

To: Mr Phillip Glyde
Chief Executive
Murray-Darling Basin Authority

From: Mr David Papps
Commonwealth Environmental Water Holder
Australian Government

Statement of Assurance for 2016-17 Commonwealth Environmental Water Holder (CEWH)

In order to maximise transparency and to provide assurance to other parties and the community that the obligations of the Basin Plan are being implemented appropriately and in line with agreed arrangements under the *Basin Plan 2012 Implementation Agreement*, I have, in my role as the Commonwealth Environmental Water Holder, completed a self-assessment of performance against my obligations under the *Basin Plan 2012* and section 34 of the *Water Act 2007* (Cth), including (where applicable) identifying progress towards full implementation of the Basin Plan Implementation Agreement and the identification of measures being, or to be, applied to rectify identified non or partial compliance.

I certify that to best of my knowledge, for the 2016-17 water accounting period, the information provided in the self-assessment attached to this statement accurately reflects the extent to which I, as the Commonwealth Environmental Water Holder, was compliant with my obligations under the *Basin Plan 2012*.

Where non-compliance or partial compliance has been detected, I have identified the measures I have implemented, are implementing or plan to implement and any impediments that are outside my control which may impact on compliance with particular provisions of the *Basin Plan 2012* and section 34 of the *Water Act 2007* (Cth).

Mr David Papps, Commonwealth Environmental Water Holder

DAVID PAPPS  30/10/17
Name Signature Date

Information collection template for water year 2016-17

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The Commonwealth Environmental Water Holder (CEWH) 2016-17 annual report to satisfy reporting obligations for:

- Basin Plan Schedule 12 responses
- Basin Plan Implementation Agreement (BPIA) self-assessment of compliance with implementation tasks

Reporting context

This template provides for one Commonwealth information collection point, which can be used multiple times to meet the CEWH reporting obligations in relation to the Murray-Darling Basin Plan.

Its aim is to reduce duplication, improve transparency and increase efficiency of reporting. The template has been tailored to address information requirements for the 2016-17 reporting year and will be updated for each subsequent reporting period.

The information collection template is designed to satisfy reporting obligations for Basin Plan Schedule 12 and the Basin Plan Implementation Agreement reporting and compliance requirements (Statements of Assurance). Reporting for Schedule 12 Matter 9 (the identification and use of environmental water) is reported elsewhere. Matter 9, indicators 9.1 and 9.2, are reported through existing Water Act s71 and s32 reporting requirements and Matter 9, indicator 9.3, is reported through the *Matter 9.3 reporting template*.

Please note that the drafting text, in the response column, highlighted yellow should be removed before the completed template is submitted.

A. Local Knowledge and Stakeholder Engagement

Reporting Matter	Supporting evidence to be provided by the CEWH	Response/milestone achievement and compliance status
<p><i>The extent to which local knowledge and solutions inform the implementation of the Basin Plan.</i></p>		
<p>A1 How engagement influenced Basin Plan implementation</p> <p><i>Applicable to Schedule 12, Matter 6 and Indicator 6.1</i></p>	<p>Where possible include specific examples:</p> <ul style="list-style-type: none"> • How local knowledge and solutions were used by the reporter • How involving communities made a difference to Basin Plan implementation • How decisions changed as a result of community involvement <p>Local knowledge might include knowledge drawn from Traditional Owners and other Aboriginal people and groups. When reporting on Aboriginal participation and influence, processes of involvement may be as important as outcomes. Examples or case studies are not mandatory, but may be a useful way to describe how local knowledge and solutions inform implementation of the Basin Plan.</p>	<p>In 2016-17, local communities have continued to play a pivotal role in planning and making decisions on the use of Commonwealth environmental water by the Commonwealth Environmental Water Holder. In particular, local communities provided their valued local knowledge and experience through:</p> <ul style="list-style-type: none"> • Identifying environmental water needs and the potential to achieve multiple benefits (such as social, cultural and economic benefits); • Identifying potential risk, including third-party impacts; and • Monitoring the environmental outcomes resulting from environmental water. <p>The Commonwealth Environmental Water Holder receives this valuable community input through engaging directly with stakeholders across the Murray-Darling Basin facilitated by site visits, community forums and state government arrangements. The Commonwealth Environmental Water Holder is supported in these engagement activities by the Commonwealth Environmental Water Office, which includes six local engagement officers who live and work in the Basin.</p> <p>During 2016-17, the three year pilot of the Commonwealth Environmental Water Office's local engagement officer program concluded. The program was assessed as effective in supporting engagement outcomes and the Commonwealth Environmental Water Holder has now agreed to the Commonwealth Environmental Water Office recruiting local engagement officers on a permanent basis. The Commonwealth Environmental Water Office is currently in the process of finalising the permanent employment of 6 local engagement officers throughout the Murray-Darling Basin with the locations of these permanent officers to be announced in the 2017-18 financial year.</p> <p>This demonstrates the Commonwealth Environmental Water Holder's commitment to ensuring that the Commonwealth Environmental Water Holder has the right mechanisms in place to build strong and meaningful relationships with local communities.</p>
<p>A2 Processes used to identify stakeholders and other relevant groups and individuals from local communities and peak bodies</p> <p><i>Applicable to Schedule 12, Matter 6, Indicator 6.2</i></p>	<p>Where possible include process used to identify stakeholders and other relevant groups/individuals</p>	<p>The Commonwealth Environmental Water Holder has mutual stakeholders with state government water managers and holders, local catchment managers, scientists, river operations and the Murray-Darling Basin Authority. These partners inform stakeholder identification, community engagement and activities undertaken by the Commonwealth Environmental Water Holder and staff of the Commonwealth Environmental Water Office.</p> <p>In 2016-17, the Commonwealth Environmental Water Holder has continued to maintain a number of avenues through which individuals, local community and non-government organisations and peak bodies can express a direct interest in, or raise issues about, Commonwealth environmental water and its management. In this way, stakeholders are self-identifying.</p>

