



Ms. C. Stephenson
Committee Clerk
Standing Committee on Public Administration
Legislative Council
Parliament House
PERTH WA 6000

10th November 2009

Dear Ms Stephenson,

RE: Inquiry into Recreation Activities within Public Drinking Water Source Areas

The Federation of Western Australian Bushwalkers Inc has pleasure in making this submission to the Standing Committee on Public Administration inquiry into Recreation Activities in Public Drinking Water Source Areas. We understand that it is for the revision of Statewide Policy No13 (2003), which has now expired. We trust we are able to assist the Committee to devise a solution that gives our members the enhanced bushwalking opportunities they once had while making a positive contribution to the safety, security and quality of public drinking water in Western Australia

The Federation of Western Australian Bushwalkers Inc. was formed in 1992 and is the peak body representing the nine incorporated bushwalking clubs in W.A. and their 1000 members. It is a member of Bushwalking Australia Inc. representing Australia's organised bushwalkers. Its overriding purpose is to facilitate for its members the healthy recreational pursuit of bushwalking. Bushwalking areas close to Perth are of particular importance to our members, because that is where most of us live. The Federation has an obvious interest in protecting the recreational, environmental and water quality values of all bushland, including those in drinking water catchments.

The Federation would welcome restrictions lifted that inhibit traditional bushwalking in drinking water catchments, with the exception of areas where there may be some special cultural or environmental reason for not doing so.

We have addressed the terms of reference and would welcome an opportunity to appear before the committee to explain and elaborate on our submission. This submission was prepared by Mr Melvyn Lintern, with input from a number of members. if you have any questions about the content of the submission please contact Mr Lintern (Mel.lintern@csiro.au).

Yours sincerely,

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Standing Committee on Public Administration
Recreation Activities within Public Drinking Water Source Areas

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EXECUTIVE SUMMARY

- Bushwalking is an activity that increases physical, mental, spiritual and social health and should be encouraged, supported and promoted.
- Bushwalking areas within easy access of the majority of the WA population are limited and the current 2 km impact zone precludes access to a disproportionately high area of access
- The Federation seeks admittance to the water catchment areas for bushwalkers to participate in low impact day walks or equally low impact overnight camping activities. We fully support exceptions for those areas in which there may be some special cultural or environmental reasons for which access should be denied. We would also adhere to any reasonable permit system should that be deemed to be an appropriate management system.
- Policy 13 needs to be updated to reflect current community need /expectation that requires low impact access to water catchment areas, while at the same time, protecting the water supply. Research indicates that these aims are not mutually inconsistent.
- Organised bushwalking (whether day or overnight) is a benign recreational activity that no known research has found to have any adverse effect on water supply.
- Bushwalkers seek a more just and consistent approach to ‘conditional activities’. It appears orienteers and rogainers have had a more supportive approach. Bushwalking is an inherently low impact activity and participants have a vested interest in retaining a pristine environment
- Bushwalkers seek to retain/regain our historical access to walking areas. No research has revealed any adverse environmental effects from our activities.
- Each member organisation of the Federation has rules and education methods for it members to be educated and trained in low impact bushwalking.

Standing Committee on Public Administration
Recreation Activities within Public Drinking Water Source Areas

Submission by the Federation of Western Australian Bushwalkers

1. The social, economic and environmental values and costs of recreation access, where possible, to Perth hills and south west drinking water catchments, including the costs and benefits to public health, water quality, recreation, indigenous culture and management options

Benefits to public health

The Federation's members walk for recreation, relaxation, leisure, a stimulating challenge, nature appreciation, and while doing so keep fit and healthy and socially connected. For some it has been a life changing pastime. Often they are seeking greater solitude, away from popular existing trails and there are also the known cognitive benefits of interacting with nature bushwalking can bring (Berman et al, 2008. Psychological Science, 19:1207). These important social values are recognised by government and government funded organisations:

- At a practical local level the need to get into the bush is recognized in the DEC's **Healthy Parks Healthy People** programme.
- The State Government's **Walking Strategy for Western Australia for 2007-2020** ("[Walk WA](#)") is intended to encourage all Western Australians to walk more and to develop environments in which the decision to walk is easier.
- In commending the **State Government's State Trails Strategy 2009 – 2015** DSR Minister Terry Waldron "recognizes activity on trails provides significant physical and mental health benefits by reducing chronic disease and reducing the epidemic of overweight and obesity. Social, economic, health and environmental benefits are also demonstrated". The Strategy specifically recognizes "defined (or formally recognised) and undefined trails".
- The **Premiers Physical Activity Task force** aims to increase the levels of physical activity within the community.
- The **Heart Foundation** is funded to encourage us all to walk more (www.heartfoundation.org.au/walking).

It is difficult to place monetary value on the catchments to walking but we regard them as priceless - we walk in catchments because we have few other areas to go!

Water quality and bushwalking

Bushwalking, whether on-track or off-track, is widely recognized as a very low impact and environmentally friendly activity. Bushwalkers do not spend much time in any given area as they are passing through, or 'on the move'. Our members have been trained in minimal impact bushwalking techniques and strictly adhere to the principles of leaving no trace, and reinforced by peer pressure.

Despite conditional access to off-track bushwalking given in 2003¹, recent DWSPPs^{2,3} have only stipulated that bushwalking be allowed on designated tracks e.g. Bibbulmun Track. This alteration to the recommendations of Policy 13 was introduced without public consultation. Furthermore, we do not understand why bushwalking with overnight stays was classified as an incompatible activity in public drinking water catchments in 2003⁴. To us (and other members of the community we have talked with) it defies logic. Bushwalkers come from all walks of life but invariably they share one key attribute: They all care deeply about the natural environment. Despite the decades of bushwalking

¹ Table 1 Policy 13 (p9)

² Mundaring Weir Catchment Area DWSP (2007), p41-42

³ Serpentine Dam Catchment Area DWSP (2007).

