

Water in the Murray-Darling Basin

Key issues for the 58th Parliament

Cristy Gelling, BSc (Hons), MA, PhD

Research Analyst, Parliamentary Research Service

May 2023



Key points

- Managing the limited water resources of the Murray-Darling Basin is a contentious topic involving significant disagreements between governments and between stakeholder groups. Major reforms have aimed to restore environmental health and better manage competition for water in the Basin.
- The Basin Plan 2012 was the result of extensive negotiations between Basin states and the Australian Government. The Basin Plan includes legislative targets for recovery of water for the environment from consumptive uses, such as irrigation.
- The Basin Plan's 'Bridging the Gap' surface water recovery targets are 98% met. However, the Basin Plan's other surface water recovery targets will not be met by the June 2024 deadline. This includes the 450 GL/y target for efficiency projects and the 605 GL/y adjustment to targets made through sustainable diversion limit adjustment mechanism (SDLAM) projects.
- Water markets in the Basin are intended to encourage water to be put to its most financially valuable uses. A recent ACCC inquiry found significant deficiencies in water market information, oversight, and regulation, as well as underlying market inefficiencies. Some of the ACCC's recommendations are being implemented by the Australian Government in partnership with Basin states.
- The Australian Government's Inspector-General of Water Compliance has identified a number of compliance issues with the Basin Plan, including the licencing and measurement of floodplain harvesting. Floodplain harvesting is the capture and storage of floodwater on farms. Attempts by the previous NSW Government to bring floodplain harvesting into a water licencing framework were prevented during the 57th Parliament by 4 separate disallowances in the Legislative Council of regulations relating to the new framework. The NSW Government re-enacted the licencing framework in February 2023, during the parliamentary recess.

Contents

Key points	1
1. Introduction.....	4
2. Overview of legislative framework.....	9
2.1 <i>Water Management Act 2000</i> (NSW).....	9
2.2 <i>Water Act 2007</i> (Cth)	10
2.3 Government agency responsibilities.....	12
3. Water recovery targets	14
3.1 Sustainable diversion limits and recovering water for the environment	14
3.2 Types of water recovery	15
3.3 Basin Plan water recovery targets.....	17
3.4 Current status of water recovery targets	22
3.5 Government responses to target shortfalls.....	27
4. Water market reform	30
4.1 The purpose of water markets	30
4.2 How Basin water markets work.....	30
4.3 Current status of market reforms.....	34
4.4 Select market reform issues.....	38
5. Compliance with the Basin Plan.....	46
5.1 Recent basin compliance and integrity reforms	46
5.2 Select Basin Plan compliance issues for NSW	48

Acronyms	60
Appendices	61
1. Future water market reforms suggested by Australian Competition and Consumer Commission for evaluation.....	61
2. Timeline of key events related to floodplain harvesting licencing regulations and disallowances	63

1. Introduction

The Murray-Darling Basin (the Basin) produces around half of Australia's irrigated agricultural production and is home to 2.3 million people, including almost 100,000 people from 46 First Nations (Figure 1).¹ It supports a variety of unique ecosystems, 120 species of water bird, more than 50 species of native fish and 16 internationally significant wetlands.² Despite variable cycles of drought and flood, low rainfall and high evaporation rates mean the water these people and ecosystems depend on is often scarce.³

Government policies and infrastructure investments have long encouraged the development of agriculture in the Basin, which now accounts for 62% of the water used for irrigation in Australia.⁴ As irrigated agriculture has developed, overuse of water resources and altered river flows have contributed to environmental damage, such as species decline, wetland drying, salinity and poor water quality.⁵ In the last 4 decades, major reforms have aimed to restore environmental health and better manage competition for water.⁶

Particularly severe environmental and socioeconomic impacts during the Millennium Drought prompted the Australian Government to push for greater Commonwealth oversight and co-ordination of water management across the 5 Basin states and territories: ACT, NSW, Queensland, South Australia and Victoria (the Basin states). This resulted in the passing of overarching Commonwealth legislation (the *Water Act 2007*), a lengthy

¹ Australian Bureau of Statistics, [Gross Value of Irrigated Agricultural Production, 2017-18 financial year](#), released 31 May 2019, accessed 21 March 2023; Murray-Darling Basin Authority (MDBA), [Why the Murray-Darling Basin matters](#), n.d., accessed 21 March 2023; S Jackson et al., Empowering First Nations in the governance and management of the Murray-Darling Basin, in BT Hart et al. (eds), *Murray-Darling Basin, Australia: its future management*, Vol 1, Elsevier, p 313-338.

² MDBA, [Why the Murray-Darling Basin matters](#), n.d., accessed 21 March 2023.

³ MJ Stewardson, Hydrology of the Murray-Darling Basin in BT Hart et al. (eds), *Murray-Darling Basin, Australia: its future management*, Vol 1, Elsevier, p 47-73.

⁴ Australian Bureau of Statistics, [Water Use on Australian Farms, 2020-21 financial year](#), released 26 July 2022, accessed 21 March 2023; J Alexandra, [Evolving Governance and Contested Water Reforms in Australia's Murray Darling Basin](#), *Water*, 2018, 10(2)113, doi:10.3390/w10020113; CA Pollino et al. Rural and regional communities of the Murray-Darling Basin, in BT Hart et al. (eds), *Murray-Darling Basin, Australia: its future management*, Vol 1, Elsevier, p 21-28; WF Musgrave, Historical development of water resources in Australia: irrigation policy in the Murray-Darling Basin, in L Crase (ed), *Water policy in Australia: the impact of change and uncertainty*, Resources for the Future, 2008.

⁵ MDBA, [Guide to the Proposed Basin Plan: Technical Background](#), MDBA, Australian Government, 2010, p 28-31; Murray-Darling Basin Ministerial Council, [An Audit of Water Use in the Murray-Darling Basin](#), 1995; P Davies et al., [Sustainable Rivers Audit – SRA Report 1](#), Independent Sustainable Rivers Audit Group for the Murray-Darling Basin Ministerial Council, 2008; PE Davies et al., [Sustainable Rivers Audit 2](#), Independent Sustainable Rivers Audit Group for the Murray-Darling Basin, 2012; G Walker and IP Prosser, Water quality: Land use impacts on salinity, sediments, and nutrients, in BT Hart et al. (eds), *Murray-Darling Basin, Australia: its future management*, Vol 1, Elsevier, p 109-135.

⁶ J Alexandra, [Evolving Governance and Contested Water Reforms in Australia's Murray Darling Basin](#), *Water*, 2018, 10(2)113, doi:10.3390/w10020113; G Beeson, *A water story: learning from the past, planning for the future*, CSIRO Publishing, 2020, p 175-188; C Guest, *Sharing the water: one hundred years of River Murray politics*, Murray-Darling Basin Authority, 2017.

negotiation of limits to ‘water take’ (in the *Basin Plan 2012*) and a Commonwealth investment commitment of around \$13 billion. These reforms have proven to be both substantive and controversial, sparking protests, political scandals and numerous government and independent inquiries.⁷

Figure 1. Catchments of the Murray-Darling Basin



Source: [MDBA](#)

⁷ J Alexandra, [Evolving Governance and Contested Water Reforms in Australia’s Murray Darling Basin](#), *Water*, 2018, 10(2)113, doi:10.3390/w10020113; G Beeson, *A water story: learning from the past, planning for the future*, CSIRO Publishing, 2020, p 175-188; C Guest, *Sharing the water: one hundred years of River Murray politics*, Murray-Darling Basin Authority, 2017; BT Hart et al., Introduction to the Murray-Darling Basin system, Australia, in BT Hart et al. (eds), *Murray-Darling Basin, Australia: its future management*, Vol 1, Elsevier, p 1-17. D Montoya, [Water: Regulatory frameworks in rural NSW](#), NSW Parliamentary Research Service, 2010, p 38; D Montoya and E Ravlich, [Key Issues for the 57th Parliament – The Murray Darling Basin](#), NSW Parliamentary Research Service, 2019, p 48-52.

NSW makes up the largest part of the Basin by area. All or part of 15 of the Basin's 22 catchments are located in NSW, in both the northern and southern Basin (see Box 1 and Figure 2). The Parliament of New South Wales has dedicated considerable attention over its history to making and scrutinising legislation related to the Murray-Darling Basin. This paper provides an overview of the legislative framework governing water management in the NSW Basin and 3 current issues likely to be considered by the 58th Parliament:

- Water recovery targets
- Water market reforms
- Basin Plan compliance issues for NSW, including water resource plan accreditation and floodplain harvesting.

These issues are contentious, involving significant disagreements between irrigators and environmental advocates, upstream and downstream communities, irrigators and water traders, and between Basin governments, among many other key stakeholders. All 3 issues are now the subject of either intergovernmental negotiations or ongoing policy and legislative reforms.

Box 1. Differences between the northern and southern Basins

The Basin consists of 2 hydrologically distinct northern and southern regions (Figure 2). Rivers of the northern Basin drain into the Darling River, while rivers of the southern Basin drain into the Murray River. When flows are sufficient, the Lower Darling is connected to the Murray.

As a result of their environmental characteristics and development histories, the northern and southern Basins differ significantly in a number of ways, for example:

- The northern Basin is drier and flatter, and its rivers have higher evapotranspiration and more variable flows
- The northern Basin receives more rain in summer than in winter, and the southern Basin receives more rain in winter than in summer
- Rivers in the southern Basin are more regulated (that is, their flows are controlled by releases from major headwater dams)
- Most irrigation occurs in the southern Basin, where there is a greater density of farms and greater diversity of irrigated crops
- Irrigated agriculture in the northern Basin is dominated by cotton
- Most water trading occurs in the southern Basin.

Figure 2. Boundaries of the northern and southern Basins



Source: [MDBA](#)

These are not the only issues relating to the Basin that require ongoing legislative and policy focus. Other current issues in the Basin not covered in this paper include:

- [Climate change](#)
- [Constraints on delivery of water for the environment](#)
- [Cultural water entitlements for First Nations](#)
- [Increased water demand from horticulture](#)
- [Mass fish kills](#)
- [Groundwater use and regulation](#)
- [Socioeconomic conditions in the Basin](#)
- [Water allocations during drought.](#)

2. Overview of legislative framework

This section provides a brief overview of the 2 most central Acts governing water management in the NSW Basin:

- The [Water Management Act 2000](#) (NSW) (Water Management Act)
- The [Water Act 2007](#) (Cth) (Water Act).

2.1 Water Management Act 2000 (NSW)

The Water Management Act provides for the sustainable and integrated management of all NSW's water sources. It vests almost all water rights in the Crown and regulates the taking of water by a licencing process that separates water entitlements from land ownership.⁸ This separation allows the trading of water access rights and the formation of a water market.

A [water access licence](#) entitles its holder to a certain share of available water from a particular water management area or water source.⁹ The amount of water available for extraction under each type of water access licence is announced periodically throughout the year via ministerial orders known as [available water determinations](#).¹⁰

These water allocations are made in accordance with the relevant [water sharing plan](#), which for a particular area or water source sets out the rules for the sharing of water between consumptive uses (such as town water supply and irrigation), and the environment. Among other matters, water sharing plans must establish rules regarding water extraction limits, environmental water needs, basic landholder rights, water trading, the granting of licences and available water determinations.¹¹

The holder of a water access licence cannot actually use their water allocation unless authorised by relevant approvals. The type of approvals needed depend on the circumstances and can include water use approvals (which authorise use of water at a particular place for a particular purpose, such as irrigation) and water supply work approvals (such as for construction and operation of a pump).¹²

⁸ *Water Management Act 2000* (NSW), [s 392](#), [s 393](#), [s 55A-88](#);

⁹ *Water Management Act 2000* (NSW), [s 56](#).

¹⁰ *Water Management Act 2000* (NSW), [s 59](#).

¹¹ *Water Management Act 2000* (NSW), [s 20](#).

¹² *Water Management Act 2000* (NSW), [Ch 3 Pt 3](#).

A key piece of subordinate legislation under the Water Management Act is the Water Management Regulation 2018, which specifies many details of the licencing framework as well as requirements for metering water use, among other matters.¹³

2.2 Water Act 2007 (Cth)

The Water Act enables the Australian Government, in conjunction with the Basin states, to coordinate water management across the Basin in the national interest. In 2008 each of the Basin states referred certain constitutional powers to the Commonwealth to allow this Basin-wide management.¹⁴ In addition, the Water Act includes the [Murray-Darling Basin Agreement](#), a long-standing intergovernmental agreement on how water in the Murray River is to be shared between NSW, South Australia and Victoria.¹⁵

The Water Act established the [Murray-Darling Basin Authority](#) (MDBA) to oversee water resource planning in the Basin. Among several other functions, the MDBA is responsible for preparing and implementing an integrated basin plan that sets environmentally sustainable limits on the amount of water that may be taken from the Basin.¹⁶ After extensive negotiations between the Australian Government and the Basin states, the [Basin Plan](#) commenced in 2012. Full implementation of the Basin Plan is due in 2024.¹⁷

The Water Act also established the [Commonwealth Environmental Water Holder](#) (CEWH) to manage the Australian Government's portfolio of water used for environmental outcomes.

In 2021 an amendment to the Water Act established the [Inspector-General of Water Compliance](#) (IGWC) to provide independent oversight and monitoring of compliance with the Basin Plan.¹⁸

2.2.1 The Basin Plan 2012 (Cth)

The Basin Plan specifies the requirements for [water resource plans](#) (WRPs), which are legislative instruments that set the water management rules for a particular area (Figure 3). Among other matters WRPs must include provisions regarding key environmental assets and ecosystem functions, risks to water resources, planning for environmental watering, water quality management plans, water trading rules, measuring and monitoring, responses to extreme events (such as drought), and the objectives and outcomes desired by

¹³ [Water Management \(General\) Regulation 2018](#) (NSW).

¹⁴ For NSW the relevant Act is the [Water \(Commonwealth Powers\) Act 2008](#) (NSW).

¹⁵ [Water Act 2007](#) (Cth), [Sch 1](#).

¹⁶ [Water Act 2007](#) (Cth), [s 172](#), [s 20-22](#); another major function of the MDBA is operation of the River Murray system on behalf of NSW, Victoria and South Australia (MDBA, [Who manages the Murray-Darling Basin](#), updated 24 September 2020, accessed 28 March 2023).

¹⁷ MDBA, [Basin Plan timeline](#), updated 25 January 2022, accessed 18 January 2023.

¹⁸ [Water Legislation Amendment \(Inspector-General of Water Compliance and Other Measures\) Act 2021](#) (Cth).

Indigenous people.¹⁹ There are 33 WRPs required by the Basin Plan, each covering surface water, groundwater or both.²⁰

WRPs are prepared by the states and assessed by the MDBA against Basin Plan requirements. If a WRP meets these requirements, the MDBA will recommend it to the Australian Government Minister for Water for accreditation. The 20 [WRPs prepared by the NSW Government](#) each include one or more water sharing plans made by NSW under the Water Management Act.²¹

The Basin Plan specifies long-term average [sustainable diversion limits](#) (SDLs) that determine how much water can be taken from a particular area for consumptive uses.²² These areas are known as SDL resource units. There are one or more SDL resource units in a WRP area, with a total of 29 surface water resource units and 80 groundwater resource units across the Basin.²³

The Basin-wide SDL is the sum of the SDLs for all resource units.²⁴

The Basin Plan also provides for:

- An environmental watering plan²⁵
- A water quality and salinity management plan²⁶
- Water required to meet critical human needs²⁷
- Water trading rules.²⁸

In addition to agreeing to the provisions of the Basin Plan, in 2013 the Basin states and the Australian Government entered into the Intergovernmental Agreement on Implementing Water Reform in the MDB. The agreement outlines their commitments to implementing the Basin Plan and specifies certain funding and implementation arrangements, including for water recovery targets.²⁹

¹⁹ *Basin Plan 2012* (Cth), [Ch 10](#).

²⁰ *Basin Plan 2012* (Cth), [Ch 3](#).

²¹ NSW Department of Planning and Environment, [Planning process](#), n.d., accessed 18 January 2023; not all NSW WRPs are accredited yet.

²² *Basin Plan 2012* (Cth), [Ch 6](#).

²³ MDBA, [Maps and spatial data](#), updated 6 April 2021, accessed 13 April 2023.

²⁴ *Basin Plan 2012* (Cth), [s 6.04 \(2\)](#).

²⁵ *Basin Plan 2012* (Cth), [Ch 8](#).

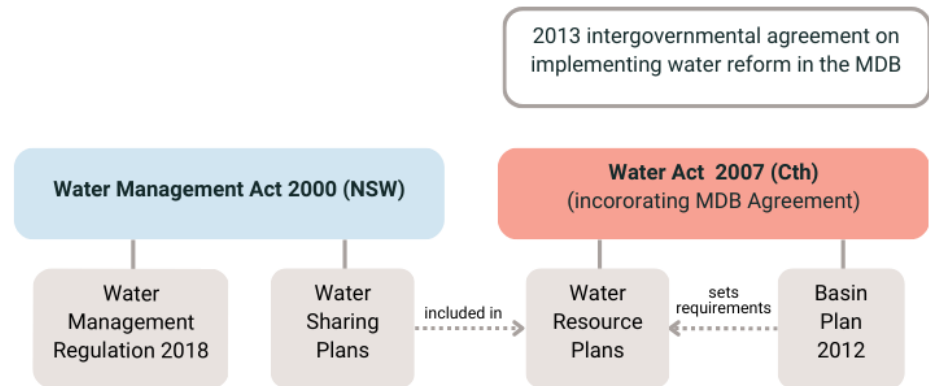
²⁶ *Basin Plan 2012* (Cth), [Ch 9](#).

²⁷ *Basin Plan 2012* (Cth), [Ch 11](#).

²⁸ *Basin Plan 2012* (Cth), [Ch 12](#).

²⁹ [Intergovernmental Agreement on Implementing Water Reform in the Murray Darling Basin](#), 2019.

Figure 3. Key legislation and agreements governing water in the NSW Murray-Darling Basin



Source: NSW Parliamentary Research Service

Note: Only select subordinate legislation is shown for each Act.

2.3 Government agency responsibilities

Several national and NSW government bodies have responsibility for managing water and administering water law in the Basin. Some of the functions of these bodies are summarised in Table 1.

Table 1. Select functions of NSW and Australian Government bodies in water management

Agency	Function
NSW Government³⁰	
Department of Planning and Environment—Environment and Heritage	Environmental water management
Department of Planning and Environment—Water	Policy, planning, regulation, intergovernmental negotiations, water allocations
Independent Pricing and Regulatory Tribunal (IPART)	Regulation of prices set by WaterNSW and other public water utilities
Land Registry Services	Maintenance of NSW water access licence registry
Natural Resources Access Regulator (NRAR)	Compliance monitoring and enforcement of NSW water laws
WaterNSW	System operation, management of licencing regime and water registers, trade approvals
Australian Government	
Australian Competition and Consumer Commission (ACCC)	Monitoring of and advising on water charge and water market rules, enforcement of compliance with consumer law
Bureau of Meteorology (BoM)	Collection and dissemination of water information across Australia, including storages, allocations and trading
Commonwealth Environmental Water Holder (CEWH)	Management of Commonwealth environmental water holdings
Department of Climate Change, Energy, the Environment and Water (DCCEEW)	Policy, planning, regulation, intergovernmental negotiations
Inspector-General of Water Compliance (IGWC)	Monitoring and independent oversight of Commonwealth and Basin state agencies' compliance with the Water Act and related intergovernmental agreements
Murray-Darling Basin Authority (MDBA)	Basin Plan development, River Murray system operation, research, monitoring, advising minister on WRP accreditation
Productivity Commission	Assessment of progress against the Basin Plan every 5 years
Multi-jurisdiction bodies	
Basin Officials Committee	Senior officials representing each Basin government. Advises and implements decisions of the Ministerial Council. Advises the MDBA on certain matters
Murray-Darling Basin Ministerial Council	Water ministers from each Basin government. Determines policy outcomes and objectives of common interest (except issues provided for in the Basin Plan)

³⁰ The full division of responsibilities is set out in detail in the [Roles and Responsibilities Agreement between NSW Department of Planning and the Environment, WaterNSW and NRAR](#).

