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Snags in the system? Water trading and the market: a review of the negatives

Janice Gray UNIVERSITY OF NEW SOUTH WALES

Prior to and since its introduction, water trading has commonly been portrayed as the panacea to many of Australia’s water woes. But, is this view well substantiated? Does it reflect the whole picture? Or is there a less positive side to water trading that lies behind the statistics, reviews, surveys and other data that form the basis of commonly held favourable opinion?

Almost 20 years on from the original Council of Australian Governments (COAG) Water Reform Framework that supported the introduction of water trading, it seems timely to ask such questions. Further, some of the first water sharing plans (WSPs) to be introduced — which operate interdependently with trading, because they set extraction limits and specific flow levels affecting the volume of water available for trading — are due to expire in 2014, and a review process has begun. This suggests that the present is a period of reflection, revision and renewal.

Accordingly, this article considers how well water trading is working as a practical management tool. The article deliberately focuses on some of the negative aspects of water trading and does not reiterate the positive aspects, which are well rehearsed elsewhere. Its aim is to expose some of the shortcomings of trading, which may be buried in its good press. Space constraints mean that the discussion is largely confined to the Murray-Darling Basin (MDB).

Background

When COAG met in Hobart in 1994, it discussed water policy and established a Water Reform Framework that helped set the direction for much of the reform that followed. COAG’s strategy was one of efficient and sustainable reform and its agenda was heavily influenced by ideas in the Hilmer Report released the previous year. Among other things, that report recommended a national competition policy.

One method by which competition could be facilitated in the water sector was to separate rights in land from rights in water, so as more readily to support trading and markets. Accordingly, key elements of Australian water law reform from the late 1990s on were water trading and water planning, both of which were characterised as positive management tools that would help redress years of unsatisfactory water management — which, in turn, had led to the vast over-allocation of Australia’s water resources.

Yet, there were some pockets of resistance to the reforms, which employed trading as a tool of water management. That resistance was commonly based on concerns about water trading’s potential to lead to stranded assets, adverse effects on regional economies, and the growth of “water barons”, for example. Ultimately, however, such concerns were overborne by an enthusiastic endorsement of trading in most quarters, and by the mid 2000s, when cooperative federalism permitted further collaborative inter-jurisdictional reform, water trading was taken as a sine qua non. It became a key element of the National Water Initiative (NWI), which endorsed the operation of water markets and trading in connected water systems, and of the Water Act 2007 (Cth).

Under the new legislative and institutional frameworks, water trading has become well established in Queensland, New South Wales and Victoria. In Tasmania, the Northern Territory and Western Australia, trading remains fairly nascent. Approximately 90% of trade is concentrated in the southern MDB, where distinct water zones and large interconnected water systems exist alongside a diverse mix of agricultural industries with different water demands.

In 2010–11, 1205 GL of entitlements and 3493 GL of allocations were traded throughout Australia, representing a 38% decline in entitlement trade and a 40% increase in allocation trade, compared with the previous water year. In terms of volume, in 2010–11, New South Wales was the most active state market (52.7% of national trade), followed by Queensland (11.3%), South Australia (7.3%), Western Australia (2.1%), Tasmania (1.6%), the Australian Capital Territory (0%) and the Northern Territory (0%). However, judged in terms of the number of trades
in the same period, Victoria was the more active trading state, with 3474 trades, while New South Wales only had 1592 trades.\textsuperscript{10} (In Victoria, there were many smaller-volume trades.)

One single national market has not emerged, nor is it likely to do so, because not all water systems are hydrologically connected. Instead, water markets in different water systems have developed at different rates and according to different factors. In particular, MDB trading reflects different patterns across different industries and locations: rice growing in the NSW Murray and Murrumbidgee; dairying in Northern Victoria; and horticulture in the Victorian Murray-Sunraysia and SA Murray, for instance.

In all states where trading of NWI-styled water products occurs, entitlements and allocations form the basis of the majority of trade. Theoretically, futures, options and other derivative products\textsuperscript{11} may also be traded, but such markets are fairly immature at this stage. Arguably, this is because the majority of water traders are water users, and entitlement and allocation trades are “well-suited” to the risk management and other needs of users.\textsuperscript{12}

\textbf{Legal instruments governing trading in the MDB}

Water trading in the MDB relies on a complex multi-jurisdictional legal framework that is largely comprised of a series of state-based frameworks overlaid by a Commonwealth framework. The relevant state-based frameworks are those of the Basin States — Queensland, New South Wales, South Australia and Victoria.\textsuperscript{13}

The key instruments comprising the multilevel framework (but excluding those relating to environmental water) include the Commonwealth Constitution; the Water Act 2007 (Cth), including the water resource plans made under it; the Murray Darling Basin Agreement 2008 (now Sch 1 of the Water Act); the Murray Darling Basin Plan, including the Trading (and Market) Rules; and state water legislation, including water-sharing plans.\textsuperscript{14} State legislation sets out the types of water products that may form the subject of trade, and the procedures and mechanisms needed to effectuate transfers. Although terminology differs between jurisdictions, in the post-NWI era, two generic terms emerged to describe rights to access water: “water access entitlements” and “water allocations”.

An entitlement is a perpetual entitlement to exclusive access of a share of water from a specified (but variable) consumptive pool, as defined in a water plan.\textsuperscript{15} Meanwhile, an allocation is the specific volume of water that is allocated to the water access entitlement in any given water year.

Under the present legal framework, trading is permitted both within and between states and territories in the MDB. It is also permitted within non-MDB states and territories.

The core trading provisions for trade in the MDB are contained in state-based legislation,\textsuperscript{16} but because water trades in the MDB are trades of “Basin water resources”, they are also governed by Commonwealth instruments such as the Water Act 2007 (Cth)\textsuperscript{17} and the Basin Plan, which under that Act is a legislative instrument.\textsuperscript{18} The Basin Plan, in turn, includes instruments such as the Basin Water Trading Rules and the Basin Market Rules, with which compliance is necessary.\textsuperscript{19}

\textbf{Reflecting on trading/market shortcomings}

The key elements of water market design include the creation of a balance between consumptive and environmental use; clearly defined property rights, which form the subject of trade; regulation (of the market), particularly so as to manage potential impacts on other water users and the environment; the development of trading platforms, such as exchanges, along with the emergence of intermediaries, such as brokers, and the availability of transparent market information; and the development of registers and water accounting, compliance and enforcement arrangements.\textsuperscript{20}

It has been difficult to establish and fulfil several of these elements in relation to the MDB water market, partly because that market is more complex than many others. It is riddled with significant physical, hydrological and environmental constraints that impede its operation. For example, the Barmah Choke, which is a narrow section of the River Murray in the Barmah-Millewa forest, physically constrains water flow and consequently has led to a restriction in water trade from areas upstream to downstream of the Choke. Additionally, significant barriers to trade exist, including those relating to ownership restrictions; co-held water access licences; and the Victorian 4% per annum limit on entitlement trades out of irrigation areas.\textsuperscript{21} Many such barriers were initially imposed as prudent, precautionary measures to temper the effects of free trade, but agencies such as the Australian Competition and Consumer Commission (ACCC) have since recommended their removal to help prevent market distortions.\textsuperscript{22} The removal of barriers would appear to be prudent only if the market (and associated planning tools) can be trusted to deliver desired outcomes.

The following discussion highlights some of the shortcomings associated with the design elements above and other aspects of trading.

\textbf{Property in water entitlements/allocations}

This issue remains unresolved, although calls for secure “tradeable property rights” date back at least as
far as COAG 1994. It is important to know whether entitlements and allocations are property in order to ascertain their proper value. A property right, with its wide sphere of enforceability and powerful armoury of remedies, is presumably more valuable than a lesser right. It is also important to know whether entitlements and allocations are property for taxation (capital gains tax), succession, trusts and other purposes.

ICM Agriculture Pty Ltd v Commonwealth\(^{23}\) considered the question of property rights in access to water, but left the answer open. In particular, that case considered if there had been "an acquisition of property" when bore licences under the former Water Act 1912 (NSW) were replaced with aquifer access licences under the Water Management Act 2000 (NSW) and became subject to a new water sharing plan — a plan that had the effect of reducing the water available for consumptive use. French CJ, Gummow and Crennan JJ decided the matter on the constitutional point and chose not to come to a conclusion about whether bore licences constituted property, although they referred to other decisions that emphasised the degree of permanence or stability necessary to characterise a licence subject to ministerial controls as property.\(^{24}\) Meanwhile, Hayne, Kiefel and Bell JJ also decided the matter on constitutional grounds, but in obiter prof ered the view that bore licences were "a species of property".\(^{25}\) Heydon J was in dissent and, therefore, his comments on the property issue did not contribute to the ratio of the case. Hence, the issue remains unresolved.

Finally, the licences under scrutiny in ICM were bore licences, not aquifer access licences. Hence, even if bore licences were found to be property, it does not necessarily follow that aquifer licences would be too. Although both are statutorily created licences, they are different creatures.

The lack of clarity on the nature of entitlements and allocations represents a significant practical weakness in the operation of the present water trading system.

Trading has not necessarily reduced consumption

Although trading was partially introduced to help reduce water consumption, that has not always been the result.\(^{26}\) For example, an NWI report found that "the reduction in water use in the Murrumbidgee system due to water trading was significantly lower than the change in water availability caused by the drought".\(^{27}\) In fact, water trading resulted in “less than a 12% reduction in regional water use in all years except for 2008–09 in the Murrumbidgee (36%) and NSW Murray (24%)".\(^{28}\) Although trading patterns and impacts differ across the different MDB regions, these figures suggest that trading may, in some circumstances at least, be problematic in reducing consumption.

The same report found that 52% of the broadacre irrigators (and 22% of horticulturalists and 27% of dairy irrigators) interviewed sold water entitlements only to purchase allocations subsequently.\(^{29}\) Further, in the Murrumbidgee, 50% of those irrigators who sold back entitlements (as part of buyback programs) reported spending the proceeds in a category that included the purchase of high security water or groundwater.\(^{30}\) These figures suggest that the sale of entitlements did not necessarily correlate with the seller exiting the industry and ceasing to consume water. It is possible, therefore, that consumption, in some cases at least, continued much as before, but with irrigators accessing water via allocations instead of entitlements.

The study also revealed that most purchasers of entitlements were horticulturalists in the Victorian Murray below Barmah (Sunraysia) and the SA Murray regions. As horticulturalists do not have flexible production systems because of perennial plantings, their purchases presumably positioned them well to maintain “normal”, or close to “normal”, consumption, if desired, meaning that their water consumption was not reduced.

Another weakness of water trading, as it relates to the issue of consumption, concerns the activation of sleeper and dozer licences. Sleeper and dozer licences entitle their holders to access water, but the holders of such licences historically have either not used (in the case of sleeper licences) or have under-used (in the case of dozer licences) their entitlements. Holders have generally had sufficient access to water via other means.

When sleeper and dozer licences are traded, the purchasers activate their rights under the licences and proceed to abstract water. The rights cease to lie dormant, perversely leading to increased consumption — one of the very ends that trading was introduced to help avoid.

Arguably, this problem has largely been resolved by way of water planning and allocation announcements that adjust the amount of water available for consumption. Nevertheless, the case of sleeper and dozer licences demonstrates how water trading may contribute to unanticipated negative environmental outcomes, alerting us to the need for checks and balances that help manage such outcomes and any lag times associated with those outcomes.

Trading’s impact on regional communities and businesses

Although trading helped many irrigators survive the millennium drought by providing cash injections, irrigators in some regions perceived trading out-of-region as
impacting negatively on their regional/local communities because the associated reduced agricultural production contributed to a decline “in local economic activity and employment, and increased pressures on human services”.

Negative perceptions of the impact of trading on regional communities were particularly strong in the Murrumbidgee, where 74% of surveyed irrigators thought that entitlement trading was not beneficial to their region, while 52% in the NSW Murray thought likewise. In the horticultural regions of the SA Murray and the Victorian Murray, negative perceptions of the impact of entitlement trading on the region were also evident but, in all cases, trading was seen as benefiting irrigators’ individual businesses. This demonstrates the complexity of analysing the impacts of trading and the need to be cautious about drawing superficial or hasty conclusions.

It would also seem that while entitlement sales during the drought may have provided short-term solace to cash-strapped irrigators, in the long term those same irrigators have been left in the position of having to exit the industry; remain in the industry and save to buy back their entitlements; or effectively become “life-time water renters” (by purchasing the allocations attached to other holders’ entitlements). Had the state’s role in water management not been pared back so much by the trend towards marketisation, it is possible that a more social welfare oriented solution may have emerged to support those irrigators who assert that during the drought they were “unwilling”, as opposed to “willing”, sellers.

Although significant numbers of irrigators perceived negative impacts on regional communities, the National Water Commission concluded that the dominant factor driving those impacts was actually drought. However, it would seem difficult to separate the two. The real question would appear to be: How did responding to the drought by employing trading as a management tool impact on regional communities?

Tagging

Tagging is a method of trading that causes water sold into another jurisdiction to be tied or tagged to its state of origin, retaining the characteristics of that state and being bound by the original WSP. Any allocations that attach to tagged entitlements are also tagged.

Although there is a protocol covering tagging, tagging’s rate of use continues to be low — only one tagged transfer in 2008–9, nine in 2009–10, and two from New South Wales to Victoria, totalling 100 ML in 2010–11. Given that tagging is the agreed method of interstate trade in the southern MDB, its low uptake would seem to represent a weakness in the trading system — a weakness that could perhaps be addressed by developing better understandings of the process.

The nature and price of buybacks

Although environmental purchases (buybacks) are not the focus of this article, it is worth noting briefly that the type or nature of entitlements bought back is significant in assessing the effectiveness of trading as a tool of water management. Buybacks need to be based on realistic price setting and also need to provide desired environmental outcomes. If, for example, general security licences (or their equivalents) are purchased in times of water shortage, those entitlements may receive low or zero allocations and consequently the environment may not be well served by the buyback. Further, where buybacks are not based on realistic price setting, irrigators may refuse to sell, and the environmental benefits that were anticipated to flow from trading will not eventuate. There are several examples of this occurring.

WSPs and trading

As noted above, water planning and water trading are interlinked in Australian water law and management. Consequently, inadequacies associated with WSPs may impact on the operation and effectiveness of trading. In relation to WSPs, studies and submissions have highlighted weaknesses in water planning consultation weaknesses that have included the provision of limited or overly complex and/or inaccurate information by governmental bodies, adversely affecting stakeholders’ abilities to comment on water allocations and their impacts on specific people and areas; the loss of localism and the subsequent need to strengthen community ties; the “front-loading” of participatory decision-making groups set up to develop Minister’s Plans under the Water Management Act 2000; and the exclusion or limited participation of non-government actors.

The provision of inadequate information, particularly scientific information, in relation to the WSP consultation process does not inspire confidence in the parts of the water trading process that are similarly dependent on the provision (or maintenance) of accurate information. Where, for example, the Minister or other delegated official is dependent on the provision of information in order to make a decision (such as a decision relating to the potential environmental impacts of a particular trade), faith in the trading process as a whole may be jeopardised if such information is perceived to be unreliable.
Inadequate monitoring and compliance resources

Water trading can only work effectively if the volume of water for trade and abstraction is metered properly. This requires the installation and effective maintenance of up-to-date technology (ideally including smart “real-time” meters). Inadequate metering undermines the veracity of data collected on consumption volumes; contributes to the degradation of the environment by not recording additional, unlawful abstractions; and also encourages water theft, which distorts the market because, among other things, actors who might be expected to buy in water have no need to do so.

Where proper metering to facilitate the monitoring of compliance does exist, the issue of enforcing compliance remains a concern in some areas. Theoretically, enforcement is available by way of prosecution, but agencies need to be properly resourced to facilitate prosecution, and that is not always the case. For example, until recently, the NSW Office of Water had only 12 inspectors to enforce water allocations across New South Wales, where there are thousands of licence holders spread over 800,642 sq km of land. Poor resourcing, therefore, has the potential to impede the effectiveness of trading.

