Senate Rural and Regional Affairs and Transport References Committee

Questions on Notice – Tuesday, 24 April 2012
CANBERRA, ACT

Inquiry into management of the Murray-Darling Basin

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SENATE RURAL AND REGIONAL AFFAIRS AND TRANSPORT REFERENCES COMMITTEE

Inquiry into the management of the Murray Darling Basin

Public Hearing Tuesday, 24 April 2012

Questions Taken on Notice

Department of Agriculture, Fisheries and Forestry

1. HANSARD, PG 7

CHAIR: Do you recall Wren wheat, which was the first dwarf wheat? He made some shady deal and had the rights to it. It is true! It revolutionised wheat-growing thinking. Wren wheat sadly got a rust problem. It grew about that high, with a head five wide, and it doubled the yield of wheat for the same amount of rainfall. When I said this 10 years ago—ABARES ought to have a crack at this—I nearly got my head blown off on the political side of it. I said that any 50-year plan for the Murray-Darling would exclude, as an annual crop, farrow cotton and paddy rice. Sharman Stone went crook and Kay Hull went crook, as did all the irrigator representatives. The only one who rang me up and supported it at the time was the Wagga research agricultural station. They said, 'You are right. We've actually got the work going on.' I do not know where it is now. If we are smart enough with GM cotton growing—there are more chemicals on strawberries now than you have on cotton, just through GM construction of the plant—and if we can build the thermostat into the rice plant instead of having all that water laying there and evaporating to control the variation in the temperature, then surely we have more water to put somewhere to use to produce more food, or whatever. Wouldn't that be a sensible scenario for ABARES to have a crack at?

Mr Grant: We might talk to RDAC [RIRDC] because RDAC [RIRDC] are responsible for research and development for the rice industry, so they may have done some work on non-paddy rice. We might talk to them and come back about that.

CHAIR: We will have a couple of witnesses in to talk about it too.

Mr Grant: But we will come back to you on whether RDAC [RIRDC] have done any R&D on that.

2. HANSARD, PG 8

Senator XENOPHON: It concerned me that Professor Mike Young, as part of his evidence, provided what he calls a 'droplet' to the committee. It is sort of an analysis of the proposed plan. He said:

Under the Proposed Plan, States will be required to adjust for the adverse effects on water availability of increased forestry, increases in farm-dam interception and increases in the capture of overland flows.

He goes on to say that that is an improvement on the current arrangements. But he then goes on to say:

Missing from the Proposed Plan is a requirement for the adverse interception effects of biodiversity plantings to be fully accounted for.

I do not know whether that is something that ABARES or the department has looked at. Professor Young has backed it up by referring to the relevant section of the proposed plan—part 5, 'Interception activities', paragraph 9.28. He talks about the definition section that states what 'commercial plantations' meant and says that plantation for biodiversity conservation is not included in that list. It is something that has been provided to the committee, so I wonder if Professor Young's note to the committee could be provided—through you, Chair—because it is relevant to a question I need to put on notice about the issue of interception and biodiverse plantations.

CHAIR: You table it.

Senator XENOPHON: I seek to table that, with the leave of the committee. Perhaps we could provide that to you, because it concerns me that Professor Young says that he thinks that there is a loophole in the arrangement of biodiverse plantations for the purpose of being considered in the plan with respect to interception. Is that something that the department or ABARES, for instance, has considered? Because, if Professor Young is right, then I would have thought that that could have some real implications for the way the proposed plan would work.

Mr Morris: We are happy to have a look at that. As I have said, any activities that extract water from the basin should be considered. They will have an impact, so they need to be taken into account. We are happy to consider that. It depends what he means by biodiversity plantings. I am not quite sure whether he is talking about farmers putting in some sort of environmental belt or whether he is talking about the sorts of activities by state governments or whatever in terms of putting in new areas.