3. Water recovery targets

3.1 Sustainable diversion limits and recovering water for the environment

The most contentious aspect of the Basin Plan has been recovering water for the environment. This is implemented using a set of sustainable diversion limits (SDLs) that came into effect in 2019.³¹ SDLs limit how much water can be taken, as a long-term average, for consumptive use from each resource unit and from the Basin as a whole.

The 'gap' between these SDLs and estimates of the water use limits that were applicable before the Basin Plan (baseline diversion limits, or BDLs) is the amount of water that must be recovered for the environment (Figure 4).³²

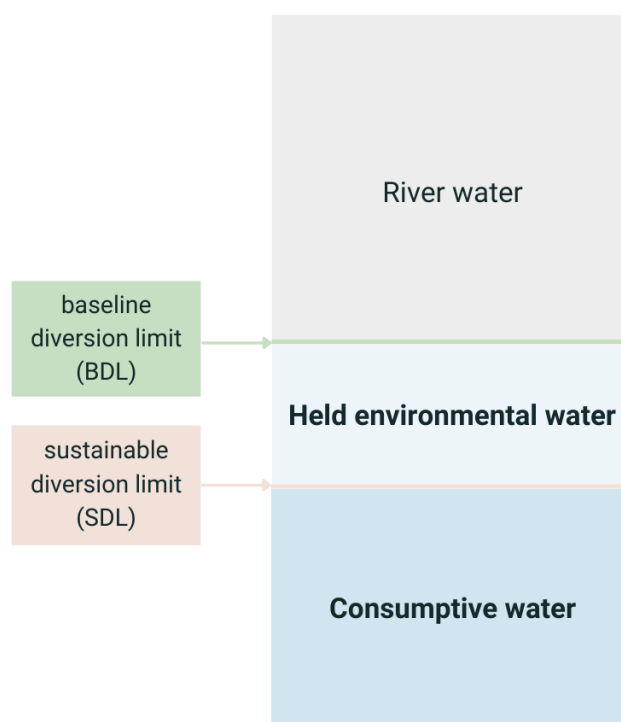
This section describes the Basin Plan's various water recovery targets, their current status and government responses to target shortfalls. It does not address debates about the socioeconomic and environmental outcomes of water recovery or whether the Basin Plan's targets have been set at the right level. In general, many irrigators argue that current targets are too high and harmful to rural communities, while many environmental advocates argue that current targets are too low to protect the Basin's environment.³³

³¹ The SDL system replaced the previous system of limits under the 1995 cap on surface water diversion; MDBA, [Transitioning from the Cap to sustainable diversion limits](#), updated 22 December 2021, accessed 2 March 2023.

³² MDBA, [Sustainable diversion limits](#), updated 23 December 2021, accessed 2 March 2023.

³³ For example, the NSW Irrigators' Council's position is that there should be no further reductions in the consumptive pool of water (NSW Irrigators' Council, [Basin Plan Policy Position Paper](#), November 2022, p5), while the Wentworth Group of Concerned Scientists considers the Basin Plan's water recovery target insufficient to restore environmental health to the Basin (Wentworth Group of Concern Scientists, [Response to the Murray-Darling Basin Royal Commission Report](#), 2019, p2).

Figure 4. Sustainable diversion limits cap the amount of water that can be taken for consumptive uses



Source: Adapted from [MDBA](#).

Notes: River water includes discharge to the sea, conveyance losses, pre-existing held environmental water and planned environmental water (that is, passively managed water left in the river after the operation of environmental rules for users and system managers). Held environmental water is water that is recovered and then held by a government environmental water holder for release according to an environmental watering strategy.

3.2 Types of water recovery

There are several different methods used to recover water, including water buybacks, supply measures and efficiency measures.

Water buybacks refers to the government purchasing water entitlements for the environment from willing sellers.³⁴ These entitlements are transferred to a government

³⁴ DCCEEW, [Australian Government water purchasing in the Murray-Darling Basin](#), n.d., accessed 2 March 2023.

environmental water holder for use in environmental management.³⁵ This reduces the amount of water available for consumptive use.

A **supply measure** is an action that increases the supply of water available for consumptive use.

There are 2 types of supply measures. The first type are measures that use less environmental water to achieve equivalent outcomes (such as by improving infrastructure for delivery of environmental water). Some of these are also **constraints measures**. Constraints measures remove or ease constraints to the effective delivery of environmental water, for example by raising bridges to allow higher river flows and purchasing easements to allow flooding of private land.

The second type of supply measure makes more water available overall, for example by reducing evaporative loss in a water storage.

Both types of supply measures can be used to increase SDLs.

An **efficiency measure** reduces the amount of water needed for consumptive purposes, for example by:

- Lining irrigation delivery channels to prevent seepage
- Switching to more water efficient drip irrigation systems
- Upgrading stormwater infrastructure to reduce water losses.³⁶

In contrast to supply measures, efficiency measures can be used to decrease SDLs. Although supply and efficiency measures adjust SDLs in opposite directions, both types of measures aim to minimise negative impacts on consumptive uses while in principle still achieving the Basin Plan's environmental outcomes.

Buybacks, supply measures and efficiency measures are all intended to have equivalent outcomes, but in practice they can have significantly different socioeconomic and environmental impacts. For example, many irrigator groups argue buybacks harm rural communities by increasing water prices and decreasing agricultural production.³⁷ Many

³⁵ DCCEEW, [Environmental water holdings](#), n.d., accessed 2 March 2023. Aside from the CEWH, environmental water in NSW is held by the NSW Department of Planning and Environment and the Living Murray program (NSW Department of Planning and Environment, [Current Water Holdings](#), updated 3 March 2022, accessed 22 March 2023).

³⁶ *Basin Plan 2012* (Cth), [Ch 7](#).

³⁷ For example, NSW Irrigators' Council, [Submission to Inquiry on Water Legislation Amendment \(Inspector-General of Water Compliance and Other Measures\) Act 2021](#), 2021, p 14.

environmental advocates, however, argue that buybacks are the most effective and least expensive method for recovering water for the environment.³⁸

3.3 Basin Plan water recovery targets

There are several interrelated Basin Plan water recovery targets, and these have been adjusted since they were originally negotiated and established in the Basin Plan in 2012. Only 2 groundwater SDL resource units have Basin Plan water recovery targets, and these are located in Queensland, so this section focuses only on surface water recovery targets.

3.3.1 Bridging the Gap target

The Water Act requires SDLs to reflect the amount of water that can be taken without compromising key aspects of the environment.³⁹ In 2010 the MDBA published an assessment of the amount of additional surface water required for the environment, finding that consumptive use would need to be reduced from baseline levels by a long-term average of between 3,000 and 7,600 gigalitres per year (GL/y).⁴⁰ Judging that reductions exceeding 4,000 GL/y would have severe socioeconomic consequences, the MDBA only gave further consideration to reduction targets of 3,000-4,000 GL/y. This would represent an estimated 22-29% reduction in diversions for consumptive use compared to the baseline and an estimated 13-17% decrease in the gross value of irrigated agriculture production.⁴¹

Publication of these assessments by the MDBA in 2010 prompted anger and protests among Basin communities, in part due to the size of the proposed reduction targets.⁴² In 2011 the MDBA proposed a reduction target of 2,750 GL/y.⁴³ The MDBA attributed this revision to a change in modelling methods and the adoption of a 'triple bottom line' approach to balancing environmental, social and economic outcomes.⁴⁴

In 2012 this surface water 2,750 GL/y recovery target was legislated in the Basin Plan. It is known as the Bridging the Gap target, referring to the gap between the amount of water

³⁸ For example, Wentworth Group of Concerned Scientists, [Submission on the discussion paper of the Independent Review of WESA](#), 2019, p 2-3.

³⁹ [Water Act 2007 \(Cth\), s 23 \(1\)](#).

⁴⁰ MDBA, [Guide to the proposed Basin Plan: overview](#), Australian Government, 2010, p 57 and p 75.

⁴¹ MDBA, [Guide to the proposed Basin Plan: overview](#), Australian Government, 2010, p 82.

⁴² Australian House of Representatives Standing Committee on Regional Australia, [Of drought and flooding rains: Inquiry into the impact of the Guide to the Murray-Darling Basin Plan](#), Parliament of Australia, 2011, p 39.

⁴³ MDBA, [The proposed 'environmentally sustainable level of take' for surface water of the Murray-Darling Basin: Method and outcomes](#), Australian Government, 2011.

⁴⁴ A Royal Commission established by the South Australian Government concluded that this revised figure was not based on the best available science, as required by the Water Act, but was instead a political compromise to gain the support of Basin state governments and enable passing of the Basin Plan into law (B Walker, [Murray-Darling Basin Royal Commission Report](#), 2019); the MDBA disagrees with this conclusion and stands by their published reasoning (MDBA, [MDBA response to the South Australian Royal Commission](#), Australian Government, 2019).

that could be taken before the plan (BDLs) versus the amount that would be allowed to be taken under the SDLs.⁴⁵

The Basin-wide water recovery target is the sum of all individual surface water SDL resource unit targets. These resource unit targets can be local or shared recovery targets. The local target of a particular surface water resource unit is for recovery from that resource unit to achieve local environmental outcomes. The shared target of a surface water resource unit is for local recovery contributing towards a zone-wide target (there are 6 zones across the Basin, each composed of one or more surface water resource units).⁴⁶ A resource unit may have both shared and local targets, or just one type.

Surface water SDLs are defined relative to the BDL for each resource unit.⁴⁷ This means surface water SDLs change if the corresponding BDL is adjusted during development or updating of a WRP. BDLs are not expressed as fixed volumes but are defined by a description of how to calculate the BDL from specified information.⁴⁸ For this reason BDLs can change when updated information becomes available about historic water use, such as new data or hydrological modelling.⁴⁹ However, water recovery targets are expressed volumetrically and therefore a change in BDL does not in itself change the associated targets. For example, the local recovery target for the Gwydir surface water SDL resource unit is 42 GL/y.⁵⁰ If the Gwydir surface water BDL increased, the SDL would, by definition, also increase, but the local recovery target would remain 42 GL/y.

Water for these targets is recovered in the form of water entitlements that are transferred to the relevant environmental water holder, whether this is through purchase, gift or transfer of expected water savings from infrastructure projects. In 2014 the Australian Government began prioritising water recovery through infrastructure programs instead of buybacks.⁵¹ In

⁴⁵ DCCEEW, [How we recover water in the Murray–Darling Basin](#), Australian Government, n.d., accessed 1 March 2023.

⁴⁶ In the Basin Plan these resource targets are referred to as reduction amounts; *Basin Plan 2012* (Cth), [s 6.04](#), [s 6.05](#); MDBA, [Progress on water recovery](#), updated 25 November 2022, accessed 23 March 2023.

⁴⁷ *Basin Plan* (Cth), [Sch 2](#).

⁴⁸ *Basin Plan* (Cth), [Sch 3](#).

⁴⁹ MDBA, [Changing limits](#), updated 7 December 2022, accessed 13 April 2023.

⁵⁰ *Basin Plan* (Cth), [Sch 2](#); the SDL for the Gwydir surface water resource unit is defined as ‘the BDL minus 42 GL per year (local reduction amount) minus the SDL resource unit shared reduction amount plus the SDL adjustment amount.’ The local reduction amount is the local recovery target. The shared reduction amount is Gwydir’s share (7.6 GL/y) of the 24 GL/y northern Basin NSW zone water recovery target, which is allocated between the zone’s resource units in proportion to their BDLs. The SDL adjustment amount is any increase in SDL that reflects the resource unit’s apportioned contribution to the SDL adjustment discussed in section [3.3.3](#). In the case of Gwydir, this share is 0 GL/y, see *Basin Plan 2012* (Cth), [Sch 6A](#).

⁵¹ Department of the Environment, [Water Recovery Strategy for the Murray–Darling Basin](#), Australian Government, 2014, archived on Trove 24 June 2015, accessed 12 March 2023.

2015 legislation was passed to limit total Commonwealth buybacks to no more than 1,500 GL/y.⁵²

3.3.2 Efficiency measures

To secure South Australia's support for the Basin Plan in 2012, the Australian Government committed to recovering an additional 450 GL/y on top of the 2,750 GL/y Bridging the Gap target (Figure 5). The 450 GL/y was to be achieved through efficiency measures, with the condition that these projects must have neutral or positive socioeconomic impacts.⁵³ In 2013 the Water for the Environment Special Account (WESA) was created through an amendment to the Water Act, setting aside Commonwealth funding to achieve the 450 GL/y target for 'enhanced environmental outcomes.' The amendment also set aside funds for constraints measures.⁵⁴ Irrigators who receive funding for efficiency projects surrender water entitlements to the Commonwealth Environmental Water Holder equal to an agreed portion of their expected efficiency gains.⁵⁵ Payments for projects funded through WESA must be made before 30 June 2024.⁵⁶

In 2018 Basin ministers agreed to stringent socioeconomic criteria against which potential efficiency projects would be assessed prior to approval.⁵⁷ In 2020, the Australian Government announced a policy shift away from on-farm efficiency projects (such as farm irrigation upgrades) towards off-farm efficiency projects (such as irrigation infrastructure network upgrades). This change was a response to evidence that on-farm efficiency projects, although providing significant benefits to participants, increase overall water demand and place upward pressure on water prices.⁵⁸

⁵² [Water Amendment Bill 2015 \(Cth\)](#), [Federal Government secures Senate support for cap on Murray Darling water buybacks](#), ABC News, accessed 7 March 2023; the Commonwealth buyback cap ceases to have effect after the first of the Basin Plan's 10 yearly reviews is delivered, which is planned for 2026; [Water Act 2007 \(Cth\)](#), s 85C (2).

⁵³ S Cullen, [Gillard announces Murray-Darling plan changes](#), ABC News, 26 October 2012, accessed 1 March 2023.

⁵⁴ [Water Amendment \(Water for the Environment Special Account\) Act 2013 \(Cth\)](#); [Intergovernmental Agreement on Implementing Water Reform in the Murray Darling Basin](#), 2019.

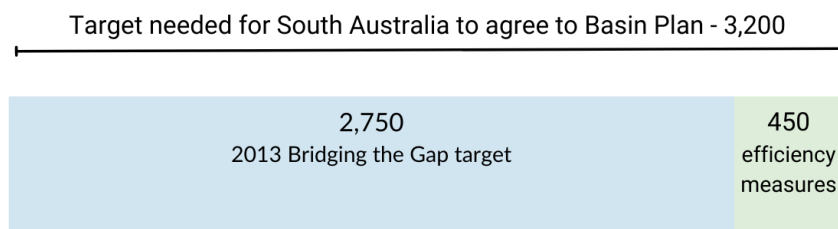
⁵⁵ S Farrier et al. [First Review of the Water for the Environment Special Account: Report to Commonwealth Minister for Water Resources as required under Section 86AJ of the Water Act 2007](#), Independent panel, Australian Government, 2020, p 11.

⁵⁶ S Lewis et al., [Second Review of the Water for the Environment Special Account: Report to Commonwealth Minister for Water Resources as required under Section 86AJ of the Water Act 2007](#), Independent panel, Australian Government, 2022, p 22.

⁵⁷ MDBA, [Murray-Darling Basin Ministers meet in Melbourne](#), 14 December 2018, accessed 28 February 2023.

⁵⁸ Department of Agriculture, Water and the Environment, [Australian Government response to the Independent assessment of social and economic conditions in the Basin](#), Australian Government, 2020, p 10; Department of Agriculture, Water and the Environment, [Murray-Darling Communities Investment Package](#), Australian Government, 2020; R Sefton et al., [Final report: Independent assessment of social and economic conditions in the Murray-Darling Basin](#), Panel for Independent Assessment of Social and Economic Conditions in the Murray-Darling Basin, Australian Government, 2020, p 64-65.

Figure 5. Basin Plan surface water recovery targets in 2013 (GL/y)



Source: NSW Parliamentary Research Service

3.3.3 Supply measures

The SDL adjustment mechanism (SDLAM) is a method for changing the surface water SDLs in the Basin Plan to account for the effects of supply measures (which can increase SDLs) and efficiency measures (which can decrease SDLs). The Basin Plan caps the overall outcome of this adjustment to a maximum of 5% net change (that is, combined changes from both supply and efficiency contributions) in the total surface water SDL across the Basin as it stood in 2012.⁵⁹

In 2017 the MDBA determined that the combined effect of a package of 36 supply projects nominated by state governments would allow a further 605 GL/y of water to be available for consumptive use.⁶⁰ However, because 605 GL/y is 62 GL/y larger than the 5% net SDL adjustment limit (which is approximately 543 GL/y) the supply contribution must be offset by 62 GL/y efficiency measures. In effect, this means that for the full contribution of supply measures to count towards increasing the Basin Plan SDLs, the efficiency measures discussed in 3.3.2 must achieve at least 62 GL/y of water recovery.⁶¹ The supply measures SDL adjustment was incorporated into the Basin Plan in 2018.⁶²

Supply measure projects are implemented by the Basin states and must be in operation by 30 June 2024. If the MDBA judges that the 605 GL/y will not be achieved by 30 June 2024, it must undertake a reconciliation process before that date to ensure that the SDL adjustment reflects the outcomes of the measures as actually implemented.⁶³ This process

⁵⁹ *Basin Plan 2012* (Cth), s 7.19.

⁶⁰ MDBA, *Sustainable Diversion Limit Adjustment Mechanism: Draft Determination Report*, Australian Government, 2017; MDBA, *Sustainable diversion limit adjustment projects*, n.d., accessed 2 March 2023.

⁶¹ MDBA, *Sustainable Diversion Limit Adjustment Mechanism: Draft Determination Report*, Australian Government, 2017, p 30; MDBA, *The determination to adjust sustainable diversion limits*, updated 9 December 2019, accessed 2 March 2023.

⁶² *Basin Plan Amendment (SDL Adjustments) Instrument 2017* (Cth).

⁶³ *Basin Plan 2012* (Cth), s 7.11.

involves making a new determination of the combined effect of all measures notified under the SDL adjustment mechanism and proposing new SDLs.⁶⁴

3.3.4 Northern Basin toolkit measures

In finalising the Basin Plan in 2012, Basin governments agreed to the MDBA conducting further investigations, drawing on local community input, about the basis for the SDLs that had been set for resource units in the northern Basin.⁶⁵ The resulting Northern Basin Review was intended to address gaps in the evidence base for water management decisions. In the review the MDBA focussed on whether there was enough evidence for changing the existing northern Basin SDLs based on predicted economic, environmental and social outcomes of different water recovery scenarios.⁶⁶

In 2016 the MDBA published the results of the Northern Basin Review and proposed that the total of 390 GL/y of water recovery targets from northern Basin resource units should be reduced by 70 GL/y (to a total of 320 GL/y), on the condition that the Australian, NSW and Queensland governments implement a package of measures (known as toolkit measures) to improve environmental benefits while minimising negative economic impacts of water recovery.⁶⁷ The 6 toolkit measures included arrangements to protect environmental flows, targeted water recovery, improvements to management of environmental flows, works to promote fish migration and constraints measures for the Gwydir catchment.⁶⁸

A key distinction between the toolkit measures and the SDL adjustment mechanism supply measures is that the supply measures are water recovery methods and have a water recovery target (605 GL/y). In contrast, not all toolkit measures are water recovery methods, and the 70 GL/y is not a water recovery target—instead 70 GL/y is the total SDL reduction agreed to by Basin governments in exchange for implementation of the suite of toolkit measures. The proposed toolkit measures received in-principle support from Basin governments in 2017, but in February 2018 the Australian Senate voted to disallow the legislative instrument that was to enact the northern Basin amendments.⁶⁹ In May 2018 the

⁶⁴ MDBA, [Sustainable Diversion Limit Adjustment Mechanism Reconciliation Framework](#), Australian Government, 2021.

