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Summary

On behalf of the Kerang Lakes Land and Water Action Group we submit this submission to the *Inquiry into the Management, Governance and Use of Environmental Water.*

Irrigated agriculture is the lifeblood of rural and regional communities. The methodical dismantling of Australia’s irrigation system is endangering our ability to feed the nation.

On a Victorian scale it is apparent that Environmental Water Holders are collectively the state’s largest irrigators, who with an assured income despite the fact that they choose to apply water in a manner that does not generate any actual monetary value, hold a significant pricing disparity over irrigators. Furthermore their ability to manipulate the water market and carry-over provisions are holding productive irrigated agriculture to ransom.

Environmental Water Holders should pay the same fixed and variable water costs as irrigators. This will require the relinquishment of large volumes of water onto the water market breaking the price monopoly, creating more capacity in storages hence reducing the likelihood of spill determinations and spreading the cost recovery base to all water users.

The Kerang Lakes is a complex environment of interconnected rivers, lakes and wetlands. Past environmental management practices have adversely impacted on the region, often as a result of the failure of responsible agencies to give credence to local knowledge, and the slow response to emerging environmental issues and adaptive management. New projects must address these issues to achieve positive community outcomes.

Collaborative partnerships between agency staff and local communities are required to address future threats to irrigated agricultural production and environmental assets. Building the capacity and skills of communities for self-advocacy in a sustainable partnership model is imperative.
1: Introduction

The Kerang Lakes Land and Water Action Group (KLL&WAG) formed in 2003 to address community concerns for the economic, social and environmental future of the Lakes area and continues to advocate on land and water management issues by bringing together the collective knowledge and resources of members.

The Kerang Lakes area is a complex region at the confluence of three major river systems being the Murray, Loddon and Avoca Rivers and part of the wider Kerang Wetlands Ramsar site. See Map: The Kerang Lakes next page. The Kerang Lakes area due to its location within the lower floodplain serves an important ecological function as both a groundwater recharge and discharge zone.

Historically the region was considered ideal for agricultural and horticultural production with a range of soil types, favourable weather and an assured water supply from the Torrumbarry Irrigation System.

Rising salinity from localised land usage combined with environmental management practices and salinity interception works resulted in the area becoming a nett importer of salt and negatively impacted economic and agricultural production.

Localised salinity issues were addressed within the Communities in Partnership-Kerang Lakes Area Salinity Management Plan (KLAWG 1992) that sought not only to ‘fix a problem’ but to engage constructively with, learn from and empower communities in making positive changes in their local environment by increasing economic productivity and improving environmental assets.

Furthermore the combination of the millennial drought, improved on-farm water efficiencies and the substantial reduction in irrigated agriculture within the Kerang Lakes and wider Torrumbarry Irrigation District due to Tradeable Water Entitlements has significantly lowered the underground water-table.

This submission will use case studies of past environmental management practices including the prolonged flooding of the Avoca Marshes, the use of environmental water for Cullen’s Lake including the Bed Flushing Program and the Barr Creek Tutchewop Lakes Drainage Diversion Scheme as a means to inform the inquiry of the largely negative impacts on the Kerang Lakes of these practices and the potential threats that the future use of environmental water poses to this complex area.

This submission will address the:

- Barriers to the efficient use of environmental water
- Trading of environmental water, carry-over provisions and the manipulation of water availability to irrigators
- Fees and charges applied to environmental water
- Links between wetland flooding, blackwater events and the proliferation of European Carp
- Murray River flows and the ‘just add water’ perception, and
2. Case Studies: Environmental Management Practices within the Kerang Lakes

The use of case studies in this submission serves two purposes:

1. To demonstrate
   - The complexity of the Kerang Lakes region
   - Repeated disregard for local knowledge
   - An unwillingness to deviate from established priorities even in the face of dissenting science
   - The inability of water and environmental managers to apply ‘adaptive management’ principles, and
2. To bring together and document local knowledge and resources.

There is considerable history, local knowledge and technical information presented in these Case Studies and supporting Appendix that this submission will refer extensively to. Please take the time to carefully read this material.

