

# Border Rivers Regional Water Strategy Targeted Engagement Session

The Department of Planning and Environment (DPE) convened a targeted engagement session on the Border Rivers Regional Water Strategy on 9 June 2022 in Goondiwindi during the public exhibition period of the strategy. It provided the department with an opportunity to hear diverse perspectives ahead of finalising the strategy.

The session was run by an independent facilitator and attended by representatives of the following groups:

Moree Shire Council	Border Rivers Food and fibre
Inland Rivers Network	Murray Darling Basin Authority
Cotton Australia	Departmental and WaterNSW representatives
Department of Regional Development, Manufacturing and Water (Queensland)	Border Rivers Commission

The Commonwealth Environmental Water Holder and Toomelah Local Aboriginal Land Council were apologies.

## About the targeted session

The objective of the engagement session was to discuss shortlisted actions in the Border Rivers Regional Water Strategy – Consultation Paper. The session was structured by two themes:

- Supporting regional economic resilience and diversification
- Connectivity

Participants were asked general and specific questions on each theme and shortlisted actions throughout the session. A summary of the main discussion points is given below.

## Theme 1: Supporting regional economic resilience and diversification

### Summary of information

The department presented information on how a more variable or changing climate could create significant risks to the regional economy which is driven by agriculture and water availability. The critical challenge is to understand how to support industry climate adaptation and diversification. Options discussed included:

- better availability of information
- voluntary conversion of general security licences to high security licences

- industry diversification

## Key points raised by participants

The group was asked for their thoughts on how we can support the region's existing agricultural industry as well as diversification into new industries.

Comments from the group regarding diversification included:

- Licence conversions are an 'old school' approach. We need to have more flexible systems that let water users manage their risk. There could be merit in considering capacity sharing arrangements and reviewing continuous accounting and use of carry
- Industry needs to have the right tools to let water users and the water market decide how and where the water will be used rather than focussing on general security to high security licence conversion
- General security to high security licence conversions cannot create an impact on the remaining general security licences. It would be better to have a higher conversion rate to make sure there are no impacts on remaining licenses
- Diversification has been attempted for years. It needs to be realistic and focus on opportunities that can only be done in the region and not elsewhere.
- In Queensland there has been industry diversification in Lockyer Valley and Macintyre Brook into higher value crops. These industries have the capacity to pay for water
- In terms of communicating future changes to allocations under various climate scenarios it would be more useful for the department to present average end of year allocations and average allocation in September (when planning decisions are made) rather than the change to how often there is a full end of year allocation.
- Some participants queried why the inland diversion scheme was not shortlisted as it may be the only way to bring additional water into the region and support the industry. Some participants queried the assumptions behind the analysis. The department committed to publish more detail about how the inland diversion scheme was analysed.

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## Theme 2: Connectivity

### Connectivity objectives

The department presented details on the connectivity actions in the Western Regional Water Strategy and their relationship to water resource access in the Border Rivers valley.

The group was presented the proposed connectivity objectives:

- Reduce the impact of cease to flow periods
- Protect the first flush of water after an extended drought
- Support water quality and reduce risk of algal blooms forming
- Support fish migration

It was explained that connectivity is not intended to:

- maintain a constantly flowing river
- reduce the overall amount of water being taken out of rivers, consistent with limits set by the Basin Plan
- move productive use of water from one valley to another
- secure connectivity between groundwater and surface water

### Key points raised by participants

Participants were asked if they agreed with the proposed connectivity objectives.

- While there was a level of support for all proposed connectivity objectives, there was a slightly higher rating for the objectives that protected the first flush and supported fish migration
- There was a suggestion that the objectives may need to consider the requirements for the life cycles of smaller fish which are food sources for the larger fish species.

## Proposed draft triggers under s324 of the *Water Management Act 2000*

### Summary of information

The department presented draft triggers for temporary water restrictions (see table below) and initial analysis around the benefits and impacts of restricting lower priority licences in the northern tributaries and Barwon-Darling when Menindee Lakes is below 195 GL. For the Border Rivers valley, initial modelling predicts a 1% reduction in overall water take.