⁶⁵ MDBA, [The Northern Basin Review: Understanding the economic, social and environmental outcomes from water recovery in the northern basin](#), Australian Government, 2016, p 10; [Basin Plan 2012](#) (Cth), note to s 6.06(1).

⁶⁶ MDBA, [The Northern Basin Review: Understanding the economic, social and environmental outcomes from water recovery in the northern basin](#), Australian Government, 2016, p 11.

⁶⁷ MDBA, [The Northern Basin Review: Understanding the economic, social and environmental outcomes from water recovery in the northern basin](#), Australian Government, 2016, p 4-8.

⁶⁸ MDBA, [The Northern Basin Review: Understanding the economic, social and environmental outcomes from water recovery in the northern basin](#), Australian Government, 2016, p 52.

⁶⁹ MDBA, [Communique: Murray–Darling Basin Ministers agree next steps](#), published 16 June 2017, accessed 2 March 2023; [Basin Plan Amendment Instrument 2017 \(No. 1\)](#) (Cth); [Regulations and determinations: Basin Plan Amendment Instrument 2017 \(No. 1\)](#), *Commonwealth of Australia Hansard*, 14 February 2018.

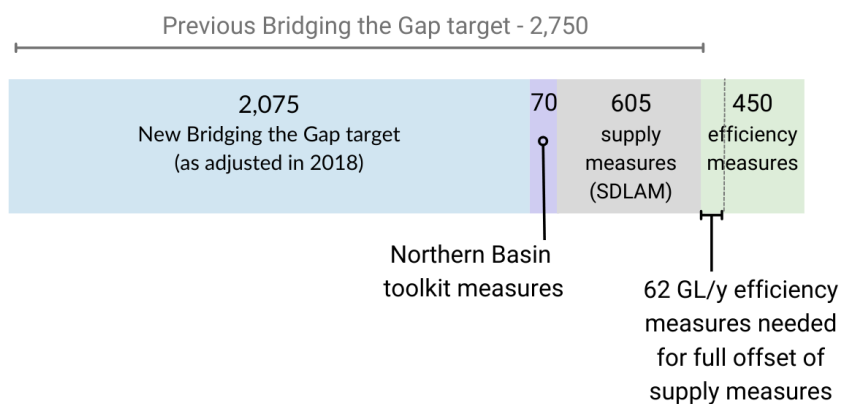
Australian Government and the ALP came to an agreement to allow both the northern Basin amendments and the SDL adjustment amendments described in section 3.3.3.⁷⁰

3.3.5 Overview of current water recovery targets

Figure 6 provides an overview of current surface water recovery targets. In summary, the Basin Plan amendments made in 2018 have reduced the previous Bridging the Gap target of 2,750 GL/y (see section 3.3.1) to a new target of 2,075 GL/y. Of this reduction, 70 GL/y was a result of the agreement to implement toolkit measures in the northern Basin (see section 3.3.4), and 605 GL/y reflects the effect of the SDL adjustment mechanism supply measures (see section 3.3.3).

The revised Bridging the Gap target depends on delivery by 2024 of both 605 GL/y in supply measures and 62 GL/y of efficiency measures. These efficiency measures would be a subset of the 450 GL/y efficiency measures target that is to be delivered by 2024 to achieve enhanced environmental outcomes (see section 3.3.2).

Figure 6. Basin Plan surface water recovery targets following 2018 agreement on toolkit and supply measures (GL/y)



Source: NSW Parliamentary Research Service

3.4 Current status of water recovery targets

3.4.1 Bridging the Gap: target 2075 GL/y

In December 2022, the MDBA assessed that 98% of surface water recovery toward the Bridging the Gap target is complete.⁷¹ The total recovery across the entire Basin already exceeds 2,075 GL/y, but this is because there has been some over-recovery in specific

⁷⁰ D Littleproud, *Statement on the Murray-Darling Basin Plan* [media release], Australian Government, 7 May 2018, archived by Trove on 12 April 2019, accessed 2 March 2023; *Basin Plan Amendment Instrument (No. 1) 2018* (Cth).

⁷¹ MDBA, *December 2022 Report Card*, Australian Government, 2022, p 8.

catchments.⁷² There remains 46 GL/y of surface water that needs to be recovered to meet local and shared targets in certain resource units.⁷³ Figure 7 shows that most resource units have achieved or are close to their recovery targets and that the majority of water recovery has occurred in NSW and Victoria, mainly from the Murray, Murrumbidgee and Goulburn rivers. Of the recovery to date, approximately 58% has been recovered through Australian Government buybacks and approximately 33% through infrastructure projects (Figure 8).⁷⁴ The surface water resource units with local recovery still required as of December 2022 are Condamine-Balonne (Queensland), Barwon-Darling (NSW), Namoi (NSW), NSW Border Rivers (NSW) and Lachlan (NSW). Those with shared recovery targets to be met are NSW Murray and ACT Murrumbidgee (though the latter will meet its target once a previously purchased entitlement is traded from NSW to ACT).⁷⁵

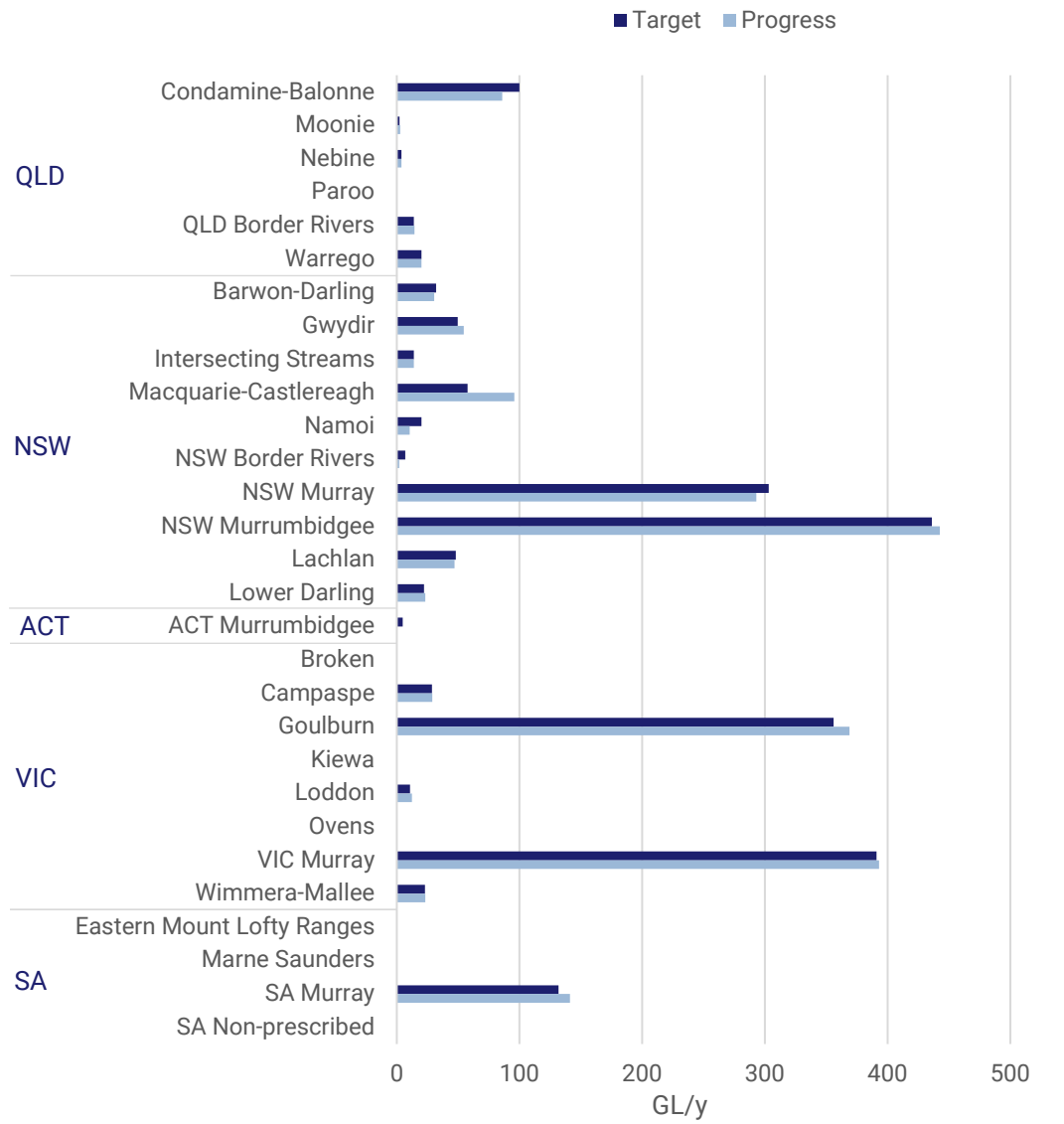
⁷² MDBA, [Progress of water recovery towards 'Bridging the Gap' to SDLs \(contracted and registered volumes\) as at 31 December 2022](#), updated 27 February 2023, accessed 2 March 2023; total recovery so far is 2,107.4 GL/y.

⁷³ MDBA, [Progress of water recovery towards 'Bridging the Gap' to SDLs \(contracted and registered volumes\) as at 31 December 2022](#), updated 27 February 2023, accessed 2 March 2023.

⁷⁴ Infrastructure projects counted under Bridging the Gap targets are typically efficiency projects, however these do not count towards the 450 GL/y target for WESA-funded efficiency measures.

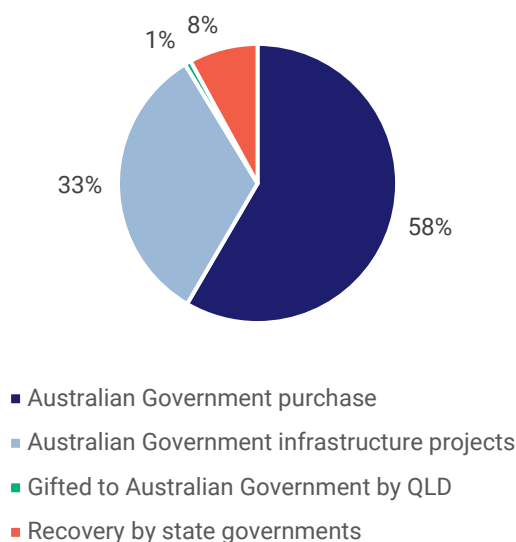
⁷⁵ MDBA, [Progress of water recovery towards 'Bridging the Gap' to SDLs \(contracted and registered volumes\) as at 31 December 2022](#), updated 27 February 2023, accessed 2 March 2023.

Figure 7. Water recovery progress towards Bridging the Gap targets by surface water SDL resource unit, December 2022



Source: [MDBA](#)

Figure 8. Bridging the Gap water recovery by type, December 2022



Source: [MDBA](#); infrastructure projects include Australian Government and state co-funded projects

3.4.2 Efficiency measures: target 450 GL/y

On 31 October 2022, only 4.5 GL/y had been recovered through WESA-funded projects, with a further 21.4 GL/y contracted for delivery.⁷⁶

The most recent statutory review of WESA found that neither the 450 GL/y target of water recovery nor the WESA-funded constraints measures program will be delivered before the funding deadline of 30 June 2024. Under the current policy settings, budget and deadline it is only possible to recover a total of 62.6 GL/y.⁷⁷ Although far short of the 450 GL/y target, this amount would meet the 62 GL/y target that would enable use of the full 605 GL/y of SDL adjustment from supply measures, should it be needed (see sections [3.3.3](#) and [3.4.3](#)).

The review also found that even if there were no deadline or budget constraints, only 330 GL/y of water recovery would be technically possible under current policy settings that restrict a large majority of WESA funding to off-farm projects only. Of this 330 GL/y potential recovery, just 5 GL/year was estimated to be achievable from on-farm projects, with the remaining 325 GL/y the potential from off-farm recovery, largely irrigation network

⁷⁶ MDBA, [December 2022 Report Card](#), Australian Government, 2022, p 12; note that updated figures as at 31 March 2023 are now available and show that a total of 12 GL/y of efficiency contribution have now been registered (MDBA, [Progress of water recovery towards 'Bridging the Gap' to sustainable diversion limits \(SDLs\) as at 31 March 2023](#), updated 19 May 2023, accessed 23 May 2023).

⁷⁷ S Lewis et al., [Second Review of the Water for the Environment Special Account: Report to Commonwealth Minister for Water Resources as required under Section 86AJ of the Water Act 2007](#), Independent panel, Australian Government, 2022, p 8; 62.6 GL/y is the sum of the 2.6 GL/y that had been recovered or contracted at the time of the review and the further 60 GL/y estimated by the panel as possible to recover through the existing efficiency program by 2024.

upgrades and urban/industrial projects. If more funding were made available for on-farm projects, in theory a further 345 GL/y could be recovered.⁷⁸

3.4.3 Supply measures: target 605 GL/y

Twenty two of the 36 supply measures are likely to be operable by the deadline and a further 8 may be operable (assessed in November 2022 as 'on the cusp' of being capable of delivery by the deadline). The MDBA considers that 6 of the 36 projects will not be delivered by the 30 June 2024 deadline. These 6 projects were critical to a substantial proportion of the MDBA's determination of a 605 GL/y adjustment to the Basin-wide SDL.⁷⁹

The MDBA's current assessment is that a reconciliation will be needed after 31 December 2023. The reconciliation process will establish the amount by which the SDLs must be adjusted by 2024 to correct for any difference between the outcomes of the supply measures as originally estimated and as actually implemented.⁸⁰ The MDBA envisages that amended SDLs would commence by 30 June 2024. In October 2022, the MDBA estimated that the revised contribution of the supply measures would be between 290 and 415 GL/y (that is, a shortfall of 190-315 GL/y).⁸¹

Among the projects that the MDBA considers will not be delivered in full is the Menindee Lakes Water Savings project. This was a proposal to achieve significant reductions in evaporative loss in the Menindee Lakes through engineering and operational changes.⁸² In 2021 the NSW Government committed to rescoping the project given the:

[...] impacts of recent severe drought and significant concerns around ecological outcomes, reduced amenity, impacts on traditional owners, whole of system connectivity, and lack of community support for the project in the form originally envisaged under the Murray-Darling Basin Plan.⁸³

⁷⁸ S Lewis et al., *Second Review of the Water for the Environment Special Account: Report to Commonwealth Minister for Water Resources as required under Section 86AJ of the Water Act 2007*, Independent panel, Australian Government, 2022, p 23-24.

⁷⁹ MDBA, *Sustainable Diversion Limit Adjustment Mechanism: 2022 Assurance Report*, Australian Government, 2022, p 29-35.

⁸⁰ *Basin Plan 2012* (Cth), s 7.11; MDBA, *Sustainable Diversion Limit Adjustment Mechanism Reconciliation Framework*, Australian Government, 2021.

⁸¹ MDBA, *Sustainable Diversion Limit Adjustment Mechanism: 2022 Assurance Report*, Australian Government, 2022, p 36-39.

⁸² NSW Department of Industry, *Menindee Lakes Water Saving Project-Summary of Phase 2 preliminary business case*; NSW Legislative Council Portfolio Committee No. 7, *Rationale for, and impacts of, new dams and other water infrastructure in NSW*, 2021, p 49-61.

⁸³ NSW Department of Planning, Industry and Environment, *NSW Government Response to Inquiry into the rationale for, and impacts of, new dams and other water infrastructure in NSW, Part 2*, NSW Government, 2022, p 10.

3.4.4 Northern Basin toolkit measures

In August 2019 the Basin governments came to a funding agreement on the toolkit measures.⁸⁴ Projects funded under this program have included constraints measures and works to allow native fish migration.⁸⁵ The full suite of projects that fall under the toolkit measures is identified by the Australian Government in a 2022 implementation status report.⁸⁶

Of the 6 toolkit measures, MDBA assessed 3 measures as on track for delivery, 2 as on track for near complete delivery, and one (a series of environmental works and measures) as highly unlikely to be delivered by the June 2024 deadline. Of the 4 projects within the set of environmental works and measures judged at high risk of not being delivered, one is from NSW (Reconnecting the Northern Basin project).⁸⁷

3.5 Government responses to target shortfalls

3.5.1 Bridging the Gap: target 2,075 GL/y

In its 2022 election commitments, the Australian Labor Party pledged to hold Basin states to the Basin Plan's water recovery targets.⁸⁸ In October 2022 the Australian Government committed 'significant funding' for water recovery, including buybacks, but did not disclose the amount to limit any effect on water market prices.⁸⁹ This was followed by an announcement in February 2023 of a buyback program to recover the Bridging the Gap shortfalls. The catchments targeted for buybacks in NSW are NSW Murray, Namoi, NSW Border Rivers, Barwon-Darling and Lachlan.⁹⁰

3.5.2 Efficiency measures: target 450 GL/y

The Australian Government Minister for the Environment and Water, Tanya Plibersek, has warned that achieving the 450 GL/y target within the original timeframe will be 'extremely challenging' stating that 'I'm not going to pretend to people that I can click my fingers and make it so.'⁹¹ However Minister Plibersek has confirmed the Australian Government is

⁸⁴ Murray-Darling Ministerial Council, *Communique – 4 August 2019*, published 7 August 2019, accessed 2 March 2023.

⁸⁵ MDBA, *Northern Basin Toolkit measures*, n.d., accessed 2 March 2023; DCCEEW, *Northern Basin Toolkit*, n.d., accessed 2 March 2023.

⁸⁶ MDBA, *Northern Basin Toolkit - Updated status of implementation August 2022*, Australian Government, 2022.

⁸⁷ MDBA, *December 2022 Basin Plan Report Card*, Australian Government, 2022; NSW Department of Planning and the Environment—Water, *Fish passage: Reconnecting the Northern Basin project*, n.d., accessed 2 March 2023.

⁸⁸ Labor, *Labor's Five-Point Plan to Safeguard the Murray Darling Basin*, n.d. archived by Trove on 25 October 2022, accessed 3 March 2023.

⁸⁹ T Plibersek, *Australian Government delivers on its Water for Australia plan* [media release], Australian Government, 25 October 2022, accessed 3 March 2023; J Murphy, *Nationals claim water market reacting to buyback news, but brokers doubtful*, 28 October 2022, accessed 3 March 2023.

⁹⁰ T Plibersek, *Bridging the Gap under the Murray-Darling Basin Plan* [media release], Australian Government, 22 February 2023, accessed 1 March 2023.

