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SENATE

STANDING COMMITTEE ON RURAL AND REGIONAL AFFAIRS
AND TRANSPORT

Reference: Management of the Murray-Darling Basin system

FRIDAY, 19 SEPTEMBER 2008

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**SENATE STANDING COMMITTEE ON
RURAL AND REGIONAL AFFAIRS AND TRANSPORT**

Friday, 19 September 2008

Members: Senator Sterle (*Chair*), Senator Milne (*Deputy Chair*), Senators Heffernan, Hurley, Hutchins, McGauran, Nash and O'Brien

Substitute members: Senator Siewert to replace Senator Milne for the committee's inquiry into the management of the Murray-Darling Basin system

Senator Farrell to replace Senator O'Brien from 15 September to 12 December 2008

Participating members: Senators Abetz, Adams, Arbib, Barnett, Bernardi, Bilyk, Birmingham, Mark Bishop, Boswell, Boyce, Brandis, Bob Brown, Carol Brown, Bushby, Cameron, Cash, Colbeck, Jacinta Collins, Coonan, Cormann, Crossin, Eggleston, Ellison, Farrell, Feeney, Fielding, Fierravanti-Wells, Fifield, Fisher, Forshaw, Furner, Hanson-Young, Humphries, Johnston, Joyce, Kroger, Ludlam, Lundy, Ian Macdonald, McEwen, McLucas, Marshall, Mason, Minchin, Moore, O'Brien, Parry, Payne, Polley, Pratt, Ronaldson, Ryan, Scullion, Stephens, Troeth, Trood, Williams, Wortley and Xenophon

Senators in attendance: Senators Farrell, Heffernan, Hurley, Hutchins, McGauran, Nash, Siewert and Sterle

Terms of reference for the inquiry:

To inquire into and report on:

1. Water management in the Coorong and Lower Lakes for inquiry and report by 30 September 2008, with particular reference to:
 - a. the volume of water which could be provided into the Murray-Darling system to replenish the Lower Lakes and Coorong;
 - b. options for sourcing and delivering this water, including:
 - i. possible incentive and compensation schemes for current water holders who participate in a once-off voluntary contribution of water to this national emergency,
 - ii. alternative options for the acquisition of sufficient water,
 - iii. likely transmission losses and the most efficient and effective strategies to manage the delivery of this water,
 - iv. Commonwealth powers to obtain and deliver water and possible legislative or regulative impediments, and
 - v. assessment of the potential contribution of bringing forward irrigation infrastructure spending under the Council of Australian Governments agreement to deliver water to save the Coorong and Lower Lakes;
 - c. the impact of any water buybacks on rural and regional communities and Adelaide including compensation and structural adjustment; and
 - d. any other related matters.
2. The implications for the long-term sustainable management of the Murray Darling Basin system for inquiry and report by 4 December 2008, with particular reference to:
 - a. the adequacy of current whole-of-basin governance arrangements under the Intergovernmental Agreement;
 - b. the adequacy of current arrangements in relation to the implementation of the Basin Plan and water sharing arrangements;
 - c. long-term prospects for the management of Ramsar wetlands including the supply of adequate environmental flows;
 - d. the risks to the basin posed by unregulated water interception activities and water theft;
 - e. the ability of the Commonwealth to bind state and territory governments to meet their obligations under the National Water Initiative;
 - f. the adequacy of existing state and territory water and natural resource management legislation and enforcement arrangements; and
 - g. the impacts of climate change on the likely future availability of water.

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Committee met at 8.06 am

CHAIR (Senator Sterle)—I declare open this public hearing of the Senate Standing Committee on Rural and Regional Affairs and Transport. The committee is hearing evidence on the committee's inquiry into water management in the Coorong and Lower Lakes. I welcome you all here today. This is a public hearing and a *Hansard* transcript of the proceedings is being made. Before the committee starts taking evidence, I remind all witnesses that in giving evidence to the committee they are protected by parliamentary privilege. It is unlawful for anyone to threaten or disadvantage a witness on account of evidence given to a committee. Such action may be treated by the Senate as a contempt. It is also a contempt to give false or misleading evidence to a committee.

The committee prefers all evidence to be given in public, but under the Senate's resolutions, witnesses have the right to request to be heard in private session. It is important that witnesses give the committee notice if they intend to ask to give evidence in camera. If a witness objects to answering a question, the witness should state the ground upon which the objection is taken and the committee will determine whether it will insist on an answer having regard to the ground which is claimed. If the committee determines to insist on an answer, a witness may request that the answer be given in camera. Such a request may, of course, also be made at any other time. Finally, on behalf of the committee, I would like to thank all those who have made submissions and sent representatives here today for their cooperation in this inquiry.

[8.07 am]

KINGSFORD, Professor Richard Tennant, Private capacity

CHAIR—Welcome. I am told on good authority, Professor Kingsford, that you really are an expert on environmental science. We have one hour. Before we go to questions, and there will be a lot of questions, I invite you, if you wish, to make a brief opening statement.

Prof. Kingsford—I guess I will just give you a little background. I have had more than 20 years of research working on Australian rivers and wetlands and more than 100 publications and three books. The rivers I have worked on in the Murray-Darling are the Paroo, the Macquarie, the Murrumbidgee, the Darling, the Condamine-Balonne and the Border rivers. I have also done a lot of work in central Australia on the Cooper Creek and Georgina-Diamantina. I have written and researched a lot about the impacts of river regulation on wetlands and rivers and their communities. I have also served within and outside government on a number of committees relevant to river management. Past committees include the Border Rivers catchment ministerial committee, the Lake Eyre Basin Community Advisory Committee and the New South Wales water reform committee. I was also one of the independent experts on the River Murray expert panel. I am currently on a number of committees, including the stakeholder consultative committee for the federal government's buyback program. I am also on the riverbank committee for the New South Wales government and its buyback of water. I am also on the scientific advisory panel for the Lake Eyre Basin. I also wear a number of hats in terms of being on editorial boards of scientific journals and various members of society. Thank you.

CHAIR—Thank you, Professor Kingsford. I have to ask whether there is any board you are not on.

Senator HEFFERNAN—He has not done the Lachlan. I want him to do the Lachlan.

CHAIR—On that, Professor Kingsford, before I do go on, I owe an apology for Senator Heffernan's shirt once again. Anyway, we will go to questions.

Senator SIEWERT—Professor, I have a range of questions, so if I get—

Prof. Kingsford—Can you all call me Richard? I prefer to be called Richard. Thank you.

Senator SIEWERT—I will start with the Paroo and the comments that you have made recently about it. Representatives from the Queensland government gave evidence here in our hearing a couple of weeks ago which disputed your evidence. Could you briefly go into what you found in the Paroo. I am also interested in your thoughts about whether it would be relevant to take further the survey you did.

Prof. Kingsford—Sure. I think our work was described as an honest mistake by the Premier of Queensland. We essentially looked at a development on the Paroo that, in terms of building storage, has happened since the signing of the Paroo River agreement and the implementation of the water resource plan. We examined that with very high resolution satellite imagery. It was less than a metre resolution. Up to fairly recently, that has only been available to defence forces and intelligence but is now publicly available. Essentially, we also looked at all of the available satellite imagery and aerial photography for that area right back to 1969. What is quite clear is that there was a levy bank there in 1969 but there also have been a number of new storages built and channels to take water from that area to two pivot irrigation areas. I think the critical issue here is that Queensland has determined that because there is a levy bank across the floodplain, that means it can be defined as a storage. Once it becomes defined as a storage, they have then converted that water backed up behind there into an overland flow allocation.

They have argued, and I have also argued with them subsequently, that there is an issue here. They argue that they cannot allow further take from that river system. The Director-General of the Department of Natural Resources and Water cannot allow further take. I have argued that because they are defining it as a storage and the water is now being taken from the floodplain and put into an irrigation area, it must be a take. This is where the dispute lies in relation to whether or not there was any take there in 1969 or before the water resource plans.

There does seem no evidence that there was water being taken out of that storage area onto terrestrial areas, although there was some clearing around there. I still think, because the allocation is more than 10,000 megalitres and the Paroo, I think, has only about 100 megalitres of irrigation water currently, it is a significant amount of water in that river system.

CHAIR—Can the Paroo affect the Lower Lakes? Has the Paroo affected them?

Prof. Kingsford—No. The Paroo needs a really big flood to get into the Darling.

Senator HEFFERNAN—In 1956.

Prof. Kingsford—Yes. In 1990 it made it through. So not so much water gets in there. But it will come in. This big flood that we have had now has not made it down to the Darling. There are a million hectares of floodplain that it will inundate first.

Senator HEFFERNAN—Beautiful property.

Prof. Kingsford—So it has come to your second question, which is about technology. I certainly think we have the technology. The issue is that some of that technology is only available after 1999. This is the one metre resolution. I think one of the issues is that no-one really has looked at the structures in a rigorous way and looked at when they have been put in place over time. We did some of that on the Macquarie, but there has been very little of that anywhere in the northern basins.

Senator SIEWERT—Thank you for that. Yesterday when we had the New South Wales government here, they were starting to tell us about the structures in the Macquarie and what is licensed and unlicensed. They had not finished that work. What is your estimation in terms of licensed and unlicensed structures across that northern area?

Prof. Kingsford—Look, I think this is such a grey area that it is really not clear what is legal and what is illegal. I will just talk about the Macquarie, if you do not mind, because that is where we have some data. I think in about the mid-1980s a sort of random line was drawn around the northern part of the Macquarie Marshes. It was then defined as a designated floodplain. Once you become a designated floodplain, you are supposed to then go through the EP&A Act and look at environmental impacts. But that was only the northern part of the Macquarie Marshes floodplain. It meant that in the southern part there were very few regulations about what could and could not be done there.

However, the New South Wales government over a number of years has produced these floodway guidelines for all their rivers. Essentially, these are recognition around about the late 1970s and early 1980s that there was too much development on the floodplain. They identified floodways that would allow uninterrupted water to go down to lower parts of the river system. We examined them on the Macquarie, where they have these areas. I will just check my notes. We identified 101 kilometres of levies and 368 kilometres of channels that had been built within the floodways. That does not count the ones outside the floodways. But because the floodways were only guidelines, there was no critical regulation or compliance and, as far as I am aware, no legal framework that would allow you to say whether they were licensed or unlicensed.

Senator SIEWERT—So these were built after the floodways were designated?

Prof. Kingsford—Yes.

Senator SIEWERT—So when did you do that survey?

Prof. Kingsford—I think last year we did that survey. From Warren up to Kurinda we looked at the number of levy banks, channels and earthworks generally in that floodplain.

Senator SIEWERT—I am going back a number of years, where we have had different inquiries through estimates et cetera. When New South Wales say they are not legal and they are not illegal, these are the structures we are talking about?

Prof. Kingsford—Yes.

Senator HEFFERNAN—These are the structures that, when they send some water down for Ramsar, for the wetland, intercept that?

Prof. Kingsford—There is one classic example, where there is a floodway that has a channel going horizontally across it. In November 2005, there was clearly an environmental flow ordered by the Ramsar site.

Senator SIEWERT—Is this the Gwydir one or—

Prof. Kingsford—No. This is the Macquarie.

Senator SIEWERT—This is the Macquarie Marshes.

Prof. Kingsford—There were no other irrigation orders for that water. The water essentially went down, obviously hit the channel and that channel took that water straight into an off-river storage.

Senator HEFFERNAN—And there is a similar one on the Gwydir too?

Prof. Kingsford—Yes.

Senator HEFFERNAN—There is one on the Gwydir the same.

Senator SIEWERT—Yes.

Prof. Kingsford—There are a number around, yes.

CHAIR—I am sorry to cut in, but Senator Milne, Senator O'Brien and I were out at Warren on Friday for a field trip. We met a lot of people out there and we looked at the Macquarie. We asked about the health of the Macquarie and all that. What they clearly told us up there was that flows from the Macquarie will not assist the Darling.

Senator HEFFERNAN—That is right.

Prof. Kingsford—About 10 per cent of flows from the Macquarie get through to the Darling.

CHAIR—That is if there is a massive flood on the Macquarie, yes. Wetlands, I think it was, on the Macquarie Marshes?

Prof. Kingsford—Well, what has happened on the Macquarie is that essentially at one point a bypass channel was built for 20-odd kilometres that made it more efficient for water to get down to the lower Macquarie and then on to the Darling.

CHAIR—But it would take a massive flow of water?

Prof. Kingsford—But it is assisted by a massive flood, yes.

CHAIR—Thank you.

Senator SIEWERT—I know Senator Hanson-Young will want to ask a question in a minute. I am keen to know what scale of water we are talking about that is or could be diverted through these structures that is not regulated in terms of legal regulation rather than a regulated channel. What scale of water are we talking about that is not actually properly being regulated?

Prof. Kingsford—It is a good question. I think one way of measuring that—this is the way the New South Wales government is trying to approach it—is to look at the storage capacity of all the off-river storages. You can potentially fill an off-river storage and empty it again so you would not be able to pick up the double-take. There are also potentially structures that do not divert water into storage. They divert water elsewhere into agricultural land. You would not measure that. At one point, the New South Wales government, when the Water Management Act came in, had a policy where they were going to potentially put in second-lift pumps. In other words, on a particular off-river storage, you would have another pump with a meter on it which would allow you to measure how much water went into that storage.

Senator HEFFERNAN—How much water was in that order they sent down that disappeared?

Prof. Kingsford—The 2005 one?

Senator HEFFERNAN—I have forgotten now.

Prof. Kingsford—I cannot remember.

Senator HEFFERNAN—It was a reasonable amount of water.

Prof. Kingsford—Yes, it was.

Senator HEFFERNAN—It was many thousands of megs.

Prof. Kingsford—Yes, it was. It was, yes.

Senator SIEWERT—So the point is here we do not actually know how much water is being held in off-river storages or is actually being diverted through these neither legal nor illegal structures?

Prof. Kingsford—I am not aware of any.

Senator HEFFERNAN—The other part is the Ramsar site down below on these smaller banks that actually create the artificial flood for one of the companies that has been in the news lately selling properties. It is one of the properties that is up to silly buggers down there.

Prof. Kingsford—So, just to clarify, there are a number of structures within the irrigation areas which are primarily designed to not only essentially move water efficiently around the irrigation area but also protect some of those irrigation areas from floods. That is certainly an issue that I think is going to become more and more one. The water is going to move in all sorts of different directions that it was not supposed to move in.

As well, over a number of years on all our inland river systems, there have been various levy banks constructed to hold water back to increase grazing capacity. That has happened over 100-odd years. That is one of the issues about the Paroo. If Queensland is interpreting any levy bank as a storage, it means potentially you could add a whole lot more irrigation allocation, if you like, in a particular river system that you never actually thought would be the case, yes.

Senator SIEWERT—So, in your opinion—this is a two-part question—was there water in that northern section that could have made it down? I am now talking about timescale. If a decision had been made earlier in the year, was there water there when the system was wetter? Is there water there now?

Prof. Kingsford—If you had stopped access to that water, there would have been more water coming down the Condamine-Balonne, which is one of the main areas. That flood that happened earlier this year was essentially a western or north-western flood. So there was water coming down the Warrego and there was water coming down the Paroo and, I might say, the Bulloo, which is a western river that has its own catchment, and the Cooper. So all of the big floods that we saw going out to the coast and affecting communities out there had a Great Dividing Range dump on the western side that allowed those western rivers to run. The most western and the biggest contributor to the Darling was the Condamine-Balonne, which is the one that obviously runs down to Narran Lake and down to the Darling. I think that in modelling years contributes maybe 20 per cent of the flows to the Darling or around that. So if you had hypothetically switched off the irrigation on that system, probably more flows would have made their way into the Darling. But understand that these systems are primarily floodplain systems, so most of the water that is actually caught for irrigation is actually denying the floodplain that the irrigation is on of that water rather than impacting on the main stem of the river systems.

Senator SIEWERT—Thanks.

CHAIR—You were talking about the Macquarie Marshes. There was an acquisition by the Commonwealth and New South Wales governments. Do you wish to make any comment about that?

Prof. Kingsford—The Pillicawarrina was an irrigation area for cotton—

CHAIR—I am sorry, Professor Kingsford. We have some senators trying to join us by teleconference. Is anyone out there?

Senator XENOPHON—Yes. I am here. It is Nick Xenophon here.

CHAIR—Senator Xenophon, welcome. We have Professor Kingsford. Sorry, Professor Kingsford, carry on.

Prof. Kingsford—So to answer your question, Pillicawarrina was a major part of the Macquarie Marshes. It had one of the most important bird breeding sites before the vegetation was laser levelled. It was made into a cotton area. I think that happened in the 1970s and 1980s. So there are, I guess, two important parts of that acquisition. One is the increased water that can be an environmental flow. The second is the opportunity to rehabilitate that area so that it is also perhaps back to what it was originally—part of the Greater Macquarie Marshes.

CHAIR—Thank you, Professor Kingsford. Senator Xenophon, we have all agreed around the table that Professor Kingsford is probably one of the experts on the Murray-Darling Basin.

Senator HANSON-YOUNG—We heard yesterday from the New South Wales environment department that, of the water being held currently in Menindee Lakes, they needed all of it for human critical needs in a variety of different areas. If water were to be released from Menindee Lakes to send down to the Lower Lakes and the Coorong over the next few months in order to try to avert the crisis that is unfolding down there, do you think that there is water available upstream to be redirected to Menindee Lakes to alleviate those concerns?

Prof. Kingsford—I am aware there is water in storage at Bourke and there is water in storage on the Condamine-Balonne and probably up in the Border Rivers. I am not quite aware of what their storage capacities are up there. I guess the critical issue is how much you lose in transmission losses on the Darling. Quite a lot goes because it is such a dry river system at the moment. Obviously once the water gets to around Menindee, you have that string of lakes, most of which are now currently dry. Either you would send it further downstream or you actually put it into the lakes. Potentially you could put some more water into the Menindee Lakes, but there is not a lot of water, I would imagine, that would come in for that. I am not a hydrologist, so I am not sure of the quantities.

I think the Menindee Lakes issue is an interesting one in that we need to be careful that we are not robbing Peter to pay Paul. There are issues about trying to move water very efficiently through that system. But that could impact on the ecology of Kinchega National Park, particularly large channels that have been considered for doing that. I think ecologically Kinchega National Park and Menindee Lakes are very important from a wetland point of view and for water birds and fish and so on. They have been dry for some time as a result of less water coming to them from upstream in the same way as the Lower Lakes are feeling that pressure.

CHAIR—I am sorry, Senator Hanson-Young. I do have other senators. If there is some time left, I will come back to you.

Senator HUTCHINS—I am interested in that line of questioning and the robbing Peter to pay Paul argument. A number of senators seem to get parochial about it. I wonder if you could outline for us other environmental priorities that we should be aware of in that whole Murray-Darling Basin. All we are talking about is the Lower Lakes and Coorong. I thought it was very apt what you just said then about the Menindee Lakes and how important it is to the ecology as well.

Prof. Kingsford—Think of all the river basins internally within the Murray-Darling. Most of them have a major wetland at the end of them. The Border Rivers used to have magnificent wetlands. I think they do not any more. Obviously the Gwydir used to have an important wetland system and then the Namoi less so. The Macquarie obviously has the Macquarie Marshes. The Darling has its own wetland system when the water gets up, the Menindee probably being the key one. There is a string of lakes there that are very important. The Lachlan has both the Cumbung Swamp right at the bottom and the Booligal wetlands, which is an offshoot that heads west. Then, of course, you get to the Murrumbidgee, and it has this magnificent wetland that was once near Balranald called the Lowbidgee. The River Murray obviously has all of the icon sites of Barmah and Chowilla Forest et cetera. From the north, obviously, the Condamine-Balonne has Narran Lakes and the Lower Balonne system and Culgoa National Park. If you go further west, the Warrego has the Cuttaburra and the Paroo overflow and Currawinya Lakes.

So, if you like, there are as many jewels on the Lower Lakes on other river systems from an environment point of view that are probably every bit as important but have not had the attention. They may be in just as bad a state as the Lower Coorong. Certainly we know places like the Gwydir and the Macquarie Marshes and the Lowbidgee, if you go to the Paroo and the Warrego, are in the peak of health because essentially they are still getting their full water complement.

Senator HUTCHINS—So it is sort of simplistic to suggest that you drain the Menindee and there will not be any other ecological disaster occur?

Prof. Kingsford—Yes, it is.

Senator HUTCHINS—Or in any of those other wetlands up in New South Wales or, I imagine, Queensland as well?

Prof. Kingsford—Yes. There is the royal commission of the early 1900s. You can go back to some of those places and actually find how often that would fill naturally. There would be water in those lakes 20 out of 30 years. That is from a local farmer who lived there who described what would happen there. I guess the argument has been that we need to get the water out of those lakes as quickly as possible to make sure that it gets into the Lower Murray. But in actual fact there is a whole ecology around those lakes. We have surveyed Menindee Lakes and found up to 70,000 or 80,000 water birds. They have been badly affected by being used as storages for water, so water has been kept artificially high. There is an opportunity there to change their flow rating so they have more of a wetting and drying phase. A lot of the trees and so on have been killed. They have certainly got less diversity now with their water levels kept artificially high.

Senator SIEWERT—I do not want to take your time. Could you ask how we could do that?

Senator HUTCHINS—Sure. How could we do that?

Prof. Kingsford—We could actually do it by looking at this whole system ecologically instead of hydrologically. The problem is that all of the focus has involved hydrologists trying to essentially get the water out as quickly as possible. So there are issues about building channels into the lake and pumping out the residual water. The most important water for these systems is as it gradually dries out. If we actually took a proper ecological assessment of that area, I think we could save some water but also maintain its ecological integrity—in fact, rehabilitate it. I have argued that, but essentially those arguments have not really been taken up.

Senator HUTCHINS—We are confronted with in this inquiry—I do not know how to say it—the impact of climate change and other factors, which will reduce the water available in that whole system. I do not know if I am putting you on the spot, but what do you see as the long-term prescription for managing the conservation values of those wetlands and, in particular, the Lower Lakes? I was with a fellow the other night who was telling me that there was salt water in the Lower Lakes until the 1930s. I was talking to another fellow. He said there were reports that there used to be sharks up to Murray Bridge. I wonder if you could comment, Richard?

Prof. Kingsford—I am not an expert on the Lower Lakes, but they would have been an estuarine system and they would have been connected. So they would have had periods of high salinity and marine creatures going up and down. But that would have been changed, like most free-flowing rivers that go out to sea, when a big flood came down. It would have changed into more of a freshwater system. So it would have bounced backwards and forwards.

To answer your big question, which is where are we going to be in terms of managing these systems, essentially, I think, we have to define out what we have lost and what we cannot manage for. That involves understanding and modelling flows, understanding how these ecosystems work, how much water red gums need and fish and water birds and then essentially saying, ‘We aren’t ever going to be able to, and nor would we want to—it would be economically and socially irresponsible—turn this system back to before we developed it.’ But I do see an opportunity to get a much better outcome for our conservation assets, if you like, by better targeted environmental flows, better management of the environmental flows, and putting as much water as we can back to those systems. I seriously think that we are starting clearly to understand in the community the impacts of river regulation on the Lower Murray lakes. The impacts on places like the Macquarie Marshes are going to be just as devastating. We are seeing large areas of hundred-year-old red gums just dying as a result of not getting water.

So it will be a big challenge to try to work out how much water we have for these systems. Essentially, we will have to manage those. Wherever we can possibly squirrel away more water through water efficiencies, we should try and retire that back to those river systems and manage that water and be very careful about auditing where all the water goes so that we know clearly how much water is going to the environment and how much is going for extraction and people clearly know their rights and responsibilities. I would like to see some opportunities for conservation groups and people in the city to start potentially buying water that is good for the environment. I certainly would like to see viable irrigation communities in these systems as well, but much more efficient ones than we currently have.

Senator HUTCHINS—I think you summed it up well when you said you have to be conscious of not robbing Peter to pay Paul. I am not sure that we have had the exposure of how ecologically important some of these other places are in New South Wales. So simplistic solutions of just releasing water here is going to have an impact significantly somewhere else.

Prof. Kingsford—Yes. That is right.

Senator HUTCHINS—That is all I have.

CHAIR—Before I go to Senator Adams, I want to reiterate that the subcommittee went to Warren. What we did, Professor Kingsford—it is not your line of expertise, obviously—is check out pasture cropping and how it was retaining water in the soil as well. But the locals in Warren went out of their way, when asked about the Macquarie River, to say it is very healthy. Their water supply is very healthy. Do you have any comment there?

Prof. Kingsford—It depends what you mean by healthy.

CHAIR—Okay. There is plenty of water and they have said that it is higher than what it has been for the last seven or eight years, even though they have been in drought.

Prof. Kingsford—People generally define a river by what is flowing in the main channel. So in a lot of these systems, there will be water flowing down the main channel and it will look healthy. The water quality may be very good, particularly if you are at Warren. That is where most of the water comes down the main channel. The bigger impacts occur downstream of Warren. If you like, what happened when we put in our dams is that we captured a lot of the flows that would go into places like the Macquarie Marshes and the Lower Lakes. It allowed us, then, to divert that water for irrigation and for our towns. A lot of those irrigation areas are upstream of the major conservation assets. It meant that a lot of the water that would normally go down into the Macquarie Marshes and the Lower Lakes obviously is now being diverted out for irrigation.

There is also an argument, which the irrigation industry will put, that the rivers are healthy and essentially there is little evidence for them not being so. There is a lot of scientific evidence that would say otherwise.

CHAIR—I have one last question. Are you aware of what has happened at Barren Box Swamp on the Murrumbidgee?

Prof. Kingsford—Yes.

CHAIR—Would you like to make a brief comment on that?

Prof. Kingsford—Yes. I have been to Barren Box or there since the early 1980s. Barren Box Swamp, for people who do not know, was used as a sort of drainage basin for waste water in an irrigation area. It would have naturally flooded and dried. So it had issues of having, like Menindee, too much water too often. Essentially it had Cumbungi and it killed quite a lot of the floodplain trees. Because it has been divided in half, I think there is obviously some opportunity there to manage some of it as a wetland and save water elsewhere. I am not sure of what the evidence is of how good that process has been ecologically because you have essentially potentially halved the ecosystem.

CHAIR—Do you think that might be or could be a solution for Menindee?

Prof. Kingsford—Well, that is certainly one of the solutions that is being put forward. But the issue would be that you would lose potentially half of your wetland. I would think a better solution would be to manage the water levels better so that you try and have natural drying patterns in Menindee. You get the water out, but not all of it, which is currently what is on the table, I think.

CHAIR—Thank you, Professor. Senator Adams did want to ask a question and Senator Heffernan wants some time too.

Senator ADAMS—I will let Senator Heffernan ask his.

Senator HEFFERNAN—By the way, Barren Box obviously supplies stock and domestic at the Wah Wah scheme. I am very familiar with that. Professor, there are a few things we want to get on the record. Are you familiar with the purchase of the property that was Elliott's—that rice property over the border?

Prof. Kingsford—I am not. I am sorry, I am not familiar with that work.

Senator HEFFERNAN—With the Gwydir and that very clever bank that is allegedly a channel but it is actually an overland water harvest given the height of the banks, is it legal?

Prof. Kingsford—It would depend whether the Gwydir was a designated floodplain or not. I would suspect that it is not a designated floodplain. So it may well be that it is not illegal. I think the area of managing rivers is very, very poor in Australia on the floodplain.

Senator HEFFERNAN—It certainly is.

Prof. Kingsford—There is very little policy development and very little legislation that actually helps.

Senator HEFFERNAN—We think it is red hot. It is the same with the set-up on the Paroo. The development that is occurring there now is by the bloke from South Australia, is it not?

Prof. Kingsford—No. On the Paroo, it is a local up near Eulo.

Senator HEFFERNAN—There has been recent speculation and revaluation of a place like Cubbie. You have had a lot to do with the downstream. Could you tell us the size of the floodplain that is associated with the Lower Balonne?

Prof. Kingsford—I will just check. I have that figure here. We mapped all the wetlands in the Murray-Darling Basin a few years ago using satellite imagery, so we have that figure here.

Senator HEFFERNAN—I think it would be interesting.

Prof. Kingsford—I will tell you in a minute.

Senator HEFFERNAN—Can you table that?

Prof. Kingsford—I can, yes.

Senator HEFFERNAN—Just have a quick look and give us a snapshot.

Prof. Kingsford—I have it here. It is 1.4 million hectares.

Senator HEFFERNAN—So that is 3½ million acres, roughly, or thereabouts?

Prof. Kingsford—It is a very sizeable area. In fact, it is the largest floodplain area—

Senator HEFFERNAN—It is.

Prof. Kingsford—in the Murray-Darling Basin, or was.

Senator HEFFERNAN—I am very familiar with it. The works that occurred on the Lower Balonne have absolutely destroyed the integrity of that floodplain. That would be fair to say, would it not?

Prof. Kingsford—I think over the next 50 years we will see colossal economic damage as a result of that. We are starting to see that now with a lot of trees that are starting to die. We will see that in terms of understanding places like Narran Lakes and their long-term viability in terms of water bird populations and all of those things.

Senator HEFFERNAN—Given all of that and given the water resource plan that was done some years ago for the Condamine-Balonne and the extraction—I think there is 1,500 gigs of off-river storage and the mean flow is 1,200—how much sense does it make that, knowing all that and knowing what you just said, the Queensland government would now be giving consideration under the ROC, which is built on the water resource plan? It did not have any environmental science applied to it. It was just rubbish. You would agree with that, would you not?

Prof. Kingsford—Well, I think the original water resource plan had a technical panel and actually had some useful information in it. But then the process that followed that was not very clear in terms of the modelling.

Senator HEFFERNAN—Well, it is a bit like the vagary of the Paroo. There were big bulldozers, and they gave them authorisation. After the event, they said, ‘Oops have a look at that. We’d better authorise that now it has been done.’ So now, to defy any sort of human logic, they are proposing to convert those authorisations into water licences knowing the system is absolutely beyond repair with the present capacity to extract water. Have you got a comment that you would like to make about how silly it is to go ahead and issue licences in the full knowledge, by the way—it has added a couple of hundred million to the potential value of a place like Cubbie—that we will then buy it back and somehow return the water to the system? One, we have a three-million acre floodplain to fill up, which has been absolutely extinguished in the meantime. Two, because it is a unique system, when the floodplain eventually does fill up in a huge event, the water will actually return to the rivers in that system as opposed to going out over the horizon. With regard to the use of taxpayers’ money, how sensible is it for the government to actually issue a whole range of financial instruments by way of converting authorisations to licences and then propose to buy them back? Could you make some commentary on that?

Prof. Kingsford—Look, I cannot actually understand why governments still make decisions. We are living here. This whole process is a result of decisions that were made maybe 10 or 15 years ago by water agencies primarily. They have driven a process which means that subsequent generations have to pick up the tab. Now it is fundamentally going to happen in the Condamine-Balonne that in 20 or 30 years, when Narran Lakes is almost completely dried out and a lot of the vegetation—it is a Ramsar site—the Australian government will be further embarrassed because it is not managing it properly. We will be losing a lot of those floodplain areas. There will be an outcry and governments will have to do something about it. A lot of the people in charge know these things are happening but are not doing anything about it.

I think there is a serious issue where conservation agencies within governments are not strong enough and are not being vocal enough about the long-term impacts. We are hearing nothing that I am aware of from the Queensland government about its responsibilities for Culgoa National Park, which is a floodplain national park, that will be impacted in the water resource plan and the resource operations plan. There should be strong internal government discussions about the long-term future of these areas.

Senator HEFFERNAN—I have been obviously in discussions with the Queensland government, this government and the previous government about this because I actually think it is sort of fraud by the Commonwealth to do what they are proposing to do. I have not had anyone who has disagreed with me in any government, but they all say, ‘Bill, what are we going to do about it?’ Should we not redraw the plan of the valley to some sort of a sustainable level and not issue licences that we know are actually being utilised now? The bulk of the water that comes out of there now is unmetered, unregulated and free. It is authorised. To convert that into a financial instrument that is compensatable I think is a curiosity. I think it does not stand closer inspection. Should we not redraw the plans and put a halt to the implementation of the ROC?

Prof. Kingsford—I think one of the problems with this is that we are privatising gains and socialising the costs. Fundamentally that is going to happen more and more. We are having major social dislocation in those areas because the people downstream have lost their livelihood with the floods.

Senator HEFFERNAN—They certainly have. So are you out there in government? Are you listening? Hello, Scott Spencer in Queensland.

Prof. Kingsford—I would like to see a little more forthrightness and strength in terms of actually looking at long-term sustainability in that catchment. My discussions with various Queenslanders indicate that that agency is a bit gun shy of strong decisions because of various court cases that have gone on and that they have lost. I think they were poorly advised in those court cases and did not necessarily think hard about it. As a result of that, they do not seem to be making very strong decisions. There is also a cultural issue. There is a strong development culture—has been for a long time—in Queensland and New South Wales. It has been an issue about how you get those people to give the advice that is useful for governments.

There is one other point I would like to make. Because this area is full of jargon, a lot of people find it difficult to understand it at a ministerial level. The people running the show are the people I call the tap turners. Unless you understand what they are doing and know what questions to ask and what issues need to be tackled, you are never going to solve this problem.

Senator HEFFERNAN—I do not know about Anna Bligh's government, but I did know Peter Beattie's government. The Premier pointed to exactly that with me when I raised it with him. He said, 'Bill, I do not think they had faith in the people in the department of natural resources.' Some of those people, of course, have some very close connections to the people who are out there in the field and are getting the financial gains out of what is proposed. I think it is quite curious that, in relation to the independent advice that the government got from it, the advisory committee was chaired by a person who, even though she does not qualify for a water licence—she has no capacity to store water or harvest water—has actually managed to get herself on to the biggest water licence that is ever going to be issued in Australia by way of a little reward. It is 469,000 megs.

Scott Spencer's people the other day said, 'Oh, well, Senator, that's just some sort of private arrangement.' Well, I think it is full-on bloody fraud. Someone up there should have the guts to say that. That particular committee was also to give advice to the government on compensation. We all know what the game is. They are going to issue these licences and then say, 'Oh, we're going to save the world and buy the place back.' It adds \$200 million or something to the asking price for Cubbie. Peter Beattie was smart enough to say, 'Why would you absolutely maximise the value with taxpayers' money and then buy it back?' As you say, you capitalise the bloody wins and socialise the losses. It is just bloody crazy.

I will just go to Tooralie. I note that the Commonwealth government obviously is concerned about what has happened. I also note that we took evidence in South Australia that a lot of people are building the future plans in their own heads—that is, the users—on the history of the past rather than the science of the future. I have a very strong view that we are going to have to reconfigure the Murray-Darling Basin. As you know, I am pretty keen on giving the next generation of farmers some hope with some mosaic development of the north. Could you give us any advice as to how you would, if you were returning water to the system, acquire that water and where you would acquire it? I am all in favour of remedial works. If they want to buy Cubbie, I am in favour of that to fix the floodplain. It would cost \$10 million. You would knock all those banks out et cetera. But I am not in favour of issuing those licences and then buying them back. Have you got any advice for the committee on the long-term prospects for the Murray-Darling Basin extraction versus the future science?

Prof. Kingsford—Well, I think to pick up on an earlier point, we need to identify where our conservation assets are and the key ones and then identify where the water is to buy to get there. We need to identify what we want out of it. The science is also going to be value based. You are going to have to decide how many red gums you want and how big an area and how many water birds. The science can contribute by informing you about what you get for your water from an environment point of view. Is it then going to be, 'Okay, we can't return this whole river system to where it was, so basically there are some environment parts that we are going to have to give away. But let's focus on the bits that we know are potentially sustainable and important areas and get as much water as we can to them and essentially try to do that through water efficiency or buyback or whatever the other methods may be.'

Senator SIEWERT—When you say 'identify those sites', are you talking about beyond the icon sites that have already been identified?

Prof. Kingsford—Absolutely. I think one of the major issues—

Senator HEFFERNAN—No.

Senator SIEWERT—I just wanted to get that on the record.

Prof. Kingsford—in the management of the Murray-Darling Basin has been the Murray focus. We have not actually looked very hard at the Darling.

Senator SIEWERT—Thank you.

Senator HEFFERNAN—And it would be fair to say that the science of the future has a prediction of somewhere between 3,500 and 11,000 gigalitres to produce run-off, which means we absolutely will have to reinvent. You can still do it with the right technology. You can grow crops et cetera with fertigation. But the same science is saying that the weather is going to move south. It is going to go slightly anticlockwise. They are predicting—it is a reasonable vagary—increased rainfall in south-west Queensland. You are across that, are you not?

Prof. Kingsford—Yes.

