

Report on environmental watering coordination and principles – Commonwealth Environmental Water Holder

The Commonwealth Environmental Water Holder's annual report on implementing the Basin Plan environmental management framework (Schedule 12, Item 10)

Reporting context

The Basin Plan aims to protect and restore water-dependent ecosystems to support a healthy working Basin. To help achieve this, the Plan makes more water available for the environment and also guides how environmental watering is planned, coordinated and used at a Basin scale.

The processes for planning and delivering environmental water including principles to be applied when watering occurs are set out in the environmental management framework set out in Chapter 8 of the Basin Plan. It includes:

- processes to co-ordinate the planning, prioritisation and use of planned environmental water and held environmental water, under which:
 - the Authority is obliged to prepare a Basin-wide environmental watering strategy
 - each Basin State is obliged to prepare long-term watering plans for water resource plan areas
 - each Basin State is obliged to identify annual environmental watering priorities for water resource plan areas
 - the Authority is obliged to identify Basin annual environmental watering priorities (Division 5)
- the principles to be applied in environmental watering
- a mechanism to enable the Authority to co-ordinate the recovery of additional environmental water

The purpose of this report is to monitor how Basin governments are implementing the environmental management framework. The report is a requirement of Chapter 13 of the Basin Plan and relates to Item 10 of Schedule 12.

Indicators for measuring success

Implementation of the environmental management framework is evaluated using the following indicators:

- Basin-wide environmental watering strategy, long-term watering plans and annual priorities were prepared as required (**Indicator 10.1**)
- Watering strategies, plans and priorities were prepared as required (**Indicator 10.2**)
- Environmental watering principles were applied (**Indicator 10.3**)

Indicator 10.1: Basin-wide environmental watering strategy, long-term watering plans and annual priorities were prepared, with the required content, published, reviewed and updated as obligated under Part 4 of Chapter 8, Divisions 2-5

Response

Consistent with 8.25(4), the CEWH (as a holder of environmental water) has made information on the Commonwealth's expected holding of environmental water for each WRP area available on the Commonwealth Environmental Water Office (CEWO) [website](#). Updated monthly, the website includes:

- Quantities (ML of entitlements);
- Reliability (long term average annual yield, ML);
- Security class (security definition differs per state);
- Links to relevant water authority for information on licence type details and limitations;
- Volume of allocations (including carryover from previous water year);
- Volumes delivered in current water year; and
- Water trading intentions.

Indicator 10.2: Watering strategies, plans and priorities are prepared consistently with Part 4 of Chapter 8, in relation to coordinating, consulting and cooperating with other Reports and the matters to which regard must be had (Chapter 8, Part 4)

Response

- The CEWH and staff of the CEWO provided feedback to the Murray-Darling Basin Authority (MDBA) on the development of the Basin-wide Environmental Watering Strategy and the Basin annual environmental watering priorities through a number of forums, including: the Basin Plan Implementation Committee and its Environmental Water Working Group (EWWG); the Murray-Darling Basin Authority's Environmental Water Practitioners Workshops; and the MDBA's Strategic Thinkers Group. The multi-jurisdictional EWWG also provided an opportunity to discuss with Basin States the process and approach for developing long-term watering plans.
- Annual planning for Commonwealth environmental water use is undertaken each year, with potential watering options developed in consultation and cooperation with the MDBA (as the delegate for The Living Murray and the river operator for the River Murray), state government agencies (including NSW Office of Environment and Heritage, the Victorian Environmental Water Holder, the SA Department of Environment, Water and Natural Resources, and the Queensland Department of Natural Resources and Mines), regional natural resource management authorities, local environmental water advisory groups and landholders.
- By developing Commonwealth Environmental Water Annual Water Use Options documents in consultation with Basin States, the CEWH and staff of the CEWO provided input to the Basin States' development of annual environmental watering priorities.

Indicator 10.3: Environmental watering principles are applied as set out in Division 6 of Chapter 8, Part 4

Response

The CEWH uses a number of frameworks and processes to ensure the use of Commonwealth environmental water is undertaken consistent with the Principles to be applied in environmental watering as set out in Division 6 of Chapter 8 part 4. The primary mechanism is the [Criteria for Assessing Options for Commonwealth Environmental Water Use](#) ('the Criteria'),¹. This Criteria is an attachment to the [Framework for Determining Commonwealth Environmental Water Use](#) and is applied for all Commonwealth environmental watering decisions. The descriptions below describe how each principle is applied to Commonwealth environmental watering actions through using this Criteria.

