

SUBMISSION TO THE MURRAY-DARLING BASIN ROYAL COMMISSION

27 APRIL 2018

We are pleased to have the opportunity to make a submission to the Murray-Darling Basin Royal Commission. Our submission is concerned primarily with the terms of reference 7, 8, 9 and 10, which broadly relate to issues of compliance, enforcement, monitoring and metering. We draw on some of our recent work* on water compliance, enforcement and regulation and our collective and individual experience as academics and researchers in the area of water law at UNSW Sydney and the University of Canberra. The views expressed are however our own and do not reflect the position of our respective institutions.

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Submission overview

Australia's and the Murray-Darling Basin's legal and policy architecture for water governance has been on a significant journey since 1994. Guided by intergovernmental agreements, and national oversight, Australian states and territories continue to implement the National Water Initiative (NWI), the *Basin Plan 2012* and related reforms. Although the Murray-Darling Basin ('the Basin') states have come a long way in water management under the NWI and Basin Plan, the design and

*Parts of this submission draw on and first appeared in the following: Cameron Holley and Darren Sinclair, [Water extraction in NSW: Stakeholder views and experience of compliance and enforcement. A report of a survey of water users](#) (CWI, 2015); C Holley (ed.), *Special Issue of the Environmental and Planning Law Journal*, [Rethinking Australian Water Law and Governance](#) (2016) vol. 33(4); Cameron Holley and Darren Sinclair, [Compliance and Enforcement of Water Licences in NSW: Limitations in Law, Policy and Institutions](#)' (2012) 15(2) *Australasian Journal of Natural Resources Law and Policy* 149-189; Cameron Holley and Darren Sinclair, [Regulation, Technology and Water: Engagement as a Precondition for Effective Real-Time Advanced Monitoring, Compliance and Enforcement](#)' (2016) 7(1) *George Washington Journal of Energy and Environmental Law* 52-66; C Holley and D Sinclair, [Rethinking Australian water law and governance: Successes, challenges and future directions](#)' (2016) 33(4) *Environmental and Planning Law Journal* 275; C Holley and D Sinclair, 'Governing water markets: Achievements, limitations and the need for regulatory reform' (2016) 33(4) *Environmental and Planning Law Journal* 301; Cameron Holley and Darren Sinclair, *Reforming Water Law and Governance: From Stagnation to Innovation in Australia* (Springer, 2018); Cameron Holley, [Future Water – Improving planning, markets, enforcement and learning](#)' in Ron Levy, Molly O'Brian, Simon Rice, Pauline Ridge and Margaret Thornton *New Directions for Law Reform in Australia: Essays in contemporary law reform* (ANU Epress, 2017); Cameron Holley and Darren Sinclair, 'Enforcement Strategies: Inspection, Targeting and Escalation' in D. Markell, L. Paddock and N Bryner (eds.), *Environmental Compliance and Enforcement* (Edward Elgar, 2017); Cameron Holley and Darren Sinclair, [Non-Urban Water Metering Policy: Water Users' Views On Metering And Metering Upgrades In NSW](#)' (2013) 16(2) *Australasian Journal of Natural Resources Law and Policy* 101-131; Emma Carmody, Barbara Cosens, Alex Gardner, Lee Godden, Janice Gray, Cameron Holley, Louise Lee, Bruce Lindsay, Liz Macpherson, Rebecca Nelson, Erin O'Donnell, Lily O'Neill, Kate Owens, Darren Sinclair, 'The future of water reform in Australia — starting a conversation' *Australian Environment Review* (2016) 31(4) 132-137; Cameron Holley and Darren Sinclair, 'Metering, Measurement and Water Policy Reform' *Australian Environment Review* (2015) 30(6-7) 131-135.

