
AWA WA Branch
PO Box 356, West Perth WA 6872
Tel 0416 289 075 Fax (08) 6210 1675
Email wabranch@awa.asn.au

Committee Clerk
Public Administration Committee
Legislative Council
Parliament House
PERTH WA 6000

cstephenson@parliament.wa.gov.au

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Dear Ms Stephenson,

Please find attached a submission on behalf of the Australian Water Association (AWA) to the Western Australian Parliamentary Review into Recreational Access in Drinking Water Catchments and Storages. We welcome the opportunity to provide this input.

The Australian Water Association is an independent, not-for-profit association for water professionals and organisations. AWA provides leadership in the water sector through collaboration, advocacy and professional development. AWA's services include publications, conferences and courses as well as a range of community and industry programs.

We are a member-driven organisation, with over 5000 individual members nationally, and about 500 in Western Australia.

The AWA vision is "Trusted leadership in sustainable water management."

## Background

Increasing demand for recreational opportunities, especially during the hot summer months, and a depletion of wilderness areas close to major population centres have put public and political pressure on water purveyors to make every body of water available to multi-purpose use. Particular interest exists in direct use of the surface water supply for boating, fishing, water-skiing and swimming. Recreational use of the catchment for hiking, camping, off-road vehicle use, horse riding and biking is also sought in many instances.

Such recreational activities can have direct and indirect impacts on water quality through a reduction in the quality, safety and supply security of the source water. This, in turn, puts a higher expectation on downstream water quality barriers such as water treatment. Other issues besides public health and safety can also be impacted by recreational access, including ecology, sustainability and security.

Furthermore, increasing access to catchments for recreational users creates a multiplicity of stakeholders and objectives which may compete with a reservoir's primary function as a source of high quality drinking water. For example, water levels in a reservoir could be expected to rise and fall in response to consumer demand, inflow, drought, environmental

watering needs and other factors. Parties whose recreational requirements demand a more stable water level would have legitimate objectives in competition with this operating regime. This is potentially a source of conflict that could lead to increase costs and environmental and other impacts.

In addition to the impact of recreational activities directly on the surface source water supply, activities within the catchment can also potentially degrade water quality. Animal waste, such as from dogs and horses, even away from the source of water supply, can be flushed into the receiving water body during periods of rainfall and runoff. Moreover, sanitary facilities can lead and release microbial contaminants to the surface and subsurface that may find their way into the water supply. Even when sanitary facilities are fully functional and pet waste is eliminated from the catchment, hiking and biking can result in accelerated erosion of soil within the catchment and that can introduce nutrients, pathogens and sediment to the source water supply. Sediment in particular can also reduce the effectiveness of downstream chlorination. The complex interrelationships that characterise catchment processes make it difficult to provide a quantitative estimate of the extent of impact, given an anticipated or measured quality of recreational access.

Permitting recreational access is potentially at odds then with efforts at source water protection; the weakening of this first barrier (by reducing the catchment's ability to mitigate risk, as well as contributing more risk) may necessitate higher levels of treatment to compensate for potentially poorer source water quality. Catchment management will generally not affect the negative impacts of natural or feral species within the catchment.

## Best practice and management options

Best practice in the management of recreation in water supply reservoirs is to err on the side of caution. Recreational use without a rigorous risk assessment is not recommended. A quantitative assessment is preferable to a purely qualitative approach; and, if the risk assessment demonstrates and unacceptable level of risk (e.g. more than one infection per 10,000 consumers per year) then either recreation must be prohibited or one or a range of management options must be implemented to reduce the risk to an acceptable level. The management interventions that can be applied include the following:

1. Prohibition of land-and/or water-based recreation, or water-contact recreation
2. Access restrictions based on location in the water body, or on the season
3. Permit-based access
4. Surveillance and monitoring; leading to closure in response to any deviations
5. Setting limits on the number of people who can access a catchment area within a period
6. Provision of dedicated recreation facilities on the site
7. Regular inspection and maintenance
8. Public education about the links between recreation and community health
9. Improved water treatment processes.

