

ENVIRONMENT, NATURAL RESOURCES AND REGIONAL DEVELOPMENT COMMITTEE

Inquiry into the management, governance and use of environmental water

25 October 2017 — Bendigo

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

Witnesses

Mr Brad Drust, Chief Executive Officer, and

Ms Louissa Rogers, Program Manager, Environmental Water, North Central Catchment Management Authority.

The ACTING CHAIR (Ms Halfpenny) — Welcome, Mr Drust and Ms Rogers and members of the gallery, to the Environment, Natural Resources and Regional Development Committee public hearing in relation to the inquiry into the management, governance and use of environmental water.

I will go through the formalities first, and then you can introduce yourselves. The committee is hearing evidence today in relation to the inquiry into the management, governance and use of environmental water, and the evidence is being recorded. You will get a proof copy of the transcript once it is available, and you can check it for accuracy before it is made public. Also anything you say within the hearing is protected by parliamentary privilege. However, if you say those same things outside the hearing they are not protected by parliamentary privilege.

First of all, if you would like to introduce yourselves and give a bit of an opening statement, and then we can ask you questions. Thank you.

Mr DRUST — Thanks very much for the opportunity to present to you this morning. My name is Brad Drust, CEO at the North Central Catchment Management Authority, and I am here with —

Ms ROGERS — Louissa Rogers, and I manage the environmental water program. We are really pleased to have the opportunity to present to you this morning. In our view the presentation builds on our written submission, which is part of an overall government submission to the inquiry, and a site visit to Gunbower forest a little while ago with some of the members of the committee as well.

North Central CMA as an organisation plays a pretty key role in the management of environmental water, with a local delivery partner role in planning for delivering and monitoring environmental water resources in Victoria. We have got a brief presentation this morning to support our evidence to the committee that will cover all the topics, and I will hand over to Lou to present that. The four key topics are our engagement approach — the way we work with our partners and the community; achieving outcomes in working waterways; enabling and complementary measures to environmental water management; and a brief comment on the distinction between beneficial and toxic blackwater. I will hand over to Lou to give the presentation.

Visual presentation.

Ms ROGERS — Brad just gave you what the 5-minute presentation is about. Our engagement framework is fairly robust. We engaged our community through environmental water advisory groups — and with these environmental water advisory groups, members nominate through a public expression of interest process. We also do some targeted requests for representation from key interest groups. We review our EWAGs biannually. We have a diverse range of stakeholders on these groups, including the local community. We have irrigators; we have representatives from the Victorian recreational fishing body, Field and Game Australia and other hunters and Birdlife Australia; and we have our stakeholder agencies as well.

Through the engagement process the primary role of the environmental water advisory groups is to provide input into our annual water planning process. This includes local knowledge and experience of the environmental, social and economic values of the sites that they are providing input into, how their systems have behaved hydrologically historically. This is a really key input — it helps us actually understand what we are going to be expecting to see when we are delivering water. Also the community's and stakeholders' knowledge of changes over time — the threats to these systems — provide input into our risk assessment. We also ask our EWAGs to provide us with their knowledge of where we can deliver opportunities for shared benefits with our environmental water.

I just wanted to give a quick overview of how we manage environmental water in our working waterways. All of our waterways in the North Central CMA region are predominantly dominated by irrigation. This is an example of the flow prior to us delivering environmental water in Gunbower Creek, and this flow over time — you can see the rapid up and down and up and down — is dominated by the irrigation demand within that creek. Over winter time the creek would draw down to cease to flow — so it would restrict down to deep force.

The ACTING CHAIR — Is this explaining the same —

Ms ROGERS — Yes. Some of that fluctuation was actually hundreds of megalitres over even a couple of hours. It was really detrimental to native fish. Native fish are adapted to the way water would flow into a river

system — fairly gradual rise, fairly stable flows, and then it would slowly ramp down. In Gunbower Creek it is absolutely impossible for us to turn it back to what it once was and nor would we want to. It is a really important irrigation carrier in our community. It is actually the key creek that delivers all of the water from Murray River to the Torrumbarry irrigation area, so it is really important for our irrigation community.