![Map of the Kerang Lakes](http://www.murraylakesandrivers.com.au/explore/keranglakes)

**Figure 1:** Map of the Kerang Lakes (Not to scale)

**Source:**
Murray Lakes and Rivers 2017 – Explore the Kerang Lakes, Accessed 10.14am Tuesday 15 August 2017
2.1. Barr Creek Drainage Diversion Scheme Case Study

The Tutchewop Lakes, comprising Lakes Tutchewop, Little, Kelly and William are located in northwestern Victoria. Lake Tutchewop, the largest of the lakes is approximately 30 km’s north of Kerang, whilst Lake Kelly is 1 km west of the Loddon River, a tributary of the Murray River.

Under natural conditions Lake Tutchewop was an intermittent freshwater lake, occasionally brackish, supplied by flood flows from the Avoca and Loddon River systems via the network of lakes and wetlands referred to as the Kerang Lakes. In 1923 Lake Tutchewop was incorporated into the Torrumbarry Irrigation System, a role it performed until 1935 when it was decommissioned due to water losses. (Simms 2005)

Lakes Kelly, Little and William however have always been saline lakes, described by Major Mitchell as “lakes of salt” in 1836, with the first Government Lease for salt harvesting from these lakes issued in 1880, with bagged crystal salt exported from the district via paddle steamers (Simms 2005).

Government Leases for salt harvesting remained in force until 1968 resulting in economic loss and un-employment upon their cancellation.

The Barr Creek Drainage Diversion Scheme, utilizing the Tutchewop Lakes commenced in 1968 with no community consultation, to reduce salinity levels within the Murray River and to maintain the agricultural productivity of the Barr Creek Catchment with the diversion of saline Barr Creek flows from the Loddon River and ultimately the Murray River.

Whilst this achieved positive outcomes for the Murray River and the Barr Creek Catchment, the community and environment of the Tutchewop Lakes suffered and continues to endure, the ramifications of this management decision, primarily the nett accumulation of salinity and associated impacts including loss of vegetation, lowering of water quality in adjacent wetlands, loss of productivity, economic losses, reduced employment and population loss.

Planned expansion of the scheme to include the Mineral Reserves Basin Scheme created widespread community action and ultimately Supreme Court proceedings, with complete disregard for valuable local knowledge or conflicting scientific data. Many properties were purchased as part of the scheme, resulting in social division and population loss with financial resources diverted from production to legal fees. The scheme was ultimately abandoned in 1982 with the acquired land remaining in government hands until recently.

Despite the unsustainable and degrading processes occurring within the Tutchewop Lakes they were listed under the Ramsar convention as part of the wider Kerang Lakes Ramsar Site in 1982. The possibility of wetlands having been mistakenly listed within the Kerang Lakes Ramsar Site was reported as early as 1989 (Lugg et. al. 1989) yet the need to maintain Ramsar values is constantly used as a reason for action without any review of the initial listing. Rather than listing Lake Tutchewop as a ‘permanent saline/brackish/alkaline lake’ it should have been listed as an ‘intermittent freshwater/occasionally brackish lake’ reflective of its historical flooding regime. The Ramsar listings of Lakes Kelly, Little and William in 1982 were based on their condition at that moment in time with the addition of 2.5 m of relatively fresh Barr Creek water resulting in a listing of ‘permanent saline/brackish/alkaline lakes’ when they should have been listed as ‘permanent hypersaline lakes’ reflective of the ecological processes that allows formation of salt crystals on the lake bed. (Simms 2017)

Highlighting this need for environmental action is the proposed introduction of the Murray Hardyhead into Lake Kelly (Lane 2004 p.35 in Peel 2005) demonstrating lack of understanding of the natural functioning of these lakes. Groundwater inflow, at salinities ranging between 5,000 to 90,000 EC (approximately 4,000 to 77,000 mg/l) would constitute a fatal process for Murray
Hardyhead given its critical salinity range of 3,000 to 40,000 mg/l (CSE 1989 in Lane 2004, p. 10 in Peel 2005).

