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Acknowledgement of the Traditional Owners of the Murray–Darling Basin

The Murray–Darling Basin Authority pays respect to the Traditional Owners and their Nations of the Murray–Darling Basin. We acknowledge their deep cultural, social, environmental, spiritual and economic connection to their lands and waters.

The guidance and support received from the Murray Lower Darling Rivers Indigenous Nations, the Northern Basin Aboriginal Nations and our many Traditional Owner friends and colleagues is very much valued and appreciated.

Aboriginal people should be aware that this publication may contain images, names or quotations of deceased persons.

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1. Introduction

About this report

This report brings together progress made by Basin jurisdictions to implement the Basin Plan in 2017–18, and the outcomes from this work. It draws on information in the annual implementation reports prepared by Basin jurisdictions, the MDBA and Commonwealth Environmental Water Office. These reports are provided to the MDBA after the completion of the financial year and are published on the [MDBA website](#).

This Basin Plan Annual Report is a key mechanism through which transparency and accountability for Basin Plan implementation and outcomes is provided, which is especially important given the scale and complexity of this major national reform. Through open and transparent reporting, the goal is to build trust among Basin communities in the agencies responsible for implementation and confidence that the intended outcomes of the reform are being achieved.

Seasonal conditions — warm and dry

Conditions have been exceptionally dry over the mainland southeast, with significant rainfall deficiencies continuing to affect large areas of eastern Australia at timescales which are now beginning to extend to around two years duration.

Figure 1 shows below average rainfall in the second half 2017–18. May 2018 was an exceptionally dry month for Australia. Nationally, May rainfall was the third-lowest on record, and lowest for May since the record set in 2008. In the context of the conditions currently being experienced by Basin communities, it is also important to acknowledge that September 2018 rainfall was below average across the majority of Australia, and especially so across the southern mainland. Compared to other January to September periods since 1900, year-to-date rainfall was the second lowest on record for the Murray–Darling Basin.

As well as being a very dry year, 2018 was very warm, had record high evaporation rates in May, and record-high wind during winter. High daytime temperatures added to the impact of reduced rainfall for instance through reduced soil moisture.

Rainfall deciles in the Murray–Darling Basin

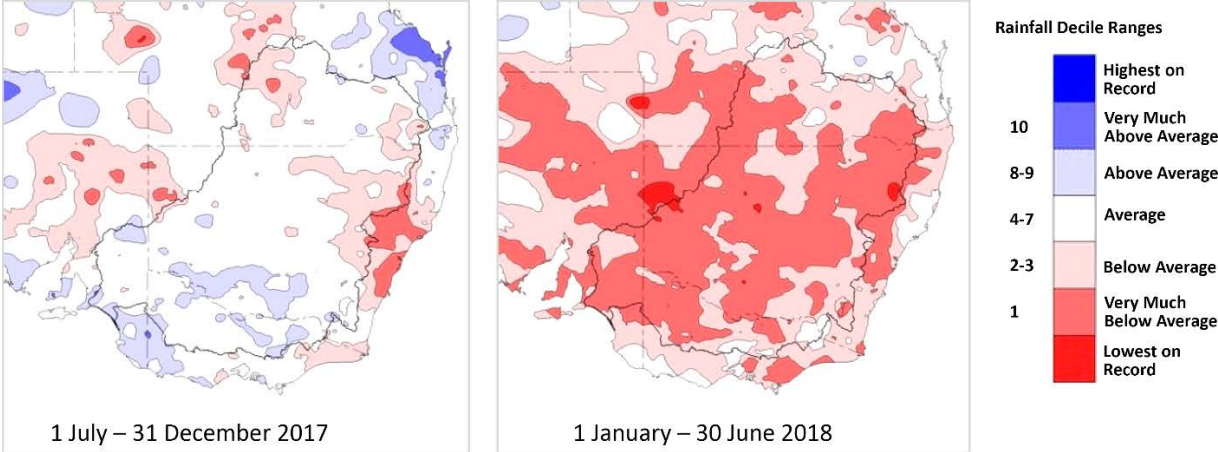


Figure 1 Source: [Bureau of Meteorology](#).

At the beginning of July 2017, the total volume in MDBA storages was 6325 GL or 68% capacity. Dry conditions, low inflows, and demands from water users over the water year led to storage levels decreasing. At the end of June 2018, the total volume in MDBA storages was 5294 GL or 57% capacity.

2. Implementing the Basin Plan

The Basin Plan aims to ensure the Murray–Darling Basin (MDB) is a healthy working basin that delivers benefits for all Australians, and particularly the communities within the MDB. The task of implementation is complex and extends over twelve years. Each implementation element works in concert with other elements, and all tasks will need to be completed in full to deliver the expected outcomes from the Basin Plan.

Water Resource Planning

Water resource plans (WRPs) are central to implementing the Basin Plan, as they set new local rules for how much water can be taken from the system, ensuring sustainable diversion limits (SDLs) in each area are not exceeded over time, and how it is shared between different users.

WRPs are to be developed by Basin state governments, assessed by the MDBA, and accredited by the Commonwealth Minister responsible for water. There are 33 plan areas in total, some for surface water, some for groundwater and a few that cover both.

In 2017–18, all Basin governments made progress towards accreditation. Notable steps forward include the development of a comprehensive WRP assessment framework, the formal submission of 2 WRPs for assessment, and improved processes for consulting with Aboriginal people.

The Basin Plan requires all water resource plans to be accredited by 30 June 2019. As at 30 June 2018, 1 plan had been accredited, 3 plans were being formally assessed and 29 plans were in development¹.

Judging by the number of plans yet to be completed, assessed and accredited, and the time remaining until the 30 June 2019 deadline, there is a risk that not all of the WRPs will be accredited by this time. The MDBA is monitoring this risk and will work with relevant states if needed to develop suitable contingency arrangements. To read more about progress with the WRP accreditation process, refer to the MDBA's quarterly progress reports on the [MDBA website](#).

Strengthening Aboriginal involvement in water planning

The Basin Plan seeks to engage with Traditional Owners to ensure that environmental water is managed to deliver environmental, social and economic outcomes that are also in line with objectives and outcomes as identified by Traditional Owners. The MDBA is funding the Northern Basin Aboriginal Nations (NBAN) and Murray Lower Darling Rivers Indigenous Nations (MLDRIN) to seek advice from Traditional Owners on the consultation undertaken by Basin States during the development of WRPs.

¹ Advice from the Murray Lower Darling Rivers Indigenous Nations, supported by both the MDBA and Victoria, will see more detailed Aboriginal consultation be undertaken for two of the WRP submitted for assessment. The additional consultation is expected to be completed in December 2018, and be included in the amended WRPs in February 2019.