⁴ Table 1 Policy 13 (p9)

within the drinking water catchments in WA, there have been no cases where pollution of drinking water has been attributed to bushwalkers and we are unaware of any such incidents attributed to hikers in the rest of the world.

There is something ironic in the DoW claims that the quality of Perth drinking water is a vindication of their policy of exclusion, when in fact, due to the long record of bushwalking activity in catchments, the opposite is true. Since the first version of the Bibbulmun track was opened in 1979, tens of thousands of Bibbulmun Track walkers use the catchment sections of the track each year and now even walk through part of the Mundaring Weir RPZ (Reservoir Protection Zone). The Western Walking Club (formed in 1937) had a tacit agreement with water supply authorities that allowed them to bushwalk in catchments – they were seen to present an insignificant risk. In 1993 this tacit agreement was expanded, and put into writing, in an annual agreement between the Water Corporation and the recently formed Federation⁵ (Appendix 1) that allowed all club bushwalking and overnight stays up to 200 m and 500 m of the reservoir edge, respectively. In 1999 the DoW refused to renew the agreement, and bushwalking policies have become progressively more restrictive and draconian. Thus we have a bizarre and contradictory state of affairs.

Defecation is not exactly a polite topic of conversation but is often discussed by bushwalkers and is the principal reason why authorities attempt to exclude the general public from catchments. Human faecal waste has been suggested as a potential pollutant to the water supply through 1) direct human and domestic animal contact with the water body that may pose an immediate threat of pathogen contamination. 2) recreational use such as swimming, fishing and canoeing that can lead to transfer of pathogens into the water body 3) the smallest amount of faecal material on the recreational user that could contain pathogens to contaminate the drinking water source and 4) faecal material that may also enter the reservoir through defecation within the catchment and subsequent overland flow into the reservoir after rainfall. Point 4 is the most relevant to the Federation since our members are not permitted to take dogs or other animals on walks and neither do they come into contact with the water body itself. If someone has to defecate then a site 100 m away from water is selected and a 20 cm cathole (a small hole to bury human waste) is dug first and waste is buried so that no overland flow occurs – minimal impact bushwalking that has been practised in the catchments for decades. Most bushwalkers do not need to defecate in the bush but clearly the assimilative capacity of the soil is enough to cope with this infinitesimally small addition, if and when it happens. It has been demonstrated that scattered disposal of urine and buried faeces have little conservation significance in natural environments⁶.

Walkers on the Bibbulmun Track have toilet facilities provided at the campsites. However, there are no toilets provided between campsites so walkers requiring to “go to the toilet” between huts have to do so in the bush. There is no evidence that the thousands of walkers that have walked the Bibbulmun Track since its creation in 1979 have had any deleterious effect on water quality; many of these bushwalkers have not been specifically trained in minimal impact techniques yet it is testament to the general respect of the environment that bushwalkers have that they must have been digging catholes as water quality in these catchments has remain unchanged – nobody likes to mess up their own backyard. The incremental effect of the relatively much smaller number of our members (say 100-200 per annum compared with the tens of thousands of Track walkers), who choose to walk off track and stay overnight, must be an infinitesimally and immeasurably small additional risk. So too the orienteers and rogainers who have managed to obtain permits to access catchments involving overnight activities.

The most often cited example of contamination of drinking water supplies is the Walkerton (Ontario) incident and is used by DoW and others to warn of the risks of contamination^{7,8,10}.

⁵ Water Authority and Federation agreement (signed 21-12-93)

⁶ Bridel and Kirkpatrick, 2003. *Journal of Environmental Management*, 69:299

⁷ NHMRC and ARMCANZ, 1996, *Australian Drinking Water Guidelines, 1996*. National Health and Medical Research Council and Agriculture and Resource Management Council of Australia and New Zealand, pp. 3-14

The incident was an outbreak of waterborne disease which resulted in seven deaths and more than 2300 illnesses. It was the result of extreme incompetence: During heavy rain, cattle manure on a farm washed a very short distance into a shallow drinking water supply well; the susceptibility of the well to such contamination had been identified more than 20 years before the incident and directives were in place for near-continuous water quality testing; those directives had been largely ignored and log entries and reports were falsified; the contamination in 2000 was therefore not identified in time to prevent the incident. The Walkerton case highlighted the seemingly obvious need for diligent water management by the authorities at all stages from primary source to consumer. It was an extreme and unusual case that shows what can happen when water becomes contaminated, but has no practical relevance to bushwalking or overnight stays within catchment areas.

Strangely, Cilimburg et al (2000)⁹ have on occasions been cited by DoW to incorrectly suggest that improper disposal of human waste by bushwalkers, and recreation in general, presents an insurmountable risk to water quality. The paper actually concludes “...*there is little evidence to suggest that the health hazard to humans is great enough to impose further regulation in areas currently using catholes*”. All Federation clubs impose catholes in areas remote from water sources and public facilities as a recognised means of safe human waste disposal. The paper actually encourages properly managed bushwalking.

DoW often quote Hrudey and Hrudey (2004)¹⁰, as an expert source for all the world’s drinking water contamination incidents. This book has detailed descriptions of 69 waterborne outbreaks, and their causes occurring since 1974 in 14 developed nations. We have analysed the study and summarised the case histories (Appendix 2). In 26 of the 69 outbreaks some victims required hospitalisation, and eight outbreaks involved fatalities. Cited key factors variously identified include inadequate (or no) water treatment, sewage leak or discharge, animal faecal contamination, poor hydraulic engineering and unusual rainfall/runoff pattern; excess turbidity. None of these appear to have been due to subtle risks or events and would have been identified and mitigated prior to the outbreaks if effective water management had been in place. Not one of the incidents involves bushwalking, or overnight stays or indeed recreation in any form.

