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The Executive Officer
Environment, Natural Resources and Regional Development Committee
Parliament House, Spring Street
EAST MELBOURNE VIC 3002

To whom it may concern

Submission: Inquiry into the management, governance and use of environmental water

Thank you for the opportunity to provide a submission into the *Inquiry into the management, governance and use of environmental water*. The North East Catchment Management Authority (CMA) are obligated to manage environmental water, or known officially as the Environmental Water Reserve (EWR), through a Statement of Obligations under the *Water Act 1989*.

The North East region of Victoria contains some of the most intact flow regimes in the State, which support a number of unique environmental values. Flows from the North East region support many downstream environmental values and communities, contributing almost 40% of the total water supply to the Murray-Darling Basin. Not only is the quantity of water supplied by the north east of significance, but maintaining the high quality of this water is essential for all downstream environmental water uses into the future.

The EWR within the North East region consists largely of 'above cap' water. Above cap EWR is most at risk from the effects of climate change for four primary reasons: (1) changing flow regimes – both seasonally and in total annual volume; (2) rising water temperature; (3) reduced water volume from snow melt; and (4) growing consumptive pressures. Only a very small proportion (70ML) of the environmental water available in the North East CMA region is held within an environmental water entitlement that has the same protection as other consumptive entitlements.

The water resources of the North East region support a range of tourism and recreational activities, as well as contributing to the social and economic success of regional towns and rural communities. Water is intrinsic to social and community connection, and fosters a broader sense of well-being.

This submission from North East CMA offers the following comments and suggestions in regard to the management, governance and use of environmental water in north east Victoria:

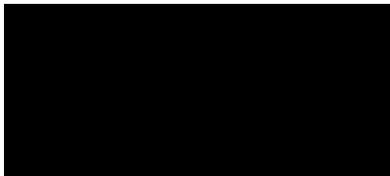
- Further investigation of the requirements and options to secure the outcomes from environmental water in unregulated systems in the face of climate change are needed. ;
- The alpine waterways and waterbodies including the alpine bogs in the upper North East region are at substantial risk from climate change through increasing temperatures, changes to the flow regime and changes in groundwater recharge;
- The Lower Ovens floodplain which is on the Directory of Important Wetlands relies on above cap EWR to water the floodplain; one of very few remaining floodplains in the State and the Basin that is regularly flooded through a natural and unregulated flow regime;

- The flooding of the Lower Ovens floodplain has the potential to produce blackwater events due to the large volume of organic matter within the forested floodplain. However, regular flooding through a natural flow regime prevents organic matter from building up to critical levels in average years.
- Reduction in natural flows through drought and changes to the flow regime allows organic matter to accumulate, increasing the potential for blackwater events. There are however, no environmental water entitlements that can be 'called upon' to remedy the impacts of blackwater or other water quality threats in the North East region.
- The entrainment of organic matter from the Lower Ovens floodplain is not only critical to the Ovens River, an Icon and Heritage listed River, but is a critical carbon source for the Murray River and the Barmah Forest, a Living Murray Icon Site. This carbon fuels the food web, supporting aquatic and terrestrial biota at higher trophic levels (e.g., fish, waterbirds) which EWR programs focus heavily upon as a targeted environmental outcomes.
- To realise the full benefits of the EWR, barriers to fish passage must also be removed. The State Works and Measures program has funded a number of construction ready designs for four structures on priority waterways in the North East region. Funding for future works programs are dependent upon available budgets.
- Other complimentary works such as riparian enhancement and instream habitat construction are also critical to augment the benefit of EWR in the North East region.
- Good instream habitat is of critical importance to act as a refuge for instream biota if EWR is reduced through drought or low flows.

Please find attached a submission addressing the points raised in the Terms of Reference.

Thank you for this opportunity,

Yours sincerely



Neil McCarthy

Chief Executive Officer

North East Catchment Management Authority.

enc: North East CMA submission addressing Terms of Reference

North East CMA submission addressing Terms of Reference for the Inquiry into the management, governance and use of environmental water

Background:

The management of environmental water or the Environmental Water Reserve (EWR) is one aspect of the work being undertaken by North East CMA to achieve the States over-arching vision: *'Victoria's rivers, estuaries and wetlands are healthy and well-managed; supporting environmental, social, cultural and economic values that are able to be enjoyed by all communities'* – Victorian Waterway Management Strategy 2013.

The objective of the EWR is to preserve the environmental values and health of water ecosystems, including their biodiversity, ecological function, water quality and other uses that depend on environmental condition.

EWR within the North East region can fall into three categories:

1. Environmental entitlement

This is the only type of EWR that has the same security as consumptive water. In the North East region, this makes up very small proportion of the EWR. A 70ML water share held by the Commonwealth is held in the Ovens System; 20ML in Lake Buffalo on the Buffalo River, and 50ML in Lake William Hovell on the King River. There are currently no other environmental entitlements in the North East Region.

The North East CMA work with the Victorian Environmental Water Holder (VEWH), the Commonwealth Environmental Water Office (CEWO) and Goulburn-Murray Water to deliver the Commonwealth environmental entitlement in the Ovens system.

2. Water provided through rules or conditions

This is EWR that other entitlement holders provide as a condition of their licence or entitlement. An example is a winter fill licence that contains a condition that requires the passing of all summer flow.

Alternatively it can be water that is retained (not diverted) within a waterway through the rules of a plan. This scenario usually applies to waterways that are unregulated i.e., those that don't have a storage that regulates the flow of water.

