REPORT ON PROCEEDINGS BEFORE

SELECT COMMITTEE ON FLOODPLAIN HARVESTING

Virtual hearing, Sydney, on Monday 20 September 2021

The Committee met at 9:15.

CORRECTED

PRESENT

Ms Cate Faehrmann (Chair)

The Hon. Lou Amato
The Hon. Mark Banasiak (Deputy Chair)
The Hon. Sam Farraway
The Hon. Ben Franklin
The Hon. Rose Jackson
The Hon. Adam Searle
The Hon. Penny Sharpe
The Hon. Mick Veitch

The CHAIR: Welcome to this virtual hearing for the inquiry into floodplain harvesting. Before I commence I acknowledge the Gadigal people, who are the traditional custodians of the land on which Parliament sits. I pay my respect to Elders past, present and emerging of the Eora nation, and extend that respect to any Aboriginal people tuning in today. Today's hearing is this Committee's first and it is being conducted virtually. This enables the work of the Committee to continue during the COVID-19 pandemic without compromising the health and safety of members, witnesses and staff. As we break new ground with the technology I ask for everyone's patience through any technical difficulties we may encounter today. If participants lose their internet connection and are disconnected from the virtual hearing, they are asked to rejoin the hearing by using the same link as provided by the Committee secretariat.

Today we will hear from a number of stakeholders including scientists, environmental groups and representative bodies and organisations with interests in water management. Before we commence I will make some brief comments about the procedures for today's hearing. While parliamentary privilege applies to witnesses giving evidence today, it does not apply to what witnesses say outside of their evidence at the virtual hearing. Therefore, I urge witnesses to be careful about comments you may make to the media or to others after you complete your evidence.

Committee hearings are not intended to provide a forum for people to make adverse reflections about others under the protection of parliamentary privilege. In that regard, it is important that witnesses focus on the issues raised by the inquiry terms of reference and avoid naming individuals unnecessarily. All witnesses have a right to procedural fairness according to the procedural fairness resolution adopted by the House in 2018. There may be some questions that a witness could answer only if they had more time or with certain documents at hand. In those circumstances witnesses are advised that they can take a question on notice and provide an answer within 21 days of receipt of the transcript. Today's proceedings are being streamed live and a transcript will be placed on the Committee's website once it becomes available.

Finally, a few notes on virtual hearing etiquette to minimise disruptions and assist our Hansard reporters. I ask Committee members to clearly identify who questions are directed to and I ask everyone to please state their name when they begin speaking. Could everyone please mute your microphones when you are not speaking—that is particularly important—and please remember to turn your microphones back on when you are getting ready to speak. If you start speaking while muted please start your question or answer again so it can be recorded in the transcript. Members and witnesses, please avoid speaking over each other so we can all be heard clearly. I remind members and witnesses to speak directly into the microphone and avoid making comments when your head is turned away.

FRAN SHELDON, Member, Wentworth Group of Concerned Scientists, sworn and examined

EYTAN ROCHETA, Policy Analyst, Wentworth Group of Concerned Scientists, affirmed and examined

EMMA CARMODY, Managing Lawyer – Freshwater, Environmental Defenders Office, affirmed and examined

CHRIS GAMBIAN, Chief Executive, Nature Conservation Council of NSW, sworn and examined

The CHAIR: We will get to opening statements, which we have requested to be as short and succinct as possible without repeating what is in the very good submissions that you have made. I will go first in the order in which you were just sworn: Professor Sheldon or Dr Rocheta on behalf of the Wentworth Group.

Professor SHELDON: We welcome the inquiry into floodplain harvesting policy and support the implementation of a licensing framework to rein in the growth of floodplain harvesting diversions. Dr Rocheta and I are here representing the Wentworth Group of Concerned Scientists. We are an independent group of scientists, lawyers and businesspeople with a longstanding interest in the conservation of Australia's land, water and biodiversity. In relation to floodplain harvesting, we think there are solutions that can restore the rivers' ecology to healthy levels; support communities along the rivers, including Indigenous communities for whom the rivers are so significant; and allow for sustainable irrigated agriculture to continue.

We see the solution arising from amending the policy to include all of the following measures: improve the modelling process and reduce modelling errors with annual validation and error correction; introduce flow triggers within each valley which cover a range of flow regimes and protect higher priority water needs; remove unlawful structures and ensure all structures on flood plains do not significantly alter natural flows when extraction is restricted; issue temporary licences until there is evidence the modelling and policy is effective at delivering expected outcomes to communities and the environment. We thank the Committee for their time and welcome questions.

The CHAIR: Thank you very much. I will go to you, Dr Carmody.

Dr CARMODY: Thank you, Chair. The Environmental Defenders Office [EDO] would like to thank the select Committee for inviting us to appear at today's hearing. The EDO is the largest public interest environmental law centre in the Southern Hemisphere. Our freshwater program extends across eight Australian jurisdictions and notably includes all jurisdictions within the Murray-Darling Basin [MDB], where we advise a diverse range of clients including farmers, Aboriginal organisations, community groups and peak conservation groups about all aspects of water law and policy.

The EDO has longstanding concerns about the administration of water laws in New South Wales and across the MDB more generally. This culminated in our office leading an investigation from 2016 to 2017 into allegations of non-compliance in the northern MDB, and collaborating with *Four Corners* on the seminal episode "Pumped". The impacts of our investigation and of that collaboration are now well documented and include multiple inquiries and reports, a royal commission, a new water regulator, new metering laws, and multiple successful prosecutions. However, we remain vigilant, including in relation to the implementation of metering laws, the continued funding of the water regulator and in relation to the regulation of floodplain harvesting in New South Wales.

The EDO supports the licensing of floodplain harvesting but this support is conditional. These conditions include, but are not limited to, the following. First, the volumes licensed must not further degrade our already over-extracted river systems and internationally listed wetlands and must reflect the impact that climate change is having on water availability. Second, it must comply with the overarching legal obligations contained within the Water Management Act, which in our view requires the implementation of downstream flow targets. Third, it must be undertaken in a manner that acknowledges and seeks to reverse Aboriginal water dispossession. This will necessarily involve an equitable portion of any floodplain harvesting licences being reallocated to Aboriginal nations. Some 30 years post-Mabo, it is entirely unacceptable for Aboriginal people in the New South Wales part of the MDB to own a mere 0.2 per cent of available surface water licences. Thank you.

The CHAIR: Thank you, Dr Carmody. We will go to you, Mr Gambian.

Mr GAMBIAN: Thank you, Chair, and thank you to the Committee for the opportunity to say a few words to you this morning. First, may I acknowledge that I am coming to you from Bidjigal country on the northern banks of the Georges River and I pay my respects to ancestors and Elders. I also pay my respects to the ancestors and Elders of the Barkindji nation and all the First Nations whose country we will be discussing today. In the searing heat of December 2019, I walked where the Darling/Baaka should have been flowing. I remember the eerie silence. I remember the stillness of that lifeless place. The riverbank high on either side of me, I could

have walked for miles and not seen a drop of water. I have walked through rows and rows of rotting citrus orchards—a once viable farm no longer capable of earning a living for the farmer, nor feeding the rest of us.

When the pipeline from the Murray was built to service Broken Hill because the Menindee Lakes could no longer be relied upon for town water—or so the story goes—emus could be found dead along its route. They could smell the water but they could not access it. When I was back in the Far West in November 2020, even after the rain had come you could still smell the stench of dead fish rotting in the water in Wilcannia. In the town of Menindee—so central to the story Australia tells itself about the outback—water stinks. The water we ask our fellow Australians to shower in, brush teeth with and drink stinks. The conservation movement of New South Wales does not support floodplain harvesting. It is a practice so contrary to the principles of water sharing, so antagonistic to the common good, so profoundly harmful to the sustainability of ecosystems on which we all depend, that it should be considered not merely illegal but antisocial and loathsome.

The assertion made by some that floodplain harvesting must be licensed before it can be regulated or limited is an obtuse one. Imagine if this were the Government's approach in other policy areas. We oppose floodplain harvesting but we acknowledge that it is a common practice and we see merit in creating a realistic regulatory framework for it that gives everyone more certainty. The Nature Conservation Council [NCC] has participated in the Floodplain Harvesting Review Committee in good faith; however, our representative has been gagged through a deed of confidentiality. The organisation has had far less access to agency staff and less direct consultation on floodplain harvesting than the irrigation industry. We have lodged several dissenting reports on the assessment and review process with Mr Jim Bentley, the Deputy Secretary.

Water policy, perhaps more than most policy areas, is extremely complex. You will hear that often repeated and will know that from your own experiences. Indeed, too many people stay away from the important debates in water policy because of this complexity and the details of the history, the data and law that have been weaponised to bamboozle and confuse politicians, regulators, stakeholders and the public at large to avoid proper scrutiny. For my own part, I have tried to understand the complexity through a simple framework, which, if you will indulge me, I will share with you: the three Ms. First, measurement. This is probably the area where there is the most consensus. We need accurate information about how much water exists in the system, how much is being taken out, by whom, and how much is left. I applaud the Government for its efforts to get meters installed across the basin. We need even more measurement; it is critical.

Second, modelling. Once we know how much water is in the system, how much is being taken and from where it has been taken we can start to create realistic models for allocations. Critically, climate change must be factored into the models. Finally, management: creating a management regime that ensures proper priority of use is applied—in this case, end-of-system flow targets that ensure sufficient water is made available for river health and communities. It will create a framework that is both sustainable and predictable. Any regulatory framework needs to be realistic, and that realism needs to start with two acknowledgements: first, that this is an incredibly dry continent that is getting drier because of climate change; and, second, that there is not likely to ever be enough water available to do all the things we may want to do with it. We may have ample land but we do not have ample water.

It seems to me that this second reality is the hardest one for many people to swallow. Moreover, whilst I speak today to advocate for the health of the river and its ecosystems, the environment is not a stakeholder. The deal making and horse trading in water politics over the last 20 years has given rise to the fallacy that the environment somehow exists as some kind of interest group that needs to be balanced against other pursuits. Without a healthy river, communities die, agriculture dies. Its survival is our survival; when it thrives, we thrive. Lake Menindee is full right now; life is coming back. I am dreaming of the joy of swimming in the river again. After lockdown I am going to get back there. I want my daughters to experience that incredibly special place. Many of you have already been. If you have not, I hope you go. I hope more people from the east coast get to visit. It changes you. We must protect it. Thanks so much.

The CHAIR: Thank you very much. We will move straight to questions. We will go to the Opposition for their round. Is that Ms Jackson?

The Hon. ROSE JACKSON: Yes, thank you, Chair. Thanks, everyone, for coming along today and for your time and for your submissions, both written and verbally this morning. I would like to direct my question to the representatives of the Wentworth Group, although Mr Gambian and Dr Carmody are welcome to comment if they wish. My question goes to the reference in your submission and your opening statement to the limitations on our capacity to accurately model. There are two points there: one, the current limitations on accurate measurement that we have because floodplain harvesting is not currently measured; and, two, the lack of transparency around the models that have been used. How do these limitations, in a way, make modelling of

sustainable floodplain harvesting difficult and how do they tend to your recommendations around annual verification of floodplain harvesting take and some kind of temporary or amendable licence regime?

Dr ROCHETA: Thank you for that question. I will try to answer it. There was quite a lot in there.

The Hon. ROSE JACKSON: We have limited time so we are trying to cram a lot in, sorry.

Dr ROCHETA: I will start by just describing the modelling and the model errors and the framework there. The models are calibrated over a certain period of time, which the models are built to replicate the flow over a fixed period of time. They are then validated over a different period of time. This is a relatively short period for the floodplain harvesting models: around eight to 14 years. The validation period is the only period where you really prove that the model is simulating the river conditions appropriately and that it is in some way fit for purpose. But in that validation the reports show that the models have errors, because all models have errors; it is difficult to simulate natural environmental processes. The errors within these models for low flows are a systematic overestimation of 10 to 30 per cent and there are a range of other errors related to other flow regimes. So this means that when we try to simulate a single year we know that the model is unlikely to simulate that year correctly. But after the model gets validated and accredited by an accrediting authority, there is no additional public transparency or reporting on annual model errors.

So the model is allowed to simulate allowable take— permitted take—without a requirement that the model is simulating actual river flows appropriately to confirm that the allowable take is a reasonable level. We are of the opinion that that annual validation of the model—so comparing how the model simulates river flows against observed river flows and a few other validations of outputs from the model—will provide significant transparency and accountability of the modelling to make sure that they are simulating reasonably. If the models are shown to not be simulating accurately for that year, then a form of error correction could be applied to scale down or up the permitted take to make sure that any errors are not adversely affecting the environment and social outcomes downstream but that it is a fair representation.

As you mentioned, there is limited data in terms of measuring floodplain harvesting. The models are also limited in that they do not account for return flows; they simulate water flowing out of the river onto the flood plains but they do not simulate that water flowing back into the river later on. This has quite significant consequences for the ability to verify environmental and downstream outcomes resulting from various policy settings within the model. We are of the view that the measurement of floodplain harvesting is absolutely essential but that it will take time for those measurement numbers to come in to be able to update and improve and verify the models, and that is why we think that a staged approach to licensing is appropriate here where, after specific conditions are met first, temporary licences could be issued—licences which have a sunset clause or conditions related to expiration—and then it allows for time for gathering the data, improving the modelling, incorporating return flows, building trust in the system, as well as implementing a number of other recommendations we put forward before the final permanent licences could be issued.

The CHAIR: Rose, are you jumping in again?

The Hon. ROSE JACKSON: [Audio malfunction].

The CHAIR: Sorry, we missed that.

The Hon. PENNY SHARPE: It is me, sorry. I missed my cue; my apologies. Both of the submissions go to the issue of floodplain structures and the dealing of those that exist or how they could operate under the licensing and measuring and metering conditions. I am not sure who to throw to; I am happy for any of you to take it. Perhaps it is one for you, Professor Sheldon, but I am happy for anyone to comment on that matter. It is a significant issue.

Professor SHELDON: We might also jump in with Dr Rocheta as well, but I think you are referring to the issue of removing unlawful floodplain structures. I guess it goes back a little bit to what Dr Rocheta was saying around being able to model what happens and the fact that the model has all the water basically going onto the flood plain and not returning to the river. Part of the problem with some of these structures is that they actually prevent water from returning to the river as well and they change some of that natural flow in other places. So it is where those structures are having a massive impact on that downstream movement of water that would naturally come back into the river. The main issue is [audio malfunction]. Did you have anything further to add on that, Dr Rocheta?

Dr ROCHETA: Yes, thanks, Professor Sheldon. In our submission we identified four areas where we have concerns in relation to the structures. One is the issue that lawful structures will continue to intercept, slow, divert and capture flows even while extractions are not permitted. A number of these structures are set up where passive take occurs, and then that water is actively pumped into a storage. It is that active pumping which is the

real focus of the policy, and we are concerned that that passive capture still significantly impacts the natural flow regimes. That is one issue.

The second is that there are a range of unlawful structures which continue to be present on floodplain structures. These unlawful structures have been there for an extensive period of time and we are not aware of a program which is actively seeking to remove and remediate these structures. So this is a problem. A third issue we have is that there are structures which will be deemed lawful but will have a significant impact on diverting flows which would otherwise have higher priority uses downstream. There are structures which would be impacting flows and they should be evaluated to determine if those impacts are significant or not, and if they are significant they should be remediated.

The fourth issue is that there are structures which fall outside of the policy—those which are outside of the designated floodways and those which are outside of the policy in relation to the extraction of floodwaters—and these will continue to intercept and corral water flowing across flood plains, which ultimately has been identified by the New South Wales Biodiversity Conservation Act as being a key threatening process for ecosystems. So we think that we think we need to address all four components of these elements in relation to structures in order to produce expected social and environmental outcomes.

The Hon. PENNY SHARPE: Can I follow up on that? That is a pretty extensive list. In your view, are there any structures that will continue to exist given those recommendations?

Dr ROCHETA: Yes, absolutely. These four components are not about removing all structures; they are just about ensuring that the structures are not intercepting flows and diverting flows when it is not permitted. That is one component. So the structures can remain, but they should not be able to significantly capture passively without releasing that water in a very timely manner. The unlawful structures should clearly be removed and then the risk assessment in relation to structures which pose high risk—there are a potential range of remediation or mitigation strategies in relation to those, but we are not putting forward that those should all be removed; we are just putting forward that they should be investigated in terms of their environmental impacts.

The Hon. PENNY SHARPE: So the key to that, obviously, is measuring what is going in and what is going out.

Dr ROCHETA: A greater understanding of and public transparency in relation to the location of these structures, the legal status of these structures, how much water they are capable of taking—absolutely, that is all required. Yes.

The Hon. PENNY SHARPE: I will just hand over to my colleague Mr Veitch.

The Hon. MICK VEITCH: Thanks, Penny. My question to start off with will be to Mr Gambian and then probably to Dr Carmody. It relates to cultural water. The importance of cultural water to our First Nations people is undisputed these days. How would you see that working when it is applied to floodplain harvesting? What sort of regime would be put in place for cultural water with floodplain harvesting?

The CHAIR: We might go to Dr Carmody first for that.

Dr CARMODY: Thank you for the question, Mr Veitch. I should acknowledge that I am coming to you all from the lands of the Gadigal people of the Eora nation and pay my respects to Elders past, present and emerging. The EDO does not speak on behalf of Aboriginal organisations, although we do work closely with and advise Indigenous groups, so I would just like to preface my response with that statement. If floodplain harvesting was to be licensed, it is our view that an equitable percentage of any subsequent licences should be apportioned to Aboriginal nations. There was some research that was undertaken by Dr Lana Hartwig, which showed that in the New South Wales part of the Murray-Darling Basin, Aboriginal people own 0.2 per cent of available surface water licences, and this represented a 17 per cent decline in ownership following the separation of land and water. This was off the back of the impacts of several previous waves of water dispossession. So if we are to meaningfully start to reverse this dispossession, it does necessarily mean that a percentage of licences need to be attributed to First Nations in the basin but specifically, in this instance, in New South Wales.

In terms of cultural water, it is an interesting question. I was having a conversation with a representative from an Aboriginal client group in the northern Murray-Darling Basin and she was saying that there is a misconception that it is simply a percentage of water and that culture is just a discrete component of the environment. In the west we tend to Balkanise the environment and to try and divide it up into discrete management zones because that is easier to do, but in fact when you go out with an Aboriginal group they will say the whole flood plain is culturally significant, which means that, putting the licensing aside, there needs to be sufficient water to maintain the health of the entire flood plain, noting that that is actually an extension of the river system.

The Hon. MICK VEITCH: Mr Gambian?

Mr GAMBIAN: Yes, thanks, Mr Veitch. I concur with everything that Dr Carmody has said and add that NCC does not purport to speak for First Nations people either, but time and time again this question comes up because, I suspect, that we have this perverse situation right now. To use the Barkindji as an example, they have native title over the land on either side of the river but not over the water in [audio malfunction] and it is, I think, indecent to describe cultural water as merely environmental water. I think that any kind of regime of licensing, whether it be for floodplain harvesting or anything else, needs to acknowledge the cultural significance of the entire healthy ecosystem, but water in particular.

The Hon. MICK VEITCH: Thank you. I think, Cate, our time must be nearly up.

The Hon. ROSE JACKSON: We have 30 seconds left so it is probably best to move on.

The CHAIR: I will jump in with a few questions now. Dr Carmody, your submission talks about how environmental water that is purchased by taxpayers is not adequately protected from floodplain harvesting under the proposed policy. Is that something to go to you, Dr Carmody, or is that more the Wentworth Group? I am just wondering how that can be protected—what recommendations in the proposed policy.

Dr CARMODY: [Disorder] Chair.