⁹¹ G Polychronis, *Murray delays are 'mind boggling'*, *The Advertiser*, 13 July 2022, accessed 6 March 2023.

committed to the 450 GL/y target and says that all options, including buybacks, will be considered for its recovery.⁹²

During negotiation in February 2023 on how the target should be reached, the NSW Government stated that it was opposed to buybacks and any proposal to 'mandate recovery of the full 450 GL or penalise communities if the target is not met.'⁹³ The Victorian Government opposes buybacks and has stated that 'the Basin Plan legislation does not allow the 450 GL to be recovered using buybacks.'⁹⁴ This may refer to the fact that WESA funds can only be used to purchase entitlements in conjunction with on-farm or off-farm efficiency measures or 'alternative arrangements proposed by a Basin State, assessed by that State as achieving water recovery with neutral or improved socio-economic outcomes.'⁹⁵

Basin governments disagree not only on how to address the shortfall in the 450 GL/y target but also on whether it needs to be addressed at all. Although the Basin states have agreed to give effect to the Basin Plan, which contains the 450 GL/y target,⁹⁶ the Basin Plan does not specify the consequences of a shortfall in this target.⁹⁷ NSW and Victorian governments have generally interpreted the 450 GL/y as an optional target (aside from the 62 GL/y needed for the full SDL adjustment from supply measures) that is subordinate to the requirement that efficiency measures have no negative socioeconomic impacts. For example, in 2019 then NSW Deputy Premier and Minister for Regional NSW, John Barilaro, stated that 'NSW will not contribute to the additional 450GL in water recovery as we simply have no water left to give.'⁹⁸ And in September 2022 the Victorian Minister for Water, Harriet Shing, stated:

⁹² Murray–Darling Basin Ministerial Council, [Communique](#), published 24 February 2023, accessed 3 March 2023; L Radford (presenter), [Interview with Minister for the Environment and Water Tania Plibersek](#), 21 July 2022 [radio program] *Drive in South Australia*, ABC Adelaide, Adelaide, accessed 6 March 2023; J Malcolm, [Murray-Darling Basin promise walk-back signalled](#), *The Australian*, 28 July 2022, accessed 6 March 2023.

⁹³ NSW Department of Planning and the Environment, [NSW position statement to the Murray-Darling Basin Ministerial Council](#), 2023, page 3.

⁹⁴ K Sullivan and C Jasper, [Water ministers fail to agree on way forward as Murray-Darling Basin Plan deadline looms](#), 24 February 2023, accessed 6 March 2023; A Davies, [Murray-Darling Basin plan: Victoria will struggle to meet water delivery obligations by deadline](#), *The Guardian*, 23 September 2023, accessed 6 March 2023; K Sullivan, [Water Minister Tanya Plibersek says farmers are ready to sell water licences as bureaucrats confirm 50 gigalitres worth of buybacks](#), *ABC News*, 11 November 2022, accessed 6 March 2023.

⁹⁵ *Water Act 2007* (Cth), s 86AD (4); *Basin Plan 2012* (Cth), s 7.17 (2)(b).

⁹⁶ *Basin Plan 2012* (Cth), s 7.09 (e); A McConville, [Environment and Communications Legislation Committee – Estimates, Commonwealth of Australia Hansard](#), 11 November 2022, p 31.

⁹⁷ B Walker, [Murray-Darling Basin Royal Commission Report](#), 2019, p 386.

⁹⁸ NSW Department of Planning and the Environment, [NSW changes course of Basin Plan and puts regional communities first](#), 18 December 2019, accessed 13 March 2023; the NSW Government changed this stance slightly in 2021, announcing it was accepting applications for off-farm efficiency projects that would count towards the target, NSW Department of Planning and the Environment [Up to \\$1.5 billion available for off-farm efficiency projects in NSW](#) [media release] NSW Government, 19 August 2021, accessed 13 March 2023; NSW Department of Planning and the Environment–Water, [Off-farm efficiency program](#), n.d. accessed 13 March 2023.

We have always had a very strong stance on the importance of positive or neutral socio-economic impacts, and we will only consider additional water recovery towards the 450GL where there are no negative socio-economic impacts, and without buybacks.⁹⁹

The South Australian Government supports buybacks and has suggested it would withdraw support for the socioeconomic criteria for efficiency projects.¹⁰⁰

3.5.3 Supply measures: target 605 GL/y

In February 2023 NSW and Victoria requested a 2-year deadline extension for supply measure projects.¹⁰¹ Under the current deadline, a reconciliation will need to be conducted and the SDLs adjusted by 2024. According to the MDBA a reconciliation would ‘almost certainly mean that further water recovery would be required to bridge a re-opened gap.’¹⁰²

To recover the anticipated shortfall of 190-315 GL/y the Australian Government would have the option of using buybacks, efficiency measures, supply/constraints measures or a combination. However, water recovery through buybacks would be limited by the 1,500 GL/y Commonwealth buyback cap (see section [3.3.1](#)).¹⁰³ Assuming the new Bridging the Gap buybacks described in section [3.5.1](#) are completed, only 222.6 GL/y of additional buybacks would be possible while remaining under the cap.¹⁰⁴

3.5.4 Northern Basin toolkit measures

NSW and Queensland have requested a 2-year extension to complete the Northern Basin toolkit measures.¹⁰⁵ Although the commitment to the toolkit measures is noted in the Basin Plan, there is no legislative requirement for a reconciliation if the measures are not implemented as agreed.¹⁰⁶

⁹⁹ A Davies, [Murray-Darling Basin plan: Victoria will struggle to meet water delivery obligations by deadline](#), *The Guardian*, 23 September 2022, accessed 6 March 2023.

¹⁰⁰ K Sullivan and C Jasper, [Water ministers fail to agree on way forward as Murray-Darling Basin Plan deadline looms](#), 24 February 2023, accessed 2 March 2023; C Jasper and K Sullivan, [Murray-Darling Basin Ministerial Council set for pivotal water recovery debate](#), *ABC News*, 12 October 2022, accessed 2 March 2023.

¹⁰¹ Murray–Darling Basin Ministerial Council, [Communique](#), published 24 February 2023, accessed 3 March 2023.

¹⁰² MDBA, [MDBA Reconciliation statement](#), Australian Government, 2019.

¹⁰³ The Commonwealth buyback cap ceases to have effect after the first of the Basin Plan’s 10 yearly reviews is delivered, which is planned for 2026; *Water Act 2007* (Cth), [s 85C \(2\)](#).

¹⁰⁴ On 30 September 2022, 271.6 GL/y of buybacks remained under the cap and 49 GL/y of buybacks had already been committed for the Bridging the Gap recovery, MDBA, [Progress on water recovery](#), updated 25 November 2022, accessed 3 March 2023.

¹⁰⁵ Murray–Darling Basin Ministerial Council, [Communique](#), published 24 February 2023, accessed 3 March 2023.

¹⁰⁶ *Basin Plan 2012* (Cth), [s 6.04](#); reconciliation is only relevant to measures under the SDL adjustment mechanism, see [s 7.11](#).

4. Water market reform

4.1 The purpose of water markets

A key aim of national water reforms over the past 4 decades has been formation of a cap-and-trade system for managing competing uses of a scarce resource.¹⁰⁷ In such a system, the total amount of water used is capped at an environmentally sustainable limit and water users can buy and sell tradeable water within this capped pool. The goal of facilitating trade within a cap-and-trade system is to ensure that the available consumptive water flows to the most financially valuable uses. For example, one of the purposes of the Basin Plan is to provide for 'water to reach its most productive use through the development of an efficient water trading regime across the Murray-Darling Basin.'¹⁰⁸

Over time, water market activity has increased in the Basin and now has an annual average value of more than \$1.8 billion per year.¹⁰⁹ Since 2014–15, the total value of water entitlements held in the southern Basin has more than tripled.¹¹⁰ Tradeable water entitlements represent a significant proportion of the capital assets of irrigated farms, comprising, for example, an average of 41% of the capital assets of horticulture farms and 36% for dairy farms in the southern Basin in 2018–19.¹¹¹

This section provides an overview of how water markets operate, summarises the current status of market reform efforts and explores select reform issues in more detail.

4.2 How Basin water markets work

4.2.1 Regulatory frameworks

Basin water markets are regulated under a general framework established by the water trading rules in the Basin Plan, which cover issues including free trade rights, transparency of trade approval processes, reporting requirements and insider trading.¹¹²

In NSW these rules operate alongside a more detailed framework specified by the water access dealing rules of the Water Management Act, the applicable NSW water sharing plans and other subordinate instruments.¹¹³ This NSW framework deals with matters such as types of trades, trade approval requirements, registration and water accounting.

¹⁰⁷ National Water Commission, *Water markets in Australia: a short history*, Australian Government, 2011.

¹⁰⁸ *Water Act 2007* (Cth), s 20 (e).

¹⁰⁹ Australian Competition and Consumer Commission (ACCC), *Murray-Darling Basin water markets inquiry: final report*, Australian Government, 2021, p 1.

¹¹⁰ Aither, *Water Markets Report: 2021-22 Review and 2022-23 Outlook*, 2022, p 30.

¹¹¹ ACCC, *Murray-Darling Basin water markets inquiry: final report*, Australian Government, 2021, p 7.

¹¹² *Basin Plan 2012* (Cth), Ch 12.

¹¹³ *Water Management Act 2000* (NSW), s 71.

Interstate trade in regulated parts of the southern Basin (known as the southern connected Basin) is governed by protocols under Schedule D of the Murray-Darling Basin Agreement.¹¹⁴ Interstate trade between Queensland and New South Wales in the Border Rivers catchment is governed by an intergovernmental agreement.¹¹⁵

4.2.2 Entitlement and allocation trade

Water trading in the Basin is not a single market, but 'a set of interrelated markets, split across product types and geographic areas.'¹¹⁶ For instance, there are dozens of tradeable water market products regulated by the Basin Plan, each subject to different trading rules about where they can be traded to and from.¹¹⁷

A key type of tradeable water right is a **water access right**. Two categories of water access right are **entitlements** and **allocations**.¹¹⁸

A water entitlement is an ongoing right to a share of available water. A NSW water access licence is an example of a water entitlement.¹¹⁹ Entitlement trading by irrigators can allow long-term changes in business strategy. For example, an almond grower who has purchased land to expand their operation may buy water access licences to ensure they receive enough water allocation for the new plantations. Entitlements are also held by a variety of other market participants, including investors, brokers, government environmental water holders, irrigation infrastructure operators and First Nations groups. Entitlements are sometimes referred to as 'permanent' water access rights.

A water allocation is the amount of water allocated to a water entitlement holder in a given water accounting period. Allocations change periodically depending on water availability decisions made by government water managers. Allocation trading allows short-term flexibility for irrigators. For example, a cotton farmer who decides not to plant a crop during a drought year can sell the water allocations from their water access licence to an almond grower whose permanent plantations need additional water under drought conditions. Allocations are sometimes referred to as 'temporary' water access rights.

¹¹⁴ *Water Act 2007* (Cth), [Sch 1](#); specifically, Schedule D of the Agreement applies to intervalley trade of water within specified parts of the southern Basin, including the Murray River downstream of the Hume Dam and regulated reaches of the Goulburn, Broken, Campaspe, Loddon and Murrumbidgee river systems.

¹¹⁵ [New South Wales-Queensland Border Rivers Intergovernmental Agreement, 2008](#)

¹¹⁶ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 57.

¹¹⁷ MDBA, [Water Markets Product Information](#), updated 14 December 2021, accessed 14 February 2023.

¹¹⁸ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 57.

¹¹⁹ *Water Management Act 2000* (NSW), [Ch 3, Pt 2](#).

4.2.3 Brokers, exchanges and trade approval

To buy and sell water, trading partners need to find each other (match), settle on a price, and lodge the trade details with the relevant authority. Brokers and exchange platforms are often used as intermediaries in these processes.

Brokers provide clients with advisory, matching, trading and various administrative services. Exchange platforms are online portals that assist buyers and sellers to trade, using, for example, automated matching, auction style listings or fixed price listings. Services offered by brokers and exchange platforms can overlap and are sometimes offered by the same entity.¹²⁰

Once a trade has been agreed, the details must be approved or registered with the relevant authority. In NSW, water access licence trades are recorded by the NSW Land Registry Services on the Water Access Licence Register.¹²¹ NSW allocation trades are assessed by WaterNSW for approval and recorded on the NSW Water Register.¹²²

4.2.4 NSW irrigation infrastructure operators

Market participants can also trade water market products created by irrigation infrastructure operators (IIOs). In NSW, these internal IIO markets are substantial.

An IIO operates an irrigation network that conveys water from a water source to customer properties. Generally, NSW IIOs hold bulk water access licences on behalf of their customers and issue these customers with various kinds of rights to use the network. Commonly these include irrigation rights (the right to access or receive water from the IIO) and delivery rights (the right to have water delivered via the IIO's infrastructure).

IIOs own the largest volume of water entitlements in the NSW southern Basin.¹²³ Correspondingly, the volume of trade in permanent IIO irrigation rights (that is, the IIO rights that are analogous to entitlements) in NSW exceeds the volume of trade in water access licences (that is, regular NSW entitlements that are not associated with IIOs).¹²⁴

NSW also has a large trade in 'temporary' irrigation rights (that is, IIO rights that are analogous to allocations). Trades between an IIO and the external allocation market are generally conducted on behalf of the customer by the IIO. For example, if an IIO customer wishes to buy a water allocation from a water access licence holder outside the IIO

¹²⁰ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 228.

¹²¹ NSW Land Registry Services, [Registrar General's Guidelines: Water dealings](#), n.d., accessed 14 February 2023; NSW Land Registry Services, [Water Access Licence Register](#), n.d., accessed 14 February 2023.

¹²² WaterNSW, [Trading water](#), n.d., accessed 14 February 2023; WaterNSW, [NSW Water Register](#), n.d., accessed 14 February 2023.

¹²³ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 126 and p 129-130.

¹²⁴ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 93.

network, the customer authorises the IIO to buy the allocation on its own bulk licence and credit the appropriate volume to the IIO customer's network account.¹²⁵

IIO markets are not subject to the same regulations as entitlement and allocation trading, particularly with regard to reporting. For a trade within its network, an IIO serves as the trade approval authority, as opposed to a state agency like WaterNSW. These trades are not recorded on the NSW water registers.¹²⁶ For trades between an IIO and external markets, both the IIO and the relevant state agency need to approve or register the trade, with the IIO listed as the buyer or seller in government registry data.¹²⁷

4.2.5 Intervalley trade

Basin water markets are divided into trading zones.¹²⁸ Trade between zones (or valleys) is known as intervalley trade or transfer (IVT) and is often subject to trade limits. These restrictions typically aim to manage operational issues that arise with interzone transfers of water, such as limited delivery and storage capacity, conveyance losses and environmental damage from high flows.¹²⁹

One example of a trade limit occurs at the Barmah-Millewa Forest, a narrow stretch of the Murray River where flow is at its most constricted.¹³⁰ This area is known to water traders as the Barmah Choke and is home to internationally significant wetlands and Australia's largest stand of river red gum forest.¹³¹ Although the Barmah-Millewa Forest requires seasonal flooding (winter/spring) to remain viable, unseasonal flooding (summer/autumn) contributes to riverbank erosion and can threaten forest health.¹³²

Water allocation trade across the choke is regulated to avoid downstream demand exceeding delivery capacity and to protect the local environment.¹³³ Water can only be traded from upstream to downstream of the choke if this can be balanced by a sufficient volume of trades in the opposite direction.¹³⁴

¹²⁵ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 88.

¹²⁶ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 126 and p 341.

¹²⁷ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 293.

¹²⁸ MDBA, [Interstate water trade](#), updated 14 December 2021, accessed 15 February 2023.

¹²⁹ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 434-435.

¹³⁰ MDBA, [Barmah Choke trade balance](#), n.d., accessed 8 February 2023.

¹³¹ Ramsar Sites Information Service, [NSW Central Murray State Forests](#), published 1 January 2013, accessed 8 February 2023; Ramsar Sites Information Service, [Barmah Forest](#), Published 1 January 1998, accessed 8 February 2023.

¹³² Department of Environment and Planning, [Barmah Choke](#), updated 19 September 2022, accessed 8 February 2023.

¹³³ MDBA, [Barmah Choke trade balance](#), n.d., accessed 8 February 2023; MDBA [Water demand \(shortfalls\)](#), updated 30 August 2022, accessed 8 February 2023.

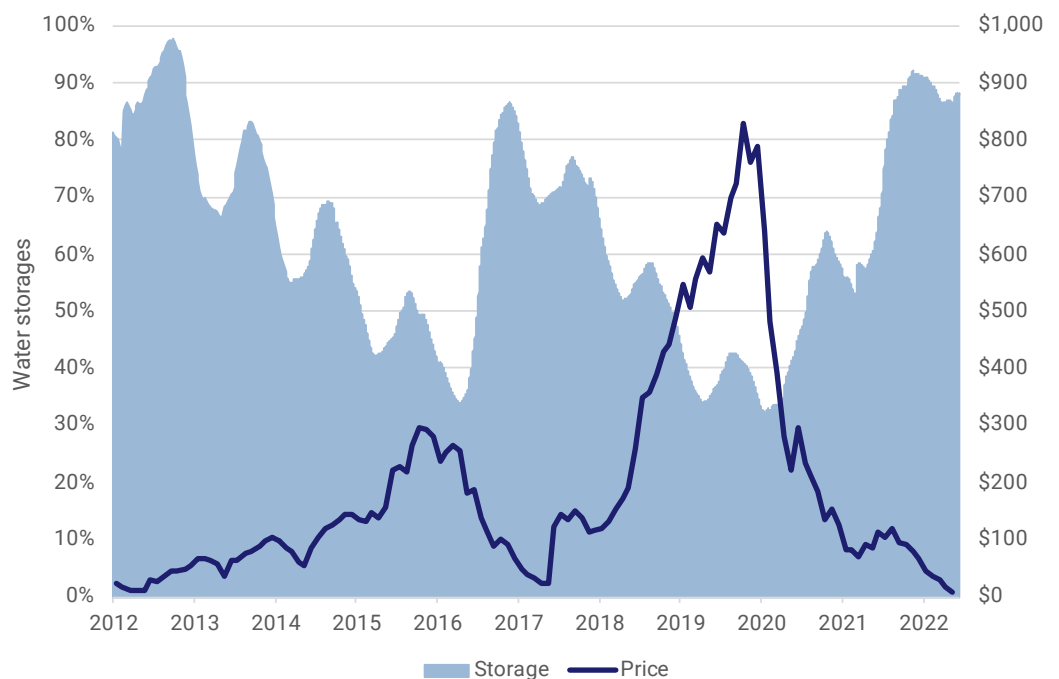
¹³⁴ MDBA, [Barmah Choke trade balance](#), n.d., accessed 8 February 2023.

4.3 Current status of market reforms

4.3.1 Price volatility during the 2017–19 drought prompted calls for market reform

Although entitlement prices are driven by a wide variety of factors, including commodity prices and government policies, trends in allocation prices are largely driven by water availability.¹³⁵ For example, allocation prices spiked during the 2017–2019 drought and have dropped dramatically since the onset of high rainfall conditions in 2020 (Figure 9).

Figure 9. Water storages and average allocation prices, 2012–13 to 2021–22



Source: [ABARES](#)¹³⁶

Note: Water storages are reported for the entire Murray–Darling Basin as a percentage of total capacity. Price is volume weighted average per megalitre for the southern Murray–Darling Basin in 2021–22 dollars.