Furthermore, work by Cole and Spildie (1998)¹¹ has also been taken out of context by DoW to suggest that bushwalkers pose a major risk of damaging vegetation through trampling and this can adversely affect water quality because of increased turbidity. In the paper’s concluding paragraph there is the appropriate caution that “*The experimental data...can only be applied to the vegetation types and trampling intensities included in the experiment*”. Those more familiar with traditional bushwalking areas in WA water catchments know the impact of off-track walkers on vegetation in the catchments is negligible. Finding any evidence that walkers have even recently visited an area would generally be impossible. In any event any possible trampling effect on tracks from traditional bushwalking in Perth’s catchments e.g. Bibbulmun Track would be infinitely less than the impact of bulldozers used on occasions by the catchment managers to thin vegetation to increase runoff into the reservoirs, and also less than the impact of mining and forestry operations that are currently acceptable^{2,3}. Off-track walking in the Perth region’s jarrah forests and wandoo woodlands does not create worn ‘tracks’ or ‘trails’ - the walkers are in very small numbers (especially in comparison to kangaroos, emus, feral pigs and illegal forest users) and very rarely follow precisely the same route on

⁸ Department of Environment, 2004, Water Quality Protection Note 36, *Land use compatibility in Public Drinking WaterSource Areas*. Perth, pp. 6-7

⁹ Cilimburg, A., Monz, C., and Kehoe, S., 2000. *Wildland Recreation and Human Waste: A Review of Problems, Practices and Concerns*. Environmental Management, 25: 587-598);

¹⁰ Hrudey, S.E. and Hrudey, E.J., 2004. *Safe Drinking Water – Lessons from Outbreaks in Affluent Nations*. International Water Association Press, London.

¹¹ Cole, D.N. and Spildie, D.R., 1998. *Hiker, Horse and Llama trampling effects on native vegetation in Montana USA*. Journal of Environmental Management, 53:61-71.

different occasions. Popular off-track walking areas such as the Christmas Tree Well area near Brookton Highway have attracted walkers for many years¹². Even today there are no signs of worn trails in that, or other popular off-track walking areas despite the many visits by keen bushwalkers. In comparison, soil erosion from logging activity in Mundaring catchment has been noted and that Stirling Reservoir has been clear felled to the water's edge²¹.

Objectively, the risk of bushwalkers contaminating drinking water sources and adding significantly to the costs of maintaining water quality is negligible, especially compared for example to the obvious potential for contamination frequently seen at public picnic areas and adjacent to public parking areas along the major highways that traverse the catchments.

Bushwalkers, with an acknowledged interest in preserving the quality of the environment, and water, could provide additional eyes and ears for the DoW. We are told Water Corporation Rangers are few in number, work five days per week, stay on roads and never leave their vehicles. Bushwalkers have a much greater range. Bushwalker's presence in catchments would also act as a deterrent to the activities of people who need a cloak of invisibility, and who may have malevolent intent for the water supply.

2. State, interstate and international legislation, policy and practice for recreation within public drinking water source areas, including information relating to population health benefits and impacts

The Sydney water scare in 1998 highlights the need for vigilance at all levels by water management authorities. It was an extreme case of water management incompetence, involving very poor quality control in water monitoring and methodology, overloaded sewage treatment plants within the catchment, processed sewage (probably containing *Cryptosporidium parvum* and *Giardia lamblia*) used as fertilizer on farms in the Warragamba catchment (Sydney water supply), un-sewered villages within the catchment, feral pigs, cattle grazing, and other animals not controlled within the RPZ. Notwithstanding this incompetence, the Sydney Water Inquiry reported that given the worst possible scenario of detectable protozoa with Warragamba Dam it was most unlikely that any person suffered illness through ingesting contaminated water²¹.

In the outer catchment areas of Warragamba dam there are many population centres including Goulburn, Bundanoon, Moss Vale, Berrima, Bowral, Mittagong, Lithgow and Mt. Victoria which still discharge their stormwater and sewerage into the catchment. Katoomba and Leura have been connected in recent years to Sewerage Treatment Plants that discharge into the Nepean River instead of Warragamba Dam. Farming, usually grazing is extensive in the outer catchment areas. The catchment is very different to those in WA in terms of infrastructure population and use, yet the Warragamba Dam still supplies Sydney with its water without problems.

The Sydney water scare also highlights the embarrassment that can be experienced by authorities and politicians if water supplies are thought to become contaminated – but there has never been any evidence to suggest that contamination has been caused by bushwalkers or overnight stays in catchments. Thus, the authorities controlling the Warragamba Dam catchment continue to allow overnight stays by bushwalkers within most of the catchment outside the RPZ;¹³. They recognize that bushwalkers' overnight stays do not pose a significant risk to water quality and that the catchment provides a valuable recreational opportunity.

¹² Menev, K and Brown, P., 1985. Forests on Foot. Campaign to Save Native Forests, pp 93-95.

¹³ Sydney Water Catchment Management Regulation 2000 under Sydney Water Catchment Management Plan Act 1998; Clause 21.

Tests by the Water Corporation in WA catchments indicate that *Cryptosporidium parvum* and *Giardia Lamblia* are “not a problem”¹⁴. They are two of many pathogens that have been found in water supplies throughout the world and are present in many animals¹⁵ including feral animals (pigs and cats), birds and terrestrial wildlife (including kangaroos¹⁶). Some suggest that these microbes from faeces are actually good for us helping our resistance against diseases and that ultra clean water may be making us sick^{17,18}. There is evidence to suggest that catchments closed off to the public increases wildlife and might lead to poorer quality water¹⁹; thus, bushwalkers in WA might assist in water quality by frightening off pigs that would otherwise dig up the watercourses and cause turbidity and other pollution. Pathogenic organisms occur naturally in even the cleanest most pristine catchments in Australia²⁰. They are naturally filtered out of the catchment through the soil and understorey²¹. The use of large storage reservoirs, as in the Darling Range, ensures that the cyst numbers are low through settling and the action of sunlight²¹. We conclude therefore that the threat to the WA water supply by these organisms is infinitesimally small and that bushwalkers play no part in their spread.