Dr ROCHETA: I am happy to speak briefly to this. The focus of those comments was in relation to held environmental water being used for overbank watering events. It is our understanding that it is currently not being used for overbank watering events and, as such, there is no proposal under the active management framework to seek to protect this. However, I think that limits potential future behaviours of environmental water holders to undertake overbank events or to top up and piggyback on a natural flow event to create an overbank event and, as such, we would encourage that the active management provisions are expanded to protect water which is held environmental water that is flowing overbank.

The CHAIR: Thank you. I wanted to get to this issue of baseline diversion limit [BDL] and sustainable diversion limit [SDL]. We are hearing that different States as well as New South Wales, are looking for some of the water resource plans or water sharing plans increasing the BDL and increasing the SDL. Is there a legal basis for increasing the BDL and the SDL to create new floodplain harvesting entitlements if the floodplain harvesting was not part of the legal frameworks in 1994 or 2009? Can we just increase the BDLs? Is that maybe you, Dr Carmody?

Dr CARMODY: Thanks, Chair. There are probably two parts to that question; the first is whether or not it is lawful under Commonwealth water laws to increase the baseline diversion limit—the BDLs—and subsequently increase the sustainable diversion limit, which is the method that is being applied by the Murray-Darling Basin Authority. It is possible to increase the BDL; the question is then do you need to go through Parliament to amend the basin plan to do so? That is the first question. The second is: Is the inevitable outcome of increasing the BDL that one automatically increases the SDL by the same volume, thereby maintaining the water recovery volume under the basin plan?

In response to the first question, yes, you can amend the BDL. My view is that because there are statutory notes in the basin plan referring to estimates of the BDL, those notes and the estimates should reasonably be amended by the proper parliamentary process. At 6.04 (2), under that, there is a note which provides an estimate of the basin-wide BDL. It is somewhere in the order of 10,900 gigalitres. Now, it is an estimate but it is a statutory note and under Commonwealth law and superior court jurisprudence those statutory notes are part of the basin plan and, similarly, the BDL notes in the schedules form part of the basin plan. I think it is reasonable for any person looking at that instrument to expect that it contains the most up-to-date BDL—that one does not have to go to a website, which has no legislative standing whatsoever, to find the most up-to-date estimate. That would be the first response. I do think that if those estimates are going to be changed because they are contained in notes that that should go through a proper parliamentary process to amend the notes.

In relation to the SDL and whether it is legal to simply increase it by the same volume as one has increased the BDL, that is a very vexed issue and I must say that my particular view on that subject is different to the view that is proffered by the Murray-Darling Basin Authority. My view is that an SDL must always reflect an environmentally sustainable level of take, as provided for under the Commonwealth Water Act. This would preclude one of them simply augmenting the SDL by the same volume. The basin-wide sustainable diversion limit that we have at the moment is not reflective of an environmentally sustainable level of take, which begs the question: If we simply increase it, how can that be reflective of an environmentally sustainable level of take? These are questions for the Commonwealth because it is a matter of Commonwealth jurisdiction, but you are quite right: The proposed augmentation of BDLs and SDLs is part of the question of floodplain harvesting and its regulation.

Dr ROCHETA: It is Dr Rocheta here. Can I please add a few comments to that?

The CHAIR: Yes.

Dr ROCHETA: The argument being prosecuted is that the floodplain harvesting was implicitly incorporated into these models and that the process of reapportioning the losses into floodplain harvesting versus other losses translates through to all of the models, so that all the models can be shifted up. But this argument is based on a key assumption that during the calibration period an appropriate level of floodplain harvesting which reflected legal limits was occurring. So that floodplain harvesting was implicitly included into the model. I have not yet seen any focus or evaluation of this key assumption and, considering it is such an important assumption, I think it should be evaluated before the argument is allowed to be used. And without this argument of reapportioning the losses, a re-evaluation of the environmentally sustainable level of take—the ESLT—would be the most appropriate and scientifically defensible approach to updating these models.

The CHAIR: Yes, because we have to start there, do we not? We have to start at the ESLT. That is the whole premise of the basin plan: What is that environmentally sustainable level of take? Dr Rocheta, I do not have much time left. Could you explain why that is so important for the Committee? Why is it so important we have to start there and get that right?

Dr ROCHETA: The environmentally sustainable level of take is the key underpinning of environmental needs across the basin. In New South Wales the framework is not focused on providing protections for environmental and social needs. The cap is just the line in the sand which is an unsustainable level of take. The plan limits which have been brought in rein in the cap a little bit, but again there is no focus on these limits to show that they produce an environmentally sustainable level of take, whereas on the Commonwealth level that ESLT is the mechanism to ensure that take is sustainable. However, unfortunately, the ESLT process was not implemented using best available science and unfortunately the ESLT does not represent a sustainable level of take currently.

The CHAIR: That is excellent, thank you. My time is up. I will move to the Deputy Chair, Mr Mark Banasiak.

The Hon. MARK BANASIAK: Thank you, Chair. My first question goes to Mr Gambian. I note in your submission you are opposed to the 500 per cent carryover and the five-year accounting period. The modelling entitlements that the Department of Primary Industries [DPI] have provided suggest that if you go to a one-year accounting period you will actually increase the entitlement or the take by 3.2 times larger. Can you just explain your rationale behind wanting to go to a one-year accounting period? It seems if it is averaged over five years the average take over those five years will actually be less than if we go to a one-year accounting period.

Mr GAMBIAN: Thanks, Mr Banasiak. I would say probably just a couple of things. One is the problem to my mind about a 500 per cent take in a single year—that is the worry.

The CHAIR: I am sorry to jump in. You are very faint.

Mr GAMBIAN: Is that any better if I do that?

The CHAIR: That is better, yes.

Mr GAMBIAN: Sorry about that. The concern that we would have is that if there was an ability to take up to 500 per cent in a single year, that would be grossly excessive. We would have an open mind to a system that, at the end of the day, ensures that we have a sustainable amount of take being—a management regime that ensured there was enough water left in the system to deliver the environmental outcomes that we need. I do not want to be sort of ideological about it or purist about it, but there needs to be a licensing regime that recognises that these massive takes—and this year's flood events is probably a good example, where there has been a lot of water go down the system, but not necessarily enough water to ensure that there is river health right through, and floodplain health as well, not just for the environment but also for downstream farmers and so on. So it is not sort of a locked-in-stone view but one that I suppose represents concern about excesses in a single year.

The Hon. MARK BANASIAK: I will stay with you but this question is also for Ms Carmody as well. We have the Macquarie Marshes; 85 per cent of that is in private ownership of graziers. I am just wondering what both your organisations' views are of unregulated floodwater and environmental flows to those marshes being used for commercial purposes, because it is possible and is happening, but it seems to be an omission from both your submissions. I will start with you, Mr Gambian.

Mr GAMBIAN: I think both my colleagues have probably got a lot more to say that is going to be useful on that question than I do, I am sorry, Mr Banasiak. I might throw to the Wentworth Group or EDO.

The Hon. MARK BANASIAK: Yes, sure. Ms Carmody, did you want to take that?

Dr CARMODY: Yes, I am happy to respond to that question. The key issue with the degradation of internationally significant wetlands, including the Macquarie Marshes, is structures on flood plains upstream of the marshes preventing adequate flows reaching those wetlands. I think that is the key issue here in terms of their health and the maintenance of their ecological character. And there is plenty of scientific evidence to support that statement.

The CHAIR: I think Professor Sheldon was about to comment as well.

Professor SHELDON: Just quickly, I was going to agree with Dr Carmody, but also I think part of the issue with the Macquarie Marshes is just the long-term drying. The less frequent the flows actually get into the marshes, the soil moisture and the entire role of the wetlands starts to decrease and these wetlands start to become more and more terrestrial, which is a degradation of their wetland function. So the fewer the floods, the fewer the wetting events they get, the more degraded they get and it becomes a bit of a compounding situation.

The Hon. MARK BANASIAK: I might just go back to you, Mr Gambian. Just looking at your submission and going through some of your recommendations, I just wanted to ask some clarifying questions. In recommendation 8 you talk about a revision of the BDL and a re-evaluation of the SDL, noting that included in those diversion limits there already is a 27/50 that has been reclaimed back by the Commonwealth. When you say "revision" I am assuming you mean further reduction. If that is the case, what percentage are you proposing being distributed to, say, the Commonwealth Environment Water Holder and what percentage would you see as acceptable being diverted to cultural water or Indigenous ownership?

Mr GAMBIAN: Again, I think we would have a very open mind about that, Mr Banasiak. We do not claim to have the technical expertise of the Wentworth Group or anyone else on these things, but the key principle here is that there needs to be enough water through the system. That is for the environment, that is for communities—often times I think some of those towns do not get enough of a mention through this discussion—and that is for cultural water as well. So I would not want to hazard a guess—and it would be a guess—about what sort of percentages we would be talking about, but it is sufficient to say, I think, at the moment that there is [audio malfunction].

The Hon. MARK BANASIAK: I have only about a minute or so left. In recommendation 11, you say "Ensure any changes to floodplain harvesting licence determinations based on growth in use or updated information are not compensable." I just want to clarify: In that recommendation are you saying that you do not recognise the existing part 8 renewals that were under the 1912 Act that were being paid by irrigators up until two years ago, or is it any future licence determinations should not be compensable?

Mr GAMBIAN: I think we are talking about floodplain licences here, and they do not exist.

The Hon. MARK BANASIAK: There is a bit of contention in terms of whether they did exist under the 1912 Act and now they sit in a regulatory warehouse, and given that irrigators were paying essentially part 8 renewals under that 1912 Act sort of suggests that they did exist in some form.

Mr GAMBIAN: That is well and truly a view you are entitled to hold; it is not one that we share. Our view is that we should not be creating burdens for future generations of taxpayers when inevitably you need to recover [audio malfunction].

The Hon. MARK BANASIAK: It is your submission that any recovery of water should not be compensable?

Mr GAMBIAN: It is my submission that people should be following the law right now, and we do not think that floodplain harvesting is legal.

The Hon. MARK BANASIAK: I think that is my time up. Thank you.

The CHAIR: Yes, it is. We will now go to questions from the Government. Mr Farraway.

The Hon. SAM FARRAWAY: Thank you, Chair. My first question is to Mr Gambian, just to follow up on your last comment about floodplain licensing, in your view, not being legal. Bret Walker, SC, has provided independent legal advice on floodplain harvesting to this Committee. Have you seen that at all?

Mr GAMBIAN: I have not, no.

The Hon. SAM FARRAWAY: Could your organisation maybe take on notice what your views are on that independent legal advice that this Committee has sought? Just moving on to Dr Carmody, probably a similar question around Bret Walker's independent legal advice provided to the Committee. Have you seen that at all?

The CHAIR: Just to jump in, Mr Farraway, you are aware that the Committee has only just agreed to publish that; it has not been made available. It would have been probably illegal for any members to send that to anybody. Just so everybody is clear, nobody has seen that yet.

The Hon. SAM FARRAWAY: I know what I am asking, thanks, Madam Chair. To Dr Carmody, if you have not seen it, are you able, on notice, to provide the Environmental Defenders Office views on that independent legal advice? Are you able to take that on notice for me?

Dr CARMODY: Yes, certainly.

The Hon. SAM FARRAWAY: Excellent. Continuing on with the Environmental Defenders Office, has the Environmental Defenders Office ever received funding or any other support from Purves Environmental Fund or directly from Robert Purves?

Dr CARMODY: Thank you for the question. I am curious as to how it relates to the terms of reference for this particular inquiry. Perhaps you could clarify—

The Hon. SAM FARRAWAY: Sorry, Doctor, I am here asking the questions. Again, it obviously relates directly as he is a significant supporter of your organisation, so I put the question back to you.

Dr CARMODY: Again I would request that you clarify how it falls within the terms of reference.

The Hon. PENNY SHARPE: Point of order—

The CHAIR: Order! A point of order has been taken, Dr Carmody, by Ms Sharpe.

The Hon. PENNY SHARPE: My point of order is that the witness has indicated that this is not part of the terms of reference. If Mr Farraway wants to attack witnesses, this is not his opportunity to do so and I would ask that he ask questions relevant to the terms of reference, please.

The CHAIR: The point of order is upheld. Could Mr Farraway please ask questions—

The Hon. SAM FARRAWAY: That is alright. I will move on.

The CHAIR: Order! Mr Farraway will please ask questions in relation to the terms of reference, and we could also please remember that witnesses should be treated with courtesy and respect at all times. Continue, Mr Farraway.

The Hon. SAM FARRAWAY: Thank you, Madam Chair. Moving on to Professor Sheldon, a question with regard to the Wentworth Group of Concerned Scientists. Any submissions that your organisation make to government inquiries—are they signed off by your board? And does the board have a say on what is submitted under the Wentworth Group's logo?

Professor SHELDON: We are an independent group of scientists and so we make submissions as the group, not as the board.

The Hon. SAM FARRAWAY: Okay. So the board would not necessarily sign off on whatever final submission that you might put forward, for instance to this inquiry on the legality of floodplain harvesting?

Professor SHELDON: [Disorder] I am aware they do not sign off on our submissions. Dr Rocheta can double up on that, but we do them as our independent selves.

Dr ROCHETA: The board do not sign off on submissions the Wentworth Group makes.

The Hon. SAM FARRAWAY: Thank you. Continuing on, Professor Sheldon, I make reference to the *Weekly Times* article "Wentworth Group of Concerned Scientists' chair buys up Duxton Water shares", 9 August 2021. Are you aware of any conflict of interest and concerns raised in that article?

Professor SHELDON: Again, as per Dr Carmody, I do not see how this is relevant to the floodplain harvesting inquiry. There has been a statement placed on the Wentworth website around [audio malfunction]. It is not relevant to floodplain harvesting.

The CHAIR: Sorry, I just need to jump in there again. Professor Sheldon, you are fading in and out quite badly. You will just need to repeat your last sentence for the purposes of Hansard and just see if we can hear you better.

Professor SHELDON: Apologies. Is that better?

The CHAIR: A little bit, yes.

Professor SHELDON: I was just saying that I do not think that question is relevant to the floodplain harvesting inquiry and there is a statement from the Wentworth Group on our website regarding that issue.

The CHAIR: Okay. That was for the purposes of Hansard, and I will just note that Ms Penny Sharpe has her hand up for a point of order. Ms Sharpe?

The Hon. PENNY SHARPE: I am not sure where Mr Farraway is going with this, but again I raise the point of order that this is an inquiry into floodplain harvesting. If Mr Farraway has got questions from the Minister's office that he has clearly been directed to try and smear witnesses here, it is thoroughly inappropriate and he should return to the terms of reference in relation to this inquiry.

The Hon. BEN FRANKLIN: To the point of order [disorder].

The CHAIR: I can see you, Ben. Mr Ben Franklin on a point of order as well, is it?

The Hon. BEN FRANKLIN: On the same point of order, thanks, Madam Chair. My point is simply this: There has been significant suggestion in a number of the submissions, apart from anything else, about the motivation of various stakeholders and of the Government in terms of why this regime is in place in the first place, or the proposed regime. I do not think it is unreasonable and an unreasonable line of questioning to look at the motivation or the potential motivation of witnesses involved in providing their advice as well. In fact, it is entirely consistent with the fact that motivation is addressed in a number of the submissions.

The Hon. ADAM SEARLE: Further to the point of order, Madam Chair, as far as I can see none of the witnesses before us today are the ones that Mr Farraway is asking questions about. He is questioning the motivations, at best, of people not before the Committee. He should cease and desist and direct his questions within the terms of reference to these witnesses.

The CHAIR: I will uphold the point of order. Mr Farraway, if you could again return to asking questions in relation to the very extensive, wide terms of reference this Committee has and is looking into and, again, please do not make inferences in relation to witnesses when you are asking them questions, which is what you are doing.

The Hon. SAM FARRAWAY: Thanks, Madam Chair. A question again to Dr Rocheta, if that is the case. Has the Wentworth Group ever had access to modelling or requested modelling related to floodplain harvesting?

Dr ROCHETA: Thank you for the question, Mr Farraway. Yes, the Wentworth Group has a deep interest in the transparency related to the modelling and in discussing the detailing of the modelling, and we have had meetings with the department representatives in relation to the modelling. Those meetings revealed that our concerns related to the modelling were substantiated—that our concerns were valid.

The Hon. SAM FARRAWAY: So, yes, you have had access to modelling?

Dr ROCHETA: The models are very complex computer systems. We have not been given access to the modelling software. We have not been given access to the modelling output, which is something we have requested. We have not been given access to model simulations of climate-change impacts, which is something that we have requested. We have been given access to two modellers for a Q and A session.

The Hon. SAM FARRAWAY: Professor Sheldon, would you agree that if governments bought back more water it would lead to an increase in the value of remaining irrigation water entitlements held by companies like Duxton Water?

Professor SHELDON: I am not a water economist and so I am probably not going to comment on what would happen in the market [inaudible] buying water and then changing market share. I am a river ecologist, not an economist, so any answer I gave you would not be based on any experience.

The Hon. SAM FARRAWAY: Alright. Dr Rocheta, do you have a view on that question on behalf of the group?

Dr ROCHETA: I do not have a view on the economic impacts. I have a view on the environmental impacts, and that is that priority-of-use legislation, which is New South Wales law, is not being upheld, particularly in relation to these unregulated flow events in the northern basin. This poses a significant risk and concern in relation to environmental outcomes—protecting the environment—and also to the impacts on downstream communities, including Indigenous nations.

The Hon. SAM FARRAWAY: My next question is directed to Professor Sheldon. In a lot of what I have been reading, there appears to be a very significant dispute in the scientific community in and around water and the sanctity of opinions, particularly on how it relates to basin plan and water resources. I noticed you have

signed a letter, which I have tabled, with 25 other scientists calling on governments to implement the basin plan. Is that correct?

Professor SHELDON: That was quite a few years ago now and, yes, scientists did—to continue with implementation of the basin plan, not to implement the basin plan. Our call was to stick with it and to let it run its course. The basin plan is a really large adaptive management framework and so our stance on that, which is outside of the Wentworth Group, which as an independent scientist was to stick with it through its first term and then actively engage in the review process, which comes up to 2025 into 2026. So it was keep going; we have to see how it actually works out.

The Hon. SAM FARRAWAY: I will continue with Professor Sheldon. Matt Colloff, Quentin Grafton and John Williams said, "All the scientists who signed the letter" with yourself—and you have just confirmed that—"were captured by bureaucrats, which had undermined their scientific integrity." You do not believe you have been captured by the bureaucracy of it all?

The CHAIR: Order! I rule that question out of order. Mr Farraway, I have said repeatedly to treat witnesses with respect. I cannot see how a question that refers to being "captured by bureaucrats" is anything other than extremely disrespectful.

The Hon. SAM FARRAWAY: It's [disorder].

The CHAIR: Again, could you please ask another question within the terms of reference?

The Hon. SAM FARRAWAY: It is referencing directly the 25 scientists in and around the implementation of the basin plan, which the witness just confirmed. How is it out of order?

The CHAIR: I have said repeatedly that, in accordance with the procedural fairness resolution that has been adopted by the House, witnesses must be treated with courtesy and respect. That question was completely out of line in relation to that. I am asking you to ask questions of the witnesses who have come before this parliamentary Committee, who are treating this inquiry very seriously and who have made very good submissions. Please treat them with the respect and courtesy that they deserve.

The Hon. SAM FARRAWAY: Thank you, Madam Chair. Professor Sheldon, I withdraw that question because it has been ruled out of order. I refer back to the reference in that article. John Williams said that the process in that article has led to bureaucrats just buying the science they want. Do you think the work of other academics and scientists who have received funding from the New South Wales Government, such as Professor Mallen-Cooper, is invalid or somewhat suspect because of the administrative capture?