implementation of water laws and regulation does not appear sufficient to meet future water challenges, particularly in the face of climate change. Australia is a world leader in water regulation, and the top-down cap and trade regime that governs the Basin system has historically been viewed as global best practice.¹ However, substantial improvements to compliance and enforcement are needed because no matter how many novel governance tools are designed, it will all be insufficient if compliance and enforcement is inadequate or absent.²

Water compliance and enforcement in the Basin faces inherent complexities. These include constrained regulatory resources, multiple diffuse points of extraction, large geographic areas, numerous variable and dynamic surface and ground water systems, and different non-urban water users who have not been subjected to the same degree of regulatory intrusion as manufacturing, for example, due to geographical isolation and the primacy of private property rights.³ These complexities have been compounded by current compliance and enforcement approaches that have evident weaknesses.⁴ Influenced by the NWI, water governance in the Basin has relied on plans, markets and caps, with compliance and enforcement largely devolved to state government regulators, with only recent and to date relatively light-touch oversight from the Murray-Darling Basin Authority (MDBA).⁵ Despite significant federal investment to state regulators to improve water monitoring, compliance and enforcement,⁶ recent government reports have revealed significant shortfalls (and the Basin is not alone in confronting these challenges, see e.g. INTERPOL reports that 30-50% of the global water supply is illegally obtained).⁷

While there are various aspects to compliance in water governance (e.g. states complying with their obligations under the Basin Plan, or the water impacts of the mining and resources sector), our submission is concerned with the now very palpable compliance challenge of ensuring non-urban water users (e.g. farmers) abide by their individual conditions and extraction limits imposed for using water for irrigation or other purposes. This accounts for the vast majority of non-urban water consumption (approx. 50-60%) in Australia,⁸ and is the core activity devolved to state-based water regulators. In this context, the Productivity Commission notes the need ‘for improvement specifically relating to implementation of national frameworks for non-urban water metering, and compliance and enforcement systems for water’.⁹ Similarly, the Matthews Inquiry reported ‘water related compliance and enforcement arrangements in New South Wales (NSW) have been ineffectual and

¹ C Holley and D Sinclair (eds.), *Reforming Water Law and Governance: From Stagnation to Innovation in Australia* (Springer, 2018).

² V Brown, *Water Theft and Water Smuggling* (Brookings, 2017), 8; Cameron Holley and Darren Sinclair, [‘Compliance and Enforcement of Water Licences in NSW: Limitations in Law, Policy and Institutions’](#) (2012) 15(2) *Australasian Journal of Natural Resources Law and Policy* 149.

³ Neil Barr and John Cary, *Influencing Improved Natural Resource Management on Farms: A Guide to Understanding Factors Influencing the Adoption of Sustainable Resource Practices* (Bureau of Rural Sciences, 2000; N Rubenstein et al, *Strengthening Water Governance in Australia, Briefing Paper* (NCCARF, 2010).

⁴ Water Crimes, *European Report on Water Crimes* (RECCEE, 2017); Cameron Holley and Darren Sinclair, [‘Water extraction in NSW: Stakeholder views and experience of compliance and enforcement. A report of a survey of water users’](#) (CWI, 2015).

⁵ COAG, *Communiqué Water Reform* (Aus. Gov., 1994); *Intergovernmental Agreement on A National Water Initiative* (Canberra, 2004).

⁶ Dep’t of the Env’t, *National Framework for Compliance and Enforcement Systems for Water Resource Management* (Aus. Gov., 2012); Commonwealth of Australia, *National Framework for Non-urban Water Metering Policy Paper 2–3* (Aus. Gov. 2009).

⁷ Productivity Commission (PC), *National Water Reform Draft Report* (Aus. Gov., 2017); K Matthews, *Independent investigations into NSW water management and compliance*, (NSW Gov., 2017) Murray-Darling Basin Authority (MDBA), *The MDB Water Compliance Review* (Aus. Gov., 2017); National Water Commission (NWC), *Australia’s Water Blueprint: national reform assessment 2014* (Aus. Gov., 2014). INTERPOL, *Strategic Report: Environment, Peace and Security* (UN/Interpol, 2016); Water Crimes, above n 4.