3. HANSARD, PG 9

Mr Morris: There are differences under the Carbon Farming Initiative in terms of restrictions on what farmers can actually plant. There are exclusions from certain rainfall zones—higher rainfall zones—except under certain circumstances. MISs are excluded because they are not regarded as additional, so not all forests are covered under the Carbon Farming Initiative at the moment. Could I just add one thing to my comments to Senator Xenophon. There is another paper that may be of interest to the committee which was done in 2010, so it is a couple of years old now. It was a conference paper rather than a formal paper, but it was—

Senator XENOPHON: Is that on the website?

Mr Morris: Yes, it is; and we can certainly provide you with the reference to it.

Senator XENOPHON: Yes, please.

Mr Morris: That was looking at scenarios involving what climate change might do in terms of the basin, as well as what a carbon price might do in terms of plantation development in the basin. It is quite relevant to this discussion because it was looking at both climate impacts and the impact of a carbon price, and it is specific to the Murray-Darling Basin. I am happy to provide that to the committee.

4. HANSARD, PG 9

Senator XENOPHON: Can I just go to the heading 'Interception of water by trees and capture of overland flow' in Professor Young's submission. He talks about the ground surface water interaction. At page 2 of your report of July 2011 about the abatement potential from reforestation at the lower carbon price of $21 a tonne, you referred to 35,000 hectares for carbon sequestration and at $47 a tonne it was about 4.9 million hectares. I do not know if you have got that—

...

Mr Morris: Yes, I think it was 350,000 hectares under the $23 a tonne—

Senator XENOPHON: I apologise. And at $47?

Mr Morris: It was 4.9 million hectares.

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Senator XENOPHON: ... What does that translate to in terms of reduced run off?

Mr Morris: We would have to do that calculation. I am not sure we have that in the report in terms of this.

Senator XENOPHON: That is pretty fundamental, isn't it, the number of hectares taken up by it and the potential reduced run off?

Mr Morris: In the context of the discussion we are having today, yes it is. But we will have to work out whether we have actually got that figure in the report because we are not—

CHAIR: Does that figure take into account the variation in the rainfall and the growth cycle of the plants? With a short life—an 18-year cycle—you have got about nine years of huge interception. You have got about 2½ megalitres per hectare at about 35 to 36 inches.

Mr Morris: I am not sure whether this report had a range of scenarios. I would have to check that.

5. HANSARD, PG 10-11

Senator NASH: ... in the assumptions behind the modelling for your analysis of the plan, did you assume that people would stay in a community after they sold entitlement or licences? How did you work that in terms of the assumption? Did you assume people would stay in the community, or did you assume that they would leave?

Mr Morris: It depends. We assumed that they would stay within the regions we were modelling. The regions we were modelling were reasonably large and some of them involve quite big towns. So we cannot actually say that the model assumed that they stayed in any number of small towns or whatever, but we did assume that they stayed within those regions.

Senator NASH: Why did you assume that?

Mr Morris: We have also done a scenario, I believe, where we looked at where they did not stay within the region, so the money was taken out of the region. So our main scenario is based on them staying within the region. We looked at scenarios where they moved out of the region and we found that the difference was relatively small. The reason why we used that as a base scenario is that we found that the impact was not very big to actually assume the other scenario.

Senator NASH: You have got the two. Your main one assumes that they mostly stay and the associated one assumes that they leave. What did you base the decision to have that main piece of modelling done on people staying in? Was it just a guess, was there evidence, was there fieldwork? What did you actually base that main piece of work on, which said that people would stay in the region?

Senator NASH: You have got the two. Your main one assumes that they mostly stay and the associated one assumes that they leave. What did you base the decision to have that main piece of modelling done on people staying in? Was it just a guess, was there evidence, was there fieldwork? What did you actually base that main piece of work on, which said that people would stay in the region?

...

Mr Morris: ... and perhaps we should take this on notice so I can give you a clearer answer.

6. HANSARD, PG 12

CHAIR: ... In the modelling you have done of what happens if you take 2700 gigs or whatever out of the system, can you give me the breakdown of the water that is involved in the 2750 gigs for your modelling?

Mr Morris: You mean by region—how much comes out of each region?