Senator HEFFERNAN—And decreasing rainfall in south-east Queensland. So we are pumping a million extra people in there but we are going to have less run-off. This means that the contribution of these rivers to the system may become increasingly more important. I think the sad news for the Coorong, much to the distress of environmental people, is that it is going back to what it used to be, and that is a sea set-up. If you look at the 40- or 50-year prediction, it is half a metre on the top of the barrage now. You are looking at about a metre. Have you got any commentary on that?

Prof. Kingsford—Well, I think the worry is that it will not necessarily go back to what it was. It might become hypersaline, like the Lower Coorong, if we do not manage to be able to flush out some of these areas. We have been doing aerial surveys over the Lower Coorong for 25 years. Those areas are becoming more and more saline and less productive environmentally for things like water birds. We know what places are like when they get too much salt in and seawater. They basically biologically cannot operate.

Senator HEFFERNAN—We were told they were three times the salt level of sea water, so it would make a bit of sense to get that out of the system. Now to the spear through the heart. Given the circumstances now—the dry spring and the possibility of a dry autumn—what is your recommendation for the Coorong given that the water in the system is all allocated? What is your advice to this committee as to what we should do?

Prof. Kingsford—I have thought about this. Obviously you are going to try and find whatever water you can. I understand there has been a bit of local rainfall that has helped out a bit.

Senator HEFFERNAN—That is true.

Prof. Kingsford—I would like to see how good the science is about mobilising the acid—whether the acid becomes really mobilised and how much it gets mobilised—and whether or not there are any rehabilitation techniques for stopping that happening.

Senator HEFFERNAN—We were given evidence there is, yes.

Prof. Kingsford—I would be a bit tentative about building a channel to take water into Lake Albert until you had explored all of those possibilities.

Senator SIEWERT—You mean sea water?

Prof. Kingsford—Sea water, sorry, yes. If you went straight across from Lake Albert, you would have to go through the Coorong so you would have to go through the two dunes. Then you would have hypersaline water potentially in the Coorong.

Senator HEFFERNAN—So should we pump that hypersaline out?

Prof. Kingsford—Well, it is going to be very expensive. These are not trivial issues. There is a lot of salt there now because it has not been flushed out.

Senator HEFFERNAN—You do not have any idea what that would cost?

Prof. Kingsford—I do not have any idea of what that would cost. Fundamentally, the issue is that there is not enough fresh water coming down. I just think we need as much science on this as possible just to see what the options are and what the future is potentially going to be.

CHAIR—On that, thank you, Professor Kingsford. Before we bid you farewell, I have one last question. Are you supportive of the government's recent announcement of a northern basin tender and of the

Commonwealth government's efforts to secure a range of agreements with the New South Wales and Queensland governments to secure passage for this water through smarter diversion rules?

Prof. Kingsford—Yes. I think if we can do that, absolutely. The more opportunity we have to get water to where it is needed, the better, as long as we are not robbing Peter to pay Paul along the way.

Senator HEFFERNAN—Where is that water proposed to come from under that statement you have just made there? Where are they proposing to get that water from?

Prof. Kingsford—I do not know.

Senator HEFFERNAN—I do not think they know either.

CHAIR—On that, thank you very much, Professor Kingsford. We do appreciate your time.

[9.02 am]

ELLIS, Mr Stewart, Chairman, Board of Directors, Murray Irrigation Ltd

GIBSON, Mrs Claire, Communications Officer, Murray Irrigation Ltd

CHAIR—Welcome. Before we go to questions, do either of you wish to make a very brief opening statement since we only have you for 30 minutes?

Mr Ellis—I would appreciate the opportunity, thank you very much. Very briefly, I am chairman of Murray Irrigation, which represents 2,400 farming businesses in the Murray Valley of New South Wales.

CHAIR—2,400?

Mr Ellis—Yes, 2,400-odd individual farms. Our area covers some three-quarters of a million hectares, or 780,000 hectares. We are adjacent to some Ramsar listed sites—the Barmah-Millewa and Koondrook-Perricoota forests. Our region supports a regional population of some 30,000 people.

Within Murray Irrigation, we are basically a general security water user group. We have a large general security licence. Irrigation water is actually not allocated to our licence until urban and high security irrigation commitments are met. I note that the terms of reference for this inquiry refer to a national emergency. I would certainly say that this national emergency is not confined to the Lower Lakes.

Senator HEFFERNAN—You are right about that, brother.

Mr Ellis—It is a crisis facing people, communities, industries and what-not in the area that I represent. In my paper, there are some examples of environmental disaster and acidification in river systems which are shut off to try to help with providing flows down the main stem of the Murray River system to actually help achieve some results there.

Within Murray Irrigation, we are just into our third year now of zero allocation. I guess in line with the national emergency, it is a disaster unfolding in our area as well socially and people-wise. There are some very sad, tragic cases starting to unfold as a result of a lack of water.

Within the river system, I would certainly say that, of the stored water, I am well aware that stored water basically underpins the critical water needs for the next 12 months. The water that is there is basically committed to make sure that we can supply critical urban and human needs. Where we sit currently with the winter flows having failed this year—and it appears the spring inflows into the storages are not providing much in the way of run-off—it could well be quite some way down the track before there are any further substantial flows into any of the storages. Certainly with the Upper Murray storages, I guess there is the opportunity for summer rainfall and flows down the Darling system, which might put water in Menindee.

So I just think we are all in a very, very tough situation. Within Murray Irrigation, we are certainly talking with DEWH and Senator Wong about water reform. We have been involved in several discussions with both the minister and her department about a package of measures that helps us as a community, as an irrigation company and as farmers adapt to climate change and work through a water reform process. We are well aware that we are going to be living with substantially different water supplies in the future. We are all part of the mix. Anyway, that is just by way of very brief introduction, I guess.

CHAIR—Thank you very much, Mr Ellis. I commend you, in your community, for still being able to smile. Now we really are short of time. We have an extended program today. I ask senators to make their questions as short and direct as possible. Mr Ellis, if we can come straight to the answer, it would be appreciated. I will kick off with Senator Hutchins and then I will go with whoever asks me for the call.

Senator HUTCHINS—Down that area are a lot of rice farmers. You get anecdotal advice that they use too much water and that rice is not really suited to be grown in Australia, particularly down that way, because there is not enough water. What is MIL's response to that sort of observation by a number of people?

Mr Ellis—Rice is grown when water is available. As you would be aware, within Deniliquin, the rice mill was a major employer within the town. It has shut down, as have several of the rice mills. There has been almost no rice grown in our area in the last four years.

Senator HEFFERNAN—Catastrophic.

Mr Ellis—Catastrophic impacts on the local community there. With regard to whether rice should be grown—

CHAIR—The claim by a number of people is that they are taking too much water and they have taken too much water before. This is why there is a number of these pending disasters along the system. I wonder if you could respond to that sort of claim by a number of people.

Mr Ellis—Rice water use now is averaging about 10 megs to a hectare. They are basically growing about a tonne of rice with a megalitre of water. That is where it has sort of headed. If you compare water use across a number of things—almond use is some 18 megs a hectare—there is a whole range of water use figures that you can look at. As we come out of this drought, we may find that the major impact, the absolute devastation and wipe-out, occurs across where people have the permanent plantings. Something like the rice industry or these more opportune type industries can spring up again because they do not have that perhaps huge overhead of the permanent plantings, which may be wiped out by a lack of water. I guess, in saying that, what I am saying is that I think there is a real place for rice in the Australian scene. The rice industry is certainly working furiously to develop new breeds of rice which may not have to be flooded and things like that.

Senator HEFFERNAN—Non-paddy rice is a commercial proposition now. That is what is up the coast. That is what is in the Northern Territory. Non-paddy rice, which I said five years ago was where we were going to go, is where we are headed.

Mr Ellis—Yes.

Senator SIEWERT—I asked this of another witness a little while ago. The issue that is raised is: can you sustain the overheads in the off years when you cannot grow rice opportunistically?

Mr Ellis—I think you are wrong. The ricegrower is in one type of industry that probably can. Many of our ricegrowers have had absolutely nothing for four or five years. If water were available, many of them could kick off and produce a crop almost immediately.

Senator SIEWERT—What about the mills closing down and things like that?

Senator HEFFERNAN—It affects the infrastructure.

Senator SIEWERT—Yes. That is what I mean. Can the mill start up again once you are growing again?

Mr Ellis—Well, at the moment, they certainly still have a mill operational in the Murrumbidgee Valley, which is to the north of us. They are maintaining the Deniliquin mill so it could fire up again.

CHAIR—Senator Hutchins. Then we will share what little time there is left between other senators.

Senator HUTCHINS—I have only a few quick questions, Mr Ellis. Again, it is sort of simplistic to say that we should not grow rice down there because it takes too much water when, in fact, as you are saying, there appear to have been changes over the last few years to accommodate what you have identified as pending difficulties with water supply?

Mr Ellis—I speak regularly with irrigators from everywhere. I have spoken again recently with South Australian irrigators. They were critical of the rice industry. They came up and had a look at the scale of our operation up there and what we can do when water is available and when we can gear up. After having a look around, they said, ‘The best thing you can do to help us is keep growing rice’, because they realise that if we were to shift 10 per cent of our water in a normal year when there is a water supply into growing whatever they are growing in the Riverland or wherever else, it wipes out their market. What I am saying is that I think there is a need for a broad mix of things now. The challenge for us all is to reach a balance between food production and water use for food production versus the environment and that sort of thing.

Senator HUTCHINS—We have had highlighted to us before the mill closing at Deniliquin. What other impacts are occurring as a result of the shortage of water now in your area, which you say is about three-quarters of a million hectares and 30,000 people? I cannot quickly do the sums, but that is a lot of hectares per person.

Mr Ellis—There are huge problems. As I understand it, Deniliquin is a town of some 8,000 people. As I understand it, there are 400 houses for sale at present in the town.

Senator HUTCHINS—If I remember, it employed a few hundred people, did it not?

Mr Ellis—The rice mill?

Senator HUTCHINS—Yes.

Mr Ellis—Yes. About 200 went recently. Of course, that was down substantially on what it would be when there is any harvest. It was at the end of two or three years of no rice that 200 went.

Senator HUTCHINS—So it is not just the mill. The ricegrowers cooperative would have had employment lost, I imagine?

Mr Ellis—Murray Irrigation is reasonably large. We employ 130-odd staff. We are certainly going down. We are under pressure to shut our doors and stop sending out a bill because irrigators, three years down the track with no water, are still receiving a fixed charges bill.

Senator HEFFERNAN—There is serious depression in the community.

Mr Ellis—There are huge problems.

Senator HUTCHINS—I know. I want to hear that from Mr Ellis and Mrs Gibson.

Mr Ellis—There really are some huge emerging social problems.

Senator HUTCHINS—This is my final question. What is MIL's views on the compulsory acquisition of water to meet environmental needs?

Mr Ellis—We are certainly opposed to compulsory acquisition. Irrigators have a property right to water entitlements. There is a market and trade there. The devastation of having carryover water suspended in New South Wales—it was 52 per cent of our carryover water in 2006—was caused by government interference in the market. That water was carried over water or water that people had gone out in the market and bought to set up their own drought management strategy. To have the government then pull the rug out from under them really did interfere with that market and the confidence people had that they could manage their own risk and security by entering the market.

Senator HUTCHINS—I just wanted to see what MIL's attitude was and put it on the record. Thank you, Mr Chairman.

CHAIR—Senator Hanson-Young has some questions.

Senator HANSON-YOUNG—Mr Stewart—sorry, Mr Ellis.

Mr Ellis—I answer to either.

Senator HANSON-YOUNG—You mentioned before that compulsory acquisition is a no-go in terms of the effect that you think it will have on irrigators. Keep in mind the fact that the crisis we are seeing not only in the Lower Lakes and Coorong but also in the other wetland areas throughout the system is because we actually have not had adequate environmental allocations. What do you think is the best and fastest way of ensuring that that happens?

Mr Ellis—The government is in the market buying water entitlements. I am not saying do not do that.

Senator HANSON-YOUNG—Do you think that that is efficient enough?

Mr Ellis—If you move to compulsorily acquire at the moment, you are still not going to actually receive any water. The sad reality is that there is no—

Senator HEFFERNAN—Purchase versus allocation.

Senator HANSON-YOUNG—So how do you see that we acquire in the most efficient way an allocation for the environment?

Mr Ellis—By what the government is embarking on now, you will achieve that in the long term. Sadly, the only way you are going to get water into the Lower Lakes and the Coorong is for it to rain. As I have said in discussions with Tim Fischer and Senator Wong—

Senator HEFFERNAN—D'oh, d'oh.

Mr Ellis—you can come to Murray Irrigation and buy 1½ million water entitlements and, sadly, carry it home in your briefcase because it is only a piece of paper.

CHAIR—The 'd'oh' was not a derogatory slur to your statement. Please do not think that.

Senator HANSON-YOUNG—Putting aside the emergency right now where we need freshwater flows for the Lower Lakes and the Coorong, we are also looking at the need for an environmental allocation throughout the system. Do you think that the government's approach is going to secure the allocation we need for the environmental flows effectively enough?

Mr Ellis—I think this water reform package, Water for the Future, is a 10-year strategy.

Senator HANSON-YOUNG—Do you think that is fast enough?

Mr Ellis—Well, I think things will happen. There will be parts of the plan that hit the table prior to 10 years. This needs to be a strategy that we all work through because we are all in it and it is going to impact on all of us. We must keep food production and the environment and everything in mind here. Sadly, there is no quick fix. Until we get rain and water in the dams—

Senator HANSON-YOUNG—Do you think that the basin plan being proposed at the moment will deliver the results fast enough for your irrigator members?

Mr Ellis—For a lot of them, no. A lot of them are now seeing it purely as an exit strategy. They are just saying, ‘You get me the best price I can and I’m out of here.’ That is part of the need for us to work closely with government and a 10-year strategy. We need to all think through this carefully so that it does not just become a decimation of our region to buy up water entitlements that are not actually yielding any water. We need to be very mindful of what is going to be left behind once we have been through this transit.

Senator HEFFERNAN—A whole lot of transit assets.

Senator HANSON-YOUNG—How would you like to see that fast-tracked?

Mr Ellis—I do not know that a lot of it can necessarily be fast-tracked. I think we have to do the planning. We have to work through the process. What I am saying to DEWH and the government is, ‘Work with us. We’re all in it together. Work with us. Don’t just arrive on the table with a book.’

Senator HANSON-YOUNG—But 10 years does not help your irrigator members.

Senator HEFFERNAN—That is what you call the market at work, though.

CHAIR—Mr Ellis, did you want to answer that, or are you just waiting for another question?

Mr Ellis—With some of the initiatives, if it starts to rain and there is water available next year, there will be substantial amounts of water in the environmental bucket as a result of the buyback that is happening and is ongoing. I am not saying stop that. I am saying work with the communities that are going to be impacted as well.

Senator HANSON-YOUNG—On another topic, you were talking before that when flows are good and rainfall is good, we should be growing rice. In relation to permanent plantings, how much water do you think is needed in New South Wales for permanent plantings? Obviously I understand that, with the changing seasons, it is hard to determine into the future.

Mr Ellis—Look, there is very little in the way of permanent plantings within my area of operation. There are certainly others. I could furnish you information, but I believe Andrew Gregson from the New South Wales Irrigators’ Council provided information there.

Senator HANSON-YOUNG—In terms of your 2,400 members, what is that water used for if it is not for permanent plantings?

Mr Ellis—When we have water available, it is for a broad range. There is rice, there is cereal cropping, there is dairy farming, there is annual horticulture like tomatoes and potatoes grown and that sort of thing. There is certainly livestock.

Senator HUTCHINS—Do they grow other things down there?

Mr Ellis—Yes. There is an emerging—

Senator HEFFERNAN—They grow everything from marijuana to pumpkins, mate. Can you tell us what the head licence of Murray Irrigation is volumetric?

Mr Ellis—The total licence?

Senator HEFFERNAN—Yes.

Mr Ellis—It is 1.4 million.

Senator HEFFERNAN—It is the biggest licence?

Mr Ellis—Yes.

Senator HEFFERNAN—I note there is a catastrophe at the bottom of the river. There is a catastrophe all the way up the river. It has not rained. The system is fully allocated. All the water that is in the system is contracted. So if they are going to send water down, they have to take it off someone it is contracted to. It is plain language. No-one wants to use it. They are all dancing around it. South Australia in 2006-07 got 99 per cent of their 11-year average and you fellas got three per cent. In 2007-08, South Australia got 66 per cent of

their 11-year average and you blokes got 30 per cent. So it is not as though you have not taken a fair share of the pain in this process. What is going to happen if it does not rain later this spring and next autumn? This time next year will be just a complete bloody wipe-out. Do you think that your growers, the industry and irrigators generally in the Murray-Darling Basin are figuring into their thinking about future allocations and that sort of thinking that just went on there that we are going to go back to what we were 50 years ago? That is given that science says we are going to lose between 3,500 and 11,000 gigs.

Mr Ellis—I think there is a growing recognition that times have changed. Probably 12 months ago, I could go out to an irrigator meeting and almost be shot down or thrown out of the room because I wanted to talk about issues like this that we needed to start to discuss as a community about the growing impact. Now I am almost overrun—‘Well, what are you doing? You’ve got to get together a package with the government that enables us to sell water entitlements and achieve some income’—because that is the only thing they have to look forward to in at least three years. When you look out, this season is probably going to be another zero. We have just come out of two zeros. We are probably heading into another zero. Given the dry sponge scenario in the catchments, irrespective of what happens, it could be biblical rainfalls and we would probably go into debt for the year.

Senator HEFFERNAN—The Riverina is actually destocking now because of not only the river wet problem but also the dry land is wiped out.

Mr Ellis—Yes.

Senator HEFFERNAN—So it is catastrophic. I will not use the language I would use normally. If we cannot go to some sort of fertigation and different crops, the answer on the rice question is the market takes care of that with the price of water, which is done with dairy farming. The price of water will fix up what you grow, so you end up growing marijuana.

CHAIR—That is why we were talking about rice in Kununurra. I understand that, Senator.

Senator HEFFERNAN—So non-paddy rice is a possibility now. But obviously with fertigation, if we lose that 3,500 as a minimum out of the system, we will have to go to non-furrow.

Mr Ellis—What I am saying is that is we need to work through this whole package strategically. We could all panic now and do some knee-jerk thing.

Senator HEFFERNAN—I agree with what you are saying entirely.

Mr Ellis—We have really got to work through this carefully.

Senator HEFFERNAN—I agree with you entirely. The solution is not these symbolic things like Tooralie. We are going to return probably 7,000 or 8,000 megs to the system. It will get halfway down to Wilcannia and that will be it. Mike Young says that we have to go back and redraw the plan for the system against the science of the future. So how silly is it that if we got savings out of the Goulburn River with better piping et cetera, you would actually take that water, against the scenario of losing 3,500 gigs, and send it to Melbourne instead of sending it down the system? Does that make any sense?

Mr Ellis—That is a concern for all of us reliant on the Murray system, I think. It is a system. The more water that is taken out of it, there are impacts right along it for all of us.

Senator HEFFERNAN—But that impact, because of the discounting and the disproportionate return of the run-off drops to the freight component of the river, that 75 gigs, would be very important, even if it was just a freight component for the future, would it not?

Mr Ellis—That is right, yes.

Senator ADAMS—Thanks for your presentation. On page 5, you have said here that Murray Irrigation’s view is that South Australia needs to take greater responsibility for providing solutions to the issue that they confront. Can you give me an example? Do you think they should be taken off the Murray completely and have storage dams and desalination plants? Would that help the system? What is your view on this?

Mr Ellis—I think all options need to be on the table. Change is here. Change has arrived. It is going to impact on all of us. We have to look at what all the options are and the bigger picture. There is a balance between water for food production and water required for environmental needs. I think we need to consider all the options. If there is an environmental disaster occurring from a lack of water in the Lower Lakes, what other options are there? Probably no-one wants to go there. But we have to look at what all the awful sorts of

options are. The gentleman before me spoke about selecting environmental areas that you need to keep and others which maybe you cannot keep and you need to let go. We have to make all sorts of awful decisions.

Senator ADAMS—You also comment on soils and state that it is not just the Lower Lakes that are having problems with salinity. Could you just give me an idea of what the salinity issue is around where you are or what you cover? Is it getting worse?

Mr Ellis—Yes. There has certainly been a saline issue, mainly as a result of high water tables back in the 1970s. We certainly had an emerging salinity issue throughout parts of our region, largely, I guess, due to lower allocation years and lower water use. But certainly some improved farm practices and the huge benefits achieved as a result of the land and water management plan works have largely got a lot of that sort of stuff under control. We have certainly learnt to live and control that sort of problem a lot better. But some of this stuff that is really popping up now is a result of certain rivers and streams that have been shut off deliberately. They are anabranches of the Murray River—the Wakool, Niemur, Colligen Creek and Merran Creek. They are all streams that have actually been shut off and are drying out so that the water can run down the main stem of the Murray to reduce the transmission losses. You have a local community there. They say, ‘Well, why can’t I have some water running down my stream when it is running down that one?’ There are all sorts of issues there. I can understand why people get angry about that. I live personally just to the west of the Werai State Forest. It is not listed there, but it is quite a substantial forest to the west of Deniliquin. The Niemur River flows through that just some kilometres from my property. To see the hundreds and hundreds of Murray cod dying in the holes as they dry up there just breaks your heart, but that is what is happening. Some areas have acid sulphate soil that is popping up through the river beds now and that is creating huge problems.

Senator ADAMS—I have just one quick question. So you would believe that we need an overall look at this with all governments cooperating?

Mr Ellis—That is the only way it can happen. It has got to happen. We are all in it together. We must work at it together.

CHAIR—Mr Ellis and Mrs Gibson, thank you very much. Senator Hutchins and I were just saying you are definitely a man of the land, Mr Ellis. Neither of us would like one of those hands around our throat. Thank you very much. Perhaps we could borrow your hand. Senator Hutchins said he would like to put it around someone else’s throat.

[9.31 am]

KOWALICK, Mr Ian John, Private capacity

MILLAR, Ms Ilona, Private capacity

COSIER, Mr Peter Aubrey, Director, Wentworth Group of Concerned Scientists

HARVEY, Mr Richard, Member, Wentworth Group of Concerned Scientists

THOM, Professor Bruce, Member, Wentworth Group of Concerned Scientists

WILLIAMS, Dr John, Member, Wentworth Group of Concerned Scientists

YOUNG, Professor Michael Denis, Member, Wentworth Group of Concerned Scientists

CHAIR—I take this opportunity to welcome representatives from the Wentworth Group. Mr Cosier, do you wish to make a very brief opening statement before we go to questions?

Mr Cosier—Yes. Thank you very much. I would like to make a brief statement. I promise it will be five minutes. With your indulgence, I also wish to table our submission that we would like to present today. This submission is from the members of the Wentworth Group and other specialists whose names appear on the document. We have brought some of those people with us today to answer questions that the committee might wish to ask.

Our submission addresses two issues. First of all is the long- and short-term management of the Coorong and Lower Lakes. Secondly, we also wish to propose a way of quickly addressing the overallocation of water in the Murray-Darling Basin. These two are interrelated because it is impossible to secure the long-term health of the Coorong and Lower Lakes unless we also address the overallocation of water.

I will turn specifically to the Coorong and Lower Lakes. In their current condition, the barrages should not be opened with floodwater to flood the lakes with sea water. This would cause irreversible damage. Instead, the Commonwealth should guarantee 300 to 400 gegalitres of river flows into Lake Alexandrina and Lake Albert to secure a sufficient reserve to maintain lake levels at no lower than minus 0.4 AHD this summer and, thus, avoid any significant release of acids this coming summer and autumn. If it proves that such flows are not available, then as a last resort, a shandy process of allowing sea water into Lake Alexandrina should be undertaken. However, this should only occur once acid release is observed and is not buffered by existing lake waters and other techniques of coping with acids are shown to be ineffective.

Consideration should also be given to pumping out 50 gegalitres of hypermarine water from the southern Coorong. This will get us over this summer. But it would be a catastrophe if we wasted this opportunity provided by the recent local showers in the local catchments. We therefore also recommend that the Commonwealth establish a commission of inquiry into the Coorong and Lower Lakes to assess the scientific and engineering options for securing the long-term health of the Coorong and Lower Lakes, including engineering options for downsizing the system upstream and managing the entrance waters, recognising the likely prospects of permanently reduced end-of-river flows.

Our submission also addresses a second issue, and that is the gross overallocation of water resources in the Murray-Darling Basin, which is at the heart of our problems. We are proposing a pathway to radically accelerate the recovery of water for the environment by combining the existing \$3.1 billion water buyback with the \$5.8 billion infrastructure programs, subjecting all funding to a common environmental cost-benefit analysis and bringing forward this expenditure over two years. The institutional vehicle for doing this would be for the Commonwealth to adopt an interim basin plan, which we believe could be produced in a matter of weeks.

We understand the magnitude of what we are proposing, so let me put a case for why we believe it is necessary. In preparing this submission, we commissioned an analysis of the existing scientific literature and most recent modelling to establish just how much water is needed to achieve the objectives of the National Water Initiative and the Commonwealth's 2007 Water Act. The magnitude of the adjustment is massive, beyond anything that has been contemplated in the Australian community to date. If we are to maintain healthy rivers and provide high quality water to produce food, our analysis suggests that we need to return over 4,000 gegalitres of water to the rivers, which will result in the consumptive use of water across the Murray-Darling Basin having to be cut by between 42 and 53 per cent.

We have sought to set out the case on social and economic as well as environmental grounds that it is in the public interest to quickly reset the allocation systems across the basin. Firstly, from a river perspective, it will allow a speedy downsizing of consumptive water use, giving rivers, floodplains, wetlands and the Coorong and Lower Lakes estuary the water they need. Secondly, it will quickly end the uncertainty in regional communities about when, how and where the government will intervene in the water market. Thirdly, it will provide an important social dividend by providing a financial opportunity for business to either upgrade and modernise their on-farm water use or, should they choose to do so, exit the industry.

In conclusion, our message is that circumstances now dictate that Australia has to make a choice. We can ignore the environmental and economic catastrophe across the Murray-Darling Basin or we can confront this issue head-on and put in place measures to correct the damage. The science says that if we spend the money that has already been appropriated by the parliament wisely and quickly, there is a high probability we will restore the rivers and floodplains to sustainable levels and be put in a far better position to confront the new challenges that are rapidly bearing down on us. Thank you very much.

CHAIR—Thank you, Mr Cosier. Before we go any further, we are joined online by Senator Xenophon. Are you still there?

Senator XENOPHON—Still here.

CHAIR—Senator Birmingham has also just dropped in.

Senator BIRMINGHAM—Good morning, everybody.

CHAIR—Senators, we have the Wentworth Group and others. We will go to questions. If you have questions online, please let me know that you want to ask them. I shall start with Senator Heffernan.

Senator HEFFERNAN—Thanks, boys and girls. With your calculations in that plan to combine the two funds, declare an emergency and send 400 gigs to the bottom, where is it going to come from?

Mr Cosier—I will let John Williams answer that question in detail. We are not proposing that the buyback would provide 4,000 gigalitres of water tomorrow because that just does not exist.

Senator HEFFERNAN—This committee is about what we are going to do now. We have been told in the last couple of days that we can possibly battle our way until March. If it does not rain, what do we do then? Where does the water come from?

Dr Williams—Well, the 300 to 400 gigalitres of flow to get the system out is what we believe to be needed. You really need to get the audit in place—we congratulate you on the fact that that is underway—to know where the water is. With the purchase, you purchase it so that it can deliver that. If it cannot, our submission goes to a shandyng option to address the problem. At the fundamental—Bruce Thom can give more detail on it—the current bottom of the Murray system is not as it was. It was an estuary. We think there are ways of bringing it back to being a functional estuary, but that is a mixing of flow as well as ocean water.

Senator HEFFERNAN—But what you are talking about is buying water that is already contracted, surely.

Dr Williams—Well, it can be contracted. It will be contracted and available. We need the audit to know where it is. That is the problem.

Senator HEFFERNAN—But we have been told in these hearings that there is nothing left in the system that is not contracted other than the contingency for urban areas.

Dr Williams—Yes. I understand that. That is what the crux of the issue is. The purchase of that contracted water is the bottom line.

Senator HEFFERNAN—Okay. Can you advise the committee whether the climate conditions that we have experienced in the last three or four years are like those going back to the federation drought?

Dr Williams—Yes. I think so.

Senator HEFFERNAN—Do you think it reflects the science we are being told about regarding what the future holds for the Murray-Darling Basin? This is about where it will be over in 30 years.

Dr Williams—Well, I think so. Our analysis of the long-term data—it is 120 years of data—suggests that the current allocations that we have made in the Murray-Darling would have failed in the federation drought just as it has now and would have failed in the 1930-40 drought, just as it has.

Senator HEFFERNAN—So if the science is telling us that this is the way it may well be permanently, we definitely have to go back and redraw the whole game.

Dr Williams—That is my view. I think it is prudent for any society to be able to build a sustainable system that can cope with what we know we have had. From any estimates—the CSIRO work is what we base our analysis upon—our current system would fail if we had our first 50 years of federation rainfall pattern.

Senator HEFFERNAN—Against the science of the future—I am trying to get people to take ownership of the future rather than dream about the past—if I were a big old Murrumbidgee cod laying in a deep hole along a river that looked like it was going to stop running, I would love that 75 gigs of savings in the Goulburn River to come down and give me a drink. Have you got anything to say against the science of the future, not against the experience of the past? Would that not be vital water?

Dr Williams—It is critical. One thing is that at the moment our current system means that, under the pressure of the drought time, we are actually consuming upwards of 85 per cent of the river system. In higher flow times, it drops to 25 per cent. That consumption at such a high level that we have now is absolutely detrimental to the functioning of the river as a living entity.

Senator HEFFERNAN—So it would be better used surely against the future rather than be flushed in dual flush toilets in Melbourne and to give my poor old Murray cod a drink, would it not?

Dr Williams—Well, I reckon that is what society has to decide. The science says yes. Society may choose to water the lawns in Melbourne and let the river die. That is a societal decision. But the science says that that water will keep the river living.

Senator HEFFERNAN—I will go back to the present strategy, which scares the hell out of me, of spending money on Tooralie. In the present emergency, where that is some sort of a plan for entitlement for the future, are there some dangers for the government in, as it were, symbolically buying properties to somehow be seen to be doing something which is actually in effect a waste of time in the present circumstances?

Dr Williams—Well, the water from that station will certainly do good things to the Darling wetlands and systems—there may be some of your Murray cod mates who will benefit—but it will not address the problem. The Darling system is the Darling system and the Murray system is where our crisis needs to be addressed.

Senator HEFFERNAN—We are only talking about 8,000 megs. The Darling has actually stopped flowing. I know it is in the storage. There is a bit of dreaming in the papers about 90 gigs or something. Thanks very much. I will come back.

Senator SIEWERT—I want to address some of the big picture issues and then Senator Hanson-Young will specifically address the Coorong. If I understand what you have just said and in your submission, which you have just circulated, what you are saying is that we need to cut water use by 50 per cent, if you take the average?

Mr Cosier—What we are saying is that if you acquire the amount of water that is required to keep the river systems healthy, given what is likely to be our future climate change, the impact of that would be a reduction in the amount of water used for consumptive use of between 42 per cent and 53 per cent. It does not mean that is a reduction in food and fibre production, but it does mean that those systems need to become far more efficient users of water.

Senator SIEWERT—You are saying that that has to happen sooner rather than later?

Dr Williams—Absolutely.

Senator SIEWERT—I am not trying to put words in your mouth. The basic point is that the plan the government has in place now, which is the same as the previous government's plan, is 10 years. If I understand what you are saying correctly, it has to happen much more immediately than that. It should start now?

Mr Kowalick—I will comment on that. It obviously implies that if you cut diversions for irrigation use substantially, there is a huge adjustment that is going to have to happen in the whole basin. The adjustment pain is happening now. I think people do not understand just how desperate people are all along the Murray. They need information. They need the action now. Doing it based on a plan by 2011 and then beginning will be too late. The adjustment process will be disorderly and there will be a lot of unnecessary pain.

Senator SIEWERT—This adjustment is going to happen anyway because we are having a reduction of rain and then inflow. We have already had evidence from CSIRO that our inflow is in fact reducing much more rapidly than predicted. In other words, this adjustment will happen. It can happen either in an organised and structured way or it can happen where people just go out the back door over the next period of years.

Mr Kowalick—Yes. That is the basic proposition.

Senator HEFFERNAN—That is what we call the market.

Senator SIEWERT—Yes. I would rather have it structured. Therefore, what you are saying here in your submission is, ‘Let’s get on the front foot and invest the money that we are talking about over a 10-year period much more rapidly in a much more structured way.’ I think I heard Mr Cosier say you combined the two big pictures, which is the water buyback and the efficiency into one to buy water but over a couple of years. Do you then need more money for restructuring?

Dr Williams—In our submission, we say yes. We say we need to get the social trauma issues separated from the free working of the market. The social trauma issues, as Ian has said, are huge. What we are saying that we are confronted with is that we can do a lot better with the water if we reduce it by 50 per cent. As you see on page 12 of our submission, there is simple evidence that there is quite a scope for putting that water to a more effective economic outcome. But what we do recognise is that to do that we need the buyback scheme running coupled with facilitating structural adjustment of the irrigation sector, as we set out on page 15.

Senator HEFFERNAN—I want to ask a question about the buyback. I think Senator Xenophon would be alert to this. Doctor, if we go into the market with a buyback—and there has been some talk that it ought to be double the market or something, and you are buying entitlement—and if I am a farmer and the bank says, ‘Brother, you’ve had it. Sell your water’, and I sell my water and then I say, ‘Well, I’ve got this water at this generous price’, I go into the temporary market and then I distort the temporary market and then everything is out of kilter.

Prof. Young—Let me try and talk first about structure. The structure which is wrong is the sharing regime. The most important thing to get right is to restructure the sharing regime. That is what buying entitlements is about. That will induce many more changes. Those changes have to come quickly. The thing, as Ian Kowalick has said, the community lacks is information about what is really happening and information about where the system is going. If we restructure the system and say with clarity there has to be a share for the environment, we have to commit to a minimum amount of water for conveyance and maintenance of the system—we take that out first and share the rest—and then communities can plan and bank managers can plan. But until we have that clarity, we confuse everybody. We make many, many investment mistakes of the type you are talking about—

Senator HEFFERNAN—Hear, hear!

Prof. Young—because nobody knows where we are going. The critical thing that Australia needs to know now is: how are we going to deal with this problem in black and white? That means we have to compress the planning process and tell people what we have all been talking about. It is not a secret. It is simple language. We know the direction. We know the intent. We have to flow with the decisions as fast as the river is changing its flow.

Senator HEFFERNAN—Because what we are talking about is a reduction of at least 50 per cent in the water that is available for work. Simple.

Prof. Young—That is right.

Dr Williams—But our submission has made the case that with a proper restructuring of our irrigation industry, where we get the best soils in the best place and all that sort of stuff, we can turn that water into producing using the market signal to make sure that water produces the most dollars. Bear in mind that resilience is as important as efficiency in doing that analysis. Then I think we do not necessarily have to take a cut in wealth generation. The analysis that Mike has done—and I will quote him, because it is simple; I will give a simple version—is that, done well with water use efficiency gain, there would be very little reduction in wealth generation from regional Australia if we reallocate that water wisely and cleverly with a proper structure and readjustment process.

Senator SIEWERT—That implies that just leaving it to the market will not work because the market is not necessarily going to do what you have just said.

Dr Williams—The market has to be freed up so it works. So this issue of four per cent caps on trading out of irrigation companies has to be addressed. The issue of states putting legislation in that restricts trade with water and land has got to be addressed. When you have efficient markets, that will be a very powerful driver for innovation and change coupled with a structural adjustment approach that makes sure we generate the maximum wealth and resilience from the water we can afford to take out of the system.

Senator BIRMINGHAM—I am sorry to cut across whoever is asking questions at present. The efficiency of the market is also behind advocating the government getting in and out of the marketplace as quickly as possible rather than it being the major player in the marketplace for a 10-year period.

Prof. Young—Yes. Precisely. That is exactly what we are saying. There is a role for government to reset the system. The government has to get out of it. It also has to be very, very careful in terms of how it invests in infrastructure. If there is a major change to be taken and the tendency of governments is to favour one area over another area—this is difficult—the reality is, and the Australian experience over all of these difficult periods, is that governments have made massive mistakes and caused a lot of harm by trying to structure change rather than to facilitate it and expedite it. There are some very important welfare issues to be dealt with and some towns which are very worried. That needs to be done through a separate process. Our submission highlights and draws attention to the fact that it is important to get water management right and then get the adjustment process right but not to try and use water to solve social problems. There is a nexus between the two, and it is important—

Senator HEFFERNAN—Hear, bloody hear!