	Implementing	Lifting
Wilcannia	Cease-to-flow for 120 days	400 ML/day for 10 days (or 4,000 ML)
Bourke	Cease to flow for 60 days	972 ML/day for 10 days (or 9,720 ML)
Menindee Lakes	Lakes fall below 195 GL Up to 12 months critical human needs Wetted habitats in Lake Wetherell	When there is enough water to restart the river
Northern valleys	Stage 4 drought or: Cease to flow for 30 days: Border Rivers: below Goondiwindi Weir Gwydir River: below Yarraman Macquarie: below Warren Weir Namoi: below Mollee Weir	Resumption of flow targets for each of the Northern tributaries

### Key points raised by participants

Participants:

- suggested that the 30 days of cease to flow at Goondiwindi is a relatively short cease to flow period. The Department noted that the feedback from Mungindi Local Aboriginal Land Council was that 30 days may be too long because it is already quite dry at Mungindi at that point.
- suggested that the department should be aiming to protect the environment before it gets too dry
- noted that the storage of Menindee Lakes can be impacted by the management of the lakes which is outside of the control of the northern basin risk and should be noted as a management risk
- generally, participants expressed a preference for rules over temporary water restrictions but acknowledged that rules may not suit all circumstances. In these instances, temporary restrictions may still be needed.

### Are the proposed options effective in meeting the proposed connectivity objectives?

#### Summary of information

Participants were asked if the options around changing the timing of when supplementary licences could take water or using Held Environmental Water would be effective in meeting the proposed connectivity objectives.

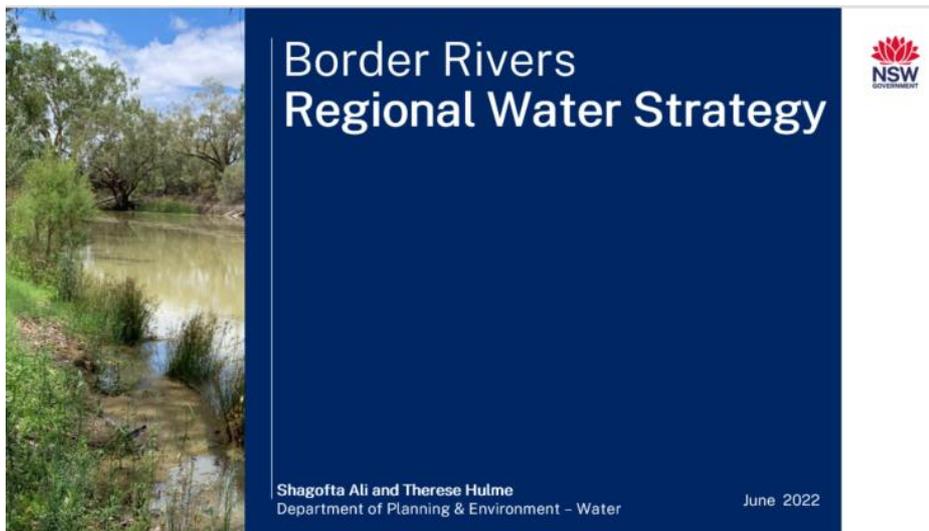
### Key points raised by participants:

- Queries whether an inland diversion scheme could support these connectivity objectives
- In between years, not just low and high flow events/years are important for flows and environment. Is Held Environmental Water for the river/valley or for downstream users/valleys?
- Short lived species, breed during the small flow events, so small events are still important as they can't survive the longer drought. Could small amounts of water be released for those species?
- With supplementary events, the water is still shared between consumptive uses and the environment. 50% of the flow is left in stream for the environment
- Overall river health should be considered and just adding more water will not help solve all problems. Complementary measures such as riparian land rehabilitation and fish passages should be considered in meeting these objectives
- If the aim is to get water downstream the government should consider strategic purchases of licences for downstream needs rather than continuing reforms.

### Attachments

- A. Presentation pack

# Attachment A: Session presentation

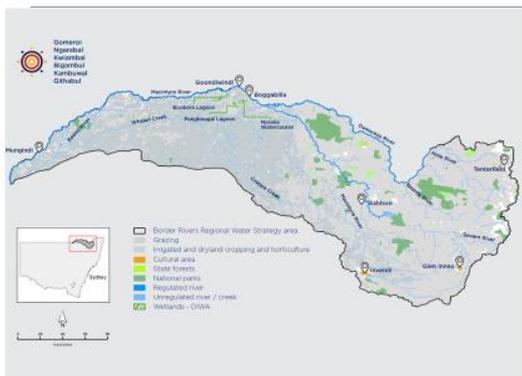


## Acknowledgement of Country

We acknowledge that today we meet on many Aboriginal lands.

