



Commonwealth Environmental Water Office: 2019-20 SCHEDULE 12 REPORT

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Reporting context

This report presents the Commonwealth Environment Water Holder (CEWH) 2019–20 annual reporting information provided to MDBA to satisfy annual reporting obligations for Basin Plan Schedule 12 responses (except Matter 9 – use of environmental water, which is reported separately).

Note that: reporting for Schedule 12 Matter 9, regarding the identification and use of environmental water, is reported elsewhere (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*).



Matter 6: Local Knowledge & Solutions

| Reporting Matter | Reporting Requirement (Supporting evidence to be provided by CEWH) | Response (response/milestone achievement/compliance status) |
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| <p>M6 The extent to which local knowledge and solutions inform the implementation of the Basin Plan. [Chapter 6, 8 & 10]</p> | <p>Please describe the process and outcomes of local engagement contributing to key BP implementation activities in 2019-20 as follows:</p> <p>M6a) Environmental watering:</p> <ul style="list-style-type: none"> • Describe the engagement process and how local knowledge, views and solutions influenced the planning and delivery of environmental water and the outcomes. This includes how the following were considered: <ul style="list-style-type: none"> ○ the views of local communities and persons materially affected by the management of environmental water (BP8.39) ○ Indigenous values (BP8.35). | <p>The Commonwealth Environmental Water Holder acted consistently with s8.39 of the Basin Plan in 2019–20 in considering the views of local communities and persons materially affected by the management of water for the environment.</p> <p>The Commonwealth Environmental Water Holder maintains a number of processes to engage with local stakeholders and include their knowledge, views and solutions into the planning and delivery of Commonwealth environmental water. This includes providing opportunities for stakeholders to:</p> <ul style="list-style-type: none"> • identify environmental water needs and the potential to achieve multiple benefits (such as social, cultural and economic benefits); • identify any potential risks, including third-party impacts; • take part in monitoring the environmental outcomes resulting from Commonwealth environmental water delivery; • support adaptive management through informing water managers of emerging opportunities during the watering year. <p>Prior to 2019-20, the Commonwealth Environmental Water Office (CEWO) developed portfolio management plans for catchments across the Murray–Darling Basin. In the 2019-20 year, CEWO developed a new streamlined Water Management Plan 2020-21. During the development of the plan, staff liaise closely with external stakeholders to help identify objectives and outcomes to be targeted during the watering year. All plans are published on our website under Publications and Resources, and improvements have been made this year to provide more accessible information products summarising the plans, including brochures, videos and a social media campaign.</p> <p>State agencies including catchment management authorities, the NSW Department of Planning, Industry and Environment, the Victorian Environmental Water Holder, the South Australian Department for Environment and Water, and the Queensland Department of Natural Resources, Mines and Energy play important roles in relaying local and state-based information to the CEWO on conditions and opportunities Commonwealth environmental water could target.</p> <p>The Commonwealth Environmental Water Holder also receives input through site visits by staff, Environmental Watering Advisory Groups, First Nations peoples and other state government arrangements and processes. The Commonwealth Environmental Water Holder is supported in these engagement activities by the CEWO, which includes six local engagement officers who live and work in the Basin. These officers provide a direct link between the community and water delivery staff discussing environmental watering activities with river communities and feeding the information back into CEWO operations and broader engagement planning. This has allowed for new sites to be watered, (suggested by community), partnerships to be developed and advice to be provided on specific watering events.</p> <p>During the watering year, CEWO staff engage with stakeholders across the Basin. Delivery officers have built strong relationships with key stakeholders in local communities. These relationships allow feedback to be provided to the CEWO in decision-making and for stakeholders to be made aware of the implications of the delivery of environmental flows. This can occur via ad hoc feedback by email and phone and through more formalised community forums such as stakeholder reference groups. Representatives from the CEWO also attend broader community events such as the Murray-Darling Association conference which allow face to face feedback to be provided by stakeholders from right across the Murray–Darling Basin.</p> <p>One area of concern in 2019-20 has been the record drought conditions and suggestions that environmental water be repurposed, which is not possible under the Water Act. Misinformation in Murray–Darling Basin communities has increased anxiety and polarised stakeholder groups. The Commonwealth Environmental Water Office (CEWO) has put considerable effort into supplying factual information to government, communities and the wider public on how we work with partners to manage Commonwealth environmental water, and is committed to the Water Information platform recently announced to help provide better information to communities.</p> <p>Media releases and position statements were published on critical issues, and environmental watering events are accompanied by regular flow updates published on the website (for example, the Southern Spring Flow, the Gwydir Valley river refuge pool flow and the Lower Balonne event).</p> <p>The CEWO continues to work to improve engagement and communication with Basin communities on water for the environment, including through</p> |



