

# ENVIRONMENT, NATURAL RESOURCES AND REGIONAL DEVELOPMENT COMMITTEE

## Inquiry into the management, governance and use of environmental water

Melbourne — 5 December 2017

### Members

Mr Josh Bull — Chair

Mr Simon Ramsay — Deputy Chair

Ms Bronwyn Halfpenny

Mr Luke O’Sullivan

Mr Tim Richardson

Mr Richard Riordan

Mr Daniel Young

### Witness

Mr Mark Stacey, immediate past president, River Basin Management Society.

**The DEPUTY CHAIR** — Welcome to the Environment, Natural Resources and Regional Development Committee’s public hearing in relation to the inquiry into the management, governance and use of environmental water. I again extend a welcome to members of the public and any media present. The committee is hearing evidence today in relation to the inquiry into the management, governance and use of environmental water. The evidence is being recorded. The hearings are also being filmed and being broadcast live via the Parliament’s website. All evidence taken today is protected by parliamentary privilege. Therefore you are protected for what you say here today, but if you go outside and repeat the same things, those comments may not be protected by privilege.

I welcome Mr Mark Stacey, who is the president of the River Basin Management Society. Today’s evidence is being recorded. You will be provided with proof versions of the transcript at the earliest opportunity. Transcripts will ultimately be made public and posted on the committee’s website. I invite you to make a very short, sharp 5-minute presentation, and then committee members will ask questions.

**Mr STACEY** — Thank you for having me here. I should start by correcting the record. I am actually the immediate past president of the River Basin Management Society. I was the president for the last two years and am still on the executive, but I am the immediate past president.

**The DEPUTY CHAIR** — That is my fault, actually; the notes do say immediate past president.

### **Visual presentation.**

**Mr STACEY** — That is okay. As I said, I have been on the River Basin Management Society, which I will call RBMS today, on their executive, for the past five years. Our organisation is a representative body for professionals who work in the catchment and waterway management sector. We have got approximately 300 members from across academia, not-for-profit organisations, students, government and private enterprise as well.

What I was going to do today is quickly touch on each of the terms of reference that were talked about, but before doing that I just want to provide a bit of context for management before jumping into each of the terms of reference. It is important to recognise that Victoria’s water management system was developed to support consumptive use. As a consequence of that we have seen some quite profound changes to the way that our water systems are managed. We have had a lot of physical changes, with the reservoirs and the like being constructed on the system, which has changed the seasonality of flow, and we have also had governance arrangements — for example, setting up a water accounting system that starts on 1 July and ends on 30 June each year.

We have seen a lot of investment into the environmental watering program, but despite that a lot of what I would call the legacy issues still have not been fundamentally addressed, and I am going to argue today that they are constraining the effectiveness of environmental watering in Victoria. I will quickly go through them in the amount of time I have.

The first one was about blackwater. The point that the River Basin Management Society would make on the topic of blackwater is that it is a naturally occurring event, but it now occurs more frequently and more severely than under natural conditions, and that is attributed largely to having fewer higher flows as a result of the construction of reservoirs. What that means is that we have organic matter accumulating on the flood plain, which gets to higher loads than it previously would have. Also the higher flows that do occur typically occur later in the season now, when the weather is warmer, so as a result when organic material is washed into the channel the microbial activity happens faster and we are more prone to getting blackwater events. I use the phrase ‘the system is more primed’ for blackwater as a result of a reduction in high flows, and then when they occur there is the greater potential for that primed system to really kickstart and cause a blackwater event.

The reading that we have done to support this indicates that there has been no scientific evidence thus far to indicate that environmental water has exacerbated blackwater events in Victoria. Environmental watering, however, can be a critical tool in the prevention and mitigation of blackwater. It can be used to prevent blackwater by getting water onto the flood plains and reducing organic material loads, and it can also provide mitigation when blackwater events do occur, or are likely to occur, by essentially providing that dilution flow to reduce the impact of that.

But the ability to undertake those measures is quite significantly constrained by the ability to inundate, particularly, private flood plain land, so the management of blackwater would be greatly improved if there was improved ability to water flood plains and also greater predictive capacity so that one could determine whether a blackwater event was likely to occur and then respond to that proactively, rather than reactively when it does occur. That could be improved through scientific research of blackwater mechanisms but also monitoring of the river system to understand how and where to get water down for dilution events.