⁸ Australian Bureau of Statistics (ABS), *Water Account Australia 2015-16* (Aus. Gov., 2017);

⁹ Productivity Commission, above n 7, at 251.

require significant and urgent improvement'.¹⁰ And in the wider Basin, 'considerable frustration' has been expressed at the MDBA's response to alleged serious breaches, while NSW, Queensland and to a lesser extent Victoria demonstrate a 'notable lack of transparency...patchy metering...the lack of real-time, accurate water accounts...[and] a low level of compliance resourcing'.¹¹

Community mistrust in the compliance system has also intensified, particularly in light of the Four Corners' exposure of alleged water corruption and theft.¹² While inquiries in NSW, Queensland and the Basin are beginning to prompt new compliance structures,¹³ there are concerns that such reforms will be undermined by messy inter-agency boundaries, incomplete metering and inadequate organisational and implementation processes.¹⁴

Without effective compliance and enforcement and accounting it will be difficult to optimise the economic, social and environmental outcomes for the Basin's non-urban water resources. Indeed, if caps are exceeded due to illegal water extraction (in water resources plans), if the various licences, approvals and tradable water rights (essential to efficient markets) are not adhered to, and if stakeholders lack confidence that there is an equitable sharing of water resources (particularly in periods of drought), then the entire edifice of the existing market can be undermined.¹⁵

Further reforms and changes will be required, and we believe the following four priorities should be considered and addressed in order to achieve a sustainable water future in the Basin.

A. Supporting and implementing water compliance and enforcement

Based on a survey of 4000 water users (approx. 22% response rate) in NSW,¹⁶ or research suggests that water compliance and enforcement in the Basin still requires substantial improvement. The findings indicate that only around 49% of respondents (n604) are confident that water users in their region comply with their licence conditions, and an almost equal amount (45%) are unsure.¹⁷ These less than optimal levels of perceived compliance and high levels of uncertainty¹⁸ are causes for concern, as people who are regulated are less likely to comply with rules where norms of compliance are not widespread in practice.¹⁹ The risk of non-compliance only appears to be compounded by related results that suggest that very few respondents agree that compliance officers regularly work in their region (26%, n533) or that people illegally taking water will be caught (33%, n611).²⁰ This is particularly concerning as a lack of community confidence can undermine a willingness to follow the rules.²¹ This appears to only be increasing as a recent survey reported that ~70% of respondents believe current compliance and enforcement is not a deterrent.²²

¹⁰ Matthews, above n 7, at 7.

¹¹ MDBA, above n 7, at 14; Wentworth Group (WG), *Review of Water Reform in the MDB* (WG, 2017).

¹² MDBA, above n 7, at 99; WG 2017, above n 11.

¹³ See e.g., N Blair, *NSW Water Reform Package* (NSW Gov., 2017).

¹⁴ Matthews, above n 7; MDBA 2017, above n 7.

¹⁵ NSW Office of Water, *NSW water take measurement Strategy - Water take measurement in NSW: A way forward. Discussion Paper* (NSW Department of Primary Industries, 2015); Matthews, above n 7; MDBA 2017, above n 7; Holley and Sinclair, above n 2.

¹⁶ See Holley and Sinclair, above n 4.

¹⁷ Holley and Sinclair, above n 4, at 31.

¹⁸ Moreover, 51% (n504) wanted more information about compliance and enforcement activities of the regulator. Holley and Sinclair, above n 4, at 46.

¹⁹ Holley and Sinclair, above n 4, at 27.

²⁰ Holley and Sinclair, above n 4, at 30.

²¹ Matthews 2017, above n 7; N Hasham, 'Leaked letter exposes 'crisis' fears over \$13b plan to save critical Australian river' *The Age*, 13/2/18.