CHAIR: No. How much of it is high-security? How much of it is off-allocation? How much of it is low-security water because depending on the water—and often that depends on the mortgage at the bank since we made it tradeable and, as John Anderson said, the biggest mistake he made in his career was letting it happen—

Senator NASH: Which is why so many are not actually willing sellers; they are distressed sellers.

...

Mr Morris: I will have to take it on notice and check on that.

7. HANSARD, PG 12

Senator NASH: One last final one: in terms of the modelling—and apologies if I should know this already—did you do any comparative modelling on the 2750 figure or indeed any other figure that models water being retrieved through infrastructure investment or works and measures compared to buyback?

Mr Morris: Yes.

Senator NASH: And what was the outcome?

Mr Morris: The outcome is reported in the report. We have three scenarios.

Senator NASH: I have not read the 27,000 pages of everything that is available; I do apologise.

Mr Morris: We have got three scenarios in the report and I can go through—

Senator NASH: You can just point them to me on notice.

8. HANSARD, PG 14

Senator EDWARDS: Thank you. I want to continue with the theme of the viability of farmers. I will come specifically to South Australia in relation to water efficiency later. But, if I can take you to your submission, at the bottom of page 11, under 'Financial performance of irrigation farms in the basin', you make the comment, referring to data that was collected four years ago, that equity was about 80 per cent. I presume it is farmers' equity that is the 80 per cent in that comment—of property, their loan-value ratios? I think that is probably one for you, Mr Morris.

Mr Morris: Sorry, we were just looking for the relevant reference in the report. Yes, that is referring to our irrigation surveys. We have been undertaking irrigation surveys in the basin for several years now and we do a calculation of, effectively, the farm equity ratio for farmers in the basin.

Senator EDWARDS: Okay. You say you have been doing it for a number of years. Have you done one for 2009-10? Otherwise, that excludes two years of serious drought for farmers where, I would suspect, their working capital governance was probably being breached every year, and the equity ratio would have changed dramatically. Have you done one for that period of time, 2009-10?

Mr Morris: The report you are referring to is our submission, which dates back to December 2010. Since that time we have released further analysis from the irrigation surveys that we have done in subsequent years. I would be happy to provide you with the numbers on notice. Unfortunately, I do not have the copies of those reports with me at the moment.

9. HANSARD, PG 15-16

CHAIR: ... On the modelling—and I am sorry that I have picked on the modelling—in the 2,700-odd gigs, is any of that water terminal?

...

Mr Sanders: ... what do you mean by terminal? Do you mean that it reaches the end of the system?

CHAIR: A terminal system...

CHAIR: ... Is it in the Lachlan? Is it in the Macquarie? These are terminal waters...

CHAIR: These rivers are not connected to the system.

Senator RHIANNON: You mean that they are closed systems—

CHAIR: Yes.

...

Mr Sanders: Some of our systems are terminal and not disconnected from the whole system.

...

CHAIR: But how much of the water, for your modelling purposes, is terminal?

...

Mr Morris: We will have to take that on notice, I think.

Department of Agriculture, Fisheries and Forestry

Committee inquiry: Senate Rural and Regional Affairs and Transport References Committee: Inquiry into the Management of the Murray-Darling Basin.
Date Held: 24 April 2012

Questions Taken on Notice

Senators Heffernan, Edwards, Nash and Xenophon asked officers appearing as witnesses at the Senate Rural and Regional Affairs and Transport References Committee: Inquiry into the Management of the Murray-Darling Basin hearing held on 24 April 2012 the following questions which were taken on notice:

1. HANSARD, PG 7

CHAIR: Do you recall Wren wheat, which was the first dwarf wheat? He made some shady deal and had the rights to it. It is true! It revolutionised wheat-growing thinking. Wren wheat sadly got a rust problem. It grew about that high, with a head five wide, and it doubled the yield of wheat for the same amount of rainfall. When I said this 10 years ago—ABARES ought to have a crack at this—I nearly got my head blown off on the political side of it. I said that any 50-year plan for the Murray-Darling would exclude, as an annual crop, farrow cotton and paddy rice. Sharman Stone went crook and Kay Hull went crook, as did all the irrigator representatives. The only one who rang me up and supported it at the time was the Wagga research agricultural station. They said, 'You are right. We've actually got the work going on.' I do not know where it is now. If we are smart enough with GM cotton growing—there are more chemicals on strawberries now than you have on cotton, just through GM construction of the plant—and if we can build the thermostat into the rice plant instead of having all that water laying there and evaporating to control the variation in the temperature, then surely we have more water to put somewhere to use to produce more food, or whatever. Wouldn't that be a sensible scenario for ABARES to have a crack at?

Mr Grant: We might talk to RDAC [RIRDC] because RDAC [RIRDC] are responsible for research and development for the rice industry, so they may have done some work on non-paddy rice. We might talk to them and come back about that.

CHAIR: We will have a couple of witnesses in to talk about it too.

Mr Grant: But we will come back to you on whether RDAC [RIRDC] have done any R&D on that.

Answer:

DAFF Agricultural Productivity Division liaised with the Rural Industries Research and Development Corporation (RIRDC) to request an answer to this question. RIRDC has provided the following response outlining its recent activities involving “non-paddy rice” (also known as “aerobic rice”).

RIRDC, through the Rice Research and Development Committee, see aerobic rice as an important strategic step for the development of the Australian rice industry, but the immediate priority is to deliver rice varieties that can be grown with a greater tolerance to cold and shorter growing maturity, and thus requiring less water. RIRDC has recently released a rice variety called *Sherpa* which produces more rice than benchmark varieties, has a two degree better tolerance to cold, and a shorter growing maturity and so uses less water.

RIRDC is also finalising a $111,940 project in its Organic Systems Program called “The embryonic development of organic upland and aerobic rice for Northern Queensland” which is investigating the: feasibility of suitable varieties; use of

compost; nutrition in the tropics; use of pivot irrigation; and green manure weed control for upland and aerobic rice.

2. HANSARD, PG 8

Senator XENOPHON: It concerned me that Professor Mike Young, as part of his evidence, provided what he calls a 'droplet' to the committee. It is sort of an analysis of the proposed plan. He said:

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Missing from the Proposed Plan is a requirement for the adverse interception effects of biodiversity plantings to be fully accounted for.

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CHAIR: You table it.

Senator XENOPHON: I seek to table that, with the leave of the committee. Perhaps we could provide that to you, because it concerns me that Professor Young says that he thinks that there is a loophole in the arrangement of biodiverse plantations for the purpose of being considered in the plan with respect to interception. Is that something that the department or ABARES, for instance, has considered? Because, if Professor Young is right, then I would have thought that that could have some real implications for the way the proposed plan would work.

Mr Morris: We are happy to have a look at that. As I have said, any activities that extract water from the basin should be considered. They will have an impact, so they need to be taken into account. We are happy to consider that. It depends what he means by biodiversity plantings. I am not quite sure whether he is talking about farmers putting in some sort of environmental belt or whether he is talking about the sorts of activities by state governments or whatever in terms of putting in new areas.

Answer:

ABARES has not directly considered the issue of interception effects of biodiversity plantings or environmental plantations. However, three reports by the former Bureau of Rural Sciences (now ABARES) on environmental forestry and plantations and water provide information that indirectly relate to the issue raised:

- Keenan RJ, Parsons M, Gerrand A, O'Loughlin E, Beavis S, Gunawardana D, Gavran M and Bugg A 2004, *Plantations and water use: a review prepared for the Forest and Wood Products Research and Development Corporation*,

Bureau of Rural Sciences, Canberra.
http://adl.brs.gov.au/data/warehouse/brsShop/data/12974_plantations_water.pdf

- Davey SM, Baker P, Frakes I and Mullen I 2006, *Opportunities for commercial environmental forestry in Australia,* Bureau of Rural Sciences, Canberra.
http://adl.brs.gov.au/mapserv/plant/report/cef/cef_20060822.pdf