Principle	Description
<p>Principle 1: Have regard to Basin annual environmental watering priorities</p>	<p>Criterion 2.1 requires consideration of '<i>the extent to which the watering action will contribute to the achievement of Basin annual environmental watering priorities</i>', and justification must be provided if a watering action is proposed that will not contribute to a priority. Evidence against this is provided in Matter 9.3 and in the Statement of Assurance.</p>
<p>Principle 2: Consistency with the objectives for water-dependent ecosystems</p>	<p>Criterion 2.2 requires consideration of '<i>how well defined and realistic the expected ecological outcomes are for the proposed watering action</i>', and the relevant expected outcomes are documented. This assessment is undertaken consistent with the Commonwealth Environmental Water Outcomes Framework, which links expected outcomes with environmental watering plan objectives.</p>
<p>Principle 3: Maximising environmental benefits</p>	<p>Multiple environmental benefits – Criterion 2.5 requires consideration of '<i>the improvement in health of the asset(s) as well as connected system benefits, expected from the watering action</i>'. 'Return flows' and water shepherding are mechanisms used to maximise multiple environmental benefits.</p> <p>Coordinating with other environmental water holders – Criterion 5.1 requires consideration of '<i>the amount of Commonwealth water and other resources needed, including relative to the contribution of the State and delivery partner</i>' and Criterion 5.3 '<i>the opportunity to supplement natural flows or coordinate with other water releases (including consumptive and other environmental water)</i>'. Annual planning for Commonwealth environmental water use is undertaken each year, with potential watering options developed in cooperation with the MDBA, Basin States' water holders and managers, site managers,</p>

¹ <http://www.environment.gov.au/water/cewo/publications/criteria-assessing-options-cew-use>

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	<p>local advisory groups and landholders. To support coordination in the southern-connected Basin, the CEWO and MDBA co-convened the 2013–14 Environmental Water Holders and River Operators Forum at the start of the water year. Delivery of Commonwealth environmental water is coordinated with and undertaken (in the main) by state government agency delivery partners. Fortnightly teleconferences are held with delivery partners to discuss watering actions.</p> <p>Having regard to social and economic outcomes; and Indigenous values – Criterion 2.7 requires consideration of <i>‘the potential ancillary social, cultural and economic benefits from undertaking a watering action’</i>. The CEWO worked with the National Native Title Council to identify opportunities to support the National Cultural Flows Research Project, a multi-year project that aims to provide research on Aboriginal values relating to water and other natural resources.</p> <p>Enhance existing flow events – Criterion 5.3 requires consideration of <i>‘the opportunity to supplement natural flows or coordinate with other water releases’</i>.</p> <p>Relative ecological benefits of competing watering actions – the decision to prioritise one watering action over another is guided by consideration of Basin-wide demands and supply, as described in the Commonwealth Environmental Water Office factsheet Managing the Commonwealth Environmental Water Portfolio.</p> <p>Consideration of natural flow variability; Strategies to deal with a variable and changing climate – Criterion 2.3 requires consideration with <i>‘the consistency of the watering action and expected outcomes with the relevant water resource availability scenario’</i>, as outlined in the CEWO's interim <i>Commonwealth Environmental Water Portfolio Management Framework</i> and the Framework for Determining Commonwealth Environmental Water Use.</p> <p>Information sharing – multiple mechanisms are used to share information (see Matter 6 for detail).</p>
<p>Principle 4: Risks</p>	<p>A conservative risk-based approach to environmental flow management is undertaken, so that unintended impacts do not occur. Criterion 3 requires a risk assessment, which is guided by the <i>Risk Management Guidance for the Use of Commonwealth Environmental Water</i> and includes consideration of potential social, cultural heritage and economic risks, environmental risks, and operational risks.</p> <p>In relation to the (b) ‘risks arising from impediments to the delivery of water’ consideration is also given to <i>‘the arrangements for the delivery of water to the targeted asset(s), including the potential for transmission losses and the adequate accounting of flows’</i> (Criterion 5.2) and <i>‘the operational feasibility of undertaking the watering action (such as channel capacity, infrastructure constraints and third party</i></p>

