

Submission to the State Environment Protection Policy (Waters) Review 2018

Dr Rebecca Nelson, Senior Lecturer, Melbourne Law School, University of Melbourne

Contact: [REDACTED]

1. Thank you for the opportunity to comment on the *Draft State Environment Protection Policy (Waters)* (version dated 16 January 2018). I am a Senior Lecturer at the Melbourne Law School, University of Melbourne, and Fellow (Non-Resident) of the Stanford Woods Institute for the Environment at Stanford University. I teach and research in the areas of water law and environmental law. This submission addresses issues in the draft SEPP that relate to areas of my past and current research, specifically:
 - regulation of groundwater, groundwater-dependent ecosystems, and groundwater-surface water interaction, the topic of my doctoral dissertation and both earlier and subsequent published work;¹
 - Aboriginal cultural values for water systems, the topic of a recent consultancy that I completed with colleagues as part of the National Cultural Flows Research Project (<http://culturalflows.com.au/>);
 - the use of offsets in the water context, the topic of past published work;²
 - urban stormwater and non-point source pollution, the topic of past work³ and current and ongoing work that I am undertaking to feed into the public consultation processes for the Yarra Strategic Plan under the *Yarra River Protection (Wilip-gin Birrarung murrong) Act 2017* (Vic); and
 - cumulative environmental effects, the topic of a current Australian Research Council-funded project ('Regulating cumulative environmental effects: Designing global best practice', 2018-2021).
2. This submission provides brief comments organised by draft clause number.

Clause 15 Exclusions from application of beneficial uses of groundwater

3. Clause 15(2), (3) and (4) provide:

(2) The Authority may determine that a beneficial use specified in Table 2 of Schedule 2 does not apply to groundwater if—

(a) there is insufficient aquifer yield to sustain the beneficial use;

...

(e) the beneficial use specified in the definition of water dependent ecosystems and species relates to cave ecosystems and subterranean fauna...

¹ Eg Rebecca Nelson, "Groundwater, Rivers and Ecosystems: Comparative Insights into Law and Policy for Making the Links" (June 2013) *Australian Environment Review* 558-566; Rebecca Nelson, "Groundwater Dependent Ecosystems in Law: Troubled Waters?" (2007) 10 *Asia Pacific Journal of Environmental Law* 99-130.

² Rebecca Nelson, "Paying Back the River: A First Analysis of Western Groundwater Offset Rules and Lessons for Other Natural Resources" (2015) 34 *Stanford Environmental Law Journal* 129-194.

³ Eg Rebecca Nelson, "Regulating Nonpoint Source Pollution in the US: A Regulatory Theory Approach to Lessons and Research Paths for Australia" (2011) 35(2) *University of Western Australia Law Review* 340-384; Rebecca Nelson, Heather Bischel, Buzz Thompson, and Richard Luthy, "Water Law in the Urban Context: Interactions and Innovations" in Katherine Daniell et al (eds), *Understanding and Managing Urban Water in Transition* (Springer Publishing, 2015) 463-488; Meenakshi Arora, Hector Malano, Brian Davidson, Rebecca Nelson and Biju George, "Interactions between Centralized and Decentralized Water Systems in the Urban Context: A Review", *WIREs* (Wiley Interdisciplinary Reviews) *Water* (2015) doi: 10.1002/wat2.1099.

(3) When making a determination under subclause (2)(a), the Authority—

- (a) may take into account possible variations within the aquifer and reasonable bore development techniques to improve yield; and
- (b) must be satisfied that—
 - (i) the beneficial use for water dependent ecosystems and species is protected;
 - (ii) there is no significant impact to groundwater beneficial uses; and
 - (iii) preferential flow through fractures or naturally formed cavities is not the dominant mode of permeability.

(4) When making a determination under subclause (2)(e), the Authority may require an applicant to conduct an assessment of cave ecosystems and subterranean fauna.

4. Two issues arise in relation to the exclusions contemplated by paragraphs 15(2)(a) and (e), namely, whether the former undesirably allows for the compounding of harm to groundwater systems that has already been caused by over-use; and whether the latter undesirably allows for a lower level of protection of certain kinds of groundwater-dependent ecosystems (**GDEs**). I will address these two issues in turn.