Professor SHELDON: Again, I personally do not. I am not sure that this is relevant to floodplain harvesting, but the research that we do as independent scientists is independent. We receive funding from a broad range of different organisations, government and different levels of government, with different interactions with universities. I think that we all behave with the utmost [inaudible].

The Hon. SAM FARRAWAY: Yes, thank you.

Professor SHELDON: I think we would disagree with that paper and so there is more debate in that area, but I do not think we are captured at all. We provide quite useful information and do it independently [inaudible].

The Hon. SAM FARRAWAY: Following on from that, and using the logic in Professor Colloff's paper, do you feel as if research that is released by companies like Slattery and Johnson, who are paid by private corporations and lobby groups for reports—

The Hon. PENNY SHARPE: Point of order: The member is flouting your ruling, Madam Chair. This hearing is not an opportunity for him to smear witnesses who are before us or due to come before us. The member has the opportunity to ask questions of the witnesses in relation to their submissions, not to use this as a smear exercise. He is becoming way out of order in his approach, and he should be called to order.

The CHAIR: Yes, thank you, Ms Sharpe. I remind the member once again to please treat witnesses with respect and courtesy and to keep your questions within the terms of reference, which do not include lines about the funding or government grants of different organisations. Please keep your questions relevant. Your time has expired. I thank the witnesses for coming today and for the great work that you continue to do for our environment. The session has concluded. The Committee will break for 10 minutes and resume at 10.25 a.m. I remind members to mute their microphones and turn off their videos during the break.

(The witnesses withdrew.)

(Short adjournment)

TIM NAPIER, Executive Officer, Border Rivers Food and Fibre, sworn and examined

BRENDAN GRIFFITHS, Vice Chair, Border Rivers Food and Fibre, sworn and examined

MICHAEL DRUM, Executive Officer, Macquarie River Food and Fibre, sworn and examined

TONY QUIGLEY, Executive Committee Chair, Macquarie River Food and Fibre, sworn and examined

The CHAIR: Each witness, or at least a witness from each organisation, has the opportunity to make a short opening statement. Who will be making one from Border Rivers Food and Fibre?

Mr NAPIER: I will kick off, Chair. Very briefly, we are here because we are keen to get this licensing process finished. It is a process that has taken the New South Wales government of all colours more than 20 years after having committed to do so to actually get to this point, so we are keen to see this brought to its conclusion. I need to make a comment at the start that our community and our people are heartily sick of the lies, conspiracy theories and well-heeled campaigns that have been run against us, demonising decent, hardworking people. This has got to be brought to a stop. I think there are community leaders, or so-called community leaders, who are running round creating division rather than unity and progress. Our interest is only in getting this done and moving on. We encourage the Committee to bring this to a swift conclusion and to get on with the process that is long overdue.

The CHAIR: Thank you, Mr Napier. Is it Mr Drum or Mr Quigley?

Mr DRUM: Yes, Mr Quigley will make a statement for Macquarie River Food and Fibre.

Mr QUIGLEY: Thanks, Chair. I am making it on behalf of myself as much as my members and some of their concerns. I am an irrigator in the Macquarie Valley. I am not a floodplain harvester and many of my constituents in the Macquarie aren't because we are outside the floodplain. But we are caught up under this legislation and regulations because of the need for the rainfall run-off exemption to be passed so that we are not breaking either one of two laws—that exemption or the conditions that are on our licence to hold all of our run-off on farm and not run it onto any public land or other people's farms. That is really important with us because many of our members are outside the flood plain.

The second issue—and I back what Mr Napier has just said—we would like to disassemble some of the misinformation that has been put out, particularly by southern groups, that we do not believe casts fair aspersions on northern irrigators or floodplain harvesters. I would like to look at that in the clear light of day and where storages sit and where allocations sit in those areas, which basically shows that the information they have put out does not hold up to scrutiny.

The CHAIR: Ms Rose Jackson from the Opposition will commence with questions.

The Hon. ROSE JACKSON: I thank the witnesses for making time to be present today and for the submissions from your organisations. I would like to ask about the impact of the current legal and regulatory uncertainty on the people that you represent. One of the things that has come up again is that there are a number of contested elements, whether it is legal, policy or scientific contestation, and how those things play out on the ground for people in your organisations.

Mr NAPIER: I will kick off if you like, Madam Chair. In terms of the uncertainty of the licensing not being concluded, probably the most immediate impact has been an AWD being placed on supplementary water users.

The CHAIR: Sorry, I will jump in when acronyms come up for the first time during this inquiry.

Mr NAPIER: I beg your pardon.

The CHAIR: Annual water determination; yes?

Mr NAPIER: Available water determination, which was invoked—because floodplain harvesting has not been included, they were working on a smaller number, and because we extracted a bit of water in the last six months we have approached the limits of our plan, which, incidentally, is worked out according to a model, not actually by actuals. It is actually worked out to a model, just to complicate things even more. But what that created—in our valley, many of our supplementary users are smaller users in the upper reaches of the system. These guys are not floodplain harvesters; these guys rely on supplementary water for their operations. They are only little guys. Because of this process, the regulations having been disallowed, these guys have had a 75 per cent AWD slapped on them. Again, it just shows up the clunkiness and the blunt instrument that some of these [inaudible] policies are.

Mr DRUM: I might jump in there. We provided some legal advice to the Committee, which dealt with supplementary use being reduced to bring overall take under cap. What we did provide was the fact that it created inequity in the property rights of users. So in actual fact you are asking Peter, who is a non-floodplain harvester, to pay for Bob's water, who is a floodplain harvester, which is a problem that needs to be resolved one way or the other.

Mr QUIGLEY: Chair, if I could add to that, this is the final piece of the jigsaw puzzle that we have been playing for over 20 years in water reform. It started with the Water Management Act 2000 that separated water from land and this has continued on. We are now in 2021 and we are still arguing about bits and pieces. This is the final part of that jigsaw puzzle. I think it is about time it was resolved to give everybody certainty—not only irrigators but the environment—get all the rules set, and I am sure everyone then will be happy to abide by them. But as an irrigator and a person who has been involved in the water industry for a long time, this is becoming very frustrating that it is taking so long for all governments to allow this to happen.

The Hon. ROSE JACKSON: Thank you for that. One of the things, in terms of resolving some of the uncertainty going forward, in addition obviously to the introduction of a regulatory licensing regime, is the metering, the measurement that goes along with that, and how important that accurate information is going forward. Are both of your organisations comfortable with and supportive of those propositions around the measurement and the monitoring of floodplain harvesting that is proposed?

Mr NAPIER: If I could go first. Yes, Rose, we are totally in support of the measurement and management of the resource once it is licensed. It has been part of our frustration that because of the recent disallowances that has actually been delayed from coming into force. It is one of the basic tenets of water management that if you can't measure it you can't better manage it. To the extent that that applies in this case—and those things are still being worked out and, as I say, have not been put in place yet—yes, of course, our people are completely supportive of the measure-and-manage approach.

Mr QUIGLEY: Chair, if I could comment as well from Macquarie's point of view, we certainly are in favour of measurement. The only caveat I would put to that is that the metering that we are already trying to do for regulated water has run into a fair number of technical hurdles for meters of the size required for these pumps, and there needs to be some tolerance here to get us through this period while the market adjusts and gets the size of meters available in the quantities required with the number of people required to install them and validate them so that we can get to that point. It is not like fitting a water meter to your house in your front garden. It is a very much more difficult process with fairly severe and expensive civil works on pump sites. So, yes, we are in favour of it but it cannot be done overnight.

The Hon. ROSE JACKSON: I have one more question before I hand over to my colleague Mr Veitch. Probably you would all accept that not all rainfall run-off capture is equal. Some people are capturing a very limited amount of water; it is a pretty basic part of their landholding right, as we know historically. But there is some rainfall run-off capture that is quite substantial that is potentially stored in quite large storages. Would you be open to a rainfall run-off exemption that potentially did not include capture of quite large volumes of water in quite large storages that, in a way, differentiated between your bog standard when it rains—obviously, some of that water is captured and diverted and goes on to the land—and the more substantial infrastructure and works that may be in place that actually captured quite a large volume of water?

Mr NAPIER: If I may, Madam Chair?

The Hon. ROSE JACKSON: Mr Napier and then Mr Quigley, if you want to jump in as well.

Mr NAPIER: Thanks, Rose. This is one of the really complex parts of the question because, on the one hand, we have a water law that is trying to control how much or limit the amount of water that can be taken. On the other hand, we have environmental law which makes it illegal for you to allow run-off off your property back into a waterway, and the environmental law, unsurprisingly, outweighs or outranks the water law. There is that part of it and then there is where do you draw the line between the two. I know the discussions we have had around the exemption regulation has been exactly around that. At what point do you say, "This is where this bit stops and this bit starts"? Because, as sure as eggs, it will happen at two o'clock in the morning when the river breaks its banks and it is still raining and six inches have just been dumped upstream. How do you actually draw the line in that? As I read it, or as we interpret it, the regulation does a reasonable fist of that.

I think the reference there to large structures and large volumes—I mean the structures are neither here nor there. If you are regulated you have a volume, and that is it; it does not matter whether it goes into 20 small ones or one big one. But the overall volumes are the critical bit that will need to be managed over time. I think the regulation does a reasonable fist of that. Is it perfect? Probably not. Could it be fine-tuned? I am hoping so because the one thing that is often missed in this point is that this regulation and all these regulations are going to apply

statewide, so this is going to apply in places where we suspect it has not even been envisaged yet that it would be applied. To that extent, I think it does a reasonable fist of it.

The Hon. MICK VEITCH: Mr Napier, I want to follow on with a question. You have been talking about the transparency around the data and the data collection mechanisms to ease people's concerns or assure people that people are doing the right thing. Can you talk to us about how the sparsity and the distribution of gauges along the river system can be an impediment and what you would see needs to be put in place to make sure that any future regime is able to be metered, monitored and measured?

Mr NAPIER: In reference to the gauges, just to outline what exists at the moment, the gauges in the northern basin in particular—stream gauges—streams are typically not very well gauged. We have a number of main ones on the main trunk stream on the Barwon and the Darling, typically at structures, at weirs or at different points up and down the river, but there are only a relatively small number of them, and there are only a very small number of those tributaries which flow into the main trunk stream that actually have gauges on them. Typically the approach up to this time, the assumption has been that the gauge in the trunk stream would pick up all those flows below that point, and that was good enough. Up until the last 15, 20 years that has been good enough but now we are trying to get a bit more sophisticated in how we are managing the resource, and the basin plan and all that sort of stuff has required that to a much greater extent.

Then we are seeing that the lack of gauges is a problem because often it is one day's or a couple of days' flow between one gauge and the next one downstream or upstream. So it is not easy to get a good, accurate picture of what water is in the stream at any time. In an ideal world you would have a gauge on every stream, but reality tells us, I guess, that a lot of these streams may only run once every four or five years, so that is going to be an expensive investment to put gauges on those systems. It is not always going to be practical, but we have been saying for a long time that the density of gauges on these streams needs to be improved markedly.

The other point on gauges and things is too that, especially at the local scale, some are owned by the local council, some are owned by the met bureau, some are owned by the State department. Not all of them talk the same language, so they do not correspond; the data does not all go to the same database. Some of them measure in cumecs; some of them measure in megalitres; some of them only give you a height and don't give you a velocity; some of them are in places where the stream survey is changed from time to time. Because they are way out in the back of beyond they are not easy to service and not easy to keep tabs on. So, yes, there is a major issue around the gauging, which could be improved. As I say, we have been saying for a long time it needs to be improved markedly. Mr Quigley, do you want to jump in on that?

Mr QUIGLEY: No, I was actually going to go back to Rose's question about the rainfall run-off exemption just to point out an issue here or really clarify that the rainfall run-off exemption we are talking about is off developed irrigation land; it is not the other 20,000 acres of dryland country that might surround an irrigation development. It is the rainfall that runs off in that formed and developed irrigation development that allows tailwater and rainwater capture. It was designed to do that. That is the rainfall we are talking about. We are not talking about water that might be flowing in because there has been a substantial amount of rain on the farm. We are talking about that specific run-off from fields that we need to contain for all those environmental reasons.

The Hon. MICK VEITCH: My last question goes to the modelling and the issue around modelling. Some of the submissions to the inquiry suggest that once a model run has been agreed upon and underpins a water sharing plan, that the modelling should be gazetted as part of that plan so that at a future date we all can go back to it and see what the model run looked like. Can I get views from both Mr Napier and Mr Quigley on gazetting such information?

Mr NAPIER: Mick, I do not disagree with the principle; I just do not know what it would gain. My experience has been, and I am not a modeller—the model we have here on the border is shared with Queensland, so they built the model together for the one resource. In our most recent iterations of our water plans, we had a previous model and we just always went back to it. I do not think it was gazetted, but it was always there, so both States were going back to the same model because, obviously, we are dealing with the same resource. I think there are many issues around modelling that I do not understand. I am not technically qualified to do so. I was once told by an expert modeller that all models are wrong but some models are useful. To that extent I think they are largely a black-box exercise, where a lot of information disappears into it and it spits out an answer that everybody accepts at the other end. Can they be updated during the life of the plan? Maybe, if it is going to benefit anything, but I think the model that we have goes back to 1895 or whatever; it is the 120-odd year one. Yes, in terms of gazetting it, I do not see what it would gain, Mick, but I would be open to discussion on it.

The Hon. MICK VEITCH: Mr Quigley, your views?

Mr QUIGLEY: Mick, I am just a farmer; I prefer to operate in the real world. Models frighten me a little bit only because they tend to be a black box to me. But I have no problem with modelling being used for all of these things because it is the only way really you can simulate it. My concern is that if you locked in—by gazetting a particular model in there, if you had flaws in it, as Tim alluded to, you lock those flaws in. If someone down the track works out a better way to do it or a more accurate model, which seems to happen all the time, we are suddenly locked into a model that is 10 or 15 years old, when both modelling and circumstances have changed. I understand the principle, but I am not sure that that is the best solution.

The CHAIR: Are there any more questions from Opposition members?

The Hon. PENNY SHARPE: Yes, I have a quick one. Thank you for being present today. My question goes to the issue around modelling and verification. One of the big issues has been that there is such a lack of transparency in relation to verification of the models that exist. Do you have a view about the models that are there, who should verify them, how that should be done and how often?

Mr NAPIER: I will have a crack, Penny, for what it's worth. Models, as I understand it, can never be perfect. Can they be verified? Yes, probably, to a point. Griff, you might offer an opinion here; you have done some modelling, but my understanding is that once the parties agree that it is accurate enough for the uses that they need it for is when they move on because there are always going to be issues with models. There are always questions that can and should be asked. But, yes, there is a Goldilocks zone there, I guess is what I am trying to drive at. Griff, do you want to add anything?

Mr GRIFFITHS: Yes, I agree, and thank you for the opportunity to comment. In terms of my answer to the question, I think it would be a combination of what Mr Quigley said before, and Mr Napier, in terms of the fact that the models themselves are imperfect and we know that. The problem is, like Tony says, we keep hiding behind the models. We have got the ability to start plugging some real numbers into these models and then they do not become so much modelled anymore; it is actuals. I think that that is what we are all quite interested in—yourselves and ourselves—in understanding what really is being taken and not these models that everyone seems to be able to hide behind when it suits them.

The CHAIR: Excellent, thank you. I will kick off questions from crossbench members. I want to go back to the 1994-95 Murray-Darling Basin cap. Since then, do you have a sense of how much water storages have increased within your respective valleys? Has that been calculated? I will go first to Border Rivers and Mr Napier.

Mr NAPIER: Not in any detail, Cate. I guess since the Water Act 2000 kicked in, the actual size and volumes of storage has actually become a moot point because the restriction has been not on infrastructure but it has been by managing the licence part of the resource, so people are managed by their licences, rather than the size of their infrastructure. Yes, some people have built storages, but you have got to remember that surface water is not the only water that can be stored in storages and your own water is not the only water that can be stored in storages because some people trade water. They will buy water in from outside over and above what they already have, so in some cases they need that extra capacity to store that extra stored water. It looks bad, I acknowledge that, but it is not necessarily a harbinger of doom that it has triggered a massive increase in take.

The CHAIR: Mr Quigley, is that something you care to answer for your valley if it is as relevant?

Mr QUIGLEY: Yes, there have been new storages built in the Macquarie, and it is probably an ongoing process. I have built one, for instance, on one of our farms. We built a storage about five years ago way out of the flood plains. It has got nothing to do with floodplain harvesting; it is simply there as a management buffer for us. Remember, a lot of us have to order our irrigation water 10 days ahead of when we expect to use it. So if we cop a storm, a rainfall event, whatever, we are still expected to take that water. The reverse is if we are running late on an order, if a heatwave comes through and the crop needs more water or earlier than we thought, we also need to have water on hand to be able to satisfy those crop demands. So Most of the storages in the Macquarie are actually used as buffer storages for irrigation management, and a lot of them are not big enough to be of particular use for floodplain harvesting. I think it is a very long bow that has been drawn by several people that says the increase in storage capacity in the northern basin is directly linked to floodplain harvesting takeaway. I have some pretty good examples of why that is just not true.

The CHAIR: Going back to Mr Napier's response, you are saying that it is not really the structures but it is about the licensing of the water. Floodplain harvesting has not been licensed. It has been acknowledged that it really has been a free-for-all, if you like, for landholders and irrigators up until now. It has to do with the structures, does it not, because those structures have allowed you to take, essentially, as much floodplain water during floods as you are able to capture?

Mr NAPIER: No. Again, Cate, it is a bit of a misnomer; it is a bit of a furphy. You have to understand that floodplain water can only be taken when it is there, so when it is actually flooding. That is a pretty rare

occurrence, especially in the last 20 years. As we said in our submission, in the last 20 years there has been a step change due to climate change, if you like, the reduction in the amount of water that has actually been there. The incidence of those flooding periods is actually far less now than was the case prior to that. That is just the fact of what has occurred in the last 20 years. Again, regardless of the size of the infrastructure that is there, that assumes that all those storages are filled to overflowing when the river runs, and that is simply not the case.

The CHAIR: Thank you for that response. I will get to the 500 per cent carryover rule in the policy in a minute, but it is the case that when it does flood, and you say they are increasingly rare events and they are happening at longer intervals but when it does, those big structures that you said have been built—a huge number have been built since 1994—do capture those really big flood events because that is essentially what they have been built for. Is that correct?

Mr NAPIER: Again, Cate, I do not think that is quite right. One of the key concepts to understand here is that you can only take a certain amount through a pump in a day, so if you have got massive infrastructure those rivers need to run for a long time to be able to fill them. Does that ever happen? Yes, rarely, and maybe they might get close to full then, but I would suspect any of those big structures would only be partially used in normal times and not used for very long. Typically, those big storages, you need to get the water out of them fairly quickly and into smaller ones to reduce your surface area and resulting evaporation. I think there is a misconception here that there are big gravity-filled storages, there are big banks and floods come down and the entire flood is diverted off away from the river and sucked up by these big, greedy people that should not have it. These storages, they are filled by running water through a pump. Pumps are expensive to run, so they do not run them without good reason.

Mr GRIFFITHS: Do you mind if I just give an example of my own situation that might clarify that point?

Mr NAPIER: Yes.

The CHAIR: Sure.

Mr GRIFFITHS: I operate a small family-owned irrigation operation on the Macintyre River in northern New South Wales. Our last floodplain harvesting opportunity was in March of this year, which was a significant flood, as you all well know, and so that water has gone all the way through and since contributed to the filling of Menindee Lakes. We had a floodplain harvesting event here that lasted, for us, approximately 48 hours. My capacity to harvest floodplain water is about probably 260 megalitres in 24 hours, so I was able to harvest about 480 megs or so in that period, and we have had supplementary access for four months in the river itself. The river itself has in fact run above trigger levels for four months, whereas the floodplain harvesting event effectively lasted for two and a bit days.