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	<p><i>impacts</i>)' (Criterion 5.4) To address impediments to the delivery of Commonwealth environmental water, CEWO staff are working with the Basin States and the MDBA to investigate potential opportunities to establish water shepherding and return flow accounting arrangements.</p>
<p>Principle 5: Cost of environmental watering</p>	<p>The cost-effectiveness of Commonwealth environmental watering actions is assessed under Criterion 5 (in conjunction with other Criterion), including consideration of <i>'the amount of water and other resources needed'</i>, while Criterion 2 requires assessment of expected ecological outcomes. Opportunity costs are factored into the decision to make water available, including consideration of alternative uses of water (both in the current water year and future water years). Given the complexity of watering in the southern-connected Basin and the multiple competing water needs, an internal six-monthly structured decision making workshop is held to support the optimisation of Commonwealth environmental water use.</p>
<p>Principle 6: Apply the precautionary principle</p>	<p>As detailed in the Framework for Determining Commonwealth Environmental Water Use the precautionary principle is central to assessing the potential benefit of watering options against the criteria (and in particular Criterion 2 - expected outcomes). The adaptive management processes established by the CEWO (see below) will also assist in reducing future uncertainties.</p>
<p>Principle 7: Working effectively with local communities</p>	<p>Refer to Matter 6 template.</p>
<p>Principle 8: Adaptive management</p>	<p>Annual planning takes into account past watering actions, current watering needs, potential water availability and local views. Through the criteria consideration is given to the <i>'how... realistic the expected ecological outcomes are'</i> (Criterion 2.2) and potential risks (Criterion 3), both of which draw on past watering experience. Consideration is also given to the <i>'effectiveness of monitoring, evaluation and reporting arrangements'</i> (Criterion 4.4). The Commonwealth Environmental Water Monitoring, Evaluation, Reporting and Improvement Framework has adaptive management as an underlying principle. It requires operational monitoring for every action, which informs the action acquittal report. Ecological monitoring is undertaken for select watering actions, which along with the acquittal reports, informs the annual watering reviews in each catchment. The acquittal reports and watering action reviews feed back into the annual planning process.</p>

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<p>Principle 9: Relevant international agreements</p>	<p>The <i>Framework for Determining Commonwealth Environmental Water Use</i> outlines the broad range of environmental watering actions to give effect to relevant international agreements. Criterion 1 requires consideration of the ecological values of the targeted asset(s), including <i>‘the presence of threatened species and ecological communities, and listed migratory species’</i> (Criterion 1.1) and <i>‘the ecological and conservation values of the asset(s) including those recognised by international agreements’</i> (Criterion 1.2).</p>
<p>Principle 10: Other management and operational practices</p>	<p>N/A</p>
<p>Principle 11: Management of water for consumptive use</p>	<p>N/A</p>
<p>Case study (if available)</p>	<p>Case study: In 2013–14, 215 GL of environmental water was delivered in the Goulburn River in a series of flow events throughout the water year. The watering actions aimed to contribute to ‘improving habitat and providing opportunities for migration and reproduction of native fish in the lower Goulburn River through reinstating a variable flow regime’, which was identified as a Basin annual environmental watering priority for 2013–14. By supporting reproduction and condition of native fish and vegetation, hydrological connectivity and biotic dispersal, the watering actions are consistent with the overall objectives of the environmental watering plan of ‘protect and restore water-dependent ecosystems’ and ‘protect and restore ecosystem functions of water-dependent ecosystems’.</p> <p>The planning and delivery of the environmental watering actions was undertaken in collaboration with the Victorian Environmental Water Holder, the Goulburn-Broken Catchment Management Authority, Goulburn-Murray Water and the Murray-Darling Basin Authority. The delivery of Commonwealth environmental water has been coordinated with 33.3 GL of Victorian environmental water and 64.0 GL of water from The Living Murray, as well as with in-channel flows (including those provided for consumptive use).</p> <p>In order to achieve multiple benefits, up to 214.9 GL of return flows from this event has been delivered to achieve additional environmental outcomes in the lower Murray.</p> <p>The decision to make the water available included consideration of risks, costs and local views. This included the potential for third party impacts and, in particular, the inundation of private land. Monitoring from the watering event showed that</p>

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	<p>spawning of golden perch occurred during the spring fresh event delivered in November —only the second breeding event recorded in at least 10 years. This was supported by a second fresh event delivered later that month, which targeted further fish breeding in addition to vegetation and macroinvertebrate growth. Delivery of baseflows and a third fresh event in March aimed to support the re-establishment of bank vegetation which was lost during the 2010–11 floods.</p> <p>Operational and ecological monitoring results will be used to help inform the planning and delivery of environmental watering events in the coming years.</p>