Finally, as in many other sectors, the sheer responsibilities of monitoring, auditing, reporting and accounting for water trading activities are becoming increasingly burdensome, but simultaneously remain essential if management in the sector continues to rely on a regulated market. Regulatory capitalism dictates that people need to receive relevant (and ever-expanding) information to operate, but, at the same time, the responsibility to collect and provide such information has arguably become oppressive.

Trading and environmental concerns

One of the fundamental tenets of trading is that water is moved from one location to another. However, not all water and ecosystems are the same, and there may be negative environmental impacts, such as increased salinity levels, associated with changes in river hydrology and water movement. While such potential impacts (which may vary across regions) have been acknowledged, there has been a tendency to downplay them by pointing out that trading may also yield positive impacts, and that it is difficult to tell if negative impacts are a result of traded water or ordinary water. The ACCC advises that environmental impacts should, therefore, not be addressed through approvals of water trades, but rather by reliance on water use approvals, broader planning processes, and any Basin Plan provisions designed to manage environmental impacts. Yet the ACCC approach is indirect, and it may rely on a capacity to adequately predict possible negative outcomes and build them into the planning processes.

Turning to some specific indicators of river health, such as river flow index scores, the Impacts of Water Trading Report concluded that, in most regions, results were largely positive, with the exception of the Campaspe system. The negative environmental outcomes in the Campaspe may, in future, it suggests, be reduced by choosing a different geographical route for the delivery of water. Where such choices exist, they should be considered (and considered before the transfer occurs). Presumably, the choice of delivery route will be felt in terms of price, with some routes being more expensive than others. Hence, for trading to operate effectively and achieve both efficiency and environmental outcomes, the needs of the environment must be appropriately prioritised and not marginalised.

Finally, as noted above, where statutory approvals and consents need, for example, to take account of potential negative outcomes, it will be crucial that there is confidence in the quality of the information on which the decision maker bases decisions. Misinformation, unreliable information or insufficient information could undermine confidence in the trading system and also lead to negative environmental outcomes.

Conclusion

In conclusion, although the common picture of water trading in much of the literature is a very positive one, some negative features also exist. It will be easier to address these shortcomings in a robust manner if they are put plainly on the table for all to see and interrogate. Doing so may even reopen the debate on the appropriateness of water markets more generally — it is a debate in which many market detractors emphasise, among other things, the great difficulty of ever effectively removing barriers to trade when dealing with such a fugacious resource that has long presented management problems.

Janice Gray
Faculty of Law
University of New South Wales

Footnotes


2. In New South Wales, 31 plans (including 14 within the Murray-Darling Basin) that commenced in 2004 are due to be replaced or extended in 2014; see Water Management Act 2000 (NSW), s 43A. Note that if the Basin Plan is commenced and
New South Wales agrees to implement it, water sharing plans in that state may need to be re-crafted as “water resource plans” by 2019 in compliance with the Water Act 2007 (Cth) and the Basin Plan.

Above, n 1, for example.


The key reforming state-based legislation that was introduced was the Water Management Act 2000 (NSW); the Water Act 2000 (Qld); the Natural Resources Management Act 2004 (SA); the Water Management Act 1999 (Tas); the Water Act 1989 (Vic); the Water Resources Act 2007 (ACT); the Water Act 1992 (NT); and some changes to the provisions of the Rights in Water and Irrigation Act 1914 (WA).


NWC, Water Markets in Australia, above, n 8, p 12.

NWC, Water Markets in Australia, above, n 8, p 12.


For further detail, see Gray, “The legal framework”, above, n 8, p 335.

For example, in New South Wales, see the Water Management Act 2000 (NSW), s 56.

See Water Management Act 2000 (NSW), Pt 2, Div 4, ss 71L–71Z; Water Act 1989 (Vic), Pt 4, Div 2, particularly s 62; Natural Resources Management Act 2004 (SA), Ch 7, Pt 3, particularly ss 150 and 151; Water Act 2000 (Qld), Div 4, Subdiv 1, particularly s 128B, and Div 6.

Water Act 2007 (Cth), s 22, particularly items 11 and 12.

Water Act 2007 (Cth), s 20(d).

Water Act 2007 (Cth), s 10 sets out the Water Trading and Water Market Rules. Compliance with the Rules will be necessary when the Basin Plan becomes operational.
37. For example, in the Lower Balonne, in 2011, there were undersubscribed tenders.


39. Holley and Sinclair, “Deliberative participation”, Above, n 38. Holley and Sinclair, “Deliberative participation”. By relying on Minister’s Plans rather than a more formal collaborative committee process, stakeholders felt that they had fewer opportunities for genuine engagement.

40. The NWC acknowledges that there is “no national, strategic and co-ordinated approach to planning and funding science to support water planning and management”: NWC, *The National Water Initiative — Securing Australia’s Water Future, 2011 Assessment*, p 15, available at http://nwc.gov.au (accessed 27 March 2013). The assessment renews its call for the implementation of a national science strategy that can “provide the knowledge necessary to support improved water policy, planning and management”. Note that the Holley and Sinclair study referred to in their article (see above, n 39) observed that the “complexity [of governmental reports] and an associated lack of sufficient assistance from government, effectively precluded many local irrigators from understanding and accordingly inputting into the decision-making process”. See also C Holley, D Sinclair, J Gray and G Cuadrado-Quesada, *Review of 2004 Water Sharing Plans: Submission to the NSW Office of Water and the Natural Resources Commission*, 8 February 2013.


42. Holley, Sinclair, Gray and Cuadrado-Quesada, above, n 40.


47. Water could be diverted from the Goulburn River at Nagambie, transferred along the Waranga Western Channel, and delivered to the Murray River via the lower Campaspe.

What’s in the Basin Plan?

Dr Anita Foerster THE UNIVERSITY OF MELBOURNE

After much anticipation and five years in the making, the Murray-Darling Basin Plan (Basin Plan) was adopted into law by the federal Parliament in late 2012. This was not without controversy, and the final few months of negotiations saw a number of changes made to the proposed plan, particularly surrounding the sustainable diversion limits (SDLs) for surface and groundwater, in an effort to broker a political compromise in support of the Basin Plan. To follow on from previous analysis of the statutory parameters for the planning process under the Water Act 2007 (Cth) (the Act)¹ and arguments that the proposed Basin Plan fails to meet these statutory requirements due to insufficient allocation of water to the environment,² this article reviews the final outcomes of the planning process, focusing particularly on the resulting SDL provisions.

Statutory parameters for SDLs

The statutory parameters of the Act governing the determination of the SDL in the Basin Plan have been outlined in detail in previous articles,³ and are summarised below:

• **Strong, substantive environmental requirements**: the SDL is a mandatory component of the Basin Plan⁴ and must reflect an “environmentally sustainable level of take”.⁵ This environmental standard is further defined as “the level at which water can be taken from a water resource, which if exceeded would compromise: (a) key environmental assets of the water resource; or (b) key ecosystem functions of the water resource; or (c) the productive base of the water resource; or (d) key environmental outcomes for the water resource” (emphasis added).⁶ The objects and purposes clauses of the Act display a strong commitment to return water resources in the Murray-Darling Basin (the Basin) to environmentally sustainable levels of allocation and to protect, restore and provide for the ecological values and ecosystem services of the Basin.⁷ While reference is made to maximising net economic returns and optimising economic, social and environmental outcomes, economic objectives are given less weight in the hierarchy of objectives than other provisions and, in some cases, are explicitly made subject to substantive environmental commitments.⁸

• **Discretion**: the Act does not specify a process for determining the SDL against this environmental standard and, apart from general guidelines and considerations (such as requiring the use of best available science and socioeconomic analysis, and requiring that the principles of ecologically sustainable development be taken into account),⁹ leaves these largely as substantive policy issues to be determined by the Murray-Darling Basin Authority (the Authority) in the preparation of the Basin Plan.

• **A ministerial veto**: although the Act established the Authority as an independent, expert, statutory authority to develop the Basin Plan, it also specifically provided for a process through which consultation with relevant Ministers and governmental officers in each state jurisdiction could take place, and ultimately gave the federal Water Minister a veto power over the adoption of the Basin Plan.¹⁰ Thus, while the statutory process was largely designed to support expert decision making, it was not fully insulated from political interference. The polarised and contentious political context surrounding the development of the Basin plan has been a significant influence on the way in which the Authority has exercised its statutory functions within the parameters of the Act.

What’s in the Basin Plan?

The final version of the Basin Plan, adopted by the federal Water Minister on 22 November 2012, contains SDLs for surface and groundwater resources throughout the Basin. These limits will come into force in 2019. The Basin Plan also provides a mechanism through which these limits can be adjusted up or down as a result of projects that produce water savings or, in the case of groundwater, where new knowledge reveals a need to adjust the SDL to achieve an environmentally sustainable level of take. Further, a special account to invest in water recovery measures that will achieve environmental outcomes beyond those delivered by the baseline SDLs within the Basin Plan has been established. It is
important to consider all three of these elements together, as both the adjustment mechanism and the special account have the potential to alter the magnitude of the SDLs and their implementation timeline.

**Surface water SDLs**

The SDL for surface water at the Basin scale is a long-term average of 10,873 GL/yr. Given existing levels of water allocation, this translates to a requirement to recover 2,750 GL/yr of water from the estimated baseline diversion limits (BDLs) or the environment from consumptive use. The final SDLs are at the lower end of the water recovery scenarios modelled by the Authority and will involve considerably less water recovery than the range of scientific recommendations put forward by the Authority in the early stages of the planning process. For example, the 2010 Guide to the Basin Plan recommended that between 3,000 and 7,600 GL/yr was required to deliver an environmentally sustainable level of take within the Basin.

The Authority justifies the selection of the SDL from the range of modelled SDL options as follows (emphasis added):

"Taking into account the evidence on benefits and costs, the diminishing capacity to achieve additional benefits as water is recovered above 2,800 GL/yr in the context of existing system constraints, and further analyses undertaken in the Condamine-Balonne region, the Authority considers that water recovery of 2,750 GL/yr on a long-term average will result in environmentally sustainable levels of take in the surface water resources, returning enough environmental water to the Basin to achieve most environmental objectives, while also ensuring that social and economic effects are best managed."

As Jonathan La Nauze and Emma Carmody contend in a recent issue of the **Australian Environment Review**, there are arguably significant flaws in the approach taken. First, the Plan does not provide enough water to meet the water requirements of key environmental assets and ecosystem functions that have been identified by the Authority as critical to achieving an environmentally sustainable level of take. As such, the SDL does not meet the statutory standard of the Act to ensure that these environmental values are not compromised. Second, the determination of SDLs by the Authority clearly seeks to minimise social and economic impacts, and also places considerable weight on factors that limit the use of environmental water to achieve environmental objectives. These include existing system constraints, such as restrictions on flooding private land, and dam outfall and delivery channel capacity constraints. While these factors are indeed relevant to the implementation of the SDL once it has been determined, the Act specifically requires an uncompromised assessment of what constitutes an environmentally sustainable level of take and does not reference economic and social impacts or implementation constraints as central considerations in this determination. As such, the determination of the SDL relies on irrelevant considerations, and for this reason may be found to be unlawful.

It is unclear at this stage whether there will be a chance to test these arguments via a challenge to the Basin Plan, and a thorough analysis of likely grounds for challenge and potential outcomes is beyond the scope of this article. A key issue would be the extent of discretion provided to the Authority in the determination of the SDL. There is a strong argument that this discretion is limited to determining what is a key environmental asset/outcome/function, and so on, and what level of water extraction would compromise this, rather than what constitutes an acceptable balancing of social, economic and environmental factors. Nonetheless, the fact that the Act gives the Authority some discretion in the determination of the SDL against the environmental standard may establish the SDL determination as a question of policy and, to a certain extent, of degree (ie, what is sustainable?). This may mean that the Authority's decisions are beyond the scope of judicial review.

**Groundwater SDLs**

The Basin Plan estimates that the existing level of groundwater extraction is 2,386 GL/yr, and sets an SDL of 3,334 GL/yr for the Basin as a whole, thereby significantly increasing potential groundwater extraction. The Authority argues that increased extraction is only permitted in aquifers where there are currently very low levels of groundwater development and where groundwater resources are not found to be highly connected to surface water resources.

Yet this approach has also been criticised on a number of ground. For example, Rebecca Nelson argues that the formulation of groundwater SDLs adopts a narrow view of the key environmental assets, ecosystem functions and environmental outcomes that were relevant to establishing an environmentally sustainable level of take for groundwater, despite the available scientific evidence. For example, the analysis of “key environmental assets” focused largely on ecosystems involving the surface expression of groundwater, such as, wetlands and rivers, and did not cover the full range of groundwater-dependent ecosystems, such as terrestrial vegetation and aquifer ecosystems. Similarly, deliberations around “key environmental outcomes” and “key ecosystem functions” focused narrowly on groundwater contributions to surface waters, and the impacts of saline groundwater discharges, rather than taking a broader view of relevant factors. Further, expressing SDLs as a volume of water that may be extracted over a large area.
fails to acknowledge that key environmental assets (such as groundwater-dependent ecosystems) can occur at very local scales and can be highly sensitive to the spatial pattern of groundwater extraction.\textsuperscript{23}

Another key critique is that the approach to surface-groundwater connectivity is insufficiently precautionary. Surface and groundwater resources are known to be highly connected in the Basin. For example, base flows in many rivers in the Basin are supplied by groundwater, and groundwater sustains many wetlands. This means that groundwater extraction can have a direct impact on surface water availability. The Authority adopted a threshold of connectivity, and set more conservative SDLs for groundwater resources that displayed a high level of connectivity as against this threshold. Yet this threshold has been criticised as arbitrary and insufficiently precautionary, resulting in many connected systems not being formally classified as connected and, as a result, subject to much higher levels of permitted extraction.\textsuperscript{24} There is considerable concern that the permitted levels of groundwater extraction will therefore undermine surface water SDLs.

Yet, while there appear to be strong scientific and policy arguments in favour of a more nuanced and precautionary approach to setting groundwater SDLs, in a similar way to the surface water issues noted above, mounting a legal argument may be difficult and there remain open questions around whether a court would be prepared to find the approval of the Basin Plan unlawful on this basis.

\textbf{SDL adjustment mechanism}

The SDL has been the central issue of contention during consultation on the Basin Plan. The end product of negotiations has been the inclusion of a mechanism that will allow the SDL to be adjusted up or down within a certain range. This mechanism provides an opportunity for a short-term review of the SDL to consider whether the same environmental outcomes can be achieved with less water, and whether more environmental outcomes can be achieved with a neutral socioeconomic impact. However, it does not allow consideration of whether more environmental water is required to achieve an environmentally sustainable level of take. The mechanism also introduces considerable uncertainty around the eventual magnitude of the SDL and, indeed, the timeframes for its implementation, as projects can be proposed under the mechanism but not fully realised until 2024.

The SDL adjustment mechanism is detailed in Ch 7 of the Basin Plan and is supported by accompanying amendments to the Water Act which facilitate the proposal of adjustments and the amendment of the plan to realise these adjustments.\textsuperscript{25}

For \textbf{surface water}, SDLs can be adjusted to reflect measures that increase the supply of water (supply measures) or the efficiency of water use (efficiency measures), within a certain range. The net effect of total supply and efficiency contributions must not increase or decrease the total basin SDL by more than 5%:\textsuperscript{26}

- \textbf{Supply measures} are any works, measures, river operations or rule changes that find ways to use less water to obtain the same environmental outcomes (for example, by reducing evaporation losses at storages, or using less conveyance water to deliver water). The additional water provided by supply measures will be made available for consumptive use, which means that the SDL will be increased and the environmental water recovery required will be reduced.\textsuperscript{27} However, the adjusted SDL must achieve equivalent environmental outcomes as compared with benchmark environmental outcomes associated with the SDLs in the Basin Plan (returning 2750 GL/yr to the environment by 2019).\textsuperscript{28} Schedule 6 to the Basin Plan provides a detailed method for determining whether equivalent outcomes are indeed achieved.