We work with scientists and community to look at the fish needs in this creek that we could actually manage. What we have been doing is, we deliver flow over winter, and what that does is when the young fish are born the previous year, when they are restricted down to those deep pools they are actually predated on by all of the native fish, the big fish. What that does is it inundates littoral vegetation and allows the little baby fish to hide, and they are more likely to survive through the year.

The spring rise is actually to cue fish like Murray cod to breed. That is a natural process that they would respond to. We then provide stable flows over summer. So once those eggs have been laid and the juveniles from the larvae have hatched, they are then able to get into little nooks and crannies up on the riverbank where the big fish cannot get to them and they can metamorphose into juvenile fish, and then we run it back down to the winter base flow.

What we have found — and I do not think this has got a pointer — the top graph shows that that is our catch for the autumn of 2013, before we started delivering these flows. We have actually had another year of data since this, but we have not been able to analyse that into a graph yet. What it is showing is that we are actually seeing young fish surviving each year and we are also seeing in the years subsequent that we are actually getting larger fish as well, that are still yet to reach sexual maturity. What this means is: one, we are actually seeing these young fish surviving through the winter period, but we are also bringing more fish into that pool of fish that will be able to be used by recreational fishers going forward.

We also want to talk about one of your terms of reference, which is around the efficient use of water. Environmental water on its own cannot achieve everything; we need to have enabling and complementary measures. The case study I am going to give you is about Pyramid Creek. Prior to the 1960s Pyramid Creek was a wide, flat creek. It was dredged in the 1960s, as you can see from the photo on the left, to be channelised. That improved its hydrologic capacity to deliver irrigation water, but what it also did was just remove all of the habitat that was available for native fish. This is a really important creek; it actually connects two big systems. So what we have been doing is putting snag complexes in. In the photo on the right you can see that there is some wood in there. We pin these down to the riverbank so that they cannot move. They will not be washed away by floods, so they are very safe and they will not cause hazards downstream. We are also fencing the riverbank, and we are putting in fishways.

The stream on the left-hand side is the Loddon River, on the right-hand side and to the top is Gunbower Creek, and the line at the top is the Murray River. Pyramid Creek connects these two systems, and we have got fishways on a weir in Kerang and we have got a fishway at a swamp which is not part of the irrigation storage network — in Kow Swamp. We have found that we have been delivering environmental water through these fishways now — autumn last year was our first one, and just this spring, we are getting a major movement of golden and silver perch from the Murray River system through into Kow Swamp, which is a wonderful nursery habitat for those fish. We are also getting lots and lots of Murray cod coming in and moving in and living on our snags and moving around and eating the food. We are pretty excited about the opportunities that this is going to be presenting in the future. That is the old regulating structure, and now this is the structure that has the fishway on it for Kow Swamp.

We want to talk about and to build on what we discussed in the forest around beneficial blackwater. When we water Gunbower forest we actually know that there is a risk of a blackwater event happening, and we have a risk management framework which modelling has supported. We know that below 4 milligrams per litre is when the risk actually occurs for fish kills. As the water is coming off the forest — so the dark blue line is Gunbower Creek water downstream of the outfall of the forest, so where the water is coming off the forest, and the blue line is actually the DO in the creek itself upstream — what we do is we wait for the water; we observe the dissolved oxygen downstream, and then as the DO gets to that danger period, we actually then deliver water from the Gunbower Creek to freshen it up.

You can see here — it is not very clear with all of the light — that that is very dark water there that is coming off the forest, and that dilution flow is coming in from the left, and then hitting the Murray River. So the dissolved oxygen is not a problem, but the carbon that is coming in off the forest is a really, really important

food source for our native fish, for the macroinvertebrates and also for platypus and turtles. So it is really key that we are actually able to deliver some of this beneficial blackwater into our river systems as the basis of the food web.