- Parsons M, Frakes I and Gerrand A 2007, *Science for Decision Makers: Plantations and Water Use*, Bureau of Rural Sciences, Canberra.
http://adl.brs.gov.au/brsShop/data/sfdm_plantations_and_water_use.pdf

The Murray-Darling Basin Authority has provided the following advice on this question:

'Land uses such as biodiversity plantings can be included as an interception activity in the Basin Plan through the requirement for states to carry out a risk assessment in preparing water resource plans (Chapter 9, Part 9 of the proposed Basin Plan). Such an assessment would include consideration of the risks associated with changes in land use that impact on water availability. These assessments are best done through water resource plans, where relevant, as provided for in the proposed Basin Plan. Depending on the level of risk, a State may then further monitor the impact over time in accordance with Part 5 of Chapter 9, or may implement other increased management arrangements as required.'

Relevant extracts of the proposed Basin Plan identified in the previous paragraph can be found on the MDBA website,
http://download.mdba.gov.au/revised-BP/PBP_reviseddraft.pdf

3. HANSARD, PG 9

Mr Morris: There are differences under the Carbon Farming Initiative in terms of restrictions on what farmers can actually plant. There are exclusions from certain rainfall zones—higher rainfall zones—except under certain circumstances. MISs are excluded because they are not regarded as additional, so not all forests are covered under the Carbon Farming Initiative at the moment. Could I just add one thing to my comments to Senator Xenophon. There is another paper that may be of interest to the committee which was done in 2010, so it is a couple of years old now. It was a conference paper rather than a formal paper, but it was—

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Answer:

Reference:

- Hafi, A, Lawson, K and Burns, K 2010, *The economic impact on irrigated agriculture of increased afforestation in the Murray-Darling Basin*, ABARE Conference Paper 10.05, Australian Agricultural and Resource Economics Society, 10–12 February 2010, Adelaide, South Australia. http://adl.brs.gov.au/data/warehouse/pe_abarebrs99014391/AARES_5.pdf

This paper investigates the potential for an increase in afforestation under a hypothetical carbon pricing scenario to impose costs on irrigated agriculture in the Murray-Darling Basin due to an increase water interception.

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Senator XENOPHON: ... What does that translate to in terms of reduced run off?
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Senator XENOPHON: That is pretty fundamental, isn't it, the number of hectares taken up by it and the potential reduced run off?
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CHAIR: Does that figure take into account the variation in the rainfall and the growth cycle of the plants? With a short life—an 18-year cycle—you have got about nine years of huge interception. You have got about 2½ megalitres per hectare at about 35 to 36 inches.
Mr Morris: I am not sure whether this report had a range of scenarios. I would have to check that.

Answer:

The volume of water interception from reforestation was not calculated explicitly in the ABARES analysis (Burns et al. 2011) of the abatement potential from reforestation under two carbon price scenarios.

Reference:

- Burns, K, Hug, B, Lawson, K, Ahammad, H and Zhang, K 2011, *Abatement potential from reforestation under selected carbon price scenarios*, ABARES Special Report, Canberra, July. http://archive.treasury.gov.au/carbonpricemodelling/content/consultants_reports/ABARES_Abatement_potential_from_reforestation_under_selected_carbon_price_scenarios.pdf

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Senator NASH: ... in the assumptions behind the modelling for your analysis of the plan, did you assume that people would stay in a community after they sold entitlement or licences? How did you work that in terms of the assumption? Did you assume people would stay in the community, or did you assume that they would leave?

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Mr Morris: ... and perhaps we should take this on notice so I can give you a clearer answer.

Answer:

ABARES (2011) modelled two variations of Scenario 1 that differed on whether the proceeds of entitlements sales were taken out of the Basin.

Scenario 1a: 2800 GL SDLs without Australian Government investment in water saving infrastructure, with entitlement buyback proceeds

This scenario reflects the long-run effect on MDB regional economies of the introduction of the Sustainable Diversion Limits (SDLs) relative to the Current Diversion Limits (CDLs). This scenario incorporates Water Trade Model (WTM) estimates of changes in agricultural production, as well as estimates of regional expenditure associated with buybacks (assuming the SDLs are achieved solely through buybacks). These expenditure estimates are generated using the same methodology and assumptions outlined in ABARE–BRS (2010).