- \textbf{Efficiency measures} reduce the amount of water required for consumptive purposes (for example, via more efficient irrigation infrastructure). Water saved will be allocated to environmental use, thereby decreasing the SDL. The plan provides that efficiency measures must achieve neutral or improved socioeconomic outcomes compared with outcomes under benchmark conditions, and requires that this be evidenced by either the participation of consumptive water users in projects that recover water through works to improve irrigation water use efficiency on their farms, or alternative arrangements proposed by a Basin state.\textsuperscript{29} These parameters effectively limit efficiency projects to on-farm irrigation works (unless a state proposes alternatives). This is a particularly narrow approach to the concept of socioeconomic neutrality, which is contrary to the growing body of evidence that direct purchase of water from willing sellers is the most efficient and environmentally effective approach to water recovery in the Basin.

For \textbf{groundwater}, the adjustment mechanism allows SDLs to be adjusted to reflect new or improved information in relation to recharge rates, connectivity with surface water, usage patterns, or Basin state policy and planning settings.\textsuperscript{30} Given the knowledge gaps and uncertainty associated with groundwater SDLs discussed above, this provides an important opportunity to
revisit the SDLs prior to 2019, when they come into force. However, it also underscores the importance of adopting a precautionary approach in the first place.

**An additional 450 GL/yr for the environment?**

During the final ministerial consultation phase, and in response to pressure from environment groups and the South Australian government, the federal Water Minister committed to establishing a special account ($1.77 billion) to fund projects to recover an additional 450 GL/yr for the environment and to implement measures to ease or remove constraints on the efficient use of environmental water. Associated amendments to the Water Act were assented to in February 2013.

Although this measure will result in more water for the environment, there are a number of uncertainties associated with its implementation. The governing provisions in the Water Act and the Basin Plan are not clearly drafted and are very complex. Although the purposes for which the account may be used include payments for efficiency projects and purchasing water rights, projects to be funded under the account must be related to an adjustment of the SDL under the SDL adjustment mechanism outlined above. The apparent effect of this requirement is to preclude the direct funding of water buyback. Water rights may be purchased only in conjunction with improving irrigation water use efficiency on farms or an alternative arrangement proposed by a Basin state. Limiting the approach to water recovery in this way raises serious doubts about the achievability of the 450 GL/yr target with the money committed, especially because buyback from willing sellers is widely seen as the most efficient and effective approach to water recovery.

Further, while the benchmark SDLs established by the Basin Plan are enforceable, the commitment to return an additional 450 GL/yr is not. As adjustments are made to the SDL over time, including via projects funded by the special account, the resulting SDL in the Basin Plan will be enforceable. However, the statutory provisions governing the special account are essentially framed as a commitment of funding, not a statutory commitment to recover a certain amount of water to realise a different SDL.

**To challenge or to implement?**

The arguments raised above suggest that there are potentially significant legal flaws in the Basin Plan, resulting from the approach taken to the determination of the SDLs. While the SDL adjustment mechanism and the special account may well result in a lower SDL and more water for the environment, there remains considerable uncertainty over the implementation of both mechanisms, meaning that they do not really alter any conclusions that may be drawn about whether or not the SDLs meet the required statutory standard of an environmentally sustainable level of take. Yet, whether or not successful legal arguments can be made to challenge the approval of the Basin Plan remains a moot point.

If the Basin Plan remains unchallenged, attention and scrutiny must shift to the implementation of the new arrangements, including the accreditation of state water resource management plans; identifying and remedying constraints to the delivery of environmental water; and funding projects to achieve an additional 450 GL/yr for the environment. There is, arguably, scope to remediate some of the flaws inherent in the benchmark SDLs and achieve best possible environmental outcomes with an adaptive, sophisticated and coordinated approach to implementing the SDLs that we now have in place.

**Dr Anita Foerster**
Senior Fellow, Melbourne Law Masters
Melbourne Law School
The University of Melbourne

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**Footnotes**

3. Foerster, above, n 1.
5. Water Act 2007, s 23(1).
7. See, especially, s 3(d)(i) and (ii).
8. For example, the objective to maximise net economic returns from the use and management of Basin water resources (s 3(d)(iii)) is explicitly made subject to the clear environmental objectives in s 3(d)(i) and (ii).
9. Section 21(4) provides the general basis on which the Basin Plan is to be developed.
10. Water Act 2007, ss 41–4. Specifically, the Minister has the power to direct the Authority to make changes to a proposed Basin Plan before it is adopted into law.
11. BDLs for each water resource management unit are detailed in Sch 3 to the Basin Plan, and are generally based on an estimate of the average amount of water that was permitted to be extracted in a given year as at 30 June 2009.


14. Murray-Darling Basin Authority, Attachment G — a synthesis of analysis associated with the determination of an environmentally sustainable level of take for surface water and groundwater in the Basin Plan (provided to the federal Water Minister on 22 November with the final version of the Basin Plan).

15. Above, n 2. This analysis focuses on whether or not the SDL provides sufficient water to meet environmental water requirements in relation to Ramsar wetlands (10 of Australia’s 16 Ramsar-listed wetlands within the Basin were chosen by the Authority as indicator sites for determining an environmentally sustainable level of take).


18. For a fuller discussion of this line of argument, see Environmental Defender’s Office (Victoria), Legal Analysis of the Proposed Murray-Darling Basin Plan, March 2012.


22. R Nelson, “Submission to the House of Representative’s Standing Committee on Regional Australia’s Inquiry on ‘certain matters relating to the proposed Murray-Darling Basin Plan’: Groundwater SDLs”, Submission 22, received 15 June 2012.


24. Wentworth Group of Concerned Scientists, above, n 16, pp 13–16.

25. Water Act 2007, ss 23A and 23B.


27. Some jurisdictions anticipate that such measures may be able to provide the equivalent of 650 GL per year of water, reducing the quantity of water access rights the Commonwealth will need to acquire to “bridge the gap”. See the note on p 41 of the Basin Plan 2012 (Cth).


30. Basin Plan 2012 (Cth), cl 7.24. Proposals should be made as soon as practicable after June 2016, or any time after June 2019, and are subject to a similar 5% net limit on adjustment.


32. Above, n 31, s 86AD(2)(a).

33. Above, n 31, s 86AD(2)(b).

34. Above, n 31, s 86AD(4).

35. Above, n 1, provided to the Water Amendment (Water for the Environment Special Account) Act 2013 (Cth). The relevant criteria are provided in cl 7.17 of the Basin Plan 2012 (Cth).

Implementing a human right to water

Francine Rochford LA TROBE UNIVERSITY

The passage of the Water Act 2007 (Cth) and the final agreement to the Murray-Darling Basin Plan (Basin Plan)\(^1\) could be considered to be a shift towards compliance with an inchoate right to access water. The agreement contains provisions prioritising “critical human needs”, at least in planning for the allocation of water in the Basin, and could provide a model for similar water-related agreements in the rest of Australia. The withdrawal of key states from the funding agreement necessary to facilitate the Basin Plan,\(^2\) along with threats of litigation and uncertainty in the governance and implementation arrangements within states\(^3\) and between states and the Commonwealth,\(^4\) suggests that implementation of the Plan remains problematic, but it could be argued that the legislation and the Plan at least place the human right to water on the agenda.

Indeed, in the long negotiation for the return of water to the environment from over-allocated irrigator extractions,\(^5\) access to water sufficient to satisfy human needs has been relatively uncontroversial.

However, there is a problematic assumption that affordable water is available across the entirety of the Australian community. The Basin Plan addresses critical human needs “that can only reasonably be provided from Basin water resources”:\(^6\) It does not require water to be allocated to address human needs in a whole range of geographical and institutional circumstances, and thus operates only as an institutional constraint on allocation principles, rather than as an individual right. It fails even to clearly articulate that such a right exists.

A right to access food and water is acknowledged in international instruments.\(^7\) The International Covenant on Economic, Social and Cultural Rights provides that “the human right to water entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses”:\(^8\) Few countries have offered any constitutional protection to this right, and even for those few it remains merely an aspirational goal.

The role of the federal government in ensuring access to water through the Murray-Darling Basin Plan process could, in some lights, be considered an attempt to implement that right. However, infrastructure and planning processes and the management of water intrastate are the responsibilities of state parliaments. The obligation to provide water in each state is reposed in state authorities. Public sector reform in all states, consistent with productivity reform requirements and Council of Australian Governments agreements, has resulted in varying degrees of commercialisation of water services, the implementation of market-based reforms, and a user-pays framework. The obligation to prioritise “critical human needs” in the federal Act does nothing to diminish the central thrust of market-based reforms.

In combination, water and infrastructure reform is reducing the availability of water in some circumstances, because the cost of water provision on a user-pays basis can be prohibitively high, and because other re-allocation mechanisms are increasing the distance over which water must be delivered. In substance, the Basin Plan may actually diminish the amount of water available, because it prioritises the delivery of water through natural water carriers, which will increase losses.

“Critical human needs” and human rights

An assertion of non-compliance with a human right to water presupposes that such a right is readily defined. There is no consensus as to the boundaries of such a right or the parameters by reference to which compliance may be measured. International aspirational statements suggest that compliance would require the state to “provide its citizens with a supply of fresh water that is quantitatively and qualitatively sufficient for their health and sanitation needs”:\(^9\) but the right could also be interpreted to require intergenerational justice — that water be used sustainably. At the level of co-riparian states, such a right could require that water diversion by upstream states be regulated to ensure that sufficient water reaches downstream states. In the last two senses, the planning processes introduced in the Murray-Darling Basin Plan could be seen as contributing to justice on an intergenerational basis and on an interstate basis. Conversely, however, at least in implementation, the provision of water through the quasi-commercial governance structures now common in Australian public service provision reduces the states’ obligation to provide water to an individual. Another, and more contentious, interpretation of the human right to water could be that it includes the use of water to grow food. This requires an ongoing commitment to the provision of water for agriculture, at least if considered in an intra-national context.
context. Finally, the prioritisation of “critical human needs” does not create an individual “right” to water. It merely states one of the criteria on the basis of which the Basin Plan is to be prepared and with which state plans are to be consistent.

Background

The Water Act 2007 prioritises “critical human water needs”:

... the Basin Plan must be prepared having regard to the fact that the Commonwealth and the Basin States have agreed:

(a) that critical human water needs are the highest priority water use for communities who are dependent on Basin water resources; and
(b) in particular that, to give effect to this priority in the River Murray System, conveyance water will receive first priority from the water available in the system.

“Critical human water needs” are defined as:

... the needs for a minimum amount of water, that can only reasonably be provided from Basin water resources, required to meet:

(a) core human consumption requirements in urban and rural areas; and
(b) those non-human consumption requirements that a failure to meet would cause prohibitively high social, economic or national security costs.

The Murray-Darling Basin Authority assesses the amount of water required to meet critical human needs in the Basin to be 61 GL for New South Wales, 77 GL for Victoria, and 204 GL for South Australia. In addition, conveyance water is prioritised, and it amounts to 1596 GL for each 12-month period. Quality of water is also assessed under the Plan, and this is clearly based on requirements for potable water supplies.

The political emphasis on “critical human needs” in the federal Act, while ensuring the maintenance of a flow of water utilising “natural carriers” to Wellington in South Australia, does little to ensure dependable and affordable access to water by those further from natural waterways. Indeed, the emphasis on clawing back irrigators’ entitlements, and the simultaneous closure of irrigation infrastructure or replacement with expensive piped systems, will reduce the affordability of water to many rural residents, and this is a policy said to be compliant with the return of water to the environment. Piped and modernised systems are inherently more expensive, and as rising costs and a decreasing irrigator base dictate the closure of irrigation infrastructure, water will need to travel over longer distances to serve the human needs of non-irrigator residents. Irrigators remaining in the system have the opportunity to supplement their requirements by participating in a maturing market for water, but the increasing costs of the user-pays systems will encourage smaller irrigators to adapt by exiting irrigated agriculture. Nothing in the federal Act prevents this, and indeed these projects are funded by the federal government partly in return for state accession to the referral of powers to the Commonwealth.

The obligation, under the Basin Plan, to recover water from over-allocated systems will have an increasing effect as the impacts of projected climate change are felt. Individual diversions through bore water or pumping, where available, will be more heavily regulated in a capped system and will certainly be restricted where the water is to be utilised for productive purposes. While many non-township rural residents rely for their potable water supplies on water harvested from rooftops, the infrastructure required to secure a water supply in a highly variable climate, particularly at the outset, has a high cost. In suitable locations, bore water will supply or supplement domestic requirements, but quality, cost and security remain an issue with that option also. Impending climate change impacts have the potential to further marginalise remote residents, and the use of purely market mechanisms to address the risks of climate change, such as those utilised to force change in irrigation extraction, will impact adversely on those not participating in the market, but relying on the participation of others. This cannot be fully measured: “the long term and uncertain nature of [climate change] impacts are … important in equity debates because the social causes of vulnerability, the capacity to adapt which constrain individuals and social groups in their adaptation, are highly differentiated”.

The Australian population is increasingly urbanised, reflecting an international trend. Jenerette and Larsen note that:

In conjunction with increasing demands on water supplies, has been an increase in the concentration of human habitation. Currently, more than 50% of humans currently live in cities … and associated with the rapid increases in urbanization is the growth of urban water uses, combined industrial and domestic sectors … In 2003, 74% of the population of developed countries resided in urban areas and this percentage is expected to increase to 82% by 2030; in developing countries 42% of the population lived in urban areas with an expected increase to 57% by 2030.

They noted that, whereas Australia as a whole is not expected to be affected by water scarcity by 2015, some cities — in particular, Melbourne — may “find it difficult to ensure the sustainable supply of water to meet the growing urban demand”. The Victorian government has prioritised the securing of Melbourne’s water needs, with the dual strategies of a desalination plant and a pipeline to divert water from the Goulburn River irrigation system.
Conversely, the Basin itself has a low population density of 1.9 persons per square kilometre, compared with the national rate of 2.6. Most people in the Basin were classified as living within inner and outer regional areas (53% and 26% respectively), a classification that governs the range and type of services available. The rate of growth in the Basin, at 5% between 1996 and 2006, was markedly less than that of the rest of Australia at 12%, and the largest population growth occurred in major urban centres in the Basin.

Techniques of prioritisation of public service delivery will inevitably assign preference to densely populated areas, and infrastructure funding will ensure the security of water provision to those areas. The prioritisation by the Basin Plan of critical human needs makes no contribution to negativing this trend, and indeed the context in which the Plan, trading rules and optimisation processes operate renders it an entirely context-based concept.

Environmental justice

This is not a trivial point: the prioritisation of infrastructure provision to heavily populated areas has the potential to continue systemic disadvantage to vulnerable communities. “Water justice” has been conceptualised as a subset of environmental justice and has been applied in particular to rural Indigenous Australians, whose access to water has been acknowledged to be a human rights issue. Investment in water and sanitation infrastructure occurred after an initial Human Rights and Equal Opportunity Commission Report; however, the Commission isolated the “market driven environmental reforms in water resource management, with concomitant integration of sustainable development goals” as problematic in an Indigenous context. The Commission suggested that a rights-based approach “allows for recognition of respect for another culture rather than providing access to conventional market opportunities.”

It is necessary to widen the application of this insight to non-Indigenous communities in rural and remote Australia. The relationship between “poverty and geographic locational disadvantage is a very serious issue that we need to grapple with in the short term rather than over the long term” to alleviate the growing disparity in wealth between urban and rural communities. This does not necessarily mean that rural and remote residents should be connected to state-maintained potable water supplies. However, there should be a closer understanding of the implications of the removal of water infrastructure and water as a consequence of re-allocation of water in rural areas.