There are a further 74 drinking water dams in New South Wales and Queensland that allow fishing, boating and/or bushwalking with no recorded pollution problems (Appendix 3). In Western Australia, at the dam on Lefroy Brook– the drinking water source for Pemberton - bushwalking is allowed right to the shoreline, and fishing is permitted.

The Federation is well known to the Department of Water as a result of our past discussions and presentations in relation to Policy 13 and specific DWSPPs as they apply to bushwalking access issues. This has included several meetings with senior Departmental officers, written correspondence, attendance at an open day at Logue Brook Dam, and meetings with previous Minister Kobelke and the current Minister Jacobs.

Policy 13 gave the Department of Water authority to use their discretion to authorise access to catchments via “*specific permission in writing*” in Section 2.6, and Section 5.1: “*In special instances, where the activity has been approved historically, activities may be undertaken in accordance with a permit or prior written approval. This includes recognition of recreational activities and facilities that have been established prior to the development of this policy under agreement with preceding State agencies or Governments.*” - As a long-established and accepted activity, having clearly negligible risk to water quality, bushwalking (including overnight stays) clearly comes under that conditional umbrella, and given its long history in most of these areas, bushwalking would reasonably be considered to be an historically significant activity. Recent DWSPPs have now denied bushwalkers access to the catchments and Federation members have been unable to get more than a token relief from these restrictions through direct Ministerial intervention.

Policy 13 provides three potential mechanisms for bushwalkers to seek to maintain legitimate access to RPZs (outside of practical buffer zones) and for overnight stays within the catchments. These are outlined below, however we have not been successful in negotiations with DoW in being able to use them.

¹⁴ Health Department of WA, Annual Report (1999), p18.

¹⁵ Geldreich, E.E, 1996. Pathogenic agents in freshwater resources. *Hydrological Processes*, 10:315-333.

¹⁶ Pathogen movement and survival in catchments, groundwaters and raw water storages. CRC for Water Quality Treatment, 2004. 17 pp.

¹⁷ Furlow, 2005. To your good health. *New Scientist*, 3 December 2005.

¹⁸ Frost, F., 2005. *The Journal of Infectious Diseases*, 191:809.

¹⁹ Walter and Bottman, 1967. Microbiological and chemical studies of an open and closed watershed. *J. Environ. Health*, 30:157-163.

²⁰ Buckley, R. and Warnken, W., 2003. *Giardia and Cryptosporidium in pristine catchments in central eastern Australia. Ambio* 32:84-86.

²¹ Report of the Standing committee on Ecologically Sustainable Development in relation to the quality of Perth's water supply, 2003. Ninth Report. 111 p.

- i) **Environmental Management Plan** ('EMP'; as per Policy 13, Sections 2.4 & 5.4.1). DoW has previously advised that EMPs may be used provided that the proposed activities are “*conditionally*” acceptable in PDWSAs. Under that advice, it would appear that EMPs are not an available mechanism for seeking to maintain access as i) Bushwalking within RPZs and Bushwalking/backpacking with overnight stays are considered in Policy 13 to be “*Incompatible*” activities.
- ii) **Drinking Water Source Protection Plan** ('DWSPP') (as per Policy 13, Sections 4.1 & 4.2). This appeared to be a potentially suitable mechanism for the Federation to seek to maintain access to its traditional walking areas. The Federation understood that the full consultation process was intended to include the DWSPP Assessment document as an information and discussion tool to be made available to key stakeholders (which include the Federation) in advance of a Draft DWSPP being released for a six week public consultation period. In our experience every suggestion for relaxing the policy in favour of bushwalking led a further restriction.
- iii) **Negotiations to engage in approved recreation activities** (as per Policy 13, Section 5.4.3): Section 5.4.3 indicated the possibility for clubs to negotiate for their members to “*engage in approved recreation activities*”. Following discussions through 2002-2003 with Water Corporation and subsequently with DoW, the Federation in February 2006 presented to the DoW a draft agreement for consideration. This was intended as a basis for negotiations toward a new agreement that would maintain access to traditional bushwalking areas within the catchments. The DoW responded by letter on 12 April 2006 reiterating that there would be no relaxation of existing policy in Priority 1 areas of Drinking Water Catchments and in RPZs.

In summary, Policy 13 appears to provide a framework for Federation members to legitimately have rights to bushwalking and backpacking in the catchments – though historical agreements in the first instance. However, we have been thwarted in our attempts to gain access through negotiations with individuals of the DoW. Furthermore, recently DWSPPs have contradicted Policy 13 in that they now deny access to bushwalkers in the catchments except on designated tracks such as the Bibbulmun. New policy needs to be clear and fair in its treatment of bushwalkers in the catchments.

3. The range of community views on the value of water and recreation in public drinking water source areas

The bushwalking community is comprised of a diverse range of individuals from all walks of life and represents a cross section of the general community. Our members include medical practitioners, pharmacists, health specialists, chemists, microbiologists, hydrologists, engineers, lawyers, judges and soil scientists. The Federation has presented its views to individual clubs and explained how bushwalking in the catchments is becoming more restricted. Our members are all in agreement that the situation needs to be reversed and that bushwalking and backpacking, the most benign of all recreation activities, should be allowed in catchments.