²² MDBA, above n 7, at 29; See generally, Holley & Sinclair, above n 4, at 29-30.

To the extent that such problems are reflected across the Basin, fixing these challenges and enhancing compliance and enforcement will require increased and continued investment. Such investment will be vital to implementing fundamental regulatory activities, including:

1. enhancing public communication of government enforcement;
2. increasing and publicising compliance officer activities (e.g. education and periodic targeting of regions/sectors);
3. leveraging peers and third parties in promoting compliance (e.g. drillers, water associations); and
4. utilising a responsive regulatory regime that maintains the support of water users.²³

B. Educating water users

Educating water users about laws, policies and compliance is crucial so that they understand the rules and the importance of complying with extraction limits and enforcing laws where breaches occur. This will help to provide a level playing field, to build confidence in market systems and improve outcomes for the community and the environment alike.²⁴ Our survey suggests that many non-urban water users have limited knowledge of compliance and enforcement activities, with 51% (n 504) of NSW water users wanting more information.²⁵

Motivations to comply with laws can be subservient to water users' knowledge of the laws and rules. It is difficult to comply with a law if you do not fully understand it. This is complicated in the water space by dense and often overlapping sets of rules at catchment, state and the Basin level. Most of our survey respondents report good or very good knowledge of specific requirements impacting on their own operations (e.g. licence conditions, allocations, entitlements, bores). However, our research suggests that most respondents report very little knowledge of water legislation, compliance policy, enforcement actions and penalties. This is a significant cause of concern, not least because it risks undermining the deterrent factor of law as a major driver of compliance. Indeed, our research suggests that few (35%, n 601) agree that penalties are a deterrent for illegal water extraction.²⁶ Moreover, those with little or no knowledge of compliance policies, penalties for illegal water extraction etc. are more likely to disagree that penalties and a criminal record are strong deterrents.²⁷ Based on this, the reported lack of 'deterrence' identified in penalties may reflect a lack of knowledge of what, when and how penalties and criminal records apply to illegal activities.

Respondents to our survey who agree that water laws and regulations are too complex (47%, n589) or agree that they find it difficult to understand their licence or approval conditions (27%, n 544) are also more likely to agree that tough economic conditions, high water costs, drought and flooding and a lack of awareness of the rules justified the illegal taking of water.²⁸ This suggests those who see water laws as difficult may be more willing to accept reasons for breaking these regulations.

Similarly, respondents who agree that water laws and regulations are too complex or agree that they found it difficult to understand their licence or approval conditions are more likely to disagree that water regulation is needed to sustainably manage water resources, protect rights of water users, or protect the environment. It may be that those who see water laws as too complex/difficult to

²³ Holley & Sinclair, above n 4, at 67-68; I Ayres and J Braithwaite, *Responsive Regulation* (OUP, 1992).

²⁴ Holley and Sinclair, above n 2; Holley and Sinclair, above n 7.

²⁵ Holley and Sinclair, above n 7, at 40, 46.

²⁶ Holley and Sinclair, above n 7, at 29.

²⁷ Holley and Sinclair, above n 7, at 33.

²⁸ Holley and Sinclair, above n 7, at 32.

understand find it more difficult to identify value in the aims and content of regulation. In such cases, non-compliance may be more likely.²⁹

The findings also indicate that there is minimal knowledge of NSW compliance officer activities by the vast majority of water users. Very few NSW respondents claim to have direct interactions with, or received assistance from, regulatory officials (35%, n 430).³⁰ This suggests that there is considerable scope to better inform and educate water users of compliance and enforcement roles and activities, and the law. This will be all the more important as the results of inquiries are rolled out in Basin states.