The capacity of the Water Act 2007 and the Basin Plan to contribute to a substantive concept of “water justice” through the prioritisation of “critical human needs” is very limited. It is circumscribed by the continuing market-driven constraints within which water policy in Australia has operated since the 1990s, and to which both state and federal governments subscribe. The federal Act itself cannot contain a substantive right that would interfere with state constitutional powers to conserve and use water, but the combined political and funding levers currently in force could enable the provision of such a right. If the Act and the Basin Plan were to implement a human right to water, it could be on the basis of compliance with the International Covenant on Economic, Social and Cultural Rights, in the same manner as s 21(1) of the Act requires the Basin Plan to give effect to international agreements, in part to activate the federal government’s external affairs power. This possibility does not, at this stage, appear to be on the federal government’s agenda.

Francine Rochford
Senior Lecturer
Faculty of Business, Economics and Law
La Trobe University

Footnotes
1. Final agreement to the Basin Plan occurred on 22 November 2012.
18. The pipeline has also been described as a maladaptive response to climate change: Barnett and O’Neill, above, n 17, p 212.
23. The Victorian White Paper on water, Securing Our Water Future Together, 2004, does not list the provision of water to rural households as one of its sustainable goals, and in relation to irrigation communities cites the outcome as “supporting a high value, low impact irrigation industry”. It does not commit to provision. Whereas the White Paper supports the Victorian Constitution in “continued public ownership of water authorities responsible for managing water resources and services”, this is not a commitment to public ownership of infrastructure.
27. McLean, above, n 24, p 33.
29. The Australian Bureau of Statistics notes that “[d]espite working such long hours, the average weekly disposable income of farmers in 2009–10 ($568) was considerably lower than that of people working in other occupations ($921)”: Australian Bureau of Statistics, Australian Social Trends, 12 December 2012, available at http://apo.org.au. This does not accurately reflect the wealth of farmers, who often have other assets. However, those vulnerable to closing water infrastructure are those reliant on irrigation infrastructure, rather than those farming themselves. The Australian Bureau of Statistics notes that “[w]hile most people in disadvantaged areas live in major urban centres, they tend to be over-represented in smaller towns and in geographically isolated communities”: Australian Bureau of Statistics, Australian Social Trends, 4 July 2000.
Problematic governance of groundwater use efficiency on the Gnangara system, Perth

Madeleine Hartley THE UNIVERSITY OF WESTERN AUSTRALIA

A drying climate, consequential reductions in groundwater recharge and availability, persistent over-allocation, and a burgeoning population are requiring the government of Western Australian to reconsider its framework for regulating groundwater use efficiency, particularly as it applies to Perth. Currently, an antiquated Rights in Water and Irrigation Act 1914 (WA) (RiWI Act), together with variable enforcement of water policy, provides the regulatory framework for water use efficiency (WUE) of the Gnangara groundwater system (GGS), which is Perth’s principal water supply. This article outlines the legal and policy framework supporting WUE measures for the GGS, asserting that problematic governance of WUE arises from a reluctance to effectuate compliance and enforcement with the present framework.

Background: the need for WUE

The GGS comprises a series of four aquifers that underlie Perth. In total, the system supplies over 60% of public drinking water to Perth, which has the fastest growing population of any Australian capital city. The uppermost, shallow and unconfined “Superficial” aquifer is sourced for self-supply and irrigation use, and supports an irrigation industry of over $646 million. Since the 1970s, Perth has experienced declines in average rainfall. The drying climate has caused a subsequent reduction in groundwater recharge. The 2010 wet season returned the lowest recorded rainfall, at 368.2 mm, which resulted in the lowest recorded recharge rates to the Superficial aquifer.

The Department of Water (DoW) is the administrative agency overseeing the implementation of water policy over the GGS. Since 1986, the DoW has established water level criteria, subject to ministerial conditions, to monitor the impacts that reduced water levels have on areas of environmental significance, such as wetlands. Technically, the DoW has a duty not to permit abstraction below these levels, and non-compliance with the conditions is an offence. Historically, however, there has been consistent non-compliance on these sites by the DoW, and limited enforcement action by both the CEO of the Department of Environment and Conservation (DEC) and the Minister for the Environment.

The latest triennial compliance report, released in 2013, demonstrates the impacts of a continually drying climate in Perth. After the 2010 drought, an additional three sites became non-compliant with water level criteria. Consequently, a total of 16 of the 30 monitored sites were non-compliant by 2011. This presents a problematic scenario, particularly given that the purpose of water level criteria is to safeguard against abstraction disturbing the ecological integrity of the environment.

In 2009, the Gnangara groundwater areas allocation plan recorded over-allocation in one-third of the management sub-areas on the Superficial aquifer. Five of the eight management areas in the Leederville aquifer, and three of the seven management areas in the Yarragadee North aquifer, were also over-allocated. The most recent figures suggest that five out of the eight management areas of the Superficial aquifer remain over-allocated.

Despite the evidence indicating critical water issues in Perth, no action has been taken against the DoW in relation to its persistent breaches of the ministerial conditions. The likely explanation for this is twofold. First, prosecution is reliant on the CEO of DEC or the Minister for the Environment determining that there has been non-compliance with the conditions. Second — and somewhat contrarily — the Minister heads both the DoW and the DEC, and so is unlikely to prosecute the proponent (DoW).

Against a backdrop of a drying climate and loss of environmentally significant sites, this situation is both perplexing and problematic. Given that there seem to be few legal ramifications that result from persistent breaches, other approaches need to be considered to ensure the future sustainability of the GGS. Ensuring that stakeholders use water efficiently is one such strategy. The DoW defines WUE as “increasing water supply efficiency and water demand efficiency to minimise the taking and use of water”. Through legislation and policy, it implements measures that seek to ensure WUE.

Rights in Water and Irrigation Act 1914 (WA)

Groundwater in WA is managed pursuant to the RiWI Act. WUE is an explicit object of the RiWI Act, which
prescribes that water be managed to promote its orderly, equitable and efficient use.\textsuperscript{20} The RiWI Act, however, does not define WUE.

Nevertheless, the Act provides a broad framework for regulating WUE. Provisions pertaining to licensing and trade create the skeletal elements of WUE. More substantive detail is added through licence conditions, such as metering, ensuring actual use, and water conservation and efficiency plans (WCEPs). The WUE measures can be outlined as follows:

- **Licensing:** Only landholders, or those with legal access to the land, can obtain licenses to abstract groundwater.\textsuperscript{21}
- **Trade:** Temporary and permanent groundwater transfers are permitted between eligible licence holders, subject to ministerial discretion.\textsuperscript{22}
- **Metering:** The Minister can require licensees to install meters to monitor groundwater abstraction against allocation.\textsuperscript{23}
- **Actual use:** The Minister retains discretion to amend,\textsuperscript{24} suspend or cancel licences that have been consistently underused.\textsuperscript{25}
- **WCEPs:** Ministerial discretion may require licensees to implement WCEPs as part of their licence conditions.

More broadly, licences may be refused in circumstances where the applicant may not be willing, or able, to comply with the terms, conditions and restrictions contained in the licence.\textsuperscript{26} Enforcement measures can be employed to penalise breaches of these conditions, through warning notices, fines and prosecution.\textsuperscript{27}

It is salient to note that WA does not have the strong history of legislative water reform witnessed in other Australian jurisdictions, particularly New South Wales.\textsuperscript{28} Rather, the 2009 WA Discussion Paper on water resources management options, which proposed reforms to radically improve the water law framework, remains pigeonholed.\textsuperscript{29} The consequent reform Bill is yet to be published, and there is no recent statement regarding the direction that the DoW is likely to pursue, some four years later.

**Policies engendering WUE**

Several policies, enabled by the above RiWI Act provisions, engender WUE on the GGS. These are the policies on WCEPs; water entitlement transactions for WA (trade policy); management of unused licensed water entitlements (anti-speculation measures); and metering the taking of water (metering policy). The principles pertaining to WUE measures that arise from these policies will now be discussed.

**WCEP policy**

The WCEP policy aims to integrate WUE measures with licensing requirements. Basic, intermediate or advanced WCEPs may be required according to the individual licence volume, as measured against the extent of allocation in an area.\textsuperscript{30} WCEPs will generally be a condition of licences for users who require an operating strategy.\textsuperscript{31}

Additionally, the policy requires WCEPs for all users with entitlements of <500 ML/yr located in high water use areas, where there is full or over-allocation of water resources.\textsuperscript{32} Areas that are under stress and have a documented need to improve WUE also require WCEPs.\textsuperscript{33} As the Superficial aquifer fits each of these categories,\textsuperscript{34} licensees permitted to draw from the Superficial aquifer should, pursuant to the policy, be subject to WCEP requirements.

**Trading “saved” water**

WUE is a concept central to WA’s trade policy.\textsuperscript{35} It is both an explicit inclusion, through encouraging “efficient and effective use of water”, and an inferred goal, by aiming to migrate water to “higher economic uses”.\textsuperscript{36}

Pursuant to the trade policy, “saved” water can be transferred between eligible users.\textsuperscript{37} Saved water is that portion of an entitlement that has not been used, but only where its conservation has resulted from WUE measures.\textsuperscript{38}

**Anti-speculation measures**

The DoW can recoup unused portions of water entitlements in the absence of extenuating circumstances that explain the unused entitlement.\textsuperscript{39} This management style is known colloquially as “use it or lose it”.

Two broad circumstances are stipulated in which licensees may risk forfeiting an unused portion of their water entitlement. These are, first, consistent under-use over a period of more than three consecutive years and, second, contravention of licence conditions.\textsuperscript{40} The over-allocation of the GGS could suggest that all licensees should be subject to stringent monitoring, in order to ensure full utilisation of entitlements.

**Metering**

The DoW has established thresholds for when metering is required.\textsuperscript{41} In 2010, thresholds were amended from requiring metering on licences abstracting $\geq 500$ ML/yr, to requiring metering on licences abstracting $\geq 50$ ML/yr.\textsuperscript{42} Due to a lack of funding, however, the thresholds have since been returned to pre-2010 levels.\textsuperscript{43}

Between 2005 and 2010, a metering project was commenced specific to the Superficial aquifer. The target was to install government-fitted meters on groundwater...
bores abstracting between 5 and 50 ML/yr. The project had the broad goal of increasing WUE by 20%, through obtaining accurate data of licence withdrawals.44

**System successes and operational deficiencies**

It is arguable that the DoW has established a comprehensive framework promoting WUE. While there are some successes in how the system manifests, operational deficiencies are witnessed in both the stakeholder interaction with the policies and through ministerial reluctance to enforce compliance with RiWI Act provisions.

In contrast to the policy requirements, many users in over-allocated areas on the Superficial aquifer have not implemented WCEPs.45 Of the 401 licensees requiring an operating strategy as part of the licence condition in 2011, only 38 licences (9%) had implemented WCEPs.46 A figure of 9% arguably compromises the DoW’s capacity to achieve WUE through this measure. Notably, however, local governments are largely compliant with this requirement, with 16 of the 17 local governments using the GGS having implemented WCEPs.47

Metering on the Superficial aquifer also remains largely inadequate. In 2011, only 38% of licences on the Superficial aquifer that exceeded 5 ML/yr had conditions requiring metering.48 The failure to meter all licences in priority areas contravenes the metering policy.49 Furthermore, just 17% of high-use licensees (greater than 50 ML/yr) were found to be meeting their metering requirements in 2012.50

The metering project on the Superficial aquifer uncovered extensive non-compliance with entitlement limits. The project revealed that, between 2005 and 2010, a total of 10,980 ML was extracted in excess of licence entitlements.51 However, the metering project simultaneously demonstrated the benefits of metering to WUE, as compliance rates increased throughout its duration. Numbers of stakeholders in breach of their entitlement by greater than 5% reduced from 38% in 2006–07, to 12% in 2009–10.52

The low level of enforcement action is disconcerting. During the 2008/09 year, only 35 formal warnings were issued for the 84 licensees breaching entitlement limits.53 This is despite the DoW foreshadowing that it would issue 116 warnings for that water year.54 In 2011, no warning letters were sent to the 78 licensees who were breaching their licence entitlements.55

Arguably, negligent enforcement of licence breaches has sparked political debate.56 and in 2012 the DoW publicised the prosecution of a licensee for water theft and meter tampering.57 Between 2010 and 2012, 15 infringement and 93 warning notices were issued, with fines totalling $7500.58 During this time, however, a total of 58,900 ML was over-extracted. Evidently, the total amount of fines issued is not a deterrent to over-use. In 2012, a revised enforcement and compliance policy was due for release and public consultation, but the policy remains undisclosed at the time of writing.59

Notably, inaction on underused licences is also prevalent. The latest figures, from 2010, revealed a cumulative total of 14,700 ML unused entitlements between 2008/09 and 2009/10.60 Despite these figures, only 2300 ML had been recouped.61

**Conclusion**

The situation on the GGS raises an important question about the government’s commitment to securing its groundwater resources. It is arguable that negligent governance has permitted a scenario where the legal and policy measures that otherwise engender WUE are inhibited by a practice of lenient application of the regulatory framework. Pertinent to this general assessment is the haphazard enforcement of DoW policies, which perhaps raises the question of whether the RiWI Act is outdated and in need of reform to strengthen implementation systems. Following the recent re-election of the incumbent government, however, the lack of political will that has resulted in the current, arguably incautious, situation seems unlikely to change.62

Nevertheless, the established policy framework in Western Australia presents a complementary and well-rounded strategy for addressing WUE measures. While the framework provided could come close to being considered best practice, the lack of policy implementation and enforcement precludes the conferral of such an accolade. Enforcement of these policies could bring WUE gains. In the absence of their stringent application, however, the issue may become one requiring legislative redress in order to drive an outcome ensuring WUE.63 The climate projections and continued decline in groundwater availability in the southwest corner of Western Australia suggest a pressing need to address these matters.

**Madeleine Hartley**

PhD Candidate

Law School

*The University of Western Australia*

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**Footnotes**

1. These aquifers are the Superficial aquifer, Mirrabooka aquifer, Leederville aquifer and Yarragadee North aquifer: Department of Water (WA), *Groundwater Areas Allocation Plan*, 2009 (Gnangara allocation plan), p 12.


5. Triennial compliance report, above, n 4, p 5.

6. Minister for Environment, “Statement to amend conditions applying to proposals — Gnangara Mound groundwater resources”, ministerial statement 819, 2009, (Statement No 819), and Triennial compliance report, above, n 4, App A and B.

7. Environmental Protection Act 1986 (WA), s 47.

8. Environmental Protection Act 1986 (WA), s 48. See also Environmental Protection Act 1986 (WA), s 47.

9. Environmental Protection Act 1986 (WA), s 47.


13. Gnangara allocation plan, above, n 1, p 42. The sub-areas, and the percentages over-allocated, were Beerumullah Plain South (4.3%), Guilderton South (4.8%), Whiteman Park (10%), City of Nedlands (1.7%), City of Perth (8.6%), Central Swan (59.8%), East Swan (23%), Neaves (71%), North Swan (49%), Radar (18%), Adams (24%), Carabooda (27%), Jandabup (2.8%), Lake Gnangara (6.7%), Mariginiup (19.4%), Nowergup (39%) and Pinjar (70%).

14. Gnangara allocation plan, above, n 1, p 43.


16. Specifically, the over-allocated management areas are Gnangara Groundwater Area (28%), Gwelup Groundwater Area (12%), Mirrabooka Groundwater Area (8%), Swan Groundwater Area (18%) and Wanneroo Groundwater Area (14%).

17. Statement No 819, above, n 4, p 5. However, the legal efficacy of ministerial conditions is questionable, given the past refusal of the WA Supreme Court to grant an injunction for breach of a ministerial condition (in broadly analogous circumstances) unless the Minister first concluded that there had been non-compliance: see Bridgetown-Greenbushes Friends of the Forest Inc v Executive Director of the Department of Conservation & Land Management (1997) 18 WAR 126 at 179–181; 94 LGERA 380; BC9702684 (Templeman J).