Prof. Young—that we get the water accounting right. Once we get the water accounting right, we know what we are managing. Everybody knows what we are managing, and we can plan the future. If we do not do that, the counterfactual—as economists talk about, which is what happens if we do not do this—is an absolute disaster. Communities are now starting to realise that. That is the big shift in Australia in the last six months. Communities are now understanding.

CHAIR—Senator Siewert has the call.

Senator SIEWERT—I have one more question. Then I want to throw to Senator Hanson-Young specifically about the Coorong. I just want to get the sequencing right here. The story is 10 years is too long because it is going to be death by a thousand cuts, basically. You do it quickly. You come in. You are reshaping your sharing regime and making sure you have a chunk for the environment. Then the market takes over once you have reshaped the playing rules. Then you do your readjustment on top of that. Have I got the story right?

Prof. Young—With one qualification. The market takes over, but the environmental managers take over as well, because they will then have an allocation which is there. They will have to take some very difficult decisions too. It is not just the irrigation community. Both sides are facing a crisis. Both sides need to be empowered to solve it.

CHAIR—Mr Cosier, I know you were trying to get someone's attention. I just urge, gentlemen, as the time is short, we have a lot of questions to ask and you have a lot of answers to provide, that we coordinate. Mr Cosier, I will go through you and look for your lead, although all your points of view are valid and very important. Mr Cosier, do you want to add something?

Mr Cosier—Yes. In answer to Senator Siewert's question, I think Mr Kowalick has some experience in both the banking sector and in structural adjustment which might be useful in answering your question about the advantages of pulling forward the 10-year program into a two-year buyback.

Mr Kowalick—I think the first point to make is that we are not short of information. There is a huge amount of information in state government agencies. There is a lot of information in the Murray-Darling Basin Commission. There is a lot of information in CSIRO. We can know what to do. The problem we have is that if we just leave it randomly to the market, it will be suboptimal. I will give you an example. I know something about the Riverland area of South Australia, having grown up there. We have got in some of the old soldier settlement irrigation areas things that were suboptimal in the 1970s. They have turned from being commercial properties now to well below minimum economic scale. They are a part-time occupation and they have a very inefficient use of water. The South Australian government and the Commonwealth are already doing some things to address it. That is an example where lots of consolidation can make big improvements. These people are not bankable. In the current environment, with the pressure on banks about credit, they are not going to be bankable in that form unless somebody intervenes to facilitate it.

Whilst you have to avoid getting involved in the handout mentality in structural adjustment, there are examples in Australia in the past where we have done it well. In the 1970s in the dairy industry, there was a very radical change in parts of Australia. It was done not trying to give handouts to accelerate the process and bring some fairness into it. So we have the expertise. We have the information. We just have to have the will to get on with it because it will be too late if we delay.

Senator HANSON-YOUNG—I will bring it back to the Lower Lakes and the Coorong, if I can. How long do you think we have before we have to put this 300 to 400 gegalitres back into the lower system?

Prof. Thom—That question is a very difficult one in the sense that we have to manage the levels of water in the Lower Lakes, particularly Lake Alexandrina, which, as you are well aware, has now dropped below mid-sea level, or AHD. If it continues to drop substantially below its current level and stays low for a substantial period of time, particularly during summer months, the risk of release of acids from those areas where the acid sulphate soils have been shown to exist creates a problem for the release.

Senator FARRELL—Are there any proposals to actually do that—to turn Lake Albert into an ephemeral lake where that will create the acidification problem that you are talking about?

Prof. Thom—Not necessarily. What we first of all want to approach, in answer to Senator Hanson-Young's question, is to try to have sufficient water in the systems to enable the water levels to not expose those areas of acids. We have some great uncertainties here, as I am sure you had explained to you by Dr Fitzpatrick from CSIRO, with respect to the acid sulphate soil issue. By maintaining water levels around their current level, it appears now that we will not get that release of acids. The difficulty is that if it gets much lower, then, as I said, you are likely to get over time a release. A lot of that depends on the nature of those soils. The sandier they are, the faster the release. The more clay they are, the slower the release. What we have learned from the science is that if you start flooding those soils with seawater, the changes to the chemistry of those soils can be catastrophic. I think Dr Fitzpatrick outlined that to you. Work that has been done in the New England area of the United States—I can give you the reference—indicates the difficulties of rapid flooding of freshwater marshes with salt water. What we are suggesting, in the absence of getting 300 or 400 gigs down the system, is to have some input from the sea to give you a shandy to just maintain that level but only doing that after you have observed damage to the environment through the release of acids.

Senator HANSON-YOUNG—Thank you. Do you think that the government's current water audit is going to be able to find the water we need for the Lower Lakes in the Coorong in terms of saying, 'Okay, we need to find storages or water released into the Murray section as opposed to further upstream in the Darling?'

Mr Cosier—Senator, we have welcomed the audit. Until we get the audit, we cannot answer your question. But we believe that if the audit is an audit not just of how much water is in each storage system but what water might be available to be released to get to the Lower Lakes, if it answers that question, we will be in a far better position to do it. So we have welcomed the audit. But until we have it, we cannot really answer your question.

Senator XENOPHON—I have a supplementary question. Further to what Senator Hanson-Young has asked, does the panel, in particular perhaps Ian Kowalick, given his role on the commission, consider that the scope of the audit and the nature of the audit are forensic enough to get the answers we need?

Mr Kowalick—Well, I am not wearing my hat as a commissioner but as a private individual. The audit could go further. But I think we have to be a little careful about the accuracy with which you can do the audit anyway. If you are talking about buying water, the availability of water is a bit like the availability of natural gas. It depends on what price you want to pay for it. The size is a function of how much you are prepared to pay. The current audit is a starting point, but you can keep on refining it, if you wish to.

Senator HANSON-YOUNG—Are you aware of public or private storages in the southern parts of the Murray that could be used if we were able to acquire them?

Mr Kowalick—There is some water outside the regulated system that is around that I am aware of, but the quantity I could not say.

Senator FARRELL—I want to take up that comment you made earlier. You are really saying that there is plenty of information around at the moment. I am just wondering whether we really need another interim plan. The government does have a plan at the moment. The plan at the moment is to try and buy back water. Senator Heffernan has been critical of it today, but that is the plan that the government has got. We have started the process. Is not the government's plan—namely, buying back water to try to get into the Lower Lakes—the quickest way of solving the immediate problems in the Lower Lakes?

Mr Kowalick—The government's plan to do those things is fine, but if you accept that the structural adjustment issue is a problem, the plan that we need is the plan that gives information to people making key investment decisions right now. People are faced with, 'Do I go out and borrow a whole heap of money to buy water? Do I sell my water rights? Do I go out of business?' What we need is a basin plan that gives people enough knowledge of where the basin is likely to be. You can make your choices. If you know that there is a

reasonable probability that we will have diversions 40 per cent less than we have now and if you are not well-capitalised et cetera, you may take the choice of selling your water. You may make the choice of trying to get extra capital and make investments. That is where the information gap is.

Senator BIRMINGHAM—Well, the key problem that is highlighted—

CHAIR—Sorry, I have to interfere there. Senator, you are coming across the top. We had a quick meeting this morning in which we decided that that is acceptable if it is all right by the questioner. I urge you, if you do speak, to say who is on the line for the purpose of Hansard. Your colleagues are all shaking their heads intently waiting to hear the answer and another question from Senator Farrell. Who is it out there anyway, sorry?

Senator BIRMINGHAM—It is Simon.

CHAIR—Between your colleagues, you will have a go later as we get further through the morning on this same topic. Senator Farrell.

Senator FARRELL—I am not sure whether Mr Kowalick—

Mr Cosier—I could perhaps add to Mr Kowalick's comment. Yes, a basin plan is an essential ingredient for the long-term management of this system. It will be a plan that will be amended and adapted and adopted probably for the next 500 years, because that is how you need to manage the system. What we are arguing here is that if you put some new structure around the money already appropriated for the buyback—some cost-benefit analysis structure and change the rules for buying that water and spending money on infrastructure—that can be done through an interim basin plan, which can be done in a matter of weeks. You would get a far greater cost-benefit outcome by doing so as well as all the social and economic benefits that come with the acceleration of the buyback.

Senator HEFFERNAN—It would be fair to say that the \$23 million or \$24 million spent on Tooralie would buy a damned lot of water under that plan down the bottom along the Murray.

Mr Cosier—But, Senator, you might find under the cost-benefit analysis done under the interim plan that the purchase of water at Tooralie provides a very important environmental benefit for the Warrego River.

Senator HEFFERNAN—All that is in the long-term future.

Senator FARRELL—I will come back to that topic. We have a crisis now in the Lower Lakes that we need to fix immediately. All of what you have been talking about is a longer term plan to solve the problem. What I guess I am saying is that the government has an immediate plan to try to fix the problem. It may not work, but we have a plan to try to fix it. That plan is to buy water and get it back into the river system. Is that not the best plan that we have right at this very point in time?

Mr Cosier—Well, we have two issues. You are absolutely correct. We have an immediate crisis in the Lower Lakes and Coorong and we have an immediate crisis in the Murray-Darling Basin system. We have tried to address both of those in our submission. Going to the Lower Lakes, we actually do not have a plan. The reason that the communities are fighting each other up and down the river and the reason that you have had, as I understand it, hundreds of submissions on how to fix the problem in the Coorong and Lower Lakes is that there has been a lack of leadership in South Australia on how to deal with the short-term issue of the Coorong and Lower Lakes. It is not like we have been surprised that all of a sudden the lake has dropped half a metre. This has been happening over a decade. We have had dredges trying to—

Senator FARRELL—With all due respect, the federal government does have a plan. The plan is to buy water to try to get it back into the system to see if we can revitalise the Lower Lakes.

Senator BIRMINGHAM—I think, with all due respect, that is action, not a plan. Worthwhile that action may be, the witness is highlighting that there should be a plan.

Senator FARRELL—Call it action; call it a plan; call it whatever you like. But—

CHAIR—Sorry, Senator Farrell. A senator has asked a question of a witness. It is up to the witness to answer, not other senators.

Mr Cosier—I will just give a brief response. Perhaps Ian Kowalick would also like to add to that. We absolutely welcome the Commonwealth's acceleration of the buyback. In the last 12 months, there has been a dramatic acceleration of the buyback program in Australia. We greatly welcome that. With respect to the—

Senator FARRELL—I appreciate that comment.

Mr Kowalick—I can add to that. I think that everything that is being done is good. We just need greater urgency about it because the damage will be so significant, it may be irreversible if we do not accelerate the process. To be able to accelerate the process, we actually have to give a lot more information to people making decisions.

Senator FARRELL—But if we can find the water to purchase to get to the Lower Lakes, that is the quickest way to solve this immediate problem we have in the Coorong, is it not? This inquiry is about the Lower Lakes. I appreciate that we have heard lots of information about—

Senator SIEWERT—The first bit of our inquiry is about the Lower Lakes.

Senator FARRELL—What we are dealing with at the moment is about the Lower Lakes.

Prof. Young—I want to make a very important distinction. I stress that it is important, in talking about water, to understand when we are talking about buying water entitlements and when we are talking about buying volumes of water which are in the system now. What we have been talking about so far is buying water entitlements. There is a short term and there is a long term.

Senator FARRELL—We do appreciate that distinction. I think every speaker has made that distinction. I think the committee is well aware of the differences between buying entitlement and actually getting the water down the river. But it seems to me that if you do not start buying the entitlement, you have no chance at all of getting the water into the river.

Mr Cosier—Ilona Miller might also have some thoughts on the impediments to the current buyback scheme.

Ms Millar—In terms of the buyback, obviously we welcome the buyback. But there are impediments to getting the volumes of water that might be necessary to meet environmental flows and to provide environmental values. So the four per cent limit on trade out of irrigation districts and the issue of unbundling water licences within Victoria, they all provide hurdles, which means that, for example, you need to buy back over a much longer period of time because of those impediments rather than be able to buy the water back more quickly.

Senator SIEWERT—Which licences in Victoria? I missed the first word you said.

Ms Millar—From the irrigation corporations.

Senator SIEWERT—The four per cent. You said the issues in Victoria are the four per cent and then something about the licences.

Ms Millar—Sorry, the unbundling of the licences.

Senator SIEWERT—Unbundling. Sorry. I missed that word.

Senator FARRELL—I have another question. I am not sure quite who to address it to. It relates to this issue of purchasing water on the temporary water market. Do you view that as a good way of solving the immediate problems we have of getting environmental flows down the river?

Mr Cosier—I will try to give you the short answer. If I get it wrong, I am sure my colleagues will assist me.

Senator FARRELL—We will go for the short one.

Mr Cosier—They will correct me in the error of my ways. The circumstance, as I understand from evidence you got yesterday and the day before, is that the lake levels are coming up a little more. We are now at about minus 0.1 AHD.

Senator FARRELL—That is actually a bit higher than we heard yesterday.

Mr Cosier—Sorry. I misheard yesterday.

Senator FARRELL—I think it was 0.18.

Mr Cosier—When this inquiry first started, we were looking at levels far below that. If we did not have those local catchment showers, we would have been in serious crisis. It appears that the likelihood of that happening is now lower in terms of this summer's risk. But as Senator Heffernan has pointed out, that gets us through this summer. Then we have to worry about the next summer. What our submission suggests is that there is a concertina of decision-making that needs to be done in the next few months to make sure that we do not get those lakes turning into battery acid. First of all, that is to secure the volumes you need. But you may not need them. We do not have the information on the audit, so we cannot go any further than that, on our

advice. If we find the audit does not have that water and it is needed, do not drop the barrages and fill those lakes up with water, which is where the community was two months ago when this inquiry started, because that would be catastrophic to then start shandyng the water. We believe, on the advice we have, that there is sufficient scientific evidence to allow us to manage our way through this crisis over this summer. But it would be very prudent to secure 300 gigalitres in case things go bad.

Senator FARRELL—This is the question I asked Dr Thom a moment ago. Part of your submission for the urgency is, using your words, to decommission Lake Albert. Does that not create the acid sulphate problem that we are trying to avoid?

Prof. Thom—Not necessarily, Senator. What we have done here is put forward a number of options. One concern I have is the link between the present crisis and the future crisis when we are looking at the conditions that are going to emerge under climate change scenarios that we have studied and which CSIRO has articulated. There will be the continued reduction of freshwater flows into the Lower Lakes and into the Coorong. What are the options available to us to manage the situation in the longer term? We know that, since the barrages have been there, we have had a significant increase in shoaling inside the entrance, which has substantially reduced the capacity of tidal exchange. So we have the possibility of a number of engineering type options before us to look at. The idea of decommissioning Albert is just one of those ideas that we believe should be looked at carefully by a commission of inquiry, particularly if it is done in a sort of a slow, monitored way, to make available the possibility of 200 gigs. But it may not be the preferred option for that area, given a better understanding of the nature of the soils and the conditions of the two lakes.

Senator HEFFERNAN—Which is what they wanted to do in 1906, by the way.

CHAIR—Senator Farrell, Senator Hutchins has some questions, as do others. Do you have any more questions?

Senator FARRELL—No.

CHAIR—Senator Hutchins. Then we will go to Senator Adams.

Senator HUTCHINS—Thank you, Mr Chairman. Mr Cosier, you are not a South Australian?

Mr Cosier—Well, I—

Senator HUTCHINS—You are, then, are you?

Mr Cosier—I am a South Australian living in Sydney at the moment.

Senator HEFFERNAN—He is a café latte bloke.

Senator HUTCHINS—Dr Williams, you are not a South Australian, or Professor Thom?

Dr Williams—No. I am not a Monaro boy, yes.

Senator HUTCHINS—Ms Miller is not.

Mr Cosier—Professor Thom is not.

Senator HUTCHINS—But all the rest of you are. You are from the University of Adelaide, are you not?

Prof. Young—No. I am an Australian. Everything I do in the basin is carefully—

Senator HUTCHINS—I am going to ask my question, if you do not mind.

Prof. Young—No, Senator.

Senator HUTCHINS—No.

CHAIR—Senator Hutchins has the call.

Senator HUTCHINS—We heard from Professor Kingsford from the University of New South Wales this morning that there are other environmental priorities along the Murray River system apart from the Lower Lakes. He used the term ‘robbing Peter to pay Paul’. Do you see in some of your proposals that that might be the case, particularly with Menindee Lakes and how vital ecologically they are?

Mr Cosier—Perhaps it would be best if a non-South Australian member here spoke to that. I might pass it to John Williams and Bruce Thom.

Dr Williams—As for New South Wales and Queensland—I am never quite sure who to barrack for in the State of Origin—to me, there is truth in what you say. The whole ecosystem—the floodplains and the wetlands—of the Murray-Darling system are having serious problems. They have not got sufficient water. That is the basis of our fundamental submission—that we have to reduce allocations by 50 per cent. Yes, along

the Lachlan and Murrumbidgee systems and the Darling and the whole lot there are wetlands that are seriously degrading under the acid sulphate conditions. The refugia that are there have been essentially filled by erosion sequences in the past. Therefore, the refugia for our wildlife is being reduced in these dry times whereas in past dry times they may well have been adequate. Yes, there is.

The point is, I think, that in the first instance it is a symptom that the whole system is under stress. There is some case for recognising the whole. But we believe that it is possible to find water at that time and do it in a way that does not necessarily lead to robbing Peter to pay Paul. That is why we would argue for a rapid reassessment of the whole thing. You have really got to reset the Murray-Darling Basin. Thank you.

Prof. Thom—I may just add that we recognise that we have 15, I think, Ramsar wetlands in the Murray-Darling Basin system, of which, of course, this is one. It is one where the international scientific world and environmental world are looking very closely at us. We do not wish to create a delisting situation for this, being a Ramsar site, and create Australia's version of the Aral Sea. Hence, as the canary in the mine, as it were, looking at the lowest part of this interconnected Murray-Darling system—this being the estuarine part—the crisis for me and my colleagues is what we can do to manage that very important ecological system.

Senator HUTCHINS—Thank you. I want to ask a second question. I took notes. You said somewhere between a 42 and 53 per cent reduction. Could you paint for us the socioeconomic consequences of that? I know you have mentioned it a few times. Are you able to tell us whether a town like Deniliquin will probably have to pack up and go home or whether Wentworth or Murray Bridge will have to stop operating?

Mr Cosier—I might ask Mr Kowalick and then John Williams to answer that question for you.

CHAIR—Sorry, we are very short on time. There are a lot of questions to be asked.

Senator HUTCHINS—I just have one more.

CHAIR—Senator Hutchins has the call. There are no worries.

Mr Kowalick—With the various estimates that have been done, and with the sort of change that that brings out, it is not a question of a particular town going. But it will affect areas that are specialised in particular crops that have not the highest and best use of water or an ability to get efficiency gains. But the figure being bandied around is about 30 per cent of people will disappear from the industry of farming because the scale of those needing to be efficient will be higher and the capital requirement will be higher. So there will be a significant transformation both in terms of the number of people and the scale and capital intensity of the industry going forward.

Senator HUTCHINS—We had representatives from Murray Irrigation Limited here earlier. They said they have within their area nearly 2,500 farming businesses and nearly three-quarters of a million hectares with a regional population of 30,000. Under your proposal, specifically are you able to give us advice about what would happen to them? Generally, is it that 30 per cent of 30,000 people will have to find somewhere else to go, or is that unfair?

Mr Kowalick—I think that is unfair because you are going to have to look at particular areas, what industries are involved, what markets they cater to and what the opportunity of efficiency is. You can have broad rules of thumb, but they are not going to be meaningful for any particular location until a lot more work is done.

Senator HUTCHINS—Thank you.

Senator HEFFERNAN—Surely we will go to higher tech farming.

Senator HUTCHINS—I have one final question. Mr Cosier, you said in your comments that there was a lack of leadership in South Australia. In a number of our submissions there has been reference to South Australia needing to do a bit more. They are my words. Do you want to expand on that for us, please.

Mr Cosier—Just very briefly, as I said earlier, people should not be surprised at what is happening with the Coorong and Lower Lakes. We have had dredges put into that to keep the mouth open for probably a decade now and we have had declining river flows as a result of the drought, which has kept getting worse and worse. This issue has come up on us slowly. We are in a situation where we seem to be managing. I take it that is why we have a Commonwealth government Senate inquiry into the Coorong and Lower Lakes—because there was no other process from which people could channel their proposals. We seem to be managing an international wetland, one of the great wetlands of the world, by press release. We have planning processes in this country where companies and businesses such as, say, BHP in South Australia, are spending hundreds of millions of dollars on prefeasibility and environmental impact statements to dig a hole in the middle of the desert and yet

we do not have any formal process for evaluating the long-term options for managing one of the world's great estuaries. That is why I made my rather impassioned comment.

Senator HUTCHINS—Thank you very much.

Senator ADAMS—I want to ask a question on the increasing amounts of salt coming down the river. My question is really about the new weir. How is that going to affect the amount of salt that is being dispersed into the lakes?

Mr Cosier—There are members of our group who have not been able to be present today who are the wisdom on that. His name is Professor Keith Walker. We could give a general answer, but it would not, I do not think, satisfy your question. Perhaps we could take that on notice.

Senator ADAMS—Thank you.

Senator FISHER—I think my question is probably for Professor Young but is open to all of you, obviously. You have talked about the wisdom of quick access in the market in terms of offering to purchase water. Have you considered proposals currently being mooted, for example, to more than double the price offered per megalitre of water from some \$2,000 to some \$4,800? Firstly, there is the increase of the price and, secondly, the prospect that, for example, that might be offered to the marketplace for a compressed period of, say, 90 days. Have you considered those specific sorts of options? What is your view of them?

Prof. Young—Yes, we have considered them. In fact, there has been quite a lot of work done on it. Particularly Professor Grafton, who was also part of our submission and is unable to be here today, has done considerable work on that. Clearly, if you want to have a compressed, very fast buyback, you are going to have to pay well above market price.

Senator FISHER—The aim of that will be to provide incentive, will it, to people to relinquish their rights?

Prof. Young—Yes. If you are in a willing buyer, willing seller environment, clearly you are going to have to offer to pay a price which is sufficient to convince people that now is the best time. Part of that is also dependent on how the government puts a package together. At the moment, we have been moving slowly. The important proposal that we are really putting on the table is to move quickly. That means the government will have to be able and willing to pay above market price. How much above market price is something that we can work on in a lot of detail. But the first thing is to get the principle established that we need to accelerate this buyback process, which means putting a lot of money on the table and then very quickly working through the detail of the best way to do that. Yes, it could be done very, very quickly.

Senator FISHER—So more money for a compressed period of time. What is your opinion of the likes of the 90 days mooted, that being the period for which the offer of the increased money might lie on the table?

Prof. Young—It is an option. I would not in this room come up with a recommended solution. The principle is what we are trying to convince you to do. Whether it is 90 days or 100 days or whether it is done in two, three or four steps is something that needs to be carefully analysed. There is also a big difference between making an offer for a 90-day period and the time in preparing to do that and getting it right. Corporate experience is that that is the sort of period it is done for each time you go around, if you are doing that.

Senator FISHER—I accept your point. In principle, a compressed time period. Be that the period or not, are you of the view that the government could forecast to the marketplace that this is the plan and that would help set the marketplace for the implementation of the plan and for some transition period afterwards in terms of those who decide to relinquish their rights?

Prof. Young—I think that is part of the whole interim planning process that we are suggesting. There needs to be an interim plan deal with the problem that can be put together very quickly. The detail then is something that must be communicated and particularly conveys to everybody the information that they need to make a very, very difficult decision. It is information to irrigation companies, to towns and to local communities.

Senator HEFFERNAN—Hang on. With great respect, I want two minutes before we finish.

Senator FISHER—I have one final question on this issue.

Senator HEFFERNAN—Well, hurry up. Quick!

Mr Cosier—I could also take the rest of your questions on notice.

Senator FISHER—Thank you.

Mr Cosier—As Mike mentioned, Professor Quentin Grafton has been helping with this. In very brief summary, he and Mike—you can also look at information from the Productivity Commission's work—argue that there are tricks and rules by which you can constrain a blowout of the price. You create crafty, clever rules for doing that. The market is not dumb. The market knows that if the Commonwealth went in over the next two years with an \$8.9 billion buyback, it is not going to come back in 2010 with another \$8.9 billion buyback.

Senator HEFFERNAN—Surely part of the deal is that if you are going to take them out of the market, you would not let them go back into the temporary market and continue the productivity of the farm because you would absolutely distort the allocated market.

Mr Cosier—That is another example.

Senator FISHER—That is right. However, my final question is: if the government were to forecast and implement a plan on the basis of those principles, would the market be distorted in perpetuity, or would the market deal with it and would the program achieve its end?

Mr Cosier—Ian is a businessman, so we can ask him. Quick.

Senator HEFFERNAN—Take it on notice.

Mr Kowalick—Yes. I will take it on notice.

Senator HEFFERNAN—I want to go to the question of this buyback. I am alarmed that we might set a precedent where, to get the water, we have got to buy the bloody land. If I am an irrigated farmer and I am a willing seller and I have 400 acres with 18-inch rainfall that I grow rice on and the bank says, 'Son, you've got to get rid of your water' and they offer twice the entitlement price, I will say, 'I'll take that, thanks very much.' Then I will be cunning and go back into the allocated water market or I will say, 'If you want my water, you've got to take my farm.'

Mr Cosier—The very short answer, Senator, is that the states agreed through the National Water Initiative to separate land and water title. The only reason the Commonwealth has had to buy land in Queensland and New South Wales is that the titles have not been separated.

Senator HEFFERNAN—It is the most inefficient way to deal with today's problem.

Mr Cosier—Yes, it is.

Senator HEFFERNAN—It is a great thing for over the horizon.

Mr Cosier—Yes, it is.

Senator HEFFERNAN—It is a garbage, bloody panic decision.

Mr Cosier—It is an inefficient way to do the job that needed to be done.

Dr Williams—My understanding, and analysis we have done through the New South Wales commission, shows that the first thing you have to do is free up the market before you go into that exercise. While ever you try to do what you are saying, without removing those caps and the fact that water and land are bound, you will have corruption of that market.

CHAIR—Before we go any further, Senator Hanson-Young has one very quick question.

Senator HANSON-YOUNG—I want to touch on the four per cent cap as an imperative to getting more water into the system in terms of the market. Would you see that this needs to be lifted in order for us to acquire the urgent 300 or 400 gegalitres for the Coorong?

Ms Millar—The four per cent limit is definitely an impediment to trade. It is an impediment to access to that water.

Senator HANSON-YOUNG—Obviously in the medium to longer term we need to tackle that anyway. But in terms of getting the urgent water we need for the Lower Lakes and the Coorong, which is part of the terms of reference for this committee, you would see the four per cent cap as an imperative that would have to be tackled ASAP?

Prof. Young—Can I add that there is another cap as well. Part of the process of unbundling in parts of Victoria is that there is a limit on the proportion of entitlement that can be separated from land. That is 10 per cent. The Commonwealth's environmental water holder would not want to own land. It would only want to hold entitlement. So, in fact, I think you will find it is not the four per cent which is the problem. When you start the process, it will be the 10 per cent limit which will very, very quickly pull the system up.

Senator HANSON-YOUNG—So in order for the Commonwealth to purchase the water needed, if we can find it and if the audit says it is there, in order for us to secure the 300 to 400 gegalitres for the environment, we would actually need to tackle those caps?

Prof. Young—No. By ‘cap’, there are differences here. There is four per cent on entitlements, which is different to the allocations.

Senator HANSON-YOUNG—To the allocations. So we need to do both?

Mr Cosier—And it is not only to get the 300 to 400 gegalitres. It is impossible for the Commonwealth to do an accelerated buyback program under the current institutional rules that are put in place by the states. If the Commonwealth were to choose to go this way, we would have to bash a few heads in the states or exercise some constitutional powers that have not been tested before.

Ms Millar—Just to add to that, in terms of the four per cent limit, recent studies have shown that it has not been triggered in New South Wales. But in Victoria at least seven irrigation districts have refused trades on the basis of the four per cent limit.

CHAIR—On that, Senator Siewert just has one clarification.

Senator SIEWERT—Mr Kowalick, you were talking about the 30 per cent of people who will go out of the industry with restructuring. From the comments you made earlier, I understand that we will see most people leave sooner or later. Can I interpret your plan to say that it will result in 30 per cent of people leaving the industry? They are going to leave anyway. What the group is saying is that you do it in a structured manner and not see them go out the door gradually. Is that a correct interpretation?

Mr Kowalick—If you have just disorderly change, it has all sorts of impacts and often ends up as a cost to government. It impedes the achievement of the objective because there are all sorts of distortions along the way. If you do it in an orderly way, and that is not necessarily big handouts, you can facilitate structural change to bring it about. It is like any problem. It is better to face up to it in a timely way. While I have some faith in markets, have a look at international finance markets. They are not perfect.

Senator SIEWERT—I just want to make sure that people do not run around saying, ‘Your plan means this many people are going to leave the industry.’ The point is that they are going to be anyway and we need to do it in a more structured, less traumatic way.

Mr Kowalick—Yes.

Prof. Young—If it is properly structured, it might mean that fewer people leave. There is the potential to get this very wrong by procrastinating.

CHAIR—I have one question to the professors, doctors, visitors and other members of the group. I do not want an answer now. Please take it on notice. In your submission, you talk about a variety of options under consideration for the long-term strategy of the Coorong and the Lower Lakes. Could you come back to us with what you see as the positives and the negatives. A photo is being taken. Put on your best faces. You have 10 seconds. I am going to thank you very much for attending today. It is good to see you. No doubt we will be seeing a lot more of you as we go through the calendar year. I now call the representatives from the Department of Water, Land and Biodiversity Conservation in South Australia. To the senators who are online—Senator Birmingham and Senator Xenophon—I am sorry about that. Before we do start with the next witnesses, do either of you wish to ask any specific questions?

Senator XENOPHON—I guess it depends on the information.

CHAIR—Thanks, Nick. No worries. Simon?

Senator BIRMINGHAM—I will reserve on these ones, depending on what we get out of them and what questions the others are asking. There is only half an hour.

CHAIR—You will have to share that time of your coalition colleagues. I would prefer it that, if you want to ask a question, you come in when I call one of your Liberal colleagues. Thank you.

[10.37 am]

ASHBY, Mr Scott, Chief Executive, Department of Water, Land and Biodiversity Conservation, South Australia

BEAL, Mr Andrew, Chair, Water Security Technical Working Group, Department of Water, Land and Biodiversity Conservation, South Australia

MAYWALD, The Hon. Karlene, Minister for the River Murray and Minister for Water Security, South Australian Government

CHAIR—Welcome. I remind senators that the Senate has resolved that an officer of a department of the Commonwealth or of a state shall not be asked to give opinions on matters of policy and shall be given reasonable opportunity to refer questions asked of the officer to a superior officer or to a minister. This resolution prohibits only questions asking for opinions on matters of policy and does not preclude questions asking for explanations of policies or factual questions about when and how policies were adopted. Officers of the department are also reminded that any claim that it would be contrary to the public interest to answer a question must be made by a minister and should be accompanied by a statement setting out the basis for the claim. I am sure there is going to be a barrage of questions from all around the table, so I will invite you to make a brief opening statement, Minister, if you so wish.

Ms Maywald—Thank you very much. Firstly, I would like to thank the Senate Rural and Regional Affairs and Transport Committee for taking an interest in this very important topic. For South Australia, there is no more important issue than the River Murray and, in particular, the Lower Lakes and the future of the Lower Lakes and the Coorong. Of course you would know the details of the Ramsar, JAMBA and CAMBA treaties that are in force in relation to the Lower Lakes. The debate on the management of the Lower Lakes regarding salt water and fresh water has been raging for more than 100 years. We have a document that we would like to distribute to members that is a research paper. It is called ‘A Fresh History of the Lakes: Wellington to the Murray Mouth 1800s to 1935’. It makes for a very interesting read. It is no surprise that even back in 1923 they were arguing the case for the freshwater retention of the Lower Lakes.

I would like to make it very clear, first and foremost, that at no time has the South Australian government advocated for a complete refill of the Lower Lakes during this extreme drought. We understand the limited available water resources. We also recognise that there are many competing needs. What we have provided for you today is a submission that talks about the circumstances that we are dealing with around the Lower Lakes and what we believe is the requirement for maintaining a freshwater lake and the responsibility to make these decisions as a collective across the nation rather than just leaving it to be South Australia’s problem. The River Murray is a national asset, including its mouth.

To fill the Lower Lakes would require 750 to 800 gigalitres. When we talk about the Lower Lakes, we are not talking about the Coorong at this point in time. Three hundred gigalitres down to the Lower Lakes would not get to the Coorong. It would not fill the Lower Lakes at this point in time. The work that we have undertaken and the modelling that we are doing in partnership with the Murray-Darling Basin indicates that now a quantum of up to 60 gigalitres would get us through to another winter under the worst case scenarios. We have had some very good rainfall around the Lower Lakes that has resulted in a response in the levels of the lakes in the upward fashion that we believe will ameliorate the effects of the acid sulphate soils for the short term. This has been very fortuitous because two months ago we were not in that position. There was 170 millimetres across the Lower Lakes. We now have the Finnis River and Currency Creek flowing into the Lower Lakes. There has been some response in the Angus Bremer river system as well.

South Australia, if I refer to our submission, has the view that if we were to look at where we might be able to get that 60 gigalitres from, it could come from a combination of different areas. There are opportunities to allocate future improvements in water availability to the Lower Lakes. There is also the opportunity to purchase from the temporary market. Purchase from the permanent market would certainly not provide for the short-term relief that is needed at the moment. The localised environment could actually find that 60 gigalitres as well. So we believe that it is very much an adaptive management approach that is needed. It needs to be monitored on a monthly basis. We need to be ready with a number of options should the lakes be at risk of falling to the level which would cause us concern regarding acidification.

South Australia is very keen to have a freshwater solution. The option of introducing sea water to the Lower Lakes would only be preferable as a last resort if we were unable to get freshwater to resolve the situation.

When we talk about resolving, we talk about maintaining it above the minimum threshold, not refilling the lakes. We perceive that the introduction of sea water would only be preferable to acidification, which we believe would be a far more devastating consequence for the Lower Lakes. I think they are the opening comments that I would like to make at this stage.

CHAIR—Thank you very much, Minister. Senator Heffernan, we have a pecking order. Before we go any further, and I have not met a politician who says no yet, do you mind having your photo taken in this committee?

Ms Maywald—Not at all.

CHAIR—I know colleagues this side will be pushing you out of the way to get their head in. Thank you very much, Minister. I will start with Senator Hanson-Young.

Senator HANSON-YOUNG—Thank you, Minister. Thank you for coming along. At this stage, you are the only government minister who has appeared in front of the committee. I think that is testament to how important this is for our own home state of South Australia. I have a few questions. Firstly, in terms of the saltwater option—I know this is something that has been flagged as an option—you have said this morning that it would be a last resort if that is what is needed, particularly to put those acid sulphate soils at bay. Earlier this week I asked the federal water minister and her department whether, if that was an option they were considering, there would be a risk assessment done to look at the environmental impacts of what this would mean. We have heard from a number of witnesses throughout the inquiry that the effects on the environment, not to mention the detrimental effects on the ground water, are something that is quite concerning. It was handballed to the state government as a responsibility to figure out whether you would do a risk assessment. Is that something you are considering?

Ms Maywald—Certainly a risk assessment in relation to acidification, with salt water introduction being the lesser of two evils if acidification were imminent. That is what South Australia understands. If we were to see the lakes fall to a level where acidification was the likely outcome, the introduction of sea water would be the lesser of two evils. We would be required, however, to undertake an approval through the EPBC Act, I am advised, which would then require the federal environment minister to provide us with the guidelines as to what we would need to do for the introduction of sea water.

Senator HANSON-YOUNG—So I take it from that, then, that no work has been commissioned yet to see what the consequences of putting salt water into the lake system would be on the ground water?

Ms Maywald—What has been undertaken is an investigation, a significant amount of work into the acid sulphate soils impacts. The acid sulphate soils impact is what is driving the agenda at the moment. There has been no specific work undertaken in relation to the seawater impacts on ground water.

Senator HANSON-YOUNG—Are you saying that you think that would then fall under the guise of the federal environment minister?

Ms Maywald—It would be under the EPBC Act an action on which we would need to actually seek guidance from the federal minister.

Senator HANSON-YOUNG—And you have not had that guidance yet, obviously?

Ms Maywald—We have not sought to undertake that action yet. We are monitoring it on a monthly basis. Should the lake levels look like they will drop in the foreseeable future to a certain level, we would need to undertake that action.

Senator HEFFERNAN—Would it not be better to do that now? Why would you not say, ‘Let’s do that now?’