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		<p>The Commonwealth Environmental Water Office tracks stakeholders through upkeep of a stakeholder database that includes details of those people that the Commonwealth Environmental Water Holder and Office staff have met with or talked to via telephone and email. This database also records those people who have sought regular updates about Commonwealth environmental watering activities (subscribers) and those who have used the central email address to provide feedback. This database supports mail-outs of relevant news updates and reports.</p>
<p>A3 How stakeholders and other relevant groups and individuals were engaged</p> <p><i>Applicable to Schedule 12, Matter 6, Indicator 6.3</i></p>	<p>Where possible include:</p> <ul style="list-style-type: none"> • Range of audiences engaged • Range of opportunities (types of engagement) <p>Relate these to the Basin Plan obligations to have regard to local views (Chapter 8 and 10)</p>	<p>Effective stakeholder engagement is an important part of Basin Plan implementation and the use of Commonwealth environmental water throughout the Murray-Darling Basin. The Commonwealth Environmental Water Holder has regard for the local views of the communities where planning for watering actions take place through a variety of processes.</p> <p>The Commonwealth Environmental Water Holder (supported by staff of the Commonwealth Environmental Water Office) plans and coordinates the delivery, accounting, monitoring and reporting of Commonwealth environmental water use in collaboration with state government water managers and holders, local catchment managers, scientists, rivers operators and the Murray-Darling Basin Authority.</p> <p>The Commonwealth Environmental Water Office is also involved in state government-led local engagement processes such as environmental water advisory groups and catchment-level fora which allow a range of stakeholders and other relevant groups to put forward views on environmental watering. These fora enable the Commonwealth Environmental Water Holder to keep informed of local issues while engaging with a range of people who are experienced in local water and land management issues. This includes community representative (landholders and Aboriginal community representatives and others) with direct knowledge of how their rivers, floodplains and wetlands work.</p> <p>Community engagement is supported by an extensive range of mechanisms including emails and phone calls, field trips/site visits/workshops, conferences, newsletters, media opportunities and the Commonwealth Environmental Water Office's web site, ensuring a continual flow of information regarding the work of the Commonwealth Environmental Water Office and opportunities for the community to make submissions regarding the use of the Commonwealth environmental water portfolio.</p> <p>Although the Commonwealth Environmental Water Office's website currently meets all required reporting obligations, evidence suggests that the number of stakeholders who access the website remains limited. Current research has also indicated that many people continue to have a low level understanding of how environmental water is managed. In 2016-17, the Commonwealth Environmental Water Office continued work to better communicate information about environmental watering in a manner that is more readily accessible by a wide range of stakeholders. One option being considered is the development of a dynamic and interactive environmental watering web portal to complement the existing CEWO website. This portal is envisaged to be an engaging solution that will succinctly explain environmental water concepts and help</p>

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		<p>promote understanding of river health and how the Commonwealth environmental water portfolio is actively managed.</p>

B. Environmental Watering

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<i>The implementation of the environmental management framework (Chapter 8, Part 4)</i>		
<p>B1 Watering strategies, plans and priorities are prepared consistently with Part 4 of Chapter 8, in relation to coordinating, consulting and cooperating with other reporters and the matters to which regard must be had (Chapter 8, Part 4)</p> <p><i>Applicable to Schedule 12 Matter 10, Indicator 10.2</i></p>	<p>Describe how coordination, consultation and cooperation occurred including with other governments in preparing watering strategies, plans and priorities, as obligated in Part 4 of Chapter 8, as well as the matters to which regard must be had (10.2.1)</p> <p>Describe how coordination, consultation and cooperation made a difference (10.2.2)</p>	<p>Annual planning for the Commonwealth environmental water portfolio is undertaken prior to the start of each water year. This planning aims to determine the best use of the available environmental water relative to the identified environmental demands and priorities. This requires consideration of all available portfolio management options – water delivery, carrying water over for use in the next year, or trading water allocations (buying or selling). It also involves consideration of past watering history and future environmental demands.</p> <p>Input on environmental demands is primarily provided by:</p> <ul style="list-style-type: none"> • Regional natural resource management groups, local environmental water advisory groups, indigenous communities and other interested community members (through stakeholder meetings, including those organised by state government agencies) • State government agencies (through the catchment annual environmental watering priorities) • The Murray-Darling Basin Authority (through the Basin annual environmental watering priorities) <p>The Commonwealth Environmental Water Office collaborates and consults with these groups, as well as river operators, other water users, relevant landholders, scientists and non-government organisations, in developing the portfolio management plans.</p> <p>The collaboration around planning supports the Commonwealth Environmental Water Holder's input to the development of Basin and catchment annual environmental watering priorities (by the Murray-Darling Basin Authority and Basin States, respectively).</p> <p>Collaboration and consultation with relevant and interested parties is critical to the development of the Commonwealth environmental water portfolio management plans. It ensures that the planning undertaken by the Commonwealth Environmental Water Office is based on the same information as its delivery partners and has access to the latest information on environmental demands, risks, constraints, and the activities of other water managers. Through coordinating engagement activities, the Commonwealth Environmental Water Office, the Murray-Darling Basin Authority and state government agencies efficiently access the views of the local communities and minimise the risk of duplicative consultation.</p>
<p>B2 How environmental watering principles were applied consistent with Chapter 8, Part 4, Division 6.</p> <p><i>Applicable to Matter 10, Indicator 10.3</i></p>	<p>Provide at least one case study that demonstrates how environmental watering principles were applied and identify the relevant principles.</p> <p>Principle 1: Environmental watering to be undertaken having regard to the Basin annual environmental watering priorities</p> <p>Principle 2: Consistency with the objectives for water-dependent ecosystems</p> <p>Principle 3: Maximising environmental benefits</p>	<p>The Commonwealth Environmental Water Holder uses a number of frameworks and processes to ensure the use of Commonwealth environmental water is undertaken consistent with the <i>Principles to be applied in environmental watering</i> as set out in Division 6 of Chapter 8 Part 4. The primary mechanism is the <i>Criteria for Assessing Options for Commonwealth Environmental Water Use</i> ('the Criteria'). This Criteria is an attachment to the <i>Framework for Determining Commonwealth Environmental Water Use</i> and is applied for all Commonwealth environmental watering decisions.</p>