The hyper-charging of saline water levels in the Tutchewop Lakes corresponded with increases in salinity of 5000EC in the irrigation supply storage of Lake Charm with resultant agricultural production losses, thought to be the result of groundwater movement away from the Tutchewop Lakes (Simms 2017). Furthermore a plume of saline water emanating from the vicinity of these lakes was reported in 1992 (O’Rorke et al., 1992 in Macumber, 2004, p. 37) while increases of up to 300% in Murray River EC’s (MDBC 2003 in Peel 2005) could account for up to 40,000 tonnes of salt per year reported in 2001 as entering the Murray River in the region (SKM 2001, in SKM 2003 p.3 in Peel 2005).

Local producers were un-able to access Salinity Management Plan funding for Whole Farm Planning, Water Re-use Systems and Community Surface Drains due to the operation of the Tutchewop Lakes, curtailing economic growth of the region.

The Kerang Swan Hill Future Land Use Project (2002 – 2004) and the included Tutchewop Lakes Serial Flushing Scheme continued to largely ignore local knowledge and dissenting science whilst advocating action to extend salinity disposal in our region and maintaining the impermeability of the system. With growing community concern the Gannawarra Shire Council stipulated that Murray Goulburn Water (GMW) and the Murray-Darling Basin Authority obtain a planning permit before the Serial Flushing Scheme proceed and as a result of concerted community action and objections during the planning process, a review of “the assumptions and assessment techniques of any hydrogeological assessments undertaken in developing the future management options for the Tutchewop disposal basins” (NT, 9/8/05 p.1 in Peel, R. 2005) occurred.

As the community long believed, the review and resultant report, publicly released in March 2007, found that evidence existed of leakage of salt from Lake Tutchewop and that the assumption of increasing salinity and salt loads within Lake Tutchewop could not be substantiated (Middlemis & Wallia 2006 in Peel, R. 2007) as the salt balance in the lakes did not match the tonnages of salt diverted. During its operation an estimated 1.3 million tonnes of salt was diverted to the lakes but it is now estimated that only 100,000 tonnes of salt remain (Simms 2017).

Farmers who believed their land was adversely affected by salinity escaping from the Tutchewop Lakes had their claim for compensation rejected in 2015 because under statute of limitations damage prior to May 2002 was statute barred (Linton, D. 2015).

Drought, Tradable Water Entitlements (TWE) and on-farm irrigation efficiency measures have largely superseded the role of the Barr Creek Drainage Diversion Scheme although it remains operable if required.

Concerning is the Kerang Wetlands Ramsar Action Plan 2016 – 2024 that has failed to address the possibility of the incorrect listing of these lakes and proposes environmental flows to maintain these lakes at their unsustainable and environmentally degrading listings of ‘permanent saline/ brackish/ alkaline lakes’ (Simms, 2017) despite mounting evidence as to the folly of this action.
2.2. Avoca Marshes and ‘The Sill’ - 1969 to 1991 Case Study

The Avoca Marshes, located in the Mystic Park district, are 3051ha in size, and are comprised of four individual wetlands being Lake Bael Bael, First, Second and Third Marshes, that are recognised for their environmental importance having been listed under the Ramsar Convention.

The surrounding districts were settled in the 1860’s as part of large agricultural leases, primarily due to the regular availability of water. The establishment of the railway during the 1880’s led to the establishment of the township of Mystic Park; officially gazetted in 1893. During railway construction, provisions were made for the six ephemeral creeks discharging from the northern and western ends of the Avoca Marshes. Under pre-European conditions the Avoca River and any overflow from the Loddon River via the Kerang Lakes system would have discharged into Lake Tutchewop, the Marraboor River (Little Murray) and ultimately the Murray River (Peel, 2003).

The Mystic Park district had a strong association with the development of irrigation in northern Victoria in the early 1900’s. Subsequent land use change, irrigation infrastructure and levee banking resulted in five of the ephemeral creeks being blocked off. The largest of these effluent streams became the sole discharge point for the Avoca Marshes. To accommodate the increased catchment hydrology this stream was enlarged and straightened during the Great Depression (1930’s) by men working for sustenance payments (Peel 2003) and is now known as the Avoca Outfall.