C. Improving monitoring and metering in water markets

A third crucial complement to water regulation and the efficient operation of markets and water allocations is the accurate measurement of water extractions. In order for this to occur, extractions require effective metering, including telemetry. And yet, although there was substantial national and state reforms to implement various metering technologies in non-urban contexts, their application has been patchy and uneven.³¹ While surface water use has often been metered, the monitoring of groundwater extraction remains weak.³² The accuracy of many current water meters is also said to be 'not high due to their age, lack of maintenance and improper installation'.³³ Although there is little data available, reports of existing meter recording errors range from +20% to -30% and +3% to -18%, and suggest 'worn or faulty meters tend to record less water than is actually extracted'.³⁴ Further, the current lack of available real time data collection and on-line access via telemetry has the potential to limit water extraction accuracy and transparency.³⁵ While recent government reforms have begun to address these deficiencies, these weaknesses in metering may undermine overarching goals of fair and efficient water use.³⁶ More generally, the lack of accurate meters (whether over or under recording) is a significant impediment to the operation of water markets and their ability to guide water to the highest value uses.³⁷ For example, studies into 120 metered sites in the Murray showed that only 20% were recording within +/- 5%, and one-third of them were misreading by more than 20%, with an overall average of a 2.2% under-reading of volume

²⁹ Holley and Sinclair, above n 7, at 32-33.

³⁰ Holley and Sinclair, above n 7, at 37.

³¹ Commonwealth of Australia, above n 6; See also, e.g. *Sustaining the Murray-Darling Basin*, Dep't of Primary Indus., <https://www.water.nsw.gov.au/water-management/water-recovery-old/sustaining-the-basin> (last visited April 27, 2018); Cameron Holley and Darren Sinclair, 'Non-Urban Water Metering Policy: Water Users' Views On Metering And Metering Upgrades In NSW' (2013) 16(2) *Australasian Journal of Natural Resources Law and Policy* 101-131.

³² See e.g. R Grafton and D Peterson, 'Water trading and pricing', in K Hussey and S Dovers (ed.), *Managing Water for Australia: the social and institutional challenges* (CSIRO Publishing, 2007) 81; Poh-Ling Tan, C. Baldwin, I. White and K. Burry, 'Water planning in the Condamine Alluvium, Queensland: Sharing information and eliciting views in a context of overallocation' (2012) 474 *Journal of Hydrology* 38-39; Holley and Sinclair, above n 31.

³³ Department of the Environment, Water Heritage and the Arts (DEWHA), *National Framework for Non-urban Water Metering Regulatory Impact Statement* (Australian Government, 2009), at 3; Ann Hamblin, 'Policy directions for agricultural land use in Australia and other post-industrial economies' (2009) 26(4) *Land Use Policy* 1195, 1198; Holley and Sinclair above n 31.

³⁴ Holley and Sinclair, above n 31; Cameron Holley and Darren Sinclair, 'Regulation, Technology and Water: Engagement as a Precondition for Effective Real-Time Advanced Monitoring, Compliance and Enforcement' (2016) 7(1) *George Washington Journal of Energy and Environmental Law* 52-66.

³⁵ Holley and Sinclair, above n 34.

³⁶ Holley and Sinclair, above n 31; DEWHA, above n 33.

³⁷ Stephen Raft and Greg Hills, *NSW Sustaining the Basin Program: NSW Metering Project Business Case* (NSW Government, 2010) ('*Metering Business Case*') vi.

extracted.³⁸ If the 2.2% under-read was reflective of current metering across all rivers in the NSW part of the Basin, it is estimated that around 140,000 ML more would be extracted than is assumed, amounting to \$21m per year on the water market.³⁹

D. Rebuilding and intensifying system wide monitoring and benchmarking

Arguably one of the most successful features of the NWI is its system of monitoring and continuous improvement. Significant government funding was committed to monitoring, oversight and continual 'learning by doing' activities, including major investment in the Bureau of Meteorology (which gathered significant national water information); and financial backing for an independent National Water Commission (NWC) – a skills-based body whose tasks included conducting periodic assessments of the reforms and producing a series of related products, research studies, performance indicators and position statements.