The CHAIR: Going back to 1994, I understand the storage in the northern basin was 600 gigalitres. Do you know how much storage there is now in the northern basin compared to that figure of 600 gigalitres in 1994, just to get our heads around it?

Mr NAPIER: No, I would not, Cate. It is not something that we track. I have seen various figures around, but many of them include Queensland as well, so it is easy to get those numbers confused. But in terms of overall numbers, no, I do not.

The CHAIR: Clearly there will potentially be some structures that have been built that will have to be demolished. If licensing goes ahead—certain storages and supply works are viewed as legitimate and given licences—certain structures will have to go. Mr Napier, has your membership talked about that and what that looks like?

Mr NAPIER: Yes. Our understanding of that is that if a works is deemed to be inoperable or no longer active—"inactive" I think is the technical term—then that condition is changed on the works approvals and those works are then deactivated. That just means that the pump lifting water into the storage is deactivated, either physically or technically. If a works is deactivated and is found to be pumping water, then they are breaking the law, so there is no need to demolish the actual earthworks. I guess the consideration is that in time works can be reactivated, whether that be through the trading of water or somewhere else closing down and that works approval being moved to another location geographically. It would be very expensive to knock over infrastructure like that when, legally, you can deactivate it by deactivating the works.

The CHAIR: We will go to questions from Mr Mark Banasiak.

The Hon. MARK BANASIAK: My first question is to Mr Drum. I note your submission spoke quite heavily on the Macquarie Marshes. Earlier today I posed this question about the impact of the graziers to the Environmental Defenders Office. I note that many of the grazing groups are opposed to the regulation of floodplain harvesting. The Environmental Defenders Office was quite dismissive in saying that the graziers do

not have any real impact and it is all the structures above the Macquarie Marshes that cause the problems. What is your view of that statement?

Mr DRUM: It is not accurate, to say the least. From our point of view, 85 per cent of the land in the marshes is owned by private graziers and 15 per cent of the marshes—that is the Ramsar-listed marshes—are managed by the public. From our point of view, we are quite concerned in relation to what the water is being used for when it flows to the marshes. Flooding in the Macquarie happens right down the end, which is where the marshes are, and so most of that water, unfortunately, we are concerned is being used for commercial purposes, which is for cattle grazing. We have written to Minister Kean to suggest that that needs to be reviewed because you cannot, unfortunately, secure the health of the marshes whilst you have got 10,000 or 20,000 head of cattle running around over 85 per cent of what is supposed to be a Ramsar-listed wetland.

The Hon. MARK BANASIAK: Okay. Just picking up on your point—

Mr QUIGLEY: Mark, if I could—

Mr DRUM: Sorry, just to finish that off, using environmental water for it, that is not ideal.

The Hon. MARK BANASIAK: No, that is a bit of a concern. Mr Quigley, did you want to add something?

Mr QUIGLEY: I was just going to add, I really want to paint the picture of what happens in the Macquarie in a flood because I think there is a misapprehension that all of the floodwater in the Macquarie ends up in the Macquarie Marshes, which is not true because the Macquarie is an upside-down river. Let me explain this, Chair. It is a little bit different to a lot of other rivers, although the Gwydir is, I guess, somewhat similar. The maximum channel capacity in the Macquarie happens at Narromine, and the river is capable of taking somewhere around 200,000 megs a day of flow, so that is a pretty massive river. That is 20 per cent or so of Burrendong Dam in a day. But by the time you get, for instance, even halfway down then to the marshes and get to Warren, the river channel capacity is only 30,000 megs. So in a major flood the Macquarie has to lose 170,000 megalitres between Narromine and Warren, which is not all that far if you have a look at it on a map. So already we have got a massive amount of water that is leaving the river, never to return, and will never get to the marshes.

But even greater than that is the reduction in the channel size from Warren down to Marebone, just above where the Macquarie Marshes start. At that point the channel capacity at Marebone is 5,000 megalitres a day. So of that potential flood of 200,000 megalitres a day at Narromine there is only 5,000 megs that can physically fit in the river to get to the marshes. Our water sharing plan, the triggers for supplementary take and all of those other things are all around that physical channel constraint of 5,000 megs a day. In the Macquarie in a big flood, and even in a small flood—even 100,000 megalitres at Narromine, so not a great flood there but a big enough one—there is still only 5,000 megs that will end up in the marshes. The other 95,000 megs goes out on the flood plain into the effluent creeks and does not return, and that makes it a quite unique river in the way it operates. It will not make it through to the Barwon-Darling, except for what runs down a couple of the—the Gunningbar Creek, particularly, might get through, and some of it will break into the Bogan at the very end and make its way over a couple of hundred kilometres to the Barwon, but very small amounts. So most of the water in the Macquarie in a flood ends up on the flood plain away from the river.

The Hon. MARK BANASIAK: Mr Drum, picking up on your comments about the inequity in property rights, I quizzed the Nature Conservation Council about its recommendation that these rights not be compensable if there is a reduction. You have got advice from Holding Redlich around floodplain harvesting. What is your view in terms of whether those part 8 renewals under the 1912 Act constituted a property right?

Mr DRUM: I think it is quite clear that our advice says—and I think also, just made public, Mr Walker's advice says the same thing—that they are a property right, in effect. The issue is that if licensing takes place under the Water Management Act 2000, which hopefully is proposed and will happen, then those rights will not be vested in the individual; they will be vested back into the Government, of which the Government will give people access to them via a licence. In relation to the inequity, the one thing I will say is that if you look at some of the other valleys where there has been a cut in supplementary access as a result of breaching cap because of floodplain harvesting, that just cannot simply be sustained. You are asking for Cate Faehrmann to pay the bill for Mark Banasiak. I mean that is just quite seriously ridiculous, to be quite frank, and it cannot stay that way. There are two forms of property rights there. One is being promoted or enhanced over the other. It is an inequitable situation.

The Hon. MARK BANASIAK: Mr Quigley, you spoke about the metering. You touched on administrative barriers or hurdles that were stopping or hindering irrigators, obviously, getting these meters in place. I note the New South Wales Irrigators' Council released a paper quite recently about some of those

administrative hurdles. Do you think it is fair that the Natural Resources Access Regulator [NRAR] uses some of those administrative hurdles to misrepresent non-compliance?

Mr QUIGLEY: Thanks, Mark. That is, I guess, a bit of a thorn in our side. We struggle with the black-and-white rulings that NRAR makes, and we have discussed this with NRAR at length, because there are some meters currently in place that can be grandfathered. They do not meet Australian Standard [AS] 4747 because they have not been through the Manly hydraulics lab; they have not got certification. But when they were made they went through a test bench certification by the manufacturer with their serial number noted. Providing they were within plus or minus 5 per cent on the test bench—I am not 100 per cent sure of that but I am sure it is a very close figure, anyway—and providing they are installed to the manufacturer's original specification, those meters are allowed to be used as an interim measure until they fail and need to be replaced with an AS4747 meter.

NRAR does not count those meters even if they have got the LID—local intelligence device—that sends the data off. Even if it has got those attached, they are still seen as non-complying because they do not meet AS4747. But they do meet all of the grandfathering requirements for them to continue as a legal meter until they need replacement. I guess that frustrates it, that NRAR does not seem to be able to find a column for those people that are complying through that allowed method.

The Hon. MARK BANASIAK: You mentioned that you had some examples that you could provide about how a growth in storage does not necessarily mean a growth in take. On notice, would you be able to provide some de-identified examples—obviously, we do not need people's property details—where that furphy of growth in storage does not equal growth in take can be shown?

Mr QUIGLEY: Look, it is pretty simple. The flood plain in the Macquarie on the southern side, where I am, ends at the Mitchell Highway. So any storage south of the Mitchell Highway, whether it is pre-1994 or post-1994, does not contain floodplain water because it does not get there or, if it does, the main street of Dubbo has got half a metre of water over it and there is all hell to pay. The last time that the floodwater got out to us from the Macquarie was 1955, pre-Burrendong. So any of those storages that are to the south-west of the Mitchell Highway and the great western railway line, whether they were built pre or post, are not floodplain harvesting storages of any sort.

Mr DRUM: Sorry, can I just jump in there? The growth in storage is irrelevant. The use of the storage relies on a multitude of different circumstances. One is you have to have a flood event. If you do not have a flood event then you do not use it for floodwater. The storage can be used for a multitude of different reasons. The northern basin has a multitude of storages that have to be privately built—which have been privately built—as opposed to the southern basin, which has got all public storages. That was a point that was made—that the northern basin should invest in storages because they do not have the same infrastructure that is government paid for the south.

At the end of the day, whether there is a storage there and whether people have built bigger storage is irrelevant. What it is used for is the purpose, and if a flood event happens once every five years then every other four years it is used for something else. I think everybody needs to get away from this "growth in storage" thing, because it is irrelevant. What it is used for is the purpose.

The Hon. MARK BANASIAK: Thanks, Mr Drum. Thanks, Mr Quigley.

The CHAIR: We will now move to questions from the Government.

The Hon. SAM FARRAWAY: Thank you, Madam Chair. Mr Quigley, I have heard and I suspect it has extensively been said within the Macquarie Valley that floodplain harvesting licensing will be—I think it is referred to as a massive transfer of wealth from downstream of the Barwon-Darling to upstream. Is this your understanding?

Mr QUIGLEY: Thanks, Sam. I think this is really the same as all of the other water reforms that have taken place since the Water Management Act 2000, where the water licence is decoupled from the land. It has happened with general security, high security, supplementary water and now the final part of that is floodplain harvesting. What people need to understand is the value in that water was already captured in the land value. It is just like when our general security water was excised from the land. It did not increase but reduced my land value, as far as the bank was concerned, by the same amount that it increased my licence value. There was no net gain, and this will be exactly the same position. In fact, for a lot of people it will be a reduction in value, because what they have taken historically will be greater than what they will be allowed to under the licence. They may be actually losing a third of the value; they will be going backwards in value rather than increasing.

The Hon. SAM FARRAWAY: Following on, obviously I have also seen commentary that has been made that licensing floodplain harvesting will cause the Macquarie to breach its BDL and its SDL. Is that your view?

Mr QUIGLEY: No, the Macquarie fortunately is in a position where we are using significantly less than our SDL over the past 10 years. That is confirmed by WaterNSW in a graph that they made public a year or so ago—18 months ago—that shows that over the past 10 years irrigators have used an average of 17 per cent of the total flow in the Macquarie-Cudgegong system, as compared to the 27 per cent that the SDL allows. Most of that is due to over-recovery in the Macquarie by the environmental agencies—in particular the Commonwealth Environmental Water Office [CEWO], which we are discussing with them right now.

Because the Macquarie is carrying a lot of the heavy lifting for the northern basin, we are significantly over-recovered by about 72,000 megalitres of licence. But on top of that, if you add in our expected number for flood plain, whatever that is—30,000 or 40,000 megalitres, I do not know—then even if that over-recovered water came back from the CEWO by one means or another, we would still be below our SDL. The Macquarie irrigators have actually done a fair bit of heavy lifting for the whole of the northern basin, and I guess we would probably like to see that squared up. But no, floodplain harvesting, I do not know the numbers but we still do not expect that even to get us near our SDL.

The Hon. SAM FARRAWAY: My colleague Mr Banasiak touched on the Macquarie Marshes and the ownership and some of the private usage. There was commentary there. For Mr Quigley or Mr Drum, I just wanted to know your organisation's understanding on the impact of floodplain harvesting on the Macquarie Marshes. Obviously we spoke about the ownership earlier. Did you have any more to add on the actual overall impact on the marshes?

Mr DRUM: Mr Quigley, I will take that one. It is difficult to understand what the impact is. Delivery of water via the flood plain down there is supposed to go to the marshes, yet how do you know it is getting to the marshes when it is being used for commercial purposes? Like I said, 85 per cent of the Macquarie Marshes are in private landownership. It is reasonably well known from the submissions made that those who are at that end of the valley oppose floodplain harvesting because they do not want it regulated and they do not want it measured. For what reason, other than to make sure that that water is going for commercial purposes? If the upper valley and every other valley in Australia, or New South Wales for that matter, has to be regulated and measured then so should the environmental usage water that goes down to the Macquarie Marshes—including those that go onto land that is used for commercial purposes that just so happens to have marshes on it.

The Hon. SAM FARRAWAY: I will change tack a little bit, and the question is open to either organisation. I have seen in submissions, commentary and media reports that some stakeholders have proposed interim licences. As industry bodies and organisations, does industry support this at all? Do your organisations support the idea of interim licences?

Mr QUIGLEY: No—

Mr NAPIER: I will take that one first, if you like. Oh, Mr Quigley, you go. You jumped up there.

Mr QUIGLEY: No, Mr Napier, you go. I will follow.

Mr NAPIER: My understanding—and, again, I am not an expert in this—is that any interim licensing really does not achieve anything. What is presumed to want to be changed in the short to medium term is the volumes and the rules around those licences to manage the resource. That is how that is done: with the rules and the regulations. They can be changed pretty much at any time anyway. It would matter little whether a licence is interim or permanent in terms of managing it, but it would just add another layer of complexity and would delay even further the final licensing of all the resource across these systems. Your turn, Mr Quigley.

Mr QUIGLEY: Thanks, Mr Napier. Thanks, Chair. As I said earlier, this is the final part of the jigsaw puzzle of water reform in New South Wales. It has been going on for over 20 years. Successive governments have kicked the can down the road, and we just do not want to see that continue. We are at the point where we are fatigued from doing all this sort of stuff; we want to get back to our day jobs. I think it is important that the licensing be put in place but it can be controlled by the available water determinations, just like they did with the supplementary in the Gwydir when the cap got breached. It can be regulated that floodplain harvesting licences in this water year are only at a 70 per cent or 80 per cent allocation to control that water take, if and when a valley gets over its SDL or BDL.

It is not as though this is a set-and-forget. There are mechanisms of government that can control the volumes of water taken. As the climate moves along and all of the other things ahead of us happen, the Government

has not lost control of being able to do it. They can do it through a process that is already well understood and adjusted to by irrigators.

The Hon. SAM FARRAWAY: Mr Napier, obviously we have heard lots about the Macquarie. But what in general is the impact of floodplain harvesting on the border rivers, just quickly?

Mr NAPIER: Very quickly, it is a very valuable part of the overall mix of the water resource for our people. We have a range of users ranging from people who take very little, to some that it is a significant part of their resource, to some for whom it is their entire resource. That varies a fair bit across the membership. Obviously, in a good year floodplain harvesting is what puts the cream on the crop across the entire district and across the community. It is important and that is one of the reasons why, when a drought bites, it bites pretty hard.

The Hon. SAM FARRAWAY: Obviously Border Rivers, Mr Napier, your organisation would represent irrigators in Queensland, correct?

Mr NAPIER: Correct.

The Hon. SAM FARRAWAY: With floodplain harvesting having been signed off by the Murray-Darling Basin Authority [MDBA] and as part of the water resource plan, how does what has been signed off in Queensland compare with New South Wales?

Mr NAPIER: The Queensland process is still underway in a similar, parallel sort of process as well, but obviously a different one. Queensland is different in that it has a much higher reliance on run-off river flows, because Queensland only owns, I think it is, 37 per cent of the upstream storage capacity. There is a long and boring story around that and I will refer you to one of the appendices to my submission around the historical context of floodplain harvesting, but essentially the two States were going to build storages and manage them together. They built one, that being Glenlyon. They then failed to build the second and instead encouraged everybody downstream to build on-farm storages. So that, in a nutshell, is how we came to have a lot of on-farm storages in the Queensland case, more so than in New South Wales.

The Hon. SAM FARRAWAY: I am happy for either organisation to take this question on notice, but I just wanted to know if either organisation has a view on what possible changes could happen to the management of Menindee Lakes. Just in general, around floodplain harvesting and down the track, what beneficial changes could be implemented for better management?

Mr NAPIER: My understanding of Menindee—I have been there a number of times—is Menindee is probably the biggest floodplain harvesting storage in the entire system. That is why it was built—to capture and store Darling floods to release later on for the benefit of the lower Darling and the lower Murray in South Australia. In that context, yes, Menindee is very important. What can they change? My understanding is there are a few things that they could do there in terms of making their management better, that being a structure between Menindee and Cowandilla so that they can reduce the evaporation losses. I think at the moment evaporation losses run close to one Sydney Harbour a year, between 400,000 and 500,000 megalitres a year, when the lakes are full. By the time Menindee fills with two million megalitres of a Darling flood, if they hold the water in there for two years then they will be lucky to get one million megalitres out of it and released downstream.

Anything that they can do to improve the efficiency of that storage and the way that it is managed they have to balance up against the locals having their water resource there, having the amenity of a lake and all those sorts of things close by. We totally get that and this is what makes it hard. There are all these obstacles which get in the way of improving the efficiency of the management of Menindee. I think what we saw in the 2016-17 event, the last time that the lake filled, was that the operators under the authority's direction emptied the lakes quite quickly. That is why the lakes did not last as long into the next drought as they had in previous droughts. There are all these competing interests, which makes Menindee very difficult. But in terms of floodplain harvesting, from our point of view, once there are licences in place and everybody has security that they know what they will get then a lot of that fear should go away.

Mr DRUM: Mr Napier, I just want to add to that. Menindee is full; it was filled from the last flood event. Let us be frank: People took floodplain harvesting water—in March, was it, Mr Napier, that you had a flood event up there? It was in March, right? There is still a lack of allocation in the Murray at the minute. Menindee is full. The southern basin are not—as they would claim—being deducted from the northern basin taking water because Menindee is full. The northern basin still took floodplain harvesting, and yet there is still some allocation problem in the south. At this stage it cannot be an issue from the north; it has to be some sort of issue in the south that needs to be addressed. There are a lot of submissions that talk to that.

I am just wary of time; there are a couple of points that I would like to make to the Committee before we go. The Macquarie has made a number of submissions along the way to a number of members of Parliament that

relate to the legality of floodplain harvesting. We have been concerned that those submissions have not been reviewed properly, although the Crown Solicitor's advice did go a long way to confirming that our advice was correct. I would just note that from Bret Walker's advice this morning, which confirms as well our advice from Peter Holt and Holding Redlich that floodplain harvesting is legal. I would just like to put that on note—that we can have a conversation around how floodplain harvesting is managed into the future, how it is regulated and how it is measured.

But I think this morning has put to bed, quite frankly, the question around whether or not. It has been in the past and continues to be legal, and so therefore we need to move on with the regulations or some form of regulatory framework around that form of water take. Sorry to jump in there.

The Hon. SAM FARRAWAY: I think that is it from me, and I think time is almost gone.

The CHAIR: Thank you very much for appearing at today's hearing, for your submissions and for taking part in this process.

(The witnesses withdrew.)

(Short adjournment)

IAN COLE, Executive Officer, Barwon-Darling Water, sworn and examined

ZARA LOWIEN, Member, Barwon-Darling Water, affirmed and examined

ANDREW WATSON, Board Member, Namoi Water, sworn and examined

DANIEL KAHL, Board Member, Namoi Water, sworn and examined

The CHAIR: We will move to opening statements. Who is giving an opening statement—very short if we can, please—for Barwon-Darling Water?