21. RiWI Act, s 5C.

22. RiWI Act, Sch 1 cl 30–32.

23. RiWI Act, Sch 1 cl 15 and 46.

24. RiWI Act, Sch 1 cl 24(2)(d).

25. RiWI Act, Sch 1 cl 25.

26. RiWI Act, Sch 1 cl 8.

27. Rights in Water and Irrigation Regulations 2000 (WA), Sch 2 rr 30–50. Also see Sch 3 Form 3.


31. Operational Policy No 1.02, above, n 19, pp 8–9. Operating strategies are generally reserved for users supplying water to general populations, and so are stipulations for the State Water Corporation and local councils.

32. Operational Policy No 1.02, above, n 19, p 9.

33. Operational Policy No 1.02, above, n 19, p 9.

34. See Gnangara allocation plan, Above, n 1, pp 37, 42–3; Triennial compliance report, Above, n 4.


39. Statewide Policy No 11, above, n 38, p 3.

40. Statewide Policy No 11, above, n 38, p 3.

41. Department of Water (WA), *Strategic Policy 5.03 — Metering the Taking of Water, 2009* (Strategic Policy 5.03), p 1.

42. Strategic Policy 5.03, above, n 41.


45. Pursuant to data compiled from the records on the Hansard of the Western Australian Legislative Council, the seven over-allocated management areas are Carnarvon Groundwater Area, Gnangara Groundwater Area, Gwelup Groundwater Area, Mirrabooka Groundwater Area, Swan Groundwater Area, Wanneroo Groundwater Area and Collie Groundwater Area. Of these, all except the Carnarvon and Collie Groundwater Areas are management areas forming part of the broader Gnangara Mound that is subject to the Gnangara groundwater areas allocation plan. See Western Australia, Parliamentary Debates, Legislative Council, 29 November 2011, 9950d–9951a (Hon Helen Morton).

46. Western Australia, Parliamentary Debates, Legislative Council, 20 September 2011, 7227b–7227b (Hon Helen Morton).

47. Triennial compliance report, above, n 4, p 25.

48. Western Australia, Parliamentary Debates, Legislative Council, 20 September 2011, 7230b–7231a (Hon Helen Morton).

49. Strategic Policy 5.03, above, n 41, pp 8–9.


51. Western Australia, Parliamentary Debates, Legislative Council, 15 September 2010, 6649a–6651a (Hon Helen Morton).

52. Western Australia, Parliamentary Debates, Legislative Council, 15 September 2010, 6649a–6651a (Hon Helen Morton).

53. Western Australia, Parliamentary Debates, Legislative Council, 15 September 2010, 6649a–6651a (Hon Helen Morton).

54. Western Australia, Parliamentary Debates, Legislative Council, 10 September 2009, 6756b–6758a (Hon Helen Morton).

55. Western Australia, Parliamentary Debates, Legislative Council, 28 June 2011, 5065b–5065b (Hon Helen Morton).


58. Robertson, above, n 43.


60. Western Australia, Parliamentary Debates, Legislative Council, 15 September 2010, 6649a–6651a (Hon Helen Morton).


62. This is despite optimism that water would play a critical role in the March 2013 WA state election: see, especially, R Morgan, “WA’s water woes: a thirsty election issue”, The Conversation, 4 March 2013, available at http://theconversation.edu.au; and Gear, above, n 56.

Coal seam gas and water resources: a case for Commonwealth oversight?

Emma Carmody and Kirsty Ruddock EDO NSW

The rapid expansion of the coal seam gas (CSG) industry across New South Wales has resulted in considerable community concern about impacts on groundwater, agricultural land and biodiversity during both the exploration and the production phases.

Several law reform initiatives have emerged at a national level in response to this concern, particularly in respect of water resources. These initiatives may be divided into two categories: Bills to amend the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act), and intergovernmental guideline proposals, principally a Draft National Harmonised Regulatory Framework for Coal Seam Gas (Draft CSG Framework). ¹

This article will focus on the former, in particular the recently tabled Environment Protection and Biodiversity Conservation Amendment Bill 2013 (Cth) (CSG Water Bill). If passed, this Bill will counter efforts by the Business Council of Australia to remove federal oversight of activities that will have a significant impact on matters of national environmental significance (NES).

Bills to add a new matter of NES to the EPBC Act

The CSG Water Bill, introduced by Minister Burke on 13 March 2013, proposes to add a new matter of NES to the EPBC Act (water trigger).² Specifically, the CSG Water Bill makes it an offence for a constitutional corporation, the Commonwealth, a Commonwealth agency or a person (mining proponent) to take an action involving CSG development or large coal mining development (projects) that has or will have, or is likely to have, a significant impact on a water resource (significant impact test).³ In keeping with the existing structure of the EPBC Act, the offence provisions do not apply if the mining proponent has been granted an approval under the Act.⁴

The application of the CSG Water Bill is circumscribed by a number of exemptions. First, the Bill does not apply to mining projects in general, or to all unconventional gas projects (such as shale gas exploration and production).⁵ Second, projects approved up to the day before the Bill’s commencement are exempt from the water trigger.⁶ More controversially, the Bill does not apply to any project that the Minister for Sustainability, Environment, Water, Population and Communities (the Minister) had decided was not a controlled action for the purposes of one of the eight pre-existing matters of NES (eight matters of NES) before the Bill commenced — that is, the water trigger will not apply to projects belonging in this category. This is the case even if the project is likely to have a significant impact on a water resource, and even if work on the project is not yet underway.⁷

Similarly, any project that has been declared a controlled action pursuant to one of the eight matters of NES, but has not been approved at the time of the Bill’s commencement, is exempt from the new trigger if two conditions are satisfied. First, the Minister must have informed the proponent of the decision they propose to make in relation to the project and, second, they must have obtained advice from the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (the Committee).⁸ Under the EPBC Act, the advice of the Committee is only sought where the Minister believes that a project is likely to have a significant impact on a water resource.⁹ Thus, the Bill proposes to exempt projects that have been referred to the Committee precisely because of their likely impacts on such resources. Indeed, the exemption will apply to unapproved projects that, in the opinion of the Committee, will have a significant impact on surface or groundwater. While the Committee may nonetheless recommend conditions to mitigate these impacts, the Minister is not bound to follow its advice.¹⁰

Furthermore, the CSG Water Bill does not propose to include specific criteria that the Minister “must not act inconsistently with” when determining a project that has been declared a controlled action for the purposes of the water trigger. This deviates from the present assessment process, whereby Pt 9 of the EPBC Act provides for controlled actions for six of the eight matters of NES to be assessed against the requirements of (inter alia) specific treaties. For example, when assessing a project that has been declared a controlled action because it is likely to have a significant impact on a threatened species, the Minister must “not act inconsistently with”
the Convention on Biological Diversity, the Apia Convention, the Convention on International Trade in Endangered Species of Wild Fauna and Flora, or any relevant recovery plan or threat abatement plan.

The terms “coal seam gas development” (CSG development) and “large coal mining development” are defined in the EPBC Act to include both an individual development that passes the “significant impact test” and a development that, when considered in concert with other “past, present or reasonably foreseeable developments”, would pass this test. The Bill will therefore enable the Minister to take into account cumulative impacts when assessing an individual project, although it is unclear whether “developments” relates to all forms of development, or simply CSG and large coal mining development.

The Bill also includes transitional provisions that provide the Minister with 60 days to determine whether a very narrow category of unapproved projects will be subject to the water trigger. This category comprises any project that, prior to the Bill’s commencement, was declared a controlled action pursuant to one of the eight matters of NES, and not exempted under any of the aforementioned provisions.

Finally, last-minute amendments to the Bill introduced by Independent MP Tony Windsor propose to prohibit any project declared a controlled action pursuant to the water trigger being the subject of a bilateral approval agreement under the EPBC Act.

These 11th-hour amendments are unsurprising insofar as the CSG Water Bill is arguably based on a Bill sponsored by Tony Windsor in 2011 (Mining Bill).

There are, however, several noteworthy points of difference between the CSG Water Bill and the Mining Bill. First, the Mining Bill is much broader in scope insofar as it applies to all forms of mining (including exploration) and all ancillary activities (such as processing, storage, disposal and construction of related infrastructure). Second, the Mining Bill frames the “significant impact” test in more specific terms, with the offence provisions applying to a mining operation “that has, will have or is likely to have a significant impact on the quality, structural integrity or hydraulic balance of a water resource.” Third, the Mining Bill only provides for two categories of mining operation to be exempted from the new provisions: “actions in a class of actions” that have been declared in a legislative instrument to be subject to an “accredited mining authorisation process” and mining operations that have already been approved under Pt 9 of the EPBC Act. Briefly, an “accredited mining authorisation process” is defined as an assessment process under state or territory legislation that the Minister is satisfied will adequately assess the impacts of an action on water resources, and which will not result in “unacceptable or unsustainable impacts” on the resource.

Accreditation of state assessment and approval processes under the EPBC Act is a contentious issue, with debate persisting as to whether these processes are robust enough to properly address matters of NES and comply with Australia’s international environmental law obligations.

It is therefore unsurprising that the “accredited mining authorisation process” constitutes the most significant difference between the Mining Bill and the Environment Protection Biodiversity Conservation Amendment (Protecting Australia’s Water Resources) Bill 2011 (Cth) (Protect Water Bill), introduced by Senator Larissa Waters of the Australian Greens. While the Protect Water Bill was not passed, Senator Waters tabled another Bill in late 2012 seeking to maintain federal approval powers under the EPBC Act. At the time of writing, the Environment Protection and Biodiversity Conservation Act Amendment (Retaining Federal Powers Approval) Bill 2012 (Cth) was being debated in the Senate.

Finally, Bob Katter MP recently introduced the Environment Protection and Biodiversity Conservation Amendment (Moratorium on Aquifer Drilling Connected with Coal Seam Gas Extraction) Bill 2013 (Cth) (the Moratorium Bill). The Moratorium Bill provides that any person who takes action in connection with CSG extraction that results in drilling through or into an aquifer within two years of the commencement of the section commits an offence. If passed, this Bill will effectively prevent all CSG operations for the next two years.

**Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development**

As previously indicated, recent changes to the EPBC Act provided for the creation of the Committee, the function of which is to provide the Minister with expert scientific advice on development proposals and bioregional assessments being considered under the EPBC Act that may have a significant impact on water resources. The Committee will also provide a range of expert scientific assistance on research about leading practice standards for CSG and mining.

Interestingly, while the Minister is only required to consider the Committee’s advice when assessing a CSG project, the first few projects approved since the amending Bill was passed indicate a willingness to follow the Committee’s recommendations. For example, the Minister’s approval for the AGL Gloucester Gas Project lists 10 conditions to protect water resources. These include a requirement to provide the Minister...
with details of the hydraulic fracturing agents or other reinjected fluids to be used during the operation, as well as a 2 megalitre-per-day limit on groundwater extraction.\(^{30}\)

The Minister’s decision to incorporate conditions based on the Committee’s advice was made despite a relatively indirect link to the relevant matters of NES — namely, the Green and Golden Bell Frog, the Giant Barred Frog and the Small-flower Grevillea.\(^ {31}\) It remains to be seen, first, whether companies will challenge such conditions and, second, whether a court would view the Minister’s powers under the EPBC Act as being broad enough to legitimately impose conditions of this nature.\(^ {32}\) However, the CSG Water Bill, if passed, would arguably strengthen the legislative basis for conditions seeking to regulate the impacts of CSG projects on water resources.

**CSG Water Bill: where to from here?**

Public concern over CSG and water will lead to more litigation, more protracted access disputes, and further protests against exploration. While the CSG Water Bill is certainly a step in the right direction, the number of exemptions permissible under the Bill will limit its application and therefore its ability to mitigate impacts on water resources. Reconsideration of these exemptions is vital if the Bill is to be supported by affected communities, while the addition of “water-trigger specific” assessment criteria in Pt 9 of the EPBC Act will improve the rigour of the actual assessment process.

As the current regulatory regime for major developments (including CSG activities) has been criticised for failing to adequately consider cumulative impacts,\(^ {33}\) the CSG Water Bill and relevant definitions in the EPBC Act should take into account the recent work of Dr John Williams, the former NSW Natural Resources Commissioner.\(^ {34}\) Specifically, Dr Williams has concluded that it is vital to assess “regional landscape capacity”, going on to note that “[c]urrent development approval processes should be updated to approve new developments only on the basis of landscape limits and the expected cumulative impacts of the existing and proposed developments”.\(^ {35}\) While the CSG Water Bill (and corresponding definitions of CSG development and large coal mining development in the EPBC Act) do provide some scope to consider cumulative impacts when determining if a project is a controlled activity for the purposes of the water trigger, the Bill and existing definitions do not characterise “significant impact” in terms of “landscape capacity”.\(^ {36}\)

The Bill does not exclude the possibility of bilateral assessment or approval agreements being entered into between a state and the Commonwealth in respect of CSG development that is likely to have a significant impact on a water resource. Nor does it propose to amend existing bilateral assessment agreements relating to controlled activities that are likely to have (or have already had) a significant impact on a water resource.\(^ {37}\) It is arguable that the Bill should explicitly provide for the latter to be varied in light of the new trigger.

**Conclusion**

CSG exploration titles and production leases span vast areas of New South Wales, including the Liverpool Plains, the Illawarra, Sydney, Gloucester, the Northern Rivers, the Pilliga and Moree. As the current assessment process in New South Wales confers broad discretion on the Minister to determine how impacts on water resources are managed,\(^ {38}\) national regulation and oversight under the EPBC Act is highly desirable. At present, the Commonwealth may only intervene under this Act if one of the eight matters of NES is likely to be significantly impacted by a project. A more direct means of Commonwealth oversight — that is, a specific “water trigger” — is therefore necessary to broaden the legislative basis of decisions (including conditions) designed to protect water resources. The CSG Water Bill constitutes but one possible formulation of this trigger,\(^ {39}\) although, as previously indicated, amendments are required to improve its efficacy. As the Bill was referred to a Senate Committee the day after it was introduced, there is still scope to broaden its application, thereby providing a greater degree of protection to Australia’s water resources.\(^ {40}\)

**Emma Carmody**

*Policy & Law Reform Solicitor*

**EDO NSW**

**Kirsty Ruddock**

*Principal Solicitor*

**EDO NSW**

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**Footnotes**


3. CSG Water Bill, s 2AE.

4. CSG Water Bill, s 24E(4). Approval provisions are outlined in Pt 9 of the EPBC Act.

6. CSG Water Bill, s 22(2)(a).
7. CSG Water Bill, ss 22(2)(b), 22(2)(c). Note that s 22(2)(c) erroneously refers to s 77 of the EPBC Act, rather than s 77A. See also s 22(2A), which relates to projects that were declared not to be controlled actions prior to the Bill’s commencement and about which the Minister of a state or territory had obtained the advice of the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (the Committee).
8. The requirement to inform proponents of the proposed decision is provided for under s 131AA(1) of the EPBC Act.
9. CSG Water Bill, s 22(d).
10. The requirement to obtain the advice of the Committee is provided for in ss 131AB and 136(2)(fa) of the EPBC Act. This will be discussed in more detail below.
11. This matter will be discussed in more detail below.
12. EPBC Act, s 139.
13. EPBC Act, s 528 (definitions).
14. We also note that this is consistent with the function of the Committee: EPBC Act, ss 505D and 528.
15. The confusion arises in part because “development” is not defined in the EPBC Act. This suggests that the term only refers to “CGS development” and “large coal mining development”.
17. Approval agreements are provided for pursuant to ss 29(1), 46(1) and 46(2)(2A) of the EPBC Act.
19. Mining Bill, s 24E.
20. Mining Bill, s 24D(1).
21. Mining Bill, s 43AB. This provision is comparable to s 24(5)–(7) of the CSG Water Bill.
22. Mining Bill, s 43C.
23. Bilateral agreements are provided for in Pt 4 of the EPBC Act.
26. Moratorium Bill, s 28B.
27. Environment Protection and Biodiversity Conservation Amendment (Independent Expert Scientific Committee on CSG and Large Coal Mining Development) Bill 2012 (Cth), now incorporated into the EPBC Act under ss 131AB and 136(2)(fa).
28. EPBC Act, s 505D outlines the Committee’s functions.
29. EPBC Act, s 136(2)(fa).
30. See conditions 20 and 22 of the approval by the Minister dated 11 March 2013 for Gloucester Coal Seam Methane Gas Project, Gloucester region, under the EPBC Act, ss 130 and 133.
31. Under the EPBC Act, the Green and Golden Bell Frog is listed as vulnerable and the Giant Barred Frog is listed as endangered, while the Small-flower Grevillea is listed as vulnerable.
33. For example, under Pt 4.1 (and the former Pt 3A) of the Environmental Planning and Assessment Act 1979 (NSW), CSG and other mining proposals are exempt from the usual concurrence requirements that help to mitigate impacts on various elements of the landscape, including native vegetation and Aboriginal cultural heritage.
36. EPBC Act, s 528 (definitions).
37. CSG Water Bill, s 24(5)–(7).
38. See Environmental Planning and Assessment Act 1979, Pt 4.1, Pt 5, former Pt 3A. Furthermore, in the recent judgement of Fullerton Cove Residents Action Group Inc v Dart Energy Ltd (No 2) [2013] NSWLEC 38; BC201301499, Pepper J held (at 148–9) that s 111 did not in the circumstances compel the determining authority to consider actual groundwater data. Rather, data regarding the surrounding geology and nearby wells was sufficient. The case concerned a pilot CSG exploration project which was assessed under Pt 5.
39. For example, the “water trigger” proposed in the Mining Bill and the Protect Water Bill was much broader, applying to all mining and ancillary activities.
Temporary Emissions Licences — improving environmental management or opening the floodgates to environmental harm?

