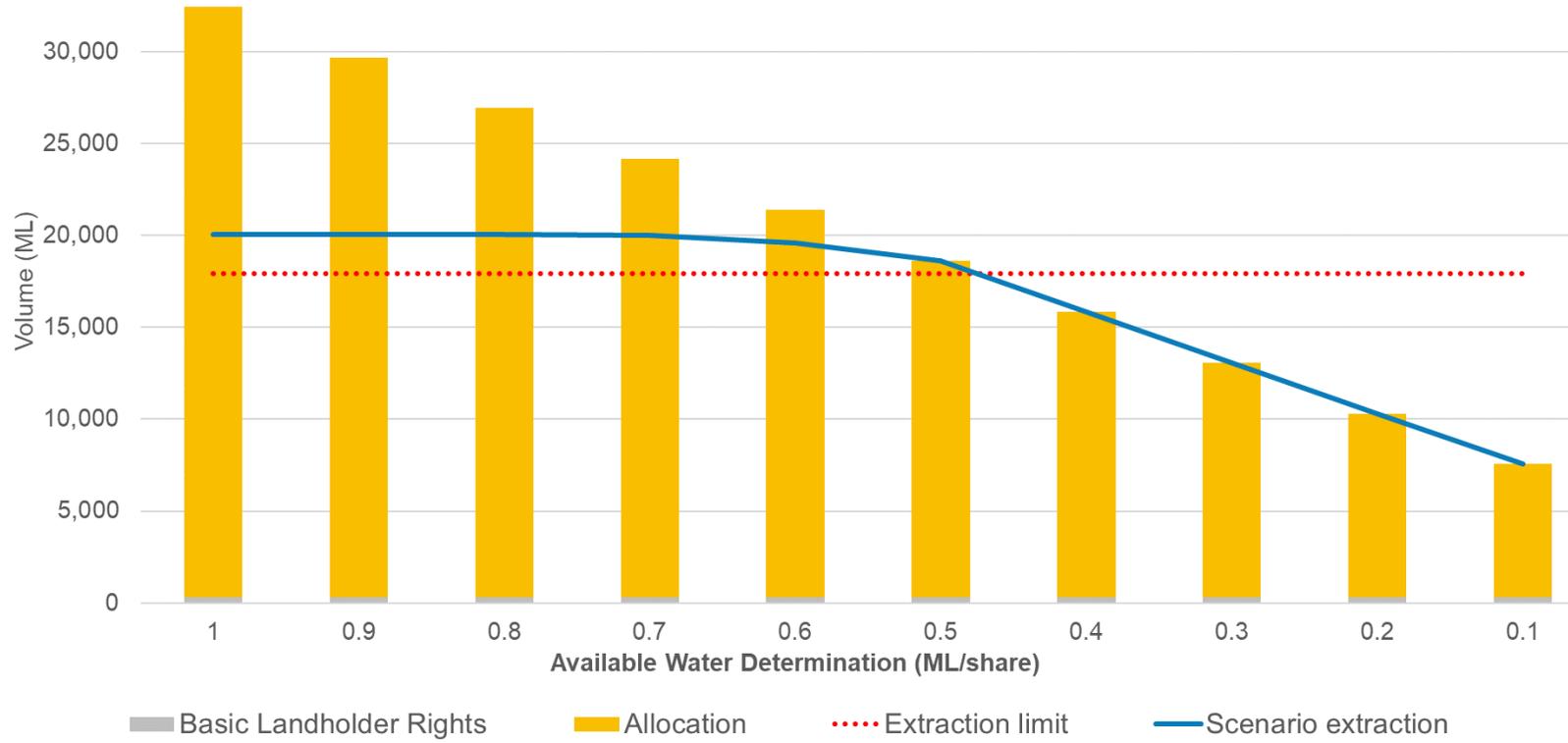


Current approach – projected results



Current approach – projected results

To demonstrate this scenario we have used 2019/2020 extraction data increased by 10%



Available Water Determination									
1	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1
112%	112%	112%	111%	109%	104%	88%	73%	58%	42%



Current approach – projected results

To demonstrate this scenario we have used 2019/2020 extraction data increased by 10%



Available Water Determination									
1	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1
112%	112%	112%	111%	109%	104%	88%	73%	58%	42%



Future approach

Aim

- If extraction limits are exceeded, then return average annual groundwater extraction to the limits

How

- Reduce **volume going into accounts** by announcing an available water determination of less than 1 ML/unit share
- Make assumptions to predict user take and trade behaviour,
OR
- Make no assumptions

How quickly

- Full return in Year 1

OR
- Over maximum 3 years

e.g. In year 1 – reduce to compliance trigger and then in year 2 reduce to the extraction limit OR have criteria for maximum step in Year 1 with full return no later than year 3



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Future approach – make no assumptions

- Make no assumptions about likely use or trade by individuals and instead assume everyone will use 100% of their shares.
- Then reduce available water determinations so total volume in accounts does not exceed extraction limit.