We acknowledge the traditional custodians of the lands and we show our respect for elders past, present and emerging through thoughtful and collaborative approaches to our work.

## Border Rivers Regional Water Strategy



- Long-term strategies that inform future water planning and management
- Contain priorities and actions for:
  - towns and communities
  - industries
  - Aboriginal people
  - environment



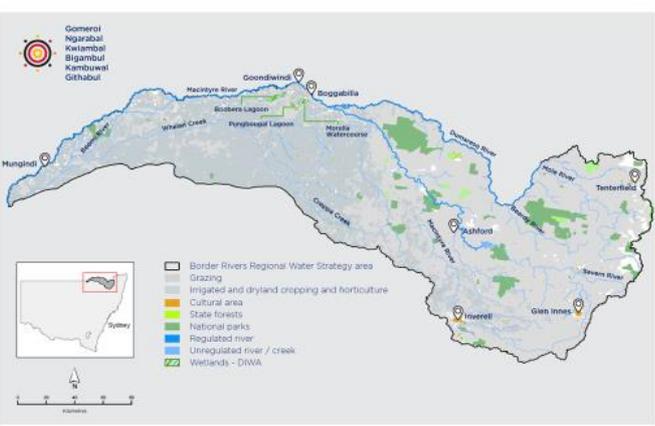
## Approach to developing regional water strategies



# Regional challenges

## Where should we focus first?

- Increased surface water security risks for towns in the region
- Risk of reduced water availability will impact the regional economy
- Dismantling barriers to Aboriginal water rights
- Sustaining the health and resilience of natural ecosystems
- Improving connectivity to support downstream needs





Today we want to discuss shortlisted actions using the following themes

- **Theme 1: Connectivity**
- **Theme 2: Supporting regional economic resilience and diversification**
- **Theme 3: Achieving multiple outcomes with the water we have**

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# Themes and shortlisted actions

Draft Border Rivers Regional Water Strategy



## Common questions

- How would this action benefit or impact the people or group you represent?
- What are the opportunities, emergent issues or risks related to implementing this action?
- Are there other actions that are more important or necessary to implement first?

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# Theme 1: Supporting regional economic resilience and diversification

Agriculture is region's largest employer and contributes significantly to regional economy

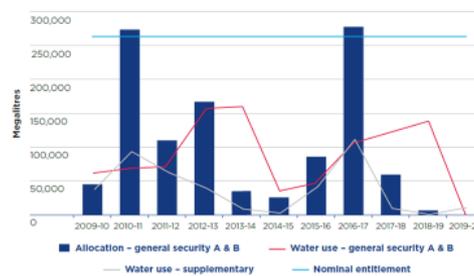
Agriculture's economic outputs varies in relation to water availability.

General security licences receive full allocation in 35% of years - some of the lowest reliability in the state

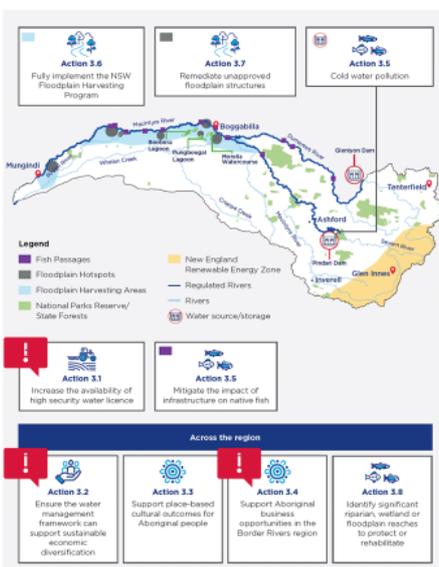
If nothing changes worst case climate change scenarios could result in:

- 45% decline in median annual inflows
- reduction in end-of-year general security B licence reliability to 10%
- 35% reduction in agricultural economic profit

General security and supplementary water availability and use in the Border Rivers valley 2009/10 to 2019/20



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## Make the region more resilient to climate variability

Agricultural industries will continue to underpin the regional economy in coming decades; however supporting future diversification could build regional resilience to increasing climate variability and extreme weather events.