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| | | <p>implementation of an updated communications strategy and closer collaboration on communications activities with other environmental water holders.</p> <p><u>Case Studies</u></p> <p>Community engagement in the Coorong In 2019-20, community members and scientists combined to provide important input and advice on the management of water for the environment in the Coorong, Lower Lakes and Murray Mouth (CLLMM) region during challenging drought conditions. For example in November 2019, a workshop on objectives, risks and associated trade-offs for environmental water management over summer was held at a joint meeting of the CLLMM Community Advisory Panel and Scientific Advisory Group in Adelaide. Participants considered the influence of different lake level and barrage flow management scenarios on a range of risks and objectives of relevance to the environmental condition of the Coorong and Lower Lakes. The workshop contributed to the information base available to water managers, helping them to assess the trade-offs between scenarios and adaptively manage according to conditions. The workshop also highlighted the challenges of managing for a range of environmental outcomes across a geographically broad and ecologically diverse region with insufficient water resources to meet all environmental needs. Involving community members and scientists led to a more informed, transparent decision-making process and helped to maximise environmental outcomes and minimise risks in the Coorong and Lower Lakes.</p> <p><u>Indigenous values</u> The Commonwealth Environmental Water Holder was compliant with s 8.35 (b)(iv) of the Basin Plan in 2019–20, in considering Indigenous values in the management of environmental water. Further detail is provided below. The CEWO works collaboratively with First Nations peoples across the Murray–Darling Basin to deliver water for environmental needs that also supports cultural outcomes. Through working relationships and direct partnerships with the CEWO, First Nations can provide input to and participate in, the management of Commonwealth environmental water. Engagement varies from involving First Nations peoples and values in planning, delivery and monitoring of environmental flows at a local scale to aligning how this water is managed with Aboriginal environmental objectives and cultural values at a Basin scale.</p> <p>Cultural values incorporated in Basin scale planning In 2019 -20, CEWO worked with the Murray Darling Basin Authority (MDBA), the Murray Lower Darling Rivers Indigenous Nations (MLDRIN) and the Northern Basin Aboriginal Nations (NBAN) to incorporate First Nations values and knowledge in planning for water for the environment. The project was informed from the ground up, with involvement of sixteen Nations in the north and sixteen in the south. It marks the first time First Nations peoples' objectives have been formally included at a Basin scale in federal environmental water planning. <i>"The 2020–21 watering year will, for the first time in history, see First Nations' environmental watering objectives acknowledged and incorporated into environmental water management at a federal level. This is a significant step forward"</i> said Fred Hooper, Chair of NBAN. MLDRIN and NBAN worked with the Nations to collate information about important places, significant species and timing and volumes of flows across the Basin. This information was provided at a southern and northern regional scale to inform the Basin Watering Strategy, annual Basin Environmental Watering Priorities and CEWO's annual Water Management Plans for 2020-21. <i>"The Nations' input highlights shared concern for all major rivers across the Basin and how environmental water can be used so that life returns to our culturally significant places,"</i> said Rene Woods, Chair of MLDRIN.</p> <p>Local engagement with First Nations Peoples Basin scale engagement complemented the ongoing direct relationships with more than 14 Nations at the local community level in 2019-20. These relationships are maintained through the CEWO's six local engagement officers, who work alongside communities throughout the Basin and supported by staff with cultural experience in Canberra. The CEWO also works closely with state government agencies, who have relationships with First Nations groups and established processes for participation in management of important environmental sites, including use of environmental water. Highlights from 2019 -20 include:</p> |



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| | | <ul style="list-style-type: none"> delivering environmental water to the Narran Lakes, known as Dharrivaa by the Yuwaalaraay/Euahlayi people, with planning and monitoring undertaken with Traditional Owners from the Narran Lakes Joint Management Committee. In addition to Narran, water flowed throughout the Lower Balonne, through multiple rivers, across floodplains all the way to Menindee Lakes – in what has been the largest Commonwealth watering event in the northern Basin in the ten-year history of the CEWO. Traditional Owner, Brendan Odee Welsh summed the event up saying “Our Yuwaalaraay country has been galingin (thirsty) for the longest time. It’s always special to be out at Dharrivaa (Narran Lakes) but even more so after these water events”. The commencement of the CEWO’s Monitoring, Evaluation and Research Program in July 2019 which includes funding to support researchers to engage with First Nations communities. For example, in the Edward/Koety-Wakool River system, turtle research is being undertaken through a collaboration between Yarkuwa Indigenous Knowledge centre (Wamba Wamba Perrepa Perrepa people), La Trobe University, Charles Sturt University, and NSW DPIE (Fisheries). This local knowledge of a totemic species has been fundamental to the project’s success. It has also provided an opportunity to build skills, showing how local people can make a significant contribution to research and environmental management projects. <p>Other ongoing relationships with First Nations Peoples include:</p> <ul style="list-style-type: none"> Commonwealth environmental watering with Nari Nari Tribal Council. Watering is overseen by Nari Nari Rangers to ensure environmental assets are being cared for in accordance with the cultural protocols of the Nari Nari People. Discussions through 2019-20 have taken place to develop a formal partnership for planning, delivery and monitoring of water for the environment; Beginning to work with Ngarrindjeri Aboriginal Corporation to continue the partnership for watering in the lower River Murray, Coorong and Lower Lakes in South Australia; Working with First Nations peoples at the Gwydir Wetlands, Macquarie Marshes, and in the Lachlan River through Environmental Water Advisory Groups. |

Matter 10: Environmental Watering

| Reporting Matter | Reporting Requirement (Supporting evidence to be provided by CEWH) | Response (response/milestone achievement/compliance status) |
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| <p>M10 The implementation of the environmental management framework.</p> <p>[Chapter 8, Part 4]; Matter 10, Indicator 10.2</p> | <p><i>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.</i></p> <p>M10a) Please describe progress in coordination, consultation or cooperation issues with other Basin jurisdictions in the management and delivery of environmental water and opportunities for further improvement.</p> | <p>In 2019-20 the Commonwealth Environmental Water Holder operated consistently with Part 4 of Chapter 8 of the Basin Plan. Planning and operation of watering has been undertaken in close partnership with Basin state government agencies, water authorities, industry groups, scientists, non-government organisations and community groups and First Nations peoples. Relationships between Federal, state and local governments have continued to grow and there have been a number of watering events which demonstrate progress in further developing in coordination and cooperation.</p> <p>The Southern Connected Basin Environmental Watering Committee continues to successfully operate as the key coordination group for delivery of environmental flows in the southern Basin. In addition, the newly established Northern Basin Environmental Watering Group is operational and working to better coordinate across catchment and state boundaries. The group met on multiple occasions in early 2020 to support cross-government management of the northern Basin first flush flow event.</p> <p>Increasingly collaboration is seeing environmental water holders combine their water to achieve larger and more effective watering events. Coordination is improving outcomes along the length of the River Murray and its tributaries, as water is used and reused across multiple sites before reaching the Lower Lakes, Coorong and Murray Mouth. Improved coordination planning allows water holders to reach higher flow rates, adding water from multiple tributaries together to stay within current constraints. For example, in 2019-20 the Southern Spring Flow in the River Murray met with a Spring Fresh from the Goulburn to build flows of over 15,000 ML/d at the South</p> |