High prices and unusual volatility in allocation markets in 2018–2019 prompted widespread concern from irrigators about market integrity, conduct of water participants and the effect of investors on market prices. In August 2019, following a pre-election

¹³⁵ T Goesch, P Legg and M Donoghoe, *Murray-Darling Basin water markets: Trends and drivers 2002-03 to 2018-19*, Australian Bureau of Agricultural and Resource Economics and Sciences, Australian Government, 2020, p 25; ACCC, *Murray-Darling Basin water markets inquiry: final report*, Australian Government, 2021, p 86 and p 94.

¹³⁶ T Westwood et al. 2022, *Water Market Outlook: July 2022*, Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), Canberra, DOI: [10.25814/b6k1-h161](https://doi.org/10.25814/b6k1-h161).

commitment, the Morrison Government directed the Australian Competition and Consumer Commission (ACCC) to conduct a review of Basin water markets.¹³⁷

4.3.2 The ACCC water markets inquiry found significant deficiencies in market arrangements

In March 2021 the ACCC published the final report of its investigation, after obtaining detailed trade records from brokers, exchange platforms, investors, agribusinesses, IIOs and government agencies. The ACCC found that water markets in the Basin 'lack many features that make markets work effectively'.¹³⁸ For example:

- There is a lack of quality, timely and accessible information for water market participants
- There are scant rules governing the conduct of market participants, and no particular body to oversee trading activities, undermining confidence in fair and efficient markets
- Trading behaviours that can undermine the integrity of markets, such as market manipulation, are not prohibited, insider trading prohibitions are insufficient, and information gaps make these types of detrimental conduct difficult to detect.¹³⁹

The ACCC did not find evidence of market manipulation or artificially inflated prices. However, analysis of trading behaviour was made challenging by the inadequacy of current data collection arrangements. In addition, certain allegations of misconduct were not able to be investigated because of data limitations and the time elapsed since the trading activity under question.¹⁴⁰

The ACCC made 29 recommendations to restore trust in the Basin's water markets and improve their operation and efficiency.¹⁴¹ The recommendations focused on 4 areas for reform: market integrity and conduct, trade processing and water market information, market architecture, and market governance. Key among the recommendations were creation of a Basin-wide water markets agency, a framework for improving market data and digital infrastructure, Basin-wide market integrity and conduct legislation, and a mandatory code for intermediaries such as brokers and exchange platforms.

¹³⁷ K Sullivan, [Coalition makes on-farm pre-election pledge of cheap loans and water market review](#), ABC News, 1 May 2019, accessed 1 February 2023; D Littleproud and J Frydenberg, [ACCC water inquiry](#) [media release], Australian Government, 7 August 2019, accessed 1 February 2023.

¹³⁸ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 2.

¹³⁹ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 5.

¹⁴⁰ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 15.

¹⁴¹ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 26-41.

4.3.3 The Australian Government's response is outlined in the water markets reform roadmap

Following release of the ACCC water markets report, the Morrison Government engaged an independent adviser to develop a phased implementation plan for water markets reform (the reform roadmap). After consultation with governments and market stakeholders, the reform roadmap was released on 11 October 2022 with a commitment from the Albanese Government to support all the recommendations.¹⁴² On 12 October 2022 Basin states agreed in principle to implement the recommendations. In November 2022 the Australian Government committed \$31.6 million over four years for water market reform, allocated to the ACCC, the IGWC, Department of Climate Change, Energy, the Environment and Water (DCCEEW) and the Bureau of Meteorology.¹⁴³ On 24 February 2023, Basin states and the Australian Government signed a funding agreement to progress implementation.¹⁴⁴ The reform roadmap includes an indicative timeline that anticipates full implementation in 2026.¹⁴⁵

The final roadmap report was generally supportive of the ACCC's findings, but with greater focus on identifying the most cost-effective options and accommodating existing reform activities. The reform roadmap recommendations were broadly similar to those of the ACCC but differed in many details, substantially so in the case of recommendations for market governance.¹⁴⁶

The ACCC found that market governance was fragmented and complex and did not sufficiently prioritise market concerns.¹⁴⁷ To address these issues, the ACCC recommended the creation of an independent water markets agency with Basin-wide functions. The water markets agency would be responsible for market regulation and surveillance, providing market information and evaluation, as well as providing water market expertise to governments and advocating for the interests of the water markets in policy discussions.¹⁴⁸ The reform roadmap acknowledged the governance issues identified by the ACCC but stated 'there was little support across the Basin states or other stakeholder groups for this reform proposal because of the potential that it would add to an already very complex set of organisational arrangements and systems.'¹⁴⁹ Instead, the

¹⁴² D Quinlivan, [Water market reform: final roadmap report](#), Australian Government, 2022; Plibersek, T, [Reforming Australia's water market to bring trust and transparency to the system](#) [media release], Australian Government, 11 October 2022, accessed 1 February 2023.

¹⁴³ T Plibersek, [Reforming Australia's water markets](#) [media release], Australian Government, 10 November 2022, accessed 1 February 2023.

¹⁴⁴ Murray-Darling Basin Ministerial Council, [Murray-Darling Basin Ministerial Council Communique](#), published 24 February 2023, accessed 27 February 2023.

¹⁴⁵ D Quinlivan, [Water market reform: final roadmap report](#), Australian Government, 2022, p 92.

¹⁴⁶ D Quinlivan, [Water market reform: final roadmap report](#), Australian Government, 2022.

¹⁴⁷ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 548.

¹⁴⁸ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 555-562.

¹⁴⁹ Quinlivan, D, [Water market reform: final roadmap report](#), Australian Government, 2022, p 83.

reform roadmap assigned the various reform functions among the ACCC, Bureau of Meteorology, and 2 new agencies that had been created or promised since the ACCC's recommendations were released: the Inspector-General of Water Compliance (IGWC) and the new National Water Commission. The first [National Water Commission](#) was responsible for providing advice on national water issues and assessing reform progress but was abolished in 2014.¹⁵⁰ The Albanese Government has committed to establishing a new commission to lead cross-portfolio and cross-jurisdictional work.¹⁵¹

4.3.4 A NSW Legislative Council select committee made additional reform recommendations

On 29 March 2022, the NSW Legislative Council established a select committee on the status of water trading in NSW.¹⁵² The committee released its report on 20 December 2022, finding that investors have 'led to market destabilisation and manipulation at the expense of irrigation farmers, regional communities and the natural environment' and that the governance and regulatory framework is 'inadequate and facilitates unfair market practices.'¹⁵³

Many of the committee's recommendations are similar to those of the ACCC, including creation of a water markets agency and greater regulation of market conduct and integrity. However, the committee went beyond the ACCC's recommendations in a number of ways, including recommending:

- A public water market ownership register
- A single hub for trade approval and exchange
- Introduction of conveyance loss factors
- Investigation of ways to improve water access for First Nations people.

The NSW Government's response was due by 20 March 2023 but was not tabled before the pre-election caretaker period commenced on 3 March 2023.

¹⁵⁰ National Water Commission, [National Water Commission](#), Australian Government, archived by Trove 15 June 2016, snapshot accessed 2 February 2023; P Hannam, [Abbott government plans to scrap the National Water Commission as drought looms](#), *Sydney Morning Herald*, 26 November, 2014, accessed 2 February 2023.

¹⁵¹ Department of Climate Change, Energy, the Environment and Water, [National Water Policy](#), n.d., accessed 1 February 2023; Labor, [Labor's Plan to Future-Proof Australia's Water Resources](#), n.d., archived by Trove on 25 October 2022, accessed 3 March 2023.

¹⁵² R Borsak, [Select Committee on the Status of Water Trading in New South Wales](#), *NSW Hansard*, 29 March 2022.

¹⁵³ NSW Legislative Council Select Committee on the status of water trading in New South Wales, [Status of water trading in New South Wales](#), 2022, p ix.

4.4 Select market reform issues

4.4.1 Market information and data frameworks need modernisation

Market mechanisms for allocating scarce resources such as water rely on market participants having access to timely and relevant information. Many stakeholders identify a lack of information and transparency in Basin water markets as a key concern.¹⁵⁴ Such issues not only make the market less efficient, they also make it harder for regulators to detect market manipulation and other misconduct.¹⁵⁵

Market data in the Basin is highly fragmented and siloed, with inconsistent rules, policies and procedures across states, trade approval authorities, exchanges, brokers and IIOs. For example, information on current buy and sell offers (pre-trade price data) is needed for market participants to gauge current market prices and depth, but this information is scattered in various formats across multiple exchanges and individual broker websites.¹⁵⁶

Market data can also be poor quality or incomplete, including data from state registries.¹⁵⁷ For example, a 2019 MDBA audit identified pervasive issues with inaccurate or incomplete price reporting on trade approval forms.¹⁵⁸ Findings included that 50% of trades were not compliant with price reporting requirements under the Basin Plan water trading rules (such as price fields being left blank).¹⁵⁹ Reasons for this misreporting included trader confusion about the requirements, inadequate reporting systems and lack of data validation. The NSW Government has subsequently made improvements to trade forms based on recommendations from the price audit.¹⁶⁰

In addition, IIO irrigation or delivery rights are not subject to price reporting requirements, even though they make up a substantial proportion of the market as a whole. The ACCC's market integrity and conduct recommendations included extending price reporting requirements to cover all transactions of tradeable water rights, including those within an IIO.¹⁶¹

The ACCC made several recommendations relating to data collection, management and dissemination, including:

¹⁵⁴ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 320-321; p 331-352.

¹⁵⁵ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 178-180.

¹⁵⁶ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 336-339.

¹⁵⁷ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 331-343.

¹⁵⁸ MDBA, [Water Trade Price Reporting Audit Overview](#), MDBA, 2019.

¹⁵⁹ Deloitte, [Water Trade Price Reporting under Basin Plan, Part 2: Independent assurance report of individual trades](#), 2019, p 6.

¹⁶⁰ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 326; MDBA, [Submission to the ACCC Murray-Darling Basin water markets inquiry](#), 2020, p 6.

¹⁶¹ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 270-272.

- Implementing Basin-wide data standards
- Investing in digital infrastructure that will allow data sharing and interoperability between state registers, IIOs, exchange platforms and trade approval authorities
- Introducing mechanisms to trace parcels of water through the market from allocation to use (lifetime traceability)
- Developing a central public information portal.¹⁶²

The Australian Government's reform roadmap adopted a more incremental approach in their digital infrastructure recommendations (for example, rejecting the proposal of a single Basin-wide trade approval portal and postponing consideration of lifetime traceability) but in general reinforced the need to modernise trade processes and data collection.¹⁶³ In May 2023, the Australian Government indicated the budgeted water market reform funding would include support for a new water market hub, water markets website and water market data standards.¹⁶⁴

4.4.2 Stakeholders are concerned about transparency in the market

The ACCC made a broad range of findings regarding the need for greater market transparency. Among these, the ACCC noted stakeholder concerns about how governments make decisions that affect the market, such as water allocations and the opening of intervalley trade (IVT) limits. For example, the ACCC found that stakeholders were particularly concerned about the NSW Government's approach to determining water allocations, alleging that entitlement reliability was declining because new policies were setting more water aside for future years. However, when ACCC requested information on allocation operational rules or process guidelines, the NSW Department of Planning and Environment¹⁶⁵ declined to provide the information, stating: 'water allocation assessments and announcements are market sensitive therefore access to real-time assessment data and information prior to public release is strictly limited.'¹⁶⁶ The ACCC concluded that more transparency is needed around decision-making processes, the discretion given to water managers and how future extreme climatic events are to be managed.¹⁶⁷

Transparency regarding water ownership has become an especially controversial issue in NSW, particularly with respect to allowing public scrutiny of ownership by foreign entities and members of parliament. Since 2020 4 bills have been introduced by members or former members (Helen Dalton, MP, Independent) of the Shooters, Fishers and Farmers Party that

¹⁶² ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 29-33.

¹⁶³ Quinlivan, D, [Water market reform: final roadmap report](#), Australian Government, 2022, p 52-63.

¹⁶⁴ T Plibersek, [Managing our water better for the future](#) [media release], Australian Government, 9 May 2023, accessed 10 May 2023.

¹⁶⁵ Or the equivalent NSW department at the time.

¹⁶⁶ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 473

¹⁶⁷ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 467-484.

included provisions to increase public information on who owns water access rights.¹⁶⁸ A Legislative Council inquiry in 2020 reported on one of these bills (along with a government bill with an alternative transparency proposal). The reporting committee noted broad support among inquiry participants for greater transparency regarding water ownership but also acknowledged the tension between transparency and privacy in providing publicly identifiable information about market participants.¹⁶⁹ None of the bills proposing changes to water trading information or disclosures were passed by parliament.¹⁷⁰

In 2022 the Legislative Council Select Committee on the status of water trading recommended a public register of water ownership. The committee found that under current arrangements:

Information about water ownership and trades is typically not available, difficult to access, or inaccurate. This prevents the public from being able to scrutinise water ownership in this state.¹⁷¹

However, the ACCC concluded that publishing publicly identifiable information on water ownership is not necessary to assist stakeholders in making trading decisions and noted several concerns relating to privacy. The ACCC instead recommended improving the transparency of de-identified data.¹⁷²

4.4.3 Market architecture does not match hydrological realities

The ACCC identified a number of inefficiencies in the Basin's water market architecture—that is, the 'framework of laws, rules, policies and arrangements that govern where, when and what water can be traded.'¹⁷³ They concluded that:

Because market architecture does not always accurately reflect the hydrological realities of the system, it does not effectively send price signals to users that reflect the limited storage

¹⁶⁸ [Water Management Amendment \(Water Access Licence Register\) Bill 2022](#); [Water Management Amendment \(Water Rights Transparency\) Bill 2020 \(No 2\)](#); [Water Management Amendment \(Transparency of Water Rights\) Bill 2020](#); [Water Management Amendment \(Water Rights Transparency\) Bill 2020](#).

¹⁶⁹ NSW Legislative Council Portfolio Committee No. 4, [Constitution Amendment \(Water Accountability and Transparency\) Bill 2020](#), [Water Management Amendment \(Transparency of Water Rights\) Bill 2020](#) and [Water Management Amendment \(Water Allocations - Drought Information\) Bill 2020: Report 44](#), 2020, p 17.

¹⁷⁰ One aspect of the bills introduced by Helen Dalton, MP, and the Shooters, Fishers and Farmers party related to requiring members to disclose any water entitlements they own on their pecuniary interest forms. Helen Dalton, MP, succeeded in introducing related amendments to a government bill that was passed into law in November 2022; [Integrity Legislation Amendment Bill 2022](#); H Dalton, [Integrity Legislation Amendment Bill 2022](#), NSW Hansard, 15 November 2022.

¹⁷¹ NSW Legislative Council Select Committee on the status of water trading in New South Wales, [Status of water trading in New South Wales](#), 2022, p 20.

¹⁷² ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 346-348.

¹⁷³ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 21; key market architecture elements considered by the ACCC were allocation policies, carryover policies, intervalley trade rules, river operations requirements and metering and measuring use requirements.

and delivery capacity, or the potential third party impacts of trade, storage and delivery decisions.¹⁷⁴

The ACCC recommended a number of ‘targeted changes’¹⁷⁵ for immediate action, along with a long-term program for evaluating more ambitious reforms that tackle the underlying causes of the market inefficiencies.¹⁷⁶

During development of the reform roadmap, ‘market architecture emerged as a contentious area of proposed reform due to the ACCC’s recommendations also touching on water management and river operations.’¹⁷⁷ Some of the more controversial topics in market architecture reform include conveyance losses, intervalley trade and carryover parking.

4.4.3.1 Conveyance losses

Conveyance loss is water that is lost to seepage and evaporation as it moves through the river system. Conveyance loss rates depend on weather conditions, flow rates, river levels, and the distance the water travels, among other factors.¹⁷⁸ In aggregate, water trading can influence conveyance losses by, for instance, increasing the amount and rate of water delivery downstream. Currently, these losses are not accounted for in market architecture.¹⁷⁹ Some stakeholders have suggested introducing various kinds of conveyance loss factors, such as an exchange rate between zones. In such a scheme, one megalitre of water purchased from upstream would deliver less than one megalitre of water to the downstream purchaser.¹⁸⁰

The ACCC concluded increased trading of water downstream may be putting upward pressure on conveyance losses but was unable to determine the magnitude of this impact.¹⁸¹ The ACCC urged improvements to modelling and assessment of conveyance losses but did not consider the scale of the problem to be large enough to justify major changes in conveyance loss accounting.¹⁸²

Similarly to the ACCC, the reform roadmap recommended improved transparency about conveyance losses in the system, but it did not recommend introducing loss accounting reforms.¹⁸³ In contrast, the Legislative Council Select Committee on the status of water

¹⁷⁴ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 22.

¹⁷⁵ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 24.

¹⁷⁶ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 508.

¹⁷⁷ D Quinlivan, [Water market reform: final roadmap report](#), Australian Government, 2022, p 67.

¹⁷⁸ MDBA, [Losses in the River Murray System 2018-19](#), Australian Government, 2019, p 1-3.

¹⁷⁹ An exception is the use of conveyance loss trade factors in Queensland’s St George Water Supply Scheme; ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 541.

¹⁸⁰ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 540-542.

¹⁸¹ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 452-459.

¹⁸² ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 458.

¹⁸³ D Quinlivan, [Water market reform: final roadmap report](#), Australian Government, 2022, p 48.

trading recommended that the NSW Government advocate for the introduction of conveyance loss factors, noting that 'it strikes us as both unfair and inefficient for conveyance water losses to be socialised across water users in upstream communities in New South Wales, when one of the significant causes of losses is the increase in demand for water among downstream water users in Victoria and South Australia.'¹⁸⁴

4.4.3.2 Intervalley trade (IVT) issues

The ACCC concluded that 'there is more demand for inter-valley trade than is able to be met under current inter-valley trade arrangements.'¹⁸⁵ For example, the three IVT limits on trade into the Murray River below the Barmah Choke are closing (that is, trade is closing because a limit is reached) increasingly often, which can result in substantially higher water allocation prices below the choke.¹⁸⁶

One of the biggest issues for irrigators is equity of access to trade across the choke. The IVT limits have spurred a technological 'arms race' that allows well-resourced market participants to invest in digital tools to beat other participants in the race for limited trading opportunities. The ACCC noted:

...recent MDBA analysis found that, for trading across the Barmah Choke:

Since early September, most trades from Up to Down [above to below the choke] occurred within 2 minutes of trade opportunity becoming available.

In one instance, the entire 14.5 ML of trade opportunity was taken up by one trade two minutes after opening.¹⁸⁷

Some stakeholders have suggested improving equity of access by changing trade approvals from the current 'first come, first served' system to a randomised ballot system. The reform roadmap rejected this suggestion as 'slow and without certainty or risk management benefits for stakeholders.'¹⁸⁸ The ACCC also rejected the ballot mechanism, instead recommending a market-based mechanism, such as an auction approach in which limited trade opportunities go to the highest bidder.¹⁸⁹ The roadmap report did not include such a market-based mechanism in its recommendations.¹⁹⁰

¹⁸⁴ NSW Legislative Council Select Committee on the status of water trading in New South Wales, *Status of water trading in New South Wales*, 2022, p 20.

¹⁸⁵ ACCC, *Murray-Darling Basin water markets inquiry: final report*, Australian Government, 2021, p 121.

¹⁸⁶ ACCC, *Murray-Darling Basin water markets inquiry: final report*, Australian Government, 2021, p 436-7; the 3 limits are: into the Murray from the Goulburn, into the Murray from the Murrumbidgee and upstream to downstream of the Barmah Choke.

¹⁸⁷ ACCC, *Murray-Darling Basin water markets inquiry: final report*, Australian Government, 2021, p 439.

¹⁸⁸ D Quinlivan, *Water market reform: final roadmap report*, Australian Government, 2022, p 73.