Two significant events occurred during the late 1960’s. The first was a conservation project involving the construction of a fixed level concrete Sill 0.60 metre high (See Appendix C: Elevations of Lower Avoca Marshes System) across the Avoca River Outfall in 1969, which dramatically changed the hydrology of the Avoca Marshes and led to prolonged flooding. The natural flooding regime in Third Marsh changed from approximately 1 year in 4, to a flooding regime of 17 wet years in 20 before the Sill was modified in 1989 and removed completely in 1991.

![Figure 2: Kerang Lakes Area Management Study: Third Marsh Sill Investigation](Image)

The native vegetation within the Avoca Marshes is primarily related to flooding regimes with River Red Gums the dominant vegetation in areas of semi-permanent inundation. The Red Gums on the floor of Second and Third Marsh suffered severe decline after the construction of the Sill with the death of an estimated 100,000 trees. (See Appendix A: Aerial Photos of Avoca Marshes 1972 and 2011).
Local opposition to the project was ignored at the outset, as was the barrage of letter writing and local advocacy as to the environmental degradation occurring until the Kerang Lakes Area Working Group commenced developing the Kerang Lakes Area Salinity Management Plan.

The second event to occur was the establishment of the Barr Creek Drainage Diversion Scheme in 1968 that saw the removal of linkages between Tutchewop Lake and the Avoca floodplain with flood flows now discharging to the Avoca Floodway, Lake Mannar and ultimately Lake Boga.

The removal of the Sill and prolonged drought benefitted the Avoca Marshes allowing them to ‘dry out’. The 2010-2011 flooding has seen significant recruitment of River Red Gums.

A hydrogeology report on the Avoca Marshes (Macumber 2004) made recommendations in respect to the environmental watering of the adjacent Cullen’s Lake and the threats it may pose for the Marshes.

The North Central Catchment Management Authority (NCCMA) continues to incorrectly classify the Avoca Marshes as terminal wetlands.
2.3 Cullen’s Lake Environmental Watering and Bed Flushing Program Case Study

Cullen’s Lake is a large, shallow, terminal lake that naturally experiences a range of salinities during its natural wetting and drying cycle (Klawg 1992 p.124), receiving infrequent fresh water inputs during flooding events within the Kerang Lakes, before declining through evaporation and groundwater recharge.

The size of the lake and its capacity to support large numbers of waterbirds is fundamental to Cullen’s Lake. (Lugg et al, 1989 in Nolan-ITU 2001 p.4) High ecological values are reflected with Ramsar listing.

As part of the Torrumbarry Irrigation System Cullen’s Lake was managed as a freshwater irrigation supply from the 1920’s to 1973 when it was removed from the supply system becoming reliant on infrequent floodwater inputs via the irrigation system (Nolan-ITU 2001 p.1 in Peel 2004) and steadily increasing in salinity.

Duck Lake is an adjacent hyper-saline wetland of low ecological value (SKM, 1999 in Nolan-ITU 2001 p.28 in Peel 2004), located lower in the landscape than surrounding wetlands. As a groundwater discharge zone, Duck Lake is regarded as a pressure relief valve for the sub-regional water-table.

Hydrological assessment of data indicated a ‘groundwater gradient and the movement of saline lake water through the shallow groundwater system towards Duck Lake’ (Nolan-ITU 2001 p. 23 in Peel 2004).

The Cullen’s Lake Operational Guidelines proposed that Duck Lake be sacrificed for the protection of Cullen’s Lake, through ‘bed flushing’ to remove accumulated salt from the bed of Cullen’s Lake across to Duck Lake via the groundwater gradient (DSE 2004, p.14), necessitating large volumes of freshwater to create a hydrostatic head to force salt deeper into the groundwater system.