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| | | <p>Australian border.</p> <p>Water holders have continued to improve transparency about the planning and use of water for the environment, sharing information on what flows are happening and their outcomes. Regional engagement events have allowed community members to see firsthand what difference delivery of water can make. First Nations groups continue to be involved in the planning and delivery of water, including representation by the Murray Lower Darling Rivers Indigenous Nations (MLDRIN) at the Southern Connected Basin Environmental Watering Committee (SCBEWC).</p> <p>Most of the Basin experienced below average to well below average rainfall and record high temperatures for the first part of 2019-20, resulting in very low to no flows in the north. Record low flows resulted in poor water quality and resulted in some death of fish and freshwater mussels, for example. Many irrigation stakeholders received low to no allocation against their water entitlement, and some northern Basin communities faced consecutive years with low to no flows in their rivers. Long sections of some rivers dried up. The Commonwealth Environmental Water Holder utilised strong working relationships with other Commonwealth agencies, jurisdictional water agencies, natural resource managers and communities to make the most of the water available in the Gwydir catchment and communicate progress with and outcomes of watering events through a series of written updates.</p> <p>As an example of continuing collaboration with state partners, the CEWO worked in 2019-20 with the Lachlan valley's technical advisory group, established by the NSW Department of Primary Industries, as part of a coordinated approach to supporting native fish in the drought. The Brewster Weir Pool provides habitat for Olive perchlet, a small native fish, once widespread throughout the Basin, now listed as endangered in NSW. 2,000 ML of Commonwealth environmental water from the Lachlan spring pulse was retained in Brewster Weir Pool to maximize refuge habitat for Olive perchlet, other native fish and water birds.</p> <p>CASE STUDY – SUPPORTING WATERBIRDS AND THEIR HABITATS AT NARRAN LAKES.</p> <p>A collaborative effort between governments, water licence holders and community representatives enabled 163 GL of Commonwealth environmental water to flow into northern Basin waterways below Beardmore Dam in early 2020, when some wetter conditions returned to the northern Basin. This allowed the most water to reach the Narran Lakes since 2012 and is the largest environmental watering action by the Commonwealth in the northern Basin to date.</p> <p>The objective was to reconnect rivers in the Lower Balonne and further downstream, and to ensure that more water was able to remain in the system before reaching the Narran Lakes, where it would support restoration of critical waterbird habitat. Severe drought meant large areas of lignum, which supports waterbird breeding and foraging habitat within the Narran Lakes Ramsar site, had not received water since April 2013. In the past, Narran Lakes has recorded some of the largest gatherings of waterbirds in Australia – 200 000 in 1983 and over 100 000 in 2011.</p> <p>The CEWO implemented an event-based mechanism in the lower Balonne in early 2020. This involved offering grants to landholders along the Narran River to forego licenced water take. One landholder agreed to forego pumping of their water allocations once predetermined target volumetric triggers in the system were met. The grant process was run through a community grant hub within the Commonwealth Department of Social Services. The grant resulted in 9 GL being left in the Narran River, at a cost of \$2m. This water contributed to the 90 GL of flow into the Narran Lakes system (measured at the Wilby Wilby gauge). A significant proportion of this water was against Commonwealth permanent licences, both water harvesting and overland flow licences. The CEWO released a series of six community newsletters ('updates') on the event. The implementation of the event based mechanism was independently reviewed, and the report has been published onto the CEWO's website.</p> <p>The officers from the Commonwealth Environmental Water Office liaised with community representatives through the Northern Basin Environmental Watering Committee, the Department of Natural Resources, Mines and Energy to plan the event. Queensland's water planning arrangements provided the foundation for this flow. Queensland enforced flow management rules to reduce the amount of take by irrigators by 10 percent (21- 25 February and 1-5 March 2020). The pilot project is an example of a how a Northern Toolkit</p> |
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| | | <p>measure can provide flexibility to achieve environmental outcomes in an unregulated system, while also recognising irrigation requirements.</p> <p>The flow replenished important waterholes along the way, before reaching the internationally significant Narran Lakes. Traditional Owners, scientists and managers have been undertaking monitoring at the Ramsar site since the water began to arrive in late February. It is clear that the water has rejuvenated parched habitat critical for waterbird breeding. Over 30 species of waterbirds have observed so far, including threatened species such as the freckled duck, blue-billed duck, and black necked stork. Between 8,000-10,000 waterbirds were observed at the site in late June.</p> <p>The participation of the Traditional Owners in the monitoring is particularly significant as the Narran Lakes, or Dharriwaa to the local Yuwaalaraay/Euahlayi First Nations peoples, is a highly significant cultural site and meeting place. The CEWO liaised with representatives from the Narran Joint Management Committee in both planning the event and monitoring the outcomes.</p> <p>More information is available at: http://www.environment.gov.au/water/cewo/catchment/lower-balonne-updates</p> <p>Opportunities for improvement</p> <p>In the 2018-19 report, the Commonwealth Environmental Water Office identified the need for better integration between operations planning and environmental water planning. The Commonwealth Environmental Water Office notes that significant progress continued to be made on this issue in 2019–20. For example, enhanced communication about our planned water for the environment deliveries has resulted in river operators building in our watering requirements in their Annual Operating Outlook (in order to help manage potentially competing priorities for river operations).</p> <p>The Northern Basin Amendment to the Intergovernmental Agreement on Implementing Water Reform in the Murray–Darling Basin agreed by the Council of Australian Governments in August 2019 provides a framework for advancing a number of water initiatives in the Northern Basin.</p> <p>Environmental water holders are still learning the best techniques to plan and deliver water for the environment. Like other water users, every year methods continue to be tested and improved as changing conditions provide new opportunities and challenges. As new knowledge grows, water holders are able to use our water more effectively and efficiently – maximising benefits for the environment and Basin communities.</p> |
| <p>[Chapter 8, Part 4]: Matter 10, Indicator 10.3 [BPIA Task 33.3]</p> | <p><i>How environmental watering principles were applied consistent with Chapter 8, Part 4, Division 6.</i></p> <p>M10b) Provide at least one case study that demonstrates how environmental watering principles were applied and identify the relevant principles.</p> | <p>The Commonwealth Environmental Water Holder uses a number of frameworks and processes to ensure the use of Commonwealth environmental water is consistent with the Principles to be applied in environmental watering as set out in Chapter 8, Part 4, Division 6. One of the primary mechanisms is the Criteria for Assessing Options for Commonwealth Environmental Water Use ('the Criteria') which are used to support the planning process and which embodies the principles. This Criteria is an attachment to the Framework for Determining Commonwealth Environmental Water Use and is applied to all Commonwealth environmental watering decisions. A case study demonstrating how the Commonwealth Environmental Water Holder applied these principles, consistent with Chapter 8, Part 4, Division 6, is provided below.</p> <p>CASE STUDY – PROVIDING WATER FOR THE ENVIRONMENT ALONG THE RIVER MURRAY VALLEY.</p> <p>In August 2019 water managers used natural inflows (rainfall & snowmelt) as a signal to start the Southern Spring Flow. The first flow release started in August but was stopped when local rains delivered flows from the Kiewa and Ovens Rivers. The second flow release started in September and was timed to coincide with water delivered through the Goulburn River. Amongst other objectives, these flows were aimed at providing food and shelter for native fish and other aquatic animals along the River Murray, from Hume Dam to the Coorong in South Australia.</p> |