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## Supporting economic resilience and diversification



1. **Support diversification**
  - Agricultural diversification: improve availability of high reliability licences to enable shift to higher value crops/industries
  - Economic diversification: to a less water dependant economy
  - Support Aboriginal business opportunities in the Border Rivers region
2. **Improve access to water availability information**
3. **Support existing industries through research and development**

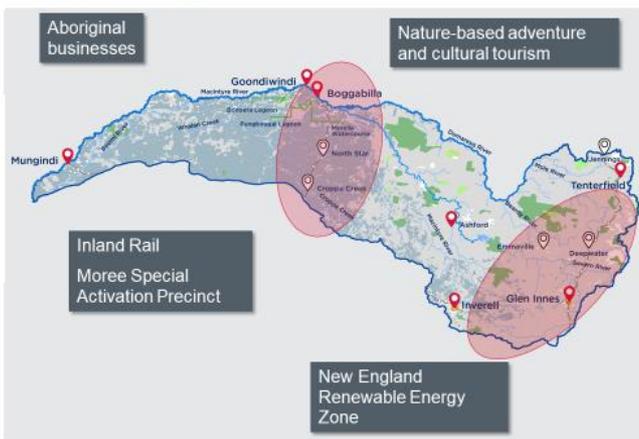
Options considered but did not progress:

- Mole River Dam
- Inland Diversion
- Raising Pindari Dam

Significant costs which did not outweigh the benefits of progressing

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## Supporting sustainable economic diversification



- How do we support the existing agricultural industry and diversification into new industries?
- What are the barriers to unlocking industries with low water reliance? (wall question)
- What are the economic opportunities for First Nations peoples?

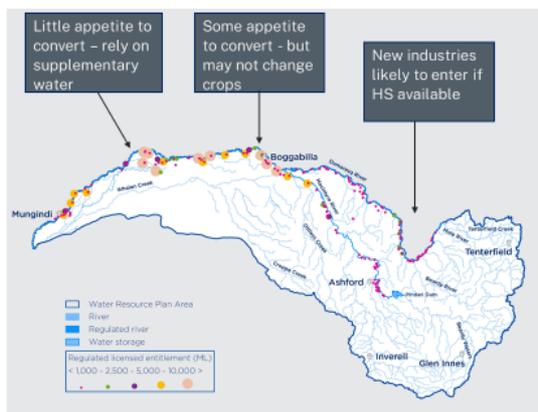
For more detail on this action see pages 67–69 and 72 of the Border Rivers Consultation Paper.

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## Increase the availability of high security licences



Conversion of 16 GL (7%) of general security licences to 4 GL high security licences



- Do you see there being appetite for conversion of general security licences to high security licences?

For more detail on this action see pages 63–66 and 130–134 of the Border Rivers Consultation Paper.

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## Improve public access to climate information and water availability forecasts

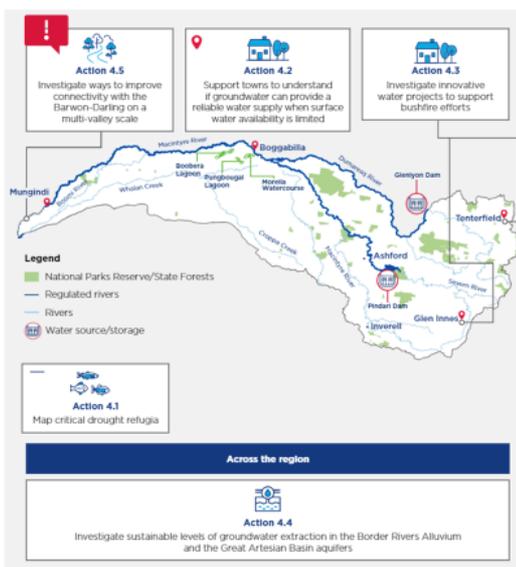
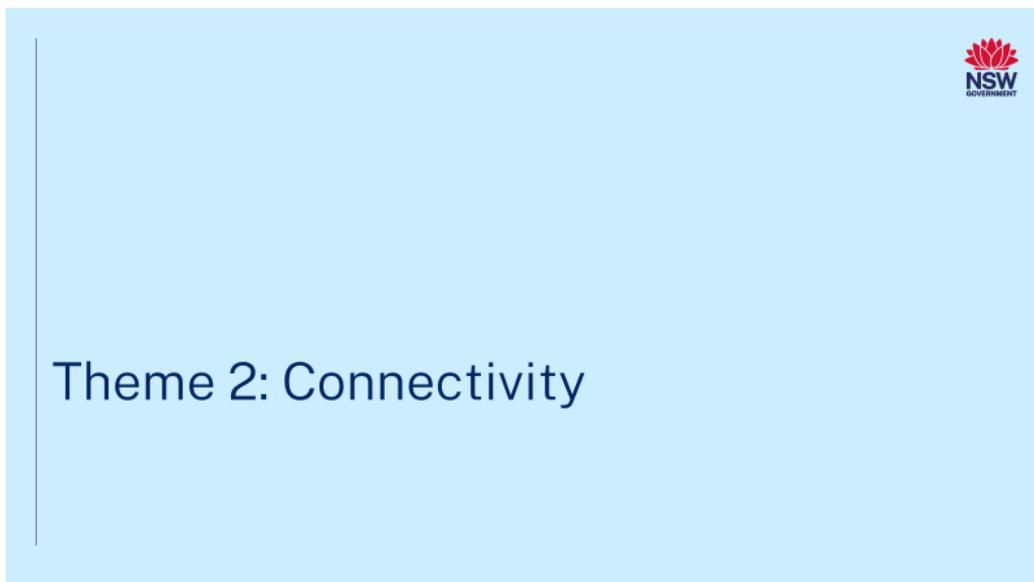