4. The costs and benefits of alternative water quality management strategies and treatment for water catchments containing recreation

The Federation of Western Australian Bushwalkers is pleased to see the formulation of a new catchment access regime placed in the hands of the Standing Committee on Public Administration. The Public Drinking Water Catchments are a very valuable resource that should be managed in the interests of all West Australians.

Because there is no reasonable doubt from the worldwide empirical evidence that hiking (or bushwalking) and overnight stays are minimal risk-low consequence activities with regard to drinking water quality issues, and additionally provide enhanced security by providing eyes and ears to monitor adverse activities which might occur beyond the scope of Government monitors, the Federation would like to see all restrictions lifted on traditional bushwalking within catchments, subject to special cultural or sensible management of any risk to water quality.

We believe the physical management of Drinking Water Catchment access by bushwalkers should continue to be managed by the DEC, as currently under their Policy 18. We are aware of the growing involvement of the DSR in the management of visitors to land controlled by the DEC and we are very comfortable with this.

The Federation has previously proposed a walk registration process with the DoW, subject to key guidelines. The Federation unsuccessfully proposed that future access for traditional organized bushwalking activities be according to the following key principles:

1. Advance notice of an intended walk (with walk route map, location of planned overnight stay/s, walk leader's name and contact details) will be forwarded to a nominated Water Corporation [or DoW] representative no less than seven (7) days prior to commencement of a walk.
2. Overnight stays will be in '**temporary designated camping sites**' to satisfy current rules allowing "camping" in designated camp sites only.
3. Overnight stay conditions will be as follows:
 - i) No more than 10 walkers per group per walk event;
 - ii) At least 500 m away from any publicly accessible vehicle track and out of visual sight of any publicly accessible areas;
 - iii) No closer than 200 m to any feeder stream courses to drinking water supply;
 - iv) Human wastes will be buried at least 250 mm deep.
 - v) Minimum impact, no trace.
4. Water Corporation (or DoW) may require a route or temporary designated campsite location to be modified prior to commencement of a walk.
5. The walk leader will carry a copy of walk notice and personal identification to be available for inspection upon request by any Water Corporation [or DoW] representative.
6. Walkers will not enter the Reservoir Protection Zone (RPZ).

5. Possible recreation sites or opportunities available outside the Perth hills and south west drinking water catchments

The Perth metropolitan area is sandwiched between the Darling Range and the Indian Ocean (Figure 1). To the north and south there is sand-plain scrub, some of which is cleared for agriculture and much is being rapidly cleared for housing. With a few notable exceptions it is relatively unattractive for bushwalking. To the east, beyond the Darling Range and its bush, there is mostly privately-owned land which has been cleared for agriculture. The bush of the Darling Range is substantially the only area within a day's easy access of Perth that offers good opportunities for bushwalking, particularly backpacks with overnight stays. It is large, near wilderness with scenic and nature qualities.