Ms Maywald—At this point in time, we are actually undertaking a whole range of works. It includes also the need to actually undertake the construction of a temporary weir should we have to introduce sea water. The work is being undertaken on the impacts of the temporary weir structure on the Lower Lakes. That is going through the EPBC process.

Senator HANSON-YOUNG—Thank you, Minister. Earlier this week you announced a small increase—I acknowledge that—in allocations for users throughout the South Australian system. Did you consider putting some of that aside for the environment?

Ms Maywald—What we have done in South Australia is we have 696 gigalitres that has been applied to the environment at this stage and 201 gigalitres is allocated to critical human needs. We have about 63 gigalitres, I

think, allocated to irrigation. We went through an exhaustive process earlier this year to establish a decision-making framework so that communities would know how we would apply water as it became available through the shared resource. We gave a commitment to our communities that we would undertake to get our 696 gigalitres for dilution flow first and foremost to underpin our 201 gigalitres for critical human needs. For the first three months of the water year—that is, in July, August and September—the improvements would first and foremost be applied to irrigation allocation until they reached a certain point. If they did not reach that certain point, it would then trigger the next level of decision-making, which includes putting away water for next year's critical human needs, which we need to do also this year, and for the environment.

We have also made application through the Murray-Darling Basin Commission to actually reintroduce water to some of the very stressed wetlands that have been closed in South Australia. Last year we blocked off 33 wetlands—27 regulated wetlands and six non-regulated wetlands—to save water for evaporation. That has all ended up going down to the Lower Lakes.

Senator HEFFERNAN—But you have emergency powers so that you can play around with that as you wish.

Ms Maywald—We have the ability to be able to allocate the water that is available to South Australia—

Senator HEFFERNAN—However you like.

Ms Maywald—however we like. We went through an exhaustive decision-making program to enable us to—

Senator HEFFERNAN—For starters, in a catastrophe, you have the emergency power.

CHAIR—Senator Hanson-Young has the call.

Ms Maywald—Senator Hanson-Young, what we have to do is share the available resource against the three needs. There are three needs. There are critical human needs. There are critical environmental needs. There are also critical industry needs. And 11 per cent is nowhere near enough to actually provide for those critical industry needs yet either.

Senator HANSON-YOUNG—Can you just clarify for me the last time the environment got an increase in allocation?

Ms Maywald—The environment receives increases in allocations. Last year we did not have our 696 gigalitres at the beginning of the year. We had to accumulate that through the course of the year. We actually applied to the Living Murray for access to water for wetlands below and above lock 1. The closure of the wetlands has applied water to the Lower Lakes that has enabled us to shift our environmental water to assist with the levels in the Lower Lakes.

Senator HANSON-YOUNG—Last week when we were in Adelaide, a number of the witnesses put forward the argument that we should be opening the locks and that this would help to obviously get a little more water into the lakes. What is your opinion of that?

Ms Maywald—Well, the situation that we have between the locks and above lock 1 in particular is that any reduction in the weir pool levels below lock 1 has a significant impact on water quality. Given that 90 per cent of South Australians get their water from the River Murray during a drought year from below lock 1, we have to ensure that we can maintain fit-for-purpose water for human consumption. There is a strong correlation with a drop in weir pools to an increase in salinity. That is because over a number of years of mismanagement of the River Murray system, where the minor floods have been managed out of the system, what happens in South Australia is we used to get regular minor floods that would go into the floodplain, pick up a lot of the salt and take it down to the sea as nature intended. We have not had any of those minor floods since 1996, which I think was the last year. As a consequence, we have just had masses and masses of salt lodging on the floodplain. So as soon as we actually mess with the weir pool levels, if we drop the weir pool levels, we have a significant impact on water quality.

We are already struggling to maintain fit-for-purpose water below lock 1. We have enough water in our dilution flow that has been allocated to the state at the moment to dilute the water below lock 1 to maintain the salt level at 1,400 ECs at Murray Bridge during the course of next summer. World Health Authority desirable drinking water levels are 800. We are able to maintain fit for purpose at that point as a consequence of being able to shandy water through the Adelaide Hills. But 696 is nowhere near enough to maintain salinity levels at Murray Bridge at fit for purpose in the longer term. The 696 is simply not enough.

Senator HANSON-YOUNG—Thank you. In relation to securing the extra 60 gigalitres, can you just clarify for me where that would come from?

Ms Maywald—It could come from any number of different sources. There has been much discussion here this morning about entering the temporary market for the purchase of environmental water. That is one option.

Senator HANSON-YOUNG—The temporary market within South Australia or across the border?

Ms Maywald—Across the board, not across the border. It would be entering the market to get it from willing sellers, wherever they may be, in the southern Murray-Darling Basin.

Senator HANSON-YOUNG—And how do you respond to claims that purchasing water further upstream is actually not going to reach the Lower Lakes?

Ms Maywald—Well, it certainly will not from the northern basin. But certainly from the southern basin there is adequate conveyance water to bring down our critical human needs and to bring down our irrigation water. So I cannot see why there would not be enough to bring down environmental water. It is certainly a different story if you are talking about the northern basin. The loss in bringing it down from above Menindee Lakes would be substantial. You would have to question whether or not that would be a wise use of that water.

Senator HANSON-YOUNG—Do you think that there are public and even private storages available across the border close enough that we can acquire that water and bring it down if we are able to?

Ms Maywald—I do not think it is about what there is in storage. It is what has been allocated that is important that would become available for sale. There is water on the marketplace. It is about purchasing that water. All water that is in dams currently at the moment has been allocated for some purpose or another.

Senator HEFFERNAN—It is all contracted. You are going to have to buy contracted water.

Ms Maywald—You have water that is actually allocated for the conveyancing water, the dilution water. You have the water to underpin the delivery of our critical human needs. You have the water that is allocated to cover the losses in the system to get water from A to B. You also have water that is currently owned by irrigators that is carryover water plus you have very, very small allocations to irrigators from this season.

Senator HANSON-YOUNG—So what is the imperative to getting that 60 gigalitres?

Ms Maywald—Well, as I said, it would be an adaptive process to it at this point in time, should worst case scenarios continue. Of course, in September, it is above the worst case scenario. We are not looking at a worst case scenario in September. It is certainly well below average, but it is still above the worst case scenario. Sixty gigalitres would be the maximum you would need to buy us another winter. We would be keen to monitor it on a monthly basis to see how we are going. If we can actually find a way to provide that water through the system accounting, through making sure that we account for losses in the Lower Lakes, and that we maintain a minimum level as well as the losses in the transmission of the conveyancing water in the rest of the system, that would be a good outcome. At the moment, the conveyancing losses and system losses from the border upstream are all accounted for and allocated first and foremost before there are any other allocations provided. Downstream, though, that is not the case. They do not collectively share the responsibility for the Lower Lakes at this stage. We would suggest that it is a shared responsibility to actually deal with the losses in the whole system.

Senator HANSON-YOUNG—Shared between whom?

Ms Maywald—All jurisdictions—New South Wales, Victoria and South Australia.

Senator HANSON-YOUNG—And what role should the federal government be playing in that?

Ms Maywald—Well, it is my view that the federal government, as a partner in this and a partner in the Murray-Darling Basin Commission management and a partner in the senior officials group process, which is determining how water is distributed amongst the states during this drought period, needs to take a lead role in it. That is what they are doing.

Senator HEFFERNAN—They are the banker.

Senator HANSON-YOUNG—I just have one more question.

CHAIR—I want an answer to a question, if I may. You talk about bringing the water down. What do you say to the growers in the Riverland, who are already struggling?

Ms Maywald—Certainly there is no way that we would be looking for a complete refill of the Lower Lakes and sending 200 gigalitres past desperate communities. It would be an inappropriate thing to do. But during

the course of the season, if we can buy ourselves another winter after and that water can be accumulated or purchased following the irrigation season, that would be a good outcome.

CHAIR—I am sorry, Senator Hanson-Young. I will come back to you. But we have heard evidence that they are struggling too.

Ms Maywald—They are. That is right.

CHAIR—They are buying temporary water. I just do not know where it is going to come from or how you differentiate between the Lower Lakes and the Coorong at the expense of that valuable horticulture and agriculture up there.

Ms Maywald—There is temporary water available on the marketplace for all users. We think that the environment should be a player in that as well.

CHAIR—I understand if there is water there. But we have heard that it is just not there.

Ms Maywald—Well, it is not there to allocate on entitlements at the moment. But of those people who are willing sellers who are selling it into the marketplace, there are those irrigators who have the capacity to purchase. As you heard from the Wentworth Group, many irrigators just do not have the capacity to purchase any more following two years of severe drought.

CHAIR—And we are also getting to this rob Peter to pay Paul line that is coming out time and time again.

Ms Maywald—It is about having buyers and sellers in the marketplace. At the moment, we are limiting the buyers only to irrigation. It may be potentially that there is an opportunity for the government to get involved post the major irrigation season. As I am saying, this 60 gegalitres is the maximum that would be required if we get a worst case scenario from today right through to next winter. Already September is not proving to be a worst case month. That water could be accumulated in the system through improvements in the water availability.

Senator HEFFERNAN—It is a tough game and mother nature is the referee.

CHAIR—Sorry, I cut across you, Senator Hanson-Young. You have one more before I go to Senator Hutchins.

Senator HANSON-YOUNG—A number of witnesses and submissions that we have received point to Lake Victoria as an option as well as some other storages.

Ms Maywald—Can I just clarify. An option for what?

Senator HANSON-YOUNG—In terms of perhaps being able to move water through. Could you just explain.

Ms Maywald—I am sorry. You need to explain. To move water through for what purpose?

Senator HANSON-YOUNG—If we are able to purchase water on the market specifically for the environment and then balance that with our human critical needs, a number of people have listed Lake Victoria as an option for being part of that mix and yet it is not in any of the government papers.

Ms Maywald—Well, Lake Victoria is a reregulating lake. Basically, what Lake Victoria does is acts as a buffer to be able to supply South Australia's needs when South Australia needs it. We have restrictions in the system, such as the Barmah choke, which means that we cannot get all the water that is needed downstream of the Barmah choke through the Barmah choke at the same time. Therefore, Lake Victoria acts as a reregulating facility for New South Wales and Victoria to supply their obligations to South Australia. That water in Lake Victoria is fully allocated for those purposes.

Senator HANSON-YOUNG—For human critical needs?

Ms Maywald—And the conveyancing and dilution flow water. The dilution flow is 696 and our critical human needs is 201. We also need that 696 and most of the 201 to get down to Murray Bridge to actually maintain the salinity levels in that reach of the river at a fit-for-purpose level. So the critical human needs amount is actually acting as a part dilution flow prior to being extracted.

Senator HANSON-YOUNG—Do you think we are moving fast enough in terms of managing Adelaide's water supply so that we can start to maximise the allocations that we give to the environment from the River Murray?

Ms Maywald—Absolutely. We undertook, the South Australian government, prior to me becoming minister an exercise in waterproofing Adelaide. Waterproofing Adelaide worked on the parameters that we have all

worked on in relation to water supply from the River Murray—the last 117 years of data. We released a document in 2005 that was considered a national leadership document in relation to water management. It looked at the options of water supply for South Australia going forward. Well, the drought of 2006-07 changed the parameters completely. Even if you had anticipated the worst scenario possible from that 117 years of data, you would never have thrown up what we got in 2006-07. So 2006-07 has changed the parameters. We have gone back in 2007-08 and revisited all of those parameters. We have acted to build a desalination plant. That will be coming on board in late 2010. We are investing heavily in effluent reuse. We have prescribed for the Adelaide and Mount Lofty Ranges. We have pushed very, very hard for new governance arrangements for the Murray-Darling Basin.

CHAIR—Sorry, Senator Hanson-Young. We really are running through. May I go to other senators?

Senator HANSON-YOUNG—Yes.

Senator HEFFERNAN—They are only words.

Ms Maywald—I do not believe that, Senator Heffernan. I think that is an incorrect statement.

Senator FISHER—Minister, what do you mean by critical human needs?

Ms Maywald—Critical human needs are the requirements for our towns and cities on level 3 enhanced restrictions. Enhanced restrictions means it is virtually level 5 restrictions for domestic users and level 3 for industry. It includes our stock and domestic riparian water as well and our country towns licences.

Senator FISHER—You have also used the term ‘critical industry needs’ and ‘critical environmental needs’. Given the definition just provided of critical human needs includes arguably aspects of industry, such as stock, what are your parameters for each of those definitions—critical human needs, critical industry needs and critical environmental needs?

Ms Maywald—Our critical human needs include stock and domestic for riparian needs and industry needs. So 201 gigalitres is the total of all those.

Senator FISHER—Your definition includes use for those purposes?

Ms Maywald—That is it, yes.

Senator FISHER—Have you agreed or discussed with your counterparts interstate the meaning of the term ‘critical human needs’?

Ms Maywald—Certainly those around the table of the senior officials group that was established by the former government back in November 2006 to renegotiate water sharing arrangements in this drought have extensively discussed the view of critical needs.

Senator FISHER—Have you come up with an agreed definition of the term ‘critical human needs’ in that group?

Ms Maywald—Mr Ashby is actually on that group.

CHAIR—I am sorry, Minister. We are in a public hearing. Witnesses do not approach the table at the front. I urge you to appreciate that. If you do have questions of senators, at least have the decency to ask that question when we are in a break. Thank you anyway. I am sorry, Minister. Please carry on.

Senator FISHER—Minister, have you agreed with your counterparts interstate a consistent definition of ‘critical human needs’ for application nationally?

Ms Maywald—Yes. I understand that is the case.

Senator FISHER—Can you provide the committee with that definition in writing, please?

Ms Maywald—It is certainly available through the senior officials group reports to first ministers. I think you will find that that is currently publicly available.

Senator FISHER—Can the committee be provided with it forthwith, please? If it is so available, can we be provided with it forthwith, please?

Mr Ashby—Yes. We can do that.

Senator FISHER—Thank you. Minister, what is the consequence of water being tagged or called water for critical human needs, critical environmental needs and critical industry needs? What is the consequence of you calling or describing water for that purpose?

Ms Maywald—It is critical because, without that critical water, there would be extreme hardship.

Senator FISHER—Indeed, that does seem obvious. Let me ask the question another way. What priority does your government attach, and governments nationally attach, to water that is attributed for critical human needs, critical environmental needs and critical industry needs? Do you put critical human needs water first? Do you put critical environmental water needs first?

Ms Maywald—The decision as to where those priorities lie was made by first ministers and the Prime Minister. It is not a South Australian decision alone. Critical human needs, which includes critical industry needs, not irrigation—critical industry and urban needs—was determined by first ministers to be the highest priority.

Senator FISHER—Can the committee also—

Ms Maywald—I think it is pretty good too. I am pleased with it as well.

Senator FISHER—Can the committee also be provided with the written description of those agreed priorities?

Ms Maywald—Yes. Certainly the reports are public information. The summaries of reports of the senior officials group to the first ministers are publicly available. They can be provided to the committee.

Senator FISHER—And they will be provided to the committee? Can they be provided, please?

Ms Maywald—I think I have said that three times.

Senator FISHER—Thank you.

Senator HEFFERNAN—Does the riparian right fit into that formula?

Ms Maywald—Absolutely, yes.

Senator FISHER—Minister, what is the purpose of the Wellington weir?

Ms Maywald—The purpose of the Wellington weir when it was first proposed was to maintain a weir pool between lock 1 and Wellington to keep the major pump off-takes operational. The secondary issue that now has arisen is the issue of acid sulphate soils. Should there be a requirement to introduce sea water to the Lower Lakes, we would need to protect the off-takes again from incursions of sea water. So it is a twofold reasoning.

Senator FISHER—So the reason has changed slightly since the initial proposition?

Ms Maywald—There has been an additional imperative, so it has not changed. We still need to maintain our pumps at an operational level, but there is an additional trigger that could cause concern if we needed to introduce sea water to the Lower Lakes.

Senator FISHER—Is the weir, in your view, at this stage for Adelaide in any way?

Ms Maywald—Well, certainly. The pump off-takes pump water to Adelaide, as they do to country towns below lock 1. Ninety per cent of South Australians get their water below lock 1. The pump off-takes are at Tailem Bend into the south-east. There is the township of Murray Bridge. There is the township of Mannum. There are the townships of Swan Reach and all of the small townships, such as Walker Flat. A number of those small townships get their water from the River Murray below lock 1, as does Adelaide.

Senator FISHER—So part of the reasoning behind the weir is to provide water for Adelaide, is it?

Ms Maywald—The reasoning for the weir is to maintain a weir pool below lock 1 to Wellington to supply water to 90 per cent of South Australians to get water during a drought year, which includes Adelaide.

Senator FISHER—Thank you. In terms of critical human needs, we have heard evidence from interstate that that is being used to provide water for a piggery in New South Wales on the basis that the piggery provides local employment. We have heard evidence from the people of the Lower Lakes and Coorong that they believe they have critical human needs. Once you decide water is for critical human needs, how do you then prioritise among those who need the water for critical human needs?

Ms Maywald—The issue is that everyone requires water for critical human needs.

Senator FISHER—Indeed.

Ms Maywald—The difficulty for South Australia is that the Lower Lakes levels have inhibited access, as a consequence of the levels within the Lower Lakes, for a number of riparian users and irrigators. Irrigators have been unable to pump from the Lower Lakes since the levels have dropped. It is an access issue. There is just no way that we can keep the Lower Lakes at a level where those people are able to access water.

CHAIR—Senator Fisher, your colleagues would like to ask a couple of questions too.

Senator ADAMS—I would just like to continue on the Pamanda Point weir. As far as the salinity build-up in the river, you are putting in yet another weir. Can you give me any evidence of whether that is going to affect it? The second question is: how much salt is dumped into the lakes each day? Could you give me any indication of that?

Ms Maywald—Certainly all the salt that goes down the river through the system is accumulating in the Lower Lakes at the moment. I can seek to get that information for you on notice.

Senator ADAMS—You can take that on notice.

Ms Maywald—I am not certain that I can give you the actual figure. But there is often confusion about the purpose of the Wellington weir, or the weir at Pamanda Point. It is not intended to dam the river. If you were to dam the river, you would have a significant accumulation of salts behind the weir and back up in between lock 1 and the weir. The weir would be actually structured so that it had a very low spill point and so that we could still put a minimum of 350 gegalitres across the weir to take the salt through the system. The idea of actually damming the river at Wellington is one that would just spread the cancer upstream. It would not provide fit-for-purpose water for Adelaide. So the idea of the weir is to maintain a weir pool level. But there would still need to be a significant positive flow into the Lower Lakes to take that saline water through the system.

Senator ADAMS—Okay. Thanks for clarifying that.

Ms Maywald—Sorry, I will just add to that. The 350 gegalitres that will be going into the Lower Lakes this year—900 megalitres a day on average is going past Wellington—is to maintain the salinity levels at 1,400 ECs this summer. We cannot maintain that 1,400 ECs if we only get 350 gegalitres going into the lakes each subsequent year. We will need 350 to 400 above that to maintain the fit-for-purpose water in subsequent years if the drought continues.

Senator ADAMS—We have had evidence that Adelaide should perhaps be not reliant upon the Murray. What future plans have you got about drought-proofing Adelaide if this were to occur—that you could not use the Murray?

Ms Maywald—Certainly the South Australian government does not agree that Adelaide should be removed completely from the River Murray. We believe that we should reduce our reliance on the River Murray during drought years. That is why we are building a desalination plant. That is why we are looking to double the size of our storage capacity in the Mount Lofty Ranges. That is why we have fought very, very hard to get storage capacity in the Hume and Dartmouth dams so that we can manage the variability of the supply of the River Murray for South Australia's use. It is not just Adelaide. It is for our critical urban needs, including our country towns.

On the issue of drought-proofing Adelaide, we are building a 50 gegalitre desalination plant at the moment with the capacity to expand that to 100 gegalitres. So we are building the inlet and the outlet and the connection pipes to be able to expand it if it is required. We are also very, very focused on stormwater and effluent reuse. South Australia currently reuses about 29 per cent of our effluent. With the projects we currently have underway, we will be increasing that to 45 per cent. With the stormwater projects, in the north, the Salisbury council, the Tea Tree Gully council and the Playford council have been doing a terrific job in stormwater reuse, aquifer storage and recovery. The South Australian government and the Commonwealth government are supporting that project. It is a \$98 million project, I think, or thereabouts that will deliver about 17 gegalitres of water for industry, parks and gardens, which will free up potable water for other uses.

There is also a significant project in the south called Waterproofing the South. We are also expanding the use of the treated effluent out from the Bolivar treatment plant north into the AngleVale area and expanding the use of that water for agricultural and horticultural purposes. In the south we have the McLaren Vale area, which uses reclaimed water. We intend expanding that in partnership with the Onkaparinga council. We are also working through a process we established called the Stormwater Authority, which is partnering with local government to look at other projects with the Brown Hill and Keswick creeks with the Adelaide airport, at Lockiel Park and at the Cheltenham racecourse. We have a whole range of projects that are currently on the table that we are working through the feasibility of. We are also upgrading the Christies Beach wastewater treatment plant. There is a \$272 million project there to upgrade that for reuse and to reduce the outflow of effluent to the sea.

Senator FISHER—Why cannot Adelaide be taken off the Murray? CSIRO has told us it can be in 10 years.

Ms Maywald—Well, certainly there is a variable flow in the River Murray. In years where there is lots of water around, we do not believe that Adelaide should have to take that infrastructure that is already there in place out of production. It is infrastructure that has a long life. If there are years when we have high flows, South Australia should be able to use that infrastructure. If we engineered a solution for the one in 100-year event so that we never used the River Murray for the rest of the time, I think it would be in fact over-engineering the solution for South Australia.

Senator FISHER—So you are saying it is doable, however?

Ms Maywald—Anything is doable. We could bring water down from the Ord, if we wanted to.

Senator HEFFERNAN—If you have money, you can do anything.

Ms Maywald—You can do anything.

Senator HEFFERNAN—That is it. The marketplace is—

Ms Maywald—But the point is whether water security is an economically and financially viable cost to the community.

Senator HEFFERNAN—The main player in this game is mother nature. This time last year, I predicted where we were going to be right now—I put it on the record—if we did not get a snow melt, as we did not get last year, and we get a dryer one. Bear in mind that there are three questions I want to ask, because I am sure Senator Birmingham has a question. What are we going to do this time next year if the worst case scenario comes to fruition? Have you done that planning?

Ms Maywald—Yes, we certainly have. It would be a foolhardy government not to have done that planning. At the moment, we have our critical human needs secured for this year. We have a requirement to accumulate from future improvements our next year's critical human needs. We will also be micro-managing the river in South Australia to ensure that we can carry over what we possibly can into the following year. We also have in place contingency plans for a whole range of ways in which we will be able to supply water to Adelaide, including looking at what we could draw down from the underground aquifers and the like.

Senator HEFFERNAN—On the question of three times the salt water that is in one of the lakes down there, which we were advised ought to be pumped to sea, is that a real—

Ms Maywald—That is the Coorong you are talking about?

Senator HEFFERNAN—Yes.

Ms Maywald—The southern Coorong. Yes, it is a real possibility. In fact, South Australia, through the Water Futures program, has secured \$610 million for what we call our Murray Futures package. A component of that is \$200 million to actually look at ways in which we can reconfigure the Lower Lakes. That includes the Lower Lakes and Coorong. We have been advised that we can have \$10 million upfront to do the feasibility studies on things like managing Lake Albert differently and putting in an environmental regulator.

CHAIR—Ten million from where, sorry, Minister?

Ms Maywald—From the Water Futures fund. That is part of the \$200 million that has been notionally allocated to the Lower Lakes for looking at other options for managing it. One of the things that we are doing the work on at the moment is pumping that hypersaline water from the southern Coorong to look at drawing fresher sea water into that environment. We are looking at a structure halfway down the Coorong that could potentially help us manage water through the Coorong. We are looking at the drainage schemes down in the south-east and what they may be able to deliver in relation to fresh water to the southern Coorong. We are also looking at how we might manage Lake Albert differently—whether or not it would be practical to manage Lake Albert as a freshwater system when the water is there or whether it could be estuarine when there is not a lot of water around. We also have \$120 million to put an integrated pipeline network around the Lower Lakes.

CHAIR—From the Commonwealth?

Ms Maywald—From the Commonwealth. That is, again, from the Water Futures program, part of the \$610 million. The \$120 million will build stock and domestic pipelines from Jervois above the Lower Lakes around to the Narrung Peninsula, the Raukkan community—the Aboriginal community at Raukkan—and the Paltallock peninsulas and domestic supply into the Langhorne Creek community. We will also be building irrigation pipelines to the Currency Creek and Langhorne Creek irrigation districts. What that will enable us to do is, once we have the pumps off the Lower Lakes, introduce a whole range of different options for managing the Lower Lakes. The Lower Lakes have been held at a consistent level for many, many years because that is

what the engineers set it to be. We may be able to do it differently and manage water through the barrages and into the Coorong more effectively for the environment without having those pumps on the waterways.

Senator HEFFERNAN—I am sure that Senator Birmingham and Senator Xenophon out there in space would love to ask a question.

CHAIR—Senator Heffernan, I am sure the senators would like a question. I will give the call, in all fairness, to government senators, after you have asked this last question. If there is time left, then we will ask Senator Birmingham or Senator Xenophon if they have a question. On that, Senator Heffernan, if you have one more, your time allocation has more than well and truly gone over what we have allotted.

Senator HEFFERNAN—No. My time allocated has gone.

CHAIR—If not, I call Senator Farrell.

Senator FARRELL—I want to reiterate the comment of Senator Hanson-Young and congratulate you for coming along today. You are the only minister brave enough to turn up, so well done. You are very clearly on top of your brief there. You live in the Riverland?

Ms Maywald—Yes.

Senator FARRELL—I just wonder whether you could perhaps tell us in your own words not only the importance of the Murray to South Australia but also the plight of the people who are currently living on the Murray and the sort of difficulties they are currently experiencing.

Ms Maywald—Yes. I would be pleased to do that, Senator Farrell. The Riverland is, of course, my home. I live just outside Waikerie, which is a small community in the Riverland. The seat of Chafey is my seat. It is predominantly an irrigation community. The impacts of the drought have been significant on my community. I have just spent two days at the Riverland field days with a stall and the full two days on hand to actually talk to people who have come through. There is a real sense of desperation. People are so uncertain about what the future holds. They do not know what decisions to make. I refer back to your previous witnesses, the Wentworth Group of scientists. The importance of actually getting an appropriate restructure package in place to assist these people make these decisions cannot be understated. It is really, really important that we actually enable people to make reasonable decisions in this time of absolute hardship.

I agree that there is the potential for up to one-third of irrigators in my community who would be willing to exit to do so if they were given the right circumstances. At the moment, the exit packages do not enable people to exit easily given that the requirement—

CHAIR—What is that in English?

Ms Maywald—Well, the exit packages that are available through the department of agriculture and fisheries are linked. You have to actually sell the land to be eligible to get the up to \$150,000 exit package.

Senator HUTCHINS—So these are the old soldier settlements that we referred to earlier?

Ms Maywald—These are the old soldier settlement blocks. That is right. There is a lot of very, very small allotments. The problem is that they are worth nothing to sell. No-one is buying them at the moment. When they sell the property, they sell their home. There is really not available properties for them to move into at the moment either. So it is a very difficult system. They are sort of locked in the system. So it is really important for us to get the exit package and the transition packages right.

Senator XENOPHON—Can I ask a question of the minister in relation to that?

CHAIR—Yes, Senator Xenophon. Senator Siewert wants a clarification. Senator Farrell has the call.

Senator XENOPHON—Further to what the minister just said, is it her position that the current exit package is simply too narrow? Would she see a viable alternative package to allow people to stay on the land and perhaps on the basis that they sell their water at a good price but be able to stay on their property and not use it as an irrigated property for a specified period?

Ms Maywald—Well, certainly, yes, that is one way that it could be developed. A number of different options have been suggested by irrigation communities. Some of them are more practical than others. I think the most important thing is to be able to enable people to stay in their homes, to actually put in place a provision where they cannot go back into productive capacity. They need to be able to exit, but that does not necessarily mean they need to sell the land. If they sell their water, they are exiting farming. The properties are too small to do anything else with. It is not like New South Wales; if you take the irrigation off, you can go back to dry land cropping or grazing. The properties are just too small. They are tiny soldier settlement

allotments. They were a good policy for another era. They do not actually fit the global marketplace that these people are competing in in a lot of ways. So I think that the opportunity to provide for them to exit to stay within the district would be a useful thing to do.

Senator SIEWERT—Senator Xenophon in fact asked the question I wanted to clarify.

Senator FARRELL—Thank you for that description of some of the problems of the people in the Riverland. Hopefully it will rain. It has obviously been raining again in September in Adelaide for the level in the Lower Lakes to have risen again. Can we, I guess, look at the worst case scenario, and that is that the drought continues now for another 12 months or more. What are the contingency plans of the government to ensure that South Australia has got drinking water and water for other uses?

Ms Maywald—Certainly we have a whole range of contingencies. The first one is to be able to accumulate our critical human needs during the course of this next 12 months or this water year. We have already gone through three months of that. We will certainly be seeking to set aside that 201 gigalitres. That could come from a number of areas, including future improvements allocated to South Australia, even under the worst case scenario. There is also the opportunity for us to look at the Adelaide Hills. If we do get a higher flow into the Adelaide Hills, we can potentially carry over some of our critical human needs from this year into next year. We have also looked at contingencies, such as the availability of underground water in Adelaide. We have looked at mining the weir pools. There is any number of contingencies that we have considered that could be put into place at any time should the drought continue.

Senator FARRELL—The federal government has provided a number of proposals to assist particularly in the Lower Lakes. I think you have talked about the \$120 million pipeline to Langhorne Creek and Narrung. But the other proposal is a \$200 million assistance package. I think you have told us about \$10 million of that. Can you tell us about what you are planning to do with the remainder?

Ms Maywald—Well, what we have said is that there is a range of projects that could be looked at. Ten million dollars has been advanced to us to work up a whole range of different proposals. One of them may be managing Lake Albert separately to Lake Alexandrina, looking at different ways to manage water through both of those systems, looking at environmental regulators between Lake Albert and Lake Alexandrina, and potentially building a channel across from Lake Albert into the Coorong. There is a whole range of those projects about which we do not have enough information to know whether or not they are goers. That is why we need to do substantial feasibility work first and foremost to understand whether or not we would actually, with an investment down around the Lower Lakes, end up with a better environmental outcome. So we are undertaking that work. The first \$10 million is to look at doing those things. That includes the southern Coorong options as well. So, out of the \$610 million, there is \$200 million towards adaptive management of the Lower Lakes.

There is a \$10 million advance to work up some of the propositions. There is the \$120 million for the pipelines around the Lower Lakes, both stock and domestic and irrigation pipelines. There is \$100 million also to manage the river between the border and the Lower Lakes in a more adaptive way as well. We have about 360 or 370-odd irrigator pumps and stock and domestic pumps that are currently on back waters to the River Murray. If we can relocate those pumps in key wetland areas, we can then introduce wetting and drying cycles to the floodplain. We can not only save water through evaporative losses but also enhance the biodiversity and conservation value of those wetlands. Currently they are permanently inundated as a consequence of the weir pools holding the water at a certain level. So this water flows back and it just sits on the floodplain and evaporates and is constantly being filled from the river. If we can put a structure in place and wet and dry it, we can introduce a more natural cycle and get a much, much healthier wetland. Plus you save evaporative losses. Banrock Station is a good example of that. So we have \$100 million for that project.

We have also got \$110 million towards an industry renewal package for the Riverland. It is a terrific initiative to look at those people who want to stay in and how we can help them adapt to a future of doing more with less and how we might be able to consolidate industries, looking at new business models and all those sorts of things. That hinges on us being able to help those who want to get out as well—for that to be successful. We have also got \$80 million for water purchase, which we would tie with an industry exit package or an industry transition out package.

CHAIR—I know Senator Hanson-Young has a question. We have a few more minutes. Senator Birmingham, I will give you the call after Senator Hanson-Young.

Senator BIRMINGHAM—Thank you, Chair.

Senator HANSON-YOUNG—Minister, I return to some of the answers that you gave before in relation to water. If we can find the water temporarily across the border, you believe that it is able to be brought down because we can bring down the other stuff in terms of what is being held there for critical human needs.

Ms Maywald—From the southern basin.

Senator HANSON-YOUNG—From the southern basin, exactly. Do you think that the audit is going to be sufficient in finding this?

Ms Maywald—It remains to be seen. I have not seen the results of the audit.

Senator HANSON-YOUNG—So are you confident that the way the audit is being structured and managed will deliver the results we need?

Ms Maywald—I am confident that the audit will do the necessary work to actually determine where the water is and what it is allocated to now. I do not think the audit actually finds the water. The market finds the water if we are going to buy temporary water. The audit does not find it.

Senator HANSON-YOUNG—Right. Have you been given any timeframes from your federal government counterparts or state counterparts in terms of when we should expect the results of the audit?

Ms Maywald—No. I think that is a question for the federal government.

Senator HANSON-YOUNG—So you have not been given any promises?

Ms Maywald—No. I have not been given any promises at all. I refer that question to the federal government. It is their audit.

Senator HANSON-YOUNG—Would you not, though, as the South Australian minister for water wanting this 60 gigalitres, be saying, ‘When is the timeframe for this, guys?’

Ms Maywald—I would be hoping that they do a thorough job and come up with it in a timeframe that is responsible and allows a thorough job on the audit.

Senator HANSON-YOUNG—And what would that timeframe be?

Ms Maywald—Depending on the amount of work that they have to do. That is a question for the federal government again.

Senator HANSON-YOUNG—So you have not said to them if by the end of summer—

Ms Maywald—I think I have already answered the question.

CHAIR—Senator Hanson-Young, we are not in an estimates session. The minister, I think, has answered the same question three or four different times. If you have another question to the minister, please ask it.

Senator HANSON-YOUNG—So, just in summary, you do not have any idea what we should expect in terms of the timing?

Ms Maywald—What I have suggested is that you refer that question to the federal government.

Senator HANSON-YOUNG—I understand that. I just want to clarify. You have not been given any information in terms of the timeframe?

Ms Maywald—I have been given an indication that it will be done as soon as practically possible, and I believe that will be the case. Now that is my answer to that question for the third time. I believe it will be done as soon as practically possible.

CHAIR—That is now the fourth time.

Ms Maywald—And that it is a question to the federal government.

CHAIR—Thank you, Minister. Senator Birmingham, you have a quick question for the minister?

Senator BIRMINGHAM—Thank you, Chair. Minister, how long will construction of the weir take?

Ms Maywald—Approximately nine months.

Senator BIRMINGHAM—So how long prior to needing the weir would you expect to make a decision?

Ms Maywald—Three months worth of approach works needs to be undertaken. We are going ahead. A no-regrets decision has been made to undertake that work. So the approach works, the roads into the site, will be completed. Then it takes about six months to the closure of the weir.

Senator BIRMINGHAM—How far progressed are those three months worth of works?

Ms Maywald—They are going through the approvals process at the moment.

Senator BIRMINGHAM—Does that mean there is still three months to go on those from the approvals?

Ms Maywald—The approvals process is part of the process.

Senator BIRMINGHAM—So how far through the process are they?

Ms Maywald—We have commenced the process. It is in the early stages.

Senator BIRMINGHAM—Does that mean there is still three months of the process to go?

Ms Maywald—Perhaps a little bit less than three months.

Senator BIRMINGHAM—Effectively, it would still be nine months if you finish the pre-works and then were to make a decision. When should we expect a decision, given uncertainty, I guess, surrounding the levels of the lakes from approximately February onwards next year?

Ms Maywald—Senator Birmingham, we will monitor it on a monthly basis. We will model the inflows and the impacts upon the Lower Lakes levels as a consequence of those inflows and recast when the trigger points may be reached, and we will work back from that. So every month it will change depending on the monthly circumstances.

Senator BIRMINGHAM—Prior to the recent rains in Adelaide, how close to that trigger point did we come?

Ms Maywald—We came very close to that trigger point, hence the no-regrets decision to go ahead with the works into the site.

Senator BIRMINGHAM—So whilst they have pushed out the critical timeframe until early next year, faced with no further significant rains, that trigger point would come again very soon?

Ms Maywald—Certainly we are going ahead with the preliminary works to build the roads into the site and we will monitor it on a monthly basis. At this stage, September 2009 would be the critical point in time for us if we took the data at the end of August.

Senator BIRMINGHAM—Is the report in yesterday's Adelaide *Advertiser* that a decision will be made at the ministerial council meeting correct?

Ms Maywald—A decision will be made on the process for decision-making. A decision will not be made to construct the weir.

Senator BIRMINGHAM—Thank you.