Mr COLE: I am. Thanks for this opportunity to address you on these issues that have been raised by the Select Committee. You will see behind me that there is a picture of the mighty Darling River flowing past the North Bourke Bridge, and recently we have had flows to this extent. In fact, about two million megalitres have flowed past Bourke during all of this year so far, which is in stark contrast to the few years before. Most of that water is headed downstream to meet all sorts of needs, including environmental, social, cultural, recreational, stock, domestic and agricultural needs. These flows have now completely filled Menindee Lakes. During that time, irrigators also have had the opportunity to take some water to fill dams both through unregulated flows and also through floodplain harvesting.

It is good to see. It demonstrates the nature of this unregulated Barwon-Darling river system, a river of droughts and floods and feast and famine. But it also shows that this is the time to take water, rather than at low flow. Water taken upstream of us in the tributaries and upstream of us in the Barwon-Darling during flood times like this, and good flows, does not grossly affect flows to Bourke and downstream to the lakes on the lower Darling. It is best to fill storages while there is plenty. Our worry is that, if you were to kill off floodplain harvesting, more water would be then taken at the lower end of the flow regime—the low to medium flows that do have a big effect on flows in the Barwon-Darling. I will say that the Barwon-Darling water sharing plan on the other end of the spectrum, on the drought end, has had some major changes in 2020 when it has been put into place.

Those major changes include a resumption-of-flow rule, the lifting of A-class thresholds, active management provisions in the plan, protection of environmental water and individual daily extraction limits. They have all contributed early on in this year, when we had to run the resumption-of-flow rule, to the beginning of this wonderful flow that we are seeing at the moment. We need to look at floodplain harvesting as a good thing in the whole spectrum of the water products that we have available to us at the moment.

The CHAIR: Thank you very much, Mr Cole. We go now to Namoi Water and Mr Watson.

Mr WATSON: Madam Chair, members of the panel, my name is Andrew Watson and beside me is Daniel Kahl. We are both from family farming businesses in the Namoi Valley. Our families have been farming and irrigating here since the 1960s. In the early part of our family's history in this region, our businesses and many others like them were encouraged by multiple governments and their policies to expand irrigation to develop the economic prosperity of the regions. Conversely, the whole 25-year period of my farming career has been focused on irrigation reform as nearly all forms of consumptive water use have become volumetric metered licences. Successively, we have gone through groundwater reform and cutbacks, surface water, supplementary, followed by unregulated water and now finally floodplain harvesting. The current process of regulating floodplain harvesting is not a new form of water take but rather the final form of historic legal water take to be regulated, measured and monitored.

It may surprise you to hear that, as users of water, we welcome this regulatory process. We want to be compliant with all legal limits. We want to ensure that everyone gets their fair share. We want to do our part to protect the environment, of which we are all temporary caretakers. This reform will provide a mechanism for the New South Wales Government to manage the last remaining unregulated form of historical take and in turn ensure we comply with the limits set by the MDBA plan cap, water sharing plan limits and sustainable diversion limits. Floodplain harvesting does not happen all the time. It mostly happens in time of extreme wet weather, when there is already a lot of water in the system. As such, the impact of floodplain harvesting on the function of the river systems is minimal.

The current circumstances provide a marvellous example of this. The Menindee Lakes are full, as are most of the northern basin dams. There is connectivity along all of the Darling system and the southern basin dams are near full or spilling. Yet, of the northern valleys, the Gwydir Valley and the Macintyre alone have had any significant floodplain harvesting in a few months, as we recover from the terrible drought conditions of 18 months ago. For any further floodplain harvesting access to have been possible, there would have to have been significantly greater rainfall in the other valleys.

In the Namoi, we only get these opportunities every five to 10 years. My nine-year-old daughter might remember the minor floods in 2016 but she would not remember the last significant floods in 2012 because she was in her mother's tummy, riding through the floodwaters in a tractor, trying to get out just in case she wanted to come into the world while we were flood bound at home. These events are few and far between. But the importance that they have for our businesses, our staff, the businesses that rely on us and our communities in surviving and recovering from the dry times in between cannot be understated. The proposed regulation will cut our historic legal access to floodplain harvesting by about a third, but this is being supported by our irrigation industry because we understand the importance of this final reform in providing certainty and confidence for all stakeholders in our water resources. Thank you.

The CHAIR: Thank you very much, Mr Watson. We will move straight to questions from the Opposition.

The Hon. ROSE JACKSON: Thank you, Chair. This question is really directed to both organisations, so you should both feel free to comment. One of the things that has surrounded and infused this debate from my perspective is uncertainty—legal uncertainty, policy uncertainty, scientific uncertainty and uncertainty about the impacts on various points in the river system. Will you talk a little bit about the impact of that uncertainty on your members? Whilst the regulation of floodplain harvesting remains unresolved, what are the consequences of that for the people that you represent?

Mr COLE: If I could begin by answering that, uncertainty is a regular thing in the water game. I go back to when the Murray-Darling cap was imposed upon the Barwon-Darling river back in the nineties and it took probably 10 to 15 years—or 15 years at least—to get that cap into place, along with some environmental flows. We were involved in that. Then to get a water sharing plan by 2012 took us a long time. We have been working on this reform of the floodplain harvesting virtually all that time. I know during the cap days we used to talk about the fact that we had to cap the water that was taken from the river by pumps, but we always had set aside in our modelling and our discussions—and this goes back to the nineties—an amount of water for floodplain harvesting.

The Government has been very slow to work on it and very slow to get this reform done. But it does, as Mr Watson says, complete that last bit of the picture as far as regulating water sources in the northern basin. For certainty, it has to be done. I have members in Barwon-Darling Water whose businesses would be grossly affected if they were not able to continue to floodplain harvest, because it forms a significant fraction of the water that they use. I have communities along the Barwon-Darling, which runs from the Queensland border down to the lakes. Those communities will be grossly affected if the uncertainty leads to the fact that we could not do it. When we look at the legality of it, you will receive advice from legal eagles far more skilled in their thinking on legal matters than me. I know that the industry has got plenty of legal advice as well, and you will receive that during these hearings.

But it is interesting to me that the Government and governments of all persuasions have cooperated with the practice of floodplain harvesting for at least over 30 years, and a lot longer in some valleys—that it appears to have a legal basis in the part 2 and part 8 approvals that we have been given. Government has been working on licensing it under the Water Management Act since the Act was introduced 20 or 21 years ago. Why are limits for floodplain harvesting enshrined in New South Wales water sharing plans and the Murray-Darling Basin Plan if floodplain harvesting is illegal or so uncertain? It is interesting that the very active and much-vaunted water regulatory body the Natural Resources Access Regulator in New South Wales has not acted against any floodplain harvesters in recent times, as floodplain harvesting has always been available and has been used this time as usual.

Mr KAHL: If I could speak further to that and more specifically to your question of uncertainty, as a younger person in my early thirties, I farm with my two younger brothers and our father. We put a lot of effort into employing young people in our community and trying to give them a start. None of that is possible without us having certainty as to the access to water we will have, which we can then build a business upon to continue into the future. I have been home for about 10 years now and my role in our business is business manager. The amount of time I spend on things like this, instead of being able to be out actively farming and encouraging the next generation of young people into agriculture and into our rural communities—it is really hard to do.

This uncertainty, in my opinion, is not necessary. This is not a new process and, as Mr Cole mentioned, a lot of the uncertainty is unfounded. If we could resolve this and get this in place, the ability for us all then to move forward and get on with improving our businesses, improving our communities and moving on and removing that uncertainty, it would be truly valuable to all the stakeholders when it comes to water.

The Hon. ROSE JACKSON: One of the critical elements, it seems, in terms of resolving uncertainty and moving on is the monitoring and measuring elements of this reform—the introduction of more robust regimes to actually know how much water is being taken and at what time, and where is it being stored. Is that something that your organisations and the people you represent are committed to? Do you see the centrality of that element

of the reform to resolving the uncertainty going forward? Obviously both organisations can feel free to comment on that.

Mr COLE: I think we do, Rose. We certainly do, and I might throw to Mr Watson on that.

Mr WATSON: Certainly, thank you. Floodplain harvesting is going to be measured and it is fully supported by all the irrigation organisations. But if you could see the amount of detail we have been into to measure this—we have to have more measuring devices than we do to pump any other form of water. We have to have a fully legislated storage meter, which either works through pressure transducers or through radar, to measure how deep our dams are. That has to be telemetrised so that it can go straight to the department. We also have to have a gauge board there, which takes an hour and a half for a GPS to see how accurate that gauge board is.

My tractor can find itself in the field in a minute and a half to two centimetres' accuracy, but we are talking about being down to millimetric accuracy on a gauge board that we take a photo of. The regulations and the monitoring and the measuring will be very, very accurate in this circumstance. We understand that NRAR have very, very high abilities to use satellites to track where water is going. We have had some real examples that came out publicly about a year and a half ago where they were tracking water by satellite. There will be a lot of ability for the water to be measured. We are supportive of that. We find it is very expensive and a lot of that cost will be borne by irrigators, but you can have it from us that the irrigators are supporting this.

Mr COLE: I think Ms Lowien has something to say.

Ms LOWIEN: Thanks, Mr Cole. I think a really good question is—we have to have accountability for this form of take. One of the things that has been undermining the confidence and the certainty around this form of take is the fact that there is not publicly available data on how much is taken during a flood. We need measurement to match that licensing program so that we can communicate that, account for it and report against cap and SDL. To do that we need a consistent approach, which is obviously proposed already in regulation. That then cuts out the debate we have about how many thousand megalitres or gigalitres is taken. We have seen, particularly in the past three years, a whole range of numbers speculated. But we will not know the number until we start getting actual data back into the model.

At the moment, the model is its best estimate and it has gone through a significant increase in data input through the Healthy Floodplains to get it there. But we need actual measurement data in it, and we cannot do that. Industry has volunteered that approach but, quite frankly, I think the community expects that of us and wants to see government enforce that on us. We need that in regulation to do that.

The Hon. ROSE JACKSON: Just one more quick question from me and then my colleague Mr Veitch has some questions, too. One of the consequences of that accurate monitoring and measuring that it is great to hear everyone is so committed to may be—not certainly will be, but may be down the track—that some structures, some infrastructure and some storages may be found to need be decommissioned or perhaps even deconstructed. That may be something that is required to occur in order to ensure that the amount of water that is being taken and diverted is within the legal limits. Is that something that your organisations and your members are open to, if indeed it is demonstrated that that is necessary?

Ms LOWIEN: I can start off and then I will get the two valleys to explain. There are a couple of things in that, I might say, Ms Jackson. If the concern is about illegal works or works that have not been approved, that is a separate process which forms under the Healthy Floodplains and NRAR's role. That will be addressed through that, and we have seen NRAR take people through the Local Court system where there are unapproved works. The licensing program in its development, however, goes through an eligibility test. That is really important—so understanding what you have on farm.

What you have on farm might be different from that eligibility test. It does not preclude you from using it, provided it is approved, but what it means is that then you are limited by a volumetric licence at that level. It is the licence volume that we need, the measurement device to match up against, to provide those limits. That structure—for example, a storage that might be deemed ineligible—provided it is approved, it has other purposes. That is where Mr Kahl or Mr Cole can explain those multipurposes and why we have those storages. But you need the measurement approach to match up to the volumetric, and then there are all those other compliance mechanisms that can come into play to assess that the take over the long term is within those limits. Mr Kahl.

Mr KAHL: Thanks, Ms Lowien. That is a really important thing to note—that the storages that we have on farm are not generally used solely for floodplain harvesting. They have multiple uses: for storing water that we have ordered through the dams to the river systems, through general security licences that we are storing on farm through groundwater. We might be storing on farm through all different forms of water. It is really important to note that while the storage, as Ms Lowien said, they will be approved already through water supply work approvals as long as those structures are legal. If they are not, and as a result they are found not to be legal

structures and need to be decommissioned for that reason, then that is fine. All of our other structures are licensed, but they should not be found to need to be decommissioned as a result of floodplain harvesting [FPH] licensing because those storages have multiple uses. Importantly, what that allows us to do on farm is to improve our on-farm efficiency.

There has been a lot of government investment in on-farm storage and on-farm efficiency projects, including building and increasing storage capacity so that we are able to store and be more efficient with our water use on farm. It is more common for us now to take our water in bulk releases, especially in times of dry lately. In our valley, the last couple of summers we have only had access to our water that is held in the dams upstream of the Namoi through bulk releases. Instead of being able to access the water that we hold in our licences at any point during that summer, during that crop-growing season, we have had to take delivery of it early in the year so that WaterNSW can be as efficient as possible in delivering it to us.

If we do not have somewhere to store that on farm, that means we do not have access to that water. If we cannot grow crops that require watering through the entire summer, again, the flow-on goes on—cannot employ people, cannot have money being spent in town and all that kind of thing. Those storages, if they are not licensed then by all means they probably should be decommissioned, but it is important to note the various uses there and the efficiency benefits they provide us.

Mr COLE: If any storage or any other structure is found to be illegal, it needs to be decommissioned—no doubt. We have experience in decommissioning assets like this because in 2006-07 the Government chose to implement a cap management strategy on the Barwon-Darling which reduced our annual volumetric limits by 67 per cent. That meant if you were a very active irrigator with quite a bit of storage, like I was at the time, you had to go out and find water to continue to be able to use those assets or they became stranded. But in fact a lot of them have been decommissioned over the years because the water is no longer there because of those earlier reforms. If we look at the buybacks on the Barwon-Darling too, I am reminded of the Toorale situation, which the Government owns at the moment. It has structures on there that have taken years to be decommissioned, but they are slowly being decommissioned.

The Hon. MICK VEITCH: I have a question around the cap. A number of the submissions talk about the 1993-94 cap and some of the submissions also talk about the current terminology is "cap scenario". There is a sort of modelling around the cap scenario for floodplain harvesting. This may be a question for Ms Lowien. Will you explain what you would see to be the difference between the actual 1993-94 cap and the cap scenario that is being used in some of the modelling?

Ms LOWIEN: I think they probably will flick to me on this one, Mr Veitch. I will start off and then they might give you some examples. There is some misunderstanding around cap. Cap is determined in the Water Act now. Previously it was a schedule to the Murray-Darling agreement, and now that sits in the Water Act. That cap has not changed in terms of its definition, and it refers specifically to the use of hydrological models. What happens is you set those models and what we have seen in this debate is often a reference back to the most recent use of that model, which was for the basin plan background documentation in 2012. It is going back to those models and it is ignoring the work and the $52 million worth of investment by the Commonwealth to improve the models, which they knew at the time were just an estimate and needed rectification.

There is no difference between the cap and the cap scenario. The cap, in fact, is a scenario which is determined through a required set of inputs into a hydrological model and that outcome. I draw your attention to the fact that, sitting here representing the Barwon-Darling today as an adviser to them, their modelling results have not been updated. In fact, some of those numbers from 2012 are the current estimates of floodplain harvesting take. But that new information is due to come for both the Namoi and the Barwon-Darling shortly, in the next few months. Where we have seen those model outputs change in some of those valleys, like for Gwydir, it does not mean that there is more water. No-one is trying to hoodwink anyone. Every State has updated their cap and their BDL since 2012—every State.

My question is do you want New South Wales to lock in information set in 2012 and ignore the Commonwealth investment in the Healthy Floodplains program, or do you want to take on that new information and make the best decisions you can with it? I think that is what we need to focus on. There is some evidence within the Gwydir Valley Irrigators Association submission that explains some of those changes, but the key here is: Do we want to take on this new information? If not, we want to lock it in with what the MDBA had in 2012 and in that case all other States are changing theirs, because that is how it is allowed to be established, we will not take on new information. How do we then prepare for climate change and changes in inflow sequences? I will draw your attention to other valleys where there was no information at the time to set those limits.

We are talking about the Murrumbidgee, for example, which had 385,000 megalitres of rainfall run-off estimated in 2012 and no storage development in their initial cap scenario because it was considered not significant

enough to capture it. And then we have other reports since then talking about storage growth, whether that be in the north or in the south, which needs to be reflected. What we have seen here is an investment in the northern basin to have that reflected—thanks to the Commonwealth investment, heavily scrutinised—and we need to take that on board and take that on board consistently.

The Hon. MICK VEITCH: Thank you.

Mr COLE: Does that answer the question?

The Hon. MICK VEITCH: Absolutely.

Mr COLE: Thanks, Ms Lowien.

The CHAIR: [Inaudible]. Thank you. Sorry, I was trying to find that little mute button. Just to get back to this cap situation, Ms Lowien, you are saying that the Murray-Darling Basin cap is actually a cap scenario that can change.

Ms LOWIEN: Now it sits in schedule E, I believe, of the Water Act. That schedule lists out the types of diversion that the cap refers to and the use of a hydrological model using the development at that point in time. The cap scenario is the development that you understand to have existed in 93-94 and then it is run over a climatic sequence, which back when the original water sharing plans were done only went up to 2000, for example. Since the basin plan came in, those scenarios were updated to go up to 2009 because that is the climatic period for the basin plan. And now, with the Healthy Floodplains period, those development conditions through those rules are run right up until 2019, for example. Potentially the Namoi and the Barwon-Darling may be run up to '20, considering they have time to do that now.

That is where you get, sometimes, changes in these estimates—when you reflect the new information of that additional climatic sequence as well. It might not be just some of the data that you put into it. But definitely, with the technology available now and the farm visits that have occurred, what existed back at that scenario is much better understood.

Mr COLE: I think the cap is a concept, is it not? The way it has always been explained at water reform meetings that I have been to is it is not a hard figure but it is the amount of water that would or could have been taken at the benchmark year of 93-94, given existing infrastructure and conditions on the river at 93-94, but then averaged over a long-term climatic sequence. So it will be different every year, but the average will remain the same. If you input fresh data into it—and better data, more robust data—the number could change upwards or downwards.

The CHAIR: Why do you think there has been so much discrepancy in terms of the estimation of how much floodplain harvesting has occurred in the northern basin? I know the CSIRO has modelled 146 gigalitres per year with 429 gigalitres of storage. The MDBA has estimated 17.7 gigalitres per year; New South Wales Government estimate a cap take of 103.6 gigalitres per year. Why do you think it is just so unclear and there are so many wild estimates, Mr Cole?

Mr COLE: I could not answer that question; it is really not a question that I could answer. I do not know if Ms Lowien has any feelings on it.

Ms LOWIEN: I will throw to Mr Kahl or Mr Watson to explain the process that they have gone through for floodplain harvesting, but any modeller will tell you that the better information you get into a model, you improve those estimates over time. So, yes, there are a range of numbers out there, some very much speculated, in terms of numbers that people think for northern basin take. But then there are also differences in models, so you have to compare the same conditions and inputs on each of those model runs to get a comparison. This is an issue that, as I explained before, if you change the climatic sequence you automatically change the period which that model has been run over. So that number is subject to change.

That is why both the cap and the basin plan are written in such a way that if we improve that baseline estimate information, the data that forms the foundational assumptions on how much water is available and how that is being accessed, that does not change the fundamentals of what is happening. It is just a better estimate, and the MDBA explain that very much in their understanding of how baseline can change. But each of those examples in many cases make different assumptions. I will give one quick example. When I tracked changes in these types of numbers over time—we talk about estimate, water-sharing plan and then the MDBA came in 2012 and made some changes in assumptions—a key policy change that was made in that time was rainfall run-off, and so then that changed where the water appeared in the model.

Now the Healthy Floodplains program has come and made more changes again in terms of the policy decisions around rainfall run-off, and so you are automatically not comparing apples and apples with those types

of comparisons. The other reason is the fundamental improvement in the dataset which is coming in the most recent models. This is why I very much caution the use of numbers in those valleys where the modelling results have been presented by the department. Those numbers from 2012 or earlier are now superseded by that model upgrade, and that is because of the work that has been done on farms like Mr Watson's. Mr Watson explained that data input that has happened through NRAR and the Healthy Floodplains program to improve the estimate that is due to come for the Namoi.