Assessments undertaken in 2017–18 by MLDRIN and NBAN concluded that less than minimum standards and efforts were made by some Basin States in meeting the requirements of Basin Plan. Some States have since followed a structured engagement approach, including working with NBAN and MLDRIN, which has resulted in more positive outcomes.

It will be important for Basin State governments to continue building on the work achieved with Traditional Owners during the development of the WRPs and include as much of the Traditional Owners' input as possible during the implementation of the WRPs.

In May 2018, the Minister for Agriculture and Water Resources announced a package of measures to complement and support full implementation of the Basin Plan. The package includes a suite of commitments that strengthen Aboriginal involvement in water planning, to help improve outcomes for Indigenous people. Part of this package is a commitment of \$40 million over four years for a program to support Aboriginal community investment in cultural and economic water entitlements and associated planning activities.

Case study: engagement with Aboriginal Nations

Queensland has actively engaged with Aboriginal Nations across the Condamine–Balonne, Border Rivers and Moonie catchments during 2017–18, building on the engagement efforts in the previous year.

Engagement intensified in 2017–18 through a number of workshops and on-country visits. These meetings sought to gather information on how Aboriginal people value and use water and to understand Aboriginal people's objectives and outcomes for water management. The overall aim was to ensure that this information was used to inform the draft water resource plans.

The approach to consultation has been improved as a result of guidance from a working group established in 2016 and made up of Northern Basin Aboriginal Nation (NBAN) delegates. This working group has been a valuable forum to ensure engagement was undertaken in a culturally appropriate way and continued to build strong relationships with stakeholders. Meetings were often led by Aboriginal Nations with catering and other logistics organised by Aboriginal people.

Results of engagement during 2017–2018:

- 11 Aboriginal Nation workshops
- 300+ people consulted face-to-face
- 10 on-country visits
- 1000+ phone calls and emails
- 100+ social media shares
- 20+ places visited
- 5000+ kilometres travelled

For more details, see the full Queensland report available on the MDBA website.

Source: Queensland 2017–18 Basin Plan Annual Implementation Report

Sustainable diversion limit adjustment mechanism

The sustainable diversion limit adjustment mechanism (SDLAM) involves projects that work together – namely ‘supply’ and ‘constraints’ projects that improve river management and achieve equivalent environmental outcomes with less water, and ‘efficiency measures’ that recover water for the environment with no adverse social or economic impacts. Taken together, these projects aim to improve the triple bottom line outcomes from the Basin Plan and are a good example of the flexibility that has been adopted during Basin Plan implementation. Basin governments agreed at the time that the net change allowed under SDL Adjustment Mechanism is plus or minus 5 per cent of the sustainable diversion limit (SDL), or 543 GL.

Supply measure projects are new ways to manage the Basin's rivers to more efficiently deliver water for Basin Plan environmental outcomes, allowing more water to be retained for consumptive use. Projects include environmental works, such as building or improving river or water management structures, and changes to river operating rules which achieve equivalent or better environmental outcomes, with less water.

Supply measure projects are identified, developed and nominated by state governments. It is the responsibility of the MDBA to determine the amount by which the SDLs could be increased while still delivering equivalent environmental outcomes.

Constraints measure projects aim to overcome some of the physical barriers that impact delivering water in the system. Constraints projects can include changes to physical features such as crossings and bridges. They can also change river operating practices and rules. They could allow water managers more flexibility in releasing and moving water through the system.

Efficiency measure projects aim to provide 450 GL of additional water for the environment, and are to be delivered on the condition they have neutral or positive social and economic outcomes.

The Department of Agriculture and Water Resources is responsible for implementing the efficiency measures program, which seeks tenders for urban, industrial, off-farm and water metering infrastructure projects across the Basin, and on-farm infrastructure projects in Queensland, South Australia and the Australian Capital Territory. States may also propose efficiency measure programs or projects.

In June 2017 Basin governments brought forward a package of 36 supply measure projects for consideration by the MDBA. The package included five constraint measure projects that were brought forward as supply measures. In 2017–18, the MDBA continued to work with Basin governments to model the final package of supply measures. In September 2017, after operation of

the SDLAM, a draft adjustment amount of 605 GL as a long-term average equivalent was determined. The subsequent public consultation process resulted in no change from the draft determination.

The MDBA's final determination of 605 GL in supply measures was delivered to the Australian Government Minister responsible for water in December 2017. The SDLAM rules in the Basin Plan require that any supply measure determination above 5% (or 543 GL) of the SDL must be offset by efficiency measures. This means that 62 GL of efficiency measures (i.e. 605 – 543 GL) must be obtained by 30 June 2019 in order for the full 605 GL supply measure offset to be realised at that time. Basin governments have until 2024 to implement the notified supply measures, and the Australian Government has until then to roll out the 450 GL efficiency measures program.

Community consultation on the design and delivery of these projects is vital. Toward the end of 2017–18 the MDBA hosted a technical workshop on the package of SDL adjustment projects to provide more information to stakeholders. The workshop was attended by peak interest groups, water experts and Basin government officials.

The MDBA reports regularly on progress with these measures and is required to undertake a formal reconciliation of the mechanism in 2024 to ensure the required environmental outcomes will be delivered by the supply measure projects. Many of the projects are complex, will need to address a number of risks, and include interdependencies with other projects. Substantial work lies ahead to deliver agreed projects by 2024.

Northern Basin Review

The Northern Basin Review was completed in 2016. Based on the review, the MDBA recommended a change to the SDLs in the northern Basin that would reduce the water recovery target from 390 GL to 320 GL.

As part of this decision, the New South Wales and Queensland governments agreed to implement a range of so-called toolkit measures aimed at improving the environmental outcomes from the proposed environmental water recovery. The toolkit included commitments to improve the protection of environmental flows from consumptive extraction, to develop event-based management options for environmental water (such as market-based options like pumping into private storages for store-and-release), and to improve the coordination and delivery of water for the environment. The toolkit also included measures in the Gwydir to remove constraints and manage flows to the wetlands, and environmental works and measures more broadly to promote fish movement and improve habitat. The toolkit measures have been complemented by measures in the Basin Commitments Package mentioned below.

By the end of 2017–18, New South Wales and Queensland governments, and MDBA had begun working together to put in place enduring arrangements for the protection of water for the environment, including the active management of events in unregulated rivers. These arrangements will need to be incorporated into WRPs when finalised.