Due to prolonged dry conditions Cullen’s Lake experienced an extended drying phase from 1996 until December 2000 (DSE 2004, p. 14) when the filling of the lake commenced with the use of 10,000ML of environmental water allocation from the River Murray Bulk Entitlement. A subsequent bird survey in August 2001 estimated that 42 different species were utilising the lake at that time, with a bird count of approximately 15,000 birds. (DSE 2004, p.14)

Monitoring of groundwater bores demonstrated increases in groundwater movements and salinities following the ‘bed flushing’ indicating that in addition to moving towards Duck Lake, that groundwater had also moved in under the Avoca Marshes (O’Brien, pers. comm. 2004 in Peel 2004) despite them being some 1.9 m AHD higher than Cullen’s Lake. This was further investigated during the Avoca Marshes Hydrological Study which revealed that the groundwater gradient could in fact be reversed (Macumber 2004 p.83 in Peel 2005) and lead to recommendations that the ‘bed flushing’ of Cullen’s Lake should coincide with flooding of the Avoca Marshes.

Cullen’s Lake was filled during the major 2010 - 2011 flooding of the Loddon River – Kerang Lakes and the Avoca Marshes systems.

In autumn 2017 Cullen’s Lake was filled using a 10,000 Ml environmental flow under the Seasonal Watering Plan wet scenario. The NCCMA made an “astounding discovery” of at least 16 Australasian bittern during bird surveying of the lake in May 2017 (Gannawarra Times 2017). Tom Lowe, noted local birdwatcher and others reported Bitterns years ago relying on the harbour of freshwater reed beds that are maintained by a leaky regulator during the irrigation season (August through to May annually) rather than infrequent environmental flows. Further the newspaper article highlights the benefit that irrigated rice production has on Bittern populations. The conservation and
environmental benefits irrigation water provides, in addition to feeding the nation and exporting around the world; is far too often unrecognised by water and environment managers.

Community advocacy has resulted in the original proposal of drying out Racecourse Lake and Bertram’s Swamp as part of the wider Kerang Lakes Bypass project being ruled out due to saline groundwater intrusion into the lakes, including Cullen’s Lake, thus creating a saline environment beyond useful vegetation growth and probably killing any vegetation around the lake on its way in, including the reed beds that harbour the Bitterns (Simms 2017).

Figure 4: Gannawarra Times newspaper article
3. Barriers to the efficient use of environmental water

When considering barriers to the efficient use of environmental water, infrastructure issues and river or channel capacity readily come to mind. However perhaps the greatest barrier is the ineffective management of human resources, specifically

- the failure to utilise local knowledge and empower communities in shaping their own futures, and
- the ‘no boots on the ground’ employment model

3.1 Infrastructure and capacity issues

Currently infrastructure issues are not a major concern in the Kerang Lakes with environmental water usage relating to freshening flows in the Lower Loddon River reaches and environmental filling of Cullen’s Lake, with required infrastructure in place. However any use of environmental water that results in reduced capacity for flood pondage or prolongs over-bank flooding of landholders is opposed by KLL&WAG.

Future modernisation of the irrigation supply in the Kerang Lakes area must not interfere with flood flows or pondage capacity, nor adversely affect existing environmental assets including the Cullen’s Lake Reed Beds as discussed in Case Study 2.3. This regular flow of water needs to be formalised with an annual environmental allocation to maintain the reed beds preserving the Australasian bitten habitat, as was the case in the Meran Wetlands Complex where regular out-falling of irrigation water during channel draw-down in the off season was recognised with a 2000ML annual environmental allocation.

If granted approval the Third Reedy Lake Bypass must exclude European carp, especially large carp from entering the lake during filling operations to promote aquatic plant life establishment and aid replenishment of native fish stocks without predation by carp. During the drying phase native fish must have passageway out of the lake. As was witnessed at Banrock Station in 2008 native fish will seek to swim back to assured water during drying phases, while carp will congregated in shrinking pools to perish (Butcher, 2009; Crouch, 2013 in Marohasy, J. Undated).

3.2 Ineffective management of human resources

Living, working and passionately caring for the social, economic and productive prosperity of the Kerang Lakes area means that the environment is paramount. Indeed the role of KLL&WAG and its predecessors has been to advocate against policies and projects that will be to the detriment of our community.

3.2.1 Failure to utilise local knowledge and empower communities

The mistakes and misinformation contained in reports and assessments that are never corrected despite extensive community feedback and participation in project based Community Reference Groups leads to fatigue and frustration at the futility of dealing with bureaucracy, a scenario which is particularly damaging to community morale and sustainability. As community representatives and activists wear out they are not being replaced and their intimate knowledge of their communities is lost, hence the reason to document the Case Studies in this submission.

