

Commonwealth Environmental Water Holder Update

Spring 2016

What is environmental water's role in the wet times?

Winter rain is a timely reminder of the importance of managed environmental water. At times like this, nature is doing what environmental water cannot and environmental water is about to do what nature can no longer do on its own.

I am often asked "what is the role of environmental water when it rains big? The rivers flood, channels are scoured and cleansed, wetlands are inundated – what's left to do?"

While the dams are filling and the State water authorities, the Murray-Darling Basin Authority (MDBA) and other river operators are implementing their flood mitigation strategies, my team are working with our partners to analyse how best we can capitalise on nature's work.

Most people don't realise that the health of the Basin's rivers, wetlands and floodplains are now highly dependent on human intervention because it is a system that has long since been natural.

Environmental water managers work in anticipation of, and around, whatever nature delivers.

People living in the Basin know very well that nature can deliver big – with widespread and occasionally persistent floods occurring across the landscape – something that environmental water cannot do because there's simply not enough of it and even if there was, it would involve unacceptable impacts on farms, towns and infrastructure.

The real value of environmental water during wet conditions lies in its ability to extend the duration of larger natural flows in order to deliver better environmental outcomes and restore some of the natural variability in flows that once existed around the big floods.

But its not just a matter of releasing water. Timing is everything. Water depth and the length of inundation are just as important. This is where, through adaptive management, we can use Commonwealth environmental water to support what nature has started and produce great results!

Take, for example, the Barmah-Millewa Forests in the mid-Murray. The current flows are critical for flushing, pre-wetting and inundating areas further up the floodplain, putting nutrients and organic matter into the system to feed fish and other species, but they have their limitations.

The rare native moira grass, an essential element of the forests' natural system, which has been lying dormant, will be bursting to life with the recent rainfall. The Moira grass plains will release large amounts of carbon into the water which will energise the river system and strengthen the food web – from tiny freshwater plankton and middle-order consumers, up to top-order predators such as native fish and waterbirds. But if it stops raining in September, while the grass will have started to grow, it will need more water in the warmer months to flower and set seed.

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habitats for an array of waterbirds including species protected by bilateral agreements between Australia, China and Japan. Grebes and whiskered terns build their nests on floating platforms created by the Moira grass and the grasses provide a hunting ground for the birds that feast on frogs, insects and other small invertebrates found in wetlands. Floating Moira grass platforms offer a shady sanctuary for native fish including golden perch and the critically endangered silver perch.

Moira grass provides nesting and foraging

This is where environmental water can be provided to support numerous outcomes for our native species; for example by delaying the wetland drying this could support Moira grass flowering and seed set as well as water bird breeding events, enabling the birds to successfully complete the breeding cycle and the young birds to fledge (be old enough to fly). The process of complementary management of environmental water is critical to finish what nature has begun.

To read about how we intend to manage our environmental water holdings this year, including multiple scenarios based on different climate conditions, please access the Portfolio Management Plans <u>available here</u>. These plans are specific to nine regions throughout the Murray Darling Basin.

These plans have been developed in consultation with our State counterparts, river operators, the MDBA, scientists engaged in monitoring as well as local environmental water advisory groups and committees. We also draw upon the MDBA's <u>Annual Watering</u> <u>Priorities</u>.

Environmental water is all about timing – the right amount of water, in the right place, at the right time

The following is a brief summary of the current conditions and actions occurring within the Basin.

May to July 2016 - Australia's third wettest on record

Australia has experienced its third wettest May-July period on record (dating back to the early 20th century). The surveyed international climate models have indicated that the wet weather will continue until the end of spring, with above average rainfall predicted from August to October for eastern and northern Australia. To find out more visit: <u>http://www.bom.gov.au/climate/ahead/</u>