Amendments to the Basin Plan

Over the 2017–18 reporting period, the outcomes of the SDLAM and the Northern Basin Review led to two critical amendments to the Basin Plan. The SDLAM Amendment amended the Basin Plan to adjust the SDL, taking into account the potential benefits of the agreed supply measures. The Northern Basin Review Amendment implemented the findings of the Northern Basin Review on sustainable diversion limits, earlier groundwater reviews and the Australian Government’s response to the independent review of the *Water Act 2007* (Cwlth). The amendments represented the completion of several years of challenging work for the MDBA and partner governments.

The Basin Plan also sets limits on how much groundwater can be taken from all groundwater resources of the Basin for the first time. The recommendations from the groundwater reviews (completed in 2014–15) came into force as part of the amendments to the Basin Plan. These changes include an increase to the SDLs, and added local management rules in four SDL resource units.

Basin commitments package

Bipartisan support for the SDLAM and Northern Basin Review amendments led to announcement by the Commonwealth Water Minister of a range of measures under the Basin Commitments Package on 7 May 2018. These include:

- ensuring full implementation of SDLAM through efficiency measures, and linking payments to states under the national partnership agreement for the delivery of SDL supply measures
- establishing a Northern Basin Commissioner to report annually on progress in the rollout of the toolkit measures
- ensuring increased transparency on SDLAM projects through technical workshops and public reporting on constraint measure progress
- supporting improved water information in the northern Basin
- providing funding to build capacity for Aboriginal groups to translate the findings of the National Cultural Flows Research Project into practical ways forward, and to support Aboriginal community investment in cultural and economic water.

Water recovery

The Commonwealth Government has committed to bridging the gap between past water use and the sustainable diversion limits by meeting the water recovery target under the Basin Plan. The Basin Plan requires that the water recovery target is made up of local reduction targets (which must be recovered within that valley) and shared reduction targets (which can be shared across a number of valleys).

The initial Basin Plan water recovery target has been revised down to 2075 GL through the operation of the sustainable diversion limit adjustment mechanism, and other changes made following the Northern Basin Review.

As of 30 June 2018, the estimate of the total volume of water recovered was 2117.5 GL. This is greater than the recovery target of 2075 GL. However, local water recovery targets have not been met in some valleys.

Furthermore, there is some uncertainty with estimates of water recovery. States are developing their future water resource plans which will define allocation arrangements for each water entitlement class. This will in turn enable an updated estimate of the amount of water recovery based on the quantity of entitlements recovered for the environment.

Updating the estimate of water recovery may mean there are small amounts of over or under recovery in some valleys. There is also some uncertainty about the outcome of the final opportunity for states to request a change to the default shared reduction amounts (i.e. the recovery targets that are shared across different valleys) in the Basin Plan. States have until 31 December 2018 to request a change to the default settings.

Based on the work that needs to be done to finalise the water recovery targets, and the time available to complete the requisite water recovery, it is apparent there is a risk that some water recovery targets will not be met by 30 June 2019. As at 30 June 2018, 29.5 GL of water still needs to be recovered from the NSW and Queensland Border Rivers, NSW Barwon–Darling, Queensland Condamine–Balonne, and NSW Namoi valleys in order to complete the environmental water recovery task. There is also a small amount of recovery still to be made in the Condamine Alluvium groundwater area.

Under the efficiency measures program, there is a high risk of not meeting the initial 30 June 2019 recovery target of 62 GL (meeting this target will enable the full 605 GL supply measure project offset to be applied from that time). At 30 June 2018, less than 2 GL had been recovered. There is also a risk that the program objective of recovering 450 GL by 2024 will not be fully met. Progress with delivery of efficiency measures projects will need to be closely monitored.

Compliance

Effective compliance arrangements are critical to the success of the Basin Plan. Water users and the community need to have confidence that water resources, rules and laws will adequately protect environmental water, and provide water users with certainty over the integrity of their access arrangements. Ensuring compliance with the Basin Plan is also essential in building confidence that communities, businesses and governments are fulfilling their obligations in sustainable water management.

In response to concerns over compliance raised in 2017, a number of reviews were undertaken during the year. Following the reviews, Basin governments and the MDBA have focused on improving the effectiveness of water compliance in a range of ways.

Murray–Darling Basin Authority

The MDBA and an independent panel conducted the Murray–Darling Basin Water Compliance Review ([Compliance Review](#)) at the request of the Prime Minister, to assess the effectiveness of compliance frameworks and practices for water management across the Basin.

The Compliance Review identified that there are significant variations across the Basin in relation to compliance, including the culture of compliance, the level of resourcing devoted to compliance activities, the transparency of reporting, the comprehensiveness and clarity of compliance policy frameworks and the challenges posed by monitoring and enforcing compliance.

The Compliance Review made a number of recommendations for improvement for Basin governments including ‘no meter, no pump’, review, transparency and protection of environmental water measures, as well as the development and implementation of a Compliance Compact between Basin governments.

The Compliance Review also recommended that the MDBA be more assertive in performing its compliance and enforcement role. Since that time the MDBA has made progress in clarifying and strengthening its compliance program. In addition to releasing a revised Compliance and Enforcement Policy, the MDBA has appointed an Independent Assurance Committee to advise on its compliance program and performance.

The MDBA is also providing assurance of the compliance and enforcement frameworks within each state to improve confidence in the management of the Basin’s water resources. For example, in May 2018 the MDBA conducted a review of compliance arrangements in place around the Northern Connectivity Event as the first in an ongoing program of compliance audits. Future audits will include SDL and WRP compliance.

There were also changes to groundwater management arrangements to enable effective and consistent implementation of the Basin Plan including the compliance methodology for compliance with SDLs over the long run. These were also complemented by other Basin Plan changes related to groundwater such as adjustments to review provisions, separating the provisions for the groundwater water quality management plans from those for surface water, and refining water resource plan area boundaries and SDL resource unit boundary definitions. During 2017–18, the MDBA trialled arrangements to estimate and report actual and permitted groundwater take. These will support SDL compliance from the 2019–20 water year onwards.

Jurisdictional initiatives

In August 2017, the NSW government commissioned Ken Matthews to undertake an independent investigation into water management and compliance in NSW. Mr Matthews’s [interim](#) and [final](#) reports found shortcomings in NSW’s compliance and enforcement arrangements, concluded that improvements in metering and measurement were needed, particularly in the Barwon–Darling catchment, and transparency of water management arrangements needed to be improved. Mr Matthews made a number of recommendations to improve governance, transparency, metering and the protection of environmental water.

In December 2017, the NSW government launched their Water Reform Action Plan outlining their response to the Matthews review. In April 2018, the New South Wales government established the Natural Resource Access Regulator (NRAR). In June 2018 a package of interim solutions for the better management of environmental water in northern NSW was released for public consultation. New South Wales has also made significant progress on a new framework to improve metering arrangements.