Comparing approaches

Returning extraction to compliance trigger	Option A - Making assumptions	Option B - Making no assumptions
Comparison example	If we were to return extractions: <ul style="list-style-type: none"> to the long-term average annual extraction limit compliance trigger (17,935 + 10% = 19,279 ML/yr) within one water year based on assumptions that individual licence holders would: Extract a volume = average past 5 years; Trade in a volume = maximum past 5 years; and all water available for purchase would be offered to the market; then..... 	If we were to return extractions: <ul style="list-style-type: none"> to the long-term average annual extraction limit compliance trigger (17,935 + 10% = 19,279 ML/yr) within one water year based on no assumptions, then.....
Action required	Available water determination - 0.63ML/share.	Available water determination - 0.55ML/share.
Effects on accounts	<ul style="list-style-type: none"> 16 accounts would have limited access compared to their average use and previous trade behaviour. Those impacted are likely to be most active users as well as those who trade most of their account. 	<ul style="list-style-type: none"> 23 accounts would have limited access compared to their average use and previous trade behaviour. Those impacted are likely to be most active users as well as those who trade most of their account.
Modelled Results for water market	Water available for purchase = 7,999ML Trade demand = 5,519ML More supply than demand in water market	Water available for purchase =6,645ML Trade demand = 5,937ML More supply than demand in water market

Note: These are modelled, not actual results. They are provided for comparative purpose only.



Comparing approaches

Returning extraction to extraction limit	Option A - Making assumptions	Option B - Making no assumptions
Comparison example	<p>If we were to return extractions:</p> <ul style="list-style-type: none"> to the long-term average annual extraction limit (17,935 ML/yr) within one water year based on assumptions that individual licence holders would: Extract a volume = average past 5 years; Trade in a volume = maximum past 5 years; and all water available for purchase would be offered to the market; then..... 	<p>If we were to return extractions:</p> <ul style="list-style-type: none"> to the long-term average annual extraction limit (17,935 ML/yr) within one water year based on no assumptions, then.....
Action required	Available water determination - 0.48 ML/share.	Available water determination - 0.48 ML/share.
Effects on accounts	<ul style="list-style-type: none"> 29 accounts would have limited access compared to their average use and previous trade behaviour. 25 would have potential to be impacted because there is insufficient water available to meet the anticipated demand for trade. Actual impact would depend on success in a tight water market. 	<ul style="list-style-type: none"> 29 accounts would have limited access compared to their average use and previous trade behaviour. 25 would have potential to be impacted because there is insufficient water available to meet the anticipated demand for trade. Actual impact would depend on success in a tight water market.
Modelled Results for water market	<p>Water available for purchase = 5,666ML Trade demand = 6,282ML More demand than supply in water market</p>	<p>Water available for purchase = 5,666ML Trade demand = 6,282ML More demand than supply in water market</p>

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What is your preference?

Method

Available water determination only - with assumptions to predict future extraction

Available water determination only - without assumptions to predict future extraction.



Assumptions

Continue with assumptions to predict future extraction?

Use different or additional assumptions around user and market behaviour to predict future extraction?

Make no assumptions about future use or trade - Licence holders allocated their 'share' of the extraction limit into their account?

Timing

Full return in Year 1 OR over maximum 3 years

- Return to the **extraction limit** in Year 1.
- Allow for adjustment - maximum 3 years to return to extraction limit, e.g.
 - Take action in year 1 to return to **compliance trigger** and action in year 2 to return to **extraction limit**
 - Take action over 3 years if available water determination in year 1 would be less than 0.5 ML/unit share



Where to from here

Consultation

Dec 2020 - Feb 2021

- Mail out to access licence holders
- Webpage
- Face to face sessions with recorded presentations and live Q & A

All feedback due
5 March 2021

Department develop
implementation
procedures

Implementation

July 2021

- Announcements



Have your say

Your input can be provided by:

- Complete the feedback form on our webpage at www.dpie.nsw.gov.au/managing-access-to-groundwater
- Download the feedback form from our webpage and email it to us at water.relations@dpie.nsw.gov.au
- Post your feedback to Groundwater Consult, [Suite 5/620 Macauley St, Albury NSW 2640](#).
- Provide feedback during a [face-to-face information session](#) in your local area.

Your feedback will need to be submitted by 5 March 2021.



Information sessions

Tuesday 9 February 2021

10.30am – 1.00pm

Club Dubbo

**82 Whylandra Street (Newell Highway)
Dubbo NSW 2830**



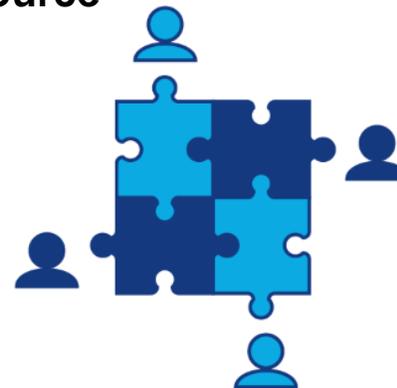
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The End

For more information go to

<https://www/dpie.nsw.gov.au/managing-access-to-groundwater>