Flows delivered through the forests and wetlands flushed organic matter off the floodplain during cooler weather. This provided food for fish and other aquatic animals and helped to reduce the risk of hypoxic (low-oxygen) blackwater over summer. 327 GL of Murray-derived water for the environment was delivered in the Murray River channel, key wetlands and creeks in Barmah-Millewa Forest and Gunbower-Koondrook-Pericoota forests, Edward-Wakool, Lake Kramen (Hattah-Kulkyne Lakes), wetlands in Chowilla, and to the Coorong and Lower Lakes. 230 GL of the water delivered in this event was Commonwealth environmental water. The flows travelled over 5,000 river kilometres from Hume Dam in New South Wales to South Australia.

In planning delivery actions, CEWO officers develop a water use minute, which identifies the annual watering priorities that should be met in a given event. The minute identifies the rolling priorities as well as the annual priorities and records the assessment against the criteria.

Management of this event demonstrated the application of the following principles:

Principle 1: Basin Annual Environmental Watering Priorities, specifically “Supporting and improving threatened fish populations”

Application of this principle is demonstrated in that consultation, planning, delivery and monitoring was undertaken to ensure that the event supported spawning of Murray cod, a species that has conservation values as well as being recreationally important.

Monitoring outcomes indicate that the event also increased the availability of fish food (plankton) supporting increased productivity in the system. Monitoring undertaken by the University of Adelaide in the Lower Lakes in 2019 recorded the native congolli as the most abundant fish species for the first time since surveys began in the mid 2000’s. Congolli are a unique native fish that need to spend different parts of their lifecycle in both freshwater and saltwater. Congolli numbers dropped drastically in the Millennium Drought with no freshwater flows between 2007 and 2010. High congolli numbers in the Lower Lakes are a direct result of the delivery of water for the environment in recent years.

Good numbers of the endangered Murray hardyhead and Southern pygmy perch were also detected in Lake Alexandrina and numerous other sites. Both of these species expanded their range this spring. Some Murray hardyhead were found at sites where they had not been detected since before the Millennium Drought.

Water for the environment is crucial for providing healthy estuarine conditions in the Coorong and benefiting native fish species. Despite dry conditions, water for the environment has supported a continuous connection between the Lower Lakes and the Coorong for over three years, generating favourable habitat and maintaining salinity levels in the Coorong lagoons below maximum thresholds. The first successful large-scale recruitment of black bream in the Coorong since the Millennium Drought occurred in 2017-18, and this strong cohort of now 1+ year old fish continues to persist. Consecutive years of good recruitment of diadromous fish species such as congolli and common galaxias have seen populations rebuild, while both pouched and short-headed lamprey are migrating through the site after an absence from recordings from 2007-2010.

Principle 2: Consistency with the objectives in Part 2, specifically s8.05(3) “...ensuring that water-dependent ecosystems that support the life cycles of a listed threatened species... are protected and, if necessary, restored”).

. Post-event monitoring picked up calls of Australasian bitterns in sites watered in the Barmah-Millewa Forest, indicating that flows supported this species of conservation significance. As very dry conditions continued, it is likely that wetlands in the Barmah-Millewa forest were important foraging habitat for bitterns this season.

Flows improved river red gum health and the health of moira grass, also a species of conservation significance. The event contributed to the decrease of salinity levels in the Coorong, improving water quality.

Threatened species identified in planning of delivery events included Moira grass, *Ruppia tuberosa* and listed waterbirds.

Principle 3: Maximising environmental benefits, specifically by (b)(i) co-ordinating environmental watering between all holders of held



environmental water and managers of planned environmental water; (b)(iii) utilising local knowledge and experience. Planned outcomes achieved include:

The Commonwealth Environmental Water Holder maintains a number of processes to engage with local stakeholders and acknowledge their knowledge and values in the planning and delivery of Commonwealth environmental water. This includes providing opportunities for stakeholders to identify environmental water needs and the potential to achieve multiple benefits (such as social, cultural and economic benefits);

The Southern Connected Basin Environmental Watering Committee (SCBEWC) is the coordination forum that supports the delivery of water for the environment in the Lower Darling and River Murray system across multiple environmental water holders, managers and jurisdictions.

The Southern Spring Flow was possible due to strong collaboration by the CEWO with partners including the Victorian Environmental Water Holder, NSW department of Planning, Industry and Environment, South Australian Department for Environment and Water and the Murray–Darling Basin Authority as the manager of The Living Murray, as well as river operators. On-ground knowledge was provided by NSW National Parks and Wildlife Service, Parks Victoria, Goulburn-Broken CMA, North Central CMA, Mallee CMA, WaterNSW, Goulburn Murray Water and SA Water. SCBEWC provides the ongoing, stable forum to drive co-ordination and is supplemented by frequent conversations between agencies.