The CHAIR: With what we are seeing in terms of revised BDLs, what has happened in terms of the environmentally sustainable level of take—the ESLT? Has there been the same level of assessment and scientific reconsideration, updated scientific knowledge, about the environmentally sustainable level of take at the same time?

Ms LOWIEN: The environmentally sustainable level of take is your baseline conditions minus a reduction in water that has now in most cases been handed to the environment as a licence through various programs. That re-estimation of the number in most cases changed—

The CHAIR: Can I just jump in? Just to check, the ESLT is the first thing that has to happen, right? That is the fundamental first thing that has to happen: What is the requirement for the environment? Just to clarify, I am pretty sure that is the law: What are the requirements? The question is: Has there been updated scientific knowledge applied to the ESLT at the same time as the BDL has had all of these kinds of reassessment within, say, Gwydir?

Ms LOWIEN: So what I will say is that when you make the assessment I do not think the ESLT needs to be updated because that work was done. We are taking things that were considered losses in the model and now attributing them to take. In most cases they were not contributing to the shortfalls in ESLT because they are happening in a flood. We are talking about floodplain harvesting when there is sometimes a metre worth of water flowing across the flood plain and that is a very different situation to ESLT. Most of the work that was done in those assessments under the basin plan were focusing on the areas where the MDBA or CEWO could influence the environmental outcome and that is when water is still in rivers because once it is out of a river there is no management that can happen.

What you can do is if you reduce the amount of water that is taken in a flood—and that is proposed for largely most of the valleys, Gwydir and Macintyre so far—you may then put floodwater back. So in a system of ours it is putting some water back into those wetlands and areas that are already inundated as we have seen this year. I do not agree that ESLT needs to be redone, particularly if we are keeping our extraction limits back to those legal limits that are defined, and you still have that water that has been calculated to be needed for the environment because we are recognising that we are in a flood scenario. Mr Watson, did you want to explain some of the work that has been done to estimate how your farm works in the model as well?

Mr WATSON: There has been new technology come in. Previously, if you had a dam you can look at it from a satellite—is it full or is it empty? It is a bit hard to tell how much water is in a dam from space so it is a new technology of lidar data which can actually measure how far up the dam wall it is and be able to calculate that. They also have to come and do a survey of each dam and that is a literal GPS survey of someone driving through each dam to actually chart how big that dam is. So there has been a lot of that sort of stuff happening and none of that is cheap and if there is any water in the dam it makes it a bit harder for people to wade through.

I was also going to reiterate one of the things that Ms Lowien mentioned, which is rainfall run-off and/or other water we have in those dams. If we have rainfall run-off—if it rains on our farms just after we have irrigated—a lot of the time we get more water on than we put off that suddenly turns up on our tailwater systems than we put into our dams because, legally, we are not meant to let that water get into the waterways because of increased nutrient load or chemical load. So we are really finding that once we get down to things like rainfall run-off we are sort of stuck between two rocks, but it will influence how much is thought to be held in these dams when they start thinking how much floodplain harvesting will be.

The Hon. MARK BANASIAK: As part of this inquiry we received a briefing from the department and as part of that they answered some questions around metering, which is obviously a feature in many people's submissions. They painted a picture that everything was going swimmingly but then NRAR did a media release and report that stated there was significant noncompliance. I note that the Irrigators' Council then released a fairly detailed analysis of what they call "compliance barriers", which raised some significant concerns about the department being a bit misleading in its self-appraisal. I just wanted the lived experience from you guys and your members in how that metering regime has been going along. We can start with you, Ms Lowien.

Ms LOWIEN: Mr Kahl has taken his mask off so I will let him go because he has been doing some of the challenges that have been experienced that we have been communicating.

Mr KAHL: I am happy to take that on. Just to be clear, too, with metering that applies not just with our storages and with our floodplain harvesting but all of our forms of take and our groundwater works and surface water works as well. In terms of how that process has worked, it has been quite challenging at times to get a good understanding of what meters actually meet the new requirements and then in getting access to those meters. There are not shelves full of them. I will not compare them to toilet paper in the COVID lockdown situation but it is not always easy to get hold of meters and then to find a duly qualified person to install them has been a challenge. As an industry, better metering has been something that we have been asking for for much longer than these new metering processes have been in place.

We have been asking the department to improve the way our take is metered because it is the best way of proving what we already know to be true—that, for the most part, we are trying to do the right thing. As with any group, there might be people who look to go outside of the rules but, for most of us, what we are trying to achieve is to use the water we have legal access to as efficiently as possible to get some good outcomes for our businesses and our communities. If we have a good metering framework in place it is really easy for us to be confident in it but, even more importantly, for the rest of the public to be confident that we are only taking the water that we are able to access legally and that we are using it appropriately. In terms of storage meters and things, that is going to be another process of accessing those meters and understanding the program in place.

In terms of noncompliance in that NRAR report, I think what that failed to really properly describe is those instances of—if you want to look at it in a black-and-white scenario where people might have been noncompliant in the sense that they did not have an approved meter in place yet then, sure, they are not compliant. But there is a fair chunk of that percentage of people who had gone to an effort to have had a meter ordered and had measures in place that they were actively seeking to get that meter in place but there were barriers—as the term was used by Irrigators' Council—to getting that in place. I think not long after that NRAR did come out with some more transparent figures that said, actually, it has been a lot better than what we possibly portrayed in the first instance; it is certainly through no lack of intent or willingness from our side of things to get this in place.

One last example from me is that we tried to get in front of this in our business and install some meters at our expense—and they are not cheap; depending on the model they cost anywhere between $10,000 and $15,000 per meter. We had four of them installed prior to the requirements and the approved meters coming out because we wanted to start that process while we had the cash flow to do so and those are now not approved. So they are one of the ones that NRAR would describe it in black-and-white terms. They would say that that is noncompliant. But, in actual fact, it is because it is being grandfathered through and we will have the ability to replace that in time. It has the ability to be—it has telemetry, it has the data logger and all that sort of thing. We can utilise it still to the standard required until we get an opportunity to replace it.

The Hon. MARK BANASIAK: Given that this is sort of [disorder]. Sorry, who was that?

Mr KAHL: I think it was Mr Watson.

The Hon. MARK BANASIAK: Mr Watson, did you have something to say?

Mr WATSON: I can see where your next question is headed but I can work towards that, too. I will admit that we have focused on inputting 28 meters on various bore and river pumps. We spent over $30,000 putting new, approved meters on river pumps, which then both failed. The speed which companies have had to develop these meters has meant that there are a lot of weaknesses in the system and so we have had to go through a process of refitting more meters to replace the ones that we first fitted. The demand for that in that first tranche, which is a limited number of the 500-plus millimetre pump sizes, does make me concerned that there will be a very distinct lack of meters coming into the next tranche of bore meters to be fitted.

In addition, I do not know where the duly qualified people are going to come from. You might be able to claim that there are 156 of them around the place but most of those companies do other things as well and it is only a portion of their time. So one of my big concerns and the things that our organisation is advising all of our members is to get in there as quickly as possible and get everything ordered and make it happen before the due dates. But there would be some real concerns that those compliance issues are going to keep coming up because of lack of supply of either the people or the meters.

The Hon. MARK BANASIAK: You anticipated my question perfectly. Did you have anything to add, Mr Cole or Ms Lowien?

Mr COLE: I think there is probably a degree of truth in both arguments. There are some people who are noncompliant but the number of compliance is much bigger than was at first talked about in the first NRAR report. That was corrected to say how many people were actually on the road to compliance. From the Irrigators' Council point of view there have been barriers—and Mr Watson has touched on a few there—and obviously COVID has been a big barrier as well in the supply of the telemetry items and metering equipment that is needed.

All the same, that is no excuse. I think as an industry we need to get on and get this job completed and I am sure you will see that done very smartly.

The Hon. MARK BANASIAK: My last question in my limited time—and it has been raised by other stakeholders—is about a concept of an interim licence or a temporary licence. We had that sort of pushed back against by our previous witnesses. I just wanted to hear your view on that said proposal of an interim licence or a temporary licence. Is such a proposal even feasible?

Mr KAHL: I am happy to answer that. We spoke about uncertainty earlier in this session. A temporary licence does nothing to take that uncertainty away and improve the confidence that all stakeholders can have. We have water sharing plans that are reviewed every 10 years. There is an opportunity to review these licences going forward—as there are with all other forms of licences. To put a temporary one in place would simply be kicking this can further down the road, and it has been rolling down this road for nearly 20 years already. So I do not see that as an outcome that would benefit anyone and it is certainly not one that we support.

The Hon. SAM FARRAWAY: My question is to Ms Lowien from Barwon-Darling Water. In your opinion do you believe that floodplain harvesting is occurring in the southern basin?

Ms LOWIEN: I think, given the way the Water Management Act is written and the definition of "overland flow", we have flood plains right around New South Wales and into the southern basin in both Victoria and South Australia. I cannot foreseeably see how it is not if we do not get a resolution to rainfall run-off. Obviously that definition of overland flow includes rainfall that is collected. It does not define whether it is within an irrigation area or outside that, so in my understanding that brings everybody into the floodplain harvesting definition. I think there are a lot of people who would not recognise themselves as floodplain harvesters and I understand that but, unfortunately, the definition is written that way. It has been suggested as part of the regulations to make amendments to that to provide some clarity for those people to collect that rainfall run-off in the tailwater. We have flood plains all around New South Wales and water flows across farms and we have flood protection works all around New South Wales, so I would be very surprised if it does not happen elsewhere.

The Hon. SAM FARRAWAY: Just continuing with that theme, are you aware of some of the growth of the on-farm storages which have been built in the southern basin since 1993-94?

Ms LOWIEN: I am not across numbers of that and I think I referred earlier to that discussion around cap and locking in conditions under certain estimated assumptions back at a certain time. In referring to the Murrumbidgee, the original cap model that was done to provide their water sharing plan decided not to put in on-farm storage as an element of that model. It was shown to be not a significant influence in terms of how they took water, but I think we have all seen reports on the ABC and others by some pretty prominent people who talk about storages, particularly in the north now, but in the past raised concerns about increases in storages in valleys like the Murrumbidgee. Currently that is not reflected in the model. I think that is up to New South Wales to do some work there.

The Hon. SAM FARRAWAY: Just continuing along that theme, are you aware of an article that was in *The Weekly Times* on 21 October 2020 titled, "Southern Murray Darling Basin irrigators are floodplain harvesting"?

Ms LOWIEN: Yes.

The Hon. SAM FARRAWAY: I have sent that to the secretariat to have tabled. That article does show a lot of satellite imagery which shows the dams which can be filled by large channels near Mirrool Creek, I think it is. I suppose the question is: In your view, are these flood works from that article the same or similar as the works on properties in valleys in the north which do need a floodplain harvesting licence?

Ms LOWIEN: I am not across the particulars of that farm exactly. There are a couple of aspects that I will raise here. With the eligibility criteria in the Healthy Floodplains Project, it is very key that we talk about the infrastructure that was developed prior to 2008—at that cut-off. I will say that part of the process—I do not know if Mirrool Creek is regulated or unregulated as determined in that valley. I will leave that there, but if water has broken out of a creek and is being intercepted by infrastructure, that is, in general terms, how in the north it happens. So we have floodways which allow the water and floodwater that has broken out of a river to flow across the flood plain and, in some cases, the most common example of floodplain interception is where there is a below ground channel that transfers regulated or other sources of water between those floodways so that floodwater is coming through a floodway and a channel is below ground there that may intercept some of that floodwater flowing across and then moves into a storage. That is the most common example of how we flood plain here in the north. If that is how that infrastructure works, potentially that is an example of how it happens in the south.

The Hon. SAM FARRAWAY: Based on that, it would be fair to say then that farms that have similar infrastructure, as we have just discussed, would be required to get a floodplain harvesting licence, would they not? If referring to that article about infrastructure—

The Hon. PENNY SHARPE: Point of order: I think that Mr Farraway is asking Ms Lowien to answer a bunch of hypothetical questions. She can answer them if she wants to but I believe that this is a bunch of hypothetical questions that do not go to the terms of reference of what we are looking at in this inquiry.

The Hon. BEN FRANKLIN: To the point of order: A question cannot be ruled out just because it is hypothetical. This is clearly and utterly in line with the issues that we have been discussing all morning. It is totally appropriate for the witness to answer how she feels fit.

The CHAIR: I will allow Mr Farraway to continue asking the question but just remember to be generally relevant to the terms of reference.

The Hon. SAM FARRAWAY: Thank you, Madam Chair. The question was that because you had reference, Ms Lowien, to that article you knew what I was referring to—I was referring to the infrastructure that is quoted and the imagery that is in the article versus how you have just described how floodplain harvesting works in the north. It is the same infrastructure—correct? So it has to be licensed in the north whereas it is questioned in the south.

Ms LOWIEN: As I said, I am not across the very specifics but, yes, this is a floodplain harvesting policy for the State of New South Wales. But it is a decision for the Government where they implement that and our groups here would all say that we think consistency is important; however, we are not in control of where that policy is implemented. That is a decision for the Government and, at this stage, it is the five northern valleys of which we recognise and accept that we take a portion a floodwater when it crosses across our farms. We do that in the way I described more generally but, again, it is a Government decision and Government needs to make a decision about where they want to implement that policy.

The Hon. SAM FARRAWAY: Yes, I think it is covered in the rainfall run-off regulation. Moving on to Mr Watson and Mr Kahl from Namoi, would you be able to explain what block releases are—obviously, from the headwater dams in the Namoi and the Gwydir rivers?

Mr KAHL: Yes, happy to. I actually looked it up and if I could share it with you I would. Since we had a wet period in the winter of 2016 we had water released under normal scenarios from Keepit in this valley under general security licences and we were able to access our water that way. As such, the river here basically had water in it up until around January 2018 and that was released in block releases. What a block release is effectively is that when the river does not have natural flow in it for delivered water to be sent downriver on the back of. In order to be as efficient as possible, WaterNSW will coordinate with water users when the best time will be for them to receive their water and then deliver it in a smaller period of time to make sure that as much of that water is being delivered to the user and we are not losing a bunch of it to transmission losses and things like that.

So if you consider that it is a bit like if you had a limited amount of water to water your garden with, would you deliver it straight from your hose into your watering can and then use a watering can to put it onto your gardening beds or whether you are just stuck with the hose at a dribble and you have to try to spread it out that way. That meant that in terms of us being able to efficiently use our water we could get it there on farm and use it through the course of the summer to grow crops rather than us being really limited in how much water we can access through the river and a whole bunch of water effectively being used inefficiently to deliver small volumes of water.

The Hon. SAM FARRAWAY: I will just continue along that theme. Have the increased droughts over the past 20 years led to more times that block releases are needed, which would probably then lead to an increase of on-farm storage?

Mr KAHL: Yes, in my time at home—so I returned full-time to our business in 2014. In that time there have probably only been two seasons—so water years, which is basically a financial year—where we have had regular delivery of water, by which I mean I can jump on iWAS, which is the New South Wales Water Accounting System, and order water in and have it delivered. Every other year since I have been home has been under a block release program, which, like I say, means we need to be able to store that water on farm so that we continue at as high a level of production as possible through those summers where otherwise the river would not have been functioning. Environmentally, too, there is a benefit because without those block releases, without our access to FPH in 2016 where we were able to fill up on farm and save water in our accounts and keep it upstream and that water then being delivered in block releases over the following two summers when otherwise the river was not running, there would have been zero flow in the Namoi for a three-year period instead of the 12-month period that did eventuate in 2019.

So I think that is really important to consider, too—that FPH allows us to access water in times when there is a lot of it in the system. We can store it on farm, which then delays our need to draw down on our dams upstream, which improves our productivity over a longer time and our ability to support our communities. From an environmental aspect it means there is water being moved down the river for a much longer time period after it has stopped raining and that is an important thing to consider, too. Every drop of water that comes down the river serves more than just one purpose and every bit of irrigation water or water being delivered to consumptive use, as long as it is in the river, is still providing an environmental benefit.

The Hon. SAM FARRAWAY: Mr Cole or Ms Lowien, did you have any comment on that? I think you wanted to say something, Ms Lowien?

Ms LOWIEN: I just wanted to explain that this is another one of the misconceptions—that X per cent of storage growth equals a corresponding per cent in floodplain harvesting growth. As Mr Kahl has explained, there is a whole range of reasons why there are storages in the northern basin. Mr Cole explained to you that with unregulated entitlements they can only take that water when those pumping conditions are available, similar to our supplementary in some of the upper catchments. So those purposes and those reasons can also explain—and the fact that we have gone to a management system in terms of sharing flows since the water sharing plans came into place—that has required the use of those storages for those other purposes as well, the key one being the environmental provisions in making sure tailwater is not released off farm.

Mr COLE: Mr Farraway, I am on the Barwon-Darling, which is an unregulated river. We do not have a dam, but if you would like to send us any block releases, we would accept them quite gratefully. We do not get them but we do prefer to take our water at times like this—you can see behind me—when the water is right up underneath North Bourke Bridge. That is the time to take it because you get all the benefit downstream and no-one can tell any difference downstream how much water has been taken out because there is so much there to start with. The Darling flood plain at Bourke in places is about 40-plus kilometres wide and we can have half a million megalitres flow past Bourke at night while we sleep. So that is the time to take water—when there is plenty—not in the low-flow range. I am quite concerned about this floodplain harvesting direction that we have taken because this is one of the most sustainable takes that we actually use in the irrigation industry.

The Hon. SAM FARRAWAY: I wanted to ask this question to both the Barwon-Darling Water and Namoi Water reps. There is obviously a fair bit of emotion around with floodplain harvesting. This morning Brett Walker, SC, who essentially was commissioned on behalf of the Committee and Parliament to provide independent legal advice about the legality of floodplain harvesting, his advice was released this morning. I am not sure if anyone has had a chance to read that yet or review that. You can either take the question on notice but if you have had a chance to do so, my question is: What is your view on that and do you concur with that view?

Mr COLE: Ms Lowien, I have not had a chance to read it. I saw a report on it that Brett Walker had come out and said that floodplain harvesting was legal. That is all I know; I have not read any detail. Have you read any of the detail?

Ms LOWIEN: I read over the advice very quickly, Mr Farraway. I am not a lawyer. I have a hydrology and soil science background and about 15 years in natural resource management and water policy. For me when I went through it, it added together the Crown Solicitor's advice and some of the other advice we have seen from some of the other experts. I think it is really important to focus on expert advice when it is available in this sense. We are just experiencing a pandemic and how important it is for people to go to the trusted source of information and that is really clear. In this case we have a senior counsel providing advice to your Committee that refers to all the other advice that has been provided. To me—not just because it might suit my understanding of the situation—I think it is important to accept that form of advice when it is provided.

The Hon. SAM FARRAWAY: Mr Watson or Mr Kahl, did you have any view on that?

Mr KAHL: Pretty much the backs are up in that one. We are not lawyers but when Brett Walker's advice seems to mirror our own advice that we have gained and what the NSW Irrigators' Council has got, it all seems to point in the same direction. We do not think it is illegal to take floodplain harvesting. It is just another form of take that will have to be metered, monitored and measured in the forthcoming years—and very soon, please.

Ms LOWIEN: Can I say, we have been here before. We saw in the ICAC report that that organisation was very critical of things that needed to be done in the Barwon-Darling water sharing plan that were not implemented by Government. We have said here a number of times that this is a historical form of take. It needs that recognition in terms of a licence so that you can better manage it and better account for it. But 20-odd years from now we could talk about more models and uncertainty—for another 20 if you like—or we could make a decision and move forward. I think that is the crux of where we have got right now: We have seen a version of regulations, you have made a decision on those regulations by having this inquiry and we are getting additional

sources of expert advice come in. I think what everyone is calling for is time for change and to recognise and ensure that there is accountability of it. For that we need regulations that enforce that so we can follow those steps consistently.