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	<p>Principle 4: Risks Principle 5: Cost of environmental watering Principle 6: Apply the precautionary principle Principle 7: Working effectively with local communities Principle 8: Adaptive management Principle 9: Relevant international agreements Principle 10: Other management and operational practices Principle 11: Management of water for consumptive use</p>	<p>The following case study provides one example of how the Commonwealth Environmental Water Office applies the environmental watering principles consistent with Chapter 8, Part 4, Division 6.</p> <p>In 2016, rainfall in the northern Basin resulted in increased inflows into Menindee Lakes. This provided environmental water managers with the first real opportunity in over two years to improve the health of the Lower Darling River system and build the resilience of its native fish populations.</p> <p>Environmental water (from The Living Murray program) contributed to flows down the Lower Darling, with monitoring demonstrating a strong Murray cod spawning response in spring. As a result, the Commonwealth Environmental Water Holder worked to enhance this environmental outcome (Principle 3) through an adaptive management approach (Principle 8) and provided water to extend the duration and size of flows down the Lower Darling. This provided additional habitat and food resources and supported the dispersal of cod larvae.</p> <p>In addition to Murray cod benefits, Commonwealth environmental water also supported the dispersal and recruitment of golden perch and other native fish populations at a range of life-stages.</p> <p>This watering action aligned with a number of key 2016–17 Basin-wide annual watering priorities in regards to native fish species including contributing to long-term recovery, supporting viable populations and maximising opportunities for range expansion and the establishment of new populations (Principle 1).</p> <p>Throughout the watering action, environmental water holders, the NSW Office of Environment and Heritage, and river operators and water resource managers worked effectively with local communities (Principle 7) to identify all risks and ensure that the use of environmental water did not affect the reliability of water supply for Broken Hill and the Lower Darling community (Principle 4).</p>
<p>Performing functions and exercising powers consistently with the environmental watering plan (ss8.03, 8.25, 8.33-8.41, 8.44)</p>		
<p>B3 Perform functions and exercise powers in a way that is consistent with the Basin Plan environmental watering plan.</p> <p><i>Applicable to BPIA Task 33.1</i></p>	<p>Responses should address the following requirement(s) as outlined in the Basin Plan Implementation Agreement:</p> <p>The CEWH will review its operations to ensure its functions and powers are exercised in a way that is consistent with the environmental watering plan.</p> <p>This includes acting consistently with the principles to be applied in environmental watering.</p> <p>The CEWH will publish an outcomes framework for environmental watering, which will be reviewed from time to time, that outlines how the expected outcomes from environmental water use will contribute to the achievement of, and be consistent with, the objectives of the environmental watering plan.</p>	<p>The Commonwealth Environmental Water Holder has a number of frameworks and processes to ensure the use of Commonwealth environmental water is undertaken consistent with the Basin Plan environmental watering plan. This includes the:</p> <ul style="list-style-type: none"> • <i>Commonwealth Environmental Watering Outcomes Framework</i> (http://www.environment.gov.au/water/cewo/publications/environmental-water-outcomes-framework), which sets out how Commonwealth environmental contributes to the objectives of the environmental watering plan • <i>Commonwealth environmental water portfolio managements plans</i>, which identify the relevant long-term outcomes from the Basin-wide environmental watering strategy that Commonwealth environmental water contributes to by catchment • <i>The Criteria for Assessing Options for Commonwealth Environmental Water Use</i>, which are a component of the <i>Framework for Determining Commonwealth Environmental Water Use</i>. All Commonwealth environmental

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	<p>The CEWH has published a framework and set of criteria that outlines how Commonwealth environmental water use decisions are made, including how this is undertaken consistent with the principles to be applied in environmental watering. The framework and criteria will be reviewed (and if necessary, revised) from time to time, with opportunities for the MDBA and Basin States, or stakeholders, to provide feedback at any time.</p> <p>The CEWH will maximise the environmental benefits and effectiveness of Commonwealth environmental watering through coordinating its use with other environmental water holders and managers of planned environmental water. The CEWH will co-convene with the MDBA, the Environmental Water Holders and River Operators Coordination Forum as referenced in this Agreement, which will support the coordination of environmental water delivery in the southern-connected Basin. The CEWH will participate in Operational Advisory Group(s) (OAG) as necessary and to the extent that the OAG's functions relate to the CEWH's statutory functions. Coordinated use will also occur on an ongoing basis among relevant parties outside of the Forum, subject to bilateral or multilateral need.</p> <p>The CEWH will maintain mechanisms for local communities to put forward proposals for Commonwealth environmental water use. These mechanisms will include:</p> <ul style="list-style-type: none"> • discussing proposals directly with staff of the Commonwealth Environmental Water Office, including regionally-based local engagement officers; • submitting a proposal via the CEWH's website; and • through relevant Basin State engagement mechanisms. <p>Proposals received through these mechanisms will be assessed in accordance with the CEWH's published framework and criteria for determining Commonwealth environmental water use and considered in collaboration with relevant Basin State delivery partners.</p> <p>The CEWH will work with the MDBA, Basin States, Indigenous representative bodies, such as the Northern Basin Aboriginal Nations (NBAN) and the Murray Lower Darling Rivers Indigenous Nations (MLDRIN), and Indigenous</p>	<p>watering decisions are assessed against the criteria, which are the primary mechanism through which the Commonwealth Environmental Water Holder acts in accordance with the <i>Principles to be applied in environmental watering</i>. The <i>Criteria for Assessing Options for Commonwealth Environmental Water Use</i> is available at http://www.environment.gov.au/water/cewo/publications/criteria-assessing-options-cew-use</p> <p>While water holders across the Murray-Darling Basin can differ in priority setting, the Commonwealth Environmental Water Holder, the Victorian Environmental Water Holder and the Office of Environment and Heritage work closely together to ensure that where appropriate environmental water is coordinated and delivered together to maximise environmental benefits and effectiveness of environmental watering. The Commonwealth Environmental Water Office either provides advice to or attends numerous committees and workgroups regarding the management of environmental water and the implementation of the Murray-Darling Basin Plan including:</p> <ol style="list-style-type: none"> a) Southern Connected Basin Environmental Watering Committee (SCBEWC) b) Environmental Water Working Group (EWWG) c) Water Liaison Working Group (WLWG) d) River Murray Operations Committee (RMOC) <p>The Commonwealth Environmental Water Holder maintains mechanisms for local communities to put forward proposals for Commonwealth environmental water use on the Commonwealth Environmental Water Office's website through both phone and email. These proposals are assessed in accordance with the Commonwealth Environmental Water Holder's published framework and criteria (included above) during planning and decision-making processes for the use of environmental water.</p> <p>The Commonwealth Environmental Water Holder continues to work closely with Indigenous groups such as the Northern Basin Aboriginal Nations (NBAN) and the Murray Lower Darling Rivers Indigenous Nations (MLDRIN) with a focus on improving collective understanding about culturally important places, habitat and species as well as investigating ways to deliver environmental water which supports both cultural and ecological outcomes.</p> <p>Since 2015, the Commonwealth Environmental Water Holder has had a partnership agreement with the Ngarrindjeri Regional Authority which supports linking best of science on environmental watering with the cultural knowledge of the Ngarrindjeri Indigenous people to help ensure that this knowledge is included in decision making on environmental water use in the Coorong and Lower Lakes.</p> <p>The Commonwealth Environmental Water Holder also works closely with other indigenous groups to deliver water to sites of cultural importance including the Tar-Ru Lands Board of Management in delivering water to the Carrs, Cappitts and Bunberro Creeks system and the Nari Nari Indigenous people in the delivery of environmental water to the Toogimbie Indigenous Protected Area as part of the National Cultural Flows project.</p>