The return on investment in our region — obviously we have these environmental outcomes. We are actually starting to see some really great monitoring results, which we are more than happy to give you if you need them, but we are also aiming for lots of recreational benefits. When we water our wetlands that are state game reserves, obviously there are significant economic and recreational outcomes for the region in terms of Field and Game Australia and hunters coming up and hunting. We have fishing opportunities, particularly as we are starting to see these young fish coming through the system. In a few years' time these fish will be within the range that they are actually legally able to be fished. Obviously there is the amenity for camping and enjoying the outdoors.

We are also working with our traditional owners to start incorporating more of their cultural values into the water planning framework. This is a very new space, but we are getting some really good opportunities with that as well. So that is just quickly what I wanted to discuss.

The ACTING CHAIR — I will go first, and then we will mix it up a bit. Just on the first slide you were talking about the engagement framework. In submissions and also in some of the hearings yesterday they were asked for comments about communication, which is essential. There were comments that, you know, people do not know why the river is going up and down, and if it was only explained to them, they might know and might be more understanding or accepting of whatever is going on.

I see you have been established since 1997, and I guess what I am talking about is the irrigation versus environments and the use of water. Have you seen a shift in attitudes or a greater understanding within communities about the need to protect our rivers, or is it still very one side or the other?

Mr DRUST — I might start with a couple of comments. CMAs have been in existence since 1997. The environmental water management approach in Victoria is much younger than that though, so it is —

The ACTING CHAIR — You are right. They did say yesterday —

Mr DRUST — probably about 10 years — in that sort of order — that it has been a significantly emerging field for Victoria. If you compare that to the irrigation industry, it has got a 100-plus-year industry, so as an environmental water industry I think we are still learning. I think we have come up to speed pretty quickly, and I think more and more we are recognising that there does not need to be — in an entitlements sense there needs to be, but in terms of the way we manage our rivers and wetlands there does not need to be — a tension between irrigation water use and environmental water use. We actually think that the uses of those two sources of water can be quite complementary in the smart management of our waterways.

The ACTING CHAIR — Can you expand a bit on that then — how they can be complementary?

Mr DRUST — Yes, I might ask Lou to give a brief example of the Campaspe River and some of the work that we have been doing there.

Ms ROGERS — The Campaspe River holds water in Lake Eppalock. It is a tributary river to the Murray as opposed to Gunbower Creek, which is an anabranch and actually sources its water from the Murray. Lake Eppalock holds — I do not know all the numbers, but it holds entitlements for irrigators and environment. It also holds a lot of water that is trade water. Goulburn Murray Water needs to manage that trade water and often needs to deliver it over the summer period. We work closely with Goulburn Murray Water to use that trade water in line with our flow recommendations for the river. So we have flow recommendations for base flows over summer. We have flow recommendations for freshers.

Over the last three years a number of the flow events that we have been delivering through the Campaspe River have actually been trade water on its way out to meet downstream user needs, and that complements the environmental water with which we are able to deliver our high flows over the winter period and spring period before irrigation demand is high. So that is an example of where we are working closely with the water authority to use consumptive water and environmental water to complement each other and achieve environmental outcomes.

The ACTING CHAIR — When you were saying that you are still learning because it is relatively new, is there anything — this might be a bit hard — any suggestions or just I guess learnings from what has already happened around government policy, where perhaps there could be some ideas, changes or initiatives introduced by government to improve the way things are, I suppose?

Mr DRUST — On the point that you made earlier about the understanding of the community, about environmental water, its objectives, I think there is an emerging recognition there that we have got some work to do with the community about environmental water, the way it is managed and what we are seeking to achieve with it. I think that is a key area that government can explore further and is already making some moves to pursue.