Principle 7: Working effectively with communities

Significantly enhanced communication and engagement efforts were built into the design and implementation of the 2019 Southern Spring Flow in the River Murray Valley.

The purpose was to proactively engage with local communities, capture local knowledge and input and share real-time information about the watering actions and resultant outcomes. The increased efforts were partly the result of feedback from regional stakeholders that more information was needed regarding the management of water for the environment. In response, the Southern Connected Basin Environmental Watering Committee (SCBEWC) identified a need to formalise a communications plan around a large-scale watering action in the Southern Basin.

Communication products that were developed to support the watering action included a fact sheet, media release, social media posts and watering action event updates (7 in total). The regularly scheduled event updates contained information regarding the progress of the flow and monitoring results as they became available. In addition, several interactive community meetings along the River Murray corridor and a series of radio interviews were held before and over the course of the watering action.

Local and Regional Engagement officers from the Commonwealth Environmental Water Office and the Murray Darling Basin Authority also provided information on the ground throughout the watering action. Additional communication channels included MDBA and jurisdictional webpage updates and environmental water advisory groups facilitated by State deliver partners with community attendance.

Informal feedback on the enhanced communication approach has largely been positive. Whilst there is room for improvement, the content and tone of communication products seemed to be appropriately pitched to the target audience. The assistance of delivery partners in distributing updates through their own local networks was effective. The community meetings were well attended, and the effort made by executive to visit regional areas was appreciated.

Having a considered and consistent narrative about the flow agreed to by delivery partners, and ready to use across all communication activities was particularly beneficial. The communication approach and distribution networks will continue to be built upon with future flows. Feedback from community members is always welcome, contact details are provided in all the watering event newsletters and



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| | | <p>Local Engagement Officers work closely with communities to provide links with local knowledge.</p> <p>http://www.environment.gov.au/water/cewo/publications/southern-spring-flow-2019-wrap-up</p> |
| <p>[BPIA Task 33.3]</p> | <p><i>Perform functions and exercise powers in a way that is consistent with the Basin Plan environmental watering plan.</i></p> <p>M10c) 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 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 communities to explore the need for additional mechanisms for engaging specifically with Indigenous communities, particularly in relation to potential opportunities for environmental water</p> | <p>In 2019-20, the Commonwealth Environmental Water Holder (Water Holder) performed its functions and exercised its power in a way that is consistent with the Basin Plan environmental watering plan. To ensure the use of Commonwealth environmental water is undertaken consistent with the Basin Plan environmental watering plan, the Water Holder has a number of frameworks and processes in place, including:</p> <ul style="list-style-type: none"> • <i>Commonwealth Environmental Watering Outcomes Framework</i> which sets out how Commonwealth environmental water contributes to the objectives of the environmental watering plan (http://www.environment.gov.au/water/cewo/publications/environmental-water-outcomes-framework) • Commonwealth Environmental Water Management Plan, which identifies 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 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>. <i>The 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>The Commonwealth Environmental Water Holder, the Victorian Environmental Water Holder, the NSW Department of Planning, Industry and Environment, South Australian Department for Environment and Water and the Murray–Darling Basin Authority work closely together to ensure that environmental water is delivered in a coordinated and collaborative way, to maximise environmental benefits and effectiveness of environmental watering. Representatives from the Commonwealth Environmental Water Office provide advice to and attend 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) Operational Advisory Groups b) Southern Connected Basin Environmental Water Committee (SCBEWC) c) Northern Basin Environmental Watering Working Group (NBEWG) d) Environmental Watering Working Group (EWWG) e) Water Liaison Working Group (WLWG) f) River Murray Operations Committee (RMOC) g) An informal environmental water leaders group <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. The Commonwealth Environmental Water Office also participates in local engagement forums established by state governments, including Environmental Water Advisory Groups and other community forums and events. The Commonwealth Environmental Water Office's local engagement officers proactively engage with community members and attend relevant on the ground events. Proposals can also be submitted through local engagement officers. All local engagement officers contact details are available on the website: http://www.environment.gov.au/water/cewo/local-engagement.</p> <p>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 Office works closely with the Northern Basin Aboriginal Nations and the Murray-Lower Darling River Indigenous Nations. The Office continues to broaden its engagement with Indigenous peoples outside of these groups</p> |



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| | <p>use to achieve mutual environmental and cultural outcomes.</p> | <p>and current partnerships to progressively incorporate increased cultural values into watering decisions. Identifying additional mechanisms and opportunities for the Office to work with Indigenous communities in achieving mutual environmental and cultural outcomes is a high priority.</p> <p>In 2020, the Commonwealth Environmental Water Office partnered with the MDBA and the Northern Basin Aboriginal Nations (NBAN) and the Murray Lower Darling Rivers Indigenous Nations (MLDRIN) to deliver the First Nations Environmental Watering Guidance project. Through this project, First Nations across the Basin worked together to provide environmental watering objectives, which have been incorporated into the Commonwealth Environmental Water Office's Water Management Plans for 2020-21. This is the first-time input has been collated in a formal process and complements the ongoing local engagement with Aboriginal communities throughout the Basin. This project represents the Commonwealth Environmental Water Offices' ongoing commitment to enhance how First Nations are involved in the planning, delivery and monitoring of environmental water.</p> |
| <p>[BPIA Task 33.2]</p> | <p><i>Perform its functions and exercise its powers in a way that is consistent with the Basin-wide environmental watering strategy.</i></p> <p>M10d) Responses should address the following requirement(s) as outlined in the Basin Plan Implementation Agreement: The CEWH will review its operations to ensure its functions and powers are exercised consistently with the Basin-wide environmental watering strategy.</p> | <p>In 2019–20, the Commonwealth Environmental Water Holder performed its functions and exercised its power consistent with the Basin-wide environmental watering strategy ('the Strategy'). While we did not undertake this kind of review in 2019-20 the CEWO, in partnership with the MDBA, is currently approaching the market to engage a consultant to refine the method for determining Basin Annual Environmental Watering Priorities (BAEWP) including development and application of a framework for assessing environmental vulnerability.</p> <p>Planning</p> <p>The Commonwealth Environmental Water Office undertakes portfolio management planning prior to the start of each water year that represents a review of CEWO operations on a valley-by-valley basis. The approach includes the identification of how short-term outcomes (<1 and 1-5 years) from environmental water contributes to the long-term (10+ years) in the Strategy and Basin Plan. 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> are applied to 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). See also description at 10 b) above on 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>[Chapter 8, Part 4]; Matter 10, Indicator 10.1 [BPIA Task 33.4]</p> | <p><i>Give information relating to expected holdings of held environmental water.</i></p> <p>M10e) Responses should address the following requirement(s) as outlined in the Basin Plan Implementation Agreement: 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. The CEWH will report on the Commonwealth environmental holdings</p> | <p>The Commonwealth's water holdings are the result of government purchases of entitlements and investment in more efficient water infrastructure, as part of a suite of national water reforms in the Murray Darling Basin.</p> <p>The Commonwealth Environmental Water Holder publishes monthly information on its holdings on the Commonwealth Environmental Water Office's website. This includes holdings against each entitlement type.</p> <p>The monthly holdings update is available on the website at http://www.environment.gov.au/water/cewo/about/water-holdings. Information on holdings is provided to the Department of Agriculture, the Murray–Darling Basin Authority and to the general public and media as requested.</p> |