CHAIR—Is that it, Senator Birmingham?

Senator BIRMINGHAM—I think Senator Xenophon has a question. I will be reasonable.

CHAIR—Senator Xenophon, if you have some quick questions.

Senator XENOPHON—I think Senator Hanson-Young raised this earlier. We heard evidence a week or two ago from Dr Bill Phillips that if you put sea water into the Lower Lakes, it could impact on the ground water on the Fleurieu Peninsula. Is the minister looking at bioremediation as an alternative? Would that, on her best advice, be a better and safer alternative to deal with acid sulphate soils?

Ms Maywald—Certainly there is a number of ways in which you can deal with acid sulphate soils. Bioremediation is one of those. But the Lower Lakes is a very large-scale problem. Bioremediation does work in smaller environments. We are actually undertaking some bioremediation work in some hot spots down around the Lower Lakes. It is soon to commence.

Mr Beal—Three one-kilometre long sites are being developed as trials.

Ms Maywald—So we are actually developing three one-kilometre sites as trials as we speak. Liming is another option, but we are talking about 900 square kilometres of lakes down here. Nowhere in the world is there an experience of dealing with an acid sulphate soil issue of that scale.

CHAIR—Senator Xenophon, if we can, we have gone over, but we went over on our previous witnesses. If you have no further questions—

Senator XENOPHON—No.

CHAIR—I will go to Senator Fisher.

Senator FISHER—How much water is in the Menindee Lakes, in your view, at the moment?

Ms Maywald—It is of the order of about 540 gigalitres, I think. It might be a little less than that because they have actually started to transfer some water down to Lake Victoria.

Senator FISHER—Based on your information, how much of that do you expect to evaporate by next year?

Ms Maywald—We would have to take that one on notice for you. I do not have that figure in my head.

Senator HEFFERNAN—I cannot understand. You are in South Australia, not in New South Wales. Why would you not have it in your head?

CHAIR—Senator Fisher, any other questions?

Senator FISHER—Well, based on the expectation that Adelaide has some reliance on that water, it would be useful information.

Ms Maywald—Well, certainly the water that is in Menindee Lakes is allocated to losses. It is allocated to the conveyancing and partly meeting New South Wales' commitment to our 696 gigalitres. It is also water to secure Broken Hill.

Senator FISHER—That is right.

Ms Maywald—It is also water that is available to irrigators below. There is a small irrigator allocation. I think in the order of about 25 to 30 gigalitres is allocated for irrigation below Menindee Lakes. So there is the transmission water that is required. The losses in the system are all accounted for in that.

Senator FISHER—From South Australia's perspective, would it not make sense for some of that water to be used rather than sit there and wait to evaporate?

Ms Maywald—Only if you could guarantee that, if that water were brought down and used, you were going to get rainfall to replace a certain amount of it for next year, because it is actually underpinning our critical human needs.

Senator FISHER—Critical human needs for?

Senator FARRELL—So we do not run out of water in Adelaide.

Senator FISHER—Senator Farrell, I am asking the minister. Critical human needs for?

Senator FARRELL—Drinking water.

CHAIR—Order!

Ms Maywald—For South Australia—for Renmark, Berry, Barmah, Waikerie, the Upper Spencer Gulf, the Keith area, Murray Bridge and Adelaide, yes. But there are lots of other critical communities in South Australia that need water too.

Senator FISHER—Indeed.

CHAIR—On that, I have one question related to Senator Heffernan's prediction 12 months ago. Senator Heffernan, Senator Hutchins and I were having a quick chat. After this meeting, if you could let us know what is going to win the third at Rosehill tomorrow, we would appreciate that.

Senator BIRMINGHAM—I want to ask one question. Minister, the Goolwa community have put forward a proposal. I understand that your department has undertaken an assessment of that?

Ms Maywald—Yes. That is exactly right. The Alexandrina council have put forward a proposal. In the Goolwa channel, salinity levels are currently at about 25,000 ECs, which is about half of sea water. When the wind blows, that blows that up into the Lower Lakes. There is also a significant tourism economy down around Goolwa and, in particular, a boating economy. The Alexandrina council have put forward a proposal for the construction of a temporary barrier at Laffin Point—between the Goolwa channel and the lakes at Laffin Point. We are currently doing some investigations into the feasibility of that project.

Senator BIRMINGHAM—When do you expect that feasibility study to be completed and made public?

CHAIR—I will have to make it the last question, Senator Birmingham, if I may. Sorry, Minister.

Ms Maywald—There is some technical work that needs to be undertaken. We are actually working through those issues at the moment. There is also a range of consultations that needs to occur with the indigenous community and others. So a timeframe on that will be as soon as possible. We are working through as many of the issues as we can concurrently so we can do it as soon as possible.

Senator HEFFERNAN—I just want to refer back—

CHAIR—Senator Heffernan, do you wish to make a statement?

Senator HEFFERNAN—Yes. The third race at Randwick. You talked about the winner. Mate, if you have enough money, I can get the race pulled for you.

CHAIR—Minister and officials from the South Australian department, thank you very much for your time.

Ms Maywald—Thank you.

CHAIR—I will keep it moving, if I can. Because our next witness is via teleconference, we do not have to wait for tables to be cleared.

[11.41 am]

STROTHER, Councillor Roger, Mayor, Coorong Council

Evidence was taken via teleconference—

CHAIR—Welcome. Sorry we kept you hanging on the line. Just to clarify for those who are in the room, you are joined by me, Glenn Sterle, Senator Heffernan, Senator Farrell and Senator Fisher. On the line is also Senator Xenophon. Senator Hutchins is in the room and Senator Birmingham. Mayor, I welcome you to this teleconference. Before I invite you to make a brief opening statement, I just remind senators who might not have been at the Adelaide hearing that Mayor Strother did share a timeslot with Mayor McKew. Obviously we are welcoming you back. On that, Mayor Strother, do you wish to make a very brief opening statement?

Councillor Strother—Thank you. I appreciate the chance to appear before you again. Just quickly, I would like to say that the Coorong district council is the largest geographic one in size in South Australia. We cover areas around the Coorong National Park, Lake Albert and a substantial portion of Lake Alexandrina. The main town in the council is Tailem Bend, with a population of approximately 1,500 people. It lies 97 kilometres south-east of Adelaide on the River Murray. The second largest town is Meningie, with a population of approximately 900 people, situated on the south-east shores of Lake Albert approximately 150 kilometres south-east of Adelaide.

The River Murray and the Lower Lakes and the Coorong are of particular significance to the Ngarrindjeri people, who have inhabited the area continuously for many thousands of years. Much of the culture and traditions of the Ngarrindjeri people are directly related to these sites and to the water contained in them. The Lower Lakes and Coorong were designated, as you all know, as a wetland under the Ramsar convention in 1985. The wetlands also provide a haven for migratory birds from many different countries. Australia is a signatory to at least two treaties with other nations in recognition of the importance of those wetlands.

In mid-2006, much of the Coorong area was subject to either drought or a lack of access to water. The situation has serious ramifications for the council area as a whole, particularly around the Meningie and Narrung Peninsula. Until recently, the Lower Lakes and the Coorong supported a thriving dairy industry, irrigated horticulture, fodder production and beef cattle production. Each of these industries have been significantly and negatively impacted by the lack of access to water from the Lower Lakes. This situation was brought about by the drought and the mismanagement of water resources within the whole of the Murray-Darling Basin. I will add that the property values of the area have declined markedly over the last 12 months, in many cases up to 50 per cent. The local economy has suffered nearly 40 per cent due to that lack of water and the closure and relocation of at least 17 areas in the local area. Enrolments in the Meningie area school have declined by over 20 per cent since 2005. That is primarily due to families leaving the district as job opportunities have diminished. I will also add that a primary school at Narrung has closed due to those same families leaving the area.

The lack of access to water has had negative impacts in a range of other ways, including on the ability of council to generate rate revenue at a level which would allow it to provide quality service to the community. Thank you.

CHAIR—We will go to questions.

Senator HEFFERNAN—I feel sorry for you in your community. Let me just tell you, old mate, we are 10 days away from our fourth complete dry land failure, so it is not as if it is something that is peculiar. As you would be aware, the rice industry last year produced 18,000 tonnes where they usually produce one million. So the distress to the community is from the top end to the bottom end of the Murray-Darling Basin. But what I wonder, and I would be interested to hear from you, is what you think the future holds, if the science is right, in the declining run-off for the Murray-Darling Basin? I absolutely think, and I have been saying it for years, that we are going to have to reconfigure the way we have settled the Murray-Darling Basin and, in fact, the way we have settled Australia.

Councillor Strother—Senator, I think you are right. I believe the community around here understands that the future of the Lower Lakes area probably will not include irrigation again. You have to understand also that the farming community contains very adaptable people who can adapt to climate change and are adapting already.

Senator HEFFERNAN—Yes. The weather is moving south, so the top end of your wheat belt is going to become more marginal, according to the scientists. The smartest bloke I know in South Australia is a bloke called Malcolm Bishop, who moved to Katherine and bought 14,000 acres up there. He bought it for \$95 an acre four years ago, which is \$1.2 million, and sold it for \$13 million this year. There is a lesson for all of us. But what that is about is giving hope to the next generation of farmers as we reconfigure Australia. On the takeout, if all our science is true, it is grim. You wake up at three o'clock and wonder why this crop is going to fail again. It is the fourth one. We are going to do that and we are going to buy people out and buy their allocations. Senator Xenophon, are you still there?

Senator XENOPHON—Yes, I am, Senator Heffernan.

Senator HEFFERNAN—You might take up the question of what is a reasonable way to package people out without corrupting the water market.

CHAIR—I think in all fairness, questions are to our witness. Time is really limited. Let us not waste it. I think it is a very important question, but I would rather you direct it to the witness.

Senator HEFFERNAN—I know Senator Xenophon has an interest in this. Senator Xenophon, do you want to take it up? If you do not, I will do it for you.

Senator XENOPHON—I will work on it.

Councillor Strother—With the buyback of properties and water, and particularly the recent buyback, what the government should consider is just buying that water, separating that water from the land and then reusing that land for agriculture and not put it into national parks.

Senator HEFFERNAN—There you go.

Senator FISHER—In terms of the transition package for irrigators, if Senator Xenophon is not going to ask—

Senator XENOPHON—Sorry, Senator Fisher. It is okay. I will wait, Chair.

Senator FISHER—Mayor, do you have a view as to how a transition package could work, particularly in respect of irrigators who may decide to sell and in respect of transitioning them out? They are not going to decide to sell and then walk out the next day, or are they?

Councillor Strother—I can only tell you what has already happened. As you are aware, nobody around the Lower Lakes is irrigating here. So what they have done is most of them have either leased their water or sold their water on and they are operating their farms as dry land farms. There are a couple trying to sell, of course, some with limited success. As for transition, probably there is a concern about infrastructure that is just sitting there going to waste. Maybe there needs to be consideration of how farmers are reimbursed or even helped out with moving that infrastructure. For example, centre pivots are sitting out in the paddocks right now not being used.

Senator XENOPHON—Chair, I thought I would take the call from you on that. I was trying to do the right thing. In relation to Mayor Strother, is the position that if people could get a package but stay on the land but not use it for an irrigated crop for a certain time, would he see that as a way of keeping communities viable?

Councillor Strother—Absolutely. I heard that. If governments were able to offer a set amount for water on the guarantee that the farmers stay on their land and work it as a dry land acreage, that would be a good outcome.

Senator XENOPHON—Presumably, that would hopefully deal with Senator Heffernan's concerns about corrupting the water market.

Councillor Strother—That is right, yes. That water would be bought by the government. You are right, yes.

Senator BIRMINGHAM—A number of proponents have talked about the southern end of the Coorong and the need to extract some of the hypersaline water there. What is council's position on this?

Councillor Strother—We view that with some favour with the understanding that it will not be an excessive amount of water that will impact on the environment down on the Southern Ocean. Our view is also, with the dredging of the mouth, that the mouth would need to be widened and deepened to allow a greater transition of water into the southern lagoon as it is pumped out. So, yes, we consider that favourably, but we need to see an impact statement or report on how that would impact on the environment in the Southern Ocean.

Senator BIRMINGHAM—In terms of other potential freshwater supplies into the southern Coorong, what assessments has the council, if any, undertaken there, particularly looking from other basin catchment areas in the south-east of South Australia?

Councillor Strother—We are, of course, looking at the drainage schemes and upgrading the drainage schemes down in the south-east. We certainly fully support those. But let us be real about those drainage schemes. They will not have any affect until we get substantial rain down in the south-east for run-off to occur.

Senator BIRMINGHAM—On broader issues, there are the irrigation packages and support infrastructure packages that the government has provided. I assume they, of course, are welcomed by the council and the local community in the security they provide?

Councillor Strother—Particularly the commitment by governments to pipe potable water around the lake, yes. That is very welcome.

Senator BIRMINGHAM—Does a fear in the community come with that that, in a sense, you are all being weaned off the lakes to potentially set up for a flooding?

Councillor Strother—I think that has been expressed, yes; in some cases, quite strongly, yes. Yes, I think you are correct in that assessment.

Senator BIRMINGHAM—Has council looked at all at proposals regarding the so-called decommissioning of Lake Albert?

Councillor Strother—Not to a great degree. We have been relying on what the scientists have been telling us. The information we are receiving really concerns us. If you decommissioned Lake Albert particularly, the results would be catastrophic for the environment and potentially even for the people living around that lake.

Senator BIRMINGHAM—What type of results do you believe would occur?

Councillor Strother—Look, I understand that if it were decommissioned, assuming that you allowed acid sulphates to become active, it would become uninhabitable around the lake shores. So that means people would need to be moved away from the affected areas. Or even if we just included salt water, it is going to become a situation very similar, if not worse, than the southern end of the Coorong, where there is considerable smell. People will have real difficulty living with that too. So the result, whichever way you look at it, means that for the people living within the shores of the lake, even with the freshwater pipe to them, it probably will not be habitable.

Senator BIRMINGHAM—You talked about the pain in the local community in terms of the impact on population numbers and otherwise. How long do you think the communities as well as the lakes can deal with the transition process required? To put that in some context, we had the Wentworth Group this morning urging the government to, in a sense, abandon a 10-year program and turn it into a two- or three-year type program.

Councillor Strother—Firstly, let me emphasise that the communities around here have not the ability now to plan ahead because they do not know what decision anybody has made about it. I think at the current time they are living almost day by day. But if we can get through this summer into next winter, we will be again living month by month, I guess. I think with the community themselves, you find that those who are left here are the ones who want to tough it out and are unwilling to move on.

CHAIR—Thank you, Senator Birmingham. I know Senator Farrell has a question and Senator Adams has one.

Senator FARRELL—Mr Strother, I was just interested to know what towns the Coorong council incorporates.

Councillor Strother—We incorporate, like I said earlier, Tailem Bend, which is actually on the River Murray about 14 kilometres before the Murray enters Lake Alexandrina. That is our largest community. We have Meningie, which is on the shore of Lake Albert. They rely on the lake themselves for their living. We have Narrung, which is a small community. Then we have the Aboriginal community of Raukkan, which lives on the shores of Lake Alexandrina. They have a population of 200, roughly. We have another small community down on the Coorong called Salt Creek. That is a very small community. Then we have a larger community inland called Tintinara, which is on the Dukes Highway. There are two or three other communities, such as Peake and Sherlock, that are reliant on Mallee farming.

Senator FARRELL—Is Policemans Point included in that?

Councillor Strother—Yes. Policemans Point is there. Yes, that is down by Salt Creek. It is within a few kilometres of Salt Creek, yes.

ACTING CHAIR (Senator Siewert)—While you have been talking to Senator Farrell, there has been a change of chair for a little while. Are there other questions? Senator Adams has one short question.

Senator ADAMS—Thank you, Mayor. If a package were available to the farmers and they gave up their water, what would they be able to diversify into? Have you got any examples of people having already done this?

Councillor Strother—Yes, there is. In the last 12 months or the last irrigation season, there was no irrigation at all. We have two dairy farms that have gone completely into dry land farming. They changed operations so that they are completely dry land operations. We have other farmers who are doing reasonably large-scale cropping. There are others who are doing just the grazing of beef cattle. So they have already diversified. That is why we are saying that we are not concerned about irrigation at this stage. Providing we have access to reasonable water, this area can survive on dry land farming operations.

ACTING CHAIR—Senator Farrell has one more question.

Senator FARRELL—Mr Strother, it is pretty green around there at the moment, is it not?

Councillor Strother—Yes, it is. We had nearly above average rain in July and August. The cropping and pastures are quite good for this time of year. If we have just a normal spring, as for dry land pastures, we will do quite well. But we do need more rain right now to finish off those pastures.

Senator FARRELL—How has September been going? You mentioned July and August.

Councillor Strother—We have had just a few showers, but we do need more rain. I might add that because the pastures are so vigorous at the moment, they are drawing moisture out of the ground very quickly. If we continue to have sunshine like we have today, you will find that the crops will start to wilt very quickly. So it is coming into a critical time for the cropping industry, yes.

ACTING CHAIR—I think we are going to have to wind it up. Thank you very much for appearing again today.

Councillor Strother—Again, thank you for allowing me a hearing, at least briefly.

[12.02 pm]

HIPSEY, Dr Matthew Richard, Research Fellow, Centre for Water Research, University of Western Australia

WAINWRIGHT, Mr David, WBM Consulting

WEBSTER, Dr Ian, CSIRO Land and Water

Evidence from Mr Wainwright and Dr Webster was taken via teleconference—

ACTING CHAIR—Welcome. I will ask you to make brief opening statements. Then we will go to questions.

Dr Webster—We have been working on the oceanography of the Coorong for the last five years. As part of that activity, we have developed a hydrodynamic model of the Coorong which aims to assess what the impacts of mouth dredging, barrage inflows, wind, tide and other management actions might be on the water levels and some of the above lagoons of the Coorong. In recent times, I have done some very preliminary trial simulations which have looked at some of the management options that have been proposed for the Coorong, including the proposition that pumping salt water out of the south lagoon would be a good management option. Ultimately the hydrodynamic modelling will be linked to work which is being done through a Water for a Healthy Country cluster, which has ecological scientists in it. We will be aiming to assess future scenarios of water release and river flows in the Murray on the ecological health of the Coorong.

ACTING CHAIR—Dr Hipsey or Mr Wainwright, do you have anything to add in terms of an opening statement?

Dr Hipsey—My background is in the modelling of aquatic systems. I conduct research into lake biogeochemistry and aquatic ecology. In particular, I have been often involved in modelling complex environmental systems. In this capacity, I was engaged by the South Australian government in March this year to explore some potential future scenarios of water quality in the Lower Lakes, not including the Coorong. This was given ongoing drought conditions.

Mr Wainwright—I will jump in there. I have been working in my capacity as an employee of WBM for the last seven years. We also build computer models on which we do simulations of the movement of water, sand and salt through the mouth of the Murray River along the Coorong within the Lower Lakes and, most recently, in the lower reaches of the Murray River below lock 1.

ACTING CHAIR—If everybody has finished making their opening statements, I will throw it open for questions.

Senator ADAMS—My question will be to Mr Wainwright. Something I have been asking all the time is just about the impact on the salinity with the weirs and especially with this new weir that is proposed. As the river is not flowing as fast as it was and it is creating problems, how do you see this new weir as far as causing a problem with salinity? I have been trying to find out how much salt actually is deposited in the Lower Lakes each day.

Mr Wainwright—I do not have a figure on the actual amount of salt that is deposited in the lake every day. Of course it varies with the amount of flow that is being pumped into the river. In terms of the impact of salinity of the weirs, we might start with the existing barrages, which are those that presently separate the Coorong from the Lower Lakes. The impact of those primarily has been to turn the lakes into a predominantly freshwater system. Previously it was probably more a brackish type of system, to the best of my knowledge. So we are looking at fairly low salinity levels, but they were still affected by the tides.

The construction of the new proposed weir at Wellington, depending on the way the construction is managed, could potentially starve freshwater flows from the Lower Lakes. So they can actually construct the weir, they will close it off. That will prevent flow from coming out of the river and into the Lower Lakes for a short period of time. After a while, a typical period is probably less than four months—again, it depends on how much water is flowing down the river—the water pool behind that weir will fill up and it will start to overtop. Then fresh water will again begin flowing into the Lower Lakes.

Senator ADAMS—So with the whole water system, can you tell me just what effect, I guess, there is with the river getting lower and not so much water flowing through? This is going right from the top down to the bottom. As far as salinity goes, is it getting worse?

Mr Wainwright—Yes, it is. I can only really comment because I have only looked closely at the areas below lock 1. But as time goes on and the evaporation down there is so large, what happens is when water is evaporated from the surface of the lake, it is sort of pure fresh water that has evaporated, more or less. You end up getting all of the salt that is sitting in the lakes being concentrated in there. So that is one effect. You are getting the concentration of salt that is already in there, which is being affected by evaporation. The evaporation that has occurred in the last couple of years has exceeded the inflow from the river and from the other tributary.

The other thing that has happened is that, as the water level has fallen in the Lower Lakes, there is very strong evidence that salt is beginning to seep underneath Goolwa barrage. My belief is that it is actually coming underneath that barrage. It is sitting on sandy sort of material. It is piled deeply into sandy material. But the ground water from the Coorong side of Goolwa barrage is able to seep underneath that barrage and make its way up into the channel upstream of Goolwa barrage. So we are seeing an increase in salt within Goolwa barrage, which is getting very high at the moment. It is sort of on its way to approaching seawater levels of salt concentration.

Senator JOYCE—The area of the Lower Lakes is about 900 square kilometres. Is that correct?

Mr Wainwright—That would be about right, yes.

Senator JOYCE—What is the evaporation rate down there? In the Murray-Darling Basin catchment, it is about two metres a year or something, is it not?

Mr Wainwright—Yes. You would be looking at something like that in full evaporation. The balance of evaporation with rainfall would typically be somewhere between 800 and maybe 1,100 millimetres; I think that is the largest.

Senator JOYCE—So if my maths are correct, that would be about 1,800 gigs a year if it is full, or maybe less—maybe about 1,600 gigs a year—evaporating?

Mr Wainwright—That sounds about right, yes.

Senator JOYCE—The Lower Lakes naturally would have been an estuarine area. Would that be correct?

Mr Wainwright—Partly correct, yes. But the degree to which you would have called it an estuarine environment would have depended upon how wet a season you would have in the overall catchment. So the amount of flow coming down the river would have sort of changed that equilibrium from year to year.

Senator JOYCE—Is there a possibility, then, if it is a naturally estuarine area, that at times when it is really dry, as it is moment, there would be salt water coming into the area? When there are excessively wet years, the fresh water would push the salt water out of the area. When did the barrages go up? Was it the 1930s or 1940s, roughly?

Mr Wainwright—Yes. That is right.

Senator JOYCE—The issue obviously is not so much lakes as getting water to farmers who live around the lakes. If we can get water to the farmers, does it matter whether the lakes are fresh or salt?

Mr Wainwright—That touches on a lot of issues that are sort of beyond my area of expertise. But I will tell you what I do know about it. We presently have a freshwater ecosystem there. If you introduce salt water, say, through Goolwa barrage or any of the other barrages and if flows keep coming down at the low rates they have been in the last few years, you are likely to get hypersaline conditions in the lakes, or at least parts of the lakes, very quickly. I am not an expert on ecology, but that would, I imagine, kill. Possibly a better person to touch on that would be Matt Hipsey.

Senator JOYCE—Is it possible to go up to near Wellington or lock 1 and, since we need to get water to the farms, actually pipe the water to the farms and save the possible 1,500 to 1,800 gigs that would be lost by evaporation if they just sat in the lake?

Mr Wainwright—Where are you talking about pumping?

Senator JOYCE—Is it possible to go upstream to where the water is more confined and restricted, rather than have it sit in the lakes, and to lift the water from there and move it to the farms by reason of pipes and hopefully save on the evaporation that would have happened by just storing it in a 900 square kilometre—

Mr Wainwright—It is possible. I do not have detailed information of the location of where farms are around the Lower Lakes. I cannot really give you an indication of how much that would cost, but I imagine it would be fairly expensive.

Senator FARRELL—Just on that point, it is worth pointing out that part of the federal government's proposal is to provide \$120 million to do exactly that—to pipe fresh water.

CHAIR—Just for a point of clarification. Thank you, Senator Farrell.

Senator HEFFERNAN—That is stock and domestic, is it, or irrigation? What are we talking about?

Senator FARRELL—It will be a range of things, I am sure.

CHAIR—Senator Farrell, thank you for that clarification. Without wasting valuable time, Senator Hanson-Young.

Senator HANSON-YOUNG—I am not sure who is the best person to answer this, so whoever can jump in. We have heard from a number of witnesses about the impact that salt water could have on the ground water in the region. Could somebody address that for me?

Dr Webster—Not me.

Mr Wainwright—I am not qualified to answer that. Perhaps either Ian or Matt might be able to field it.

Senator HANSON-YOUNG—Dr Hipsey?

Dr Hipsey—I have not done any particular study looking at how the concentrated salt water would enter back into the ground water, although that is a common process generically, so I would imagine the saline water built up in the lakes—in particular, Lake Albert—would reach out to the ground water and cause a concern.

Senator HEFFERNAN—If you have negative pressure, obviously. You can control the extraction to prevent that from happening, but you have to actually do it.

Dr Hipsey—Yes. You would need a balance between the lake level and the groundwater level.

Senator HEFFERNAN—By the way, just to set the precedent, that is exactly what they do on the Gascoigne with the Carnarvon water. The two adjoining aquifers are saline. The riverbed is fresh water and they absolutely use full science to control. You can do it, but you have to be careful with your science.

Senator HANSON-YOUNG—Thank you, Senator Heffernan. I think if you were a witness, we would be asking you questions as well, but we are not. There has been a suggestion—it is not overly popular, I must point out—to remove the locks or open up the locks so that the water can run down. There was a response from the state water minister that that would have an impact on the quality of water. Can you flesh that out for me a bit.

Mr Wainwright—I am not sure in what context they are saying that. It may have to do with the potential for acid to be resuspended from the wetlands that are adjacent to the river.

Senator HANSON-YOUNG—The response was that the quality of water would not be sufficient to have it taken out further upstream for use by stock or even others under their definition of human critical needs.

Mr Wainwright—I am not sure that I can shed any light on that claim. Perhaps one of the others can.

Dr Hipsey—I believe you are talking about water coming in from the barrages moving back upstream and impacting on the water off-takes for Adelaide. Is that correct?

Senator HANSON-YOUNG—No. It would be opening up the separate locks and allowing the water just to flow as opposed to keeping it at higher levels further upstream.

Dr Hipsey—I see.

Senator HANSON-YOUNG—The argument against that from the water minister was that that would significantly decrease the quality of water needed for human critical needs.

Dr Hipsey—Yes. It would blend with the poorer quality water and you would have less control over it.

Senator HANSON-YOUNG—In relation to the timeframe that we have to do something, we are hearing from locals in the area, and we heard this morning from the Wentworth Group, that we actually have to be taking action now; we cannot wait any longer if we want to ensure that we stop any more environmental devastation. What do you see as the timeframe for getting fresh water into the Lower Lakes?

Dr Hipsey—I will answer that. A lot of this information is based on predictions of acidity trigger levels, where the lakes will become acid due to acid sulphate soils. That is part of the work that I have been involved with. But the work was really intended to highlight priority areas for investigation and further experimentation, for example, and priority monitoring areas. The results have indicated that there is the potential for the increased risk of acidification given projected water level decline.

But I must add that this approach that has been used as the basis for much of these comments has several simplifying assumptions due to basically data that is simply unavailable and due to insufficient time to address all the more complex issues. As a result, the model predictions are not without criticism. Indeed, the timeframe of when water would need to come in and so on, which is based around these predictions, is not without criticism. Indeed, the Murray-Darling Basin Commission has commissioned a critical review of this work, which is pending.

So it is very difficult to say an exact timeframe in which this would need to occur. I am afraid no-one could do that. What we have said, though, is that we need an adaptive monitoring and management strategy to basically monitor this and understand this as it is happening into the future. But it is actually almost impossible to offer an exact date. Some of the model predictions are forecasting within the next 12 to 24 months.

Senator HANSON-YOUNG—One of the pieces of information that was given today from the South Australian department of environment and the water minister was that we only need a maximum of 60 gigalitres of fresh water into the lakes to keep at bay those acid sulphate soils getting any worse. Do you think that that is a correct prediction? Keep in mind it was not a minimum. It was a maximum that was stated.

Dr Hipsey—Our best understanding at the moment is that we have what we call a threshold event, where you would have a very large volume of acid sulphate soil which is increasing exponentially. We have a reducing volume of water to buffer that acidity. What happens is you have two exponential graphs superimposed on each other and you end up with a critical value where all of a sudden the lake can no longer withhold it. There is much uncertainty about when that threshold event occurs, but it does seem to occur as a threshold event. It is almost impossible to say what volume of water is going to be required. But if I were a risk averse manager, I would like to ensure that the water level was kept above negative one metre AHD.

Senator HANSON-YOUNG—Sorry, can you say that again?

Dr Hipsey—If I were a risk averse manager, I would do my best to keep the water level above one, although there is a lot of uncertainty in that threshold level. Sixty gigalitres may be enough to do that. I am not exactly sure how that translates into a water level change. For example, a 20 centimetre water level change can be significant in withstanding acidity effects. I could get back to you on the conversion of gigalitres to water level.

Senator SIEWERT—That would be useful.

Senator HANSON-YOUNG—Yes. That would be useful. One of the other suggestions that has been put forward over the last week or so is managing the Coorong separately to managing the lakes. Obviously that already happens to an extent already. But in terms of a crisis response to what is going on, it is having different options for each of the different areas. Have you got any thoughts on that and possibly on what the differentiations would be in terms of the response?

Dr Webster—I can answer that. I think at the moment the lakes and the Coorong are separate from one another. I think these management options that we have been thinking about at the moment effectively assume there is going to be no water through the barrages for some time to come. There are a series of management options for the Coorong that could be implemented that do not involve extra water coming through the barrages. So, in that sense, Lake Alexandrina and the Coorong could be separated in terms of their management to some extent.

CHAIR—Thank you, Senator Hanson-Young. I know Senator Adams and Senator Farrell have questions. If you do not mind, it is ladies before gentlemen. I know Senator Farrell will not mind that.

Senator ADAMS—Thank you very much. Dr Webster, just to get an overall picture from your expertise and experience, what really is the solution to deal with the whole issue?

Dr Webster—Well, I think it is the solution that we all have, which is more water coming through the barrages.

Senator ADAMS—Yes. I know.

Dr Webster—Aside from that, there is a proposition on the table that has been suggested by Dave Paton—it originated from Dave Paton at the University of Adelaide—that we can ameliorate the problem in the south lagoon by pumping water out of the south lagoon. Effectively what that causes to happen is you get an increased amount of sea water coming in through the mouth and ultimately winding up in the south lagoon and lowering the salinity. I think the preliminary modelling we have done on this suggests that this is an option that could lower salinity to the point within range of being ecologically viable for the south lagoon. So it seems in

the past that salinities in the south lagoon have always been quite high—several times sea water—but quite a few organisms can live in that kind of environment. I think with the pumping option, if it is done correctly or properly and efficiently, we would get within range of achieving an environment that would be suitable for at least some kinds of life in the south lagoon.

Senator SIEWERT—That is separate from flushing out the other two—Lake Alexandrina and Lake Albert?

Dr Webster—Absolutely.

Senator SIEWERT—We are talking about a separate discussion here, are we not?

Dr Webster—Yes. This is assuming that there is no flow through the barrages, there is no fresh water available to the Coorong at all.

Senator ADAMS—I would just like to ask now about the turtles. I recently visited the area, so I am pretty perturbed about the turtles. How can they survive? What sort of habitat or salinity level do we need for them to actually survive this?

Dr Webster—I think I need to avoid that question. We have colleagues in our project, which is a clam ecology project in the South Australian universities. I think there would be ecologists there who would be much better able to answer that question than me.

Senator JOYCE—I want to ask one brief question.

CHAIR—Is it on that, Senator Joyce?

Senator JOYCE—Not on the turtles but associated with the turtles.

CHAIR—I was going to call Senator Farrell. Do you have many questions, Senator Farrell?

Senator JOYCE—How much water would need to get into the Lower Lakes to sustain them?

Senator ADAMS—To keep the turtles alive.

Senator JOYCE—Yes. To keep the turtles alive. How much water are we actually looking at? I have heard 1,000 gigs. Is that the sort of amount we are looking for?

Dr Webster—I would have to pass over to my colleagues for that one. I think we are operating in the Coorong at the moment, so I think they are the ones that really need—

Mr Wainwright—I might try to field this. With the 1,000 gegalitres, is that 1,000 gegalitres a year?

Senator JOYCE—Yes. That is what I have always heard you need. We are looking for 1,000 gegalitres.

Mr Wainwright—Sorry to ask questions, but what are you looking to achieve with that water? What are the desirable outcomes?

Senator JOYCE—With the issues that pertain to the Lower Lakes, what amount of water extra per year are they looking for to take the system back to what they believe is a sustainable freshwater system as opposed to a sustainable estuarine system?

Mr Wainwright—Senator Joyce, I believe it was you who actually quoted that volume earlier through your own calculations. Am I right?

Senator JOYCE—Yes. It was 1,100 and 600, or something like that, yes.

Mr Wainwright—So you are looking at replacing basically around about one metre worth of water over the full size of the lake, the 900 square kilometres?

Senator JOYCE—Yes. That is right. I said 900 square kilometres, or two metres per year. That is 1,800 gigs. But if the evaporation is a little less, I suppose it is a little less than that.

Mr Wainwright—The evaporation figure that you have is looking at, did you say, 1.8 metres a year?

Senator JOYCE—Yes. About 1.8, or approximately.

Mr Wainwright—That is evaporation only. You also have rainfall on top of that. While evaporation takes out of the lake, rainfall adds to it. When you balance those two factors against each other—the major source of water leaving the lakes at the moment is evaporation—you are looking at about a metre worth of water being lost in height from the lakes every year.

Senator JOYCE—So you are looking for a return of about 1,000 gigs?

Mr Wainwright—It would be something around that value, but it depends upon what water level you want to hold the lake at. As the lake water level goes up, the surface area of the lake goes up and you get more evaporation from it. The higher you want to manage the water level, the more water you need to pump down the river.

Senator JOYCE—As an estuarine area, its natural level, I suppose, would be something approximate to sea level?

Mr Wainwright—Yes. Probably just a touch above it.

Senator JOYCE—A touch above it. Is that a surface area of about 900 square kilometres?

Mr Wainwright—Give or take, yes. I can give you an exact figure on that, if you like. I do not have it at my fingertips at the moment.

Senator JOYCE—Thank you very much for that.

Dr Hipsey—I want to add a comment. As part of the acidity work, I have also run low flow, which is 896 gicalitres a year, medium flow, which is about 1,500, give or take, and high flow scenarios. High flow is 1,800 gicalitres per year entering the lakes. The lakes will recover under a medium flow scenario, which is not 1,000 gicalitres a year extra but more like 500 or 600 gicalitres per year extra. Again, as David said, if you want them to recover all the way back up to above zero metres AHD, you will need in the order of 1,000 gicalitres per year. But, saying that, the lakes will respond favourably to flows much lower than that too.

Senator JOYCE—How many gigs are in the Menindee storage lakes? It is 540?

CHAIR—I do not know if you heard Senator Joyce asking that question about how many gigs there are in Menindee Lakes. One of the foremost experts—and we are joined by experts as we speak now—Professor Kingsford, this morning mentioned that taking water from Menindee for the Lower Lakes would be, I quote, robbing Peter to pay Paul. What are your views on that, gentlemen?

Dr Hipsey—This is a good point. I would like to make the point that this problem that you are facing at the bottom of the river is a systemic issue. Short-term management options are exactly that—they are short-term bandaids for what is ultimately going to likely propagate up the river. We are seeing this already with other areas suffering acid sulphate soils and salinity issues. So I would suggest that, as the other witness suggested, it is a short-term fix. It comes down to management—whether you prefer to save the upper reaches versus the lower reaches.

CHAIR—Of course, on that, we would not know how much would be lost through transmission, would we, or would we?

Dr Hipsey—The scientists from the CSIRO Sustainable Yields Project, I think, would be able to tell you that pretty accurately.

CHAIR—I think 85 per cent was mentioned, if I am not mistaken. I am sure someone will give me the correct figure. On that, then, thank you, Doctor.

Senator FARRELL—Dr Webster, given that we do seem to be in an extended period of drought and that all the advice we seem to be getting about climate change is that we are looking at a permanently reduced amount of water getting into the system, what do you see as the longer term solution to saving the lakes and the Coorong?