Without the local knowledge ‘checks and balances’ water and environmental managers would have a free hand, especially true when major projects can be progressed and planning permits granted without the need to advertise intent to apply for a permit. This could have been the case with the Tutchewop Lakes Serial Flushing Scheme (detailed in Case Study 2.1) had it not been for the
Gannawarra Shire Planning Officer responding to community concerns and agitation by declaring the process made public. Many objections to the scheme were lodged and subsequent mediation resulted in a long overdue independent technical review.

The value of utilising local and knowledge and empowering communities was demonstrated with a collaborative partnership approach during the development of local Salinity Management Plans, concluding with the Communities in Partnership-Kerang Lakes Area Salinity Management Plan in 1992. Genuine consultation and seeking local solutions to local problems gave the community ownership of the issues and the outcomes. The process built the capacity for local people to learn advocacy skills whilst gaining access to and learning from a range of technical people and resources.

It should be noted that community expectations are that consultation is not talking at people; it is a two way exchange of information and investigation is seeking understanding; not just working to a pre-determined outcome.

3.2.2 ‘No boots on the ground’

The ‘no boots on the ground’ employment model can be summarised as
- the centralisation of water and environmental policy makers in capital cities,
- the lack of local on-ground scientific and technical staff; and
- short term project based employment contracts.

The employment of staff and consultants on short term project based contracts and the centralisation of policy and decision makers in capital cities is a major barrier to a community based collaborative approach. With no employment permanency environmental and water staff do not establish themselves within communities preventing them from building rapport and good working relationships with communities. With no assured employment, especially in country areas where there are no other employment options, they are not in a financial or professional position to go against the establishment, restricting robust examination of issues as they arrive or the full investigation and consideration of community input received during projects.

Previously the Kerang Public Officers were staffed with a large number of employees from many departments within the agricultural and environmental fields. These on-ground scientific, technical and catchment officers would, with the security of assured employment, work with communities to investigate issues fully and be prepared to take the unexpected results as the need to investigate further, seeking to find the best local solution to local problems. This was especially important as there was timely interpretation of monitoring data.

4. Fees and charges applied to environmental water

The Victorian Environmental Water Holder (VEWH) holds 343,508 ML of High Reliability Water Shares (HSWS) in addition to 339,563 ML of Low Reliability Water Shares (LRWS), and 144,838 ML comprised from other allocations and water sharing arrangements within 15 water supply systems across Victoria (VEWH website).

A simple ‘Google’ search on who pays for environmental water didn’t reveal any clear answers.

What I found was that the water supply corporations in Victoria pay an annual Environmental Contribution to the Victorian Government which ends up in the Treasury and Finance Department for allocation to environmental projects to benefit water. The 2016 contribution was $112,509,000. As water corporations are independent entities that must operate with financial sustainability their environmental contributions will form part of the annual operating budget and therefore be collected from water users and owners under cost recovery.
Goulburn Murray Water’s (GMW) 2015 edition of the Customer Information Booklet Accounts and Payments Section (pages 16 & 17) sets out the fees and charges that may appear on accounts, (dependant on individual circumstances), of which there are 16 different Fixed Charges and 6 different Variable Charges. There is no clearly defined environmental charge so presumably the environmental contribution is included in the base $/ML or fee per service charges for all irrigation water holders and users, meaning we all contribute to the environmental charge.

The VEWH responded to a submission to the Draft Advice on the water charges rule review (VEWH 2016) refuting claims made by a GMW irrigator that “environment flows are not paid for and [the environmental water holder] does not have to pay storage costs or per megalitre”. They claim to have paid $12.1 million for infrastructure charges in 2014-15. At face value this sounds a large contribution but let’s look a little closer.

Firstly this was for headworks and delivery of VEWH water, Commonwealth Environmental Water Holder (CEWH) and Murray Darling Basin Plan (MDBP) water, with the combined total HSW entitlement held by the three bodies in Victoria being 837,100 ML. The total volume of water actually delivered was unspecified.