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| | each month on its website. | |
| [BPIA Task 33.3 and 33.5] | <p><i>Have regard to the Basin annual environmental watering priorities when performing functions and exercising powers and report when they were not followed.</i></p> <p>M10f) 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. Please provide reasons for any environmental watering that was not in accordance with Basin annual watering priorities listed at Att A (partially/fully) in accordance with s8.44 of the Basin Plan and Principle 1.</p> <p>The MDBA may publish the statement of reasons on its website.</p> | <p>The Commonwealth Environmental Water Holder had regard to the Basin annual watering priorities in all environmental watering that was undertaken during the 2019–20 watering year. The Commonwealth Environmental Water Office also demonstrates its regard to the Basin annual watering priorities by including relevant priorities in Portfolio Management Plans that are developed on an at least annual basis for each catchment. These are published on the website at http://www.environment.gov.au/water/cewo/publications.</p> <p>The site-specific priorities in the north were Narran and Barwon-Darling. A record volume of Commonwealth environmental water was provided to Narran and the Barwon-Darling in 2019-20, including the Narran Lakes event based mechanism. After seven years of dry, around 90 GL of water flowed into the Ramsar-listed Narran Lakes/Dharriwaa. Up to half of the water that flowed into Narran Lakes was Commonwealth water for the environment, helping meet the Basin annual watering priority to support replenishment flows to maintain habitat at Narran Lakes. Narran Lakes/Dharriwaa is a place of immense cultural significance for local First Nations peoples.</p> <p>The Barwon-Darling received significant contributions of Commonwealth environmental water from the Lower Balonne, Warrego and Moonie river systems, which helped meet the Basin annual watering priority to provide flows that protect refuges, maintain river connectivity and support population recovery of native fish in the Barwon–Darling and lower Darling rivers. This Commonwealth environmental water also contributed to the Basin annual watering priority to increase longitudinal connectivity with the Barwon–Darling and through to the lower Darling by protecting and enhancing unregulated events. Throughout the severe drought that continued in 2019 and early 2020, the CEWO worked with NSW delivery partners to provide replenishment and top up flows to key refuges in the Gwydir and Macquarie systems. In February 2020 the Gwydir Recovery Flow provided 3.7 GL of environmental water entitlements to rivers and wetlands across the Lower Gwydir, Gingham and Mallowa systems.</p> <p>Rainfall between February and April 2020 enabled environmental water entitlements in the Macquarie system to provide 4.5 GL to help restore the condition of wetlands within the internationally significant Macquarie Marshes.</p> <p>The consolidation of drought refuge habitat was a key priority for flows in the Lachlan during 2019-20. Flows into Booberoi Creek, Yarrabandai Lagoon and the Noonamah woodlands sought to provide drought refuges away from the main river channel for native plants, frogs and birds. Flows in the river channel sought to build on past watering actions, protect threatened Olive perchlet in Brewster weir pool and maintain the condition of the core area of reed beds in the Great Cumbung which need water every year.</p> <p>In 2019 in the Lower Murrumbidgee region, many lakes, wetlands and local streams were drying up and stranding native wildlife. With limited wetland habitat available across the Basin due to drought conditions, approximately 80.5 GL of environmental water (~48.3 GL Commonwealth) was delivered to maintain critical refuge habitats at sites throughout the Murrumbidgee catchment.</p> <p>These flows prevented irreversible damage to the environment through preventing loss of wetland vegetation species by supporting native aquatic vegetation growth and providing critical refuge habitat to support the survival of waterbirds and native wildlife. In addition, flows were delivered to specifically target breeding of southern bell frogs at key sites in Gayini-Nimmie Caira, such as Eulimbah Swamp, where populations had declined and were at risk of local extinction. Commonwealth, in conjunction with NSW environmental water, successfully supported southern bell frog breeding, with tadpoles followed by metamorphs and juveniles having been observed (CSU 2020).</p> <p>During summer as drought continued to impact inflows, salinity levels in the Coorong reached levels higher than sea water. This was due to relatively low volumes of water passing through the barrages and high evaporation. In autumn, additional environmental water from upstream watering actions enabled the barrage gates to open and allow freshwater to flow into the Coorong, reducing salt levels and creating a healthier environment for native fish and waterbirds. Continuous end of system flows of over 685 GL maintained estuarine conditions in parts of the Coorong close to the barrages, allowing them to function as refuges from the hypersaline conditions that persist further south in the Coorong lagoons.</p> |