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	<p>communities to explore the need for additional mechanisms for engaging specifically with Indigenous communities, particularly in relation to potential opportunities for environmental water use to achieve mutual environmental and cultural outcomes.</p>	
<p>B4 Perform its functions and exercise its powers in a way that is consistent with the Basin-wide environmental watering strategy.</p> <p><i>Applicable to BPIA Task 33.2</i></p>	<p>Responses should address the following requirement(s) as outlined in the Basin Plan Implementation Agreement:</p> <p>Following the finalisation of the Basin-wide environmental watering strategy, the CEWH will review its operations to ensure its functions and powers are exercised consistently with the Basin-wide environmental watering strategy.</p>	<p>The Commonwealth Environmental Water Holder performs its functions and exercises its power consistent with the Basin-wide environmental watering strategy ('the Strategy').</p> <p>Planning</p> <p>Portfolio management planning is undertaken prior to the start of each water year. The approach includes the identification of how short-term outcomes (<1 and 1-5 years) from environmental water contribute to the longer-term (10+ years) in the Strategy and Basin Plan.</p> <p>Portfolio management plans are produced for each catchment and identify the relevant long-term outcomes from the Strategy that Commonwealth environmental water will be contributing to in that catchment.</p> <p>Decision-making</p> <p>The <i>Criteria for Assessing Options for Commonwealth Environmental Water Use</i> is applied for all Commonwealth environmental watering decisions.</p> <p>Assessment against the criteria includes a description of how a watering action contributes to the achievement of outcomes listed in the Strategy (and applies any of the relevant management strategies).</p> <p>See also description against Principles to be applied to environmental watering for further descriptions of the way in which the Commonwealth Environmental Water Holder applies the management strategies identified in the Strategy.</p>
<p>B5 Have regard to the Basin annual environmental watering priorities when performing functions and exercising powers.</p> <p><i>Applicable to BPIA Task 33.3</i></p>	<p>Responses should address the following requirement(s) as outlined in the Basin Plan Implementation Agreement:</p> <p>The CEWH will have regard to the Basin annual environmental watering priorities at the time that decisions are made to use Commonwealth environmental water.</p> <p>Consistent with the principles to be applied in environmental watering, other factors that will be considered in decisions to make Commonwealth environmental water available for use may include expected benefits, costs, risks (including to third parties), and monitoring and accounting arrangements to support adaptive management.</p>	<p>The Commonwealth Environmental Water Holder has regard to the priorities through the <i>Criteria for Assessing Options for Commonwealth Environmental Water Use</i>. This is applied for all Commonwealth environmental watering decisions. Criterion 2.1 of the Criteria requires consideration of 'the extent to which the watering action will contribute to the achievements of Basin annual environmental water priorities', and justification must be provided if a watering action is proposed that will not contribute to a priority. In addition, the <i>Criteria for Assessing Options for Commonwealth Environmental Water Use</i> also includes consideration of a range of other factors consistent with the principles to be applied in environmental watering.</p> <p>The <i>Criteria for Assessing Options for Commonwealth Environmental Water Use</i> is available at http://www.environment.gov.au/water/cewo/publications/criteria-assessing-options-cew-use</p>
<p>B6 Give information relating to expected holdings of held environmental water.</p>	<p>Responses should address the following requirement(s) as outlined in the Basin Plan Implementation Agreement:</p>	<p>The Commonwealth Environmental Water Holder provides monthly holding information to the Department of Agriculture and Water Resources and the Murray-Darling Basin Authority; and publishes monthly</p>

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<p><i>Applicable to BPIA Task 33.4 and Matter 10, Indicator 10.1</i></p>	<p>The CEWH will provide information to the MDBA about expected holdings of held Commonwealth environmental water, including quantities, reliability, security class, licence type, limitations, and other characteristics.</p> <p>The CEWH will report on the Commonwealth environmental holdings each month on its website.</p>	<p>holding information on the Commonwealth Environmental Water Office's website.</p> <p>The Commonwealth Environmental Water Holder reports on the Commonwealth environmental holdings each month at http://www.environment.gov.au/water/cewo/about/water-holdings</p>
<p>B7 Report when the Basin annual environmental watering priorities are not followed.</p> <p><i>Applicable to BPIA Task 33.5</i></p>	<p>Responses should address the following requirement(s) as outlined in the Basin Plan Implementation Agreement:</p> <p>The CEWH will provide the MDBA with a statement of reasons as to how environmental watering has been undertaken in accordance with the Basin annual environmental watering priorities for the relevant water year.</p> <p>The level of detail of these statements will vary depending on the reasons for which any environmental watering was not undertaken in accordance with the Basin annual environmental watering priorities.</p> <p>The MDBA may publish the statement of reasons on its website.</p>	<p>Commonwealth environmental water contributed to all of the 11 Basin annual environmental watering priorities published by the Murray-Darling Basin Authority for 2016-17 as well as the expanded priorities published in the November addendum.</p> <p>See Statement of Reasons for full details.</p>

C. Water Quality and Salinity Management

Reporting Matter	Supporting evidence to be provided by the CEWH	Response/milestone achievement and compliance status
<p>Implementation of the water quality and salinity management plan, including the extent to which regard is had to the targets in Chapter 9 when making flow management decisions.</p>		
<p>C1 Regard had to the targets in s9.14 when making decisions about the use of environmental water.</p> <p><i>Applicable to Schedule 12 Matter 14, Indicator 14.2</i></p>	<p>Summary of how CEWH 'had regard' when making decisions about the use of environmental water.</p> <p>What procedures and tools were in place to enable water quality targets to be met?</p> <p>Statement that procedures and tools were used to meet water quality targets in the reporting year.</p> <p>Reporters to provide a case study where possible.</p>	<p>The Commonwealth Environmental Water Holder had regard to the water quality targets set out in s9.14(5) when making decisions about the use of Commonwealth environmental water in 2016-17.</p> <p>The Commonwealth Environmental Water Office considers expert regional knowledge, in-field monitoring and salinity forecast modelling to support the planning and active management of Commonwealth environmental water. For every Commonwealth watering action, a risk assessment is undertaken 'including with regard to the Basin Plan's water quality and salinity targets for managing water flows'. These risk assessments are guided by the <i>Risk Management Guidance for the Use of Commonwealth Environmental Water</i>, which specifically identifies the potential risks of Commonwealth environmental watering resulting in water quality and salinity targets being exceeded, and provides guidance on mitigation strategies.</p> <p>As part of these risk assessments, contingency planning and procedures for monitoring and operational response to risks are developed and integrated within the delivery arrangements for Commonwealth environmental water use. Delivery arrangements are agreed with state delivery partners through Watering Schedules. These schedules outline the operational strategies and procedures for the management of Commonwealth environmental water, including the on-going assessment and management of water risks where required.</p> <p>In 2016-17, risk assessments, which include the potential risk for exceeding the water quality targets, were undertaken for all Commonwealth environmental water use actions.</p> <p>No Commonwealth environmental watering actions were found to have resulted in adverse water quality impacts.</p> <p>Case study on hypoxic blackwater events:</p> <p>During 2016, natural flooding in spring triggered hypoxic 'blackwater' events in a number of rivers in the southern Basin (including the Lachlan, Murrumbidgee, Murray and Goulburn rivers and Broken Creek). The flooding that leads to blackwater events is a natural feature of Australian river systems and the capacity to prevent and manage impacts from these events is limited.</p> <p>Commonwealth environmental water has never been used in events that have created or contributed to significant hypoxic blackwater events or blue-green algae events. In some circumstances, environmental water can be used in a targeted way to help mitigate negative impacts of poor water quality. In 2016, more than 300 GL of Commonwealth environmental water was used to mitigate the negative impacts of hypoxic blackwater and benefit native fish populations across multiple systems including the River Murray and parts of the Murrumbidgee and Lachlan Rivers.</p> <p>Water quality monitoring and anecdotal evidence from stakeholders has indicated that environmental</p>