Matthew Austin and Shana Engelhart KING & WOOD MALLESONS

Rain events in 2010–11 caused Queensland’s coal mines to hold enormous amounts of mine-affected water. This meant that 85% of coal mines had to restrict or completely stop production, resulting in an estimated loss to Queensland’s gross state product of $5.7 billion and $950 million for the 2011 and 2012 financial years respectively. Mines in Queensland have again been affected by heavy rainfall during the current 2012–13 wet season.

Amendments to the Environmental Protection Act 1994 (Qld), introduced by the Economic Development Bill 2012 (Qld) and assented to on 11 December 2012, have created a new Temporary Emissions Licence (TEL) regime to manage the release of water during flood-type events. In this article, we examine the operation of the TEL regime in Queensland.

A climate of extremes

Severe weather events have the potential to cause significant economic and environmental impacts. A legislative framework that provides for efficient action during floods and other emergency situations (such as bushfires) is necessary to mitigate adverse impacts to the extent possible. TELs were introduced in response to the Queensland flood events in 2010–11 to manage the controlled release of water from coal mines.

Legislative setting

In Queensland, Environmental Authorities (EAs) under the Environmental Protection Act 1994 (Qld) (EP Act) are the key mechanism for controlling water releases from coal mines. Generally, water cannot be released from a mine other than in accordance with the release criteria specified in the EA conditions (including flow levels for receiving waters, rate of release, and water quality/contaminant levels). It is an offence to breach a condition of an EA.

The process for changing a condition of an EA generally involves a lengthy environmental assessment. Accordingly, this process is not suitable to quickly allow the release of water in response to an emergency or an event/circumstance not contemplated at the time the EA conditions were imposed.

During the 2010–11 wet season, some EAs for coal mines in the Fitzroy basin contained conditions (the Fitzroy model conditions) that had been imposed following community concerns about downstream water quality affected by releases from the Ensham mine site flooded in 2008. These conditions were imposed at a time when there was no scientific monitoring data available to justify larger releases. In addition, following years of severe drought, water management systems operating at some mines had been designed to catch as much run-off as possible for operational purposes.

Restrictions on mine water releases in EA conditions, combined with a lack of flood preparedness and mine site infrastructure (such as levee banks and mine run-off controls), have meant that water could not be released from flooded mines without risking a breach of the mine’s EA.

The legislative mechanism favoured by the Queensland government to allow water releases in 2010–11 was the use of Transitional Environmental Programs (TEPs) under the EP Act. TEPs, once granted, override the conditions of the EA for the length of the program. Although the process for granting a TEP is more expedient than the process for amending an EA condition, assessment timeframes and criteria for the approval of a TEP were still an issue.

Following the 2010–11 floods, the Queensland Floods Commission of Inquiry (QFCoi) found that a quicker approvals regime would be required to respond to a significant rainfall forecast. The QFCoi recommended that the government investigate amending the EP Act to allow for the relaxation of EA conditions to enable the release of water in advance of rainfall or flooding.

A new regime for granting TELs is now in force under the EP Act.

Potential impact of water releases from mines

Where not managed carefully, water releases from mines can pose a threat to freshwater environments due to high levels of salinity and/or metals. For example, water monitoring following water releases from the flooded Ensham mine in 2008 revealed high levels of...
salinity in downstream drinking water supplies. Also, after the 2010–11 floods, water quality testing at Cave Creek, located in close proximity to the abandoned Mount Oxide mine site, revealed high levels of contamination. The presence of metals at Cave Creek exceeded the acceptable levels for the protection of ecosystems and human and livestock drinking water.

The marine environment may also be impacted by different salinity levels and high sediment loads. After the 2010–11 floods, higher mortality rates than in previous years were recorded for dugongs, turtles and dolphins, while coral bleaching and seagrass damage were also noted. However, the QFCoi reported that the Queensland government was not able to come to a definitive conclusion as to the causes of the damage to the marine environment observed after the floods or the relative contribution of releases from mines.

**Temporary Emissions Licences**

Following the recommendations contained in the QFCoi report, TELs were introduced to authorise the release of contaminants otherwise prohibited by an EA granted under the EP Act or a development approval issued under the Sustainable Planning Act 2009 (Qld).

TELs apply in relation to an "applicable event", defined in the EP Act as an event or a series of events that is either natural (such as flood or bushfire) or caused by sabotage, and was not foreseen when conditions were imposed in the EA or development approval.

A TEL application is assessed against criteria less strict than for an application seeking approval of a TEP. TEL applications must be decided within a 24-hour timeframe. This streamlined process makes TELs a more responsive tool than TEPs or EA amendments for authorising water releases from mines in anticipation of, or following, flood events.

TELs may be amended, suspended or cancelled without consultation with the TEL holder if the government receives information that the impacts of the release will be greater than envisaged when the TEL was granted, or where other TEL applications are made that would, if granted, affect the same environmental values.

The issue of a TEL can also be used as a basis to review a condition of an EA should the granting of the TELs be evidence of the need to modify or update conditions of the EA. For example, the government may amend a water release condition to ensure that the EA is able to deal with water levels experienced in a previous wet season and for which a TEL was required.

**Can impacts be assessed and environmental harm avoided in 24 hours?**

The Economic Development Bill 2012 (Bill) (which included the TEL amendments to the EP Act) was introduced to the Queensland Parliament on 1 November 2012 and passed 27 days later.

The mining sector had previously been consulted on the TELs and was generally supportive of the EP Act amendments. TELs, however, were a contentious topic, with public submissions from conservation and other groups (including the agricultural sector) criticising the TEL concept.

In particular, the 24-hour timeframe for deciding a TEL application was a hot topic, with certain groups arguing that it was insufficient and potentially conducive to causing environmental harm or harm to downstream businesses. The potential cumulative impact of multiple TELs granted for releases into the same water catchment and the use of TELs to release legacy water (understood as contaminated water from previous floods still held in mine pits) were also raised as key concerns.

In response to these concerns, it was emphasised during parliamentary debate that the ability to take immediate action to amend or cancel a TEL, including where downstream water quality was adversely affected by the release, remained available. The government also affirmed that the legislation was not introduced retrospectively, and that there was no intention to use the new TELs to allow mines to release legacy water from previous floods.

**Use of TELs in 2013**

As at 25 February 2013, more than 20 TELs had been issued since December 2012. Most TELs were issued to allow water releases from mines in preparation for the current 2012–13 wet season.

A sample of TELs reviewed for this article indicates that they remain in force for a short period of time (such as from two weeks to three months). While in force, the TEL overrides particular conditions of the EA and may allow water releases otherwise prohibited by the EA conditions. As revealed by the sample of TELs reviewed, a TEL may be used, for example, to allow:

- water releases from mines at certain flow levels where the quality of the water released will not impact the receiving environment — this could be used to ensure that mine sites are not at full capacity when significant rainfall is predicted;
- the release of water with higher levels of salinity or other contaminants where the receiving environment is capable of sufficiently diluting these contaminants — this could be used to release water from recent flood events, thus preventing future mine affected legacy water arising, and
- the release of water from, or to, a different location (ie, changing water release points) — this could be useful to deter potential adverse impacts of multiple mine water releases into the same receiving environment.
The sample of TELs reviewed revealed that conditions imposed on TELs require strict monitoring, sampling and reporting of mine water releases.

Considering the number of TELs issued to date, we anticipate that future EA amendments will follow to allow for specific release triggers to be imposed. It is also expected that monitoring data gathered after flood events will inform the development, or amendment, of model EA conditions.

Recent releases authorised by TELs (or other approved methods) may have assisted in offsetting the impacts of excessive rainfall recorded at mine sites in central Queensland. However, the performance of TELs is likely to be closely scrutinised to ensure that the correct balance between mine operations and environmental objectives is achieved.

**Matthew Austin**  
Partner  
King & Wood Mallesons

**Shana Engelhart**  
Solicitor  
King & Wood Mallesons

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**Footnotes**

2. This article examines TELs in the context of mine releases associated with flood events. However, TELs may also be used in response to other emergencies — including, for example, during bushfires or to allow a quarry to operate outside the permitted hours to provide material for emergency recovery works.
7. The QFCOI was established on 17 January 2011 by the then Queensland Premier, Anna Bligh, to examine the 2010–11 flood disaster, which affected 70% of the state. The Hon Justice Catherine Holmes was appointed commissioner, and Jim O’Sullivan AC and Phillip Cummins were appointed deputy commissioners. The Commission sought public submissions from across Queensland and held three rounds of public hearings and community meetings in affected areas. The Commission delivered its final report on 16 March 2012.
8. QFCOI, Final Report, p 363. Issues with the use of TEPs were also acknowledged in the explanatory memorandum to the Economic Development Bill 2012 (Qld), p 111.
13. Statement of Peter McGinnity (Great Barrier Reef Marine Park Authority) to the QFCOI, 24 November 2011, p 11.
14. Playford, above, n 12, p 3; McGinnity, above n 13, p 3.
15. QFCOI, Final Report, p 357.
16. EP Act, s 357A.
17. EP Act, s 357D (for TELs) and s 338 (for TEPs).
18. EP Act, s 357C.
19. EP Act, s 357J.
20. EP Act, s 312E.
24. Our review of sample TELs revealed that a TEL has been issued for changing EA conditions about the water flow criteria for a receiving environment.
25. Our review of sample TELs revealed that a TEL has been issued to release water from a recent flood event where the water has a higher electrical conductivity levels (which measures salinity) than authorised by the EA.
26. Our review of sample TELs revealed that a TEL has been issued to allow the release of water from a release point different than the release point authorised in the EA.
Australia’s environmental water holders: who is managing our environmental water?

Erin O’Donnell UNIVERSITY OF MELBOURNE

Environmental water holders have proliferated throughout eastern Australia, particularly within the Murray-Darling Basin. But who are they, and what are their responsibilities when it comes to managing environmental water?

Environmental water holders perform a public service in managing environmental water to achieve improvements in the health of aquatic ecosystems, such as rivers, lakes, wetlands and estuaries. There is a wide variety of environmental water holders operating in Australia, and the constraints and opportunities that affect one may not apply to another. Understanding the nature of each organisation is essential in order to understand its capacities and how it can be held accountable for its actions in managing environmental water.

This article provides a definition of environmental water holders (EWHs) and an overview of their roles and responsibilities. EWHs have emerged in response to Australia’s major water reforms, so the article provides a short summary of these reforms. Next, each of the EWHs currently operating in Australia is identified and discussed briefly. Finally, the article provides a means to classify each of these organisations, based on their organisational type, objectives and legal powers, all of which are essential to the operations of the EWHs and are often different in each case.

Definitions: environmental water and environmental water holders

At the most basic level, there are two types of water use: consumptive use, in which water is used in some fashion (usually, but not always, by extracting it from a river) by private users; and environmental use, where the water remains in rivers, lakes, wetlands and estuaries to maintain the health of the aquatic environment. This article focuses on environmental water, which was defined by the National Water Commission as “the water regime provided to achieve environmental objectives”, including maintaining ecosystem function, biodiversity, water quality and river health targets.

In Australian water law, environmental water is defined at three levels within the water resource management framework:

1. by legislation, as water set aside for environmental purposes through a range of mechanisms, but with no mention of the volumes or locations of this water;
2. by specific rules for river operators or obligations on consumptive water users, often referred to as “planned environmental water”; and
3. by individual water entitlements, including those that have been traditionally held by individual consumptive users, as well as those specifically created for environmental use.

It is this third type of environmental water that is held by EWHs. These water entitlements can be used, traded and carried over for use in future years.

In this article, I define EWHs as those organisations or entities responsible for holding environmental water entitlements. In state registers listing all water entitlements, EWHs are listed as the “owners” of environmental water entitlements. Notably, this distinguishes EWHs from the other organisations that play a role in environmental water management.

The role of environmental water holders in the process of environmental water management

Environmental water management is a complex process, with multiple, interacting steps completed by a variety of organisations acting in partnership. In addition to the EWHs, this includes organisations responsible for long-term planning and management of catchments and natural resource management areas; water delivery and river operations; and monitoring and reporting on the outcomes of environmental water management.

Figure 1 provides an overview of the tasks of managing environmental water, and the generic organisations responsible for each task. Versions of this diagram exist for each jurisdiction and, in constructing the diagram, I have drawn on many of these resources. The diagram focuses on the role of the EWHs and, in particular, their decision on where and how to use environmental water each year (shaded in grey). However, this decision is not taken in isolation, and usually involves an additional round of engagement and feedback between EWHs that operate within spatially overlapping jurisdictions.
Figure 1 highlights the critical elements of the EWHs. They hold the water entitlements and are responsible for deciding how and where water will be used. In all cases, this includes some capacity to trade the water, or carry it over for use in future years. Although they receive input from many other organisations, EWHs are the key decision makers in managing held environmental water.

Figure 1: Roles and responsibilities in environmental water management

The emergence of environmental water holders

EWHs are a context-specific legal response to the challenge of managing increasing volumes of environmental water in the context of active water markets. Understanding why they have been created requires a brief review of environmental water recovery and the new challenges posed by the large volumes of environmental water.

Water use in the Murray-Darling Basin has been capped since 1997, and basin-wide environmental water recovery began with the Living Murray First Step in 2002, which recovered 500 GL for six icon sites. In 2004, this was followed by an intergovernmental agreement (the National Water Initiative), which committed to legal recognition of environmental water and additional investment in water recovery. In 2007, the Commonwealth government passed its own water legislation, the Water Act 2007 (Cth), which committed to developing the Murray-Darling Basin Plan and setting a new limit on the volume of water available for consumptive use (the sustainable diversion limit).

The Murray-Darling Basin Plan was adopted by the Commonwealth government in November 2012, and, for surface waters, commits to providing 2750 GL of water for the environment by 2019, along with a further 450 GL by 2024. This is an unprecedented volume of environmental water, and is further enhanced by additional recovered environmental water outside the Murray-Darling Basin. The Murray-Darling Basin Plan marks the beginning of the end of a period of massive...
investment in water recovery for the environment. The largest investor has been the Commonwealth government, with $5.8 billion put towards water efficiency projects and $3.1 billion to purchasing water rights for the environment.20 However, state governments and non-government organisations have also invested substantially.21

As the water recovery process nears completion, the focus of environmental water provision shifts from recovery to management.22 The volumes of environmental water available are large and represent a substantial public investment. They must be managed effectively to maximise potential environmental outcomes.