The $12.1 million paid in infrastructure charges for 837,100 ML of HSW entitlements held by the three environmental water holders calculates to a price of $14.45 / ML of HSW. This calculation does not include any charges for Low Reliability Water of which there is 381700 ML held by the three water holders (VEHW Website).

The Infrastructure Access Fee, calculated as Delivery Share for the GMW Torrumbarry Irrigation System, is $28.70 ML, which is an annual fixed charge to access the system whether used or not. In addition irrigators pay variable charges based on the actual ML’s used.

Whilst this is a very basic calculation based on limited data it appears the Environmental Water Holders have a significant pricing advantage over irrigators.

Whilst it is easy to calculate the economic return to the irrigator per ML or to determine the production per ML of water used, the calculation of dollar values attached to environmental water use and outcomes is an entirely different matter.

Based on complex formulas that derive data from emotive surveys asking for the values respondents place on rivers, wetlands, trees, birds, fish, animals etc. ignores the fact that the VEWH does not generate any actual monetary income from any products or services delivered.

Collectively Environmental Water Holders are essentially Australia’s largest single irrigator. Whilst they choose to apply water in a manner that does not generate any actual monetary value they should pay the same fixed and variable water costs as irrigators. This will require the relinquishment of large volumes of water onto the water market breaking the price monopoly, creating more capacity in storages reducing the likelihood of spill determinations and spreading the cost recovery base to all water users.

5. Trading of environmental water, carry-over provisions and the manipulation of water pricing

The VEWH is the largest holder and user of water in Victoria but does not generate any actual income from that water use. Therefore their continued operation is either reliant on government funding, presumably via the environmental contribution paid by water corporations or through trading of water.
With the current open water market so much water is held by ‘non-irrigators’ that they can now manipulate the availability of water; create a shortage then dribble it onto the market at inflated prices. The environment as the largest water holder in Australia amongst others, including overseas superannuation companies and even the New York Fire brigade, are holding Murray Darling Basin irrigators and Australian agriculture to ransom, jeopardising the ability of the nation to feed itself. With Australian immigration at 200,000 new residents annually, food production to meet demand is a growing issue.

With high temporary water prices, at some point irrigators will be forced to abandon irrigated crops and sell the water, a financial decision to ensure a financial bottom line.

This upward price manipulation has direct benefit for environmental water holders; the higher the dollar return per ML sold the smaller the volume of water required to be sold to fund their ongoing operations and the more water they are able to carryover. If EWH’s do not pay any or only minimal storage fees, as appears to be the case in Victoria, this creates further pricing disparity.

Carryover as a risk management tool intended to provide some level of continuity to irrigators; especially horticulturalists with permanent plantings and livestock producers with decades of selective breeding genetics to preserve, to extend the critical decision making timeframes beyond seasonal weather patterns ensuring the survival of plantings and livestock during drought and dry spells.

By carrying over large volumes of water, environmental water holders are significantly reducing dam capacity to collect and store inflows and increasing the risk of irrigators losing their carried over water in spillable water accounts. This spillable water has been paid for by irrigators and any spills pose a significant financial loss to irrigators and negates risk management strategies.

Again due to pricing disparity, financial disadvantage to environmental water holders from spills is minimal. Once spills have occurred into river systems, EWH managers are still able to make use of this water termed “opportunistic watering, freshening flows” or in the case of lakes and wetlands, “opportunistic filling”. All of the benefits without any of the cost sharing.

6. Links between wetland flooding, ‘blackwater’ events and proliferation of European Carp

European Carp emerged within the Kerang Lakes system in 1975 and have played a significant role in reducing aquatic weed growth, increasing water turbidity hence decreasing sunlight reaching the lake bed and contributing to increased erosion. Carp are known as ferocious predators of native fish species.

The reproductive cycle of European Carp benefits from floodplain flooding. Investigations following the major blackwater event that occurred in Victoria in 2010 reported native fish, crayfish, yabby and shrimp abundances were significantly reduced but that alien fish species particularly European Carp were able to withstand hypoxic blackwater events without any significant effect on abundance (King et al., 2012 in Marohasy, J. Undated).