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		<p>water provided refuge habitat for native fish during these hypoxic blackwater events. In the long-term, the frequency or severity of such events could be reduced through more regular smaller scale flooding in winter and spring, which would flush away organic material from floodplains when there are more moderate temperatures and bacterial activity is low. This highlights the need for State and Commonwealth agencies to continue to work together to implement constraint relaxation to a satisfactory level across the Murray-Darling Basin to allow for more regular flushing of the floodplain where risks have been adequately mitigated.</p>
<p>Targets for managing water flows (s9.14)</p>		
<p>C2 Have regard to targets on dissolved oxygen, recreational water quality and levels of salinity when making decisions about the use of environmental water.</p> <p><i>Applicable to BPIA Task 34.1</i></p>	<p>Responses should address the following requirement(s) as outlined in the Basin Plan Implementation Agreement t:</p> <p>The CEWH will have regard to the targets as part of the risk assessment for each decision to make Commonwealth environmental water available for use.</p>	<p>For every Commonwealth watering action in 2016-17, a risk assessment was undertaken, 'including with regard to the Basin Plan's water quality and salinity targets for managing water flows'. The risk assessments were guided by the <i>Risk Management Guidance for the Use of Commonwealth Environmental Water</i>, which specifically identifies the potential risks of Commonwealth environmental watering resulting in the water quality and salinity targets being exceeded, and provides guidance on mitigation strategies.</p>

D. Water Trading

Reporting Matter	Supporting evidence to be provided by the CEWH	Response/milestone achievement and compliance status
Information and reporting requirements (ss12.48, 12.49-12.52)		
<p>D1 Report trade prices.</p> <p><i>Applicable to BPIA Task 35.1</i></p>	<p>Responses should address the following requirement(s) as outlined in the Basin Plan Implementation Agreement:</p> <p>If a trade requires approval by an approval authority or requires registration, where the CEWH is the seller, the CEWH will notify the approval authority or the registration authority of the price in writing.</p> <p>Note: This applies to both entitlement and allocation trades as section 1.07 (3)</p>	<p>The Commonwealth Environmental Water Holder notifies the approval authority or the registration authority of the sale price for any allocation trades in writing through the relevant application to trade water forms which must be submitted for a trade can proceed.</p>
<p>D2 Make water announcements generally available.</p> <p><i>Applicable to BPIA Task 35.2</i></p>	<p>Responses should address the following requirement(s) as outlined in the Basin Plan Implementation Agreement:</p> <p>The CEWH will publish its water announcements in a way that makes them likely to be brought to the attention of interested members of the public.</p>	<p>The Commonwealth Environmental Water Holder makes water announcements publically available on the Commonwealth Environmental Water Office's website at http://www.environment.gov.au/water/cewo/news. Water announcements are also made available on the Commonwealth Environmental Water Holder's twitter account and through other media distribution channels used by the Commonwealth Environmental Water Office.</p>
<p>D3 Not trade water if aware of a water announcement before it is made generally available.</p> <p><i>Applicable to BPIA Task 35.3</i></p>	<p>Responses should address the following requirement(s) as outlined in the Basin Plan Implementation Agreement:</p> <p>The CEWH will develop, publish and act consistent with a set of protocols regarding trading of water entitlements and allocations. These protocols will be designed to avoid trading if a situation arose where the CEWH were to become aware of a water announcement that was not generally available and could be reasonably expected to materially affect the price or value of any water access right that is the subject of the water announcement.</p> <p>The CEWH will, where it considers it would be appropriate, develop a trading strategy and will make any such trading strategy generally available.</p>	<p>The Commonwealth Environmental Water Holder has published the <i>Commonwealth Environmental Water Trading Framework</i> which includes operating rules, procedures and protocols.</p> <p>These water trading protocols assist the Commonwealth Environmental Water Holder and staff of the Commonwealth Environmental Water Office to meet their requirements as per the Basin Plan water trading rules. The protocols include Chinese wall arrangements; avoiding exposure to inside information and conflicts of interest; disclosing and managing inside information and conflicts of interest if they arise; record keeping and information and management; being aware of water announcements and decisions to trade; and sanctions for breaches of the APS Code of Conduct.</p> <p><i>The Commonwealth Environmental Water Trading Framework</i> is available at http://www.environment.gov.au/water/cewo/trade/trading-framework</p> <p>Consistent with the framework, the internal 'approach to market' minute and 'trade approval' minute for the trading of Commonwealth environmental water includes checklists to ensure the Basin Plan trade rules are considered as part of the decision making process. The Commonwealth Environmental Water Office also has standard operating procedures for water transfers; a due diligence process for trade; and appropriate delegate approval processes for sign off on transfers and trade. The Department of the Environment and Energy and Commonwealth Water Office also have fraud controls plans in place, with staff instructed in the use of these plans.</p>

E. Operation of Organisation

Reporting Matter	Supporting evidence to be provided by the CEWH	Response/milestone achievement and compliance status
Overview of monitoring and evaluation approach.		
<p>E1 Perform its functions and exercise its powers in a way that is consistent with, and in manner that gives effects to, the principles to be applied in monitoring and evaluating the effectiveness of the Plan.</p> <p><i>Applicable to BPIA Task 36.1</i></p>	<p>Responses should address the following requirement(s) as outlined in the Basin Plan Implementation Agreement:</p> <p>The CEWH will monitor the response to Commonwealth environmental water at a number of locations across the Basin between 2014-15 and 2018-19. This long-term intervention monitoring and evaluation program will align with the CEWH's published outcomes framework for environmental watering.</p> <p>Consistent with principles 6 and 8 in Chapter 13 of the Plan, the CEWH will work collaboratively with Basin States and the MDBA and will undertake to both avoid duplication of effort and ensure monitoring is cost-effective and efficient. In particular, the CEWH will rely on monitoring undertaken by the MDBA in relation to the specific objectives in the environmental watering plan for the Lower Lakes and Coorong.</p>	<p>The Commonwealth Environmental Water Holder's approach to monitoring and evaluation and how this approach is consistent with the Basin Plan is documented in the <i>Commonwealth Environmental Water Monitoring, Evaluation, Reporting and Improvement Framework</i> (available at http://www.environment.gov.au/water/cewo/publications/cew-monitoring-evaluation-reporting-and-improvement-framework).</p> <p>Long-term monitoring has commenced in seven locations in the Basin (Warrego-Darling Junction, Gwydir, Lachlan, Murrumbidgee, Edward-Wakool, Goulburn, and Lower Murray). This monitoring will be undertaken for 5 years and be completed in June 2019.</p> <p>In 2016-17, the Commonwealth Environmental Water Office began investigating the development of the next stage of a long term monitoring project in consideration of the completion of the first 5 years in June 2019. The development of this next stage will include a review of the current long term monitoring sites and the types of data collected to identify improvements for cost-effectiveness and efficiency.</p> <p>Further information on the Long Term Intervention Monitoring project is available at http://www.environment.gov.au/water/cewo/monitoring/ltim-project.</p>

Statement of reasons why watering not undertaken in accordance with Basin Environmental Watering Priorities (BAEWP) for 2016-17 (Refer Matter 10 – Indicator 10.3 and BP IA Task 20.2)

Section 8.44 of the Basin Plan (2012) requires that: If a person undertakes environmental watering other than in accordance with the Basin annual environmental watering priorities accessible on MDBA's website, that a person must give to the Authority a statement of reasons why environmental watering has not been undertaken in accordance with the Basin annual environmental watering priorities (8.44(1)). The person must give the statement to the Authority as soon as practicable, but in any event within four months after the end of the water accounting period in which the environmental watering was undertaken (8.44(2)). The Authority may publish on its website the statement of reasons given.