In addition, as environmental water recovery has progressed, water markets within the Murray-Darling Basin have increased in activity.23 Water markets create opportunities for all holders of water rights, as they provide an additional option: when the income from using the water is insufficient, it may be possible to sell the water for a profit on the water market.24

In response to the need for the effective management of increasing volumes of environmental water, and the additional required capacity to operate within a water market, governments at the federal and state levels have created new organisations with responsibility for holding and managing environmental water: the government EWHs. Over the same period, non-government organisations (NGOs) have also emerged with the intent of providing an alternative source of, and management arrangements for, environmental water.

**The Australian environmental water holders**

Australia has a range of both government and non-government EWHs (see table 1). Government EWHs operate at the federal, basin and state levels. At the federal level is the Commonwealth Environmental Water Holder (CEWH), an independent statutory entity established in 2007 with responsibility for managing the environmental water holdings of the Commonwealth government.25 This includes using the water in accordance with the Murray-Darling Basin Plan requirements, as well as the capacity to trade or carryover water.26 The CEWH is a function performed by an employee of the Australian public service, and the necessary staff to support that person (now known as the Commonwealth Environmental Water Office). The CEWH is responsible to the Commonwealth Minister for Water, who retains the capacity to issue directions on how water is to be used within a given year.28

At the level of the Murray-Darling Basin, the Murray-Darling Basin Authority (MDBA) is responsible for managing the portfolio of water entitlements obtained through the Living Murray program.29 The MDBA is a statutory corporation underpinned by both Commonwealth legislation and intergovernmental agreement.30 Annual environmental watering plans are prepared by the Environmental Watering Group, which comprises the state governments and the MDBA.31

At the state level, the Victorian Environmental Water Holder (VEWH),32 the New South Wales RiverBank/Off ice of Environment and Heritage33 and the South Australian Department of Environment, Water and Natural Resources34 all have the capacity to use, trade and carryover environmental water, although these capacities are limited in each state in different ways.35 Although other state government departments assist in the management of planned environmental water, they are not responsible for the management of held environmental water, so have been excluded from this discussion.36 The EWHs in New South Wales and South Australia are both directly responsible to the relevant Minister, and to the public via the parliamentary system. The VEWH, on the other hand, is a statutory corporation with three commissioners and a small number of staff.37 While the VEWH must report to the Victorian Environment Minister, the Minister is prohibited from issuing directions on how the VEWH will use its water in any given year,38 thus insulating the VEWH from the politics of the government of the day (at least to some extent).

Most of the non-government EWHs have arisen following the severe drought in south-eastern Australia from 2006 to 2010 (although some have links to older organisations).39 These organisations can be classified into two main organisational types. First, there are the not-for-profit corporations, such as Healthy Rivers Australia40 and the Murray-Darling Wetlands Working Group Ltd.41 Both have been incorporated and operate under the Corporations Act 2001 (Cth), including compliance with financial and reporting requirements under that legislation. Second, there are water trusts or water banks that are established and operated by a parent organisation, such as the Environmental Water Trust of the NSW Conservation Council,42 the Water for Nature of Nature Foundation SA,43 and the Murray-Darling Foundation (an initiative of the Murray-Darling Association), which has been operating a water bank for environmental purposes since 2007.44
In general, the non-government organisations have relatively small environmental water holdings. They rely on philanthropic donations (of both money and water), and most receive support from government, either financially or as part of the environmental watering process. The activities of these agencies are limited by their own objectives and their capacities under the water resource management statutes of the jurisdictions in which they operate, which can lead to very different outcomes. For example, in Victoria, non-government organisations may purchase water entitlements, but environmental entitlements can only be allocated to the VEWH. In New South Wales, on the other hand, the Murray Wetlands Working Group (the predecessor of the Murray Darling Wetlands Working Group Ltd) was given responsibility for managing two adaptive environmental water licences.

<table>
<thead>
<tr>
<th>Environmental water management type</th>
<th>Organisation type</th>
<th>Objectives</th>
<th>Water holding and management capacities</th>
<th>Accountability arrangements: who does this organisation report to?</th>
<th>Australian example(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ownership</td>
<td>Statutory corpora...</td>
<td>Establishing legislation</td>
<td>Establishing legislation and water statutes in its jurisdiction(s) of operations</td>
<td>To relevant Minister(s) and the public through corporate plans and annual reports</td>
<td>Victorian Environmental Water Holder; Murray Darling Basin Authority</td>
</tr>
<tr>
<td></td>
<td>Statutory entity</td>
<td>Establishing legislation</td>
<td>Establishing legislation and other water statutes in its jurisdiction(s) of operations</td>
<td>To relevant Minister(s) and the public through business plans and annual reports</td>
<td>Commonwealth Environmental Water Holder</td>
</tr>
<tr>
<td></td>
<td>Function with gov...</td>
<td>Policy documents, ministerial statements</td>
<td>Water statutes and regulations in its jurisdiction(s) of operations</td>
<td>To relevant Ministers through annual plans and reports; parliamentary reports</td>
<td>New South Wales RiverBank and Office of Environment and Heritage; South Australian Department of Environment, Water and Natural Resources</td>
</tr>
<tr>
<td>Non-government</td>
<td>Not-for-profit corporation</td>
<td>Incorporation documents, mission statement, corporate plan</td>
<td>Water statutes in its jurisdiction(s) of operations</td>
<td>To donors through corporate plans and annual reports and to the public via websites</td>
<td>Healthy Rivers Australia; Murray Darling Wetlands Working Group Ltd</td>
</tr>
<tr>
<td></td>
<td>Water trust/water bank for environmental purposes</td>
<td>Constitution, mission statement</td>
<td>Water statutes in its jurisdiction(s) of operations</td>
<td>To donors and to the establishing organisation through annual reports, and to the public via websites</td>
<td>Environmental water trust of NSW Conservation Council; Murray Darling Foundation; Water for Nature of Nature Foundation SA</td>
</tr>
</tbody>
</table>

In conclusion, environmental water provides a public service, by maintaining healthy aquatic ecosystems for all Australians to enjoy and use. But Australia’s environmental water is being managed by a plethora of very different EWHs. These EWHs include government and non-government organisations, with varying levels of accountability to the public. Each EWH is limited by its objectives, its organisational type (which can impose limitations such as Ministerial control), and the requirements of the water statutes of the jurisdictions in which they operate.
it operates. Understanding the responsibilities of any particular EWH requires a thorough knowledge of all three.

Erin O’Donnell
PhD candidate, Melbourne Law School
University of Melbourne

Footnotes


3. For example, see the Water Act 1989 (Vic), ss 4A, 4B; Water Management Act 2000 (NSW), s 8; Water Act 2007 (Cth), ss 4, 6.


5. See the list of entitlements in the Water Act 2007 (Cth), s 4, definition of held environmental water.

6. For example, environmental entitlements in Victoria, see the Water Act 1989, ss 48A–48PA.

7. For example, Water Act 1989 (Vic), s 3 (definition of Victorian Environmental Water Holdings); Water Act 2007 (Cth), s 108.

8. These registers exist in all states where water rights have been separated from land: see, for example, Department of Sustainability and Environment, Victorian Water Register, available at http://waterregister.vic.gov.au (accessed 11 March 2013).

9. The concept of ‘ownership’ is problematic when it comes to statutory water rights in Australian jurisdictions. In this article, ownership is taken to mean the holder as specified in the relevant water register. For more discussion on property in water rights, see D E Fisher, “Water law, the High Court and techniques of judicial reasoning” (2010) 27 Environmental and Planning Law Journal 85.


14. Murray-Darling Basin Authority, The Living Murray Story: One of Australia’s Largest River Restoration Projects, 2011, pp 6–11. A range of state water recovery projects had been underway for some time, but the Living Murray was the first on the basin scale.


19. Murray–Darling Basin Authority, above, n 17: see ss 6.04, 7.09. There are separate sustainable diversion limits for groundwater.


32. The VEWH was established in 2010: Water Act 1989 (Vic), ss 33DA, 33DB.

33. New South Wales’s RiverBank was established in 2006: see NSW Government, above, n 21.

34. South Australian Government, above, n 11.

35. For example, in Victoria, any sale of an environmental entitlement (unlike the sale of water allocation available under such an entitlement) requires approval from the Minister for Water and the Minister for Environment prior to the sale: Water Act 1989 (Vic), s 48OB.


37. Water Act 1989 (Vic), ss 33DF, 33DM.

38. Water Act 1989 (Vic), s 33DS.

39. For example, the Murray Darling Wetlands Working Group Ltd had its origins in the NSW Murray Wetlands Working Group, which was formed in 1992; the corporation has only existed since 2009: see Murray-Darling Wetlands Working Group Ltd, “About us: History”, available at www.murraydarlingwetlands.com.au (accessed 11 March 2013).


41. Murray-Darling Wetlands Working Group, above, n 39.


45. Siebentritt, above, n 21.

46. Water Act 1989 (Vic), s 48B.

47. Murray-Darling Wetlands Working Group Ltd, above, n 39. It is unclear whether this scenario would occur with the new corporate not-for-profit form of the organisation.
Beneficial use of CSG water in Queensland

Andrew Bruton and Franklin Morean HWL EBSWORTH LAWYERS

Background
During the production process of coal seam gas (CSG), water (CSG Water) needs to be extracted to reduce pressure and allow CSG to flow to the surface. CSG Water is a by-product of CSG production and contains significant concentrations of salts compared with good-quality drinking water. As a by-product from an industrial activity, CSG Water is characterised as “regulated waste” under the Environmental Protection Act 1994 (Qld) (EP Act) and the Environmental Protection Regulation 2008 (Qld) (EPR).

Introduction
The significant increase of CSG production in Queensland has consequently brought a corresponding increase in the level of production of CSG Water. This has necessitated the development by the government of a policy for the beneficial use that meets the expectations of the relevant stakeholders (including the environment). Practices adopted at the early stages of the CSG activity, which consisted mainly in the disposition of the CSG Water in evaporation dams, have been banned (and only allowed in exceptional circumstances).

The most recent policy, which the Queensland government published in December 2012, attempts to set out a transition between the existing CSG Water management regulations and the future regime, which is currently being developed by the government. This future regime consists of amendments to key pieces of legislation regulating the CSG Water management.

CSG Water as regulated waste
CSG Water is considered to be waste for the purposes of the EP Act, as it is a by-product from an industrial activity under s 13 of the EP Act. In addition, CSG Water falls within the broad definition of “regulated waste” under s 65 of the Environmental Protection Regulation 2008 (Qld) (EPR). According to s 65, “regulated waste” is waste that:

- is commercial or industrial waste, whether or not it has been immobilised or treated; and
- contains one of the constituents of a type set out in Sch 7 of the EPR, which includes “non-toxic salts, including, for example, saline effluent, hydrocarbons and water mixtures or emulsions, and oil and water mixtures or emulsions”.

As a consequence, in order to use or transport CSG Water, CSG companies require environmental authorities, beneficial use approvals, and/or licences to transport regulated waste.

Beneficial use of CSG Water
As regulated waste, the beneficial use of CSG Water must be approved under Ch 8 of the Waste Reduction and Recycling Act 2011 (Qld). There are two types of beneficial use approvals:

- general approvals, which are granted for the benefit of everyone; and
- specific approvals, which are granted for the benefit of a stated person only.

Once an approval is issued, the resource stops being a waste for the beneficiary of the approval and can be used for the purpose set out in the relevant beneficial use approval.

On 23 December 2008, the Department of Environment and Heritage Protection (DEHP) issued a general beneficial use approval for irrigation and general use, livestock drinking water, aquaculture and human consumption of aquatics foods, drinking water, dust suppression, and landscaping and revegetation. All CSG companies can use CSG Water in accordance with such general beneficial use approval by complying with the requirements set out in the approval, which include meeting certain parameters with respect to water quality.

In December 2012, DEHP published the Coal Seam Gas Water Management Policy (Policy), establishing the management options for beneficial use of CSG Water. The Policy envisages that beneficial use of CSG Water may include:

- injection into depleted aquifers for recharge purposes;
- substitution for an existing water entitlement;
- supplementary water for existing irrigation schemes;
- new irrigation use, with a focus on sustainable irrigation projects;
- livestock watering;
- urban and industrial water supplies;
- coal washing and dust suppression; and
- release to the environment in a manner that improves local environmental values.
CSG companies may apply for specific beneficial use approvals that align with the beneficial uses set out in the Policy.

**Specific restriction for beneficial use of CSG Water under the 1923 Act**

The Petroleum and Gas (Production and Safety) Act 2004 (Qld) (P&G Act) authorises petroleum tenure holders to take or interfere with underground water and landowners to use associated water in accordance with the P&G Act (without the need for any water licences).

However, there is no similar provision in the Petroleum Act 1923 (Qld) (1923 Act) giving the petroleum tenure holder an automatic right to take and supply CSG Water. Section 86 of the 1923 Act provides for an exemption from the Water Act 2000 (Qld) (Water Act) where the tenure holder first obtains the Minister’s permission in accordance with that section.

Sections 86(1)(a) and 86(1)(c) of the 1923 Act provide that a tenure holder can apply to the Minister for a right to:

- search for, obtain, store and use “underground water” (including artesian and subartesian water) within the limits of the land covered by the petroleum lease for any of the authorised purposes of the lease; and
- supply (with the agreement with the landholder) to a landholder of any land adjoining or in the vicinity of the petroleum tenure “any water” obtained by the tenure holder.

The alternative argument is that a petroleum tenure holder may have an inferred right to take and supply CSG Water. However, there is no determinative authority to support such an argument in light of the restrictions imposed by the Water Act.

Further, if a petroleum tenure holder has an inferred right to take CSG Water (in unlimited quantities, as is the case with the P&G Act), there is no express obligation for the petroleum tenure holder to comply with its underground water obligations imposed by the Water Act — whereas s 86 of the 1923 Act makes it clear that if the Minister gives permission to take water under that section, the tenure holder must comply with its underground water obligations under the Water Act. This is consistent with the position under the P&G Act.

Relevantly, the 1923 Act restricts (or does not authorise) the on-supply of water to owners and occupiers of land for stock and domestic purposes. The petroleum tenure holder must obtain the approval of the Water Act regulator under the Water Act to authorise such supply.

The approval by the Water Act regulator may only be granted for stock or domestic purposes under s 86(1)(c) of the 1923 Act.³

The petroleum tenure holder will generally be required to apply for a water licence pursuant to s 206 of the Water Act to use or supply CSG Water for any other purpose not authorised by a 1923 Act water licence or by the 1923 Act.⁴

In applying for a water licence, the petroleum tenure holder will need to demonstrate that:

- the water is CSG Water;
- it is testing for gas production or producing gas for commercial purposes;⁵ and
- it has provided members of a “priority group” (if any) with the opportunity to make a written expression of interest about access to the CSG Water. The water licence application must be accompanied by each expression of interest from priority group members.⁶

Usually, a public notification process would be required before the grant of the water licence. However, water licence applications made by petroleum tenure holders do not necessarily require public notification (which would reduce the time for the application process).

A petroleum tenure holder is obligated, among other things, under the general beneficial use approval to only release the CSG Water to the landholder if the landholder has certified in writing that the landholder is going to use the water for livestock drinking water and that they have appropriate facilities at the site.⁷ The obligations under the general beneficial use approval should be factored into any written agreement with the landholder to ensure that the petroleum tenure holder can mitigate and share any risks it may be exposed to by having to comply with the beneficial use approval conditions.

Alternatively, the petroleum tenure holder needs to be aware that it cannot charge a landholder for the supply of CSG Water without first registering as a “service provider” under the Water Supply Act.⁸

There is a potential argument that there is an inferred right under the 1923 Act to take and supply CSG Water for stock and domestic purposes without the requirement for a water licence.
However, having regard to the construction of s 86 of the 1923 Act, the situation is not entirely clear.