Nevertheless, there are a number of shortfalls in the NWI's monitoring and continuous improvement systems. While monitoring of water plan outcomes is still impoverished,⁴⁰ perhaps the biggest shortfall relates to oversight of the NWI system itself. As a tool for improving and progressing the NWI, the NWC assessments were arguably its most important product, helping to facilitate benchmarking of performance. The assessments also shed light on gaps in the agenda, and publicly 'prodded' governments when they were dragging the chain on water reform.⁴¹ This success is worth noting given that, subsequent to the National Competition Reforms and their incentive arrangements, there has been little funding to encourage State commitment to implementation (other than those tied to specific programs or places like the National Framework for Compliance and Enforcement and the Basin national partnership agreement payments).

Despite the success of the NWC, it was abolished in 2015. This decision was based on the view that progress in implementing the NWI was such that monitoring of national reforms was no longer needed, with statutory functions to be transferred to existing Commonwealth agencies.⁴² With the government left to self-assess progress (albeit alongside Productivity Commission or *ad hoc* senate and independent inquiries), the disciplinary drivers that arose from the NWC's public transparency and comparisons have largely fallen away. As the NWC itself noted before being disbanded, there is 'little assurance against backsliding on previous gains'.⁴³ This is particularly worrying given the substantial amount of work still to be completed regarding the Basin Plan.

At a minimum, improving the commitment to monitoring and improvement goals requires increasing monitoring budgets (e.g. for water plans) and reembracing an oversight and transparent benchmarking role for the MDBA (or some other new body). This would ideally involve a monitoring and improvement model so as to mirror the so-called experimentalist learning architecture,⁴⁴ replete with new obligations for localised and transparent benchmarking of water resource plans, greater

³⁸ NSW Office of Water, 'NSW Water Take Measurement Strategy – Water Take Measurement in NSW: A Way Forward' (Discussion Paper, NSW Department of Primary Industries, July 2015) 2, citing State Water Corporation, 'Review of Meter Accuracy - NSW Metering Scheme' (Murray Pilot and Murrumbidgee Metering Project); C Holley and D Sinclair, 'Governing water markets: Achievements, limitations and the need for regulatory reform' (2016) 33(4) *Environmental and Planning Law Journal* 301, at 316.

³⁹ *Ibid.*

⁴⁰ National Water Commission (NWC) *Monitoring and evaluation for adaptive water management: issues paper*, (NWC 2013); NWC, above n 7, 404.

⁴¹ David Rosalky, *COAG Review of the National Water Commission* (COAG, 2011) iii-iv.

⁴² P Hannam, 'Parched NSW seeks help as National Water Commission axed', *Sydney Morning Herald*, 13 May 2015, <http://www.smh.com.au/environment/parched-nsw-seeks-help-as-national-water-commission-axed-20150513-gh0ork.html>.

⁴³ NWC, above n 7, 108.

⁴⁴ Bradley Karkkainen, Archon Fung and Charles Sabel, 'After Backyard Environmentalism' (2000) 44 *American Behavioural Scientist* 692.

horizontal diffusion of information (e.g. compliance practices) between states and catchments (facilitated by the oversight body like the MDBA), and setting and ratcheting up minimal standards of good performance and process. Doing so would enhance opportunities for sharing more detailed learning and innovation (such as how best to manage environmental assets or conduct compliance) across the Basin, but also between states within and outside of the Basin context, as well as enhancing opportunities for greater accountability (peer-to-peer and publicly).⁴⁵

⁴⁵ C Holley, N Gunningham and C Shearing, *The New Environmental Governance* (Earthscan, 2012); C Holley, 'Future Water – Improving planning, markets, enforcement and learning' in Ron Levy, Molly O'Brian, Simon Rice, Pauline Ridge and Margaret Thornton *New Directions for Law Reform in Australia: Essays in contemporary law reform* (ANU Epress, 2017).