CEWH action update – responding to current conditions

Northern Basin	Central Basin	Southern Basin
Recent rainfall and river flows into the Macquarie Marshes has primed the system and created considerable potential for strong responses by vegetation when the weather warms up. If required, environmental water could be used to increase the length of time water is available in the Marshes which may support insect and frog breeding and vegetation recruitment. Healthy wetlands provide food and good habitat for waterbirds. If any water bird breeding events start in the Macquarie Marshes, environmental water could be used to continue these events, which may take several months to complete. Rainfall also provides the opportunity to build on the benefits of recent flow events in rivers such as the Macquarie. Higher flows in spring or summer may trigger spawning of golden perch and the listed silver perch. Environmental water could be used in coming months to enhance fish breeding events that are triggered by tributary inflows.	Major wetlands such as the Great Cumbung Swamp and Booligal Wetlands are being inundated, meaning great potential for large colonial nesting bird breeding events to occur with the onset of warmer weather. Should colonial bird breeding occur, we will work with the NSW Office of Environment and Heritage to support breeding by providing environmental water to continue inundation if required. We will also consider delivering environmental water to ensure vegetation outcomes are met in distributary systems and/or the Great Cumbung Swamp if rainfall ceases and/or the system does not have sufficient flows. Major storages such as Wyangala Dam and Lake Brewster have either commenced airspace operations or are close to it.	Natural flows are providing benefits to a number of wetlands throughout the Murray catchment and its tributaries. As such, there have only been small volumes of Commonwealth environmental water delivered this water year. As the naturally high water levels recede, environmental water will be used to help boost the health of wetlands and floodplains along the length of the River Murray. This includes targeting outcomes at Hattah Lakes, raising weir pools in the River Murray, providing baseflows and freshes in the Goulburn River and providing water to Barmah-Millewa forest (by maintaining flows of up to 15,000ML/d downstream of Yarrawonga Weir).

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Campaspe River 10km downstream of Lake Eppalock

The northern catchments tend to receive more rainfall in summer than winter, and have received less rainfall in 2016 to date. Given the rainfall forecast in coming months, there is more potential to achieve greater environmental benefits in northern rivers than has been possible for several years.



For more information on Commonwealth environmental watering actions, please contact your Local Engagement Officer.

Water tech talk: What are translucent flows?

If you live in the Lachlan or Murrumbidgee catchment you may be aware that volumes of water have been released from several storages under "translucent flow" arrangements. This water is required to be released in accordance with Water Sharing Plan rules. Translucent flow rules also apply to the Macquarie and Border Rivers systems in NSW.

Translucent flows are a form of environmental water (i.e. it can't be used for consumption) and are independent of Commonwealth environmental water. What triggers a translucent flow is specific to rules that apply to individual storages, but what they have in common is, when a storage has reached a certain capacity, a small amount of water is allowed to flow through river systems to replicate a natural response to rainfall.

Translucent flows are beneficial for a number of reasons;

- Translucent flows are an important contributor to the health of a river system because;
 - they provide variable flows for in-stream species to 0 respond to and restore 'natural' high flows, and



Baby turtle

- water from tributary inflows downstream of storages is used where feasible this water is generally richer in the nutrients needed to sustain in-stream species and processes than water released from the dams.
- Translucent flows assist to mitigate the risk of flooding by releasing smaller flows earlier as a dam approaches capacity, allowing for increased airspace (remaining space in the dam). In circumstances where dams later spill from sustained wet conditions, translucent flows do not reduce the volume held in dams for consumptive use - rather, the translucent flows reduce the likelihood of greater, more problematic flow rates needing to be released later.
- Limits on the use of consumptive water (such as Water Sharing Plan limits, and . SDLs) are developed taking into account the preservation of translucent flows. Were translucent flows to be removed, and harvested in dams, plan limits would prevent increased consumptive use and lead to a higher risk of dam spill.

Want to find out more? Please refer to http://www.water.nsw.gov.au/watermanagement/water-sharing/environmental-rules/rivers#flows

See our web page for the latest information about Commonwealth environmental water in Basin storages, allocations and carryover and water use.



Community consultation

I welcome opportunities to discuss the Commonwealth's involvement in environmental water and its management. If you are interested and/or potentially affected by our planning and decision-making, you can get in touch with me or members of my team.