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| | | <p>Impediments to maximising outcomes</p> <p>The achievement of some priorities was limited during the 2019–20 watering year due to ongoing drought conditions and deliverability issues. For example:</p> <ul style="list-style-type: none"> • Very low water resource availability and very dry conditions meant in some valleys there was little or no environmental water available to provide to key wetlands and alleviate drought conditions, such as in the Barwon-Darling and Lower Darling River. |
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Matter 14: Water Quality and Salinity

| Reporting Matter | Reporting Requirement (Supporting evidence to be provided by CEWH) | Response (response/milestone achievement/compliance status) |
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| <p>M14 Progress the implementation of 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>[Chapter 9; Matter 14, Indicator 14.2]</p> <p>[BPIA Task 34.1]</p> | <p><i>Context: BP s9.14 recognises that flow management, in some circumstances, can assist with the management of water quality issues, such as salinity, hypoxic blackwater events and blue green algae outbreaks. The intent of s9.14 is that 'having regard' to these risks and opportunities becomes part of business as usual when making decisions about flow management or the use of environmental water. Other actions that can also address water quality issues include coordination and communication about blue green algae outbreaks (in line with BP s9.18) or hypoxic blackwater events.</i></p> <p>M14a) In this context, please describe how these water quality issues were considered, when making decisions about flow management or the use of environmental water, and/or other actions; did this make a difference to these water quality issues, and are there any learnings to inform adaptive management.</p> | <p>In 2019–20, the delivery of Commonwealth environmental water (CEW) contributed to lateral and longitudinal connectivity. In 2018–19, Commonwealth environmental water contributed to improved lateral connectivity and included 219 612 ha of lakes and wetlands (including the Lower Lakes, Coorong and Murray Mouth) and 26 568 ha of floodplain inundation. In 2018–19, CEW contributed to watering actions (by flow component) along approximately 14 379 km of waterway. The analysis of hydrological data for this measure is complex and involves multiple parties. Therefore, there is a lag time (approx. nine months) between the end of year and the time when results are published. Data from 2019–20 will be published on the CEWO website when it becomes available.</p> <p>In 2019–20, more than 685 GL of Commonwealth environmental water was delivered through the Lower Lakes barrages, contributing to the export of salt from the Murray–Darling Basin. Trends over time indicate that Commonwealth environmental water has consistently contributed to the export of salt over the Lower Lakes barrages. Results for 2019–20 will be reported in the annual report next year. In 2018–19, Commonwealth environmental water contributed to the export of 160 897 tonnes (70.5 percent) of the salt through the Lower Lakes barrages to the Coorong. All water delivered over the Lower Lakes barrages contributed to the cumulative export of 228 293 tonnes of salt from the Murray–Darling Basin.</p> <p>As an example of how action was taken to address water quality issues and inform adaptive management, the Gwydir Refuge Pool Flow Water for the environment was managed to fill refuge pools in the Gwydir, Mehi and upper Carole systems, helping native fish and other wildlife survive the drought. Low flows over hot riverbeds involves some risk, and work is being done to understand the exact cause of poor water quality which led to a small number of fish deaths during flows in November 2019.</p> <p>Flows in December reached Tyreel, Moree weirs and Carole Creek near Garah. Due to hot, dry conditions in December, flows along the Mehi River did not reach Combadello Weir. As a result, a decision was made to deliver additional water for the environment (Event 3) in early January.</p> <p>Flows reached downstream of Brageen on the Gwydir, to Tillaloo in the Gingham, downstream of Combadello in the Mehi and to near Garah on the Carole. Regular monitoring of refuge pools detected a decline in water quality in early January. This was along parts of the Mehi River as flows moved through the system. Water quality was managed with additional releases of water for the environment and improved conditions were observed..</p>  |



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| | | <p><i>Leaf litter washed from riverbank on Mehi River following flows from Event #1. Photo: D. Preston DPIE.</i></p>  <p><i>Leaf litter washed into the Mehi River following flows from Event #3 13 January 2020. Photo: M. Miles DPIE.</i></p> <p>In November 2019 staff from WaterNSW, Commonwealth Environmental Water Office, along with NSW DPIE, worked with landholders along the Mehi River to reduce the impact of the poor quality water.</p> <p>With the cooperation of a local irrigation farmer, around 100ML of poor quality water was pumped out of the flow below Combadello Weir. This action was combined with the redirection of 120ML of the flow into dry sections of Mallowa Creek. Following these interventions, no further fish deaths occurred as water continued to make its way further down the Mehi River.</p> <p>Please note: The volumes of Commonwealth environmental water reported above as delivered during 2019–20 are based on operational reporting provided by state-based delivery partners. These volumes are the best available; however, they are subject to minor revision by the responsible state authorities as they finalise state water accounts. Final acquitted volumes of Commonwealth environmental water delivery will be published on the CEWO website - www.environment.gov.au/water/cewo</p> |
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Matter 16: Water Trading

| Reporting Matter | Reporting Requirement (Supporting evidence to be provided by CEWH) | Response (response/milestone achievement/compliance status) |
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| <p>M16 The implementation of water trading rules.</p> <p>[Chapter 12]</p> <p>[BPIA Task 35.1]</p> | <p>Responses should address the following requirement(s) as outlined in the Basin Plan Implementation Agreement:</p> <p>M16 a) Has the CEWH sold water in the previous year? If so, did they notify the approval or registration authority of the price agreed for the trade?</p> <p>Note: This applies to both entitlement and allocation trades as per section 1.07 (3).</p> | <p>In 2019-20 water allocations to the Commonwealth's Environmental Water Holdings were constrained due to the ongoing dry climate experienced in the Murray-Darling Basin. The Commonwealth Environmental Water Holder considered that with the climate constrained water availability to the environment, any allocations made to Commonwealth Environmental Water Holdings must be directed to the environment.</p> <p>The conditions to enable trade of water allocations from the Commonwealth could not be met and no water allocation was traded from the holdings in 2019-20.</p> |
| <p>[Chapter 12]</p> <p>[BPIA Task 35.2]</p> | <p>Responses should address the following requirement(s) as outlined in the Basin Plan Implementation Agreement:</p> <p>M16 b) 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 publicly available on the Commonwealth Environmental Water Office's website at http://www.environment.gov.au/water/cewo/news.</p> <p>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 including sending out notification emails to subscribers to the Office's distribution lists.</p> |
| <p>Chapter 12]</p> | <p>Responses should address the following requirement(s) as</p> | |