Recreational access in catchments varies across Australia, from closed catchments, through limited access and up to open access. In most cases, recreation access is not permitted on direct supply sources, but is allowed on pump-backs or emergency sources. Some form of land-based recreation is often permitted in areas some distance from the reservoir or off-take. The following are four examples of access regimes in Australia:

### *Adelaide*

Several reservoirs supply water to the City of Adelaide. All reservoirs supplying drinking water have very limited recreational access. Swimming, boating and fishing are prohibited at all reservoirs except for one, which has a small fishing trial. Some passive land-based recreation is allowed in areas some distance from the reservoir. However, camping and hunting are also prohibited. Water treatment is chlorination, filtration and UV disinfection. Access is limited through surveillance, education and the provision of alternative areas to recreate.

### *Sydney*

Sydney is supplied predominantly from one large reservoir, Lake Burragorang, behind the Warragamba Dam, and several smaller reservoirs to the south of the city that operate as reserve storages. As Warragamba is a very large reservoir with an equally large catchment, some restricted land-based access can occur in areas with low connectivity to the reservoir, otherwise, access within a 3 kilometre exclusion area is restricted, and most activities in areas with direct connectivity are strictly limited. Rangers patrol catchments to ensure recreational activities comply with approval conditions, and to identify and remove those illegally present in the restricted areas. For the reserve storages to the south of Sydney, fishing and passive boating is permitted. All sources have water treatment involving direct filtration and chlorination.

### *Melbourne*

80% of Melbourne's catchment areas are closed to access for all purposes aside from those associated with water supply. This has been the case for more than 100 years. Melbourne Water attributes the high water quality obtained from its water supply catchments to these restrictions. The system's consistently high water quality has obviated the need for Melbourne to invest further in water treatment, beyond chlorination. Secondary benefits from Melbourne Water's policies are the maintenance of very high natural and ecological values within the catchment areas.

*Brisbane*

Impounded waters from which water supplies for South East Queensland are sourced, and their catchment areas, are managed by SEQWater. Many catchments and water bodies are open to a variety of recreational activities including camping, some types of boating, horse-riding, walking, picnicking, and water-skiing in some instances (see http://www.seqwater.com.au/public/recreation/activities-by-location). In a number of catchment areas, there exists significant agriculture with intensive farming and cattle grazing predominating. Public health risk is minimised through the use of sophisticated water treatment processes in conjunction with a range of activities and restrictions to maintain source water quality.

## Regulation

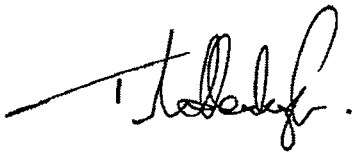
Drinking water quality in Australia is guided by the *Australian Drinking Water Guidelines* (ADWG) and its risk-based Framework, which outlines the key aspects of drinking water quality management across all accountable stakeholders and outlines strategy, planning, operations and research. Water utilities that deliver treated water to customers report to health authorities on their performance against the ADWG. The ADWG emphasises the need to avoid waterborne disease outbreaks through the "protection of catchments from human and animal waste as a priority".

## Conclusion

The above comments are sourced largely from the publication *Watershed Management for Drinking Water Protection* jointly published by the Australian Water Association and the American Water Works Association (Davis, C. (ed.) 2008). In summary, this document and the prevailing view of the AWA is that recreational access to catchments should be limited and often prohibited in the interests of protecting drinking water quality if there are insufficient downstream barriers in the form of appropriate water treatment facilities.

Members of the AWA's Western Australian Branch or its Catchment Management Specialist Network would be pleased to speak further to this submission. If the Parliamentary Review would gain value from hearing directly from members I would invite you to contact Branch President, Noel Lavery, on 9268 4443 or at nlavery@skm.com.au.

Yours sincerely,



Tom Mollenkopf
**Chief Executive**
Australian Water Association