Recreation area under threat Drinking Water Catchments and RPZ

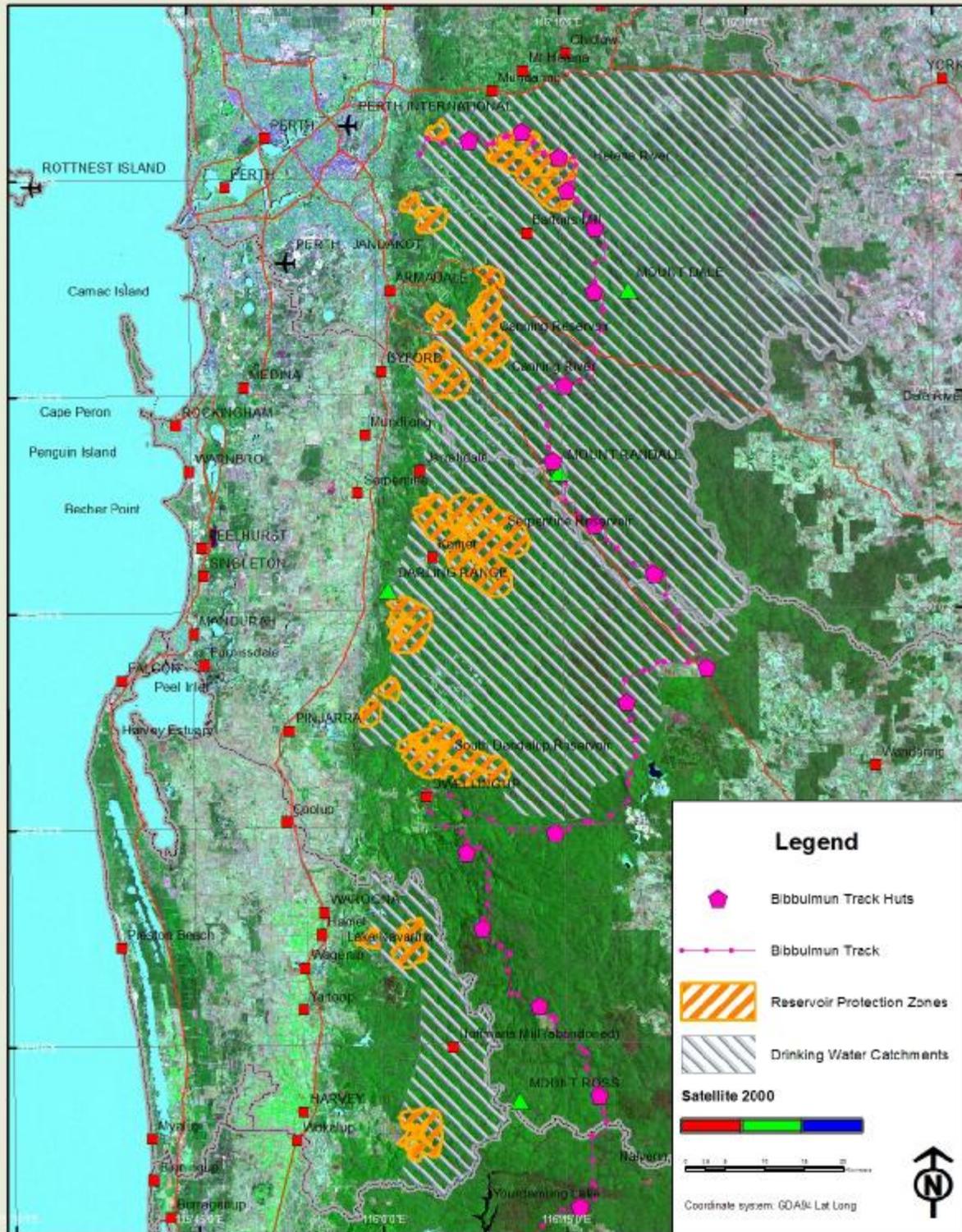


Figure 1: Satellite image showing extent of forested area, cleared land and drinking water catchments.

We are very proud of Western Australia's icon long distance trails (Bibbulmun Track, and the Cape to Cape Track). We helped with construction and alignment of the Bibbulmun Track, and help with its continuing maintenance. Despite this support for formal trails, many of our members find that their best walking experience is on informal routes²². They gain all of the benefits of bushwalking, but 'off-track' walking adds a special sense of freedom, exploration, adventure, and a heightened appreciation, valuation and restorative qualities of wilderness. Often they are seeking greater solitude, away from popular existing trails, including backpacks with overnight stays.

The people who use Class 5 and Class 6 routes (off track bushwalking) are a small part of the overall bushwalking community²³. They have navigation and map reading skills, and superior bushcraft skills and are substantially independent of outside assistance. They are extremely conscious of the environmental impact of all that they do in the bush. Many of them have been walking for many years and are fiercely protective of retaining the wilderness quality of the areas they walk in.

Reservoir Protection Zones are too large

The Department of Water has previously stated that Reservoir Protection Zones comprise a small relative percentage of the total area within each catchment. Unfortunately that ignores the fact that many of the best traditional bushwalking areas are within 2 km of water source areas. The zones up to 2 km wide around relatively small reservoirs lock away disproportionately large total surrounding land areas. Due to the nature of the mainly gentle Darling plateau terrain, there are fewer options for alternative attractive bushwalking areas away from the RPZs than are available in other States. Consequently, restrictions on bushwalking that might seem acceptable to the community in other States, are not appropriate for the Perth region.

It is interesting to note that in their discussion of the safe disposal of human waste, Cilimburg et al, (2000)⁹ have pointed out that "*Many land management agencies... recommend depositing (human) wastes in cat holes 30-60 m from lakes and streams... there is no compelling evidence to alter such recommendations, except to standardise the distance to 60 m*". In the more than 25 years ago since the legislation was enacted there has been no evidence of any focused work by the authorities to understand or quantify the perceived risks that justify the 2 km 'buffer' for all activities. As noted above despite the long history of bushwalking within the water catchments in W.A. there have been no cases where actual or potential pollution of public drinking water has been attributed to bushwalkers, and to the best of the Federation's knowledge there have been so such cases attributed to hikers anywhere in the world.

Furthermore, in Water Quality Protection Note, WQPN6 of February 2006 ("Vegetation buffers to sensitive water resources"), which DoW claimed represented its "*current views*" and "*guidance*" it appears to be implicitly acknowledged that a 'Prohibited Zone' across the entire 2 km RPZ width is unnecessary. It is also encouraging that the DoW when defining default buffer dimensions that are "*considered most suited to the south-west of WA*", indicates in the Note that a minimum appropriate vegetation buffer width within RPZs is 100-200m. Furthermore, "*recommended buffer widths may reduce according to risk level...*". Item 19 in the paper deals with RPZs and specifically refers to Table 1 and the largest buffers. The Note recommends a **minimum 200 m sub-zone within the RPZ** itself as a total activity-exclusion buffer zone. The paper is focused on vegetation rather than access as such, but clearly links the 100-200 m minimum buffer as also being the 'no public access zone'. The

²² These informal routes are described in Australian Standard, AS 2156.1 as Class 5 and Class 6 Routes. Very briefly a Class 1 track is engineered for large numbers of people and can be expected to have many facilities and much signage. Class 2 tracks are a little more rugged, for a smaller number of people and with a lesser number of facilities, and so on. The Bibbulmun track is a Class 3 or 4 trail. Class 6 routes have no engineering, no facilities, no markings, and are 'cross country'.

²³ ERASS statistics for 2007 – the latest data available – say there are 83,800 people who bushwalk in WA, and 6,600 of these are 'organised. The Federation's total membership base is 1000. Most of the organised bushwalkers, and many of the other bushwalkers would only walk on designated and/or marked trails.

explanatory notes on Table 1 of the Note also indicate the buffer is the primary barrier to protect the water body from harm...including to provide “*risk minimization of water contamination...*” There is no suggestion in the Note that public access should be prohibited across the entire 2 km width of an RPZ. DoW’s own publications and statements therefore show an awareness that a 2 km exclusion zone is not universally warranted for protection of reservoirs.

There is clearly a case for a change to the MWSSD by-laws of 1981 to allow for substantial reduction of the prescribed 2 km ‘prohibited zone’ to a more realistic distance such as 200 m. DoW’s WQPN36 of April 2006 (“Protecting Public Drinking Water Source Areas”) states that “By-law changes are currently being consulted to allow the “*two kilometre*” limit to be defined in DWSPPs “up to two kilometres”.

In summary, the basis and need for a prohibited access zone as wide as 2 km, as first prescribed over 25 years ago, and the nature of the restrictions and/or exclusions applying to that zone, needs review. The Federation urges the necessary quantitative risk assessment work to establish appropriate levels of protection be given considerable priority.