Beneficial uses and low yield in the context of over-used aquifers

5. Paragraph 15(2)(a)(e) appears intended to deal with situations in which low aquifer yield means that an aquifer cannot support beneficial uses, such that applying water quality protections would, in turn, not help to support beneficial uses (ie there would be ‘no point’ applying these quality-related protections).
6. A problem arises in relation to the way that the clause would apply to situations where over-use of an aquifer has already compromised aquifer yield (leading to low yield), particularly where measures are in place to recover the aquifer. If recovery measures are planned or in place to restore aquifer yield, so as to support a currently unsupported beneficial use, it would be inappropriate to ‘write off’ the future ability of the aquifer to support that beneficial use by not applying the corresponding water quality protections in the present.
7. The problem outlined above could be addressed by modifying the drafting of paragraph 15(2)(a), to read as follows:

- (2) The Authority may determine that a beneficial use specified in Table 2 of Schedule 2 does not apply to groundwater if—
 - (a) there is insufficient aquifer yield to sustain the beneficial use, **and aquifer yield will not foreseeably increase to sustain the beneficial use;**

8. The inclusion of the bolded text above would be consistent with other parts of the draft SEPP, for example the process for assessing practicability in clause 12, which requires having regard to ‘risks to ... potential beneficial uses’.

Beneficial uses and cave ecosystems and subterranean fauna

9. Neither paragraph 15(2)(e) nor the explanatory notes clarifies the basis for allowing the Authority to determine that a beneficial use does not apply to protect cave ecosystems and subterranean fauna. There does not appear to be any environmental justification for protecting

these ecosystems and species to a lesser extent than other ecosystems and species. Indeed, significant recent government investment in research into subsurface groundwater-dependent ecosystems (**GDEs**) supports recognising the value of these GDEs and protecting them accordingly (see, for example, the Australian GDE Toolbox, which classifies these types of ecosystems as ‘Type 1 GDEs’).

10. Cave ecosystems and subterranean fauna are known to be more vulnerable than other GDEs to changes in water quality (see, for example, Appendix 2 of the [New South Wales Risk assessment guidelines for groundwater dependent ecosystems Vol 1](#)). Accordingly, if these forms of ecosystems are present, the protections offered by the SEPP will be particularly important. If the policy intention of the current drafting is to give the Authority flexibility to determine that the beneficial use associated with cave ecosystems and subterranean fauna does not apply because these ecosystems are not present in any area that may be affected by a relevant activity (as suggested by the Beneficial Uses-Proposed Changes document of April 2017), this policy intention should be clarified to remove the possibility of a ‘watering down’ of protections for this type of GDE where it is present. One way of doing this would be to amend draft sub-clause 15(4) as follows (with suggested change in bolded text):

(2) The Authority may determine that a beneficial use specified in Table 2 of Schedule 2 does not apply to groundwater if—

...

(e) the beneficial use specified in the definition of water dependent ecosystems and species relates to cave ecosystems and subterranean fauna **and these ecosystems and species are not present in any relevant area...**

11. If it is intended that the Authority would assume that cave ecosystems and subterranean fauna are not present in aquifers under urban areas, the justification for this should be explained. I note that the Bureau of Meteorology’s GDE Atlas records no known data on subterranean GDEs for the whole of Victoria, which would suggest no known data for assuming that any part of Victoria has any less potential to harbour subterranean GDEs than any other.

Clause 17: Environmental quality indicators and objectives in the context of the beneficial use of Traditional Owners’ and Aboriginal Victorians’ cultural values

12. I congratulate the drafters on recognising the importance of water quality to achieving Traditional Owners’ and Aboriginal Victorians’ cultural values by listing these values as a stand-alone beneficial use.
13. The explanatory notes to clause 17 note that no specific environmental quality indicators or objectives are provided for this beneficial use, because other objectives for other beneficial uses ‘go some way’ to contributing to them, and if this is not the case, ‘sub-clause (4) applies’, and ‘Traditional Owners should be engaged in the development of environmental quality indicators and/or objectives through local management and planning processes for waterways and catchments.’ Sub-clause 4 provides that ‘contamination must not cause an adverse impact on the beneficial uses, and the level of any indicator must not be greater than’ that outlined in listed documents or levels approved by the Authority.
14. The intention of the clause, as illuminated by the Explanatory Notes, is laudable. However, the clause should provide a more concrete mechanism for translating this intention into practice.