Improve existing platforms and products to provide information about water availability and climate change in forms that are suitable for water users and their business planning needs

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  - What water availability information and information products do you need to make decisions for your business?
  - Are there key points in the planning cycle when certain water information is more critical?
  - What else needs to be done to help industry adapt to a changing climate?

For more detail on this action see pages 39-41 of the Border Rivers Consultation Paper.

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We need to explore whether we need to enable water to flow across connected systems at important times.

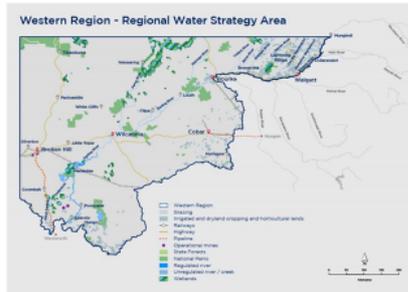
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## Connectivity actions: context



- The Barwon-Darling and Lower Darling rely on flows from upstream catchments
  - Border Rivers contributes 20% of BD inflows
- Connectivity is important during wet, dry and average years
- Connectivity during extended dry periods is most challenging.
  - Water management can influence short cease to flow periods, but not long dry periods
- Some stakeholders believe water is being taken by lower priority licences upstream when downstream needs have not been met



There is no clear agreement on what an acceptable level of connectivity is and how we can improve it

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## Connectivity objectives – what should we focus on?



### Proposed objectives

- Reduce the impact of cease to flow periods
- Protect the first flush of water after an extended drought.
- Support water quality and reduce risk of algal blooms forming
- Support fish migration.

### The work is not intended to:

- Maintain a constantly flowing river
- reduce the overall amount of water being taken out of rivers, consistent limits set by the Basin Plan
- move productive use of water from one valley to another
- secure connectivity between groundwater and surface water

## Proposed connectivity objectives



- Reduce the impact of cease to flow periods
- Protect the first flush of water after an extended drought
- Support water quality and reduce risk of algal blooms forming
- Support fish migration



- Do you agree with these objectives?
- If not, how do you propose we amend the objectives?

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## How can we achieve these objectives?



1. Use emergency powers in the legislation (temporary water restrictions)
2. Change the timing around when licence holders can take water
3. Major reform programs
  - Overhaul water sharing arrangements
  - New or larger infrastructure



### 1. Proposed draft triggers under s324 of the Water Management Act 2000

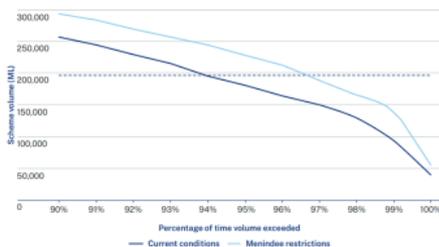


Objective: protect the first flush of water after an extended dry period		
	Implementing	Lifting
Wilcannia	Cease-to-flow for 120 days	400 ML/day for 10 days (or 4,000 ML)
Bourke	Cease to flow for 60 days	972 ML/day for 10 days (or 9,720 ML)
Menindee Lakes	<b>Lakes fall below 195GL</b> - Up to 12 months critical human needs - Wetted habitats in Lake Wetherell	When there is enough water to restart the river
Northern valleys	Stage 4 drought or: cease to flow for 30 days: • Border Rivers: below Goondiwindi Weir • Gwydir River : below Yarraman • Macquarie: below Warren Weir • Namoi: below Mollee Weir	Resumption of flow targets for each of the Northern tributaries