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| <p>[BPIA Task 35.3]</p> | <p>outlined in the Basin Plan Implementation Agreement:</p> <p>M16c) 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 not traded water in a situation where it has become aware of a water announcement that was not generally available.</p> <p>The Commonwealth Environmental Water Holder has published the Commonwealth Environmental Water Trading Framework 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 Environmental Water Office also have fraud controls plans in place, and staff are instructed in the use of these plans.</p> |
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Other: Operation of Organisation – Overview of monitoring and evaluation approach

| Reporting Matter | Reporting Requirement (Supporting evidence to be provided by CEWH) | Response (response/milestone achievement/compliance status) |
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| <p>Perform its functions and exercise its powers in a way that is consistent with, and in manner that gives effect to, the principles to be applied in monitoring and evaluating the effectiveness of the Plan.</p> <p>[BPIA Task 36.1]</p> | <p>Responses should address the following requirement(s) as outlined in the Basin Plan Implementation Agreement:</p> <p>Oa) The CEWH will monitor the response to the delivery of Commonwealth environmental water at a number of locations across the Basin. 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>In 2019–20, the Commonwealth Environment Water Holder continued to be compliant in monitoring the response of delivery of Commonwealth environmental water to a number of locations across the Basin. Consistent with Chapter 13 Principle 6 and Principle 8, the Commonwealth Environmental Water Holder continues to work collaboratively with Basin States and the MDBA, to avoid duplication of effort and ensure efficient and cost-effective monitoring is in place, to monitor the response to the delivery of Commonwealth environmental water.</p> <p>Monitoring and evaluation supports the efficient and effective use of water, ensures accountability and transparency, supports adaptive management and helps to build knowledge. It is also critical to the management of Commonwealth environmental water so that outcomes can be reported and communicated. The Commonwealth Environmental Water Office developed the <i>Commonwealth Environmental Water Monitoring, Evaluation, Reporting and Improvement (MERI) Framework</i> to guide monitoring and evaluation activities and ensure we are aligning with and meeting, legislative and Basin Plan obligations.</p> <p>Broadly, the Basin Plan establishes the following responsibilities:</p> <ul style="list-style-type: none"> • The Commonwealth Environmental Water Holder is focussed on monitoring and reporting on the outcomes from Commonwealth environmental watering at the asset and Basin-scale. • Basin States are focussed on monitoring and reporting on the achievement of environment outcomes at the asset scale. • The Murray–Darling Basin Authority is focussed on monitoring and reporting on the achievement of environment outcomes at the Basin-scale. |



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| | | <p>The Commonwealth Environmental Water Holder’s Monitoring, Evaluation and Research program has been deliberately designed to complement the activities of other agencies while supporting the Commonwealth Environmental Water Holder’s statutory obligations, and informing adaptive management of the Commonwealths Environmental Water Holdings. The Commonwealth Environmental Water Office continues to work with colleagues from state government and the Murray–Darling Basin Authority to ensure the most efficient monitoring programs are in place.</p> <ul style="list-style-type: none">• Operational monitoring is undertaken for every Commonwealth environmental watering action, typically by state government delivery partners. It involves collecting on-ground data about the environmental water delivery action such as volumes, timing, duration, location, flow rates and river heights.• Intervention monitoring helps the Commonwealth Environmental Water Office to understand the environmental response to decisions on Commonwealth environmental water use. <p>In 2019–20, the Commonwealth Environmental Water Office implemented the Monitoring Evaluation and Research Program (Flow-MER) (2019–20 to 2021–22). This program integrates and replaces monitoring and research activities under the Long-Term Intervention Monitoring (LTIM) (2014–15 to 2018–19) and Environmental Water Knowledge and Research (EWKR) (2014–15 to 2018–19) projects. A continuation of on-ground monitoring, evaluation and research activities via the Flow-MER project will enable the CEWH to continue to:</p> <ol style="list-style-type: none">a) Demonstrate outcomes from Commonwealth environmental water;b) Inform environmental water management;c) Fulfil legislative reporting obligations; andd) Build on our knowledge of the contribution of environmental water to the aquatic health of the Murray–Darling Basin. <p>The selected area teams implement monitoring and evaluation plans in seven selected areas within the Basin – the Junction of the Warrego and Darling rivers; Gwydir river system; Lower Lachlan river system; Murrumbidgee river system; Edward-Wakool river system; Goulburn River; and Lower Murray</p> |
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| | | <p>River. These regions provide the maximum coverage possible over areas where Commonwealth environmental watering occurs and complements, rather than duplicates, monitoring activities undertaken by others. The results from selected areas are then used to undertake a Basin-scale evaluation across the themes of: Hydrology; Stream Metabolism and Water Quality; Ecosystem Diversity; Biodiversity; Fish and Vegetation.</p> <p>In addition to the above projects, the Commonwealth Environmental Water Office has also been monitoring the short-term environmental response of environmental water since 2010. Short term monitoring projects have focussed on determining whether selected watering actions are meeting their intended ecological objectives and understanding the implications for environmental water delivery.</p> <p>Our monitoring is proving to be fundamental to adaptively managing the sites where environmental water is delivered (both in real-time and learning from watering event to watering event). More than 30 of Australia's leading regional universities and scientific research institutions engaged to undertake monitoring and research regularly discuss what is happening at sites with ourselves and state colleagues, leading to the rapid adoption of knowledge. All monitoring, evaluation and research reports are published on the Commonwealth Environmental Water Office website available at http://www.environment.gov.au/water/cewo/publications. All monitoring data is available for any purpose. The Commonwealth Environmental Water Office acknowledges that further effort is required to communicate outcomes in a format that is more readily accessible to the public. Funding has been provided through the Flow-MER project to enables selected areas to undertake more regular reporting via quarterly newsletters and, engagement activities such as webinars and field days with external stakeholders. Further information about the Flow-MER project is available at: https://flow-mer.org.au/.</p> |
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