In the North East region, the Upper Ovens Water Supply Protection Area Water Management Plan is a statutory plan that combines both surface water and groundwater management. It defines a series of flow triggers which specify reductions in licenced diversions as flows reduce to ensure ecological values and functions are maintained. The current review of statutory plans for unregulated surface water and ground water within Victoria is of interest to the North East CMA, who have the responsibility to ensure there is sufficient EWR in these systems to ensure ecological values and function are protected.

3. Above cap water

This is the water outside defined entitlements or licences, and forms the majority of EWR within the North East region. Unfortunately, it is the least reliable and highly vulnerable in dry conditions. Changing climatic scenarios have the potential to greatly impact upon the volume and quality of the water resources and EWR within the North East region. Upland and alpine systems are at greatest risk of losing the EWR required to sustain them. The North East CMA believes further investigation of the requirements and options to secure the outcomes from environmental water in unregulated systems in the face of climate change are needed.

Terms of Reference:

1) *The assessment of the role environmental water management in preventing or causing blackwater events*

Entrainment of organic matter from the floodplain is a natural and beneficial process. When floodplains have not experienced an overbank flow for an extended period of time, flooding events can result in blackwater. Blackwater can pose an issue when the decomposition of entrained organic material reduces oxygen levels within the water. If oxygen levels become too low, this can potentially harm or kill fish and other aquatic organisms. Summer flooding can be particularly detrimental, since higher air and water temperatures also reduce oxygen levels in the water. Typically, blackwater events occur following long intervals between flooding (e.g. after the millennium drought) when large amounts of organic matter accumulate on the floodplain.

The floodplain of the Lower Ovens is frequently flooded through a near natural flow regime. Organic matter entrained from the Lower Ovens floodplain provides a critical carbon supply for food webs and primary productivity – not only within the Ovens River, but in the Murray system and Barmah Forest, a Living Murray Icon Site. It is vital that the flooding of the Lower Ovens, in both frequency and duration, is maintained through appropriate water resource management if large blackwater events are to be avoided. EWR reduction through drought for example, has the potential to cause more blackwater events in the region. There are however, no environmental entitlements that can be ‘called upon’ to remedy blackwater or other water quality threats in the North East region.

2) *How environmental water and environmental water managers interact with, and utilise, management tools such as carryover and whether the carryover of environmental water impacts on the availability of water for irrigators*

This is not applicable to the environmental water entitlements within the North East CMA region, as there is no carryover available.

3) *Consideration of what barriers exist to the more efficient use of environmental water and how these may be addressed*

To realise the full benefits of the EWR, there are a number of complimentary works that are required. Within the North East region there has been an on-going Works and Measures program funded through DELWP to primarily enable fish passage. This process capitalises on areas with high environmental water investment such as the Upper Ovens. To date there have been designs completed for the Bright and Porepunkah Weirs in the Upper Ovens, Tea Garden Weir on the Mid-Ovens and the Snowy Creek Weir fishway on Snowy Creek. Construction of these fishways is dependent upon future funding allocations and priorities for these works which are considered essential to achieve long-term outcomes.

Other complimentary works such as riparian enhancement and instream habitat construction can augment benefits provided by the EWR. To date, the North East CMA has worked with a number of angling clubs and community groups to restore instream habitat at key locations. Instream habitat is of particular importance as a refuge for instream biota if EWR is reduced through drought or low flows. The North East CMA believes these works should continue and be further resourced as a priority, to provide refuges in key locations and support EWR outcomes.

4) Assessment of fees and charges applied to environmental water and whether these differ from those imposed on other water users.

There are minimal fees and charges associated with environmental entitlements within the North East region, simply because the entitlement is not considerable.

Other Issues:

Using EWR to improve water quality

Since the majority of EWR in the North East region is either within unregulated systems or is made up of above cap water, drought and the other impacts of climate change make the North East region very vulnerable.

During periods of low flow or drought, there are no environmental water entitlements or 'held' EWR available to ameliorate the impact of blackwater, algal blooms, low oxygen levels or sedimentation after bushfires. The 70ML environmental entitlement in the Ovens System can only be used for low flows for a maximum of 2 days. This small volume of water is insufficient to reach the Ovens River in low flow conditions, such as those experienced in 2006/7.

Threats to alpine areas

The alpine waterways and waterbodies, including alpine bogs in the upper North East region, are most at risk from climate change. Reductions in rainfall, decreasing snowfall (changing groundwater recharge) and increasing temperatures are significant risks to these habitats. In lowland waterways, there is capacity for aquatic biota to migrate upstream (pending barriers) if temperatures increase, but in systems at the upstream extent of catchments, this is not an option. Increases in temperature can cause stress in aquatic biota, leading to altered distribution, disruption of life cycles and mortality. Recreational trout fishing bodies have already noted changes in trout distribution within the North East region which are thought to be temperature driven.

Shared benefits

The North East region is highly utilised by recreational users. It is a highly prized region for anglers due to the range of environments from cooler upland waterways where trout fishing is extremely popular, to lowland areas which host a range of native angling fish species.

The extensive Alpine National Park and other public land make the North East a popular destination for nature based tourism such as hiking, camping and snow based activities. In addition to the park areas, there are also a number of extremely popular localities outside the park environment such as the townships of Bright and Porepunkah on the upper Ovens River. These destinations are extremely popular for river based activities such as swimming, canoeing/kayaking and angling. The popularity of these towns over the summer period is akin to any coastal town. These towns cater very well to the summer influx, and are highly reliant on these holiday-makers for their livelihood. In turn, the towns and holiday makers are reliant on flows in the upper Ovens River. There has been considerable investment to ensure the upper Ovens River retains summer flows through the Upper Ovens Water Management Plan, and the off-stream water storage at Freeburgh. There is however still a considerable risk to these towns and their livelihood if EWR should diminish, or the water quality is compromised through events such as bushfire.