¹⁸⁹ ACCC, *Murray-Darling Basin water markets inquiry: final report*, Australian Government, 2021, p 524-5.

¹⁹⁰ D Quinlivan, *Water market reform: final roadmap report*, Australian Government, 2022, p 73.

Another issue relating to IVT limits is the existence of ‘grandfathered tags’, which have become a mechanism by which a small number of traders can both bypass IVT limits and manipulate the timing of IVT limit opening. The Basin Plan Water Trading Rules exempt from IVT restrictions those water entitlements that, before 22 October 2010, were ‘tagged’ for water to be extracted in a different zone than the zone in which the entitlement is registered.¹⁹¹ Currently 16 grandfathered tags remain in Victoria. New South Wales did not provide the ACCC with data on grandfathered tags in the southern connected Basin.¹⁹²

The ACCC found that some holders of grandfathered tags are using them to gain access to potentially lucrative trade across the choke. A person with a grandfathered tag can strategically time their usage to trigger the opening or closing of an IVT limit, putting them at an advantage for capturing the resulting trade opportunities.¹⁹³

In development of the reform roadmap the Basin states agreed to support legislation to repeal the exemption for grandfathered tags ‘at the next available opportunity.’¹⁹⁴

4.3.3.3 Carryover parking

Carryover refers to the ability for water allocated to an entitlement in one water accounting year to be used in the next accounting year. In NSW carryover rules are specified by the relevant water sharing plan.¹⁹⁵ In general, the ability to carry over differs between the 2 main types of tradeable water access licences, that is, high security and general security licences. High security licences receive higher allocation priority and typically receive close to their full allocation each year. However, under most water sharing plans, holders of high security licences cannot carry over and must forfeit any remaining allocations at the end of the accounting year.¹⁹⁶ In contrast, general security licences have the lowest allocation priority and in dry years may receive very low or even no allocations, but they can typically carry over a percentage to the next year.

The capacity for carryover contributes to the value of general security licences. According to the ACCC, ‘in discussion with irrigators, it has been speculated that without carryover, New South Wales, Murrumbidgee general security entitlements would halve in value.’¹⁹⁷

Carryover parking refers to the trading of allocations to gain access to carryover capacity. Although carryover is generally regarded by irrigators as an important mechanism for

¹⁹¹ Basin Plan 2012 (Cth), s 12.23.

¹⁹² ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 440-1.

¹⁹³ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 440-3.

¹⁹⁴ D Quinlivan, [Murray-Darling Basin Water Market Reform - Development of implementation roadmap: December advice](#), Australian Government, 2021, p 14.

¹⁹⁵ *Water Management Act 2000* (NSW), s 21.

¹⁹⁶ NSW Department of Planning and Environment, [NSW Regulated Water Accounting Rules Summary](#), updated 21 June 2022, accessed 10 February 2023.

¹⁹⁷ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 490.

planning water use for the next growing season, the trade in carryover parking is controversial for some stakeholders. Submissions to the ACCC and the Legislative Council Select Committee included concerns that carryover parking results in higher water prices, greater evaporative losses and spill risk in dams. There were also concerns about the possibility that carryover results in lower allocations to general security licences. The stakeholders argued that carryover results in high security licence holders retaining allocations that would otherwise have been forfeited and available for reallocation after the end of the water accounting year, resulting in lower allocations to all licence holders.¹⁹⁸

The ACCC found that the volume of carryover parking is comparatively small but rapidly increasing.¹⁹⁹ They concluded that spill risk from carryover is generally adequately managed by Basin states and that the impact of carryover on allocations to general security licences is very small.²⁰⁰ However, they expressed concern that NSW does not take water storage evaporation losses into account in its carryover policies and recommended these losses be attributed to the individual rather than shared across all water users.²⁰¹ The reform roadmap did not include this loss accounting recommendation but instead recommended evaluation of the impacts of carryover parking trade.²⁰²

The Legislative Council Select Committee found that ‘investors are exploiting carryover water rules to their advantage, making profits off unused water while driving up prices for the irrigation farmers who need it.’²⁰³ The committee recommended that the NSW Government ‘investigate reports of “parking” of carryover water and develop solutions that restrict this from occurring except where water users genuinely require it.’²⁰⁴

¹⁹⁸ NSW Legislative Council Select Committee on the status of water trading in New South Wales, [Status of water trading in New South Wales](#), 2022, p 18; ACCC, [Murray-Darling Basin water markets inquiry: final report](#), ACCC, 2021, p 487-494.

¹⁹⁹ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 487-488.

²⁰⁰ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 489-494.

²⁰¹ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 491-493 and p 514-515.

²⁰² D Quinlivan, [Water market reform: final roadmap report](#), Australian Government, 2022, p 12.

²⁰³ NSW Legislative Council Select Committee on the status of water trading in New South Wales, [Status of water trading in New South Wales](#), 2022, p 20.

²⁰⁴ NSW Legislative Council Select Committee on the status of water trading in New South Wales, [Status of water trading in New South Wales](#), 2022, p 21.

4.4.4 More fundamental market reforms require further evaluation

The ACCC recommended that Basin governments should start work immediately on evaluating mechanisms for more wide-reaching changes to market design and architecture, in light of the intensifying impacts of trade (such as conveyance losses, erosion and delivery shortfalls) and the possibility that market efficiency may deteriorate. The ACCC advocated for such changes to coincide with the next Basin Plan review, which is planned for 2026.²⁰⁵

Several potential mechanisms for addressing market inefficiencies were identified for evaluation, including:

- Water accounting methods that align with time of delivery rather than time of trade (tagged allocation trade)
- Water accounting methods and storage rights that align with available storage space (capacity sharing and continuous accounting)
- Methods to allocate limited delivery capacity (congestion or time-of-use charges, markets for delivery or extraction rights)
- Accounting for conveyance losses (conveyance loss factors)
- Alternative market models that manage operational trade-offs and result in price signals for costs of use, storage and delivery decisions (water banks or smart markets).

The key attributes of these options and the benefits and concerns raised by ACCC in their discussion are briefly described in [Appendix 1](#).

The ACCC did not explicitly recommend any of these potential mechanisms, instead emphasising the need to improve market data, information and modelling to allow more effective cost-benefit analysis of the proposals.²⁰⁶ This is in part because of the potential for high implementation costs, including impacts on the financial value of water entitlements. The ACCC noted that in feedback on market architecture options 'stakeholders generally expressed caution about major reforms.'²⁰⁷

²⁰⁵ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 529-545.

²⁰⁶ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 529-545.

²⁰⁷ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), Australian Government, 2021, p 509.

5. Compliance with the Basin Plan

Under the Water Act, Basin government agencies, infrastructure operators and water entitlement holders must all act consistently with and give effect to the Basin Plan and water resource plans (WRPs).²⁰⁸ In general, Basin states are responsible for ensuring individual entitlement holders comply with state water management laws and the Basin Plan.²⁰⁹ Responsibility for enforcing the compliance of Basin states with regards to the Basin Plan was recently transferred from the MDBA to the new IGWC. This section summarises recent compliance reforms and provides an overview of 3 NSW Basin Plan compliance issues identified by the IGWC.

5.1 Recent basin compliance and integrity reforms

In 2017 the ABC aired the *Four Corners* episode 'Pumped', which included allegations of widespread illegal water use in the Barwon-Darling river system and misconduct at the then NSW Department of Primary Industries – Water.²¹⁰ These allegations were followed by numerous reviews of the integrity of water management, including from the Independent Commission Against Corruption, the MDBA and an independent report for the NSW Government (the Matthews report).²¹¹ In addition, the Productivity Commission examined compliance issues in its 5-year review of the Basin Plan.²¹²

²⁰⁸ *Water Act 2007* (Cth), s 34, s 35, s 58, s 59

²⁰⁹ *Murray-Darling Basin Compliance Compact*, 2018, p 12-16.

²¹⁰ M Fallon (producer), 'Pumped' [television program], *Four Corners*, Australian Broadcasting Corporation, 24 July 2017.

²¹¹ NSW Ombudsman, *Investigation into water compliance and enforcement 2007-17*, 2017; Australian National Audit Office, *Independent assurance report: Department of Agriculture and Water Resources' Assessment of New South Wales' Protection and use of Environmental Water under the National Partnership Agreement on Implementing Water Reform in the Murray-Darling Basin*, Australian Government, 2017; MDBA, *The Murray-Darling Basin water compliance review*, Australian Government, 2017; K Matthews, *Independent investigation in NSW water management and compliance: advice on implementation*, report to the Department of Industry, NSW Government, 2017; NSW Ombudsman, *Correcting the record: Investigation into water compliance and enforcement 2007-17*, 2017; NSW Ombudsman, *Water: compliance and enforcement – a special report to parliament*, 2018; T Waldron et al., *Independent audit of Queensland non-urban water measurement and compliance*, report to the Queensland Government, 2018; Australian Senate Rural and Regional Affairs and Transport References Committee, *Integrity of the water market in the Murray-Darling Basin*, 2018; Independent Commission Against Corruption, *Investigation into complaints of corruption in the management of water in NSW and systemic non-compliance with the Water Management Act 2000*, 2020.

²¹² Productivity Commission, *Murray-Darling Basin Plan: Five-year assessment*, Australian Government, 2018.

A number of major compliance and integrity reforms were subsequently initiated, including:

- **NSW Government Water Reform Action Plan**²¹³

In 2017, the NSW Government released the Water Reform Action Plan, which outlined its response to recommendations from the Matthews report and the MDBA's compliance review. The listed commitments included establishing an independent regulatory agency (Natural Resources Access Regulator, NRAR), increasing the budget for compliance and enforcement, and having all NSW WRPs accredited by the MDBA. Independent reviews were published in 2019 and 2020.²¹⁴ These reviews found all actions had been completed except a water monitoring technology plan and the accreditation of NSW WRPs.

- **The Basin Compliance Compact**²¹⁵

In 2018, the Basin states and Australian Government entered into the Basin Compliance Compact, which is a non-binding joint commitment to restore public confidence in water resource management through agreed priorities and work plans. Commitments fell under 5 themes: transparency and accountability, compliance and enforcement frameworks, metering and measurement, finalising WRPs, and protecting and managing environmental water.

- **Inspector-General of Water Compliance (IGWC)**²¹⁶

In 2019, in response to concerns raised during the Productivity Commission's review, the Basin states agreed to the Australian Government's proposal to establish an Inspector-General to oversee implementation of the Basin Plan.²¹⁷ In 2021, the Water Act was amended to give the IGWC statutory powers.²¹⁸ The IGWC's functions under the Water Act include oversight of Australian and Basin state government agencies and their implementation of the Basin Plan.²¹⁹

²¹³ Department of Industry, [Securing our water: NSW Government water reform action plan](#), NSW Government, 2017.

²¹⁴ D Owens, [Water Reform Action Plan Independent Review](#), report to the Department of Industry, NSW Government, 2019; Alluvium, [Independent review of progress of the NSW Water Reform Action Plan and related NSW water reform commitments](#), report to the Department of Planning, Industry, Environment – Water, NSW Government, 2020.

²¹⁵ [Murray-Darling Basin Compliance Compact](#), 2018.

²¹⁶ Inspector-General of Water Compliance, [Inspector-General of Water Compliance](#), n.d., accessed 21 February 2023.

²¹⁷ [Improving implementation of the Murray-Darling Basin Plan: Joint Basin government response to the Productivity Commission inquiry report: Murray-Darling Basin Plan: Five-year assessment](#), 2019; Murray-Darling Ministerial Council, [Communique for Murray-Darling Basin Ministerial Council meeting of 4 August 2019](#), published 7 August 2019, accessed 21 February 2023.

²¹⁸ [Improving implementation of the Murray-Darling Basin Plan: Joint Basin government response to the Productivity Commission inquiry report: Murray-Darling Basin Plan: Five-year assessment](#), 2019; [Water Legislation Amendment \(Inspector-General of Water Compliance and Other Measures\) Act 2021](#) (Cth).

²¹⁹ [Water Act 2007](#) (Cth), s 215C.

5.2 Select Basin Plan compliance issues for NSW

In an August 2022 review of compliance and enforcement in the Basin, the IGWC commended NSW for its reform progress since 2017, particularly with regard to resourcing, public reporting and the use of new technologies. However, the IGWC also noted that the state's WRPs are 'well past committed deadlines' and stated:

...until the unconstrained taking of floodplain water is regulated, this will remain a shortcoming of the New South Wales water management framework under the Basin Plan. Until it is regulated, floodplain harvesting water take remains directly unmeasured and both state and commonwealth compliance remains inoperative.²²⁰

In October 2022, the IGWC published an audit of the recording and reporting of interstate trades between NSW and Queensland in the Border Rivers catchment. The audit identified significant issues in the accuracy and integrity of water trade and take data.²²¹ The issues of water resource plan accreditation, floodplain harvesting regulation and Border Rivers interstate trade are considered in more detail below.

5.2.1 Water resource plans

Basin state compliance with an SDL can only be enforced under the Basin Plan once the relevant WRP is accredited.²²² Only one WRP (from Queensland) was accredited by the time SDLs came into effect on 1 July 2019.²²³ To ensure SDLs were given effect during the accreditation process, the Basin states each entered into bilateral agreements with the Australian Government.²²⁴

On 18 December 2019, the NSW Government announced that it would not submit any WRPs for assessment and accreditation until after drought conditions ended.²²⁵ By 1 July 2020, all other Basin states had accredited WRPs in place.²²⁶ NSW submitted all 20 of its draft WRPs for assessment during 2020, but then withdrew them in 2021 after the MDBA found they were inconsistent with Basin Plan requirements.²²⁷ The MDBA reportedly judged several aspects of the plans as unlikely to meet requirements, including issues with modelling and determination of take, how the plan ensured there was no net reduction in

²²⁰ IGWC, [Compliance and enforcement across the Murray-Darling Basin](#), Australian Government, 2022, p 9.

²²¹ IGWC, [Audit of Accounting for Interstate Trade in the Northern Basin](#), Australian Government, 2022.

²²² According to the IGWC, this is because the WRP describes the water accounting methods needed to calculate SDL compliance under the Basin Plan, see IGWC, [Sustainable Diversion Limit Compliance Frequently Asked Questions](#), 2022, accessed 16 March 2023.

²²³ MDBA, [Murray-Darling Basin sustainable diversion limit compliance outcomes 2019-20](#), MDBA, Australian Government, 2021.

²²⁴ MDBA, [Bilateral agreements with Basin state and territory governments](#), n.d., accessed 16 March 2023.

²²⁵ NSW Department of Planning and Environment, [NSW changes course of Basin Plan and puts regional communities first](#) [media release], NSW Government, 18 December 2019, accessed 28 February 2023.

²²⁶ IGWC, [Sustainable Diversion Limit Compliance Frequently Asked Questions](#), 2022, accessed 16 March 2023.

²²⁷ MDBA, [Water resource plans – November 2021 quarterly report](#), Australian Government, 2021, p 5.

planned environmental water and the representation of First Nations values, uses and objectives.²²⁸

In June 2022, the IGWC described the absence of accredited WRPs in NSW as probably ‘the most critical failure of the plan to date,’ stating that:

As a result, there is currently no legal basis upon which my office can assess NSW’s compliance with the long-term annual SDLs for the purpose of the Water Act. Or more importantly, we have no capacity to enforce the WRP.²²⁹

The IGWC indicated that if NSW did not promptly submit WRPs capable of accreditation, the Australian Government would need to use its powers under the Water Act to adopt a WRP prepared by the MDBA rather than the state.²³⁰ By February 2023, NSW had resubmitted all 20 WRPs for accreditation and 2 were accredited and operational.²³¹

The length of time required for assessment and accreditation varies considerably, but when NSW’s WRPs were first submitted in mid-2020, the stated timeframe suggested the MDBA would provide their accreditation recommendations for all NSW’s plans under assessment within approximately 18 months.²³²

5.2.2 Floodplain harvesting

Floodplain harvesting refers to the capture and storage of floodwaters on farms for later use. This practice is most prevalent in the northern Basin, where public dams are smaller and water allocations are less reliable.²³³ In NSW, floodplain harvesting is not yet subject to a licensing and metering framework.

Exactly how much water is taken in this way is a matter of considerable debate,²³⁴ but the NSW Government estimates that in certain catchments it amounts to 25% of the total legal

²²⁸ T Goodes, [Environment and Communications Legislation Committee – Estimates](#), *Commonwealth of Australia Hansard*, 11 November, 2022, p 46.

²²⁹ IGWC, [Transcript – The Hon. Troy Grant – Inspector General of Water Compliance, 2022 River Reflections Conference](#), 2 June 2022, accessed 16 March 2023.

²³⁰ IGWC, [Transcript – The Hon. Troy Grant – Inspector General of Water Compliance, 2022 River Reflections Conference](#), 2 June 2022, accessed 16 March 2023.

²³¹ NSW Department of Planning and the Environment—Water, [All 20 NSW water resource plans lodged, 14 February 2023](#), accessed 23 May 2023; MDBA, [Water resource plans – November 2022 quarterly report](#), Australian Government, 2022.

²³² MDBA, [Water resource plans – December 2020 quarterly report](#), Australian Government, 2020, p 3.

²³³ NSW Department of Planning, Industry and Environment, [NSW Government Submission to the Select Committee on Floodplain Harvesting](#), 2021, p 1; CA Pollino et al. Rural and regional communities of the Murray-Darling Basin, in BT Hart et al. (eds), *Murray-Darling Basin, Australia: its future management*, Vol 1, Elsevier, p 26-27.

²³⁴ For example, Brown et al. estimate floodplain harvesting take to be nearly twice the NSW Government’s estimate (P Brown et al. [An unsustainable level of take: on-farm storages and floodplain water harvesting in the northern Murray–Darling Basin, Australia](#), *Australasian Journal of Water Resources*, 26(1):43-58, DOI: [10.1080/13241583.2022.2042061](#)); for a range of stakeholder views on models of floodplain harvesting take, see Chapter 4 of the [NSW Legislative Council Select Committee on Floodplain Harvesting Final Report](#), 2021.

surface take.²³⁵ It also estimates that in most of the northern Basin, floodplain harvesting now exceeds limits set in the water sharing plans and the Basin Plan.²³⁶ Northern Basin irrigators maintain that floodplain harvesting is crucial for their operations and has only marginal downstream impacts, while downstream stakeholders argue the practice has significantly reduced flows and has had adverse impacts on their communities.²³⁷

Under the Basin Plan, floodplain harvesting is included in the forms of take regulated by SDLs.²³⁸ WRPs must specify any intercepting activities (which includes floodplain harvesting) that may have significant impact on the relevant water resources. WRPs that identify any such intercepting activities must also set out processes for monitoring the impact of these activities and addressing any growth in interception.²³⁹ In the 2018 Basin Compliance Compact, NSW committed to bringing floodplain harvesting into its licencing framework under the Water Management Act through implementation of the NSW Floodplain Harvesting Policy.²⁴⁰

The policy, released in 2013 and revised in 2018, applies across NSW but is to be implemented first in the 5 valleys where floodplain harvesting is most prevalent: Border Rivers, Gwydir, Namoi, Barwon-Darling and Macquarie. The policy outlines an implementation process for enacting the licencing framework and issuing the relevant approvals and licences under the Water Management Act.²⁴¹ In 2019, the NSW Government released the Floodplain Harvesting Action Plan, which set a timeframe to complete implementation of the policy by June 2021.²⁴²

To implement the licencing framework, the NSW Government must amend the Water Management (General) Regulation 2018 (the regulation).²⁴³ Amendments were made to the regulation and then repealed on 4 occasions between 2020 and 2022 by NSW Legislative Council disallowance motions. The regulation was most recently amended on 3 February 2023 to enable determination of floodplain harvesting licences in the Macquarie, Barwon-

²³⁵ NSW Department of Planning and the Environment—Water, [Frequently asked questions – Healthy Floodplains Project and floodplain harvesting](#), n.d., accessed 16 March 2023; NSW Department of Planning, Industry and Environment, [NSW Government Submission to the Select Committee on Floodplain Harvesting](#), 2021, p 2.