	Basin annual environmental watering (BAEWP) priorities for 2016–17	Jurisdictions to consider reporting	Please tick (x), where BAEWP not followed	Statement of reasons how BAEWP were followed
River flows and connectivity				
1	Overarching: to provide longitudinal connectivity and variable flow patterns for water quality and ecological benefit — particularly for native fish.	NSW, Vic, Qld, SA, ACT, CEWH, TLM		Reporting on this overarching priority has been provided through descriptions against the specific Basin annual environmental watering priorities for 2016-17 that were published by the Murray-Darling Basin Authority.
2	Maintain waterholes in the Lower Balonne Floodplain to provide critical refuge for water-dependent species.	Qld, NSW, CEWH		Commonwealth environmental water made a significant contribution to end-of-system flows in the Lower Balonne Floodplain in late 2016. Of the 71 GL (un-extractable water) estimated to have flowed through to the end of the system, Commonwealth entitlements contributed ~28 GL (17 GL in flow to the Barwon–Darling and 5.6 GL increase to Narran Lakes). As inflows also reached the distributary channels, an important downstream outcome expected to have been achieved is the refilling of all waterholes, including critical refugia, across the floodplain.
3	Protect aquatic habitat conditions in the Coorong and support native fish movement by optimising flows into the Coorong and through the Murray Mouth. November 2016 addendum: Protect aquatic habitat conditions in the Coorong and support native fish movement by optimising flows into the Coorong and through the Murray Mouth. In particular, promote <i>Ruppia</i> recruitment by elevating water levels in the Coorong from October to December by	SA, CEWH, TLM		Over 618 GL of Commonwealth environmental water was delivered to the Coorong, Lower Lakes and Murray Mouth during 2016–17. This water contributed to protecting aquatic habitat by maintaining water quality to levels suitable for aquatic vegetation; and supported the native fish movement through the site by contributing to attractant and fishway flows over the barrages and into the Coorong and Murray Mouth. Flows through fishways have been maintained throughout the 2016–17 water year. Due to the magnitude of the 2016 floods, there was no need to build on unregulated flows at the South Australia border from October to December. Instead, the majority of Commonwealth environmental water was used on the recession of the high flows experienced in 2016 to allow continuous elevated barrage flows (> 2 GL/day) throughout January to early April 2017. These flows likely contributed to extended estuarine habitat for fish, as well as improved water quality conditions for <i>Ruppia tuberosa</i> —a keystone species identified as important for small bodied fish—in the South Lagoon of the Coorong.

	Basin annual environmental watering (BAEWP) priorities for 2016–17	Jurisdictions to consider reporting	Please tick (x), where BAEWP not followed	Statement of reasons how BAEP were followed
	building on the unregulated flows with environmental water.			
Native vegetation				
4	Overarching: to water discrete locations that include threatened vegetation or support other threatened species and communities, including vegetation that is critical waterbird foraging or breeding habitat.	NSW, Vic, Qld, SA, ACT, CEWH, TLM		Reporting on this overarching priority has been provided through descriptions against the specific Basin annual environmental watering priorities for 2016-17 that were published by the Murray-Darling Basin Authority.
5	Improve the condition of wetland vegetation communities in the mid-Murrumbidgee wetlands that provide critical habitat for threatened species and communities.	NSW, CEWH		Up to 150 GL of Commonwealth regulated environmental water was made available for a mid-Murrumbidgee reconnection event. This event did not proceed due to the wetlands being inundated naturally by the floods that occurred in spring 2016. This water was subsequently used for other priorities in the Murrumbidgee system with the remaining amount carried over to support a reconnection event in 2017-18.
6	Improve the health and complexity of waterbird rookery habitat in the northern Narran Lakes system.	NSW, QLD CEWH		Commonwealth environmental water contributed an estimated 5.6 GL of the 18 GL that entered the Narran Lakes system, inundating over 1500 hectares of wetland area, in late 2016. This included most of the northern Narran Lakes system (e.g. Back, Clear, Long Arm). The health and complexity of lignum communities (identified as core rookery habitat) improved following inundation which lasted close to 60 days around Clear Lake.
7	November 2016 addendum: Prevent further critical deterioration of Moira grass in Barmah–Millewa Forest, subject to resolving natural resource management issues.	NSW, Vic, CEWH, TLM		<p>From November 2016 to June 2017, over 160 GL of Commonwealth environmental water was delivered in the Mid-Murray as part of a 'whole of system' watering event contributing to multiple priorities throughout the Southern Connected Basin. This included 39 GL delivered between November and December 2016, which supported other sources of environmental water (from the Victorian Environmental Water Holder, the Living Murray and Barmah–Millewa Environmental Water Allowance) to extend the inundation of the Barmah–Millewa Forest and improve the health of Moira grass as well as supporting other environmental outcomes at the site (see waterbird priorities) and downstream.</p> <p>Moira grass was observed growing in areas from which it had previously disappeared. Growth and flowering across the forests was reported as developing but inconsistent. Feral horses in the area remain an issue with monitoring evidence indicating this pest species again had a detrimental impact on Moira grass after water levels rescinded.</p> <p>Future growth is expected to be more consistent following the Victorian Government's decision to implement measures to limit the incursion of feral horses into sensitive Moira grass areas of the Barmah-Millewa Forest.</p>