The Queensland government released a response to [the independent audit of Queensland non-urban water measurement and compliance](#), and established the Rural Water Management Program to deliver on its commitments, in June 2018. The independent audit found that, while Queensland had well-developed water planning arrangements, improvements were needed in the areas of governance, culture, transparency, metering and measurement.

Compliance Compact

In June 2018, the Murray–Darling Basin Ministerial Council agreed to the Murray–Darling Basin Compliance Compact (Compact).

The Compact responded to the reviews into the integrity of Basin water management and compliance, and sets out a range of commitments, work programs and clear timeframes for delivery. The commitments address: transparency and accountability, compliance frameworks, metering and measurement, water resource plans and protection and management of environmental water.

All Governments have committed to ensuring that new and replacement meters must comply with the national standard for non-urban water meters and, by 2025, to progressively improve the accuracy and reliability with which water take is measured.

Consistent and timely public reporting is important for transparency, maintaining momentum, and for meeting Compact obligations. As part of new compliance reporting activities, the MDBA reports on progress by Basin governments to implement their Compact obligations. The Independent Assurance Committee also reports on the MDBA’s progress with its obligations and compliance program.

Water trade

Improved water trade enhances the productivity and growth of water dependent industries, and can help provide irrigators with confidence in their long-term future by enhancing their ability to manage business risks. Water markets continue to provide flexibility to water users, particularly in times of decreasing water availability. Water markets allow water users to buy or sell water to suit their individual business needs.

The Basin Plan water trading rules commenced in 2014, and for the first time, Basin water markets were subject to uniform rules designed to ensure a competitive, level playing field. Achieving these outcomes is dependent on Basin States and Irrigation Infrastructure Operators implementing the rules and the MDBA effectively regulating the rules.

When the MDBA’s Office of Compliance was established in late 2017 to manage the organisation’s compliance and enforcement functions, water trading functions were transferred into the Office. Since then, there has been a renewed focus on compliance and enforcement of the Basin Plan water trading rules. For example, the MDBA commenced an audit of the accuracy of price disclosure which will be published in 2018–19.

In 2017–18 it became apparent that with limited opportunities to trade across the Barmah Choke into the Murray River that the processing of these trades needed to be improved if entitlement

holders were to be able to take advantage of opportunities as they arose. The MDBA worked with Victoria to develop an online tool to automatically process trades across the Choke. These changes have supported more efficient and timely processing of trades across the Choke, and mean that Victorian and NSW water users now have equitable access to opportunities to trade across the Barmah Choke. This is expected to improve the operation of the water market with benefits for irrigators and their industries.

Work to improve the operation of water trading arrangements in the MDB is ongoing. The MDBA is aware of more than 1500 trade restrictions in the MDB and has commenced a work program to review and assess their effect on the operation of the market and identify appropriate corrective measures where applicable.

Environmental Watering Coordination

Environmental water holders across the Basin are responsible for making decisions about when, where and how much water is released for the environment. Delivering environmental water to priority sites to achieve environmental outcomes requires a high degree of coordination between all parties involved. This includes environmental water holders in each Basin jurisdiction, water planners and managers, and local landholders.

Through the Southern Connected Basin Environmental Watering Committee (SCBEWC) coordination and information sharing efforts, environmental water holders and river operators have improved their knowledge of environmental water requirements for key environmental assets and functions in the Murray–Darling Basin. Information sharing and actions across multiple environmental water holders has occurred through the planning, delivery, monitoring and evaluation of environmental watering actions. This is often as part of shared actions using a range of held environmental water portfolios.

In October–November 2017, the Queensland government worked with the CEWO to release environmental water in the Dumaresq River (Border Rivers) to provide flows for both recruitment opportunities for Murray cod and reproduction opportunities for small bodied fish. In April 2018, the Queensland government and the New South Wales government worked with the CEWO in the environmental watering action known as the Northern Connectivity Event. This watering action built on natural inflows and provided for connectivity between waterholes across multiple river systems in the Northern Basin, including the Border Rivers, to protect and support native fish.

Case study: Northern Connectivity Event

In early 2018, over 1000 kilometres of the Barwon–Darling River downstream of Brewarrina ceased to flow. As a result, water quality deteriorated in stagnant waterholes. Blue-green algae alerts were escalated to amber and red along the Barwon–Darling with local governments expressing concern over the deteriorating water quality. In February and March 2018, rainfall in Queensland resulted in some unregulated flows into the Barwon–Darling which were protected by the NSW government for social reasons including water supply.

In April 2018, Commonwealth and NSW environmental water was made available for delivery to create a northern rivers connectivity event which would link river systems and benefit native fish through providing improved food sources and opportunities to move to better habitats. The Commonwealth and New South Wales governments worked together to release around 25 GL of environmental water into the northern river system after extensive discussions with the NSW government, irrigators along the river and local communities.

The flow was protected by the NSW government through a temporary restriction on pumping and increased compliance activities. Local engagement officers from the Commonwealth Environmental Water Office (CEWO) kept river communities up to date during the flow event, including through community presentations which tracked the progress of the flow through regular local and online updates.

This was the first time that Commonwealth environmental water was protected in the northern Basin and demonstrated effective collaboration between state agencies in NSW, the Commonwealth and local councils and irrigator groups, highlighted the outcomes which could be achieved through the protection of environmental water. The CEWO is continuing to build on the new relationships, which were formed between the CEWO and the local community members during this important watering event.

Further information is available from [CEWO website](#)

Basin annual environmental watering priorities

In June 2017 the MDBA published its first rolling, multi-year priorities that provide recommendations for environmental watering actions over a range of seasonal conditions that could be expected in coming years. Environmental water planners and managers supported this move towards a rolling multi-year framework, as it aligns with the expected environmental outcomes in the Basin watering strategy and builds capacity to adapt to changing seasonal conditions.

The MDBA further developed this approach during 2017–18, and for 2018–19 provided rolling, multi-year priorities for 12 targeted environmental outcomes. This was in addition to more specific guidance for the forthcoming water year, based on ecological need and seasonal conditions.

The below case study illustrates how NSW applied the multi-year priorities approach to environmental watering, using an example from the Macquarie–Castlereagh. Read more about the 2017–18 environmental watering priorities, on the MDBA’s [website](#).

Case study: Multi-year environmental watering in the Macquarie Marshes

For the Macquarie, a 3-year release strategy was developed based on 375 GL of Environmental Water holdings. The plan is based on the “worst case” scenario that the catchment remains dry and no further Available Water Determination (AWD) being made during the 3-year period.