Ms ROGERS — I would just like to add that in the community group process that we have, often when we first have new people in our groups, we value the information that they come to the table with, but what is wonderful is when they actually are able to learn about the science, see the science in practice and get an appreciation of what we are trying to do in the space that we are trying to do it. The science is a theory. We can never deliver exactly what the scientific literature historically used to say, which was, ‘This is what the river would have done prior to regulation, and therefore this is what it needs’. We cannot do that, so we have to be working in this space where we need to find out what the critical things are that we need to do with environmental water where there is no wriggle room — we have to do those things — and then what the other things are that we cannot do but it actually does not matter and we do not need to worry about trying. Being able to find the space to do that and have communities understand that we need the space to do that — the more resources we have to do more comprehensive engagement the better.

Mr DRUST — The other point in there is the one around shared benefits. It is already an area identified by government as a key focus for the future of environmental water management and putting in place a framework so that we identify those shared benefits. How do we deliver an environmental outcome, which is the primary purpose behind environmental water management, but where possible maximise the social and economic benefits that we get from management and also recognise the link between a healthy and sustainable working waterway system and the benefits that that provides in itself?

The ACTING CHAIR — Just one quick one to follow up on that — the forums that you have, is it a two-way thing as well?

Ms ROGERS — Yes.

The ACTING CHAIR — So if individuals have an idea or a concern or whatever, those things are addressed as well as being presented?

Ms ROGERS — Yes. I can give you an example from our recent planning meeting for this year. Lake Cullen is a wetland in the Kerang Ramsar site. It is a massive wetland, and we are only able to deliver water at the moment because of the risk that there may be some groundwater interaction with some neighbouring wetlands. Two community members on our EWAG, one of whom is new, said that is not in their lived memory of how this system operated in the 1956 floods and the 1974 floods, and so we have taken that information, we have secured funding to do an investigation. We are actually going to test what the science told us back in 2003 — which was a millennium drought, and admittedly groundwater may have been behaving differently — and then if that investigation demonstrates that these landholders and community people have given us the right information, we will be able to change the way we manage that wetland going forward, which is a major boon for the area. It is actually a really highly productive wetland for waterbirds.

Mr RIORDAN — Thank you. Thank you for the other week too; it was a good experience, and it was useful in terms of some of the other discussions we have had since. It seems to me that the example you showed us at the Gunbower forest of using environmental water to achieve quite a lot of outcomes is a good example of where environmental water can be engaged with and get all sorts of outcomes without too much conflict with traditional agricultural uses that obviously cause problems in other parts where transferring the water, for example, will mean flooding private land or whatever consequences. Correct me if I am wrong, but that is a really good example of where it can work quite well, where everything is controllable and manageable and where there are minimal downsides, I guess.

Some of the other sites we looked at are trying to do something similar. There are groups wanting to do similar things, but it involves conflict with existing as-of-right uses. The question I had was: when talking about the build-up of leaf matter and vegetable matter and so on, traditional owner burning practices and so on, is that an opportunity to target other areas less accessible with man-made flooding events? Is that an option that could work as part of a blackwater management plan?

Ms ROGERS — I guess it would be something we would have to try and see. Barapa are the traditional owners for the Gunbower forest. There are areas of the Gunbower forest that we actually cannot reach with environmental water. We do not do fire, but the Department of Environment, Land, Water and Planning forest fire group have been working with traditional owners Dja Wurrung and are starting to work with Barapa to do cultural burns, which are targeting areas that are adjacent to waterways and wetlands, so this is a watching space. I think that might be something that we can explore, absolutely.

Mr RIORDAN — Another issue that was raised with us on managing environmental water was that the observation was made that with the decommissioning of many canals in areas where the buyback has been, inadvertently the leaky, poorly maintained canal system actually provided what were described as micro wetlands, but on private land.

Ms ROGERS — Yes.

Mr RIORDAN — The suggestion was to us that environmental water cannot be released on private land.