On the topic of carryover and trade, I think again it is important to recognise that we are operating very much within a system designed for irrigation use. Here I have got a chart of mean monthly flows in the Goulburn River below Lake Eildon. You can see the blue shape there shows the natural conditions where prior to European settlement the flows would have been peaking in that late winter, early spring time of year. Then we have fundamentally changed the river system to support an irrigation demand which has high requirements in December, January, February, March and the like.

As a result of that change we set up a water accounting system that starts on 1 July every year — what we call the water year — and that is very much suited to irrigators. You can see that they have got several months to build their allocation before they want to use it in summer. That water is then being imposed on the environmental watering program, and the environmental watering program would prefer to use its water earlier in the season. If you were to set up a water year account for environmental water, for example, you would probably start it in March. So fundamentally different types of flow requirements throughout the year mean that environmental water is operating in this constrained water year environment.

The implications are that that was one of the reasons why carryover was set up — because we did not want to do the overhaul of the water accounting system. As a result carryover was first introduced for environmental water in, I think it was, the mid-1990s for the Barmah-Millewa entitlement, when that was set up. That is really critical now for enabling those early spring environmental water releases to be provided for, and increasingly it is being used to do multiyear planning of environmental water allocations.

Together, carryover and trade have been demonstrated time and time again to provide a more efficient use of environmental water and therefore reduce the amount of water that will need to be set aside for environmental purposes to achieve a given level of environmental outcome. I should just note that the proportion of carryover that is being used with held environmental entitlements seems to be similar to the sorts of proportions that non-environmental water holders are using at the moment.

Quickly on the matter of barriers to efficient use, I just need to set the scene again. The environmental watering program has been around for about 20 years compared to irrigation, which has been around for 100 or more years, and so we need to acknowledge that it is still a relatively young program and particularly the volumes of environmental water that are held now come in recently in quite large amounts. In light of that, some of the greatest barriers that now exist to efficient use of environmental water are through imperfect knowledge. So actions that we could undertake to address that would be increasing our metering and monitoring of our networks and providing research to enable improved predictive capacity that could allow environmental water and events to tie in with natural flow events, irrigation water releases or urban water transfers and the like. I think I have largely covered that.

I will also say that there is obviously quite a focus on what is called shared benefits at the moment in Victoria from all water users, ensuring that we can try to tick off on other people's needs where it does not compromise the original objective of the water holder's water. I see that being increasingly common in Victoria, but we just need to stress that environmental water is for environmental purposes, and so while shared benefits are great to achieve where possible, we need to recognise that you cannot prevent environmental outcomes being achieved through that process.

Some other things that could be done to address barriers include works to utilise return flows — so when the water flows into a wetland, enabling that water to be redirected back to the environmental account so it can be reused downstream — and a lot of work on physical infrastructure to remove barriers.

Quickly on fees and charges, I guess the argument I should point out is that there is a pretty important principle that needs to be applied when setting fees and charges, and that is a beneficiary-pays principle. That would say that users who seek private benefits from the water and users who seek public benefits from the water would naturally have different fees and charges associated with those. It is appropriate for public benefits to be

financially supported by the public, and we would very much advocate that we want to avoid an arrangement where we are selling off environmental water to cover the fees and charges associated with environmental watering programs, because that essentially takes quite a backward step. The last principle there is that where discrepancies are existent in fees and charges at the moment, a lot of the time that is due to past government investment in water savings programs and the like, which has led to things like headworks exemptions in some charges.

Summarising all of that, we have got a water management arrangement with some significant legacy biases against environmental water use. That context means that we get increased blackwater events. We need extensive use of carryover and trade. We have got significant barriers that need to be addressed to get more efficient use, and it justifies the beneficiary-pays fees and charges model. We have got a range of options that researchers and practitioners are working on to address each of those.

**The DEPUTY CHAIR** — Thanks, Mr Stacey, and thanks for your submission. If you are happy to table that overhead presentation, that would help our authors of the report.