At the commencement of the water year, 375 GL of water was available in environmental water accounts. This volume is made up from 254.2 GL of unused allocation carried over from 2016–17 water year and 120.5 GL from a 36% AWD made on the 1st July, 2017.

Environmental water demand in 2017–18 was assessed to be relatively low for many assets due to large volume of system inflows and widespread inundation of the Macquarie Marshes in late 2016. Some assets that require more frequent flows however vary in water demand. Overall, resilience of the mid-Macquarie River and Macquarie Marshes system has improved since the very dry preceding years of 2013 to mid-2016. The current challenge is to secure those gains for the medium-term.

This three-year watering strategy for Macquarie Marshes is focussed on building resilience in one area. This area has been identified as requiring over 100 GL over a 5-month period between June and April to inundate core semi-permanent areas which include reed-beds, water couch, mixed marsh and river red gum forests of the Northern marshes feed by the Bora, Ginghet and Macquarie River channel. This area also encompasses the East Marsh (Gum–Cowal/Terrigal) wetland system.

A wet marsh allows for greater flow efficiency within this large and complex system. The effectiveness of the environmental water deliveries to reach the normally difficult river red gum forests north of the Northern Marsh Nature Reserve is made more feasible under wet antecedent conditions. The three-year release strategy aims to capitalise on these wet antecedent conditions with the primary focus being to build resilience to 20 000 ha of wetland vegetation.

Source: NSW 2017–18 Basin Plan Annual Implementation Report.

Working with Aboriginal peoples to deliver environmental water

The MDBA, the CEWO, NBAN and MLDRIN are working on a project to improve the way Aboriginal environmental objectives and outcomes are included in environmental water planning and management. The outputs of this work will inform the 2019–20 Basin annual environmental watering priorities and will be considered in future environmental watering planning and management.

Working in partnership with NBAN and MLDRIN will facilitate knowledge sharing between Aboriginal peoples and water planners. In addition, the MDBA will work with emerging Aboriginal natural resource managers from NBAN and MLDRIN to develop their skills in environmental water planning and management.

The work the MDBA has been doing with NBAN, MLDRIN and CEWO to incorporate Aboriginal environmental objectives and outcomes into environmental water planning and delivery, will form a key component of annual reporting on how Indigenous values and uses were considered and how Indigenous people were involved in decisions.

3. Outcomes

Water for the environment is used to improve the health of our rivers, wetlands and floodplains. This water benefits the fish, animals and plants that depend on healthy rivers to feed, nest and grow. In turn, this provides social, recreational and economic benefits to the communities in the MDB.

In addition to environmental outcomes the Basin Plan also aims to manage salinity and maintain appropriate water quality for environmental, social, cultural and economic activity in the Basin.

Environmental conditions

With the drought conditions in the Basin, environmental water holders, like all other water entitlement holders, have been allocated less water under state allocation policies. Water holders therefore need to manage a much smaller portfolio by carefully targeting the highest environmental priorities to achieve the best environmental outcomes. In a relatively dry year, it is especially important for environmental water managers and river operators to work together (especially in the southern Basin) and look for opportunities to effectively deliver environmental water in conjunction with the delivery of water to consumptive uses.

In 2017–18, water managers consolidated the positive environmental outcomes from previous years by delivering water to build system-scale resilience. Basin states, the Commonwealth Environmental Water Office (CEWO) and the MDBA worked together to deliver about 2700 GL of water for the environment to the Basin annual environmental watering priorities during 2017–18. This included water from Commonwealth environmental water holdings, state holdings, and a small amount of planned environmental water.

Much of the water delivered to meet Basin environmental watering priorities in 2017–18 was effectively re-used by harnessing return flows, providing multiple benefits along the rivers and their floodplains. Environmental return flows are water that drain back into rivers after an environmental watering event. Capturing and re-using these return flows means each parcel of environmental water can be used to meet more than one environmental watering priority, and this is important for getting the most out of the available environmental water. In many ways, it is similar to an irrigation re-use scheme on a farm. The potential benefits of this approach are highlighted by the watering of the wetlands in South Australia, where approximately 656 GL of the 1200 GL total volume delivered was from return flows.

In the northern Basin, the CEWO and the New South Wales and Queensland governments coordinated the delivery of environmental water into the Barwon–Darling river system to mitigate a cease-to-flow event. See the case study in the previous section for more details.

Highlights for the year from across the Basin include:

- 195 GL of environmental water reconnected numerous wetlands in the mid–Murrumbidgee — a site which had been listed as a Basin-scale environmental watering priority for several years.

- 333 GL of environmental water was delivered in Barmah–Millewa Forest, in conjunction with operational water. Moira grass, a threatened species, grew in response, and return flows provided downstream connectivity benefits. These flows also triggered a bird breeding event.
- 70 GL of environmental water was used in the Macquarie Marshes to support recruitment, improve the condition of wetland vegetation and provide movement opportunities for fish through the Macquarie River.
- In the Lachlan, 37 GL of environmental water was provided through anabranches to stabilise water levels and support successful Murray cod nesting, building on outcomes from high flows in 2016–17.
- In the Border Rivers, where the Dumaresq and New South Wales Severn rivers were close to cease-to-flow conditions, New South Wales and Commonwealth water managers applied 13 GL of environmental water to support native fish.
- In the Severn, an environmental pulse was sent through the system to promote Murray cod breeding, while in the Dumaresq base flows were maintained using 4.2 GL of water to maintain habitat access for cod.
- In the Gwydir, 10 GL of environmental water was used to promote early-season productivity through a 10-day flow pulse in late winter. Further flows were provided in spring, with stable base flows aiming to promote fish movement along the upper stretches of the Gwydir River.
- In the Lower Darling, the use of 26 GL of water for the environment has made more habitats available for the juvenile Murray cod that spawned in 2016–17, increasing their chances of survival. After another successful spawning event in 2017–18, base flows were maintained to support habitat condition, food production and dispersal of young fish.
- In South Australia, about 1200 GL of water for the environment has contributed to providing habitat at temporary wetlands along the River Murray and maintaining flows through the barrages. As these flows decreased over summer, additional environmental water supported productivity and helped migratory fish move through the system.
- 112 GL was pumped into Hattah Lakes, capitalising on the lakes already being partially filled (from previous watering) and enabling the flows to reach black box trees which had not been inundated since 1993. This is also an example of multiple uses of environmental water along the entire southern connected system achieving multiple environmental outcomes.