	Basin annual environmental watering (BAEWP) priorities for 2016–17	Jurisdictions to consider reporting	Please tick (x), where BAEWP not followed	Statement of reasons how BAEP were followed
8	November 2016 addendum: Maintain inundation of floodplain areas for sufficient duration to: freshen groundwater; reduce soil salinity; improve health of mature trees; and promote recruitment of long-lived floodplain vegetation, including seed set and germination.	NSW, Vic, Qld, SA, ACT, CEWH, TLM		Commonwealth environmental water contributed to maintaining inundation of approximately 3365 ha of the Western Floodplain at Toorale. 15.5 GL of Commonwealth environmental water was delivered to Nimmie-Caira to inundate wetland and floodplain vegetation. The inundation of floodplain in both these areas is expected to have contributed to improving the quality of groundwater and soil salinity as well as improving the ecological health, resilience and recruitment of wetland and floodplain vegetation.
Waterbirds				
9	Overarching: to prevent further decline in habitat that supports waterbird breeding across the basin and thereby to help stabilise waterbird populations, albeit at lower levels than are sought over the long term.	NSW, Vic, ACT, SA, Qld, CEWH, TLM		Reporting on this overarching priority has been provided through descriptions against the specific Basin annual environmental watering priorities for 2016-17 that were published by the Murray-Darling Basin Authority.
10	November 2016 addendum: Capitalise on opportunities to support waterbird breeding. Sites in the Lachlan, Macquarie and Murray catchments now show potential for successful waterbird breeding in the coming months. At these sites, environmental water should be used to sustain the duration and depth of inundation so that the waterbirds can reproduce successfully.	NSW, Vic, ACT, SA, Qld, CEWH, TLM		<p>In the Murrumbidgee, 13.4 GL of Commonwealth regulated environmental water was delivered to Nimmie–Caira to successfully support naturally triggered waterbird breeding events to completion. This included successful breeding of large ibis colonies at Telephone Bank and Eulimbah Swamp in the Nimmie–Caira, and the first recorded pelican breeding event in the Lowbidgee at Is-Y-Coed, with an estimated 6000 pelican nests in the colony.</p> <p>A further 5 GL was delivered to Wanganella Swamp, 844 ML to North Redbank, and 2155 ML to Yanga National Park to successfully support naturally triggered waterbird breeding events to completion.</p> <p>1.3 GL of Commonwealth environmental water was delivered between January and March 2017 to support a colonial nesting waterbird breeding event in the Booligal Wetlands of the Lachlan River. This was the second of two waterbird colonies that successfully bred in this wetland, with the larger colony supporting over 100,000 nests. This wetland complex has received environmental water over several watering years aimed at maintaining the condition of the vegetation to support waterbird breeding and foraging opportunities.</p> <p>Commonwealth environmental water (9 GL) together with 21 GL of New South Wales environmental water, contributed to inundation of semi-permanent wetland vegetation in the Gwydir Wetlands during the summer of 2016–17. These flows helped to maintain the critical feeding and breeding habitat of the watercourse in a good condition and supported breeding of resident waterbird populations.</p> <p>Over 17 GL of Commonwealth environmental water was delivered in conjunction with 29.4 GL of New South Wales environmental water to the Macquarie Marshes to support the completion of a naturally triggered colonial waterbird breeding event by maintaining water levels, feeding, foraging and breeding habitat. A further 30.2 GL of Commonwealth</p>

	Basin annual environmental watering (BAEWP) priorities for 2016–17	Jurisdictions to consider reporting	Please tick (x), where BAEWP not followed	Statement of reasons how BAEP were followed
				<p>environmental water (with 3.8 GL of New South Wales environmental water) was delivered to the mid and lower Macquarie River to support native fish. This water also inundated important waterbird feeding and foraging habitat in the Macquarie Marshes.</p> <p>At least 21 active waterbird colonies were identified across the Macquarie Marshes (a total of 15 colonial waterbird species nesting across these sites). These active colonies included two large straw-necked ibis colonies consisting of a total of approximately 36,000 nests.</p> <p>Environmental water prolonged inundation and maintained or increased water levels at colony sites. This is expected to have maintained feeding, foraging and breeding habitat, deterred ground based predators, extended the nesting period and potentially increased the success rate for late-nesting species such as royal spoonbills, egrets, night heron and cormorants.</p>
Native fish				
11	Overarching: to protect drought refuge habitats, to maintain in-stream habitats, and to ensure existing populations of threatened species remain viable.	NSW, Vic, ACT, SA, Qld, CEWH, TLM		Reporting on this overarching priority has been provided through descriptions against the specific Basin annual environmental watering priorities for 2016-17 that were published by the Murray-Darling Basin Authority.
12	Contribute to the long-term recovery of silver perch by improving existing populations and enhancing conditions for recruitment and dispersal to and from suitable habitat.	NSW, Vic, ACT, SA, Qld, CEWH, TLM		<p>The Mid-Murray 'whole-of-system' flows (over 160 GL) delivered between November 2016 and June 2017 contributed to maintaining instream habitat (when flows would have otherwise been unnaturally low) and increasing the availability of food resources for several fish species, including silver perch. By maintaining elevated river levels between January and June 2017, additional habitat, including connecting flows to Toupna Creek in Millewa Forest, were provided. This has enabled native fish, such as silver perch, to move between different habitat types to access a range of resources required at various life stages.</p> <p>A coordinated fish pulse in the Murray, Goulburn and Campaspe rivers was undertaken targeting the movement and recruitment of large-bodied native fish, such as silver perch. This included around 60 GL of Commonwealth environmental water delivered in the Goulburn River in March 2017. A number of silver perch were tagged at Torrumbarry Weir, which allowed their movements to be tracked upstream. A proportion of the tagged fish entered the Campaspe and Goulburn Rivers. Many fish then remained in the Campaspe and Goulburn Rivers, while others returned to the main river channel on the recession of the pulse.</p> <p>Continuous baseflows in the Goulburn River, Campaspe and Loddon in 2017 supported further in-stream habitat for native fish, including silver perch.</p> <p>In autumn 2017, 47.5 GL of Commonwealth regulated environmental water was delivered in-stream through the Murrumbidgee system to provide movement and recruitment opportunities for native fish, including for silver perch, and to support hydrological connectivity, biotic and nutrient dispersal, riparian vegetation and water quality.</p> <p>Commonwealth (2.6 GL) and New South Wales (3.8 GL) environmental water was delivered to the mid-Macquarie River and Macquarie Marshes to provide opportunities for the post-spawning dispersal of native fish, including silver perch. A further 27.6 GL of Commonwealth environmental water was delivered specifically to provide longitudinal connection between the mid-Macquarie River and the Barwon River (through the Macquarie Marshes and the lower Macquarie) to support the movement of</p>