Appendix 1: Annual agreement between the Water Corporation and the Federation

AGREEMENT BETWEEN THE FEDERATION OF W.A. BUSHWALKERS (Inc)

AND THE WATER AUTHORITY OF WESTERN AUSTRALIA

(1 January 1994 to 31 December 1994)

1. The Federation of W.A. Bushwalkers (the Federation) and the Water Authority of Western Australia (the Authority) are prepared to enter into an agreement for pedestrian access to be granted by the Authority to catchment areas for the purpose of bushwalking and camping by member clubs of the Federation. The agreement allows for occasional access to areas not covered by the specific conditions of pedestrian access in Class 1 and 2 catchment areas. (ie within the existing 2 kilometre prohibited zone).

2. Currently there are four member clubs with a combined financial membership of approximately 600. They are:

- i) Bushwalkers of Western Australia (BOWA),
- ii) Perth Bushwalkers Club (PBC),
- iii) Western Walking Club (WWC), and
- iv) Action Outdoors (AO)

Walks shall be limited to 50 participants for events in areas that are subject to this agreement.

3. Within the first calendar month of each year the Federation will provide to the Authority with an updated list of Club names and membership numbers of those clubs. This agreement is subject to an annual review and renewal by the Authority following the provision of the required details (within the time allowed). The Authority reserves the right to call a meeting with the Federation to discuss any changes or the cancellation of the Agreement.

4. In participating in this agreement the Federation indemnifies the Authority against any claims resulting from the Federation undertaking its activities.

5. The Federation shall comply with any direction given in writing by the Authority on the understanding that these directions will only be given after the matter of concern has been discussed with the Federation.

6. All Federation member clubs will submit a copy of their programs to the Authority indicating the walks which are intended to pass through catchment areas designated Class 1 and Class 2. These programs will be accompanied by a clearly marked map showing the route of the intended walk. The program and the map will be forwarded to the Authority before the first walk on the program is undertaken.

7. All Federation club member walks leaders will carry a copy of an agreed identification to be presented on request by a Catchment Ranger whilst on official Club walks in areas which are the subject of this Agreement.

8. Camping is permitted in catchment areas on the understanding that:

- a) the activity shall be "minimum impact - no trace",
- b) no more than 15 people will camp in a given catchment area on any one night, and
- c) camping will be discrete and may only take place more than 500 metres from the "full supply level". Also the site should not be visible from the dam wall.

9. On all activities toilet waste will be buried at least 250 mm deep no closer than 200 metres to the high water mark and 100 metres to any feeder streams.

GENERAL CONDITIONS.

1. The Federation will ensure that the assembly area of the walk and the area in which the walk takes place is left in a clean and tidy state following an event and should a subsequent inspection by the Authority indicate problems, arrange to return to the site to clean up any debris.

2. The Federation shall ensure that all vehicles remain on approved roads and park only in designated areas.

3. This agreement does not infer exclusive rights to any areas by the Federation.

Table - Summary of Water Borne Disease Outbreaks in Public Drinking Water Supplies (1974 to 2002): from Hrudu, 2004