**Mr STACEY** — I am certainly happy to.

**Mr O'SULLIVAN** — Thanks very much, Mr Stacey, for coming in. It was a very comprehensive presentation that you gave to us. There are two things I just want to revisit from your contribution. With the 'beneficiary pays' that you were just discussing there, you were saying how the user should pay for the fees and charges and you basically made the comment that environmental water should not have to sell some of its water to pay for its fees and charges.

**Mr STACEY** — That is correct.

**Mr O'SULLIVAN** — Can you sort of expand on that? How should those charges and fees be paid if they are not going to sell environmental water to do it?

**Mr STACEY** — Sure. At the moment the vast majority of funding from the environmental water program comes through consolidated revenue, as I understand. When we were doing the consultation with our members, one member put forward an example, which is in the submission, that in the late 1990s there was 13 gigalitres of environmental water that was delivered at a cost of about \$155 000 at the time to cover the fees and delivery charges and that in response to that the environmental water was sold to essentially recoup the cost for that and as a result less environmental water which had been specifically allocated to achieve environmental benefits was provided to achieve environmental benefits.

I guess our view is that the consolidated revenue stream that supports the environmental watering program at the moment is the best place to do that. The reason for that is that the amount of water that is in the Victorian environmental water holdings at the moment has been derived based on scientific research and investigations as a bottom-up approach to see how much water is required to support the ecosystems. Now we have got that water in reserve, it would be backwards to essentially extract water out of that reserve just to cover financial costs.

**Mr O'SULLIVAN** — I guess the money has got to come from somewhere, so you are sort of saying that other people should pay for it.

**Mr STACEY** — Consolidated revenue, like the rest of the program.

**Mr O'SULLIVAN** — It is all very well just to say to the poor old taxpayer, 'Pay for it'.

**Mr STACEY** — We would argue it is a public benefit that is being provided by the environmental watering program, so it makes sense that the public pays for it.

**Mr O'SULLIVAN** — But that does not always apply to the private user, because the private user cannot pass on that cost to the end beneficiary, which would be the consumer. Often they have to wear that cost themselves, and it comes off their bottom line, so it is not as simple as you make it out to be — that the beneficiary pays.

**Mr STACEY** — I certainly cannot speak to the money flows in agriculture, so I could not comment on that.

**Mr O'SULLIVAN** — Yes. The poor old farmer has to wear the costs, and they can never pass any of those costs on, so it impacts their bottom line.

**Mr STACEY** — I will not comment on that.

**Mr O'SULLIVAN** — In terms of the reuse of water, can you give us more of an indication about what opportunities there are for water to be used more than once as a part of the way it is accounted for in Victoria?

**Mr STACEY** — Sure, at a higher level. For example, if you had an environmental water release coming out of the Goulburn system, you might go along and provide that into effluent channels and things to achieve benefits to the flood plain wetlands and the like, and then some of that water would be passed through the system at a later date as it gets soaked through the water profile and gets returned back into the stream. That might not be within a matter of hours or a matter of days; it might even be a couple of months later on. My understanding is that generally the water accounting we have in place means that that lag time means that that water does not get accounted for. So while that water then might go down and potentially could be extracted — pumped into the Hattah lakes, for example — at the moment there is not the mechanism to enable that reuse to occur, so the water then goes back into I guess the consolidated pool of water rather than being available for future environmental use.

**Mr O'SULLIVAN** — So who ends up with it once it goes back into that consolidated pool? Where does the ownership or entitlement then land?

**Mr STACEY** — It is a complex system. It depends exactly which storage it gets caught in. So under that example I believe the Murray-Darling Basin Authority takes charge of the water that comes into the Murray, but I am not a specialist on that. There are certainly incidents where water is applied for environmental use, some excess is delivered back into the system and it is not available for environmental reuse.

**Ms HALFPENNY** — Just going on to the first term of reference, which is about blackwater events, and what your submission is saying about the way that water is managed leading to increased blackwater events, I am assuming that is the harmful blackwater events, because I think we have heard in some cases as a natural thing it is minor; it does not affect fish and so on. So you are talking about the harmful —

**Mr STACEY** — Yes. What would be called the severe events sometimes.

**Ms HALFPENNY** — That argument is that there should be use of environmental water to go onto the flood plain to sort of wash what is collecting up there —

**Mr STACEY** — Correct.

**Ms HALFPENNY** — which includes on private land. Is that the issue?

**Mr STACEY** — In some cases. That is right, yes. So both public and private. Obviously there are a bunch of constraints. Even public land might have a levee up, for example, that was constructed for a previous use that might not be relevant anymore if the system has been returned to a national park, for example.