Ms ROGERS — No, that is actually not true. We actually have a private wetland in a flood plain in between the Loddon River, the Murray River and Barr Creek. It was subject to very extensive flooding in 2011, and the government policy of the day was actually to buy back all of that land and remove it from irrigation. There has been extensive rationalisation of the channel system through there. It has not actually happened yet, but it is on the cards.

The landholder of a private wetland contacted us in 2012. We have a legal agreement with him — a deed of agreement. We deliver environmental water through the irrigation infrastructure on his property to these private wetlands —

Mr RIORDAN — So they are private wetlands that the owner is committed to reserving, fencing off or whatever and maintaining as a wetland. They entered an agreement with you guys. Environmental water could be accessed, though.

Ms ROGERS — Yes. It has been quite a success. There are a number of wetlands across that flood plain, all on private land. We are actually hoping to start up a project to go through there and meet these landholders and work out what they are wanting to do. We do not necessarily have to have them separated from their farming practice all the time — probably when water is in there, yes, but not all the time. We are really, really keen to actually get into that space because this —

Mr RIORDAN — That is quite a good opportunity for private landowner environmental water engagement.

Ms ROGERS — Yes, and in our region 50 per cent of the wetlands actually are on private land, so it is a really key —

Mr RIORDAN — So there is a big overall benefit that could be had.

Ms ROGERS — Absolutely.

Mr DRUST — It is very much an emerging field. If we think about the 10-year history or thereabouts of the environmental water program in Victoria, the strong focus has been on public assets, be they rivers or significant wetlands on public land. Environmental water deliveries to wetlands on private land, just like there are significant patches of bush and remnant grassland on private land, is very much an emerging field, provided that we can make sure that the outcomes from the investment in the water are secured with an appropriate agreement with the landholder.

Mr RIORDAN — That is good. Last question: regarding the issue of trying to deliver environmental water that can result in flooding of private land, can you tell us any workable options that you are working on as an organisation that can overcome that tension?

Ms ROGERS — At the moment we have got a constraint in the Loddon River downstream of the Loddon weir, where we can only deliver water at 450 megalitres a day through a stretch because it will overbank flood into private land. We developed a long-term plan for the Loddon River, and during that process in our engagement with those local landholders a number of them indicated that there might be times of the year where flooding their land might not be a problem.

What we would not be able to do is actually flood in spring, which is when the flow study tells us that we need to. We are willing to actually work with those landholders. We have actually got a workshop coming up in December. No-one has said, ‘No, we don’t want to talk to you about this’. So there might be time, say, in autumn when they finish their harvest, when they are just using their land for livestock, where we can say, ‘The water’s coming. Get your livestock somewhere else’, and where we might be able to actually overbank flow, which would then allow us to deliver high flows upstream and downstream. So that is very new.

Basically if one of those landholders says no, we cannot go ahead, so we do need to work with all of them and get legal agreements with all of them, but it is something we are definitely willing to pursue. And then if we can deliver water, even if it is at a time of year that is not what the science is telling us, we then monitor and work out whether we are getting benefits, and if we are, then we go ahead.

Mr O’SULLIVAN — Thanks for coming in and also thank you for the tour that we did up at the Gunbower forest. As Mr Riordan said, that was very informative to be able to see it firsthand and actually see it working. We saw a couple of examples of that yesterday as well, but I particularly liked the Gunbower forest experiment that you have got going on. One of the things I wanted to follow up on — and I think it is a question I actually asked at the time when we were out at Gunbower — was in terms of what a success looked like. I want to take that a step further, because I think probably, from some of the evidence that we have heard, there is some great work going on. There has been a lot of money invested into that, and a lot of water is being invested into that as well. I understand theoretically what success looks like, but do you have any KPIs or are there any KPIs around actual beneficial outcomes that you derive from that environmental water? I know it is not easily able to be quantified, but I am just wondering if you actually do have formal KPIs in terms of the use of that water.