Case No.	Date	Location	Failures that led to Outbreak									Illness			Comment	
			Inadequate or No Treatment/ Monitoring	Sewage Leak / Discharge	Excess Turbidity	Poor Hydraulic Engineering	Incompatible Hydrogeology	Animal fecal contamination	Unusual Rainfall/ Runoff Pattern	Other	Unknown	Bushwalking/ camping	Confirmed Cases	Estimated Cases		Deaths
1	1974	Richmond Heights, Florida, USA	1	1									10	1200	0	
2	1974-75	Rome, New York, USA	1										350	5300	0	
3	1976	Crater Lakes, Oregon, USA	1	1									20	2200	0	
4	1976	Camas, Washington, USA	1	1		1							25	600	0	
5	1977	Berlin, New Hampshire, USA	1	1									275	7000	0	
6	1978	Bennington, Vermont, USA	1	1	1				1				15	3000	0	
7	1979	Bradford, Pennsylvania, USA	1						1				407	3500	0	
8	1980	Georgetown, Texas, USA	1	1				1		1			36	7900	0	
9	1980	Red Lodge, Montana, USA	1		1								24	780	0	Excess turbidity due to volcanic eruption
10	1980	Bramham, Yorkshire, England	1	1									0	3000	0	
11	1980	Rome, Georgia, USA	1				1						0	1500	0	
12	1980	Grums, Sweden	1				1						221	2000	0	
13	1981	Eagle Vail, Colorado, USA	1	1									0	81	0	
14	1982	Movik, Sweden	1	1									56	557	0	
15	1982	Edmonton, Alberta, Canada	1	1									895	22000	0	
16	1983	Drumheller, Alberta, Canada	1	1									1326	3000	2	
17	1983	Greenville, Florida, USA	1						1				11	865	0	
18	1984	Braun Station, Texas, USA	1	1									51	368	0	
19	1984	Alsvalg, Norway	1					1	1				22	680	0	
20	1985	Orangeville, Ontario, Canada	1					1	1				57	241	0	
21	1985	Pittsfield, Mass., USA	1		1	1		1					703	3800	0	
22	1986	Penticton, BC, Canada	1		1				1				362	3100	0	
23	1986	Salen, Sweden	1	1									1636	3600	0	
24	1987	Carrolton, Georgia, USA	1	1					1				58	13000	0	
25	1988	Sunbury, Victoria, Australia	1						1				0	6600	0	
26	1988	Boden, Sweden	1	1									0	11000	0	
27	1988	Saltcoats & Stevenson, Scotland	1				1		1				27	27	0	
28	1988	Skeivoy, Norway	1										10	350	0	
29	1988	Swindon & Oxfordshire, England	1							1			516	516	0	Recycling of filter backwash led to excessive levels of contamin
30	1989	Oakcreek Canyon, Sedona, Arizona, USA	1	1				1					3	900	0	
31	1990	Cabool, Missouri, USA	1	1						1			243	243	4	Possible contamination during water meter replacements
32	1990	Moama, NSW, Australia	1	1									8	2000	0	
33	1990	Creston, Erickson, BC, Canada	1					1					124	124	0	
34	1990	Sanitama, Japan	1								1		42	186	2	
35	1990	Isle of Thanet, Kent, England	1						1				47	47	0	
36	1991	Naas, County Kildare, Ireland	1	1									340	6800	0	
37	1991	Uggelose, Denmark	1	1		1			1				0	1600	0	
38	1992	Jackson County, Oregon, USA	1	1					1				43	15000	0	
39	1992	Bradford, W. Yorkshire, England	1						1				125	125	0	
40	1992	Warrington, Cheshire, England	1					1	1				47	0	0	
41	1993	Kitchener/ Waterloo, Ontario Canada	1		1					1			143	1000	0	Recycling of filter backwash may have led to excessive levels o
42	1993	Milwaukee, Wisconsin, UWA	1	1									285	4000	50	
43	1993	Gideon, Missouri, USA	1				1		1				31	650	7	
44	1994	Noormarkku, Finland	1	1		1				1			5	3000	0	
45	1994	Temagami, Ontario, Canada	1	1					1				26	330	0	
46	1994	Victoria, BC, Canada	1						1				100	7800	0	Questionable as to whether outbreak was water borne
47	1995	Village in Fife, Scotland	1		1		1						14	633	0	
48	1995	Yukon Territory, Canada	1	1				1					3	433	0	
49	1995	South Devon (Torbay), England	1	1									575	575	0	
50	1995	Klarup, North Jutland, Denmark	1	1									110	2400	0	
51	1996	Ogose Town, Saitama Prefect, Japan	1						1				125	9100	0	
52	1996	Cranbrook, BC, Canada	1						1				29	2000	0	
53	1996	Stromsund, Sweden	1						1				0	3000	0	
54	1997	NW London & Hertfordshire, England	1						1				345	345	2	
55	1998	Resort Hotel, Bermuda	1				1						0	448	0	
56	1998	Heinavesi, Finland	1	1									15	3100	0	
57	1998	Alpine, Wyoming, USA	1					1	1				71	157	0	
58	1998	Brushy Creek, Texas, USA	1	1				1	1				89	1500	0	
59	1998	La Neuveville, Bern Canton, Switzerland	1	1		1							0	2400	0	
60	1999	Washington Count, Fair, New York, USA	1	1				1		1			171	5000	2	
61	2000	Clitheroe, Lancashire, England	1				1		1				58	58	0	
62	2000	Belfast, Northern Ireland	1	1		1			1				476	476	0	
63	2000	Gulf of Taranto, Matera, Italy	1			1							22	344	0	
64	2000	Walkerton, Ontario	1				1	1	1				280	2300	7	
65	2000	Asikkala, Finland	1					1	1				71	1900	0	Contamination introduced during maintenance
66	2001	North Battleford, Saskatchewan, Canada	1	1									375	7100	0	
67	2001	Boarding School, Hawkes Bay, New Zealand	1						1				0	185	0	
68	2001	Camp Stockholm, Sweden	1	1									11	200	0	
69	2002	Transtrand, Sweden	1	1									4	500	0	
TOTALS			54	36	5	14	8	17	24	3	1	0	11569	195724	76	

Appendix 3: List of water supply dams allowing recreation (fishing and/or boating) in Queensland and NSW

Beardy Waters Dam	Gosling Creek Res.	Awoonga Dam	Gordonbrook Dam
Ben Chiffley Dam	Grahamstown Dam	Baralaba Dam	Hinze Dam
Burrendong Dam	Hune Dam	Baroon Pocket	Kinchant Dam
Captain's Flat Dam	Jerrara Dam	Beardmore Dam	Lake Julius
Lake Cargeligo	Lake Jindabyne	Bedford Dam	Lake Macdonald
Chaffey Dam	Kept Dam	Bowen River	Lake Mondurian
Clarrie Hall Dam	Manly Dam	Cabooitbure River Weir	Lenthalls Dam
Copeton Dam	Mulwala Dam	Charters Tower Weir	Leslie Dam
Crockwell Dam	Oberon Dam	Chincilla Weir	Miles Weir
Danjera Dam	Parkes Rec Lake	Connolly Weir	Moondarra Dam
Dry Dam	Parramatta Lake	Cooby Dam	Mount Morgan Dam
Duneresq (Armidale)	Pejer Dam	Coolmunda Dam	Moura Weir
Lake Endeavour	Pindari Dam	Corella Dam	North Pine Dam
Fitzroy Falls Reservoir	Ryfstone Dam	Cressbrok Dam	Peter Faust Dam
Flat Rock Creek Dam	Tallowa Dam	Ewen Maddock Dam	Somerset Dam
Lake Glenbawn	Three Mile Dam	Fairbairn Dam	Storm King Dam
Glennes Creek Dam	Windamere Dam	Fitzroy Barrage	Sura Water
	Wyangala Dam	Glenlyon Dam	Teemburra Dam
	Yass Wier	Goondiwindi Weir	Wilvenhoe Dam

4. In setting walks the Federation shall minimise disturbance to obviously sensitive areas. Areas that the Authority considers sensitive will after discussion with the Federation be suitably identified on the maps to be used by the persons planning official walks.

Signed by:.....*K. Butler*.....Date:.....*21.12.93*.....

for the Water Authority of Western Australia

Signed by:.....*J. Woodhouse*.....Date:.....*13/12/1993*.....

for The Federation of WA Bushwalkers (Inc.)