Dr Webster—I will refer my answer to the Coorong. Well, I certainly hope that this drought that we are going through at the moment is a temporary one and it is climate variation rather than a climate change, although climate futures for the region do suggest that the region will dry so we will get less water. I think that if we consider pumping as an option for, let us say, the south lagoon, the problem with that is that it would require an ongoing cost in fuel and maintenance of the pumping equipment. My understanding from the people I have talked to in the SA government is that they are looking at a short-term solution with the expectation that the flows through the barrages will improve once we get past the worst of this drought.

Senator FARRELL—Just at the moment, the south Coorong is divided from the rest of the Coorong, is it not?

Dr Webster—There are basically two lagoons in the Coorong—the north lagoon and the south lagoon. The north end of the north lagoon is connected to the sea. The south lagoon is basically an end, a cul-de-sac. This is the problem with it. So what is happening is that salt gets transferred into the south lagoon by evaporative suction. You get water loss from the surface and that pulls sea water in so you get a net flux of salt in.

Gradually over time the salinity in the south lagoon increases. So the south lagoon and the north lagoon in fact in a lot of ways have different management issues surrounding them. The south lagoon has always been hypersaline, but it has supported an ecology that has adapted to those hypersaline conditions. The north lagoon is much more estuarine, or at least one end of it is. It is much more like a traditional estuary. So the management of those two systems, I suspect, is going to be a little different.

Senator FARRELL—How does the water get into the south lagoon at the moment?

Dr Webster—There is a narrow, shallow channel between the two at Parnka Point. In fact, that channel plays quite a key role in what goes on in the south lagoon. One of the difficulties with the south lagoon is that channel. For parts of the year, it is disconnected from the north lagoon and its salinity increases during that time because it continues to evaporate and does not get replenished with water from the north lagoon. Certainly one of the possible solutions or a partial solution is to change the connectivity between the two lagoons, such as by a bit of dredging in that area. I think that is certainly an option, particularly in conjunction with the pumping option, which would be something which, I think, would work.

Senator FARRELL—So you would pump the water that is currently in the south lagoon into the sea?

Dr Webster—Yes.

Senator FARRELL—And then you would pump sea water back in?

Dr Webster—No. You would not need to. What would happen is that the sea water would flow in through the mouth and down through the north lagoon and enter the south lagoon and replenish the water level in the south lagoon.

Senator FARRELL—But I thought it was not connected at the moment?

Dr Webster—Yes. So what you are doing is pumping salt out. The concentration of salt in the south lagoon at the moment is something like five times sea water. So for every litre of water that you pump out, you pump out five times as much salt as there would be in the same volume of sea water. But you are bringing in a volume of salt which is equal to the volume that is in sea water. So, in effect, by pumping the south lagoon, you are causing a net loss of salt to the system. So that is the concept anyway.

Mr Wainwright—I would just like to add to Ian Webster's comments. By pumping water out of the southern end of the southern lagoon, you are increasing the amount of flow that is coming through the Murray mouth. When you do that, you actually increase the amount of sand that is going to come into the mouth. At the present time they are operating a dredge continuously to keep the mouth open. With the management option that Dr Webster is talking about, there is also likely to be a need to increase that dredging capacity at the mouth of the Murray.

Senator HANSON-YOUNG—We touched briefly on Menindee Lakes and this idea of robbing Peter to pay Paul. In fact, numerous times we have heard that perhaps what needs to happen is to allow Menindee Lakes, that system, to go back to more of a natural wetting and drying cycle. That would perhaps free up some water. I would like to see if you have an opinion on that. Are there other sites like that where, if we were to manage them differently, we could have a different result?

Dr Hipsey—I would like to just raise a couple of points on that issue. First, the problem of acid sulphate soils throughout the basin is largely a result of the impoundments that have been put in. That is, previous river floodplain systems would periodically be under water and periodically be exposed to the atmosphere. Now we have permanently put them under water. Because of a drought, the water levels are declining and these longstanding minerals are oxidising and causing a problem. Historically, it has been more of a river floodplain wet-dry cycling system. Indeed, that would resolve some of the acid sulphate soil issues if it were to continue to go through this inter-annual variability. The second point is that would free up water, as you suggest, and that is valuable. If you just open the barrages and let a flux of sea water straight in, you are going to get a massive shock to the ecology of the lakes. It is these sort of shocks that can result in negative impacts.

So what I would foresee is that you have a gradual management change, where you have some salt water coming in, say, through Goolwa barrage, to maintain water levels. This would be guided in part by monitoring the alkalinity and water quality of the lakes. Then you would also supplement the other end of the lakes with fresh water from these reserves that you mention.

To answer the latter part of your question, I am not sure upstream of lock 1 what other sources are available, except through the media, for farms and so on that are spoken about. But I cannot add any more to that.

Senator HANSON-YOUNG—In relation to the current operation of the Murray, we are pumping water from Lake Alexandrina into Lake Albert to try to keep those acid sulphate soils covered. We have heard from the federal water environment department yesterday. We are hearing from them again. I am sure their position has not changed overnight. They say that that is the option they are happy to keep going with until early or even mid next year. Do you think that that is going to be sufficient at the moment?

Dr Hipsey—I think it is necessary to maintain Albert. There are two main reasons for that. The soils of Albert have more acid generating minerals than in Alex, so there is a higher acid generating potential. Secondly, the surface area and the volume ratio is significantly higher for the exposed sediment in Albert, so there is less water to buffer the available acidity. So Albert is much more sensitive to this than Alex. There was a concern in our study that indicated that if you basically tried to support Albert to the level where you were reducing Alex by, say, an extra 20 centimetres than you would have otherwise reduced it, that does start to place risks on Lake Alex and, in particular, around the more shallow areas, such as north of the barrages and the Finnis and Currency inlets. Again, there needs to be an adaptive management system with routine monitoring of PH and alkalinity and a continued update of model projections and an update of potential management recommendations. It needs to be a fluid process. I do not think any one of us would like to say you have to do this and you cannot do that. To answer your question, pumping into Albert should occur for the next 12 months, in my opinion.

Senator HANSON-YOUNG—Am I correct in taking from that that doing that alone is not going to be solving the problems?

Dr Hipsey—It will until you run out of water in Alex.

Senator HANSON-YOUNG—Yes, I know it is hard to predict, and that is part of the problem. If we do not bring more fresh water downstream into Lake Alexandrina and if we do not bring salt water in, how long can that pumping continue before we are starting to put Alexandrina at risk?

Dr Hipsey—Look, this is really a guess, but I would say that it is of the order of 18 to 24 months.

Mr Wainwright—I have some simulations that we have been completing in the last couple of weeks. I concur with what Matt Hipsey has said there. You may start running into issues around the new year between 2009 and 2010.

CHAIR—Are there any other questions of the doctors and Mr Wainwright? If there are not, gentlemen, thank you very much, especially Dr Webster for making the effort to come to Canberra. Thank you very much, gentlemen.

Dr Hipsey—Is it possible to make a closing comment?

CHAIR—Yes, please.

Dr Hipsey—I would just like to point out for the record that a proposal put to the CSIRO Flagship Collaboration Fund for scientists to investigate the ecological effects of these changes was recently rejected for various reasons. I would just like to put that on the public record.

Senator SIEWERT—Who did you put it to?

Dr Hipsey—It was put to the CSIRO Flagship Collaboration Fund by a senior group of scientists from several universities.

Senator SIEWERT—Did they say why it was rejected?

Dr Hipsey—They cited an incompatibility between the timescale of management and the timescale of research.

Senator SIEWERT—And how long was the research going to take?

Dr Hipsey—It was scheduled to begin in 2009 and continue for three years and would be very compatible with the timescale for management.

Senator SIEWERT—Would you be able to provide us with some details? Can you take on notice the timeframes and things like that?

Dr Hipsey—Sure.

CHAIR—It would be very helpful. On that, then, thank you very much. We shall now take a 10-minute break while we wait for the next witness. Thank you.

Dr Hipsey—Thank you.

Mr Wainwright—Thank you.

Proceedings suspended from 12.49 pm to 1.02 pm

MATTILA, Ms Jenni, Coordinator, Bondi Group and National Irrigation Corporation Water Entitlements Register

CHAIR—I welcome Ms Jenni Mattila from the National Irrigation Corporation Water Entitlements Register.

Ms Mattila—I am the coordinator of the Bondi Group and I am the honorary solicitor for the National Irrigation Corporation Water Entitlements Register. The acronym is actually NICWER, and we tend to refer to it as NICWER.

CHAIR—NICWER?

Ms Mattila—Yes.

CHAIR—Before we go to questions, do you wish to make a brief opening statement?

Ms Mattila—Yes. Thank you very much. First of all, let me briefly explain. The Bondi Group is the peak national body for locally owned irrigation schemes in Australia. The group membership does not include commodity groups or government-owned irrigation schemes other than those that propose to convert to grower ownership. The Bondi Group is therefore in a unique position in relation to being a peak body because it is independent of government and commodity-driven policies. The group members have recently established the National Irrigation Corporation Water Entitlements Register, known as NICWER. NICWER provides an online searchable database of irrigator entitlements within grower-owned irrigation schemes around Australia. The NICWER database also includes encumbrances over irrigator-owned water entitlements. That is who we are.

CHAIR—Very good. How many irrigators do you represent?

Ms Mattila—There are 12,000 water entitlements on the NICWER register and the register in the Murray-Darling Basin covers around 30 per cent of the water entitlements within the MDB.

CHAIR—30 per cent?

Ms Mattila—Yes.

Senator SIEWERT—Is that all of the locally owned irrigation schemes?

Ms Mattila—It does not include Murrumbidgee, but it does include Jemalong, western Murray, Coleambally and Murray irrigation in New South Wales. We have members in other states as well. I am assuming you are mainly interested in the MDB.

Senator SIEWERT—Yes.

Ms Mattila—We are in the process of having discussions with the Central Irrigation Trust at the moment. But the members of NICWER are those four major irrigation schemes in New South Wales. We have them in the other states as well.

CHAIR—Do you wish to continue your opening statement?

Ms Mattila—Yes.

CHAIR—Please do.

Ms Mattila—I have been through a number of the submissions that have been made by other groups. One of the things that occurred to me is that no-one actually went back to the basics and explained how it all worked. I thought that in the circumstances, whilst I appreciate that the committee is a long way down the track, it might be useful to go back over some basic principles as to how it all works. I saw a number of the senators a couple of weeks ago, and it was fairly apparent that this is not necessarily an area where people actually understand how it all fits together.

The terms of reference that you have sent out request options for the acquisition of water as opposed to water entitlements. I think we need to draw a distinction between permanent water entitlements and water allocation. To use an analogy, permanent water entitlements are a bit like an empty glass. It is based on the dam. It gives you a maximum capacity, but it is not a physical asset.

The commonwealth has been buying the permanent water entitlements—the permanent rights. At the start of each season, the state crown determines the percentage of the glass that will be filled with the annual allocation. That is the physical water. I know you cannot see this in *Hansard*, but if you think of it as being an

empty glass and the state crown, and the state crown says, "We will fill a percentage of the glass." That is the physical entitlement, the real water.

The percentage that the grower receives depends on the class of water right. There is a number of different classes, but I will keep it simple and talk about two. There is high security water, which is usually growers with permanent plantings—grapevines, citrus and stone fruit. They have high security entitlements; they have purchased them or acquired them over time. There is also general security, or low security water, and the growers who own that are usually people who have annual crops.

This season, as of Monday, 15 September, the New South Wales government granted the high security growers in the Murray system 50 per cent. So they took their jug of water and filled the glass halfway. If the growers had not used all of their previous season's allocation, they were allowed to carry over from the previous financial year. Because the financial year changes on 1 July in New South Wales, we are talking for a moment of a carryover of 15 per cent of the water that they had not used in the previous year. This is in their allocation count.

In the New South Wales southern Murray-Darling Basin, that is your high security guys and this is your general security guys. They currently have an allocation of nil. For the last few years, the allocation for the general security growers has on average been nil. It was six per cent a few years ago, but in general there is very little water for the general security growers who are trying to grow annual crops.

The general security growers in New South Wales do not receive any annual allocation until the high security growers receive 80 per cent of their entitlement. You could get to the end of the year and not get any physical water at all. It would appear that the available water, if it were to be purchased, would need to be purchased on market.

One of the things that I have brought with me, and I probably need to circulate it, is a report showing the water physical water that is available on the market at present and the prices. I thought this was a practical way of approaching what you have asked us to do. This is the water exchange report from Monday of this week. It shows the physical water or the temporary allocation that is for sale on market, how much it costs and where it is. There is a number of trading platforms in relation to annual allocation, and this is just one of them. I printed that one out because the Bondi Group has a particular interest in delays in the temporary trade markets—delays in approvals. The water exchange always has the little bit at the end that tells you if you actually apply for a temporary trade how long it takes the relevant authority to do an approval. I will just move on to that very quickly, because I realise I have to be quick with this.

You will see that with the grower-owned schemes, the average approval time is a day or so. We blew out to three days in Coleambally at one stage. If you go over the page, you will see the approval times in South Australia, for example, can be 40 days. In some cases in New South Wales it can be 58 or 59 days. There is a serious delay issue in terms of getting approvals for water on the temporary market. As I said, that is why I tend to look at this one, because that is one of our concerns. There is quite a few water trading platforms; this is certainly not only one. It shows the physical water available for sale in the southern Murray-Darling Basin.

Of course, you have also asked as part of your terms of reference about transmission losses. I suppose one person's transmission loss is another person's environmental flow. I should mention that, except for evaporation, a lot of those transmission losses actually go back into the environment and they are treated as environmental water. Obviously, the best idea is to try to purchase water, if that is what you decide to do, as close as possible to the Lower Lakes and Lake Coorong. I notice that the Queenslanders suggested that of their 666 megalitres, if they delivered all of it downstream, by the time it got to the Lower Lakes it would be only about 30 or 40 megalitres. That is probably about right in my experience.

Senator HEFFERNAN—I do not know about that.

Ms Mattila—It takes months. In terms of the mix of high and general security water, it changes as you go through the Murray-Darling Basin. The water rights in the northern Murray-Darling Basin are predominantly general security rights. As you move down through the basin, the closer you get to the Murray mouth, the percentage starts to swing heavily towards high security entitlements.

So, if you are looking for water, it is more likely to be at the bottom of the basin than at the top. Of course, the growers at the top of the basin did get a big dump of rain late last year and early this year, which filled some of their dams. These are all very practical things. As I said, I did not want to come and make a political statement. I thought we would talk about how it all fits together.

The general security water in the system is really the pressure valve. It is the water that you can either have or not have. The growers who have general security water can choose to plant or not to plant. The people who have high security water have permanent plantings. If you take the water from the high security growers, those grapevines, the citrus trees and the stone fruit trees will die. They do not have the flexibility of the general security growers in terms of what they can and cannot do. Those plantings, on average, take about seven years to replace before you would actually get another crop.

As we know, the commonwealth has been purchasing general security water. They have been converting it, or they are attempting to convert it, to high security water. The conversion rate from general security to high security is about 2.2. The difficulty this creates—and this is my opinion; it is not something we have discussed in the Bondi Group—is that you are actually further compounding issue with the high security water. You are shifting the percentage away from general security into high security and high security is meant to be, for practical purposes, guaranteed water. So they spent \$50 million on purchasing permanent entitlements, generally general security water. If you accept what was printed in the Australian, and I have no doubt it is true, the allocation for that last year was 10 megalitres. I was surprised there were 10 megalitres.

If we had a blank slate, one would think that in relation to the Murray-Darling Basin and the situation we have, depending on whether or not you think that it is simply a drought or climate change, that you should look very carefully at the mix of general and high security water. That is one of the things that we need to have a think about. But we have to deal with the situation we have. It is not easy to change the situation and we need to be very careful. The difficulty with the Lower Lakes and the Lake Coorong is that historically those lakes would have run dry probably much sooner than now. We now have a regulated river system and the water is held in the river for a much longer period. If we did not have that, the water that is currently there would have all been out to sea probably a couple of years ago.

It is a very difficult situation. I think it is important that when we consider these really difficult issues that we do not unnecessarily harm other users in the system. But there is not sufficient water on market to be able to achieve what you are looking to achieve. There is simply not that much in the system. But we do need to have a look at the types of situations that we have and there are some hard decisions that need to be made.

CHAIR—Thank you. Do you have any more that you wish to add?

Ms Mattila—No.

CHAIR—Your words are sobering—the water is just not there. There is no quick fix and we really are in a dire position.

Senator HEFFERNAN—Have you explained to the committee the technology you used to capture the market on your database?

Ms Mattila—No, I did not explain NICWER; I basically explained how the Murray-Darling Basin system works and high security.

Senator HEFFERNAN—This is fantastic information.

CHAIR—I think the deputy chair may wish to add some commentary to that, but I am a little bit confused. I certainly was not confused because I heard Ms Mattila's presentation quite clearly. Do you have any more questions, Senator Heffernan?

Senator HEFFERNAN—I asked the question because the committee might be interested to know the technology behind the capacity to do this.

CHAIR—Bearing in mind the time constraints, Senator Siewert might want to ask questions in relation to the document in front of us.

Senator SIEWERT—I have some questions about this.

Ms Mattila—I should point out that that is not NICWER; that is water exchange.

Senator SIEWERT—I understand that. This is the water that was on the market on the water exchange as of Monday?

Ms Mattila—Yes.

Senator SIEWERT—So people have actually put water on the market?

Ms Mattila—Yes.

Senator SIEWERT—This has to be high security water that is on the market.

Ms Mattila—When it is allocation water, it is real water. This is real water.

Senator SIEWERT—Yes.

Ms Mattila—There is so much information. That is why I thought it would be best to go back and to explain things from beginning. This is the water that is available. When it goes into the temporary market, it loses its characteristics as general or high security water and it actually just becomes physical water. So, this is physical water, whether it is high security or general security. My guess is that this water would probably mainly be high security water.

Senator SIEWERT—I am sorry if I am a bit slow on the uptake.

Ms Mattila—This is why I thought it would be best to go back to the beginning and to talk about basic principles.

Senator SIEWERT—As I understand, no general security water has been allocated in New South Wales.

Ms Mattila—For some time.

Senator SIEWERT—For some time. I apologise if I have misunderstood this. If this water is on the market, it has to have come from high security water allocations.

Ms Mattila—Yes. There may be carryover water. With the 15 per cent, some of the growers have not planted for many years.

Senator SIEWERT—Okay.

Ms Mattila—For example, in Coleambally they have made systems savings. I am using them as an example because they are a little bit easier. They have made upgrades to their system, and some of the water that they make available actually relates to their conveyance licence. So they are small amounts of water in comparison in Coleambally. In general, most of the water that would be on the market would come from high security growers.

Senator SIEWERT—So, this is high security water that people have actually put on the market. At what volumes are these?

Ms Mattila—That is megalitres.

Senator SIEWERT—So that water, as of Monday, was actually currently on the market?

Ms Mattila—Yes.

Senator SIEWERT—The point that was made by the New South Wales government yesterday is that it does not believe that is water available in storage.

Ms Mattila—That is a different problem.

Senator SIEWERT—I know. But the point it was making is that you would have to buy it on the market.

Ms Mattila—Yes, this is the market.

Senator SIEWERT—This is the market.

Senator HEFFERNAN—That is contracted water.

Senator SIEWERT—Yes. Do not confuse things by saying "contracted water". This is water that is on the market. They were also saying that if you wanted to get water, the bottom line was, "Don't get it off us, buy it on the market. But we have transition water from Menindee Lakes that we have promised South Australia, or we have conveyance water."

Ms Mattila—Yes.

Senator SIEWERT—The point is here that there is water on the market and the government could come in and buy it because it is physical water that is physically on the market now.

Ms Mattila—Yes.

Senator SIEWERT—To say there is no water is not correct.

Ms Mattila—No.

Senator HEFFERNAN—That is water contracted by the system to those growers, who can then on sell it.

Senator SIEWERT—Yes.

Ms Mattila—And they are.

Senator HEFFERNAN—Other people who want to water their trees are in the market to buy that water.

Senator SIEWERT—Yes. Senator Heffernan, I accept what you are saying, but the point is that there is water here that is on the market. The point that the New South Wales government was making yesterday is that if the federal government wanted to buy water or access water for the Lower Lakes, it should enter the market. This is the market. I understand that they are in competition with other growers.

Senator HEFFERNAN—The danger is that if you corrupt that market—

CHAIR—Please let the witness answer the question, Senator Heffernan.

Senator HEFFERNAN—That adds up to about 36,000 or 38,000—

Ms Mattila—Not that much—

CHAIR—Senator Heffernan, I think Ms Mattila is probably more than capable of answering Senator Siewert's questions.

Senator SIEWERT—The point is that the South Australian government said this morning that it may need as little as 60 gegalitres. That is on top of the water it has already promised to supply to the lakes.

CHAIR—How many gegalitres is that all up?

Senator SIEWERT—The figures that the minister gave this morning indicated that they are already supplying 350 gegalitres. They are saying that it may now—

Ms Mattila—Most of it is not—

Senator SIEWERT—We do not know; that is what we are trying to find out. I have not had a chance to add this up.

Ms Mattila—You need to realise that a lot of this water would not get there. A lot of it is too far north. We are back to the Queensland problem. If you look down the volume list, see all the zeros?

Senator SIEWERT—Yes.

Ms Mattila—The other problem you have is the four per cent rule.

CHAIR—Can I just ask—

Senator SIEWERT—These are megalitres.

Ms Mattila—This is megalitres.

Senator SIEWERT—What would you need to look at is where it is.

Ms Mattila—Where is it?

Senator SIEWERT—I appreciate that. Then obviously you have to get over the four per cent cap and all those sorts of issues. I understand that.

Ms Mattila—And the 58 days that it takes people to approve things.

Senator SIEWERT—That is amazing as well. So you would need to go through this list and look at where it is available and whether the government was willing to purchase it. I appreciate that those are issues. But in some areas there is some water available.

Ms Mattila—Yes.

Senator SIEWERT—And we need to get over the legislative provisions as well.

Ms Mattila—Yes.

Senator SIEWERT—I want to ask a few technical questions. Is that okay?

Ms Mattila—Yes.

Senator SIEWERT—I have one technical question that you might have to take on notice. You were talking about the amount of water that the government has purchased and converted from general water to high security water, which is 2.2 on the conversion factor. How much outside government purchase are you aware of that has been converted from general to high security in the recent past?

Ms Mattila—In my opinion, the New South Wales government has become concerned about the conversion of general security to high security water and there is an embargo on it at present, and there has been since 2 July.

Senator SIEWERT—That is this year though, is it not?

Ms Mattila—Yes.

Senator SIEWERT—How much has been converted in the recent past, because that obviously impacts now?

Ms Mattila—Historically it was not worthwhile to convert general security to high security. When the commonwealth went into the market, it basically watched the pricing. If the price of high security compared to general security water was such that you were financially better off to buy general security and convert it—as in the price was less than 2.2—they would buy the general security water. As far as I know, I do not think they bought a lot of high security water.

Senator SIEWERT—Is that the government you are talking about?

Ms Mattila—Yes.

Senator SIEWERT—I am talking about other people.

Ms Mattila—In terms of the growers, there has been very little that I am aware of. As I said, I am actually a lawyer. I have a big border practice, so I have a pretty good idea of what goes on. Historically there has not been a lot of conversion. There is a couple that I am aware of. But, in general, it has not been as common with the growers.

CHAIR—You should not mention that you are a lawyer, because normally Senator Heffernan attacks lawyers.

Senator HEFFERNAN—I have already done all that a week or two ago. That is how come she is here.

CHAIR—We have only four minutes left. Senator Siewert, do you have any more questions?

Senator SIEWERT—That is it.

CHAIR—Before I go to Senator Hanson-Young, Senator Adams, do you have any questions?

xadam—No, I am right.

CHAIR—Senator Farrell?

Senator FARRELL—Where would Toorale Station be on this list?

Ms Mattila—Too far north.

Senator FARRELL—No.

Ms Mattila—It would be—

Senator FARRELL—Where would that appear in this?

Senator HEFFERNAN—Actually it is not—

Ms Mattila—This is temporary water. That is on the Darling system. The water that is listed here is just the water that is available this week. Toorale is on the Darling.

Senator HEFFERNAN—It is not separated titles.

Senator FARRELL—This is only Murray water?

Ms Mattila—No, this is a mixture. It is Murray, McIntyre, Murrumbidgee, Goulburn—

Senator SIEWERT—It is in the southern basin.

Senator HEFFERNAN—Some of it is up the top.

Ms Mattila—Yes, some of it is up the top.

Senator HEFFERNAN—The McIntyre has to flow into the Darling to get into it. So it is way too far above.

Senator FARRELL—Toorale is not there.

Ms Mattila—No. That is permanent—

CHAIR—Sorry, Ms Mattila. Senator Hanson-Young, we have three minutes left.

Senator HANSON-YOUNG—You mentioned that one of the things that you are concerned about is the delay in getting approvals to put physical water on the market. What causes the delay?

Ms Mattila—It is not the delay in getting it on the market. The delay is that once there is a willing buyer and a willing seller it needs to be approved by the relevant approval authority. As you can see down the

bottom, the approval authority could be Coleambally irrigation or the South Australians. I am sorry, but I always call it 'wallaby' rather than its longer name. It will depend who the approval authority is.

I will step back for a second because I realise we have a short period of time. Bondi Group has actually called two meetings to try to address this issue of delays of approvals in the temporary market—one in Sydney last year and one in Mildura in November. My understanding of the delay—and this is the reason that was given when those meetings were held—was that there was a problem in South Australia in that their legislation required physical paper to be posted to the relevant approval authority and they required original signatures.

For some of the others, in particular Victoria, for example, there is a current problem because their forms say that documents can be lodged provided they are scanned and emailed. The difficulty has arisen that the brokers in general scan them as JPEGs, but the Victorian government has now said that in spite of what is on the form they do not want a JPEG, they want a PDF. They do not want—

Senator HANSON-YOUNG—So you are saying that it is bureaucracy.

Ms Mattila—Yes.

Senator HANSON-YOUNG—You have said the Bondi Group has met to try to address some of this stuff. Have you had any response from the South Australian government? If it is in legislation that you have to have a physical bit of paper and a signature on a page, that is something the water minister could take to her cabinet and get the amendments approved.

Ms Mattila—When we called the first meeting in Sydney we invited everyone. All the key people in the New South Wales government turned up, the commonwealth turned up and the ACCC turned up. We actually had a letter from Central Irrigation Trust apologising that they could not be there. They actually sent us a letter explaining what the problems were and the reasons for delay in the trust.

To enable a better range of people to come the next time that I called a meeting, I actually went to Mildura, so that they were actually physically in Victoria and across the border from South Australia to make it easier for people to get to the meeting. To their credit, Lower Murray Water and Central Irrigation Trust turned up and we talked around the table as to how we would address these problems. I have also been to see Karlene Maywald. I flew to Adelaide to talk to her about it and raised these issues with her. I think South Australia is working on it.

The last meeting was called in November last year. I was promised that the commonwealth would take over the calling of the meetings. We were supposed to have a meeting in May, but it did not happen. I rang and said, "Why haven't we had a meeting on this? This is important."

Senator HANSON-YOUNG—When you say the "commonwealth", who do you mean?

Ms Mattila—At the meeting in November last year I was told that the Murray-Darling Basin Commission would take over the calling of these meetings and that there would be a meeting in May.

Senator HANSON-YOUNG—And it did not happen?

Ms Mattila—No, and I rang and asked why not.

Senator SIEWERT—What did they say?

Ms Mattila—That they would call one soon.

Senator HANSON-YOUNG—And we are still waiting?

Ms Mattila—Yes. I have raised it on a number of occasions in a number of forums.

CHAIR—We have time constraints and you have answered that question three times, Ms Mattila. Are there any other questions? It is now 1.30 pm.

Senator HEFFERNAN—I hope you noted that I have not asked any, but I was seriously well briefed by this young lady a couple of weeks ago.

CHAIR—Thank you for that statement. Ms Mattila, thank you very much for your attendance.

Proceedings suspended from 1.32 pm to 2.30 pm

ABRAHAMS, Mr Harry, Acting Assistant Secretary, Water Reform Division, Department of the Environment, Water, Heritage and the Arts

FLANIGAN, Mr Mark, Assessment of Wildlife Division, Department of the Environment, Water, Heritage and the Arts

HARWOOD, Ms Mary Beatrice, First Assistant Secretary, Water Efficiency Division, Department of the Environment, Water, Heritage and the Arts

SLATYER, Mr Tony, First Assistant Secretary, Water Reform Division, Department of the Environment, Water, Heritage and the Arts

CHAIR—Welcome. I remind senators that the Senate has resolved that an officer of a department of the Commonwealth or of a state shall not be asked to give opinions on matters of policy and shall be given reasonable opportunity to refer questions asked of the officer to superior officers or to a minister. This resolution prohibits only questions asking for opinions on matters of policy and does that preclude questions asking for explanations of policies or factual questions about when and how policies were adopted. Officers of the department are also reminded that any claim that it would be contrary to the public interest to answer a question must be made by a minister and should be accompanied by a statement setting out the basis for the claim. First, thank you for making yourselves available again. Does anyone wish to make a brief opening statement?

Mr Slatyer—Just very briefly. Yesterday, I gave updates on the numbers in the department's initial submission. I offered to table those for you. We have that document to table. We have also updated them again so that they are current as COB yesterday. There are further minor changes in the numbers that I read into the record yesterday. But I am happy to table this document for the committee.

CHAIR—Thank you. The department has lodged submission No. 1 and a supplementary submission. Do you wish to make any amendments or alterations apart from what you are tabling?

Mr Slatyer—No.

Senator HEFFERNAN—What we were wanting the department to tell us, which was qualified yesterday, is that the water is not available. Since yesterday we have been given very good evidence from the water exchange that there is approximately 5,000 megalitres available on the market in South Australia and there are various bits of water, some of which is locked up in Coleambally. We were given evidence this morning from the South Australian government that perhaps 60 gigalitres would be a temporary fix for them. Given advice you have received, is 60 gigalitres a temporary fix? This is for the bottom end.

Mr Slatyer—If South Australia's advice was that 60 gigalitres would be required, that would be based on an assessment of three factors: the current lake levels; the assumed evaporation losses between now and the time that the lakes would require additional water; and the assumptions about inflows from the Murray and from local tributaries between now and then. South Australia would have assessed those three factors to come to the opinion that 60 gigalitres would be required. I did not hear that evidence, but I assume that the evidence was that that would be sufficient to get the lakes through next autumn.

Senator HEFFERNAN—I think that is about it.

Mr Slatyer—Of course, the issue that is most difficult in this debate is the fact that, depending on the assumptions you make around the three issues that I just mentioned and the time at which it is determined to be necessary to apply the water, very different amounts of water may be required. If South Australia's evidence was that 60 gigalitres would be required to avoid the lakes acidifying through to next winter, it would have been based on those three factors. We would not have any reason to doubt that assessment.

Senator HEFFERNAN—What is your understanding of what water is required, on top of the water that is already in the system for freight et cetera and that is already built in? I think your figure was 200.

Mr Slatyer—We have the same information that everyone else has about anticipated evaporation rates, minimum inflows and things that like that. So it is a simple sum to calculate from month to month how much water is necessary to maintain the lakes at a particular level. But that is all based on assumptions of minimum inflow or other assumptions you make. We can make the same calculation you can make based on information that is readily available about the evaporation rates from the lakes and the inflows from the Murray under minimum inflow conditions.

Senator HEFFERNAN—Our job is to articulate the bloody issues. If you do all that, what do you think is the amount of water that is required, in addition to the water that is already allocated to the system for various work components of the water that is allocated? How much water on top that do we need to do the job on the lakes?

Mr Slatyer—We cannot answer that question that simply. If you are asking how much water is required to refill the lakes—

Senator HEFFERNAN—No.

Mr Slatyer—You are not asking that?

Senator HEFFERNAN—No, just to protect the environmental status of the lakes.

Mr Slatyer—Okay. I thought we had given evidence of that in our submission.

Senator HEFFERNAN—You did, but I just want you to remind me—

Mr Slatyer—I am trying to find the right part of the submission.

Senator HEFFERNAN—to see if you are consistent.

Mr Slatyer—We have figured it out—and I still have not found the right bit. We know, based on those minimum inflow assumptions, how much would be required to offset evaporation losses for a year—for a full summer. The amount that is required month by month, which is really the critical number, is readily calculated. It appears that South Australia has done that calculation and advised Senate this morning.

Senator HEFFERNAN—It also appears from the database of the market water that is available as allocation—that is, real water—there is probably 5,000 megalitres available in South Australia. About 15,000 or so megalitres will make its way through the system. Given the information that you have and all the layers of experts and bureaucrats in the system, do you think that a solution to problem of the Lower Lakes and the Coorong is a slug of freshwater? If so, is it available?

Mr Slatyer—Chairman, I have been asked to express an opinion.

Senator HEFFERNAN—Yes.

Mr Slatyer—The department's view is that the options that need to be considered are the options set out in our submission. We have explained in that submission what we see as the issues arising from those options.

Senator HEFFERNAN—I know; that is very good. You are putting up a nice little blanket there. Really, I am asking you, as an informed department, is it a fantasy to think there is water in the system now that can fulfil the requirements? That is the purpose of this committee—to try to source facts to make an informed decision with the best information that is available to the department—and I do not know where else we go. If the department does not bloody well know, who does? Is there or is there not enough water that can be made available, without obviously putting critical human-needs water at risk?

Mr Slatyer—We gave evidence yesterday on that question.

Senator HEFFERNAN—And my interpretation was that there was not.

Mr Slatyer—We answered that. Without taking into account commitments on that water and water that could be accessed by governments, there would not be sufficient water available.

Senator HEFFERNAN—That was my interpretation.

Mr Slatyer—Your question about whether the government accessed the pre-committed water through purchase is a different question. We have given evidence in our submission on the potential issues arising from—

Senator HEFFERNAN—We will go to that. But there is a view among some people on the committee that there is water that is available and enough to solve the problem. Any of the water that is available is already contracted and some of it is available as temporary water in the marketplace. Obviously there is a danger that if the government went in to get that water and offered two or three times what it is really worth that it would completely destroy the market for people who have to make a quid out of it, even if they are not growing marijuana. At the same time, you may not reach the required target to solve the problem. Is the simple answer that, based on the present information that is available, there is simply not enough water in the system to solve the problem with freshwater?

Mr Slatyer—The answer is as I give it yesterday.

Senator HEFFERNAN—Which was what?

Mr Slatyer—I have just restated that answer.

Senator HEFFERNAN—Which is a qualified no, there is not enough water.

Mr Slatyer—No, assuming existing commitments on that water.

Senator HEFFERNAN—I think that is a reasonable, Mr Slatyer, given that governments have an obligation to err on the side of caution because of the vagaries of mother nature's plans for the future. I wish you well in making that decision, by the way. Can we go to a broader question relating to the science of the future? Obviously the Murray-Darling Basin has to take ownership of it at some stage to make informed decisions about how we are going to manage the future and the proposition that was put by Mike Young in Adelaide, the Wentworth Group this morning and various other people—Don Blackmore, Mike Hatton and so on. Is the department drawing up a plan of what might be seen as the template for the future to completely reallocate the system based on future science?

Mr Slatyer—No, the department is not doing that. The National Water Commission has commissioned very substantial work within the CSIRO on that subject. That work is available now publicly and will be available to the Murray-Darling Basin Commission, which will be the entity that does the assessment.

Senator HEFFERNAN—Does the buck stop with the Murray-Darling Basin Commission with advice to the government on this matter?

Mr Slatyer—That is how it will work, yes.

Senator HEFFERNAN—Yes. This is what you call pass the parcel. It is a great curiosity to me why the Murray-Darling Basin Commission was not consulted on the Toorale site. Why would that be do you think? Surely, with one iota of commonsense you would consult the ultimate banker of advice—that is, the Murray-Darling Basin Commission. Surely, if they had half a brain in their head, they would at least have stepped foot on the property. It is a very symbolic, pig-in-the-poke decision to buy Toorale, given that it is a viable property and they are getting decent rain in the north, and to take it out of the system and turn it into a national park for a piddling amount of water that will not find its way through the system. I think they still have 30,000 megalitres in their account for the Darling, but that is not available. I know I am not supposed to ask you for an opinion, but would it not have been wise to go and have a look?

Ms Harwood—There had already been extensive assessment of the property for its natural conservation values. We had a very clear description of the water—

Senator HEFFERNAN—This is a perfect answer, to which I will perfectly respond in a minute.

Ms Harwood—Okay. It had already been identified as a high priority as a conservation area if the opportunity arose.

Senator HEFFERNAN—Yes.