²³⁶ NSW Department of Planning and the Environment—Water, [Impact of floodplain harvesting growth in the northern Basin](#), n.d. accessed 16 March 2023.

²³⁷ NSW Legislative Council Select Committee on Floodplain Harvesting, [Floodplain harvesting](#), 2021, p 39-91.

²³⁸ *Basin Plan 2012* (Cth), [s 1.07](#).

²³⁹ *Basin Plan 2012* (Cth), [Ch 10, Pt 5](#).

²⁴⁰ [Murray-Darling Basin Compliance Compact](#), 2018, p 27.

²⁴¹ NSW Department of Industry, [NSW Floodplain Harvesting Policy](#), NSW Government, 2018.

²⁴² NSW Department of Planning, Industry and Environment, [Floodplain Harvesting Action Plan](#), NSW Government, 2019.

²⁴³ NSW Department of Planning and Environment, [Outcomes from consultation](#), n.d., accessed 17 March 2023.

Darling and Namoi valleys.²⁴⁴ These events are described in more detail in the following sections, and a timeline is provided in [Appendix 2](#).

5.2.2.1 Disallowance of floodplain licence exemption in 2020

In late January 2020, after several years of record drought conditions, widespread rain fell across parts of the northern Basin. To protect the 'first flush' flows into the Barwon and Darling rivers, the NSW Government instituted a series of temporary restrictions on water extractions that prioritised critical human and environmental needs (such as town water supply and river connectivity).²⁴⁵ Among these restrictions was an order made under the Water Management Act that had the effect of prohibiting floodplain harvesting in a number of floodplains.²⁴⁶

The same day as the floodplain harvesting restriction was made, an amendment to the regulation commenced that exempted floodplain harvesting from the Water Management Act's requirements for work approvals or access licences.²⁴⁷ According to then Minister for Water, Property and Housing, Melinda Pavey, MP, this licence exemption was required before the floodplain harvesting prohibition could take effect.²⁴⁸ The exemption amendment had previously been identified in the 2013 Floodplain Harvesting Policy as a transitional arrangement that would be required while the new licencing scheme was implemented.²⁴⁹

After 28 February 2020, the floodplain harvesting prohibitions ceased to have effect in all valleys, but the exemption amendment to the regulation remained in force.²⁵⁰ On 27 February 2020 the NSW Legislative Council agreed to refer the amendment to the Regulation Committee for an inquiry, noting community confusion about its operation and application.²⁵¹ The Regulation Committee inquiry heard evidence on the legal status of floodplain harvesting, the need for the regulation and the impact of the regulation on the

²⁴⁴ [Water Management \(General\) Amendment \(Floodplain Harvesting Access Licences\) Regulation 2023](#); NSW Department of Planning and Environment, [Amendments to water regulations for floodplain harvesting](#), n.d., accessed 17 March 2023.

²⁴⁵ NSW Department of Planning and Environment, [Northern Basin First Flush Assessment](#), n.d. accessed 18 March 2023; NSW Department of Planning, Industry and Environment, [Fact sheet - Temporary water restrictions on river and overland flows in the northern Basin](#), 13 February 2020, accessed 17 March 2023.

²⁴⁶ NSW Department of Planning and Environment, [Temporary Water Restriction - Northern Basin Floodplain Harvesting](#), 7 February 2020, accessed 17 March 2023; additional floodplains were later added to the order via an amendment, NSW Department of Planning and Environment, [Temporary Water Restriction - Northern Basin Floodplain Harvesting \(Amendment\)](#), 12 February 2020, accessed 17 March 2023.

²⁴⁷ [Water Management \(General\) Amendment \(Exemptions for Floodplain Harvesting\) Regulation 2020](#)

²⁴⁸ M Pavey, [Submission to NSW Legislative Council's Regulation Committee inquiry on the impact and implementation of the Water Management \(General\) Amendment \(Exemptions for Floodplain Harvesting\) Regulation 2020](#), 2020; the legal basis for this requirement is disputed by some stakeholders, see NSW Legislative Council Select Committee on Floodplain Harvesting, [Floodplain harvesting](#), 2021, p 7-15.

²⁴⁹ NSW Department of Industry, [NSW Floodplain Harvesting Policy](#), NSW Government, 2018, p 6.

²⁵⁰ NSW Government Gazette, [No 30, 7 February 2020](#).

²⁵¹ M Veitch, [Regulation Committee](#), *NSW Hansard*, 27 February 2020.

number of flood works and the extent of floodplain harvesting. On 22 September 2020 the committee's report was tabled. It recommended the Legislative Council proceed to a disallowance debate. The debate occurred the same day and the exemption amendment was disallowed.²⁵² The disallowance was moved by Justin Field, MLC (independent), citing 2 key reasons:

Firstly, the legal basis for the regulation has not been made clear by the Government. Secondly, the volumes of floodplain harvesting are so contested that the impact of this regulation cannot be known.²⁵³

5.2.2.2 Disallowance of licencing, measurement and rainfall runoff exemption amendments in 2021

In November 2020, the NSW Government began public consultation on 3 amendments to the regulation that were needed to implement the NSW Floodplain Harvesting Policy.²⁵⁴

These amendments set out eligibility for floodplain harvesting access licences and determination of entitlements under those licences, imposed various metering and measurement conditions on works used under those licences and exempted from the licence requirements the use of tailwater drains to collect rainfall run-off from an irrigated field.²⁵⁵

These amendments were made on 30 April 2021. On 6 May 2021, all 3 regulations were disallowed by the Legislative Council.²⁵⁶ In moving the disallowance, Justin Field, MLC, stated:

As important as the mechanism for issuing licences, agreeing on the modelling that informs the number that will be issued and how that take is ultimately measured, the operational rules for when floodplain water can and cannot be taken and how it contributes to the needs of downstream communities and the protection of the environment are far more important. Those rules are not settled and while uncertainty remains around them, it is difficult for

²⁵² [Water Management \(General\) Amendment \(Exemptions for Floodplain Harvesting\) Regulation 2020](#), NSW Hansard, 22 September 2020.

²⁵³ J Field, [Water Management \(General\) Amendment \(Exemptions for Floodplain Harvesting\) Regulation 2020](#), NSW Hansard, 22 September 2020.

²⁵⁴ NSW Department of Planning and Environment, [Amendments to water regulations for floodplain harvesting](#), n.d., accessed 17 March 2023; [Water Management \(General\) Amendment \(Floodplain Harvesting Access Licences\) Regulation 2021](#); [Water Management \(General\) Amendment \(Floodplain Harvesting Measurement\) Regulation 2021](#); [Water Management \(General\) Amendment \(Exemption for Rainfall Run-off Collection\) Regulation 2021](#).

²⁵⁵ [Water Management \(General\) Amendment \(Floodplain Harvesting Access Licences\) Regulation 2021](#); [Water Management \(General\) Amendment \(Floodplain Harvesting Measurement\) Regulation 2021](#); [Water Management \(General\) Amendment \(Exemption for Rainfall Run-off Collection\) Regulation 2021](#).

²⁵⁶ [Water Management \(General\) Amendment \(Floodplain Harvesting Access Licences\) Regulation 2021](#) [Water Management \(General\) Amendment \(Exemption For Rainfall Run-Off Collection\) Regulation 2021](#) [Water Management \(General\) Amendment \(Floodplain Harvesting Measurement\) Regulation 2021](#), NSW Hansard, 6 May 2021. <https://www.parliament.nsw.gov.au/Hansard/Pages/HansardFull.aspx>

members to sign off on a regulatory framework that enables the issuing of floodplain harvesting access licences and formalises the practice of floodplain harvesting.²⁵⁷

5.2.2.3 Select Committee on floodplain harvesting

On 23 June 2021, the Legislative Council established a select committee to inquire into floodplain harvesting.²⁵⁸ Reporting in December 2021, the committee found that floodplain harvesting has had a significant impact on downstream flows and river health, leading to numerous economic, social, cultural and environmental impacts. The committee also made findings regarding deficiencies in the implementation of the NSW Government's floodplain harvesting policies in relation to issues such as the modelling of floodplain harvesting volumes, transparency, engagement with First Nations peoples, licensing rules and potential legal issues.²⁵⁹

The committee made 25 recommendations to address their findings. Select recommendations included that:

- Floodplain harvesting licences should only be issued once all the committee's recommendations are implemented
- An independent expert panel coordinated by the Natural Resources Commission should be established to assess, accredit and audit various matters relating to the models used in water sharing plans and compliance with diversion limits
- Any floodplain harvesting licences and entitlements issued should be non-compensable and subject to parliamentary oversight
- Minimum flow targets should be developed, below which any take by floodplain harvesting would not be permitted.²⁶⁰

The government response was published in May 2022 and supported or partially supported 20 of the recommendations. The government did not support postponing the licencing scheme any further.²⁶¹ Regarding oversight by an independent expert panel, the government indicated that the MDBA undertakes these functions, but it would consider whether the Natural Resources Commission can be engaged in other ways to support the

²⁵⁷ J Field, [Water Management \(General\) Amendment \(Floodplain Harvesting Access Licences\) Regulation 2021](#), [Water Management \(General\) Amendment \(Exemption For Rainfall Run-Off Collection\) Regulation 2021](#), [Water Management \(General\) Amendment \(Floodplain Harvesting Measurement\) Regulation 2021](#), *NSW Hansard*, 6 May 2021. <https://www.parliament.nsw.gov.au/Hansard/Pages/HansardFull.aspx>

²⁵⁸ C Faehrmann, [Select Committee on Floodplain Harvesting](#), *NSW Hansard*, 23 June 2021.

²⁵⁹ NSW Legislative Council Select Committee on Floodplain Harvesting, [Floodplain harvesting](#), 2021, p ix-x.

²⁶⁰ NSW Legislative Council Select Committee on Floodplain Harvesting, [Floodplain harvesting](#), 2021, p xi-xiii.

²⁶¹ NSW Government, [Response to the Select Committee on Floodplain Harvesting](#), 25 May 2022.

intent of the recommendation. It also noted that it had already committed under the NSW Water Strategy to greater transparency regarding data and models.²⁶²

The government responded to the committee's recommendation to make licences non-compensable by stating it did not anticipate that changes to allocations would trigger compensation if they were made through an amendment that is authorised by the relevant NSW water sharing plan under the Water Management Act.²⁶³ Between March and May 2022, 2 bills to restrict compensation for floodplain harvesting licence holders were introduced to the Legislative Council by The Greens and Justin Field, MLC, and one was introduced to the Legislative Assembly by Helen Dalton, MP.²⁶⁴ In introducing The Greens' bill, Cate Faehrmann, MLC, stated:

...one of the consequences of handing out these entitlements is that if—hopefully, this will be the case—a future government comes to its senses and decides to return the water that is granted in the coming months to the environment and downstream communities and to the basin entirely, that will come at a hefty price tag for that government and for future taxpayers. An indication of just how hefty are the water buybacks through the Condamine Balonne strategic water purchase is that the Commonwealth paid \$2,745 per megalitre. If the Government hands out its proposed 346 gigalitres of licences that it proposes to hand out under the floodplain harvesting licences in the north—it is starting to hand them out—that will equate to \$950 million worth of licences.²⁶⁵

All 3 bills lapsed with the end of the 57th Parliament.²⁶⁶

In response to the recommendation to develop minimum flow targets, the NSW Government indicated that it would assess whether flow targets for downstream critical needs that were then being consulted on for incorporation in the Barwon-Darling water sharing plan under the Water Management Act were suitable for use as floodplain harvesting licence rules.²⁶⁷ The response also proposed including a new rule in water sharing plans that would restrict floodplain harvesting whenever there is less than 195 GL

²⁶² NSW Government, [Response to the Select Committee on Floodplain Harvesting](#), 25 May 2022.

²⁶³ NSW Government, [Response to the Select Committee on Floodplain Harvesting](#), 25 May 2022, p 13.

²⁶⁴ C Faehrmann, [Water Management Amendment \(No Compensation for Floodplain Harvesting Licences\) Bill 2022](#), *NSW Hansard*, 30 March 2022; J Field, [Water Management Amendment \(Floodplain Harvesting Licences\) Bill 2022](#), *NSW Hansard*, 11 May 2022; H Dalton, [Water Management Amendment \(Floodplain Harvesting Licences Compensation\) Bill 2022](#), 19 May 2022.

²⁶⁵ C Faehrmann, [Water Management Amendment \(No Compensation for Floodplain Harvesting Licences\) Bill 2022](#), *NSW Hansard*, 30 March 2022.

²⁶⁶ [Water Management Amendment \(Floodplain Harvesting Licences Compensation\) Bill 2022 \(nsw.gov.au\)](#); [Water Management Amendment \(Floodplain Harvesting Licences\) Bill 2022 \(nsw.gov.au\)](#); [Water Management Amendment \(No Compensation for Floodplain Harvesting Licences\) Bill 2022 \(nsw.gov.au\)](#).

²⁶⁷ NSW Government, [Response to the Select Committee on Floodplain Harvesting](#), 25 May 2022, p 12.

stored in the Menindee Lakes and flows are below local targets.²⁶⁸ This proposal was referred to extensively in subsequent parliamentary debates, including later disallowance motions and orders to produce documents.²⁶⁹ Documents released under these orders²⁷⁰ showed that the Department of Planning and Environment – Environment and Heritage group advised the Environment Minister that the proposed targets would be too low to protect key environmental assets outside extreme dry periods and did not support the principles of the Water Management Act.²⁷¹

5.2.2.4 Disallowance of licencing, measurement and rainfall runoff exemption amendment in 2022

On 17 December 2021, the Water Management (General) Amendment Regulation 2021 was published, which essentially combined, with minor changes, the provisions of the 3 regulations that had been disallowed in May 2021.²⁷² On 21 February 2022, the NSW Government issued 132 floodplain harvesting access licences in the Border Rivers and Gwydir valleys.²⁷³ On 24 February 2022, the December 2021 regulation was disallowed in the Legislative Council.²⁷⁴ The licences issued before the disallowance retained their validity after the disallowance.²⁷⁵

²⁶⁸ NSW Department of Planning and Environment–Water, [NSW Legislative Council inquiry into floodplain harvesting](#), n.d. accessed 24 March 2023; NSW Government, [Response to the Select Committee on Floodplain Harvesting](#), 25 May 2022, p 5.

²⁶⁹ J Field, [Floodplain Harvesting – Production of Documents: Order](#), *NSW Hansard*, 8 June 2022; J Field, [Flood Plain Harvesting](#), *NSW Hansard*, 10 August 2022; C Faehrmann, [Floodplain Harvesting – Production of Documents: Further Order](#), *NSW Hansard*, 10 August 2022; H Dalton, [Water Management \(General\) Amendment \(Floodplain Harvesting Access Licences\) Regulation 2022](#) [Water Management \(General\) Amendment Regulation \(No 2\) 2022](#), *NSW Hansard*, 10 August 2022; M Banasiak, C Faehrmann, [Water Management \(General\) Amendment \(Floodplain Harvesting Access Licences\) Regulation 2022](#), *NSW Hansard*, 21 September 2022.

²⁷⁰ [Return to order - Floodplain harvesting metrics - Documents received on Wednesday 22 June 2022 from the Secretary of the Department of Premier and Cabinet, together with an indexed list of documents](#), NSW Legislative Council Tabled Papers, 22 June 2022; [Return to order - Floodplain Harvesting - Further order \(10 August 2022\) - Documents received on Wednesday 31 August 2022 from the Secretary of the Department of Premier and Cabinet, together with an indexed list of documents](#), NSW Legislative Council Tabled Papers, 31 August 2022.

²⁷¹ L Cox, [NSW flood plain harvesting rules won't protect environment, government advisers warn](#), *The Guardian*, 17 July 2022, accessed 24 March 2023; J Field, [Flood Plain Harvesting](#), *NSW Hansard*, 10 August 2022; J Field, C Faehrmann, R Jackson, [Water Management \(General\) Amendment \(Floodplain Harvesting Access Licences\) Regulation 2022](#), *NSW Hansard*, 21 September 2022.

²⁷² [Water Management \(General\) Amendment Regulation 2021](#)

²⁷³ NSW Department of Planning and Environment, [Compliance with regulations - determination of floodplain harvesting access licences in the Gwydir and NSW Border Rivers](#), NSW Government, February 2022, accessed 1 March 2023; in addition on 18 February 2022 a proclamation was made declaring the Water Management Act applies to floodplain harvesting access licences ([Water Management \(Application of Act to Certain Water Sources\) Proclamation 2022](#)).

²⁷⁴ J Field, [Water Management \(General\) Amendment Regulation 2021](#), *NSW Hansard*, 24 February 2022.

²⁷⁵ NSW Department of Planning and Environment, [Amendments to water regulations for floodplain harvesting](#), n.d., accessed 17 March 2023; on 16 December 2022 additional amendments were made to the Water Management (General) Regulation 2018 to provide more time for compliance with metering requirements and to make transitional arrangements for metering of floodplain harvesting ([Water Management \(General\) Amendment Regulation \(No 3\) 2022](#)).

5.2.2.5 Disallowances of licencing amendment in 2022

On 1 July 2022, the amendments that had been previously disallowed were published again (with minor changes), this time in 2 amending regulations.²⁷⁶ On 29 July, the relevant NSW water sharing plans for the Gwydir and NSW Border River valleys were amended to include new floodplain harvesting rules that would give effect to the floodplain harvesting licences that had been issued earlier in the year.²⁷⁷ The relevant water sharing plan for the Macquarie valley was also amended to include the floodplain harvesting licence rules (floodplain harvesting licences had not yet been issued for this catchment).²⁷⁸

On 10 August 2022, Helen Dalton, MP, moved to disallow the amendments in the Legislative Assembly, but the motion was not agreed to.²⁷⁹ On 21 September 2022, Justin Field, MLC, moved in the Legislative Council to disallow the regulation²⁸⁰ that related to the issuing of floodplain harvesting licences.²⁸¹ The motion to disallow was agreed to. The regulation²⁸² that contained measurement and metering and the rainfall runoff exemption amendments was not covered by the disallowance motion. The measurement and metering and rainfall runoff provisions were not disallowed so that NRAR would continue to have authorisation to monitor the existing licences that had been issued in the Border Rivers and Gwydir valleys before the 24 February 2022 disallowance motion.²⁸³

5.2.2.6 Licensing amendment of 2023

On 3 February 2023, the NSW Government published a floodplain harvesting licensing amendment to the regulation that is essentially the same as the amendment disallowed on 21 September 2022. Because the regulation was published during a parliamentary recess, no disallowance motions could be debated after the 2023 election. Water spokesperson for

²⁷⁶ [Water Management \(General\) Amendment \(Floodplain Harvesting Access Licences\) Regulation 2022](#); [Water Management \(General\) Amendment Regulation \(No 2\) 2022](#).