None of the documents listed in sub-clause 17(4) sets out a concrete process for identifying environmental quality indicators to protect Traditional Owners' and Aboriginal Victorians' cultural values. Accordingly, it would appear that this protection depends, for its substantive effect, on 'any levels approved by the Authority' (para 17(4)(d)). **This paragraph should commit the Authority to undertaking appropriate investigations to approve indicator levels to protect Traditional Owners' and Aboriginal Victorians' cultural values.** Otherwise, it risks paying mere lip service to an issue that has been recognised for almost two decades since the ANZECC Guidelines (see pp 2-6 and 2-7), but has resulted in no action.

Clause 24 Offset measures to protect beneficial uses

15. Clause 24 provides as follows:

The Authority may approve an application to discharge wastewater of a lower quality than would otherwise be acceptable, for a specified period, if the occupier of the premises agrees to, in consultation with the community and the relevant waterway manager, implement and maintain offset measures that offer equivalent or greater protection of beneficial uses within the affected catchment or segment.

16. On balance, the inclusion of an offset option is a useful part of the SEPP. To improve understanding of the provision, the draft SEPP should provide more specific guidance on the use of offsets to ensure 'like for like' offsetting, notwithstanding the intended support to be provided by a separate and more detailed policy document (as foreshadowed in the SEPP Implementation Plan). Achieving equivalence between a discharge and an offset may require that offsetting is constrained to areas that benefit from a high degree of scientific certainty in relation to existing water quality impacts and stressors. Attention should also be paid to the potential to create 'hot spots' of low quality water.

17. To ensure that regulated entities are aware of the relevant dimensions of like-for-like offsetting in the water context, I suggest expanding clause 24 by adding a further paragraph as follows:⁴

(b) Consideration of whether offset measures offer equivalent or greater protection of beneficial uses includes considering the chemical constituents, temperature, quantity, timing and location of water discharges.

This type of information would assist regulated entities at a higher level than the detailed information that might accompany policy guidance on what information is required from proponents, for example. Including this information in the SEPP itself would also provide more certainty about the robustness of the approach to equivalence to be used in relation to offsets, rather than leaving this entirely to a non-statutory policy document.

18. In addition to ensuring like-for-like offsetting in a technical sense, experience of similar water quality offset (or 'flexible compliance') systems in the USA suggests that the following are important policy components to consider (likely in the context of the separate policy guidance document):

⁴ The suggested text is based on analysis contained in Rebecca Nelson, "Paying Back the River: A First Analysis of Western Groundwater Offset Rules and Lessons for Other Natural Resources" (2015) 34 *Stanford Environmental Law Journal* 129-194.

- well-developed, area-specific scientific models to link pollutant loads to impacts on beneficial uses;
- assessment of the cost and pollutant load reductions achievable through specific pollution control measures; and
- increased compliance monitoring, reflecting the greater risk associated with offset arrangements compared to avoiding pollutant discharges in the first place.

19. Notwithstanding the explanations in the Policy Impact Statement about the decision to restrict offsets to the works approvals and licensing context, other work by the Authority or DELWP should investigate a strategic approach to the use of offsets that sees them as a politically palatable way to address, for the first time, previously unregulated sources of pollutant loads (particularly from non-point sources), as well as a way to facilitate more cost-effective compliance by existing regulated entities where this is appropriate and low-risk. In this context, offsets could be relevant to options to address residual pollution from the following where avoidance is impossible, the following being the subject of existing offset approaches in the US, and relevant to the current SEPP (albeit not in the context of legal obligations in relation to specific pollution discharges):

- Urban stormwater (for example, as an element of Council's stormwater management plans noted in clause 34);
- Impacts of irrigation drains and channels, in clauses 36 and 37 (for example, as an element of guidelines for the development of land and water management plans); and
- Runoff of pollutants from agricultural activities, in clause 39 (for example, as a measure to achieve a net benefit taking into account unavoidable residual runoff of pollutants from premises used for agricultural activities to waters).