### 1. Initial analysis of 195GL Menindee target



Menindee Lakes volumes over time when applying restrictions when Menindee Lakes is below 195GL



Region	Reduction in overall water take
Border Rivers	1%
Gwydir	1%
Namoi	1%
Macquarie	No change
Barwon-Darling	Small reduction likely

**Modelling assumptions:**

- use total Menindee storage (not active) across all lakes.
- Restricted supplementary licences, B-Class licences, C-Class licences when the lakes were below 195GL and lifted when the lakes were above 250GL
- Data does not include last drought

## Temporary water restriction triggers



- Do you support the proposed draft triggers?
- If not, which ones don't you support and why?
- Would you prefer implementing triggers through rules rather than temporary water restrictions?

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### 2. Will restricting lower priority licences help meet downstream connectivity needs?



Target	Trigger for restrictions
<b>Menindee Lakes and Lower Darling</b> Protect the first flush and support drought recovery.	Restrictions could be implemented if Menindee Lakes Storage <sup>20</sup> is forecast to fall below 195 GL.  If releases have ceased below the Menindee Lakes, restrictions would not be lifted until the Lakes were forecast to have enough water to provide up to 12 months of water for human needs and allow the river to be restarted.
<b>Northern Valleys</b> Protect the first flush and support drought recovery.	Cease to flow for 30 days: <ul style="list-style-type: none"> <li>• Border Rivers: below Goondiwindi Weir</li> <li>• Gwydir River: below Yarraman</li> <li>• Macquarie: below Warren Weir</li> <li>• Namoi: below Mollee Weir.</li> </ul> Resumption of flow triggers are being developed for each of the Northern tributaries for lifting restrictions.
<b>Algal suppression</b> Preserve a flushing flow event to break up and disperse algal blooms.	To achieve a flow of 3,000 ML/day for 7 days at Wilcannia if flows are below the following triggers throughout the spring/summer period: <ol style="list-style-type: none"> <li>Walgett - 250 ML/d</li> <li>Brewarrina - 510 ML/d</li> <li>Bourke - 450 ML/d</li> <li>Wilcannia - 350 ML/d.</li> </ol>
<b>Fish migration</b> Preserve events needed for fish dispersal, spawning, and migration at appropriate times of the year.	Achieve the following: <ul style="list-style-type: none"> <li>• Dispersal and condition: 15,000 ML/d for 15 days at Bourke between July and September</li> <li>• Spawning: 15,000 ML/d for 15 days at Bourke between October and April</li> <li>• Migration: 14,000 ML/d for 15 days at Brewarrina between October and April.</li> </ul> These targets will be revised once fishways are installed.

We have looked at:

- Flows needed to meet connectivity objectives
- Whether changing the timing of water taken by lower priority licences helps improve downstream needs
- High level impact analysis

### 2. Will restricting lower priority licences help meet downstream connectivity needs?



Objective	Effectiveness in meeting objective	Impacts on diversions over the long term
Reduce cease to flow	N/A	N/A
Protect first flush	✓ 3% reduction in time Menindee Lakes is below 195GL	Initial estimate of potential change in overall water taken by licences: Border Rivers: 1% reduction
Algal suppression	✓	Changes in total long-term diversions: Border Rivers: 4% reduction
Fish migration	Minimal benefits	

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## 2. Can general security held environmental water help meet downstream needs?



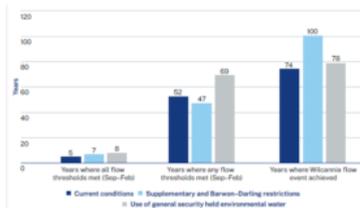
- Held environmental water could help meet lower flow targets, but limited by volume.
- Restrictions on supplementary licences could help meet higher flow targets but the timing may not align with needs



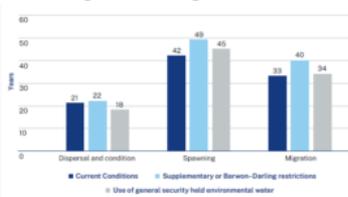
Note these are theoretical scenarios that compare using entire HEW portfolio with reducing all supplementary licences.