Case study: Black bream recruitment

In October 2017, an opportunity to support black bream recruitment in the Coorong was identified at an inaugural joint meeting of the Coorong, Lower Lakes, Murray Mouth Community Advisory Panel and Scientific Advisory Group. This meeting brought together perspectives from industry and scientific groups who provided advice on an opportunity for environmental water to support black bream spawning. The advice was used to manage barrage releases to support conditions for black bream spawning. Barrage operators experimented with different barrage configurations to create the most favourable conditions and maximise environmental benefits for the current flow but also to assist with identifying the long-term flow requirements.

The CEWO, MDBA and South Australian Department of Environment, Water and Natural Resources jointly funded monitoring by the South Australian Research and Development Institute of the barrage releases targeting black bream recruitment over the summer of 2017. The monitoring indicated that environmental water releases successfully generated suitable spawning and nursery conditions in the Murray estuary and Coorong. Young black bream were detected during subsequent autumn monitoring showing that successful recruitment coincided with environmental water releases.

This watering action aligned with a major 2017–18 Basin-wide annual watering priority to support Basin-scale population recovery of native fish by reinstating flows that promote key ecological processes across local, regional and system scales for the southern connected Basin.

Source: South Australia 2017–18 Basin Plan Implementation Report

Social and economic impacts of the Basin Plan

The Basin Plan aims to find a balance between the water needs of all Basin users, to ensure communities, industries, and the environment share a sustainable future. A central feature of the Basin Plan is the re-balancing of how water is shared between consumptive uses and the environment. While this re-balancing was always expected to protect and restore the environmental health of the Basin, it was understood that there would be some social and economic impacts from the transition to the new water sharing arrangements. A major focus for the MDBA over recent years has been to develop a better understanding of the extent of the Basin Plan impacts, and to place these in the context of other drivers of change affecting irrigated communities in the MDB. Initially, this work was done in the northern Basin to inform the Northern Basin Review. Subsequent work has focussed on the southern Basin. This work, particularly the new work in the southern Basin, was a major input to the evaluation of the Basin Plan conducted in 2017–18.

At the Basin scale, available data on population, employment and economic activity has generally shown that the economy of the Basin has continued to grow even as environmental water recovery has occurred. Even so, there are some signs the Basin Plan has had an impact on social and economic outcomes at the Basin scale. For example, the real value of irrigation outside the Basin has grown at

a faster rate than inside the Basin – 20% growth outside the Basin but little or no growth in real terms, in the MDB since 2001. However, Basin or regional scale analysis often overlooks instances where there have been more locally significant impacts of environmental water recovery.

In 2017–18, the MDBA released community-level social and economic analysis that assessed the effects of the Basin Plan on individual southern Basin communities, as well as the effect of other major drivers on these communities. Irrigated production and employment, together with other social and economic indicators, were used to describe the changes in 40 southern Basin communities since 2001. The community profiles have been published on the [MDBA's website](#).

The MDBA's community level analysis highlighted that MDB communities have experienced very large, and often difficult, change since 2001. Total employment in the 40 southern Basin communities fell by around 11 400 between 2001 and 2016. The Basin Plan accounted for around one third of the decline, or 3711 jobs, with non-Basin Plan factors accounting for the remainder. With regard to farm employment including farmers, farm workers and seasonal workers there was a fall of around 9200 jobs between 2001 and 2016. Around 20% of this change (just over 1800 jobs) was estimated to be due to the Basin Plan, with non-Basin Plan factors accounting for the rest.

The research highlighted just how much the effect of Basin Plan water recovery has varied from community to community. Across the forty 40 communities examined, 12 appear to have experienced quite small employment effects arising from Basin Plan water recovery. Across the other 28 communities, the effects of water recovery range from modest and identifiable (18 communities), through to quite large changes (10 communities).

For Benerembah, Berrigan–Finley, Blanchetown, Coleambally, Hillston, Mirrool, Morgan, Renmark, Robinvale, Tabbita, Wah and Yanco, water recovery was estimated to have an effect of less than 2.7% on total employment. This level of variation would be difficult to distinguish from the other processes of change affecting those communities.

Using the range of social and economic indicators presented in the community profiles, the 18 communities where modest changes have been observed generally have changes in total employment arising from Basin Plan water recovery, of around 3% – 5%. These communities are Cobram, Coomealla, Cullulleraine, Deniboota, Denimein, Hay, Kerang–Cohuna, Kyabram–Tatura, Mannum, Mildura, Murray Bridge, Pyramid Hill–Boort, Shepparton Irrigation Area, Swan Hill, Taillem Bend, Waikerie, Wentworth and West Berriquin.

The 10 communities experiencing larger changes are those where Basin Plan water recovery has generally led to effects on employment of greater than 6%. These communities — Berri, Cobdogla–Barmera, Colignan, Lower Lakes, Loxton, Merbein, Red Cliffs, Rochester, Swan Reach and Wakool — have also been strongly influenced by non-Basin Plan factors.

MDBA modelling also highlighted that the impacts of water recovery would have been much greater had it not been for the investments in on-farm irrigation infrastructure upgrades. It has also highlighted the many other factors that are contributing to the changes which are being felt in southern Basin communities. These other factors include the effects of the millennium drought, water trade into or out of the regions, farm consolidation, agricultural mechanisation, changes to the mix or location of irrigated crops, and non-water policy decisions by governments (such as the

completion of free trade agreements and changes to the location or method of providing government services). These past effects are now being compounded by the drought currently affecting much of the Murray–Darling Basin. The drought conditions have affected 49 per cent of agricultural land in south-eastern Australia which experienced 1 in 20 year drought conditions for the first nine months of 2018 (ABARES Analysis of 2018 drought).

The Australian Government has responded to this analysis by announcing a \$20 million grant program over four years for economic development projects in indigenous, remote, rural and regional communities most impacted by the Basin Plan. This was included in the Basin Commitments Package announced in May 2018 (discussed in the previous chapter).

Water quality and salinity

Basin governments and the MDBA have a long history of working together to manage water quality and salinity issues. This includes managing flows to reduce salinity levels and operating salt interception schemes that divert saline groundwater away from the river. The Basin Plan sets water quality targets and objectives to protect water quality in the Basin’s rivers for people and livestock as well as for wetlands and floodplains. The Basin Plan requires water managers to consider water quality targets when making decisions about environmental watering and running the river.

Managing water quality

The benefits of the requirement to give regard to water quality outcomes when managing river flows was clearly demonstrated during 2017–18 in two case studies in the Murray and Goulburn Rivers. These are described below.

On preliminary review, it appears that the actions taken by water managers helped prevent a hypoxic black water event (dissolved oxygen levels below 2 mg/L) forming in 2017–18. The December 2017 inundation event in the Murray River was considerably smaller in magnitude and duration compared with the more widespread and long lasting flooding in 2016. It also probably re-wet areas that were previously inundated in 2016. These factors may have combined to result in a less severe event because of the lower dissolved organic carbon loading in the water. Further research into risks and possible mitigating factors could help water managers in the future, and may also highlight the benefits of restoring the frequency of overbank environmental watering events.