**Ms HALFPENNY** — On that, maybe then just go through some of the water management controls that you believe create —

**Mr STACEY** — Sure. I guess there are the physical controls that exist along the flood plain — so things like levees themselves, which prevent water getting into locations, and bridges and culverts and things — and their capacity might not be sufficient to inundate the flood plain to remove that organic material that is stored on the flood plain. And then there are a whole bunch of operational requirements. I guess if you think to the way that the storages are managed and the like, as I said earlier, the water framework and the focus on irrigation mean that we capture a lot of our water that occurs. Typically the high flows that would have occurred during that winter period get captured in the storage, and so they do not have those flow pulses coming down to regularly remove the material off the flood plain.

**Ms HALFPENNY** — So what would you say we should do to sort of remedy that? I am not sure in terms of your work experience, but, for example, in Shepparton we heard that people are concerned that this will damage property and stock and livelihoods.

**Ms STACEY** — My understanding is that the state government has a policy not to inundate private land at the moment with environmental water. The River Basin Management Society would like to see more done to address that issue and provide mechanisms for private land to be inundated if they had the landholder's support, for example. So my understanding at the moment is that that cannot happen due to the state policy.

**Ms HALFPENNY** — So do you think the concerns of the private landowner are justified or not? Should they be worried or not worried? I think there seems to be this view that if it is allowed to happen, then it will be disastrous.

**Ms STACEY** — Sure. I am not an agricultural specialist, so I cannot speak to the impact that having water on the flood plains would cause for different agricultural uses. In some cases people might have temporary pump stations and it might be an easy matter for them to work with the authorities, for example, to get an appropriate alert, take the pump out of the water and enable a high-flow event to occur. Other sorts of agricultural uses may be much more reliant on having fixed pump stations and cannot have that inundation. I am not an expert, but certainly my view would be that there are likely to be many different opportunities across the state where you could work more closely with landholders to support inundation of private land for the environmental warning program.

**Mr RIORDAN** — We have heard a lot about the increase in blackwater events because of the changed river regimes and so on. We are prone to having blackwater events on the flood plains that would cause them. Is someone doing regular monitoring of leaf litter and vegetable matter or whatever so that we start to build up knowledge of, you know, 'This area has not flooded for five years; this much coverage of red gum or whatever will equal this type of event'? Does anyone do that? Do we have that monitoring in place?

**Ms STACEY** — Not that I am aware of at a practitioner level. I believe one of your experts today is going to be Dr Baldwyn, who has been studying blackwater for many, many years, so it would be better to talk to him on the monitoring that goes on and is associated with the research program. But I am not aware of that being rolled out at a statewide practitioner level, so to speak.

**The DEPUTY CHAIR** — Just a quick one from me. I think Mr Young and Mr Richardson have indicated that they are happy with the current questioning. You talked about shared benefits from environmental watering, yet your submission sort of indicates, 'Well, that's all fine, but not at the compromise of the environmental objectives'. Have there been examples where there has been compromise of shared benefit to the environmental objectives?

**Ms STACEY** — It is an interesting point. I actually represented the River Basin Management Society at the Victorian Environmental Water Holder's stakeholder forum they held last week, and I asked that question and I was not provided back with an example of where there has been a tangible time that there was a conflict between the two. They spoke to times where there has been, for example, a kayaking event, and they have been able to shift their environmental water release to support the kayaking event and not constrain the environmental objective. I personally suspect that there are going to be examples popping up where the environmental water objective will be constrained, but I have not been privy to those experiences yet.

**The DEPUTY CHAIR** — Mr Anderson might well have a view about that. Thank you very much, Mr Stacey, for your presentation. If you are happy, we would like to have access to your presentation.

**Ms STACEY** — I am very happy with that.

**The DEPUTY CHAIR** — With a spell check or two perhaps needed for those teachers amongst us that may well pick it up.

**Ms STACEY** — Yes, that was late at night in front of the cricket.

**The DEPUTY CHAIR** — For your submission, thank you very much for your time this morning.

**Ms STACEY** — Thank you.

**Witness withdrew.**