Ms Harwood—There had been extensive surveys of flora and fauna and recognition of natural systems that were underrepresented in the national reserve system, making it worthy for addition the national reserve system. As well, we had a clear description of the water entitlements and we were able to assess those as they stood.

Senator HEFFERNAN—Which I put on the record the other day.

Ms Harwood—So the values of the property were well recognised. We also had a valuation of the property.

Senator HEFFERNAN—So, in its wisdom, where is the decision-making between what you have just described, which is valid, and the community benefit? The Save Toorale rally in Burke said to the government yesterday, "Now you have made this cocked up decision, why not use the property as a working property to train indigenous people et cetera et cetera?" Who would have made the glorious decision that the community did not deserve that? Even from a rating point of view, I think it provides 20 per cent of the income for the shire. This is overall activity, not rates. Who would have made that decision? Was it your department? Where does the buck stop on that decision? Who made the decision to buy it? If you do not know, just—

Ms Harwood—The government made the decision to proceed with the purchase of Toorale.

Senator HEFFERNAN—Did you give it advice?

Ms Harwood—Yes, we did.

Senator HEFFERNAN—Did you tell them to buy it?

Ms Harwood—We described to them—

CHAIR—It is not up to the department to tell anyone the government's advice.

Senator HEFFERNAN—Calm down.

CHAIR—Rephrase your question.

Senator HEFFERNAN—Calm down, he knows how to handle me.

Ms Harwood—We provided the advice on the frame for purchasing the property and—

Senator HEFFERNAN—That is good enough. Would you like to provide this committee with the modelling that was done to come to that decision?

Ms Harwood—Modelling of what?

Senator HEFFERNAN—Of the contest between the availability of the water and the economic benefit to the community, versus the proposition that you would lock it up as a national park in the name of bandicoots and boomerangs or whatever, which I have no objection to, by the way. But there must have been some paperwork that made you arrive at that decision, or was it just a yarn over a cup of tea?

Ms Harwood—I guess I would answer that in two parts. The first is that in acquiring water under the water purchase program more generally, each parcel is assessed on its merits in terms of its potential to contribute water to the environment et cetera. The separate issue of when governments, be they state or commonwealth, decide to proceed to establish a national park, is a distinct question. In this case the property had been identified as being of high value for conversion and inclusion in the national park. In this case the property had been identified as being of high value for conversion and inclusion in the national reserve system.

Senator HEFFERNAN—I appreciate that.

Ms Harwood—That had already been—

Senator HEFFERNAN—What may have—

CHAIR—Ms Harwood, finish your answer and we will go back to the terms of reference where we were talking about the Coorong and the Lower Lakes.

Senator HEFFERNAN—This is attached to the Coorong.

Senator NASH—Yes, it is. If we are talking about taking—

CHAIR—Ms Harwood, finish your answer regardless of the commentary around the table. We are inquiring into the Lower Lakes of the Coorong. Lately the questions have been fairly wide-ranging. Senator Heffernan, for the past 10 minutes you have been quizzing the authority on the sale of a property in Queensland.

Senator HEFFERNAN—You do not have the authority to tell me where I should direct my questions.

CHAIR—We will go back to the terms of reference.

Senator HEFFERNAN—As long as it is relevant to the—

CHAIR—Senator Heffernan, you have had at least 10 minutes to ask questions along this same line. To be quite frank, I think I have given you a fair round.

Senator HEFFERNAN—Yes, you have, and you always do.

CHAIR—I request senators to go back to what we are here for.

Senator HANSON-YOUNG—If you want a break I have some questions about the basic cap.

Senator HEFFERNAN—Good on you.

CHAIR—Ms Harwood, have you finished your answer?

Ms Harwood—As I said before, the property had been identified before as having significant nature conservation value.

Senator HEFFERNAN—Who identified it?

Ms Harwood—It was identified by both the New South Wales Department of Environment and Climate Change and, within it, the National Parks and Wildlife Service.

CHAIR—We did this the other day.

Ms Harwood—It was also identified by our parks division, which worked with the states on the national reserve system in identifying priorities for funding under that national reserve system.

Senator HEFFERNAN—Going back my original question, could you provide us with the paperwork that made you arrive at the decision to buy that property after looking at its water return value, its national parks value and its economic benefit to the community? Surely those issues were given consideration in the thinking of that decision? However, I rather suspect that they were not.

Ms Harwood—If you want to see the advice that relates to that property and its acquisition I will take that question on notice.

Senator HEFFERNAN—Let me put it to you in a different way. You are the decision maker and Mr Slatyer is the guru. You provided that advice to the government without consulting the Murray-Darling Basin Commission, so you did not worry about what water advice it was going to give you. As you said, they are the people that provide the peak advice, so I do not know why you bypassed them. No-one went onto the property except two national parks officers. From whom did you seek advice about the economic benefits that would be foregone by this decision?

Senator HANSON-YOUNG—Good question.

CHAIR—Senator Heffernan, you have asked that question a number of times.

Senator HEFFERNAN—We will take a vote if you like.

CHAIR—Ms Harwood, if you want to take that question on notice you can. It is entirely up to the department.

Ms Harwood—It is a matter that the National Parks and Wildlife Service considers. It assesses it at the point of converting properties in this way to join the national reserve system. There is continuing economic activity, despite the change to a national park, and a commitment by the National Parks and Wildlife Service to spend locally to employ people. Constructive discussions are already taking place with the people currently employed at Toorale about continuing employment when the property converts to a protected area.

Senator HEFFERNAN—All right.

Ms Harwood—Consideration has been given to this—it is very real issue to the National Parks and Wildlife Service—in taking the property through to a protected area.

Senator HEFFERNAN—All right. In taking this decision were you aware that the Booka and the Bora banks provide water to neighbours? Do you know what I am talking about?

Ms Harwood—Stock and domestic water? That is something that we will—

Senator HEFFERNAN—Do you know where the Bora and the Booka banks are?

Ms Harwood—I do not know where they are, no.

Senator HEFFERNAN—It is a great shame that the department that took this decision did not know. They did not know anything about that site when they decided to recommend that it be bought. Those neighbours are seriously distressed. The best we can now be told is, ‘We will have to go and have a look at that now that we have discovered it.’ It is a bloody disgrace. If this sets a precedent in times of a crisis of returning water—as the chairman correctly pointed out, we are here about the Coorong—what capacity is there for anyone to have any confidence in planning? This is some sort of over-the-horizon plan to return water to the system.

I know in my head the flows, the means and what the pipes do that have been put in those banks. They voluntarily put pipes in the last two banks—the billabong banks—but what sensible things have they done for the future? The available money for buying back water and compensating groundwater people is outrageous. What proportion of finance have you provided to the national parks versus finance for the water as a contribution from the Commonwealth, and where has that money come from?

Ms Harwood—The property was purchased as a whole, that is, all found with land, water and fixed assets.

Senator HEFFERNAN—That is right. The national parks people went there to have a look at some of the fixed or given assets.

Ms Harwood—Basically, the purchase price is a price that covers the entire thing as a package.

Senator HEFFERNAN—Yes, I understand that.

Ms Harwood—It is not subdivided or partitioned.

Senator HEFFERNAN—I understand that. What contributions did the Commonwealth and the state make to the purchase price?

Ms Harwood—I will take that question on notice because I do not have the precise figures with me.

Senator HEFFERNAN—Do you have any idea? Was there a particular—

CHAIR—Senator Heffernan, I think the official said that she would take that question on notice. Other senators want to talk about the whole Murray-Darling Basin.

Senator HEFFERNAN—We have two hours.

CHAIR—I understand that, Senator Heffernan. I was not rushing you.

Senator HEFFERNAN—You are wasting my time interrupting.

CHAIR—I am referring to relevance. You are asking the same questions 10 or 12 times in different ways.

Senator HEFFERNAN—No, I am not. This matter is serious and it is important.

CHAIR—You have asked questions of this same nature. We have dealt with the answers to those questions.

Senator HEFFERNAN—This issue is of importance and the community wants an answer to it.

CHAIR—We have dealt with the answers to those questions, Senator Heffernan.

Senator HEFFERNAN—This matter is serious and it is important.

CHAIR—You want to waste more time today.

Senator HEFFERNAN—Did you negotiate with the states to divvy up the capital expenditure? Was there formal negotiation? How did you arrive at what the states were going to put in and what you were going to put in? What proportion of that would be a water contribution versus a land contribution from the Commonwealth?

Ms Harwood—As I said, I would like to take that question on notice.

Senator HEFFERNAN—Take it on notice. What were the negotiations? Did you negotiate? You do not know, which is the crazy part about it. This just came out of the blue. By the way, I am aware of the answers to these things. I have been talking to the people who have been doing the negotiating. They played the government on a break.

CHAIR—Senator Heffernan, your commentary has nothing to do with the officials.

Senator HEFFERNAN—All right, we will go to the valuation.

CHAIR—Quite clearly, New South Wales was interested in the valuation and the Commonwealth was interested in the water entitlements. It is as clear as that.

Senator HEFFERNAN—We will go to the valuation. Who supplied the valuation to establish whether you were buying a pig in a poke?

Ms Harwood—The valuation was supplied by the New South Wales Department of Lands.

Senator HEFFERNAN—Could we see that valuation and the supporting documents? It is worth about \$35 an acre. That is what it is worth.

Ms Harwood—I would need to consider that because of the commercial-in-confidence aspects of the negotiation.

Senator HANSON-YOUNG—Senator Heffernan, would you mind if I asked some questions?

Senator HEFFERNAN—Go for your life.

Senator HANSON-YOUNG—Thank you.

CHAIR—That is fine; I know you will ask about the Coorong and the lower levels.

Senator HANSON-YOUNG—One of the things I want to ask is: What stage has the audit reached, and what is its timeframe? Have you received back some sorts of results so that we can figure out whether there is any water in the system? If there is water in the system is it able to be accessed and earmarked for the Lower Lakes and the Coorong? Two weeks ago we were not given a timeframe. I am wondering whether we have any more updated information.

Mr Slatyer—The Murray-Darling Basin Commission's second audit of the system is now with ministers. It will be released when ministers agree to that.

Senator HANSON-YOUNG—State or federal?

Mr Slatyer—All the ministers of the Murray-Darling Basin Ministerial Council.

Senator HANSON-YOUNG—Really?

Senator SIEWERT—Has it been independently audited?

Mr Slatyer—The review of that audit, which the Commonwealth government is undertaking, has now been initiated. It is scheduled to be completed in the next few weeks.

Senator HANSON-YOUNG—Within the next few weeks? Will it be completed by the end of October?

Mr Slatyer—Before then, yes.

Senator HANSON-YOUNG—At the moment the ministerial council has an audit that is being independently checked?

Mr Slatyer—Yes, that is right. The Murray-Darling Basin Commission has already released one audit.

Senator HANSON-YOUNG—When was that?

Mr Slatyer—It must have been a couple of months ago. It is on the commission's website.

Senator HANSON-YOUNG—I wanted to ensure that we were talking about the same audit.

Mr Slatyer—The process is that the commission has agreed to update that audit. That update has now occurred and, as I said, it is with the ministers. The Commonwealth government has undertaken independently to review the approach taken in that audit. That review is now under way and it will be completed in the next few weeks.

Senator HANSON-YOUNG—Great, thank you. Just before the lunchbreak we heard from one of the witnesses who said that one of the concerns related to when water is put into the market. The terminology that was used was that people wanted to sell their physical water, that there was a delay in getting approvals for the purchase and trading of that water, and that those delays were somewhat lengthy and inhibiting to getting water into the places that it needed to be. I realised that a variety of bodies spread across the different jurisdictions are associated with making those approvals happen. What can the Commonwealth government or the department do to try to speed up that process?

Mr Slatyer—Senator, you are correct in identifying a problem in the water trading market, that is, that there can be considerable delays in the execution of transactions. Those delays have been of concern to the Commonwealth and to other governments. Currently, the Commonwealth is working with the states to try to improve the way the water market operates in a number of ways, including by understanding the reason these administrative delays are occurring, and implementing processes to remove those kinds of problems. But these are not the kinds of administrative problems that can be removed overnight; in many cases it requires substantial changes to the way in which the state-based systems operate. For now we have to work with those systems as they are. That is not inhibiting the Commonwealth from wishing to purchase entitlements under its entitlement purchase program, but it is factor in the timing with which water can be made available.

Senator HANSON-YOUNG—I take it from that that you understand it is an issue. You are trying to work on alleviating those issues but, at the moment, that is what we are stuck with. We have given no commitment as to when those issues will be cleared up and we have not given any directives or encouragement to the states to do things by certain times.

Mr Slatyer—Yes. We have been working with the states to move along this reform. I do not have details with me about specific timeframes and so forth that have been agreed or discussed, but rest assured that we are working actively with the states on this matter.

Senator HANSON-YOUNG—Do you think that those delays would be discouraging for people selling water on a temporary basis?

Mr Slatyer—Any delay in the settlement process, if you like, will be a reason. Ideally, we would like a system that works much more smoothly.

Senator HANSON-YOUNG—If somebody has some water, they do not have full allocations, and they are not able to use what they have, they have cash flow issues. They want to get the water onto the market and start concentrating on what they are going to do for the next season. If they have to wait 60 or more days to get approval surely that is not an effective way of trying to encourage people to put their water onto the market?

Mr Slatyer—We agree that the situation needs to be improved. Currently people are active in the market—water brokers are active in the market. There are ways and means for people, if they wish to sell allocations, to do so in the most efficient way possible. However, we agree that administrative constraints hold up the final execution of some of these trades.

Senator HANSON-YOUNG—Thank you. My next question is somewhat broader but I think it is quite important. In the view of the department who is responsible for ensuring that the Coorong and wetland areas in the region remain listed under the Ramsar convention?

Mr Slatyer—That is a fairly complex question because different levels of government have different responsibilities in different ways.

Senator HANSON-YOUNG—Where should the buck stop?

Mr Slatyer—We can recite Australia's responsibilities under the Ramsar convention and other relevant international instruments. As it is state government property, the state has an underlying responsibility for the management of the area. The Commonwealth fully respects that but there are some decisions that the Commonwealth needs to take and there are other decisions that South Australia needs to take. When it comes to the management of river flows in the Murray system, the Murray-Darling Basin Commission and its processes have to take some decisions. Senator, it seems that your question is fairly straightforward but it is quite a complex question to answer.

Senator HANSON-YOUNG—I appreciate that. At the end of the day someone has to drive the process. In the view of the department who should be driving the process?

Mr Slatyer—In our view to date the key initiating steps have been taken by both governments and by the commission according to their responsibilities. To date that is what has been occurring.

Senator HANSON-YOUNG—That does not appear to be a very efficient way of doing it. We heard from the New South Wales Department of the Environment and from your department. This is the third time that we have heard from the South Australian government and the water minister. Everybody has different pieces of information and different ideas about who is responsible for what. No central driving body is saying, 'If we do not do something about this our internationally recognised Ramsar wetlands will be dead.' Is it the Prime Minister's responsibility, is it the federal water minister's responsibility, or should someone entirely different be responsible for this?

Mr Slatyer—Our department has been very active in pursuing what we see as the Commonwealth's responsibilities under the Ramsar convention and under our legislation. I would not agree with the suggestion that there has been a breakdown in the way in which governments are working together. In fact, governments, through the Murray-Darling Basin Commission process, have been working through this problem together. I cannot really add to what I said before about how I see the relevant responsibilities.

Senator HANSON-YOUNG—How extensive is the over-allocation issue across the basin?

Mr Slatyer—The department is concerned, and it has been for some time, about the impact of the current drought and the potential future impact of climate change on water resource availability throughout the basin. The CSIRO sustainable yield reports paint a picture of the situation in the southern basin potentially worsening, impacting on the environment and on downstream interests. Those are some of the reasons why the department has been working to assist the government to pursue this whole reform agenda relating to the creation of the authority, the basin plan, the new sustainable diversion limits, and other reforms that will reset the new water purchasing and buy-back arrangements. That will reset and rebalance the basin in a more sustainable manner. In the future, if conditions continue to worsen, or not improve, as a nation we will be better placed to manage that.

Senator HANSON-YOUNG—With all due respect, the basin plan will start to see results only within the next five to 10 years. Surely you do not then consider this issue to be at crisis point, as have some of our other witnesses?

Mr Slatyer—No, I would not agree with that at all. The basin plan aims to deal with problems in the medium and longer term. For all the reasons that we have given in evidence, we believe that that is a serious and difficult task that must be done properly. In the shorter term we are administering programs for the government to recover water from consumptive users for application to the environment. In the immediate term we are working actively with South Australia and the MDBC to develop management options for the

Lower Lakes for governments to consider. We are doing all those things for the long term, the medium term and the short term.

Senator HANSON-YOUNG—I want to clarify the issue of responsibility. In the view of the department it has a shared responsibility to ensure that we do not lose our Ramsar wetlands. Correct me if I am wrong, but obviously that responsibility is shared not only between the Commonwealth government and the South Australian government but also with those governments through whose jurisdictions this river runs. Is that correct?

Mr Slatyer—That is true to the extent that under the Murray-Darling Basin Agreement they have rights and responsibilities in regard to the management of river flows in the Murray itself.

Senator HANSON-YOUNG—Is it correct to say that the New South Wales government has responsibility to work with other interested parties to ensure that we do not lose the Ramsar listing of the Coorong?

Mr Slatyer—No, I did not say that.

Senator HANSON-YOUNG—That is what I am after.

Mr Slatyer—Under the Murray-Darling Basin agreement New South Wales has formal responsibility in regard to water sharing arrangements with South Australia. New South Wales has been party to, has agreed to and has worked cooperatively with other states, in the dry inflow contingency planning arrangements that have resulted in some modifications and realignments of those rules to get it through the current very dry spell.

New South Wales is also a party to the Living Murray initiative of the Murray Darling Basin Commission, in which each jurisdiction has undertaken to recover certain amounts of water to the benefit of several icon sites along the Murray, including the Lower Lakes and Coorong. New South Wales has accepted responsibilities under the Living Murray initiative. Beyond that, unless I have overlooked something, those are the formal responsibilities of New South Wales. Victoria would be in a comparable situation.

Senator HANSON-YOUNG—Thank you.

Senator NASH—As I was not able to be here yesterday I apologise if the basic question that I am about to ask has already been asked. You refer in your submission to the effectiveness of the first water purchase round. For the purposes of Hansard could you lay out the facts and the timeline of that first round? I do not think the committee has done that yet in detail.

Ms Harwood—I do not have the precise dates with me as I only recently arrived in the world of water.

Senator NASH—That is okay. You can supply specific dates later. Today I am after the timeline, the decisions, how it happened, and the framework that was set up to enable it to happen.

Ms Harwood—I can describe the basic framework, which is a public call with notices in many newspapers—rural and national newspapers—inviting offers from willing sellers of water entitlements to the Commonwealth. For the first round we received a large number of offers to sell. Essentially, they were assessed in tranches on a monthly cycle. The tender was open for several months and batches of entitlements were assessed individually and against each other to establish the capacity of the water to be of benefit to the environment, bearing in mind that this is a long-term program. We are not just looking at what the water will do this year; we are also looking at entitlements.

In time, how will that water entitlement parcel and the water it will deliver benefit on average? Obviously we also look at value for money, that is, our obligation to deliver value for the government in our water purchases. That proceeded to the point where offers were made to purchase water from those whose bids were successful. That process—from the negotiations through to acquisition and settlement—takes time. For the first round we are still in the process of finalising settlement.

A number of settlements have been made but there are various points in the contract process, for example, making an offer, establishing a contract, seeing it through to settlement, and transfer of the entitlement to the Commonwealth. If it is of value I have a table from the first round that lists the offers that have been pursued, that are already settled, and the long-term average amount of water that that would deliver.

Senator NASH—That would be useful.

Ms Harwood—At the end of that round we commissioned a review of that first phase of the purchase program to help inform the development of future purchasing rounds as well as establishing a stakeholder consultative committee with broad representation to advise us. At the end of the first round of purchasing we conducted regional consultations in a number of places throughout the basin. In the first round we talked

people through what had happened in the round, we answered questions, and we had conversations about the future of the present water purchase program.

Senator HEFFERNAN—Was that all entitlements?

Senator NASH—I have not finished asking questions, but you can jump in, Senator Heffernan.

Senator HEFFERNAN—Are you talking about water entitlements? Normally you talk about water.

Ms Harwood—Water entitlements, yes—permanent water rights.

Senator NASH—What was the total amount of the entitlement purchased?

Ms Harwood—As I said earlier, some of the processes have concluded.

Senator NASH—And some of them have not?

Ms Harwood—Some of them are quite close to concluding. From that first round of water purchases that we expect to see through to completion, the total purchase was 28 gigalitres with a long-term cap equivalent of 17.4 gigalitres.

Senator NASH—Of those 28 gigalitres how much water was purchased?

Ms Harwood—I need to take us back to what is on the books for the Commonwealth environmental water holder, which is a smaller quantity of total water. Some of this water is still flowing—

Senator NASH—What I am getting at is simply this: How much of it was paper and how much real water was purchased in that transaction?

Ms Harwood—It was the same as for any other purchase. All those water entitlements have the same character as if an irrigator held them. If there is a 60 per cent allocation against the entitlement—

Senator NASH—I understand that.

Ms Harwood—They have varying long-term reliability and, obviously, they also have varying current allocations against them.

Senator HEFFERNAN—High or low security?

Ms Harwood—A mixture of high and low security.

Senator HEFFERNAN—That will make a lot of difference to what we do. If it is low security you buy nothing.

Senator NASH—You buy nothing.

Ms Harwood—Water entitlements currently held by the Commonwealth environmental water holder, which is a smaller total than the one I just gave you, are concluded through to settlement. Once the title has arrived the water entitlements are owned by the Commonwealth. Against that the current allocation is a total of 72 megalitres. When you buy a water entitlement the only allocations you will get on that entitlement in the year that you buy it are those accruing to it after you have acquired it, if you see what I mean. If it came through only last week the allocations already made against that entitlement would belong to the seller and not to the buyer.

Senator HEFFERNAN—Could I get you to repeat that? You referred to a total of 72 megalitres for all that trouble?

Ms Harwood—Well, as I said—

Senator HEFFERNAN—I would say that that is a piddling amount of water.

Ms Harwood—The entitlements are only just being settled. Prior to the point of settlement the allocations against those entitlements belong to the seller. The other way to look at it is to assess those entitlements in the long term—what you would expect to receive against them for their reliability.

Senator HEFFERNAN—Yes, but can I—

CHAIR—Sorry, Ms Harwood. Senator Heffernan, Senator Nash has the call.

Senator HEFFERNAN—We are sharing the call.

Senator NASH—If it is on the same issue I am happy for Senator Heffernan to jump in.

CHAIR—If you can read my mind that well I might as well leave the room. Senator Farrell is waiting to ask questions.

Senator NASH—Given that it is only 3.25 pm—I will probably only take another 10 or 15 minutes—I am happy to share my time.

CHAIR—That is fine; I am the same. Senator Heffernan cannot look me in the eye and tell me that he will be only 10 or 15 minutes. Senator Farrell has been waiting patiently to ask questions.

Senator HEFFERNAN—Yes, I know. He is very patient.

Senator NASH—I have had only five minutes.

CHAIR—Senator Nash, you can have a lot more time. Sorry, Senator Heffernan, there is no drama.

Senator NASH—If I can have a lot more time I am happy to cede a bit of my allotment to Senator Heffernan.

Senator SIEWERT—That is cheating.

Senator HEFFERNAN—I require only a bit of your time. You have acquired 72 megalitres of real water out of the entitlements. Is that what you are telling us?

Ms Harwood—Let me explain again. The water entitlements are only just arriving into the hands of the Commonwealth.

Senator HEFFERNAN—I understand that.

Ms Harwood—Taking a photograph of the position as it is now, the only allocations are those allocations that have been made to fit entitlements since the Commonwealth acquired them.

Senator HEFFERNAN—That is right.

Ms Harwood—It has taken a considerable time to bring those entitlements through to the Commonwealth.

Senator HEFFERNAN—Let me put a proposition to you. If you want to return water to the system you do not have to buy any entitlements.

Ms Harwood—That is right.

Senator HEFFERNAN—As you know, an entitlement is a proportion of the water that is available to various classes of priority in the system. Is that true?

Ms Harwood—Yes, but it depends on what—

Senator HEFFERNAN—Hang on. Your answer is yes. Given that I am worried about the future—

Senator NASH—If there is never any water you do not have an entitlement.

Senator HEFFERNAN—Hang on. You are buying an entitlement. Each year you are buying the sum that is done on the water that is available, and you apportion your entitlement of that proportion of water. If you wanted to do that without buying entitlements the Commonwealth could readjust its water formula under those entitlements and redistribute the plan.

Ms Harwood—No.

Senator HEFFERNAN—Why not?

Ms Harwood—The Commonwealth does not have the power to do that. Furthermore, it—

Senator HEFFERNAN—But the entitlement is a calculation made by the Commonwealth.

CHAIR—Senator Heffernan, you asked Ms Harwood a question. Let her finish her answer and you can then ask further questions.

Senator HEFFERNAN—She gave an answer. Her answer was no.

CHAIR—There was an explanation behind it.

Senator HEFFERNAN—I do not need the explanation.

CHAIR—It would help those of us who do not have an understanding.

Ms Harwood—It should be remembered that this process of purchasing water entitlements, which has the same character as if held by an irrigator, is returning water to the environment. However, it is also compensating at fair market prices for the water that is sold.

Senator HEFFERNAN—I understand all that. Go on.

Senator NASH—Let me describe this in laymen's terms. If you bought X amount of entitlement and, hypothetically, the conditions at that time did not change and the rainfall did not increase, in the future there would not be water to put against that entitlement anyway. Would you not have bought something that simply did not exist and the water would never be placed against it?

Ms Harwood—It is the same as for any other person possessing water entitlements in the market.

Senator NASH—I understand that.

Ms Harwood—There is the same challenge. Similarly, irrigators will be grappling with lower allocations against those entitlements. For what it is worth I should also add that of the 72 megalitres of water the Commonwealth currently owns, or has full title to, only 1.3 gigalitres.

CHAIR—Entitlements?

Ms Harwood—Entitlements. A lot of water entitlements are on their way through the contractual process—settlement and transport through to water registers to the Commonwealth.

Senator HEFFERNAN—How much of that is real allocation and how much of that is entitlement?

Senator NASH—How much of that is—

CHAIR—There is an echo which commences at one end of the room and travels to the other end. I do not know whether Hansard is aware of that echo.

Senator HEFFERNAN—You said that you purchased 1.3 gigalitres of entitlement which at present is 72 megalitres of real water?

Ms Harwood—Yes.

Senator HEFFERNAN—Is that what you are saying?

Ms Harwood—Yes. It should be remembered that for those 1.3 gigalitres of entitlement there would have been allocations well above 72 megalitres. It is just that they would have accrued this year to the owner who sold them.

Senator HEFFERNAN—Yes, I understand that.

Ms Harwood—Next year all the allocations against those entitlements will come to the Commonwealth.

Senator HEFFERNAN—At present there is a zero allocation on the bulk of that water, which is general allocation. That is a statement of fact.

Ms Harwood—I have the proportions here between—

Senator HEFFERNAN—Give them to us.

CHAIR—Once you have done that me we might see whether any other senators want to ask some questions.

Senator HEFFERNAN—This is very important.

Senator NASH—It is important stuff. I have a few more questions.

CHAIR—I do not doubt that it is important, but other senators have been waiting patiently to ask questions.

Senator NASH—I know, but I wish to continue for a moment. Ms Harwood, because of the way in which the process has been described, it does not seem to me to be very transparent. Farmers or holders of entitlements put in a bid and, to put it simplistically, you tick off the ones that you want. What transparency was there surrounding the value of those entitlements? Why did you choose the ones that you did?

Ms Harwood—There is a large amount of detail on our website with a breakdown by river, entitlement type, et cetera, of the purchases that are being made.

Senator HEFFERNAN—Will you provide that to the committee?

Senator NASH—Could you provide that to the committee?

Ms Harwood—We can give you a full print-out of the website. There is a lot of information about the character of water entitlements, how much, in which rivers, et cetera.

Senator NASH—Has that happened in hindsight, or was any of that information available during the process?

Ms Harwood—The process is a commercial contract between the seller and the buyer. Our obligation is to get value for money for the Commonwealth.

Senator NASH—I understand that but let us compare it to, say, stock exchange transactions, which are far more open and transparent. I am trying to get a sense of how transparent it was.

Ms Harwood—There is general information about the value of water. We point people to information that is available about current water purchase prices in different areas in the basin. People have access to information about current water trading prices in the basin. In deciding to make an offer to us they have access to that information and we also point people to that information.

Senator NASH—Were any tenders considered from regions that currently do not have a catchment management plan?

Ms Harwood—All the entitlements that we purchase were entitlements that were separable from land and tradeable.

Senator NASH—If somebody put in a tender and he or she was in a region that did not have a catchment management plan, would you consider that tender?

Ms Harwood—No. We did not proceed to purchase anything that was not separable from land as a tradeable entitlement.

Senator HEFFERNAN—Except Toorale.

Senator NASH—Okay, I am with you. You state in your submission:

The new tender will be announced in 2008-09.

Ms Harwood—The current tender round opened in the northern basin.

Senator NASH—Okay.

Ms Harwood—It started on Tuesday this week.

Senator NASH—When you state, ‘A new basin-wide water purchase tender will be announced in 2008-09’ you meant to say last Tuesday?

Ms Harwood—From which submission are you reading?

Senator NASH—It is the front page of the second submission that you gave us yesterday. You state on the very first page:

A new basin-wide water purchase tender will be announced in 2008-09.

Ms Harwood—There were two announcements. On 14 August the Prime Minister made a number of announcements about accelerating the water purchase program. We had already said that we would soon be starting the tender round in the northern basin. In that announcement on 14 August the Prime Minister said that, at that point, it would be in Queensland, but he extended that to be purchasing from the northern basin areas in New South Wales.

Senator NASH—Sorry, who extended it?

Ms Harwood—The Prime Minister in announcing those initiatives. The tender for the northern basin was announced as that—for the whole of the northern basin. That was on Tuesday. As well as that we will be commencing a whole-of-basin tender round later this financial year.

Senator NASH—When?

Ms Harwood—A date has not been set for when that will happen. At the moment the northern basin tender round is open. The date has not been set for when we will open the whole-of-basin tender round.

Senator NASH—In section 1 (c) you refer to the impact of any water buybacks on communities. I understand from this that ABARE will prepare a report that is due in early 2009. What do you mean by ‘early 2009’?

Ms Harwood—I do not have a precise date on that.

Senator NASH—Given that those dates are extremely fluid, which does not seem to me to be particularly sensible, am I right to assume—I should not assume anything—that the report will be finished and back to government before any announcement is made about the commencement of that tender?

Ms Harwood—I cannot say.

Senator NASH—Finally—and I say finally because so far as we are concerned nothing was done to address the impact on communities—what is the point of seeking a report from ABARE? Obviously the tender for the northern basin has already commenced and the whole-of-basin tender will commence at some point. The whole point of getting a report is to advise governments of the impacts of tenders and buybacks, rather than doing that before a report is commissioned. Quite frankly, that should have been done before this whole thing was started.

Ms Harwood—There are several parts to your question. We have done a review of the first purchase round and we had a great deal of feedback on these issues in our regional consultations and through the stakeholder consultative committee.

Senator NASH—Could you supply that feedback to the committee?

Ms Harwood—I will take your question on notice to determine how to present that feedback.

Senator HEFFERNAN—Does this relate to the 28 gigalitres?

Ms Harwood—Yes.

Senator HEFFERNAN—You have settled on only 1,200 megalitres of that?

Ms Harwood—Can I finish answering Senator Nash's question?

CHAIR—Yes, you can. Just answer the question, Ms Harwood. Ignore the interjections.

Ms Harwood—Thank you. The purchase program will go through time; it is scheduled to go for 10 years. Throughout that program we will be looking at the impact that it has.

Senator NASH—What will you do if it has buggered up a community? Sorry, excuse me.

Senator HEFFERNAN—I think you should withdraw that. That is shocking!

Senator NASH—I withdraw that. This issue is really important. I understand you will review the impacts of this on the community, but what will you do if it has already had a negative effect on the community? What if it has already had an extraordinary impact? We do not know because there is no report. No modelling has been done to show what will be the impact of all these buybacks. If this has a serious social and economic impact on regional communities what will you do? You have already bought back the water.

Senator HEFFERNAN—You go and have a glass of wine.

Senator NASH—You have already bought back the water. What is the point of reviewing it? How would you fix it?

Ms Harwood—I again state that the purchase program will occur over time. It will extend over a period of 10 years and we will be looking at it as we go. At the same time a significant investment program, almost double the value of the purchase program, is the investment in sustainable rural water infrastructure. Basically, that is working with the irrigation communities to help them move to a sustainable footing. Both the environment and the irrigation communities will have to cope with the fact that there will be less water in the future.

This will help those communities move to a sustainable footing and it will help them to achieve greater productivity from the water that is available. When sustainable yields and safe extraction levels are set for different catchments, the communities will be helped through time by the investment of that \$5.8 billion. We are looking at infrastructure in the various regions, we are improving irrigation and operation infrastructure, and we are moving those communities onto a more sustainable footing.

Senator NASH—I appreciate your answer but I will have to read through it to see what it means. I asked this question earlier and I will ask it again: If you continue down the buyback path and you receive a report that states, 'Removing water from these rural communities will have a serious effect on the social and economic well-being of those communities' and you have already removed the water, what would be the department's next step? What would be your next step?

Senator HEFFERNAN—They do not have one.

Senator NASH—What is your next step?

Senator HEFFERNAN—It is a blank space—a very blank space.

Ms Harwood—As I said, we will be looking at the impacts of the purchase program. It is important to—

Senator NASH—But you would already have purchased. Looking at the impacts of the purchase after you have purchased, how would you correct it? In hindsight, if you made a wrong decision and the review of the impact states, ‘We should not have taken that much water out of the community because look at the economic impact it has had’, what would be the department’s next step to redress the problem that it had created?

Senator HEFFERNAN—Have a glass of wine down at the art gallery.

Senator FISHER—Toorale is a good example.

Ms Harwood—Both the purchase program and the investment program will improve irrigation infrastructure. We will be working with those communities through time. We are not doing this blind from Canberra—we will be out there talking with the communities about this. The intersection between the investment program and the purchase program is very real to us. It will ensure that the cumulative effect of this investment will be to ensure that the best benefits flow to the environment and to the irrigation to which it is going.

Senator NASH—You have not answered my question. I give up. That is not an answer.

CHAIR—On that note, Senator Nash, would you like to draw breath, have a drink of water and—

Senator NASH—I am done for the moment, Chair. I am happy to hand over to one of my colleagues.

CHAIR—Thank you, Senator Nash. I am looking forward to hearing the dulcet tones of Senator Farrell.

Senator FARRELL—Thank you, Chair. Ms Harwood, you probably cannot say—but I think I can—that one of the reasons we are not further down the track towards more water purchases is that the previous Liberal-Nationals government did nothing about buying any water. You have told us how far you have got, which is a start—it is something. The former government did not deliver a drop of water to the system, but we are starting to make some progress. What is in store for us in the future? What sorts of things are you looking at, or what methods will you be using to work out these purchases? How much do we intend to spend in making these purchases?

Ms Harwood—Over the 10 years of the Water for the Future Program \$3.1 billion has been set aside for water purchase. We envisage continuing with the rounds of water tenders. Basically, the thing is framed around the least disruption to the water market and also to buying water from willing sellers. There are some additional elements to that for which we are developing guidelines. For instance, what is called managed buyout where, at the end of channel, a group of irrigators may wish to cease irrigation, may wish to move to dry-land farming, and may wish to do that as a group. We will look to see how we might make that—

Senator FARRELL—You might be interested to know that we heard a bit about that this morning from farmers around the Coorong. They are doing exactly that. Because of water shortages they are turning, quite successfully, to dry-land farming.

Ms Harwood—At the same time, through infrastructure investments, one of the aims of that, amongst others, is to deliver water savings for the environment. If you can reduce conveyance losses or evaporative losses in the system the water that is saved can be shared between irrigators and the environment. There are a number of arms to the water purchase program and it moves in tandem with the investment in improving irrigation infrastructure throughout the basin.

Senator FARRELL—The other question I have relates to the Sustainable Rural Water Use and Infrastructure Program. Could you tell us a bit about the progress on that front? Are we looking at \$5.8 billion?

Ms Harwood—We are looking at \$5.8 billion. A number of significant projects have been agreed in principle with the states for Commonwealth funding on the basis of doing a due diligence assessment. Those were announced at the COAG meeting on 3 July.

Senator FARRELL—Could you tell us about some of those?