Native fish species are attuned to natural cues and will leave drying wetlands whilst European Carp will remain and perish. During environmental watering this cue can be provided by reducing inflows quickly, sharply dropping water levels (NCCMA 2014).

The current Third Reedy Lake wetting and drying proposal therefore must exclude European Carp from entering the lake during filling and provide passageway for native fish to exit the lake during the drying phase.
7. Murray River flows and the ‘just add water’ perception

The KLL&WAG wishes to restate our long held opposition to the perception that just adding more water to the Murray River will restore the Coorong and keep the Murray mouth open.

Lake Alexandria was historically “estuarine” and never meant to be permanently fresh; keeping it so allows 750,000 ML of productive water to evaporate annually. The Barrages should be abandoned to allow the lake to return to natural conditions with a weir built just upstream of Lake Alexandrina.

The Murray River prior to river regulation did not run water permanently. Early mariners sailed past the mouth of the Murray for some years before realising there was a river mouth there. Photographs document family picnics in the dry bed of the Murray. The “Millennial Drought” was the first major drought in which the river never ceased to flow.

The Murray did not always harbour the great River red gums we see today with early photographs of Swan Hill showing no sign of trees. When Major Mitchell camped at Swan Hill on June 20th 1836, he recorded spending a cold night as not enough wood was available to light a fire.

The methodical dismantling of our irrigation system endangers Australia’s ability to feed the nation.
8. Conclusion and Recommendations

As demonstrated throughout this submission the Kerang Lakes is a complex environment of interconnected rivers, lakes and wetlands. Past environmental management practices have adversely impacted on the region, often as a result of the failure of responsible bodies to give credence to local knowledge, and the slow response to emerging environmental issues and adaptive management.

New projects including the Third Reedy Lake By-pass and the GMW Connections program must address these issues to achieve positive community outcomes.

To address these issues within the Kerang Lakes area we present the following recommendations

1. Formalise annual Environmental Allocation to preserve the Cullen’s Lake Reed Beds.
2. Install carp exclusion barriers and fish passageway into and out of Third Reedy Lake.
3. Establish a local consultative group to work with agencies to build collaborative partnerships through exchange of information and building the capacity and advocacy skills of locals.

On a Victorian scale it is apparent that Environmental Water Holders are collectively the state’s largest irrigators, who with an assured income despite the fact that they choose to apply water in a manner that does not generate any actual monetary value, hold a significant pricing disparity over irrigators. Furthermore their ability to manipulate the water market and carry-over provisions are holding productive irrigated agriculture to ransom.

The centralisation of environmental and water policy makers, managers and project staff in capital cities, along with short term contract based employment positions, is hampering adaptive management principles and effective community consultation.

To address these issues at state level we present the following recommendations

1. That Environmental Water Holders pay the equivalent water fees and charges as paid by irrigators in each of the irrigation districts.
2. That all fees and charges paid by Environmental Water Holders be released publicly.
3. That any water spilled from Spillable Water Accounts be applied to environmental water in the first instance, until such time as their account balance (or balances) reaches zero, before being applied equally as a percentage base across all other water holders.
4. That all water trades by the Environmental Water Holders be finalised by 28 February annually.
5. That no further sales of Australian water be allowed to overseas investors.
6. The decentralisation of environmental, water and agricultural management back to regional and small communities including the employment of catchment officers, project officers, technical and scientific staff, (including traineeships or internships) with permanency in employment.
9. References and Further Reading


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Appendix A: Aerial Photos of the Avoca Marshes in 1972 and 2011


Note healthy Black Box trees on western side of Third Marsh (Upper right hand corner of photo)
Photo: Raelene Peel

Above: 2011 Inlet Second Marsh (L) to Third Marsh (R), looking west.

Note tree deaths due to prolonged inundation from 1969 to 1989.
Photo: Raelene Peel

Above: 1972 Enlargement of Avoca Marshes section of photomap from previous page.
From bottom of page, looking north, Lake Bael Bael, First, Second and Third Marsh.

Note extensive living tree coverage in Second and Third Marshes.