	Basin annual environmental watering (BAEWP) priorities for 2016–17	Jurisdictions to consider reporting	Please tick (x), where BAEWP not followed	Statement of reasons how BAEP were followed
				<p>native fish, including silver perch. Preliminary monitoring indicated that silver perch were present in the lower Macquarie system. It is expected that these actions designed to support native fish provided opportunities for dispersal to and from suitable habitat.</p> <p>7.8 GL of Commonwealth environmental water was delivered to support the conservation stocking of silver perch fingerlings in the Namoi River by maintaining flows. This provided connectivity and access to habitat along the length of the Namoi River to the Barwon River. It also provided opportunities for fish to migrate from the Barwon River into the Namoi River. A further 1.2 GL of Commonwealth environmental water was delivered in the Peel River in conjunction with the 5 GL of New South Wales Peel River environmental contingency allowance. These flows provided the opportunity for silver perch (and other native fish) to move upstream into the higher reaches of the Peel River and maintain flows to support juvenile native fish.</p>
13	Support viable populations of threatened native fish by protecting drought refuges and maintaining in-stream habitats and essential functions.	NSW, Vic, ACT, SA, Qld, CEWH, TLM		<p>The Mid-Murray 'whole-of-system' flows and connection with Toupna Creek supported threatened native fish. Monitoring conducted in Toupna Creek recorded the presence of threatened fish (Murray cod and trout cod) using this off-channel habitat within the period of Commonwealth environmental water delivery in the Mid-Murray.</p> <p>Over 20 GL of Commonwealth environmental water was delivered at Gunbower Creek to maintain populations of threatened fish, including silver perch, Murray cod and trout cod. Monitoring of fish populations in Gunbower Creek since 2008 indicates that the population structure of Murray cod is improving.</p> <p>Over 70 GL of Commonwealth environmental water supported a population of Murray cod and their critical habitat in the Lower Darling River between December 2016 and June 2017. Commonwealth environmental water, in conjunction with water from The Living Murray, was delivered to support viable populations of threatened native fish. Operational releases to meet downstream consumptive demands were also delivered during this period.</p> <p>Commonwealth environmental water was delivered between December 2016 and January 2017, and April to June 2017, to inundate habitat critical to the survival of Murray cod larvae following the largest spawning event recorded in the Lower Darling River in 20 years. Delivery of Commonwealth environmental water maintained habitat (including physical and chemical i.e. water quality) for fish at a range of life stages from young-of-year to mature adults and increased the availability of appropriately sized food resources for larvae and fingerlings as well as dispersing larvae to downstream areas of the Lower Darling River.</p> <p>29.5 GL of Commonwealth environmental water was delivered from Lake Victoria in late December 2016 to provide refuge habitat from hypoxic blackwater for fish in the Rufus River. This action was undertaken in conjunction with water from The Living Murray program. Monitoring by SA Water found a significant increase in water quality, particularly dissolved oxygen levels in Rufus River (compared with the main channel). Anecdotal evidence at the time suggested that fish were using the refuge habitat provided by the flows into the Rufus River from Lake Victoria.</p> <p>In response to the significant hypoxic blackwater event that occurred in the lower Murrumbidgee as a result of the spring 2016 flooding, 151 GL of Commonwealth regulated environmental water was delivered in November and December 2016. These flows targeted improvements to water quality and provided in-channel refuge habitat and movement opportunities for native fish and other aquatic animals.</p> <p>In response to the significant hypoxic blackwater event that occurred in the Lachlan River as a result of the spring 2016 flooding, 28 GL of Commonwealth environmental water was delivered in November and December 2016. This targeted improvements to water quality and provided in-channel refuge habitat and movement opportunities for native</p>

	Basin annual environmental watering (BAEWP) priorities for 2016–17	Jurisdictions to consider reporting	Please tick (x), where BAEWP not followed	Statement of reasons how BAEP were followed
				<p>fish and other aquatic animals. A portion of this flow was redirected to contribute to outcomes in the Lower Lachlan, including the waterbird breeding event in the Booligal Wetlands.</p> <p>Commonwealth environmental water was also delivered in the Colligen–Neimur Creek System (3.2 GL), Edward River (75 GL) and Wakool River (29 GL) in late 2016 to provide escape flows for native fish from hypoxic blackwater events occurring after the spring flooding. These flows assisted in maintaining in-stream refuge habitat and essential functions during this period.</p> <p>Summer flows to support native fish condition, spawning and movement were also provided to the Colligen-Neimur, Wakool-Yallakool and Merran Creek systems followed by winter flows. These summer and winter flows supported viable populations of threatened native fish. Total in-stream water use for these actions was 53 GL.</p> <p>Commonwealth (2.6 GL) and New South Wales (3.8GL) environmental water was delivered to the mid-Macquarie River and Macquarie Marshes to provide opportunities for the post-spawning dispersal of native fish, including threatened species such as Murray cod, silver perch, trout cod and freshwater catfish. A further 27.6 GL of Commonwealth environmental water was delivered specifically to provide connection from the mid-Macquarie River through the Macquarie Marshes and the lower Macquarie to the Barwon River to support the movement of native fish, including silver perch. It is expected that these flows provided access to additional habitat and an opportunity to increase genetic diversity and fish condition, which will improve the long-term viability of native fish populations, including those threatened species.</p> <p>Commonwealth environmental water (10 GL in total) supported native fish such as silver perch in the Namoi and Peel rivers by maintaining flows, supporting access to habitat and providing longitudinal connectivity along these rivers.</p>
14	Maximise opportunities for range expansion and the establishment of new populations of silver perch and other threatened fish, as conditions allow.	NSW, Vic, ACT, SA, Qld, CEWH, TLM		<p>The Mid-Murray ‘whole-of-system’ flows delivered during November 2016 to June 2017 contributed to several fish priorities, including maximising opportunities for range expansion and the establishment of new populations of silver perch and other threatened native fish through improved connectivity and flow conditions in tandem with increased flows from other river and creek systems.</p> <p>The coordinated fish pulse in the Murray, Goulburn and Campaspe rivers supported native fish (including golden perch and silver perch) to move upstream and access new habitat. Low abundances of silver perch have been consistently recorded in these tributaries over several years—this movement is important for improving the population structure of this species in these rivers. Over the past two years, endangered trout cod have been found below Shepparton, on the Goulburn River, which may indicate a recent expansion in range since 2003, when they were only found further upstream.</p> <p>Commonwealth environmental water delivered into the Lower Darling River and the Great Darling Anabranh contributed to several fish priorities, including supporting Murray cod recruitment in the Lower Darling and dispersing juvenile golden perch and other native fish from the Menindee Lakes to the southern Basin.</p> <p>Commonwealth environmental water (27.6 GL) was delivered specifically to provide connection from the mid-Macquarie River through the Macquarie Marshes and the lower Macquarie to the Barwon River to support the movement of native fish. This is expected to have provided dispersal, movement and range expansion opportunities for native fish, including threatened species.</p> <p>A small volume of Commonwealth supplementary entitlement (6.35 GL) was taken in the Mehi River and Carole Creek during large to natural spring flows to contribute to downstream connectivity to the Barwon river.</p>

	Basin annual environmental watering (BAEWP) priorities for 2016–17	Jurisdictions to consider reporting	Please tick (x), where BAEWP not followed	Statement of reasons how BAEP were followed
15	<p>November 2016 addendum: Contribute to the long-term recovery of threatened fish species, including silver perch, through range expansion and establishment of new populations. Environmental water can benefit silver perch recruitment by dampening sharp and extended drops in River Murray levels downstream of Yarrawonga during late spring and summer. Provision of water for small in-channel rises in Victorian tributaries and the Murray in summer and autumn will support dispersal of young silver perch.</p>	NSW, Vic, ACT, SA, Qld, CEWH, TLM		Reporting for this 2016-17 Basin annual environmental watering priority has been provided through descriptions against priority 12 and 14.