Andrew Bruton  
Partner  
HWL Ebsworth Lawyers

Franklin Morean  
Special Counsel  
HWL Ebsworth Lawyers

Footnotes  
3. “Stock purposes” means watering stock of a number that would normally be depastured on the land on which the water is, or is to be, used.
4. Or the P&G Act on a P&G Act tenure.
5. The application for a water licence must be accompanied by copies of the petroleum tenure (ie, PL92) and each EA under the EPA that relates to the petroleum tenure.
7. Condition 14 of the general beneficial use approval.
8. Section 20 of the Water Supply (Safety and Reliability) Act 2008 (Qld).
Lee and Gropler v Commonwealth and Murray-Darling Basin Authority — reflection on a conception of Australian water access rights

Alex Gardner
UNIVERSITY OF WESTERN AUSTRALIA

A large group of irrigators from Victoria, South Australia and New South Wales, known as Murray Valley United Inc (MVU), is challenging the validity of the Water Act 2007 (Cth) (the Act) on a number of constitutional grounds. The challenge is designed to bring down the Murray-Darling Basin Plan made under the Act and to prevent the Commonwealth exercising, with the states, powers to limit the historical water access rights claimed by the irrigators. One of the grounds of challenge is based on s 100 of the Commonwealth Constitution. That provision restricts the Commonwealth from making a law or regulation of trade and commerce that abridges the right of a state, or the residents therein, to the reasonable use of the waters of rivers for conservation or irrigation.

The challenge is interesting because it constructs a particular conception of river water access rights that is based on a claim of an historical long-term reasonable use of the waters of the River Murray amounting to an immutable constitutionally founded water access right, rather than an entitlement defined from time to time by the state water resources law entitlement regime. This article will outline the essence of the MVU claim, briefly explain the interpretation of s 100 of the Constitution to date, and then consider the conception of water access rights that underlies the plaintiffs’ argument. It is suggested that the proposed constitutional conception of river water access rights is untenable and is based on a premise that was rejected more than a century ago when the first substantial water rights legislation was being enacted by the colony of Victoria — before the Constitution was drafted. Finally, an alternative interpretation of the term “reasonable use” in s 100 is suggested.

The plaintiffs, Lee and Gropler, bring the proceedings as representatives for approximately 500 members of MVU resident in Victoria, South Australia and New South Wales who are engaged in horticultural farming of permanent crops along the Murray River. They describe the MVU members as “River water users”, holding water entitlements and “the right to the reasonable use of the waters of the River Murray for irrigation and conservation in respect of irrigable land” along the course of the River Murray, from Swan Hill in Victoria to the Coorong near the river mouth in South Australia. The first and second plaintiffs describe themselves, respectively, as being landholders in irrigation districts established in Victoria (since 1909) and in South Australia (since 1920), and claim to hold beneficial interests in water access entitlements linked to their land. Significantly, they assert that without irrigation their crops will die and farming their semi-arid land will be commercially unviable.

A central aspect of the plaintiffs’ claim is their assertion that they have “enjoyed the reasonable use of the waters of the River Murray for irrigation or conservation on irrigation farms in Victoria and South Australia from time to time”. They assert various annual volumetric amounts of water usage for a range of horticultural crops as representing the “historical measure of use by horticulturists that is reasonable and which accords with industry standards along the River Murray since the establishment of irrigation districts [in] 1885 in order to sustain irrigable agriculture”. The plaintiffs claim that, pursuant to their “high security” water entitlements held under state laws, they have used and propose to continue to use “no more River water than is reasonable for irrigation and conservation” in accordance with these historical measures to sustain their respective farms. Their allegation is that the Act, in breach of the Constitution, encroaches upon these rights of reasonable use.

The statement of claim sets out five key arguments for the constitutional invalidity of the Act — namely, contravention of:

1. the s 100 right of residents of the states to the reasonable use of the waters of rivers (at [22]–[28]);
2. the s 99 prohibition on a Commonwealth law giving a preference to one state or a part of a state (at [29]–[35]);
3. the s 92 freedom of interstate trade and commerce (at [36]–[45]);
4. the s 51(xxxii) guarantee of just terms compensation on acquisition of property rights, which is
alleged to have occurred by the Commonwealth Environmental Water Holder (CEWH) performing its statutory functions in ways that have diminished the value of the plaintiffs’ water and land proprietary rights (at [55]–[64]); and

(5) the implied Melbourne Corp\(^5\) principle that forbids a Commonwealth law from discriminating against a state or imposing a special burden upon a state in the exercise of its essential constitutional functions (at [46]–[50]).

Elements of the fourth argument are also linked to an argument that the execution of the CEWH functions has abridged the plaintiffs’ rights to the reasonable use of the waters of the River Murray under s 100.

There is also an unusual allegation that the Commonwealth has contravened s 101 of the Constitution in failing to establish the Interstate Commission, proposed under that section, to ensure the maintenance of the constitutional provisions relating to trade and commerce, and of the laws made under those provisions. The argument is unusual because there has been a very limited operation of that provision since federation, due in part to the High Court’s interpretation of the potential authority of the Interstate Commission. It is also difficult to see how Parliament’s general failure to constitute the establishment of the Murray-Darling Basin Authority impairs the execution and maintenance of the Constitution’s provisions relating to trade and commerce.

It is not possible here to analyse all of the plaintiffs’ arguments. The focus is on the s 100 argument and, in particular, the attempt to construct a water access right that purports to be founded on a constitutionally guaranteed volumetric right to reasonable use.

Section 100 imposes a restriction on the Commonwealth, namely:

The Commonwealth shall not, by any law or regulation of trade or commerce, abridge the right of a State or of the residents therein to the reasonable use of the waters of rivers for conservation or irrigation.\(^6\)

Besides the question of what constitutes the “reasonable use of the water of rivers”, there are at least three issues that have arisen for consideration and only one of them has been resolved.

First, it is clear that “waters of rivers” does not include groundwater,\(^7\) but this will not trouble the plaintiffs. There is less certainty about the second issue: whether “any law or regulation of trade or commerce” is limited to laws made only in reliance on the trade and commerce power of s 51(i), or whether that phrase might include laws made under other heads of power having an effect on trading and commercial activities. To date, the narrow view has been applied by three judges (ie, not a majority) in Commonwealth v Tasmania (1983) 158 CLR 1; 46 ALR 625; 57 ALJR 450; BC8300075 and the question must be regarded as still open for determination.\(^8\) Should the narrow view be affirmed by a majority of the High Court, s 100 would still be a potentially significant restriction on Commonwealth legislative power and the implementation of the Act, but it may not be sufficient to compromise the effective operation of the Basin Plan.\(^9\)

For the plaintiffs, however, the most interesting question is the resolution of the third issue: “whether s 100 guarantees to riparian States and their residents access to the use of the waters for the purposes mentioned or whether it merely imposes a restriction on the power of the Commonwealth”.\(^10\) This question was reiterated by Gummow and Crennan JJ in Arnold v Minister Administering the Water Management Act 2000 (NSW) (2010) 240 CLR 242; 172 LGERA 82; [2010] HCA 3; BC201000370 (at [53]), and further elaborated upon in the same case by French CJ (at [24]):

There is also an interesting question whether the term “right of … the residents” in s 100 is used in a collective sense rather than as a reference to individual rights.

This comes to the essence of the plaintiffs’ claim. If they are to succeed, they will need to argue successfully that s 100 does, indeed, guarantee residents access to the use of River Murray waters, and that it does so by protecting the rights of access of individuals or particular corporate entities. The plaintiffs address these arguments by attempting to give substantive rights content to the concept of “reasonable use”.

How do their arguments stand against the traditions of Australian water resources law?

With respect, the better view is that that s 100 operates only as a limitation on Commonwealth power, and is not a wider guarantee of a state’s right to water or of the rights of residents to use the waters of rivers. The definition of the states’ rights to water and of their residents’ rights to water must come from elsewhere. There is a plausible argument that there is a common law doctrine of states’ riparian rights yet to be distilled by the High Court.\(^12\) In essence, the doctrine applied to interstate rivers could mean that each of the states has the right to a reasonable or equitable use of the shared resource. Renard has proposed a doctrine of “reasonable sharing”, applicable to the regulation of flows, diversions and pollution.\(^13\) The common law doctrine could be supplemented by constitutional implications of equality between the states, and it could not be defeated by the unilateral legislation of any jurisdiction.\(^15\) However, as a common law doctrine, it is subject to displacement by an interstate agreement that is ratified by legislation of the participating jurisdictions.\(^16\) Since the first decade of Australian federation, such interstate agreements have
been the normal mode of addressing the interstate sharing of water resources, especially in the Murray-Darling Basin. Given that the Murray-Darling Basin Agreement 2008 has been legislatively ratified by all participating jurisdictions supporting the enactment of the Act,\textsuperscript{17} it is arguable that the states’ rights to the use of the waters of the River Murray are now defined by the Act and the Basin Plan, subject to the Basin Plan conforming to the Act.

What law, then, defines the rights of the residents to use the waters of rivers? These rights have, in Australia, always been founded on the laws of the colonies and later the states. Initially, the legal definition of the rights to use waters of rivers was defined by the common law.\textsuperscript{18} The essential characteristic of these rights was that, acknowledging that the water resources were common property, the riparian landholder held usufructuary rights to take and use water as a natural incident of the land title and could only exercise those rights in respect of the riparian land. These rights entitled the landholder to make only ordinary domestic use of the water and any further or extraordinary use (such as irrigation) only to the extent that the use did not sensibly diminish the flow to the lower riparian landholder — sometimes described as a reasonable use of the water in the river or stream.\textsuperscript{19} In times of scarcity, the resource was shared proportionally and no riparian could claim a prior right to the use of the water by dint of appropriating the water to a beneficial use before another.

When the colonial legislatures first enacted statutes to regulate water access for burgeoning irrigation and other industrial and mining activities, they had a choice in how to allocate the waters of the rivers.\textsuperscript{20} The colonial legislatures made the conscious choice to reject a model of water rights that recognised a hierarchy of access rights founded on the prior appropriation of water to beneficial uses setting a historically based measure of permanent entitlement.\textsuperscript{21} Following the well-known trip of Alfred Deakin to California, the Victorian Parliament legislated to vest the right to the use of all water in any watercourse, lake or marsh in the Crown until it was divested by the Crown grant of an access right, often in the form of a water licence (usually for a finite term) or ongoing land-based tenure in an irrigation district. Over time, riparian rights were restricted to stock and domestic use, and licence and irrigators rights accorded a degree of security by public works that assured supply and, eventually, by better water allocation planning. But the legislation retained one telling feature: public control of the distribution of the water resources, especially in times of scarcity. As the High Court explained in *ICM Agriculture Pty Ltd v Commonwealth* (2009) 240 CLR 140; 170 LGERA 373; [2009] HCA 51; BC200911041,\textsuperscript{22} albeit mainly in relation to groundwater access licences, the state legislatures maintained sovereign control over the exact definition of the water access rights through generations of evolving legislative provisions.

Increasingly, the purposes of the state statutory regimes of water resources management have been to ensure the long-term sustainability of the systems, including the support of ecological characteristics. Although different levels of water resources security have been conferred by the different definition of the water access entitlements ("high" and "general" security water), within these categories of access entitlements scarcity is typically shared proportionally and there is no absolute right to trade water from high security entitlements to general security entitlements in years of scarcity.\textsuperscript{23}

The central principles now underlying Australian water policy and law are that access entitlement holders receive a water access right that is a share of a consumptive pool and an annual volumetric allocation to that share determined in accordance with a water allocation plan, and according to variable water availability impacted by a variable climate. Crucially, this entitlement system is still entirely based on state law. Under s 100, the residents’ rights to the reasonable use of the waters of rivers will be determined by and under state law.

The argument advanced by the plaintiffs for a constitutionally defined right of reasonable use ignores the reality of the Australian state-based regimes of water access rights. The statement of claim also lacks any relevant assertions about how the implementation of the Basin Plan might impact on the plaintiffs’ water access rights. The scheme of the Act is for the Commonwealth to make the Basin Plan setting “sustainable diversion limits” (SDLs) for the whole of the Basin and for water resource management areas, and it is for the states to implement these SDLs through their own water resource management and planning systems. While the Commonwealth and Murray-Darling Basin Authority have strong powers to insist that the states implement the SDLs, the adjustments to the individual or particular water access rights will be made pursuant to the state entitlement regimes.

This still leaves the question of how s 100 might be interpreted to restrict the Commonwealth from abridging the residents’ rights to the reasonable use of the River Murray’s waters. If the residents’ rights are construed in the collective sense referred to by French CJ in *Arnold*, rather than by reference to the rights of individuals or particular entities, the application of the s 100 test of reasonable use will address the determination of the SDLs as limits on the aggregate use of water by collectives or communities of river water users.
The long-distant dissipation of the historical purpose of s 100 as restricting the Commonwealth from regulating navigation and shipping should not deter the High Court from reviewing how the Basin Plan impacts on the use of the waters of the River Murray. 24 However, the High Court’s approach may be to look more at the reasonableness of the SDL determinations as a matter of process in pursuit of reasonable goals, rather than any attempt to ascertain whether there have been reductions in the historical measure of the use entitlements of individual or particular corporate River water users. As the Commonwealth argued, 25 it may mean only:

… that “reasonable use” in section 100 means some sort of environmentally sustainable level of take and that might mean no more than what is determined by the body upon whom statutory authority is relevantly conferred has ascertained that that is the level that water should be taken.

In the directions hearing before French CJ on 29 November 2012, 26 the plaintiffs failed to convince the Chief Justice that the statement of claim sufficiently established clear constitutional facts to make the questions ones of pure legal principle that could be referred to the full High Court. There are important questions of fact and law to be clarified before the case is fit for such a referral. The case has been remitted to the Federal Court to provide the opportunity for this to occur. The plaintiffs would do better to address the constitutional limits on the Commonwealth’s capacity to restrict the collective rights of the River water users, rather than seeking to define their individual and particular water access rights in a new stream of legal thought sourced in s 100 of the Constitution.

Alex Gardner
Associate Professor
University of Western Australia

Footnotes
1. No C5 of 2012 in the High Court of Australia Canberra Registry. Lee v Commonwealth. The parties were before the Chief Justice for a directions hearing on 29 November 2012: [2012] HCA Trans 306. A summons was filed on 13 September 2012 and a similar statement of claim was filed on 31 October 2012. References to the plaintiffs’ claim are based on the statement of claim.

2. Statement of claim at [4].

3. Statement of claim at [20].

4. Statement of claim at [20].


6. It is unclear whether “resident” in s 100 includes corporations. It does not in s 75(v): see Australasian Temperance & General Mutual Life Assurance Society v Howe (1922) 31 CLR 290 at 299, 321, 334–5; Cox v Journeaus (1934) 52 CLR 282 at 285; 9 ALJR 83a; BC3400108; Crouch v Commissioner for Railways (Qld) (1985) 159 CLR 22 at 24, 27, 34; 62 ALR 1; 59 ALJR 831; BC8501072.


8. Above, n 7 at [23] per French CJ; at [53] per Gummow and Crennan JJ; and at [76] per Hayne, Kiefel and Bell JJ.


12. Webster and Williams, above n 11, and see Gardner, Bartlett and Gray, above n 9, at [7.2]–[7.3].


16. See, generally, Renard, above, n 13, especially at p 675 and following.

17. Gardner, Bartlett and Gray, above, n 9, at [7.17].

18. Gardner, Bartlett and Gray, above, n 9, Ch 8.

19. ICM Agriculture Pty Ltd v Commonwealth (2009) 240 CLR 140 at 188–89; 170 LGERA 373, per Hayne, Kiefel and Bell JJ; [2009] HCA 51; BC200911041 at [109].


22. See, especially, per Hayne, Kiefel and Bell JJ at [116].

23. Gardner, Bartlett and Gray, above, n 9, at [26.8].


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