Where I am getting to — and I will get to my second question as a part of this question — is I think there is possibly a bit of a bad reputation that environmental water has in the eyes of some, which is probably not necessarily justified. I think there is possibly a need for better consultation or communications with particularly irrigators and irrigator groups to have a better understanding of what is actually happening with the environmental water. Then they would not see it as that nasty thing that is taking all the water away from production. I think they all agree that there needs to be a balance in terms of the way that water is used, but I wonder whether there is an education or a consultation or a full understanding of it. If you could bring that back to the KPIs, it just might help to flesh that out.

Mr DRUST — I think at a macro level — the way I see it — there are four levels of KPIs if we use Gunbower as an example. There are a series of risk management KPIs making sure that bad things do not happen as a result of environmental water management — so flooding of private land, to come back to that example that we have just discussed. There are a series of ecological objectives, which are very well defined for Gunbower forest, so they create the vision for the forest from an ecological point of view that we work to, and they have driven the water management infrastructure and water management practices.

Then there are a series of KPIs into other key areas — as I mentioned earlier, talking about shared benefits is very much an emerging field — into the social benefits from environmental water and into the economic benefits from environmental water. Environmental water is a public asset. It is set aside to deliver public benefit. We think that that benefit can be beyond just the ecological and environmental outcomes that we can secure. So that is a kind of macro-level picture, as I see it, around KPIs. I am probably not well positioned to talk in detail about the specifics of Gunbower forest.

Mr O’SULLIVAN — I am just trying to put myself in the middle, if you like, having been through this inquiry. I think you need to be able to articulate the KPIs in a way that the average person can fully grasp and

understand, because in terms of the environmental lingo and language, that does not always resonate in terms of trying to articulate those outcomes.

Ms ROGERS — I will just reiterate what I said to you in the forest. In our region there were once 22 native fish species. Of those 22 native fish species we have 13 remaining, and of those 13, six are listed under state or national legislation as threatened. While we are absolutely targeting the recovery of those native fish populations and that diversity, including bringing back some of those lost species through the fact that we now have water security for the forest, the ongoing benefits of what a robust fishery would mean for our region are — I do not even know how to quantify that.

But I think with environmental water we were concerned around quantifying environmental outcomes for quite some time because there are so many variables that could affect us being actually able to achieve something that we did not want to set ourselves up to fail. We are now learning so much more. We are seeing what we are able to achieve, and we are actually able to start quantifying the KPIs for the ecological outcomes. I think as we start seeing the response to the improved systems by the region's communities and tourism, then we will be able to quantify that too.

We have got a project, as I said to you, out there with Gannawarra shire that we will be implementing over the next couple of years where we will be actually seeing what sort of usage the forest has been getting and be able to put some economic benefit dollars around the use of the forest, and I would like to do a similar thing with our wetlands in the Kerang Lakes system. We have a memorandum of understanding with Field and Game, for example. That memorandum of understanding is actually working towards the conservation of wetlands, but it is for those state game reserves. There is a similar thing going on down in South Gippsland as well.

Mr O'SULLIVAN — Yes, it has worked well down there.

Ms ROGERS — Yes, I agree with you. I think that the way to our community's heart is actually to show how environmental water will benefit them, particularly in the irrigation communities too. The creeks and rivers will be of better quality, and the water that they are then using will be of better quality. The irrigators that we do have on our environmental water advisory groups are some of our strongest advocates as well.

Mr O'SULLIVAN — Yes, absolutely.

Ms ROGERS — But communication is absolutely the key — education but also us listening to what people have to say and learning from that and incorporating that.

The ACTING CHAIR — Thank you very much for coming in, and I am sorry that I missed the tour.

Ms ROGERS — I would have liked to have taken you to everywhere anyway.

The ACTING CHAIR — Thanks very much for your time in coming in. If we have any further questions, we may write to you, and if you can answer them, thank you.

Ms ROGERS — Yes, we are happy to provide anything that you might need.

Committee adjourned.