The CHAIR: With that we have run out of time for this session. I thank you all for appearing today. The Committee will now break for lunch.

(The witnesses withdrew.)

(Luncheon adjournment)

MARYANNE SLATTERY, Director, Slattery and Johnson, affirmed and examined

WILLIAM JOHNSON, Director, Slattery and Johnson, affirmed and examined

MATTHEW COLLOFF, Fenner School of Environment and Society, ANU and Slattery and Johnson, affirmed and examined

The CHAIR: Welcome back to our next session. Who would like to make a short opening statement?

Mr JOHNSON: Yes, I would like to make one. We just observe that there are no reliable figures for take from flood plains in northern New South Wales. The New South Wales department has not demonstrated that it can license the proposed volumes and keep extractions below cap. We are concerned about the processes used to licence floodplain harvesting as a couple of examples are using a cap scenario model rather than the formal cap model and linking the sustainable diversion limit to the baseline diversion limit. We believe that if this process is followed it allows the cap to be undermined in New South Wales and, by extension, in the basin. That is all.

The CHAIR: Thank you. Dr Colloff, do you have a statement?

Dr COLLOFF: Yes, I do. The Department of Planning, Industry and Environment [DPIE] has repeatedly claimed that floodplain harvesting take has increased above the legal limit set under the water sharing plans and the basin plan and that they are bringing floodplain harvesting within these limits. However, they have consistently failed to provide evidence of this. Accordingly, we undertook an assessment ourselves to develop a method to identify on-farm storages on the flood plain, calculate the capacity of on-farm storages, assess the change in total storage volume between 1993 and 2020 and estimate the volume of floodplain harvesting from annual take. We estimated storage capacity of almost 1,400 gigalitres, a two-and-a-half-fold increase since 1993. The annual average take was 778 gigalitres, twice the volume modelled by DPIE.

We conclude that the magnitude of floodplain harvesting diversions has had major negative impacts on downstream communities and ecosystems. We consider that floodplain harvesting is first and foremost a water justice issue, not just a water management issue. We suggest some safeguards that need to be put in place under any licensing regime, including ensuring volumes of water harvested are legal and compliant with limits under the basin plan as well as the setting and enforcement of downstream flow targets to be met before floodplain harvesting can commence; improved monitoring and transparent reporting of the extent and magnitude of floodplain harvesting to ensure accurate and comprehensive basin-wide water accounting; and to help communities adapt in a fair and just manner to a future under climate change. Thank you.

The CHAIR: Thank you. We will start with questions from the Opposition. I understand Mr Adam Searle is kicking things off.

The Hon. ADAM SEARLE: I wanted to ask some questions, Ms Slattery, about your document on licensing floodplain harvesting in northern New South Wales from about August 2021. In that document you outline there is a legislative process through the Murray-Darling basin framework to establish the takes on water extraction, but you also make the case that the New South Wales Government is promulgating what it calls a "cap scenario", which is a different and significantly higher cap—if I can use that term—for extraction and are using that scenario to justify its former regulation, which has been disallowed, and its current approach to what the Government says is going to be an efficient regulation of floodplain harvesting. Earlier today we heard that the Murray-Darling Basin cap is just another cap scenario, equivalent to any other cap. Can you just step us through why the legislated cap is important and why the New South Wales Government cap scenario is not an appropriate method to set extraction limits?

Ms SLATTERY: The Murray-Darling Basin cap is set under the Murray-Darling Basin Agreement, which is a schedule to the Commonwealth Water Act. In New South Wales the extraction limits must be the lower of cap or the limit in the plan. The DPIE, when they have proposed new floodplain harvesting licences, have argued that floodplain harvesting has exceeded cap and they have brought it back within cap but they are actually talking about a cap scenario model, which is a new model that has no official status, rather than the official cap model. The process for determining cap is set out in a schedule to the Murray-Darling Basin Agreement that prescribes what the baseline conditions are. It requires a register of diversions that is agreed by Ministerial Council every year and it requires the development of a model against the description of the cap.

That model needs to be approved by the Murray-Darling Basin Authority and the Murray-Darling Basin Authority has agreed that it will only approve models once they have been independently accredited. That process has happened for nearly all of the valleys, except for the Barwon-Darling valley and I believe one other valley in Queensland. They are the official cap models; you cannot just go and label something else a cap scenario model

or just give it a name like cap and expect it to have the same legal status as cap. It is a really important process that we have a limit and that limit has a process around it to ensure that we are sticking to that limit.

The Hon. ADAM SEARLE: So by relying on their cap scenario to inform State Government policy, is it the case that the New South Wales Government would be operating outside the Murray-Darling Basin framework?

Ms SLATTERY: Yes, that is my understanding of it. The cap scenario model does not have an official status as a cap model, so they are not adhering to the cap.

The Hon. ADAM SEARLE: [Disorder.]

The CHAIR: Order! Mr Searle, I am going to have to stop you there. Every time you stop speaking if you could mute and then unmute—it is frustrating but that is what we are going to have to do because it is distorting heavily.

The Hon. ADAM SEARLE: Just to be clear, the State Government's cap scenario that it appears to be relying on would permit much higher levels of water extraction and use than the Murray-Darling Basin set caps. Is that correct?

Ms SLATTERY: Yes, that is correct. It is certainly the case for the Gwydir—the cap scenario is much higher than the cap. DPIE—the New South Wales department—have said, "We have this high level of floodplain harvesting, we are bringing it back to cap," when actually they are increasing cap by quite a substantial amount.

The Hon. ADAM SEARLE: What is the impact on the integrity of the Murray-Darling Basin framework if the State Government was to proceed this way?

Ms SLATTERY: I do not think it has any integrity and it is clearly the Government's intent to mislead this process to state that we are within cap—that they are bringing licensing back within cap—when it is clearly not. I think it has absolutely no integrity.

The Hon. ADAM SEARLE: Earlier today we heard evidence from the food and fibre organisations in the northern basin. At least some of their evidence said that focusing on storage capability is wrong and misdirected; it is about how the water is in fact used. In your various submissions you have set out how storage has increased by 2½ times over the past 26 years—I think growing at nearly 10 per cent a year. The State Government has said that water storage capability is vital to ascertaining floodplain harvesting entitlements. Is that your view?

Ms SLATTERY: Yes. We undertook that exercise in attachment A to map the growth in floodplain harvesting storages because we have been saying to the department for several years, "You have to demonstrate to stakeholders that floodplain harvesting is within cap." We were not getting any satisfactory answers so we undertook to do that satellite imaging project ourselves to demonstrate what the growth in storages was. Storages are not a one-for-one for floodplain harvesting but they are certainly an indication of the ability to take water. The other reason we were looking at storages is because at that time DPIE was using the amount of storages as a way to determine the shares of how floodplain harvesting licences would be apportioned. So it was very close to the logic that the department was using. There is 20 years' worth of documentation about the relationship between the capacity to take floodplain harvesting water and the size of storages.

The Hon. ADAM SEARLE: In your submission on page 22 you set out the difference in storage capabilities by valley and you come out with a figure significantly greater than that ascertained by the department. How should we evaluate the differences in your evaluation of the storage compared to the department's?

Ms SLATTERY: No, I think our storages were very closely aligned to the department. The thing we did that the department did not do was show the growth in storages from 1994. Our numbers, quite independently, came out very close to what the Government had published. I have seen in subsequent email exchanges between offices correspondence that became available under some Standing Order 52s that the department agreed with our 1994 figure as well. So the department agrees with us.

The Hon. ADAM SEARLE: But storage capability is a very important pointer to floodplain harvesting. We should not disregard storage capability as an important factor.

Ms SLATTERY: No, absolutely not. Also, if you go back to the criteria of cap, which is the infrastructure, the rules and the entitlements that existed in 1994, that is the cap. So we mapped out the infrastructure part of that equation.

The Hon. PENNY SHARPE: Just to go back to the issue around cap versus cap scenario, how have other States dealt with this issue? If it has to be approved by the Murray-Darling Basin Authority, can you tell us why New South Wales thinks it can do it differently?

Ms SLATTERY: I am not aware if there are any other States cooking up a cap scenario model. I am not aware of other States doing it.

The Hon. PENNY SHARPE: So the explanation would be that if this was to go through then it would have to still be approved by the Murray-Darling Basin Authority and your evidence is that it would be unlikely to be approved because it does not meet the requirements as set out in the plan.

Ms SLATTERY: If New South Wales wants to rely on a new, amended cap then they have to submit a new model back to the Murray-Darling Basin Authority, who have to approve that model. At the moment, my understanding is that if there was an agreement they would only approve the model if it had been independently accredited. I am assuming that still stands, so they would have to go back through that process, yes.

The Hon. PENNY SHARPE: In your submission you talk particularly about the issues of the 500 per cent carryover and the mathematical issues associated with that. We have obviously had evidence that over a five-year period, given the likelihood of flood events, it is likely that five years is a reasonable thing and that carryover would provide greater certainty. Can you take us through your concerns with that?

Ms SLATTERY: It is not so much of an average annual amount over a time period; it is more about starting with 500 per cent in the bank. If you start with 500 per cent in the bank and then you rely on an average that is spread out over a certain amount of years, you are always going to exceed—if there is water—that average take because you have not started with an average; you have started with a kicker at the start. A really good example of that is the Barwon-Darling water sharing plan, which has very similar accounting rules that started with 300 per cent rather than 500 per cent. This year they have breached their sustainable diversion limit. MDBA and the Natural Resources Access Regulator have gone to great pains to explain that no individual has exceeded their water licence and accounting rules, but the valley as a whole has because of this issue around starting with something in the bank.

The Hon. PENNY SHARPE: The argument from the department—we have had some material on this—is that without doing this each year you will end up exceeding the target. Can you respond to that?

Ms SLATTERY: Well, that just does not make any sense. If you have an average over five years and you allow 500 per cent—or 10 years and 1,000 per cent or whatever it is—if you have an average then you cannot exceed more than one year so they must be making different assumptions in their models to demonstrate that.

The Hon. PENNY SHARPE: Can I ask a question and it is because I am not an accountant. In your submission you talk about the need for it to be audited and for it to be done based on Australian auditing standards. My question about that is: How is other water take undertaken and is there a difference? Is what you are pointing to a different standard of accounting or is it the same as what happens for other water take?

Ms SLATTERY: No, we are just saying the total—all water accounting needs to be improved. It is certainly a lot easier to measure something that is taken via a pump, for example, than it is for floodplain harvesting. It is a very difficult thing to meter. The measurement is very poor but, in addition to that, you have no accountability. I would extend that more so to the models as well because the modelling underpins everything and the modelling is a compliance tool. It is so open to manipulation that we just have no transparency over what is being done to those models.

The Hon. PENNY SHARPE: So this is not just a matter for floodplain harvesting; it is for other water take as well?

Ms SLATTERY: It is, but floodplain harvesting is the most problematic part of the water balance.

The Hon. PENNY SHARPE: I want to ask you to unpack the issue—you take issue with the Murray-Darling Basin Authority in relation to the water, obviously, at Wilcannia being 40 per cent less, which has been a huge concern of the Barkindji and others. The MDBA has said that that is about climate change. You sort of state that research says that is not the case. I just want you unpack that for us, please.

Ms SLATTERY: I will quickly answer this and then I will defer to Dr Colloff in a second because I know he has been looking at this issue as well. There has been a decline in inflows into the Murray and that example of a decline in inflows at Wilcannia; however, there has been no evidence that I am aware of that can attribute all of that to climate change rather than a mixture of climate variability and also increased extractions. The Murray-Darling Basin Authority received a large dataset for its 2020 evaluation from the Bureau of Meteorology that was catchment inflows. That showed in the past 20 years, which is the period that the

Murray-Darling Basin Authority is showing this decline, there was very little variation in the northern basin; it was slightly above average. There are other documents that we obtained through freedom of information that the MDBA have attributed changes in the Murray-Darling to more than climate variability and there must be increased extractions. There is also the work that the Academy of Science did and also Professor Rob Vertessy's team that looked at the fish kills that—both of those two things talked about increased extractions. I will pass on to Dr Colloff.

Dr COLLOFF: Thank you. In relation to that issue of the impacts of floodplain harvesting on the Barwon-Darling, as Ms Slattery says, both the two fish kills inquires, that by the Academy of Science and that by the so-called Vertessy report panel, concluded that the root cause of the fish kills was that there was not enough water in the Darling system to avoid catastrophic declining conditions through dry periods. In both cases they found that it was partly due to climate change but also partly due to major diversions through irrigation in the northern basin. My colleague Quentin Grafton recently produced a report in which he has examined the causes of hydrological drought and the consequences for resilience in the northern Murray-Darling Basin and has partitioned the effects of climate change from the effects irrigation diversions, including floodplain harvesting. His assessment is approximately a 50-50 split between those two drivers of change.

The Hon. PENNY SHARPE: Thank you. That is very helpful. My final question is about accounting for cultural flow and deciding that. I know that you touched on this in your submission. Obviously Aboriginal communities up and down the various rivers have got firm views about this, but I am wondering if you could just let us know how, under this proposed regime, cultural flow is going to be able to be accounted for and/or included.

Dr COLLOFF: I might defer to my colleague Mr Johnson to address that question, if I may.

Mr JOHNSON: I cannot see how cultural flows or any water for Aboriginal communities can be accommodated under this proposal. I think it consolidates and institutionalises further reduction in flows down the river and to those communities.

The CHAIR: We will go to questions from the crossbench. I will kick them off. We have been hearing about these potential changes to BDL, and the cap scenario and the BDL scenario. What is wrong with updating these models with what is being called best available information? We are being told that that has always been allowed under the Murray-Darling Basin Agreement, that there is something called best available information that can be applied to things. Ms Slattery, that is the response to your complaints about the cap scenario model. What do you say to that?

Ms SLATTERY: As I was explaining to Mr Searle, there is actually a process to update cap. It is a formal process to avoid exactly this situation that we are seeing, which is that any new information is considered best available information. Therefore we can update the models and therefore the extraction limits at a whim, any time we want, with zero accountability, zero transparency and outside the parliamentary process. So we have gone through this massive amount of pain and disruption and aggravation between communities for the last—more than a decade, and we are now at a situation where somebody in a back room can literally just change a number and that changes the limit. I mean, that is not a limit at all.

The idea that it is best available information, there is no criteria for what that best available information is. There is no arbiter on who gets to decide what information is better or not. There is no accountability, no transparency. I also think it is a misinterpretation of the Water Act because the Water Act requires that the water resource plans be made with best available information. What is happening with the changing of the BDLs and the SDLs, it is actually changing, meaning that the sustainable diversion limit, the SDL, will no longer represent the environmentally sustainable level of take, which is a requirement under the Water Act. That means that a requirement for the water resource plan would effectively be overriding the requirement of the Water Act, which seems to contradict legal principles.

The CHAIR: You have said in your submission as well that when DPIE say that floodplain harvesting volumes have been reduced to cap within the Gwydir valley, that has not happened and it is not possible. Can you explain to the Committee why you are saying that?

Ms SLATTERY: The first thing is to go back and have a look at the official cap model for the Gwydir, which has a very small component of floodplain harvesting in it. The new proposal with the new cap scenario model is not the same as the official cap model. The department has just cooked up this new cap scenario model and said we have reduced it back to the cap scenario model, which is a completely unofficial model.

The CHAIR: Because they cannot keep the take within the cap, does it look like they are changing the cap instead of reducing the take?

Ms SLATTERY: Yes, exactly right. So floodplain harvesting has never been reported under cap. There is only a small amount in the original cap model. They have not regulated it or contained it; they have allowed it to grow. So of course you are not going to be able to bring it back into cap because it is too large and there was never room for it within cap in the first place. The only way they can try to demonstrate that it is within cap is by changing the cap. What they are saying is the cap number and trying to justify that they have actually brought it within cap when they have not. They have just cooked up a new model.

The CHAIR: You saw quite a few emails within that call for papers in the upper House. I know you have seen some of them that seem to justify your concerns that there are DPIE officials who are talking about changing cap numbers, talking about updating the modelling, talking about kind of alarming statements about this. Did you want to talk about some of the emails that you have found?

Ms SLATTERY: Yes, sure. Some of these were reported in *The Sydney Morning Herald* today. So there are discussions around exactly this point that you cannot just cook up a new cap scenario model. You have to stick within the official cap; there is an official cap process. This process is tied to the water sharing plans and the Murray-Darling Basin Agreement and you cannot just go and call something a new cap scenario model. There was certainly a lot of discretion on behalf of the modellers. Do we change this number or that number? There is no sort of objectivity in relation to that or controls around that. It seemed to be how do we get the highest number for floodplain harvesting? That was definitely a very large theme of the conversations in the correspondence from the Standing Order 52. There is a lot of talk about how poor the numbers are, how poor the modelling is, lots of references to magic numbers, just cooking something up, random number generators, you know, we will have all sorts of problems if this ends up in court. We will not be able to defend it in court. There is no question that the modelling process is a bit of a joke, really, and certainly a lot of relying on decisions by individual modellers.

The CHAIR: You also made a recommendation in your submission to establish a professional body of modellers. Is this one of the reasons? Do you just want to expand on that recommendation?

Ms SLATTERY: Yes, sure. If you are an accountant or a lawyer, you have a set of standards. Some of those include ethical standards that you abide by. There is nothing like that for modelling. Anybody can be a modeller, for a start. It is not a strict discipline like accounting or law, so anyone can be a modeller. There are just no checks and balances over the process. Even with the best intention and good faith, it is still very subjective. There is no external quality control process to make sure that what the models are doing are fit for purpose. When you take away the process with cap—and then there is nothing to replace that in the basin plan—there is just no internal controls over that process at all.

In this example that we have seen where we have just cooked up this new cap scenario model, there is no professional repercussions on any of the people involved with that the way there would be if they were accountants or lawyers, for example, with their own professional code of ethics. So I think it is long overdue, particularly the extent to which we rely on the models to regulate water management in Australia and for our compliance. It is pretty extraordinary that that is the only tool we are using and we have got no controls over the application of that tool.

The CHAIR: For my final question I will go to you, Dr Colloff. You say in your submission that you have put in to the Committee that the basin plan allows for a long-term average take of 46.3 gigalitres per year from floodplain harvesting in the northern catchments. That 46 gigalitres per year, therefore, is that what you believe we should be seeing now. Is that right? You also say how much it has grown. So does it need to be taken back to 46 gigalitres? Is that your argument, Dr Colloff?

Dr COLLOFF: No, it is not. The estimates in the MDBA cap compliance reports drastically underestimate rates of floodplain harvesting. They are little more than a guess. They use the same figures year after year after year. Really what was required as part of the development of the basin plan modelling was a proper assessment of the extent and magnitude of floodplain harvesting. What we really need to get a handle on is how much water is being taken out of the system and how that is included in the sustainable diversion limit.

The CHAIR: Thank you.

The Hon. MARK BANASIAK: I just might start with you, Mr Johnson. In your opening statement you were listing some of your concerns and I think I heard you say one of them was the linking of BDL and SDL. I just want a bit of clarification on that. My understanding is that they are inextricably linked because the SDL basically equals BDL minus that 2,750 that was recovered by the Commonwealth Government. Am I right in what I heard, that you said that you are concerned about some link between these two?