Case Study – active management of water quality in the Murray River

A rainfall event in the Ovens River system in December 2017 resulted in higher flows entering the Murray River downstream of Yarrawonga Weir and a decision was made to open some of the Barmah–Millewa Forest regulators. This led to the inundation of some low lying areas within Barmah–Millewa Forest.

Because the inundation occurred during the warmer months, there were concerns about the risk of a hypoxic black water event so dissolved oxygen data (24 hour data in some locations) were closely monitored. Dissolved oxygen levels lower than 6 mg/L were detected in the Edward River at Toonalook, indicating that water low in dissolved oxygen was returning to the river from the Millewa Forest.

A range of risk mitigation strategies were explored by river operators, environmental water holders and managers in case dissolved oxygen levels continued to decline to levels which may have threatened the survival of aquatic life (generally 4 mg/L and below). This included assessing whether additional water could be supplied to localised areas to improve dissolved oxygen levels. Consideration was also given to whether prolonging floodplain inundation of Barmah–Millewa Forest would be beneficial.

Collectively it was decided the best operational strategy was to allow the flow to naturally recede so that flows through the Barmah–Millewa Forest would return to in-channel levels. Action was also taken to re-route some of the flow already in transit down the Murray to the Edward River. Dissolved oxygen levels started to rise in affected locations and the operational strategy was considered a success.

Source: MDBA 2017–18 Basin Plan Implementation Report

Case Study – managing low dissolved oxygen event in the Goulburn River

In early December 2017, 65 mm to 170 mm of rain fell in the Goulburn River catchment triggering high flows in the tributaries of the lower Goulburn River including Pranjip Creek, Castle Creek and Sevens Creek. Inflows from these tributaries flushed a large amount of organic matter into the Goulburn River. Warm weather immediately after the event provided ideal conditions for biological breakdown of this organic matter and as a consequence dissolved oxygen levels dropped.

Summer rainfall events that generate runoff into rivers can sometimes result in low dissolved oxygen level. In the Goulburn River in previous years, such events have caused dissolved oxygen levels to drop below 2 mg/L and have resulted in fish deaths. To mitigate the risk during the 2017 event, Goulburn Broken CMA and Goulburn Murray Water increased releases from Goulburn Weir using a combination of Goulburn Water Quality Reserve and environmental water. Dissolved oxygen levels at McCoy's Bridge in the lower Goulburn River dropped from 6 mg/L to 3.2 mg/L as the event passed through, but the actions of the CMA and Goulburn Murray Water likely prevented a more severe environmental outcome. Dissolved oxygen concentrations gradually increased to more than 5.0 mg/L two days after the event.

Source: Victorian 2017–18 Basin Plan Implementation Report

Salinity targets

The Basin Plan requires the MDBA to monitor salinity levels at five reporting sites on a daily basis and, at the end of each water accounting period, assess whether the salinity targets at the reporting sites have been met over the last five years. Results for July 2013 to June 2018 in Table 1 show that the salinity target values were achieved at four of the five sites — Murray Bridge, Morgan, Lock 6 and Milang.

Over the five year reporting period ending in June 2018, the salinity at the Burtundy site was above the target for 36% of days, with a peak salinity of 3406 EC in August 2016. The highest salinity level in 2017–18 was just below the target value, reaching 825 EC in October 2017.

The August 2016 spike in salinity was the result of record dry conditions in the Darling system in 2015–16 water year, during which the lower Darling River downstream of Menindee Lakes experienced 8 consecutive months of no flow. This was the longest no flow period since construction of the Menindee Lakes Scheme, and the inability to draw on water from Menindee Lakes for dilution purposes meant that it was extremely difficult to manage salinity in the Lower Darling River during that time.

Table 1: Five year average salinity results 2013–18—achievement of targets

Reporting site	Target value (EC $\mu\text{S}/\text{cm}$)	Achievement of target
River Murray at Murray Bridge	830	✓
River Murray at Morgan	800	✓
River Murray Lock 6	580	✓
Darling River at Burtundy	830	X
Lower Lakes at Milang	1,000	✓

* EC > 800 $\mu\text{S}/\text{cm}$ is marginal for drinking, EC > 1600 $\mu\text{S}/\text{cm}$ is brackish, EC > 4800 $\mu\text{S}/\text{cm}$ is saline

The MDBA is working to review the Water Quality and Salinity Management Plan targets in the Basin Plan by 2020. Part of the review will include an examination of the appropriateness of how the salinity target at Burtundy is expressed. This will need to consider the future flow regime in the northern Basin and Lower Darling following the changes made to the Basin Plan following the Northern Basin Review. The future effect of enhanced protection of environmental flows, which are one of the Northern Basin Toolkit measures, and the future management arrangements for Menindee Lakes linked to the implementation of a SDLAM project will also need to be considered.

Salt export objective

The Basin Plan includes a salt export objective to ensure salt is flushed at a sufficient rate from the River Murray system into the Southern Ocean, indicatively estimated at an average of two million tonnes per year. Due to low inflows into the River Murray system in two of the last three years

(2015–16 and 2017–18), it has not been possible to export this amount of salt over the barrages despite the additional environmental water provided under the Basin Plan. For the July 2017 to June 2018 period, the estimated amount of salt discharged over the barrages was just 0.44 million tonnes. Over the three-year period from July 2015 to June 2018, the average annual amount of salt exported over the barrages has been estimated to be 0.86 million tonnes per year.

During dry periods, salt interception schemes become increasingly important in managing salinity in the river system, and these schemes have helped achieve the salinity targets discussed in the previous section. Nevertheless, extended periods of below average inflows into the Murray River system make it more difficult to flush an annual average of two million tonnes of salt out of the Basin over the long term. As recommended in the 2017 Basin Plan Evaluation, the upcoming 2020 review of the Water Quality and Salinity Management Plan should consider how the Basin Plan’s salt export objectives could be better defined or varied to deal with periods of low flow.

4. Monitoring, evaluation, reporting and improvement

The program for monitoring and evaluating the effectiveness of the Basin Plan is set out in Chapter 13 of the Basin Plan. Its purpose is to detail the monitoring, evaluation and reporting approach required to evaluate the effectiveness of the Basin Plan to enable improved implementation practices, through an adaptive management approach. The program requires relevant jurisdictions to report annually on implementation activities, and requires the MDBA to evaluate the effectiveness of the Basin Plan every five years.