20. More detailed analysis supporting the points above, and analysing the US experience, is presented in *Rebecca Nelson, "Regulating Nonpoint Source Pollution in the US: A Regulatory Theory Approach to Lessons and Research Paths for Australia" (2011) 35(2) University of Western Australia Law Review 340-384.*

Clause 34: Urban stormwater

21. Among other things, the provisions of the draft SEPP dealing with urban stormwater appropriately requires 'Councils ... in consultation with the Authority, catchment management authorities established under the Catchment and Land Protection Act 1994, water corporations, landowners and the community, [to] develop and implement stormwater management or equivalent plans that' identify various options relevant to dealing with adverse impacts of stormwater in relation to quality and quantity.

22. While identifying options is valuable, clause 34 should also require Councils to **implement a program of measures, with corresponding timelines, for the options identified.**

23. To further clarify potential legal and policy vehicles of relevance to urban stormwater, the SEPP could identify the following:

- Amendments to planning schemes;
- Agreements under section 173 of the *Planning and Environment Act 1987* (Vic);

- Precinct structure plans (in relation to growth areas) and urban renewal frameworks (in relation to urban renewal areas); and
- Policies regarding the management of Council-held land.

Clause 43: Management of groundwater risks to surface waters and cumulative effects

24. Clause 43 valuably draws attention to the potential for groundwater over-extraction to have impacts on surface waters, specifically in the context of licensing decisions. It provides:

Water corporations must ensure that their activities, including licensing decisions, do not pose a risk to surface water beneficial uses, particularly through the excessive extraction of groundwater and the subsequent prevention of surface water environmental flows, and through reducing the quality of adjoining surface waters.

25. The meaning of the phrase ‘the subsequent prevention of surface water environmental flows’ is not entirely clear. There is some potential to interpret the phrase as referring to the complete cessation of surface water environmental flows, such that it would seem directed to preventing only a catastrophic level of impact.

26. The meaning of ‘a risk to surface water beneficial uses’ is also unclear in relation to what the intended threshold of harm is. Since it is the cumulative impact of individual groundwater licensing decisions that is likely to have significant effects on surface water environmental flows (rather than necessarily an individual application to pump groundwater in isolation), it would be preferable to express this provision with reference to cumulative effects, rather than ‘risk’ in an unspecific sense. One option for adopting this approach is presented below, with modifications in bolded text.

- (a) Water corporations must ensure that their activities, including licensing decisions, do not pose a risk to surface water beneficial uses, particularly through the excessive extraction of groundwater and **subsequent effects on** surface water environmental flows, and through reducing the quality of adjoining surface waters.
- (b) **For the purposes of paragraph (a), the risk posed by an activity of a water corporation, including licensing decisions, includes the risk of an activity in its own right, or when considered with other activities, whether past, present or reasonably foreseeable activities.**

27. Adopting a cumulative effects perspective would be consistent with the approach of other Victorian laws and policies related to water. For example, *Victoria’s Policies for Managing Take and Use Licences* (2 February 2014) require that in issuing, renewing, or approving the transfer of a licence under the *Water Act 1989* (Vic), the delegate include in the licence such conditions as are appropriate, covering ‘minimising cumulative impacts of water use’ (cl 17(1)). More broadly, statutory water plans such as those adopted under Victorian water laws generally are inherently a cumulative impact management tool.⁵

⁵ “Cumulative effects, being typified by small developments which extend over time and generally escape any or detailed environmental assessment processes, can have major impacts on catchment water resources.” M Maher, J Nevill and P Nichols, *Improving the Legislative Basis for River Management in Australia (Stage 2 Report: Final Report)* (2001) 26, 59.

28. Note that the text suggested in (b) above adopts the same formulation of cumulative effects used at the federal level in the context of water resources for the purposes of the 'water trigger' under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (ss 24D, 528).