Removing all supplementary licences OR using the entire HEW portfolio will have impacts that have not been analysed

Algal suppression targets



Fish migration targets



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## Restricting lower priority licences and using held environmental water (GSE)



- Are these options effective in meeting the proposed connectivity objectives?
- What additional information or analysis do we need to undertake to understand trade-offs?
- What options should we consider to mitigate or offset impacts?

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## 2. Options for implementation



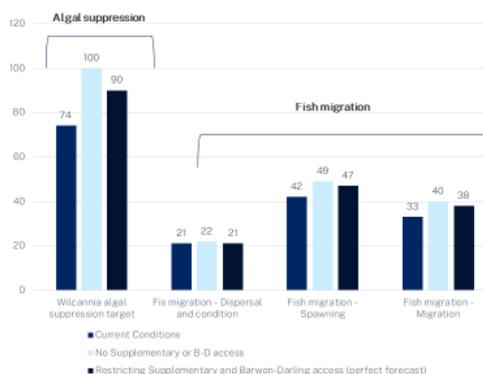
Approach relies on accurate forecasting:

- Impacts on licence holders depend on how accurately we can forecast.
- Benefits do not change substantially
- We cannot implement the targets by using flow forecasting alone

Options on a way forward if the targets are implemented:

- Rules based approach – clearer but less effective
- Operational decision making – more complex operationally but could be more effective

Number of years the algal suppression targets are met under a perfect forecasting scenario compared to a bookend scenario by removing all lower priority licences



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## Implementation approach



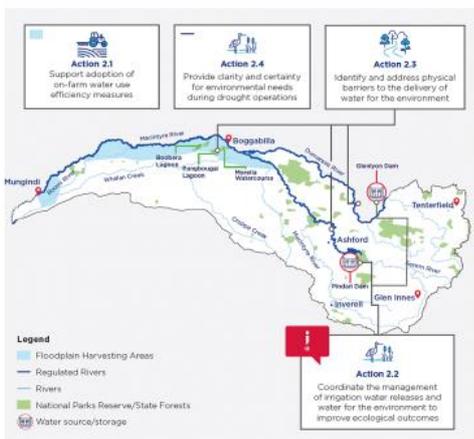
Do you have a preferred implementation approach?

- Rule based triggers (similar to resumption of flow rule in Barwon-Darling Water Sharing Plan)
- Operational decision making – more complex operationally but could be more effective

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## Theme 3: Achieving multiple outcomes with available water



To avoid long-term impact to the region we will have to meet the needs of all water user with less water.

Approximately 1% of surface water licences are held by environmental water holders.

All water, including natural events and irrigation releases, has potential to contribute ecological condition of rivers and wetlands. Benefits can be limited by:

- Operational and physical constraints
- Impacts of drought operation measures
- Public and private infrastructure limits fish movement and degrades habitats

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## Coordinate the management of irrigation water releases and water for the environment to improve ecological outcomes



Identify gaps in the frequency and adequacy of different flow types under the current climate and future climate scenarios and determine how to fill these flow gaps without significant on water users



- Do opportunities exist to coordinate releases of consumptive water and held environmental water to achieve environmental watering needs?
- Do you support adjustments to the operation of the regulated Border River leading into and during drought to improve environmental outcomes?
- Is this likely to impact on business operations?

For more detail on this action see pages 53 to 55 of the Border Rivers Consultation Paper.

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## Regional Water Strategy vision and objectives



Our vision for the Border Rivers is to support the delivery of healthy, reliable and resilient water resources for a liveable and prosperous region

	<p><b>Deliver and manage water for local communities</b></p> <p>Improve water security, water quality and flood management for regional towns and communities.</p>
	<p><b>Enable economic prosperity</b></p> <p>Improve water access reliability for regional industries.</p>
	<p><b>Recognise and protect Aboriginal water rights, interests and access to water</b></p> <p>Including Aboriginal heritage assets.</p>
	<p><b>Protect and enhance the environment</b></p> <p>Improve the health and integrity of environmental systems and assets, including by improving water quality.</p>
	<p><b>Affordability</b></p> <p>Identify least cost policy and infrastructure options.</p>