Commonwealth Environmental Water Holder David Papps with Mutti Mutti Elder Barry Pearce, August 2015





Australian Government



Winter rains will help provide indicators for 'what waterbirds want'

It is with eager anticipation we await to see if the recent rain events will lead to a boom in waterbird activity throughout the Basin. The recent events will provide us with a great opportunity to observe natural processes and better understand habitat conditions and preferences for native fauna, which may shape our environmental watering strategy for years to come!

As in other areas of the Basin, the floodplains and wetlands of the Lachlan are flourishing and as a result, large breeding events for colonial water bird species such as straw-necked ibis are possible. Our long-term intervention monitoring (LTIM) researchers are well placed to understand and report on the benefits of natural flows (as



distinct from environmental water flows) and how we might mimic similar conditions Nesting brolga. Image credit Brian Furby Collection through environmental water delivery to stimulate future events.

These natural conditions will allow us the opportunity to monitor waterbird populations over numerous sites to see if and how they use sites differently, and come to better understand habitat or food source preferences to see if trends exist that environmental water can actively contribute to in future.

For more information on our long-term monitoring, please visit: http://www.environment.gov.au/water/cewo/monitoring/ltim-project

Voyage of discovery and clean-up to help protect one of Australia's unique oceanic Ramsar sites

June 2016 saw a 24 member team on two vessels undertake a Coral Sea Clean-up and Biodiscovery Voyage searching for new scientific specimens and collecting a significant haul of rubbish (almost two tonnes!)

The journey, funded by Parks Australia and Bush Blitz, will help protect and enhance our understanding of the unique values of the islands and reefs within the Coral Sea Commonwealth

Marine Reserve, some of which are listed as wetlands of international importance under the Ramsar Convention (<u>Coral Sea Reserves-(Coringa-Herald and Lihou Reef)</u>. These near pristine and visually spectacular cays and reefs lie in the remote, tropical oceanic environment of the Coral Sea, approximately 450 km from the Queensland coast, and are unlike most other Australian Ramsar wetlands!



Interior of a giant spider conch. Image credit Keith Martin-Smith

Follow the <u>link</u> to find out more about the voyage. For more information on our Ramsar listed wetlands visit: <u>http://www.environment.gov.au/water/cewo/wetlands</u>

Welcoming our new local engagement officer in Dubbo, NSW – Adrian

Our six local engagement officers, based throughout the Basin,

ensure that the Commonwealth Environmental Water Holder adopts local knowledge and experience in his decision-making. Our local engagement officers work alongside State and local land and water management officers, providing outreach to local communities throughout the Basin.

Adrian Clements has recently joined the Commonwealth Environmental Water Office as our local engagement officer based in Dubbo, NSW. Please contact Adrian to learn more about our work or offer suggestions for the use of environmental water locally. To find our local engagement officer closest to you, visit <u>Local Engagement</u>.

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Our Local Engagement Officers from left to right: Rosemary Millward, Adrian Clements, Linda Duffy, Richard Mintern, Michelle Campbell and Erin Lennon.

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> The best approaches to environmental water management involve local knowledge and the latest science



Commonwealth Environmental Water Office

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Useful resources:

See latest information about Commonwealth environmental water in Basin storages, allocations and carryover and water use: www.environment.gov.au/water/cewo/about-commonwealth-environmental-water

How Commonwealth environmental water holdings are managed: www.environment.gov.au/system/files/resources/1a947b47-08ac-453b-901e-4ed59c0b76cc/files/managing-cew-portfolio.pdf

Commonwealth Environmental Water Office Trading Framework: www.environment.gov.au/water/cewo/publications/water-trading-framework-dec2014

Bureau of Meteorology Water forecasts: http://www.bom.gov.au/water/

Real time river information

NSW: Water NSW http://realtimedata.water.nsw.gov.au/water.stm

Vic: Goulburn-Murray Water https://waterline.g-mwater.com.au/waterstatus/#ST@G409ACM

SA: Murray-Darling Basin Authority River Murray Operations & South Australian Department of Environment, Water and Natural Resources http://livedata.mdba.gov.au/

QLD: (Border Rivers, Warrego Moonie and Condamine Balonne) https://water-monitoring.information.qld.gov.au/host.htm

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