Ms Harwood—The food model program in Victoria will modernise the entire irrigation setup, move it on to produce water savings, and move it on to a more modern footing—everything from metering, delivery arrangements and so on, irrigation setup—to produce water savings and move it onto a more modern footing in terms of everything from metering and delivery arrangements, and so on. Other examples under the priority projects, which are in Queensland, New South Wales, Victoria and South Australia, would include the pipelines in South Australia, both the potable water pipeline to provide potable water to communities currently dependent on the Lower Lakes for freshwater for household and domestic use as well as an irrigators pipeline

to Langhorne Creek and related areas, so that water can come to them rather than being pumped from the lake again.

Each state has developed the projects that it wishes to pursue in agreement with the Commonwealth. We are working with each of them on developing those. Some of them are moving quickly to project development: for instance, those pipelines in South Australia. Others are very large, comprehensive projects that need a great deal of planning to make sure you get it right. We are commencing the process with the state governments in developing those projects.

As well as investment in private irrigation infrastructure, this is working with private irrigation bodies to, in similar vein, help move those irrigation communities and systems onto a more sustainable footing through investment in infrastructure and also looking at ways that you can provide water savings from those areas as well. It is a big investment through time. We are at the very start of that in terms of working on the structure and the content and the due diligence processes for those projects with the states.

Senator FARRELL—I have just one follow-up question.

CHAIR—Then Senator Siewert is waiting, then Senator Fisher as well as is Senator Heffernan.

Senator FARRELL—On those water projects around the Lower Lakes and the Coorong, where do they plan to pump that water from? Is it in any way dependent upon the Wellington Weir being built, or is the water level high enough at wherever it is that they are planning to pump it from to ensure that we get that potable water?

Ms Harwood—The off-take is further upstream than is Wellington Weir in terms of where that water would be sourced from.

Senator FARRELL—You do not know exactly where it is?

Ms Harwood—I do not have it precisely with me, so I would not standardise.

Senator FARRELL—But it does not require the construction of the weir to get you a sufficiently high level.

Ms Harwood—No. Not on my understanding.

Senator HEFFERNAN—You are pursuing 28 gigalitres, right? Is that correct?

Ms Harwood—We are pursuing 28 gigalitres.

Senator HEFFERNAN—You have purchased 28 gigalitres.

Ms Harwood—We are in the process of purchasing. This table lists all the current ones, both stuff that we have acquired and whatever else we have acquired—

Senator HEFFERNAN—Now can you tell us how much you have actually settled?

Ms Harwood—We have settled on 1.3 gigalitres of water.

Senator HEFFERNAN—Righto. And out of that you have produced 72 megalitres of water.

Ms Harwood—Or 1.4, I am sorry. I have misread a figure here.

Senator HEFFERNAN—My information is that it is 1.2, but anyhow, be that as it may, you state in your table that that is going to produce water available for the environment and expected long-term annual average 17 gigalitres. Right?

Ms Harwood—Yes.

Senator HEFFERNAN—Can you tell me, in arriving at that 17 gigalitres, the calculation you made on average available allocation out of those entitlements?

Ms Harwood—In the column before, you will see that there is a column that says, ‘Long-term reliability of entitlements.’ That is basically looking at the expected percentage reliability according to the character of the water entitlement.

Senator HEFFERNAN—Okay. In making that calculation, what science of the future have you applied to it, given that the science is saying that you are going to lose between 3,500, that is, 25 and 50 per cent of run-off in the system over the next 40 years? I will bet you that you have not done it. Obviously you are going into conference. You have a problem.

Ms Harwood—You are asking me how we arrived at the percentage calculations for liability?

Senator HEFFERNAN—In the science of the future, which says we are going to lose between 25 and 50 per cent, you are saying that the water available for the future, as a yield out of all of that, is 17 gigalitres.

Ms Harwood—That is correct.

Senator HEFFERNAN—Again, you use some weasel words because what calculations did you do of the future science in arriving at that 17 gigalitres?

Ms Harwood—All right. As I understand it, that figure is based around the recent driest scenarios for the basin. Essentially it is not a 100-year average.

Senator HEFFERNAN—Could you provide us with the model.

Ms Harwood—It is looking at the last 10 years where water availability has been much lower.

Senator HEFFERNAN—Could you provide us with that modelling?

Ms Harwood—That is the basis on which that figure was calculated.

Senator HEFFERNAN—Righto.

CHAIR—Thank you, Ms Harwood.

Senator HEFFERNAN—Just—

CHAIR—Senator Heffernan!

Senator HEFFERNAN—Just one more.

CHAIR—One more, then Senator Siewert.

Senator HEFFERNAN—Just one more, and I realise that everyone else has been patient. I want to go back to the future and entitlement. Could you explain to the committee the current method of producing an allocation out of an entitlement?

Mr Slatyer—Senator, the short answer is no. There are very complex rules in each state for working that out, and we do not have those rules here with us.

CHAIR—Thank you.

Senator HEFFERNAN—All right. No, I have to follow it up, mate.

CHAIR—Look, Senator Heffernan, Senator Siewert has been waiting.

Senator HEFFERNAN—I appreciate that.

CHAIR—I am going to go to Senator Siewert. You have had a go and I have said we will come back to you, but your colleague, Senator Fisher, is waiting to ask questions as well. Senator Siewert?

Senator SIEWERT—Thank you. I wanted to just double check on going back to the audit that Senator Hanson-Young asked a question about. Can I just clarify that the audit will not be released until the independent review of methodology has been done? Is that correct?

Mr Slatyer—No, that is not correct. Senator, the audit will be released as soon as the ministers who have just received it agree to release it. It will be released quite independently of the review report.

Senator SIEWERT—Okay. And the review report will be released once that has been assessed by the minister, or is it not going to be released?

Mr Slatyer—I expect it will be released, Senator. I cannot imagine that it will not be. Ultimately I guess it is the government's prerogative, but the government has announced that the review will be done. I expect it will be released as soon as it has been accepted by the government.

Senator SIEWERT—From my recollection of our conversation last week, you are expecting it in about a month?

Mr Slatyer—Yes. I said in evidence earlier it should be completed in the next few weeks.

Senator SIEWERT—Thank you. Can I ask around the North South Pipeline or the Sugarloaf Pipeline—it goes by various names—whether your section of the agency was consulted in that assessment process?

Mr Slatyer—We were, but that is about as much as I can say. My colleague, Mr Flanagan's, division is handling that matter.

Senator SIEWERT—Were you consulted about the amount of water that it may or may not take out of the river?

Mr Slatyer—No. I am not prepared to divulge what internal conversations occurred within the department. It is not appropriate to divulge that.

Senator SIEWERT—That is interesting. You obviously heard the evidence that the Wentworth Group gave this morning?

Mr Slatyer—I apologise, Senator, but, no: I was not here.

Senator SIEWERT—I am sorry. You were in Melbourne.

Mr Slatyer—No. My colleague was in Melbourne but I was also tied up in other things, so I did not hear it.

Senator SIEWERT—Okay. I will rephrase it. I presume you have been briefed as to what the Wentworth Group said this morning.

Mr Slatyer—Not that either, I am afraid, Senator, because we have both been completely tied up in other meetings between their evidence and coming here. You will have to help us by telling the Wentworth Group's comments.

Senator SIEWERT—All right. The Wentworth Group is saying that we need to cut consumptive water use by 42 to 53 per cent; that we should be doing that within the next two to three years; that most of the money that is currently allocated to both buyback and irrigation restructure and efficiency gains should be committed to buying water; and that further resources need to be made available for structural readjustment, the argument being that the Murray-Darling Basin is in crisis; that we are much better off dealing with that up front in the next two or three years than let it happen on an ad hoc basis over 10 years; that 30 per cent of consumptive users or farmers-irrigators will leave the industry regardless; and that we should be doing it up front and now, rather than let it happen willy-nilly. I hope that is a fair assessment.

Senator FISHER—I think it is, Senator.

Senator SIEWERT—That was the big picture. They have also made a number of points around the Coorong and the Lower Lakes and suggested setting up a commission of inquiry for the Lower Lakes. I am aware that I have just told you that and that you have not had time to think about it, and I appreciate it is difficult. I am not trying to put you on the spot. I would much appreciate it, if perhaps you take that in writing, to have your response.

Mr Slatyer—Senator, I am happy to talk about it because of course we think about these things. We cannot express an opinion about those particular views, but can I say that, as I have given in evidence before, the Commonwealth and the states are setting up a new process for arriving at a system of diversions that is based on sustainability principles. This is the whole purpose of the basin plan and the sustainable diversion limits. We believe that is a very serious and difficult task to get right and it needs a couple of years to occur. We have stated that in evidence.

The new authority will have the powers, the resources and all the other capacity to develop those limits. I cannot foreshadow whether those limits will be of the sort that the Wentworth Group is advocating or some other number. The evidence we have from the CSIRO sustainable yield reports is that water availability in the long run over the next 10 years is unlikely to be reduced by that sort of scale that the Wentworth Group is talking about. But of course in the longer run, it may well be the case, but we do not know that.

All I am saying, Senator, is that we are not in a position to give an opinion on the Wentworth Group's views, but the governments of the Murray-Darling Basin are establishing a process that will mean that the formal constraints on how much water can be taken from the basin in the future will be based on sustainability principles, on principles of, I think these are the words of the act, ecologically sustainable levels' of take. That will underpin the whole new system that will then take effect when existing water sharing plans expire. In our view, that is a very thorough and appropriate procedure to follow to do the very serious work that needs to be done to get this right.

Senator SIEWERT—Have you consulted the Wentworth Group in the work that you have been doing?

Mr Slatyer—Individual members of the Wentworth Group have had talks with officials from time to time. They are all known to us. We have discussions, but they are not in the nature of formal consultations.

Senator SIEWERT—In terms of the Coorong and the Lower Lakes, at what point would an EIA kick in to look at supply of water and the sea water option, given that it is a Ramsar wetland? At what point does an impact assessment need to be done?

Mr Flanagan—Essentially, the requirement to effectively trigger the act will kick in when someone is proposing or contemplating to take an action that will be likely to have a significant impact. In the case of the principal issue regarding the Lower Lakes, we are already assessing the potential impacts of the temporary weir proposal. But in regards to the possibility or the prospect of opening the barrages to allow salt water into the system, it has been agreed that that will need to be assessed because of the obvious impacts.

The time at which it will kick in is a little bit up to the South Australian government in terms of when it thinks that will become something that will need to proceed because, as you can see, there is quite a lot of effort and work involved in undertaking a full assessment. To the extent that other options that do not require modification of the environment in terms of opening the barrages would be available, holding off the official kick-off of the process is probably a wise thing. But our discussions with the South Australians to date are at the point where we are expecting that a formal referral will be made in that envelope, which will give enough time for a full and thorough analysis of the issues.

Senator SIEWERT—What is the average length of time that it takes you to do an assessment like that?

Mr Flanagan—Normally they can be done in three to six months. The length of time often depends on the length of time it takes a proponent to undertake the necessary environmental assessment work. In the case of the lakes, the prospect of opening the barrages as a possibility is not a surprise, so there is already a considerable amount of work going on in the background to begin the process of developing the necessary models and environmental understandings of the system. It will be a foreshortening of the time frame.

Senator SIEWERT—Without pre-empting the assessment process, one would expect that the impact on groundwater would be a necessary part of that review.

Mr Flanagan—Yes, to the extent that it is relevant to the ecological character of the Ramsar site and the other matters of national environmental significance.

Senator SIEWERT—Yes. I appreciate that we will not go into the shortcomings of the EPBC process right now.

Mr Flanagan—Saving that for the next inquiry?

Senator SIEWERT—Yes. I am just exploring a little bit here. In terms of the strategic assessment under the EPBC act, could a strategic assessment be carried out over that particular area, if it was so decided by the state and federal governments?

Mr Flanagan—Yes, it could. There is quite a lot of flexibility in terms of using the strategic assessment processes and they could be used as a surrogate for the standard project approval and assessment process. I do not think there would be any material difference in fact from using either process, though, Senator.

Senator SIEWERT—I am wondering if it could be broader than just doing the specific potential flooding of the wetlands. I am aware of other strategic assessments being carried, and I am thinking of the Kimberley one at the moment, it is much broader than the potential project. I am wondering whether, therefore, under a strategic assessment you could look at some of the other options in respect of the health of that particular system.

Mr Flanagan—Senator, I think what you are alluding to is the provision within the strategic assessment process that allows the other party, which in this case would be the state, to ask that the assessment cover more than just the matters of national environmental significance—potentially, the whole impact on the environment.

Senator SIEWERT—Yes.

Mr Flanagan—In that context, it could potentially have a broader scope and then it would be dependent on the state, in this case, wishing to have the terms of reference for that assessment being much more all-encompassing.

Senator SIEWERT—Yes. Has that been considered? Have there been any discussions between the state and federal government about that? Has that been considered at all?

Mr Flanagan—Senator, the bulk of our discussions with the state to date have been around undertaking an assessment of the opening of the barrages largely because, given that the triggering provision in this case is the ecological character of the Ramsar site, it is quite broad anyway in its scope. It is essentially the environment, so we have not been actively pursuing the option of strategic assessment.

Senator SIEWERT—I was wondering whether the other particular choices that may or may not be made could be included under a strategic assessment.

Mr Flanagan—What are you alluding to, Senator?

CHAIR—If there are other watering options or the various options that are being considered for getting water into the lakes, the impact of mulching, and all those sorts of other options that are being considered for the lakes, whether it would be worth using a strategic assessment process to look at those.

Mr Flanagan—The discussions we have had with the state are along the lines that the assessment will include the Moulting option anyway.

CHAIR—Okay.

Mr Flanagan—If what you are alluding to is the option or the ability to provide additional freshwater into the system, those things themselves do not require assessment. They are part of the current status. I do not think in that context they are relevant to the questions of whether or not the barrages should be opened.

CHAIR—Although, since we do not like the barrage options, I am wondering whether there are other options that could be looked at.

Senator NASH—The same old tack.

CHAIR—Yes. I am going to change tack a little bit here. I am not sure whether I am asking the right people, but the Ramsar review that has been undertaken by the department, not just of the Coorong but of all of Ramsar management, where is that at? I will come back to the Coorong in a minute.

Mr Flanagan—Senator, while my colleagues are deliberating, do you have any further questions on the EPBC act itself because I have another meeting that I have to go to.

CHAIR—No, I am done.

Senator FARRELL—I have some questions.

CHAIR—Do you want to interpose them now?

Senator FARRELL—Yes. I just want to know what the act requirements were, making two assumptions: one, if the South Australian government seeks to establish a temporary weir at Wellington and, secondly, if they want to put sea water into the Lower Lakes, what are the requirements under the act in those circumstances?

Mr Flanagan—Senator, the temporary weir proposal has already been referred by South Australia last February, I think from memory, and so is currently going through the assessment process already. That means at the moment South Australia is developing the environmental impact assessment documents and doing the modelling of the lake and the potential impacts of the weir. As I understand it, the original project they referred had a higher wall and they now propose to drop that, so they are doing some remodelling on those things.

The prospect of whether or not the barrages would be opened would be another action under the legislation as well as is the physical activity of changing the current environmental circumstance by opening the barrages. That would clearly affect the ecological character of the Ramsar site, which is the test under the legislation because the introduction of the salt water in some measure would carry with it a risk that obviously would be determined by the amount of salt water that had to be introduced and over what length of time it had to be there. But those would be the sorts of questions that would be considered during an assessment under the act.

Mr Slatyer—In response to your question about the review, the review has been completed but it has not yet been submitted to the government. The department has been working with state departments on the issues and next steps arising from the review and is wanting to put a full package of material up to the minister, but that has not yet occurred. I am conscious that you have asked about the review in our estimates committee.

CHAIR—Every single one since you started it, I think.

Mr Slatyer—But that is the current status. You should know that in addition to that review the Murray-Darling Basin Commission has been undertaking an assessment of the acid sulphate risks in all wetlands in the Murray-Darling Basin, including the Ramsar sites, but I think it is about a thousand wetlands sites and is a very comprehensive look at the acid sulphate soil risks in all those wetlands. That information also should be available pretty soon.

CHAIR—Thank you. I am aware of the time. I know Senator Heffernan wants some time at the end.

Senator NASH—And I have just one quick one first.

Senator HEFFERNAN—And me.

CHAIR—Senator Farrell, do you have any more questions?

Senator FARRELL—I have one more after that.

Senator HEFFERNAN—I have a couple.

CHAIR—Yes, I know. You have 10 minutes at the end.

Senator HEFFERNAN—Righto.

Senator NASH—There has been a lot of talk around the voluntary acquisition of the entitlements. I note in your submission you say that it has been focused on voluntary acquisition. Has there been any discussion within the department of moving to compulsory acquisition? [4.05 pm]

Mr Slatyer—Senator, we cannot talk about internal discussions within the department. That is just routine departmental policy discussion that we do not discuss publicly.

Senator NASH—Okay. How firm then is the status of voluntary acquisition?

Mr Slatyer—It has been confirmed by the government on a number of occasions that that is the way that it is proceeding with the water purchase program.

Senator NASH—So the committee should be assured that there will no change to the voluntary acquisition status?

Mr Slatyer—You have to ask the government that question, but I draw your attention to the government's own public statements.

Senator NASH—That is very reassuring, thank you.

Senator FISHER—We started some discussion about this last night, if you can recap, in terms of bringing water back into the system. Senator Siewert asked you about the Wentworth Group proposal.

Mr Slatyer—That is true.

Senator FISHER—However, it is not an entirely new proposition. South Australian irrigators have put a not dissimilar proposition in terms of paying a premium to encourage people to provide an incentive for water holders, call them as you will, to relinquish their water. Have you advised the government on an option that provides the industry with incentive beyond current market value to relinquish their water?

Ms Harwood—The purchase, as done currently, is based on willing sellers and market price and minimal market disruption. In terms of a premium of some sort, the only context that I am aware of is the one I discussed before where you might have a whole group of irrigators who move out of irrigation at the same time. There may be costs associated with that in terms of changing the infrastructure and shutting down channels and so on. There may also be water savings from that, so that in the whole, the value-for-money proposition on that may take you above a flat market price for the water entitlement held by the individual irrigators.

Senator FISHER—Leaving that scenario aside, is it nonetheless an option to, for example, more than double the rate currently on offer from some \$2,000 per megalitre to, say, some \$4,800 per megalitre? Is that nonetheless not an option? Is it nonetheless not an option to offer that price for a compact period of time?

Ms Harwood—It is an option, obviously, in the marketplace.

Senator FISHER—And what would be the consequences of that?

Ms Harwood—The consequences of that would be particularly severe in the current drought circumstances for other irrigators in the basin who seek to acquire water for their purposes. That is, there are people wishing to trade water to continue their operations in the basin. If the government intervenes in a way that doubles the market price, that will have a profound impact for those seeking to acquire water for their irrigation purposes.

Senator FISHER—If that intervention were targeted at that medium and longer term as opposed to solving immediate needs, what would be the consequence?

Ms Harwood—The consequences will be immediate if you do that, so I do not quite understand the hypothetical question; that is, if you entered the market now and offer double the market price, that will have an immediate impact on people.

Senator HEFFERNAN—For an entitlement or an allocation? What are we talking about?

Ms Harwood—The government is buying permanent rights under the Water Purchase Program.

Senator FISHER—That is right.

Senator HEFFERNAN—Surely, Senator Fisher, if you pay double for the entitlement, which is not water, you would destroy the allocation rate.

Senator FISHER—Address it in terms of the Wentworth Group proposition. Address it in terms of the South Australian irrigators' group's proposition.

Ms Harwood—All I can do is comment on the impact of it as we see it in terms of currently, by purchasing at market prices, as a parallel player in the market, there is least disruption to the market. It is fair, in terms of those who seek to acquire water, to keep their operations viable in a system which is severely stressed. If the government offers double the price or whatever, that will have a profound impact for the other players in the market.

Senator HEFFERNAN—It sure will.

Senator FISHER—Would one of the effects be that there would be more certainty for those who stayed in and greater security for the water that they do have?

Senator HEFFERNAN—No.

Ms Harwood—I do not see how that would occur, given the disruption to the market that doubling the price would cause.

Senator FISHER—If that intervention were forecast to occur at a time in the future and for a compressed period, is your answer the same?

Ms Harwood—Whenever it might occur, if you were contemplating paying way over the odds in the market, it is going to have a very serious impact for the other players in the system—for the irrigators who currently trade water to keep their operations viable.

Senator FISHER—You may have said this in answer to Senator Siewert, but will you be advising the minister on the proposal contained in the Wentworth Group's submission?

Ms Harwood—I cannot answer that question either way.

Senator HEFFERNAN—Can I—

ACTING CHAIR—Hang on. Is that your answer, or are you going on?

Ms Harwood—It is hypothetical. It is a question about the relationship between us and the minister, and I do not think it is appropriate for me to comment on that when neither of us knows what the Wentworth Group put to you, and neither of us has had a chance to discuss it, either with fellow colleagues in the department or with the minister.

Mr Slatyer—Senator, the department briefs the minister on a very wide range of matters. The content, nature and specifics of those matters are matters between the department and the minister.

Senator FISHER—The minister is away and she will not have had the opportunity. Well, she was away. She may not have had the opportunity to have a look at the Wentworth Group's proposal either, but there is a significant independent set of experts in this debate. One would have thought that the department would at least suggest to the minister that the minister might want to consider their proposition and consider advice from the department in assisting her to assess the proposition, would you not?

Ms Harwood—I did not answer the question in the negative. It is the appropriateness of us commenting on our advisory relationship with the minister that was the character of my answer.

Senator HEFFERNAN—Can I just nail something?

ACTING CHAIR—No, hang on. You have 10 minutes at the end.

Senator HEFFERNAN—But look I just want to—

ACTING CHAIR—Senator Farrell has not had his time yet.

Senator HEFFERNAN—I just want to nail down something there, which you will appreciate.

Senator FISHER—I am happy for Senator Heffernan to follow this up.

ACTING CHAIR—He has got one minute. You were only having two more minutes until quarter past, so it is not up to you to say you are happy.

Senator HEFFERNAN—I just want to nail this down.

Senator FISHER—Senator Sterle has allowed that.

Senator HEFFERNAN—This will help Senator Fisher.

Senator FARRELL—Chair, it is obvious there are only two people at the table.

Senator FISHER—No, there are not, Senator Farrell, and I reject that.

ACTING CHAIR—Hang on!

Senator FARRELL—Could they go out of the room to resolve their internal disputes?

ACTING CHAIR—Hang on! Senator Heffernan, you have got one minute, and then you, Senator Fisher, have got one minutes after that, until quarter past.

Senator HEFFERNAN—The difficulty with the proposition which is being put over is that doubling the water market in their entitlement when that person stays in the market. If the bank comes to me and says, ‘Son, you’re broke. Sell your water entitlement’, and you offer me double, right? If I have to water a crop, so what do I do then? This is what you are on about. You go into the temporary market and you distort the temporary market to the point where anyone that is in the market, who grows anything but marijuana, cannot afford it, unless you have this double premium for your entitlement from the government. That is what is wrong with that.

ACTING CHAIR—Okay. Senator Fisher, you have one more minute.

Senator FISHER—Thank you, Chair. What process does the government have for deciding how to redistribute water that becomes available?

Mr Slatyer—The Commonwealth has established an entity called the Commonwealth Environmental Water Holder, which is a statutory office under the Water Act. The Environmental Water Holder owns the entitlements that the Commonwealth purchases.

Senator FISHER—Thank you. In view of the time, has it finalised a plan?

Mr Slatyer—The water holder will be using those entitlements in line with the Water Act requirements. I am sorry, I might have misheard the question. My colleagues are whispering other ways I could have responded.

Senator FISHER—I was somewhat confounded by the response. I thought it was a prank.

Ms Harwood—It is about when the water comes into the system, who is getting it—like, between the states and stuff.

Mr Slatyer—Oh.

Senator FISHER—And between users as well. I think I heard half of that. Who? How? On what basis? Who gets it? How do they get it? On what basis? On what terms and conditions? When do they get it?

Mr Slatyer—Water that the Commonwealth has acquired?

Senator FISHER—Yes. That is part of it, but ultimately all and any of the water that is available.

Ms Harwood—Do you mean if more water comes into the basin—say, if it rains a lot tomorrow—who decides what people get and when they get it?

Senator FISHER—That is part of the question.

Mr Slatyer—Oh, okay.

Senator FISHER—The water is totality, however you characterise it, noting that it has correctly been said here today that there are differing systems and rules from state to state. But rather than confounding us with the different systems and rules, I think the community deserves to be reassured that there is a vision for a consistent set of rules and a process that is aimed at achieving that. That is what I am trying to ascertain to the extent that the department can help.

Mr Slatyer—Senator, my apologies for not understanding your question the first time.

Senator FISHER—I am trying to keep it short.

Mr Slatyer—The basic rules for sharing of water between the states that apply currently will continue to apply under the new arrangements. If there are improvements in water availability in particular locations, they are distributed to the states according to publicly available rules. That is what you see when each state makes an announcement on the 15th or the first of each month about its allocation arrangements and so forth. It is the

result of it having its share of those improvements in water availability allocated to it. Then what happens within each state and how they choose to allocate the water within each state, for what purpose, in what manner and in what timing, is entirely up to that state to determine.

Senator HEFFERNAN—But as the rainfall declines, as the run-off declines, there is a disproportionate return that has to be made to the freight, and the biggest freight effect is the furthest or at the bottom of the river. In fact, if you were doing that correctly, you would have to disproportionately take water off people at the top end to allow for the additional freight requirement and the reduced run-off to get the water in the rivers.

Senator FISHER—Following on my that helpful interjection from Senator Heffernan—

ACTING CHAIR—That now takes you over time, so this will be the last question.

Senator FISHER—Thank you, Acting Chair. Does that mean that there is an acceptance that the current inconsistent rules from state to state and inconsistent systems will remain? Or, putting that another way, is there a plan to standardise?

Mr Slatyer—No, there is not, but there is nothing inherently problematic with the situation where each state is making allocations according to its own procedures.

Senator FISHER—Maybe not, but it brings shortcomings in that it means that in answer to a question, a question cannot be answered other than in terms of, ‘Well, it depends which state, what.’

Mr Slatyer—It does. The question has to be answered in relation to state that it is about.

Senator FISHER—Some of the witnesses have also suggested that it gives rise to difficulties in trading beyond state barriers. What do you think of that?

ACTING CHAIR—You have started another question.

Senator FISHER—I have, Acting Chair.

ACTING CHAIR—I was distracted by your comment.

Senator FISHER—I was utilising the distraction.

Mr Slatyer—There are rules agreed between the states for the interstate trading of water to deal with those problems.

ACTING CHAIR—Senator Heffernan may give you some of his time.

Senator FISHER—That would be generous.

ACTING CHAIR—But that is up to him.

Senator FARRELL—On this topic of water trading, can you tell us a little bit about the rationale behind establishing tradable water entitlements under the Water Initiative, and the value of the water markets to the adjustment mechanism?

Mr Slatyer—Water trading or improving the water markets was a fundamental objective of the National Water Initiative. The reason for that is that there is plenty of evidence that it is only through a market in water entitlement that you can get efficient allocation of water; that is, water used where it can have the most value. Another way of putting it from the environmental side is that for a given amount of production, you are consuming the least amount of water. There is plenty of evidence that where the water markets have been in effect, they have had that result and that production has changed accordingly. In the recent very dry in-flow situation, the markets in our view have been quite imperative in allowing adjustment to occur. There has been plenty of water allocation traded, particularly downstream into South Australia to where there is some very high value horticulture, for example.

Had there not been functioning interstate allocation markets, governments would have had to intervene in all kinds of ways to compensate for that and to try to figure out which particular farmer should get what particular amount of water. Our view is that the functioning of the water market has been absolutely essential to getting through, to the extent we have, the current dry spell and has averted what otherwise would have been an even worse situation.

Senator FARRELL—I have just a follow-up question on that. What fits into the high-value horticulture category?

Ms Harwood—Citrus.

Mr Slatyer—There are plenty of crops. Just off the top of my head, there is viticulture, citrus and various nut crops.

Senator NASH—Plums, tangelos.

ACTING CHAIR—Yes.

Senator NASH—Various cereals and cotton.

Mr Slatyer—Well, I have just about answered it, I think, Senator.

ACTING CHAIR—Anything that grows on a tree. Senator Heffernan, you have 10 minutes at the absolute most.

Senator HEFFERNAN—Right. Let us go to entitlement.

ACTING CHAIR—That does not sound like a 10-minute topic to me.

Senator HEFFERNAN—You do not know how the entitlement formula is arrived at—any of you.

Mr Slatyer—I did not say I did not know, Acting Chair. I said that there the rules are complex.

Senator HEFFERNAN—Let us take the rules down in New South Wales. Let us take on the full set.

Mr Slatyer—The rules are complex in each state and we can provide those rules. The department knows what the rules are but we do not have the rules here with us.

Senator HEFFERNAN—But the entitlement is a proportion of a licence. It is a proportion of the water that is available. Say it is a 1,000 megalitre licence and there is a 10 per cent allocation so it is 100 megalitres, right? That is calculated on the water that is available. Do you agree with that?

Ms Harwood—The character of the entitlement—

Senator HEFFERNAN—I am not talking about carryover.

Ms Harwood—No, the character of the entitlement varies according to the river in which that entitlement operates.

Senator HEFFERNAN—I understand that. I am talking about just that you are buying mostly general allocation entitlements.

Ms Harwood—We have bought a range.

Senator HEFFERNAN—A mixture.

Ms Harwood—We have bought a mixture of water entitlements.

Senator HEFFERNAN—But the bulk of it is general allocation. In South Australia, we know it is all different down there.

Ms Harwood—We have bought high reliability, high security water. The more security—

Senator HEFFERNAN—What goes over the border is fixed to South Australia, right? What goes over the border in South Australia is dependent upon what is in the system, obviously. What I am trying to arrive at is if you have an entitlement, it is not a set amount of water. You would agree with that.

Mr Slatyer—No, no.

Senator HEFFERNAN—It is an entitlement.

Mr Slatyer—Yes.

Senator HEFFERNAN—If you wanted to take into consideration the experience of the last two or three years and model that as the way it will be in the future, which is what the science is telling us—this is the reduction in run-off—why would you have to buy entitlement to return water to the system when you could recalculate the percentage? If you have to have extra water go to the freight of the system, the same amount of water to the environment to protect it and so that you do not have to carry the water to let the fish run up it, and then there is a certain amount left over for the work in the river, why do you have to buy entitlement to return water to the system when you can recalculate the water that is available for the work and simply reapportion it with the same entitlements?

Mr Slatyer—Senator, can I first of all answer one part of your question, which is when you said that the science is saying that what has happened in the last two years is likely to continue. That is not what the science is saying.

Senator HEFFERNAN—The science is saying we have between a 3,500 and 11,000 gigalitres reduction over 40 to 50 years in the southern Murray-Darling Basin. [4.25 pm]

Mr Slatyer—Yes, but the science is not saying that the conditions we have experienced in the last two years are what we will be experiencing in the future.

Senator HEFFERNAN—Yesterday your mob said that what we have experienced in the last two or three years—and if you did not say it, someone else did—is about where it is for the future science.

Mr Slatyer—Right. The CSIRO sustainable yield work is showing that even if you look at the last 10 years, which is better on average of course than the last two years, even that is at the very most pessimistic end of future forecasts.

Senator HEFFERNAN—Yes, that is right.

ACTING CHAIR—Yes, exactly.

Mr Slatyer—Acting Chair, I just wanted to say this—

Senator HEFFERNAN—I understand. There is not need to drag it out. I have only got 10 minutes.

Mr Slatyer—It is not accurate in our view to suggest that the last two years—

Senator HEFFERNAN—Forget that. I surrender on that. Can we not just have a formula that works out, on the best knowledge available, the water that is available? If it is a declining amount of water over the next 40 years, you just say to someone who was going to get 100 megalitres, ‘Sorry, old mate, you’re only going to get 50 megalitres’, and that is the end of the section.

Ms Harwood—It would be far more brutal than the scheme that we have, which is acknowledging that water needs to move from extractive use to the environment and paying market rates to do that.

Senator HEFFERNAN—It would be possible, and you could do it today with the emergency powers that are available if you want to and I accept that that would be like declaring war, to reallocate the system. What Mike Young is on about is reapportioning the work of the river, which will be a lot less than it has been, to the existing entitlements.

Mr Slatyer—Senator, the approach that governments have agreed to take is to—

Senator HEFFERNAN—Yes, I accept that.

Mr Slatyer—Achieve this result through the setting of sustainable diversion limits.

ACTING CHAIR—Sustainable what, I am sorry?

Senator HEFFERNAN—Sustainable diversion limits.

Mr Slatyer—The states, which I have talked about in previous evidence as part of the new basin plan, would have to design their allocation systems to fit within those sustainable diversion limits, whatever they happen to be—

Senator HEFFERNAN—All right. I do not want to spend any more time. We do not have the time.

Mr Slatyer—As Ms Harwood said, in the interim, through the purchase of water on the market.

Senator FISHER—But the retention of existing inconsistent rules and regulations from state to state is what would ultimately frustrate Senator Heffernan’s proposition.

Senator HEFFERNAN—All of them.

Mr Slatyer—Senator, as I said, the governments have agreed to set up a system of what will be called sustainable diversion limits, which will delimit how much can be taken from each catchment. States must design their allocation systems to fit within those limits.

Senator HEFFERNAN—Can I just go to the question that Senator Fisher put a while ago on doubling the price of the purchase of entitlement. If you want to solve the problem on that, the only way to solve the problem on that without distorting the allocation—because those guys can go into the allocation market—is to say to them, ‘If we’re going to pay you double for your entitlement, old mate, then here’s five years when you can’t go back into the market. You’re out of business.’ That is the solution. Otherwise they can go back into the market the next day, into the spot market—which is what an MIS does with the cash that they get—and absolutely distort the market in terms of the price of water that is available for some poor bugger that is trying to water a vineyard or something.

With what you have just said, that the pace is seriously over allocated—or that is my assumption from what you have just said—what advice are you giving to the government? Why in hell's name are we proposing to issue all those licence in the lower Balonne in the full knowledge that we are going to buy them back? The negotiations and the announcement we have just made is to go into the market in that area now. We know the system. There are 1,500 gigalitres on on-farm off-river storage in a system that has a mean annual flow of 1,200 gigalitres. At the moment it is authorised water. Scott Spencer argued this with me the other day and eventually had to concede that authorised water for overland flow is unmetered, unregulated and free, right? We are now about to allocate a financial instrument to those authorisations in the full knowledge that we have to buy them back. What sense does that make?

Mr Slatyer—Senator, the only thing I can really say about that is that we are informed that the settlement of the resource operating plan up there, which is what you are talking about, is consistent with the Water Sharing Plan, which has been adopted. To the extent that you have concerns about the balance and the amount of consumptive water that is being allowed in that Water Sharing Plan, that was a matter for the Queensland planning process.

Senator HEFFERNAN—I appreciate that is the bureaucratic answer. We know from all the science that we have received in days of hearings—

ACTING CHAIR—Senator, you have two minutes remaining.

Senator HEFFERNAN—Yes. We know from all the science that we have received in days of hearings that that system is seriously out of kilter with its capacity. That is because it is a unique system and the bulk of the water that is extracted there now is free, unlicensed and unmetered. The only real science that was applied to the original water resource plan that was built for the Condamine-Balonne—and you can go and check; this is what Tom Hatton has just revisited—was a guess at the future flows. There was no environmental planning. As Professor Kingsford said this morning, the largest floodplain in Australia on the bottom end of that river has been completely wiped out, and because you had the biggest bulldozer and built the biggest dam with the biggest diversion bank, we are proposing to turn that work, which was all unauthorised when they did it and has since received authorisation, into a tradable financial instrument, knowing that the government has to buy it back.

I think that deserves a royal commission inquire into it because it is a bloody fraud. How does someone who is not eligible for a licence under that system get herself, when she is the independent chair of the process which is giving advice to the government on how the licences and compensate for the licences when they are taken back, get a licence when she is not qualified for a licence? The answer from the department in Queensland is, 'Oh well, that's a private arrangement between neighbours.' I think it is fraud and there ought to be a judicial inquiry into what is going on up there.

ACTING CHAIR—Okay, thank you.

Senator HEFFERNAN—You can answer that if you want to, or you can hold your cards.

ACTING CHAIR—If you answer that, that is the last question.

Mr Slatyer—There was no question there.

Senator HEFFERNAN—No, because there is no bloody answer, that is why.

ACTING CHAIR—Thank you.

Senator HEFFERNAN—Thanks for your trouble, Acting Chair.

ACTING CHAIR—That concludes today's hearing. I thank all the witnesses, the secretariat and Hansard. The committee stands adjourned until Friday next week.

Committee adjourned at 4.32 pm