²⁷⁷ Water cannot be taken under the floodplain harvesting licences until WaterNSW credits an associated water allocation account and the rules relating to the licence commence in the relevant water sharing plan ([Water Sharing Plan for the Gwydir Regulated River Water Source Amendment Order 2022](#); [Water Sharing Plan for the NSW Border Rivers Regulated River Water Source Amendment Order 2022](#); H Alexander, [Irrigators 'gifted' water licences by NSW ministers](#), Sydney Morning Herald, 29 July 2022, accessed 17 March 2023; NSW Department of Planning and Environment, [Compliance with regulations - determination of floodplain harvesting access licences in the Gwydir and NSW Border Rivers](#), NSW Government, February 2022, accessed 1 March 2023.

²⁷⁸ [Water Sharing Plan for the Macquarie and Cudgegong Regulated Rivers Water Source Amendment Order 2022](#)

²⁷⁹ H Dalton, [Water Management \(General\) Amendment \(Floodplain Harvesting Access Licences\) Regulation 2022](#) [Water Management \(General\) Amendment Regulation \(No 2\) 2022](#), *NSW Hansard*, 10 August 2022.

²⁸⁰ [Water Management \(General\) Amendment \(Floodplain Harvesting Access Licences\) Regulation 2022](#)

²⁸¹ J Field, [Water Management \(General\) Amendment \(Floodplain Harvesting Access Licences\) Regulation 2022](#), *NSW Hansard*, 21 September 2022.

²⁸² [Water Management \(General\) Amendment Regulation \(No 2\) 2022](#)

²⁸³ J Field, [Water Management \(General\) Amendment \(Floodplain Harvesting Access Licences\) Regulation 2022](#), *NSW Hansard*, 21 September 2022.

the Greens, Cate Faehrmann, MLC, has stated she will be bringing forward another disallowance motion.²⁸⁴

According to the NSW Government, the amendment will enable determination of floodplain harvesting licences in the Macquarie, Barwon-Darling and Namoi valleys.²⁸⁵ The Government also stated that the regulation was required to achieve core elements of the select committee's recommendations, in particular:

- Enforcement of limits on take, to comply with the legal limits in water sharing plans and the Basin Plan
- The installation of accurate measurement equipment for every user
- The collection and reporting of data on water take through floodplain harvesting.²⁸⁶

Amendments were also made to the relevant water sharing plan for the Barwon-Darling valley to include rules for floodplain harvesting licences.²⁸⁷

In February 2023, 94 floodplain harvesting access licences were issued to landholders in the Macquarie and Barwon-Darling valleys. With the relevant NSW water sharing plan rules having commenced for these licences, landholders can start taking water once an associated water allocation account is established and credited.²⁸⁸

5.2.2.7 Summary of status of floodplain harvesting licensing framework, as of May 2023

Licences have been issued and applicable rules added to the relevant water sharing plans for the Border Rivers, Gwydir, Macquarie and Barwon-Darling valleys.

The only remaining floodplain prioritised by the NSW Floodplain Harvesting Policy for which licences have not been issued is the Namoi Valley. Amendments to the Namoi water sharing plans were on public exhibition between December 2022 and February 2023. In December 2022, the Department of Planning and Environment indicated it planned to enact the water sharing plan amendments and issue licences for the Namoi Valley in the first half of 2023.²⁸⁹

²⁸⁴ D Howard, [A fifth flood plain harvesting regulation disallowance on the cards](#), *The Land*, 25 April 2023, accessed 17 March 2023.

²⁸⁵ NSW Department of Planning and Environment, [Amendments to water regulations for floodplain harvesting](#), n.d., accessed 17 March 2023

²⁸⁶ NSW Department of Planning and Environment, [Amendments to water regulations for floodplain harvesting](#), n.d., accessed 17 March 2023

²⁸⁷ [Water Sharing Plan for the Barwon-Darling Unregulated River Water Source 2012 Amendment Order 2023](#)

²⁸⁸ NSW Department of Planning and Environment, [Compliance with regulations - determination of floodplain harvesting access licences in the Gwydir and NSW Border Rivers](#), NSW Government, February 2022, accessed 1 March 2023, p 11-12.

²⁸⁹ NSW Department of Planning and Environment, [Outcomes from consultation](#), n.d., accessed 17 March 2023.

A clause included in the water sharing plan amendments for the Border Rivers, Gwydir, Macquarie and Barwon-Darling valleys commits the government to, before 1 July 2025, considering independent expert advice on the adequacy of Menindee Lakes storage and local flow targets that must be met before floodplain harvesting is permitted.²⁹⁰ The water sharing plan amendments also allow modification of provisions relating to floodplain harvesting licences in response to a review of licence access rules (this would include flow and storage targets) and a review of rules for trading floodplain harvesting licences.²⁹¹

Mark Banasiak, MLC (Shooters, Fishers and Farmers Party) referred to these reviews during debate of the fourth disallowance motion (which the Shooters, Fishers and Farmers Party did not support):

It is crucial to remember that two reviews will take place under these regulations. If the numbers are not correct, we can make appropriate changes to valley flow targets and low water trigger points. I acknowledge that the 195 gigalitre total storage target is a work in progress and that the low water trigger levels should be based on an active target that provides protections for the Lower Darling and meets local and community needs in the Menindee. The reviews will facilitate the necessary changes, allowing adaptive management. Without passing floodplain harvesting regulations, we remain stuck with a legal practice that sits outside modern law: unregulated, unmetred, unlimited.²⁹²

5.2.3 Border region interstate trade

In October 2022, an IGWC audit identified issues with the accuracy of water trade reporting by NSW and Queensland in the Border Rivers catchment of the northern Basin.²⁹³ The IGWC found numerous instances (representing approximately 5% by volume) in which water accounting data and records were non-transparent, inconsistent or inaccurate. In addition, the audit found that the way NSW and Queensland administer a particular class of interstate allocation transfer is inconsistent with the Basin Plan and undermines the integrity of the data used to assess SDL compliance.²⁹⁴

These interstate allocation transfers occur through works that are 'permanently linked' between NSW and Queensland. This means, in essence, that an entitlement on one side of the border governs a pump that is located on the other side of the border. For example, this may occur if an irrigator in the NSW Border Rivers catchment purchases additional entitlements that are available from the Queensland Border Rivers catchment. The irrigator can permanently link the NSW pump to the Queensland entitlements to receive the

²⁹⁰ For example, Water Sharing Plan for the Barwon-Darling Unregulated River Water Source 2012 Amendment Order 2023, Sch 1 (54)(1F).

²⁹¹ Water Sharing Plan for the Barwon-Darling Unregulated River Water Source 2012 Amendment Order 2023, Sch 1 (53)(a)(iv)(v).

²⁹² M Banasiak, [Water Management \(General\) Amendment \(Floodplain Harvesting Access Licences\) Regulation 2022](#), NSW Hansard, 21 September 2022.

²⁹³ IGWC, [Audit of Accounting for Interstate Trade in the Northern Basin](#), Australian Government, 2022.

²⁹⁴ IGWC, [Audit of Accounting for Interstate Trade in the Northern Basin](#), Australian Government, 2022, p 3.

associated allocations. Such transfers made up approximately 83% (by volume) of all interstate trade between NSW and Queensland in 2018–19.²⁹⁵

According to the IGWC, these transfers of allocations are included in the definition of trade under the Basin Plan.²⁹⁶ However, the IGWC states that NSW and Queensland do not recognise these transfers as trades and hence do not undertake the processes required for an interstate trade. The IGWC report concluded that:

Failure to recognise the transfer of water allocation through works that are permanently linked leads to movement of water between the two states without having to meet the checks and balances in place for other types of trade, or the conditions associated with the works through which water is extracted. This is inconsistent with established processes for approving applications to trade an allocation, where there is a greater level of scrutiny and rigour followed to ensure that water transfer to existing entitlement holders is protected.²⁹⁷

The IGWC made 7 recommendations for administrative changes to address these issues and improve accuracy of accounting.²⁹⁸

With regard to the interstate allocation transfers through permanently linked works, the NSW Government response states that NSW already recognises such transfers as trade. It further notes that documented approval processes are defined in the relevant intergovernmental agreement between NSW and Queensland, and it will ensure these protocols are published online.²⁹⁹ It is not clear to what extent these protocols address the issues identified by the IGWC. In its interim management response, the Queensland Government indicated it had concerns with the recommendations regarding interstate allocation transfers and will need to work with the IGWC prior to providing a final response.³⁰⁰ In April 2023 the Queensland Government submitted its final management response, in which it agreed in principle or accepted the IGWC's recommendations.³⁰¹

²⁹⁵ IGWC, [Audit of Accounting for Interstate Trade in the Northern Basin](#), Australian Government, 2022, p 2.

²⁹⁶ IGWC, [Audit of Accounting for Interstate Trade in the Northern Basin](#), Australian Government, 2022, p 2.

²⁹⁷ IGWC, [Audit of Accounting for Interstate Trade in the Northern Basin](#), Australian Government, 2022, p 10.

²⁹⁸ IGWC, [Audit of Accounting for Interstate Trade in the Northern Basin](#), Australian Government, 2022, p 13.

²⁹⁹ NSW Department of Planning and Environment, [NSW Management Response: Audit of Accounting for Interstate Trade in the Northern Basin – Final Report](#), NSW Government, 2022; NSW–Queensland Border Rivers Intergovernmental Agreement 2008, [Sch E](#).

³⁰⁰ Queensland Department of Regional Development, Manufacturing and Water, [Queensland Government Interim Management Response to Audit of Accounting for Interstate Trade in the Northern Basin – Final Report](#), NSW Government, 2022.

³⁰¹ Queensland Department of Regional Development, Manufacturing and Water, [Final Management Response - Audit of accounting for interstate trade in the Northern Basin](#), Queensland Government, 2023.

Acronyms

Acronym	Name
ACCC	Australian Competition and Consumer Commission
BD	Baseline diversion limit
BoM	Bureau of Meteorology
DCCEEW	Department of Climate Change, Energy, the Environment and Water
GL	Gigalitres
GL/y	Gigalitres per year
IGWC	Inspector-General of Water Compliance
IIO	Irrigation Infrastructure Operator
IVT	Intervalley Trade
MDBA	Murray-Darling Basin Authority
ML	Megalitres
NRAR	Natural Resources Access Regulator
SDL	Sustainable diversion limit
SDLAM	Sustainable diversion limit adjustment mechanism
WESA	Water for the Environment Special Account
WRP	Water resource plan

Appendices

1. Future water market reforms suggested by Australian Competition and Consumer Commission for evaluation

Key attributes	Benefits	Concerns
Align accounting methods with time of delivery (tagged allocation trade)		
Water allocations remain subject to rules (such as carryover and further trade) in the source zone until the time water is actually used in the destination zone	Better aligns trade rules with physical transfer of water rather than the time of trade Could replace the existing system of IVT limits and provide a basis for introducing conveyance loss factors	Complexity and cost Need for southern Basin states to cooperatively adopt the model
Link storage rights and accounting to inflows and storage availability (capacity sharing and continuous accounting)		
In continuous accounting, instead of an arbitrary water accounting year, water accounts are reconciled frequently (e.g., monthly or daily), and allocations are automatically carried over up to a total account limit In capacity sharing, entitlement holders receive a specified share of dam capacity and inflows, and accounts are reconciled by continuous accounting ³⁰²	Replaces the need for carryover policies Creates more transparent allocation policies Results in more efficient use of storage space Could replace the existing system of IVT limits to control for spill risk	Large transition costs Uncertain feasibility in complex interconnected system of the southern connected Basin
Charge users in a way that reflects the relative costs of water delivery decisions (congestion or time-of-use charges)		
Apply higher water use charges during 'peak' times and at locations with the most scarce delivery capacity or highest conveyance losses	Incentivises movement of irrigation developments further upstream and above constraint points Incentivises use outside peak times	More rigid and less accurate than a market-based mechanism Complex to set an accurate usage price

³⁰² N Hughes et al. *Storage rights and water allocation arrangements in the Murray-Darling Basin*, Australian Bureau of Agricultural and Resource Economics and Sciences, Australian Government, 2013.

Key attributes	Benefits	Concerns
Create formal markets for rights to delivery capacity and/or water extraction		
Rights for the delivery of water are separated from water entitlements, allowing development of a separate cap and trade regime to manage limited delivery capacity	<p>Incorporates delivery costs into the costs of trade</p> <p>Improves efficiency of trade and water use decisions</p> <p>Better manages environmental damage from delivery and risk of delivery shortfalls</p> <p>Could be combined with a method of accounting for conveyance losses</p>	<p>Adds substantial complexity that presents new barriers to market participation</p> <p>Challenging to define what level of extraction at a particular part of the system aligns best with delivery capacity</p> <p>Individual water extractors may not be those best placed to be those managing delivery capacity (compared to system operators)</p>
Develop conveyance loss factors		
<p>Apply conveyance loss factors to allocation trade</p> <p>Could be implemented at the level of allocation trade, delivery / extraction or via bulk intervalley trade adjustments</p>	<p>Attributes increased conveyance losses associated with water trades to those incurring these costs</p>	<p>Challenges in determining accurate loss factors</p> <p>Complexities of implementation</p> <p>Applying loss factors to delivery would reduce the value of downstream entitlements</p>
Investigate alternative market models that reflect price signals for the actual costs of use, storage and delivery decisions (water banks or market operator/smart market)		
<p>A water bank is an intermediary, usually managed by a public institution, acting between buyers and sellers</p> <p>A smart market is a centralised computer-assisted market that matches bids with offers within the physical constraints of the system to maximise potential gains (similar to smart energy markets)</p>	<p>Allows the party who has the most information about the system (e.g., the system operator) to make decisions on the trade-offs involved in running the system</p> <p>Allows traders to signal their demand better to river operators to make better decisions about meeting demand</p> <p>Allows users to focus on their need for water without worrying about the best way for water to flow through the network</p>	<p>Large-scale reform with establishment costs</p> <p>All users have to engage with market and order their water to access it (no passive take)</p> <p>Requires much more advanced modelling and telemetry than in current use</p>

Source: Information summarised from [ACCC](#).³⁰³

³⁰³ ACCC, [Murray-Darling Basin water markets inquiry: final report](#), ACCC, 2021, p 529-545.

2. Timeline of key events related to floodplain harvesting licencing regulations and disallowances

Date	Event
2013	NSW Floodplain Harvesting Policy published
2019	Floodplain Harvesting Action Plan published
7 February 2020	<p>Water Management (General) Amendment (Exemptions for Floodplain Harvesting) Regulation 2020 commenced</p> <p>This amendment to the Water Management (General) Regulation 2018 (the regulation) permitted floodplain water to be harvested through eligible works without a works approval or access licence</p> <p>Temporary Water Restriction (Northern Basin) (Floodplain Harvesting) Order 2020 commenced</p> <p>This order restricted floodplain harvesting take in parts of northern NSW until 28 February 2020</p>
27 February 2020	Legislative Council votes to hold a Regulation Committee inquiry into the impact and implementation of the floodplain harvesting exemption amendment
June 2020	<p>Guideline for the implementation of the NSW Floodplain Harvesting Policy published</p> <p>The guideline was updated in June 2021</p>
22 September 2020	<p>Legislative Council Regulation Committee's report on the floodplain harvesting licence exemptions amendment tabled</p> <p>Legislative Council disallowed the floodplain harvesting exemptions amendment</p>
30 April 2021	<p>Water Management (General) Amendment (Floodplain Harvesting Access Licences) Regulation 2021 commenced</p> <p>Water Management (General) Amendment (Floodplain Harvesting Measurement) Regulation 2021 commenced</p> <p>The Water Management (General) Amendment (Exemption for Rainfall Run-off Collection) Regulation 2021 commenced</p> <p>These amendments to the regulation related to floodplain harvesting access licences, metering and measurement and an exemption for rainfall run-off collection from field tailwater drains</p>
6 May 2021	Legislative Council disallowed all the April 2021 amendments
23 June 2021	Legislative Council established a select committee on floodplain harvesting
15 December 2021	Legislative Council Select Committee on Floodplain Harvesting published final report
14 February 2022	<p>Water Management (General) Amendment Regulation 2021 commenced</p> <p>The amendment essentially combined the provisions of the 3 amendments disallowed in May 2021</p>
21 February 2022	Floodplain harvesting access licences issued in the Border Rivers and Gwydir valleys
24 February 2022	<p>Legislative Council disallowed the February 2022 combined amendment</p> <p>The access licences issued on 21 February 2022 remained valid</p>

Date	Event
30 March 2022	The Greens introduced the Water Management Amendment (No Compensation for Floodplain Harvesting Licences) Bill 2022 to the Legislative Council The bill lapsed upon prorogation on 27 February 2023
11 May 2022	Justin Field, MLC, introduced the Water Management Amendment (Floodplain Harvesting Licences) Bill 2022 to the Legislative Council The bill lapsed upon prorogation on 27 February 2023
19 May 2022	Helen Dalton, MP, introduces the Water Management Amendment (Floodplain Harvesting Licences Compensation) Bill 2022 to the Legislative Assembly The bill lapsed on 30 September 2022.
25 May 2022	Government responds to the report of the Select Committee on floodplain harvesting
1 July 2022	Water Management (General) Amendment (Floodplain Harvesting Access Licences) Regulation 2022 commenced Water Management (General) Amendment Regulation (No 2) 2022 commenced The amendments contained essentially the same provisions as the amendment disallowed in February 2022
29 July 2022	Water Sharing Plan for the Gwydir Regulated River Water Source Amendment Order 2022 commenced Water Sharing Plan for the Gwydir Unregulated River Water Sources Amendment Order 2022 commenced Water Sharing Plan for the NSW Border Rivers Regulated River Water Source Amendment Order 2022 commenced Water Sharing Plan for the Macquarie and Cudgong Regulated Rivers Water Source Amendment Order 2022 commenced These amendments each included rules relating to floodplain harvesting access licences
10 August 2022	Helen Dalton, MP, moves in the Legislative Assembly to disallow the access licences and rainwater runoff provisions of the amendments that commenced 1 July 2022 The disallowance motion was negated on division
21 September 2022	The Legislative Council disallowed the regulation amendments relating to floodplain harvesting access licences that commenced 1 July 2022 The amendments relating to metering and rainwater runoff were not included in the disallowance motion
3 February 2023	Water Management (General) Amendment (Floodplain Harvesting Access Licences) Regulation 2023 commenced. These included essentially the same access licence provisions as were disallowed in September 2022
17 February 2023	Water Sharing Plan for the Barwon-Darling Unregulated River Water Source 2012 Amendment Order 2023 commenced These amendments included provisions to add rules relating to floodplain harvesting access licences
10 and 17 February 2023	Floodplain harvesting access licences issued in the Macquarie and Barwon-Darling valleys

Water in the Murray-Darling Basin

Cristy Gelling

Research Paper No. 2023-07

ISSN 2653-8318

© 2023 Except to the extent of the uses permitted under the Copyright Act 1968, no part of this document may be reproduced or transmitted in any form or by any means including information storage and retrieval systems, without the prior consent from the Manager, NSW Parliamentary Research Service, other than by Members of the New South Wales Parliament in the course of their official duties.

Disclaimer: Any advice on legislation or legal policy issues contained in this paper is provided for use in parliamentary debate and for related parliamentary purposes. This paper is not professional legal opinion.

The NSW Parliamentary Research Service provides impartial research, data and analysis services for members of the NSW Parliament.

parliament.nsw.gov.au



@NSWParlResearch

The Parliament of New South Wales acknowledges and respects the traditional lands of all Aboriginal people and pays respects to all Elders past and present. We acknowledge the Gadigal people as the traditional custodians of the land on which the Parliament of New South Wales stands.