Basin jurisdictions and the MDBA invest significant funds in a range of monitoring and evaluation programs. The information collected is used to guide the implementation of the Basin Plan. For example, monitoring information is used each year to develop the MDBA's annual environmental watering priorities. The priorities help guide environmental water holders in how they plan and use their annual water allocations.

Information is also gathered directly with communities. Governments engage frequently with local community members, subject matter experts, and Traditional Owners to access best available and local knowledge to inform implementation of Basin Plan activities. Some of the committees the MDBA engages with frequently include the Basin Community Committee (BCC) and the Advisory Committee on Social, Economic and Environmental Sciences (ACSEES).

2017 Basin Plan Evaluation

In December 2017, the MDBA released the interim evaluation of the Basin Plan based on the five years of implementation since the Basin Plan came into effect in 2012. The main purpose of the 2017 Basin Plan Evaluation (the evaluation) was to inform stakeholders about whether implementation is on track, and the outcomes so far. The evaluation also aimed to identify options for improving future implementation activities, and lay the groundwork for a more detailed evaluation in 2020. The evaluation made a number of key findings, and was a useful exercise for informing the 2020 evaluation, which will include reports from all Basin governments.

The evaluation focused on progress with implementation of key Basin Plan activities, and the associated environmental, social, cultural and economic outcomes. It found that implementation is largely on track, with important positive ecological responses observed as a result of environmental watering delivery.

The evaluation also found that three key elements of the Basin Plan are at risk of not being completed on time. With only one Water Resource Plan (WRP) accredited as at December 2017, the evaluation found there was a high risk that WRPs would not be in place by the 30 June 2019 deadline.

Secondly, the evaluation found that there has been slow progress with some parts of the transition to new methods of SDL accounting for some forms of water take. Accurate water take accounting is important for determining SDL compliance and provides the basis for transparent reporting. Since

the evaluation, the MDBA and States have been working closely to ensure appropriate SDL accounting arrangements will be in place by 30 June 2019.

Thirdly, the evaluation mirrored the findings of the MDB Water Compliance Review, highlighting again the risks to effective compliance with the new SDL's under the Basin Plan. To mitigate the risk, it was found that Basin states, in particular New South Wales and Queensland must do more to increase the robustness, transparency and consistency of compliance and enforcement. Both States have since taken significant steps to improve in these areas of compliance, including committing to the Compliance Compact.

In April 2018, the MDBA finalised the socio-economic analysis component of the evaluation, and published detailed profiles for the social and economic status of 40 individual irrigation-dependent communities, the centres of Deniliquin and Shepparton–Mooroopna, and an additional five communities with little or no irrigated agriculture as a control for comparison purposes. The findings of this analysis are discussed in Chapter 3. To read more about the community profiles, see the [MDBA website](#).

In response to these findings, the evaluation made a number of high-level recommendations aimed improving future Basin Plan implementation activities and improving Basin Plan outcomes. The recommendations can be accessed from the [MDBA website](#). The MDBA will provide regular reports on the work to progress these recommendations on its website.

Improving evaluation and reporting

The 2017 Basin Plan Evaluation process revealed some gaps with the current evaluation framework, and the MDBA has since taken steps to improve its evaluation capabilities. As part of the actions to improve evaluation, the MDBA has begun to develop a revised evaluation framework, in consultation with Basin governments. The updated evaluation framework is expected to guide updates to annual reporting, to ensure that the right information continues to be collected and reported by Basin Plan delivery partners. This is essential for informing decision making in the future, and for delivering future evaluations of the Basin Plan. Basin jurisdictions are also collaborating as they develop their jurisdictional reporting and evaluation requirements for the 2020 and 2025 Basin Plan evaluations.

The Basin Plan requires that the monitoring, reporting and evaluation (MER) capabilities of all Basin jurisdictions with Basin Plan implementation responsibilities be assessed by 2020. In 2018, the MDBA commissioned the independent assessment of Basin jurisdictions' MER capabilities. The findings of this assessment will be used to improve capabilities required to deliver the Basin Plan monitoring and evaluation program in the lead up to the 2020 and 2025 Evaluation and a review of the Basin Plan in 2026.

Efficient implementation of the Basin Plan can be supported by efforts to streamline the various reporting requirements which have built up over time. The Basin Plan and the Water Act have a fulsome set of reporting requirements for the MDBA and Basin governments. These were supplemented by additional reporting requirements that were introduced in 2018. For example, in June the Commonwealth Minister for Agriculture and Water Resources introduced the *Water (Indigenous Values and Uses) Direction 2018* requiring the MDBA to report annually on how Indigenous values and water uses were considered in environmental water planning and how Aboriginal people were involved in decision-making. It also requires that the MDBA publish the

report on its website within six months after the end of the water accounting period. The first of these reports is due to be published by 31 December 2019. Additional requirements have also been introduced under the new Basin Compliance Compact as outlined in chapter 2.

In 2017–18, the MDBA worked closely with Basin States, the Commonwealth Environmental Water Holder and the Department of Water Resources and Agriculture (the DAWR) to begin reviewing the set of reporting requirements to identify arrangements under which these could be met most efficiently. This included Basin Plan implementation requirements, and other reporting required by the DAWR for its implementation funding assessments.

The MDBA will continue to work with jurisdictions to further streamline reporting for 2018–19.

Best available science

The MDBA aims to identify and use best available science and analysis to inform decisions and ongoing improvement with the implementation of Basin Plan activities. This commitment extends to regularly reviewing the risks that may be posed to Basin Plan outcomes.

In 2017–18, return flows was raised as an issue for implementation. Some concerns were raised that recent increases in groundwater sustainable diversion limits and irrigation efficiency projects may lead to significant reductions in river flow and offset the benefits of surface water recovery for the environment.

In response to these concerns, the MDBA commissioned an independent review led by experts from the University of Melbourne. As part of the review, a technical workshop was facilitated by ACSEES member, Professor Mike Stewardson. The workshop involved a large number of expert hydrologists to ensure the data and methods being used by the independent reviews was appropriate.

The review aimed to answer the following questions:

1. Is it likely that the Basin Plan groundwater sustainable diversion limits will have a material impact on river flow volume?
2. Is it likely that irrigation efficiency projects, carried out to achieve Basin Plan environmental water recovery targets, will have a material impact on return flow to rivers?


The review found that while return flows may change in the future, the reductions were relatively small and likely to take many years or decades to occur. Consequently, these changes are not expected to undermine the outcomes that can be achieved through the Basin Plan. However, it also concluded that it will be important to continue to monitor and improve our understanding of return flows so that we can reduce the uncertainty around possible future changes in return flows.

To find out more about return flows, visit the [MDBA website](#).

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