Mr JOHNSON: Yes. I am concerned that there is now a fixed volume difference between the SDL and the BDL. The BDL was an estimate or a measure of the amount of water that was being taken. The SDL is meant to reflect an ESLT or give force to an environmentally sustainable level of take. The two were two different

methods to get the number. The BDL was really an estimate of use. That is called a measure or an estimate of use. The SDL was a reflection of the ESLT, which was the calculation of the environmental needs of rivers and wetlands. Now whatever the shortcomings there might have been around that, they were two completely different processes, and the SDL was meant to be achieved by recovering water to a volume from the BDL. The reduction of the BDL was meant to be the amount required to achieve an SDL, which reflects the ESLT. They are not fixed. There is not a fixed relationship and the department and the MDBA have never been able to explain how it has become a fixed volume. Bret Walker also said that it was not lawful. But, simply, the two methods are different. There is not a fixed relationship and there should not be a fixed relationship.

The Hon. MARK BANASIAK: Ms Slattery, in relation to questions from Labor about growth in storage, can you provide a bit of comparison or context in terms of that growth in storage in the north compared to the growth in storage in the south from that same period? Do you have that data?

Ms SLATTERY: No, we have not done that exercise. We did a trial in the Murrumbidgee over quite a small area before we undertook the project. There was a growth in on-farm storages in the Murrumbidgee for that area and that was around Griffith. There has been growth in on-farm storages in the Murrumbidgee valley, certainly, particularly between Griffith and Hay, that have been funded under the Commonwealth's efficiency program, but we have not done that exercise for the south.

The Hon. MARK BANASIAK: Did that initial look indicate a similar level of growth or a projected similar level of growth?

Ms SLATTERY: We did it about 18 months ago. There was a large level of growth, but I could not tell you off the top of my head what it was, and it was not for the whole valley. But I can get that on notice if you want.

The Hon. MARK BANASIAK: That would be great, thank you. I might just turn to a—

The CHAIR: Mr Banasiak, I will just remind all witnesses and members to mute every time you are not talking.

The Hon. MARK BANASIAK: Thank you, Chair. I might just turn to a document that I have just tabled and hopefully the Committee secretariat has emailed it to you. It comes from the department and it came via Twitter, talking about water allocation update. One of the arguments we hear from the southern irrigators is that floodplain harvesting has a direct impact on the allocation that they receive. This statement by the department talks about a payback system to the tune of 350,000 megalitres that was borrowed against the environmental water allowance. I am just curious as to how much of an impact on the southern irrigators' water allocation would such a payback have versus the claims of floodplain harvesting impacting water allocation. That seems a fairly significant amount of water that has been borrowed against an environmental water licence.

Ms SLATTERY: I have not seen the document and I have not got it in front of me. It has not come through from the secretariat. What I would say is that you are referring to the arrangements around the Barmah-Millewa account. That has been in place since about the nineties, I think, so it is not a new thing. You would not expect that it would have an impact on allocations but you would not expect that to have a changed impact on allocations, certainly since the nineties. But I would argue that there has been a growth in extractions in the north and that does have an impact on the Barwon-Darling/Baaka and that therefore has an impact on southern allocations. I do not see how anyone could argue otherwise.

The Hon. MARK BANASIAK: Yes, I just wanted a bit of context in terms of how such a payback would compare to the impacts of floodplain harvesting. Perhaps, because you have not seen the document, I might try and get the secretariat to email it to you. Perhaps on notice you might be able to come back with some further comments. I am just conscious that I might be running out of time shortly. If that is okay, Ms Slattery? Yes. Thank you.

My other question was to you, Dr Colloff. In relation to Ms Faehrmann's questions, you were saying that they have been using the same figures every year. Is it not the case that one of the reasons they have been using those same figures is that it has not been measured and it has not been metered, and to get updated figures you actually have to do the measuring and the metering?

Dr COLLOFF: My response to that was that using basic principles of water accounting and using publicly available data, we were able to estimate the mean annual floodplain harvesting take for five river valleys in the northern basin, and they vary from year to year. Now if we can do that then surely the Murray-Darling Basin Authority and DPIE, with all the resources they have available, can do that too.

The Hon. MARK BANASIAK: I might just quickly jump back to you, Ms Slattery. This cap versus cap scenario, is this something new that has come out from the department since the disallowance of the regs?

Because the submissions that have come through during this inquiry is the first that I have personally heard of this cap scenario. Is this a recent invention from the disallowance or was this happening before?

Ms SLATTERY: The first time I saw reference to a cap scenario was when the reporting around the proposed licensing for the Gwydir valley was published. I think that was towards the end of last year, so it would have been after the first regulation disallowance but before the second ones. They change the names on the different scenario runs all the time, but that is the first time I saw the cap scenario.

The Hon. MARK BANASIAK: Does the cap, as it is described in schedule E, combined with the latest disallowed regs, would that have properly transferred the 1912 licences over to 2000?

Ms SLATTERY: Sorry, you will have to ask that question again.

The Hon. MARK BANASIAK: As the cap is described in schedule E of the Commonwealth Water Act—not the Cap scenario but as it is described in schedule E—and with the most recent disallowed regs, in your view, would that have provided the mechanism to transfer the 1912 licences over to 2000?

Ms SLATTERY: [Inaudible].

The Hon. MARK BANASIAK: You are on mute, Ms Slattery.

Ms SLATTERY: That is a really complicated legal question that I am not going to attempt to answer. But I would say that the cap is very clear that you must have the infrastructure, the entitlements and the rules at 1994, and if the floodplain harvesting—well, there were no floodplain harvesting entitlements in 1994. I think it is arguable about the rules that were in place for floodplain harvesting as opposed to the absence of it being illegal. I think there is a good question there for Bret Walker and the other lawyers appearing before you. Just because floodplain harvesting was not illegal does not mean that it was within the rules and the entitlements. And similarly the baseline diversion limit says what is law under State management law at 2009, and if floodplain harvesting was not within State management law at 2009 then it cannot be part of the BDL. So they are questions for a lawyer.

The Hon. MARK BANASIAK: Thank you, Ms Slattery.

The Hon. BEN FRANKLIN: Thank you all for being present today. I will start with you, Ms Slattery, if I may. We obviously spoke time at the dams inquiry, so we have talked a little bit. I just want to get a couple things clarified to start with. You are a consultant with a range of organisations. You work with them on providing advice and information and recommendations about how they should proceed in their different strategies? Is that right?

Ms SLATTERY: I would ask how this is relevant to the terms of reference for this inquiry.

The Hon. BEN FRANKLIN: It is relevant. This is not actually a gotcha question. I want to talk about something that was in the newspaper and is relevant to the Southern Riverina Irrigators [SRI]. I was just making some context. So is that correct?

Ms SLATTERY: We provide information to a range of clients across the basin.

The Hon. BEN FRANKLIN: And you are currently working with Southern Riverina Irrigators?

Ms SLATTERY: Southern Riverina Irrigators are a client of ours, yes.

The Hon. BEN FRANKLIN: How long have you been working with them, just out of interest?

Ms SLATTERY: Again, I would ask how this is relevant to the terms of reference for this inquiry.

The Hon. PENNY SHARPE: Point of order: It is similar to the point of order that I made earlier today. The questions should be about the terms of reference of this inquiry. I think that Ms Slattery has answered the question and that Mr Franklin should move on and actually ask questions about the submission and within the terms of reference of this particular inquiry.

The Hon. BEN FRANKLIN: To the point of order: I just did not think that the witness would be embarrassed about how long she has worked with a client. I do not understand why that is—

The CHAIR: Order!

The Hon. PENNY SHARPE: There is no need to also be rude to the witnesses before us.

The Hon. BEN FRANKLIN: I am not being rude to the witness at all.

The Hon. SAM FARRAWAY: To the point of order: We have not even gotten to the substance of the question because we are trying to get some context there. Because it does not suit some on their agenda, they call a point of order. So I think Ben is well and [disorder]—

The CHAIR: Order!

The Hon. ADAM SEARLE: To the point of order, Madam Chair: It really will smooth proceedings if members directed their questions to witnesses about matters relating to the terms of the inquiry and their evidence before us today. That is a very wide ambit and, with the greatest of respect to my friend Mr Franklin, I think he has strayed beyond that.

The Hon. BEN FRANKLIN: I am quite fine about continuing on without you telling me how long you have worked with Southern Riverina Irrigators.

The CHAIR: Mr Franklin, can I just reiterate [disorder].

The Hon. BEN FRANKLIN: Madam Chair, you are now wasting my time.

The CHAIR: Excuse me. Please remember, in terms of the procedural fairness resolution, to treat witnesses with respect and courtesy at all times. If you could continue, thank you.

The Hon. BEN FRANKLIN: Sure. Also, can I say that when the witness makes statements like, "Clearly, the Government's intention is to mislead", as a representative of that Government I do not think it is unreasonable to prosecute the case against that witness. Anyway, we will move on. Can I ask, Ms Slattery, were you aware of the legal advice from Bret Walker, SC, to this inquiry that has now been published today?

Ms SLATTERY: Yes, I am aware that it has been published. I had a quick glance at an article in *The Weekly Times* that was produced very, very quickly after that legal advice was published.

The Hon. BEN FRANKLIN: I am not sure if it is the same one. So have you actually had a chance to look at that legal advice yet?

Ms SLATTERY: No, I have not read it. I think I have got the gist of it from different conversations but I have not read it myself.

The Hon. BEN FRANKLIN: I am not sure if *The Weekly Times* article is the same one that I am referring to now. There was a letter in the *Deniliquin Pastoral Times* on 14 September from the executive officer of Southern Riverina Irrigators. They talk about raising some money for a voluntary levy, and they say:

> … has allowed us to engage the services of Bret Walker SC, who is considered one of Australia's most formative minds on water. His report in the up and coming NSW Upper House inquiry confirms SRI's position — FPH has never been legal …

My question is: Is that a different report to the one that has currently been submitted to this inquiry or are they the same thing?

Ms SLATTERY: You would have to ask the author of that. I am not aware of that letter. You will have to ask the author of that letter what they were referring to. Our submission that we have put in to this Committee raises very different legal questions to the questions that I understand were asked of Bret Walker by the Committee. According to the Peter Hunt article, the Committee asked Bret Walker some very specific questions in relation to offences under the Water Management Act. The issues that we have raised in our submission go to an interaction between State and Federal law, the cap under the Murray-Darling Basin Agreement and the water Act, the relationship between the sustainable diversion limit and the baseline diversion limit in the Water Act and the basin plan, the relationship between the sustainable diversion limit and the environmentally sustainable level of take in the Water Act, the ability to change the basin plan through the BDL and the SDL without going through the parliamentary process at the Federal level, and not removing volumetric limits out of the State legislation with the new water sharing plans. So we have raised very different questions that need a legal interpretation to the ones that the Committee asked Bret Walker.

The Hon. BEN FRANKLIN: I understand what you are saying. I guess I am just confused and I was wondering if you could clarify. It says in this letter from the lady who represents an organisation that you said was your client that FPH has never been legal. Yet in the advice that we received today from the question: Is there any circumstance under which the take of water through floodplain harvesting could be considered illegal activity?, his response was:

> … the answer … is straightforward. The circumstances that have obtained for generations are, it turns out, circumstances under which the take of water through floodplain harvesting should be considered (not merely "could be considered") a legal activity.

That is, in fact, legal. And the answer to a very broad question is that it is legal. Do you disagree with that premise?

Ms SLATTERY: I have not read the letter. SRI is a client but that means we give them advice when asked. It does not mean that we dictate their operations. It does not mean that we write their letters for them. I have not even read the letter, so I cannot comment.

The Hon. BEN FRANKLIN: I am just trying to clarify. So you think that they are probably wrong when they say that FPH—

Ms SLATTERY: No, please do not put words in my mouth. I am here to talk about our submission, where we have raised a lot of questions around the making of these floodplain harvesting licences and around the volumetric limits and MDBA and DPIE of New South Wales seeming to remove volumetric limits out of any legislation, State or Federal, in relation to the basin plan and all of the interaction with that. I can talk to that. I cannot talk to a letter that somebody else has written that I have not read.

The Hon. BEN FRANKLIN: Understood. In answer to the question "Is the take of water through floodplain harvesting illegal activity under the Water Act 1912?" Bret Walker says that it follows that the proper answer to that question is yes. Do you agree with that?

Ms SLATTERY: I am not a lawyer. We think there are a whole lot of issues in relation to the licensing of floodplain harvesting and potentially the legality and there are several areas that look to me, as a non-lawyer, as though there are very questionable legal practices that are very separate to the questions that this Committee put to Bret Walker.

The Hon. BEN FRANKLIN: Even though Bret Walker—

The Hon. PENNY SHARPE: Point of order—

The Hon. BEN FRANKLIN: Sorry, with respect, I am just pursuing a line of questioning.

The CHAIR: Excuse me. A point of order has been taken.

The Hon. PENNY SHARPE: Well, it is a line of questioning that is completely out of order.

The Hon. BEN FRANKLIN: This is directly relevant to the terms of reference, Madam Chair.

The Hon. PENNY SHARPE: No, it is not. Ms Slattery has said that she has not read the advice. You are now reading out pieces of the advice, which have been published publicly. You could ask Ms Slattery to take it on notice and actually come back to you with an answer, but it is extremely unfair to ask a witness to try and deal with a piece of paper that she has not actually read and then make assertions about clients that she may or may not be working with and what letters that they may or may not have written that, again, she has not seen. It is completely out of order.

The Hon. BEN FRANKLIN: Well, the witness has said that she has as a client Southern Riverina Irrigators, who have publicly said that they have engaged Bret Walker, SC. That is on the public record. I am trying to work out how that works when he said to us it is a legal activity and they contend that it is an illegal activity. How can she reconcile that because she—

The Hon. PENNY SHARPE: Ms Slattery has nothing to do with it. This is the whole point.

The Hon. ADAM SEARLE: Point of order—

The CHAIR: Yes.

The Hon. ADAM SEARLE: This is getting very close to someone's legal privilege. If Mr Walker has been commissioned by clients to provide them with legal advice about matters, that is a matter for Mr Walker and those clients, not a matter for Ms Slattery, with respect. Ms Slattery cannot be called upon to interrogate or divulge anything she knows or does not know about that other advice. This Committee and its members have no business inquiring into those matters.

The Hon. BEN FRANKLIN: I am happy to move on to another question.

The Hon. ADAM SEARLE: Why don't we take these matters up with Mr Walker, or we ask—

The Hon. BEN FRANKLIN: I am happy to move on to another question.

The Hon. ADAM SEARLE: —Southern Riverina Irrigators on another occasion, but not Ms Slattery.

The CHAIR: Thank you, Mr Searle. Yes, we do have Mr Walker on Friday morning. Mr Franklin, if you can continue.

The Hon. BEN FRANKLIN: I will move on to an entirely different line of questioning. Ms Slattery, could you tell me: Do you agree with the New South Wales Government's push to change the River Murray agreement to ensure that they regain control with a deliverable 480 gigalitres of water?

Ms SLATTERY: Sorry? You will have to restate the question.

The Hon. BEN FRANKLIN: Do you agree with the New South Wales Government's approach to change the River Murray agreement to ensure that they regain control with a deliverable of 480 gigalitres of water?

Ms SLATTERY: I am sorry, I do not know what you are talking about. I do not know what agreement is being proposed. Are you talking about Menindee Lakes?

The Hon. BEN FRANKLIN: Yes.

Ms SLATTERY: Sorry, I was not aware that there was a proposal to change the agreement. I know that there have been talks about Menindee Lakes going on for 20-odd years. I know that that will require a change to the Murray-Darling Basin Agreement.

The Hon. BEN FRANKLIN: So would you support that?

Ms SLATTERY: I do not know anything about the proposal.

The Hon. BEN FRANKLIN: I am just asking the question. Would you support the Menindee Lakes having a deliverable 480 gigs so that they are not drained, basically? That is my question.

Ms SLATTERY: It is a really—I am sorry, with respect, it is a very strange question. The Murray-Darling Basin—

The Hon. PENNY SHARPE: Point of order: These questions have nothing to do with the floodplain harvesting inquiry, which is what this session is supposed to be about. I would ask you to ask Mr Franklin to actually ask questions that are within the terms of reference of the inquiry.

The CHAIR: Yes. Mr Franklin, could you please bring your line of questioning back to the terms of reference.

The Hon. BEN FRANKLIN: With respect, so many submissions and witnesses have talked about the Menindee Lakes. If that is suddenly off the table, I think that is a pretty extraordinary comment. Why don't we move to something else. Ms Slattery, can you tell us: Does floodplain harvesting occur in other States and, if so, how is it licensed and enforced?

Ms SLATTERY: It occurs in Queensland. I am not aware of it occurring in Victoria or South Australia.

The Hon. BEN FRANKLIN: And how is it licensed and enforced in Queensland? If you prefer to take that on notice, I understand that might be quite complex.

Ms SLATTERY: Yes, I have not looked into Queensland in a great lot of detail. I have heard that it is probably pretty cowboy territory there as well.

The Hon. BEN FRANKLIN: Right. I might just go to Dr Colloff. Just a final couple of questions. I googled an article that you were quoted in, Dr Colloff, I think in *The Sydney Morning Herald* on 9 May entitled *'Like the anti-climate change brigade': Water scientists under attack*. You talked about the basin plan being subject to a process of administrative capture, whereby some scientists are incentivised to constrain the scientific questions asked, limit debates and promote policy approaches favoured by decision-makers. I was wondering if you could speak a little more to that because I find that troubling when people potentially are paying so-called experts and we should potentially be considering their motives. Could you speak about that issue for us?

Dr COLLOFF: Thank you, Mr Franklin, for your question. I am not sure how your question is relevant to this inquiry. It is not about floodplain harvesting. I am here as a scientific expert to answer questions about floodplain harvesting. I would be grateful if you directed your questions to that issue and to the submission that I put in conjointly with Slattery and Johnson entitled *An unsustainable level of take: on-farm storages and floodplain water harvesting in the northern Murray-Darling Basin*. Thank you.

The Hon. BEN FRANKLIN: Okay. I was trying to discuss the broader context through which this whole debate is happening and was just hoping for some clarity on your views, but that is okay. We just heard evidence where we were told that the department was cooking things up and there were some experts who were described as cowboys. I guess I was looking into that issue further to discuss broadly what makes an expert and what makes a good debate and informed debate in this. But if you prefer not to discuss it, that is understandable. I am okay to move on. I am happy for any witnesses to answer this question. I was just picking up on a line of questioning from Ms Sharpe, which was basically: Are there instances where other States have adjusted their

baseline diversion limit or their sustainable diversion limit? If there are not, how would that happen and what are your views on that?

Ms SLATTERY: I can answer that. Yes, the baseline diversion limit and the sustainable diversion limit have been increased in each of the other States. I understand that was done through the water resources plan process. Ms Sharpe's question was specifically in relation to presenting a cap scenario model as cap. I am not aware of that happening anywhere else. But the basin plan limits—the baseline diversion limit, the sustainable diversion limit—have been increased in the other States. We would argue that that should have been done through the parliamentary process set out in the Water Act in the basin plan, not in a behind-the-scenes deal with MDBA and the relevant State.

The Hon. BEN FRANKLIN: I know I asked you, Ms Slattery, about floodplain harvesting occurring in other States and you discussed, obviously, the issue of Queensland. Would either of the other two witnesses like to talk about basically that example and the lessons that could be learned by New South Wales that are worthy of discussing—how it is licensed and enforced and so forth? Again, you can take it on notice if you wish or if you do not have anything to add, that is fine.

Dr COLLOFF: I do not have anything to add. Queensland has a form of licensing system but I am not familiar with it. Mr Johnson may have something to say. I do not know.

Mr JOHNSON: No, I do not have anything to add.

The CHAIR: That is the end of this session. Thank you very much to the witnesses who appeared today and for all of your good, extensive work. That is the end of today's hearing. Thank you all very much.

(The witnesses withdrew.)

The Committee adjourned at 14:29.