Scenario 1b: 2800 GL SDLs without Australian Government investment in water saving infrastructure and without entitlement buyback proceeds

This scenario is the same as scenario 1a, but without any water buyback proceeds entering the Basin. This scenario effectively assumes that none of the proceeds from water entitlement sales to the government remain in the Basin.

Given the size of the regions considered in the model, there was no appreciable difference between the estimates derived for each of these scenarios and, as a result, there was no assessment of which was more likely. At a smaller scale there may be some differences in results, but it is not clear whether farmers who sell water will sell all or only part of their water and whether they would spend the sale proceeds in their immediate area or outside the area.

References:

- ABARE-BRS 2010, *Assessing the impact of the Murray–Darling Basin Plan and the Australian Government's Water for the Future Program in the Murray-Darling Basin*, ABARE-BRS report to client prepared for DSEWPaC, October 2010. http://www.daff.gov.au/__data/assets/pdf_file/0011/1812971/reg-impact.pdf

- ABARES 2011, *Modelling the economic effects of the Murray–Darling Basin Plan,* ABARES report to client prepared for DSEWPaC, November 2011. http://mdba.gov.au/files/bp-kid/1716-ModellingTheEconomicEffectsOfTheMDBPlan.pdf

6. HANSARD, PG 12

CHAIR: ... In the modelling you have done of what happens if you take 2700 gigs or whatever out of the system, can you give me the breakdown of the water that is involved in the 2750 gigs for your modelling?
Mr Morris: You mean by region—how much comes out of each region?
CHAIR: No. How much of it is high-security? How much of it is off-allocation? How much of it is low-security water because depending on the water—and often that depends on the mortgage at the bank since we made it tradeable and, as John Anderson said, the biggest mistake he made in his career was letting it happen—
Senator NASH: Which is why so many are not actually willing sellers; they are distressed sellers.
Mr Morris: I will have to take it on notice and check on that.

Answer:

The ABARES water trade model is a 'water use' model that models how irrigators use available irrigation water during the year. The model does not explicitly model entitlement classes, but rather aggregate allocations across regions and industries.

For the Basin Plan modelling a long-term average year of water availability was modelled, with water allocations based on observed long-term average allocations. For this modelling, differences in entitlement types are reflected through differences in their long-term Cap equivalents.

ABARES modelling is broadly consistent with the Commonwealth purchasing an equal proportion of high and low security entitlements. That is, if it was assumed 25 per cent of entitlements within a region were to be purchased, then this would involve purchasing 25 per cent of the high security entitlements in the region and 25 per cent of the low security entitlements.

In order to mimic the effect of purchasing a higher proportion of high security water entitlements, ABARES modelled a scenario where it is assumed the SDLs lead to a 20 per cent reduction in perennial land use (fruit, nuts and grapes). As expected, the results for this scenario indicate that the reduction in the gross value of irrigated agriculture increases as higher proportions of high security water are purchased (16.8% reduction compared to a 13.5% reduction).

Reference:

- ABARES 2011, *Modelling the economic effects of the Murray–Darling Basin Plan,* ABARES report to client prepared for DSEWPaC, November 2011. http://mdba.gov.au/files/bp-kid/1716-ModellingTheEconomicEffectsOfTheMDBPlan.pdf

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Senator NASH: One last final one: in terms of the modelling—and apologies if I should know this already—did you do any comparative modelling on the 2750 figure or indeed any other figure that models water being retrieved through infrastructure investment or works and measures compared to buyback?
Mr Morris: Yes.
Senator NASH: And what was the outcome?
Mr Morris: The outcome is reported in the report. We have three scenarios.
Senator NASH: I have not read the 27,000 pages of everything that is available; I do apologise.
Mr Morris: We have got three scenarios in the report and I can go through—
Senator NASH: You can just point them to me on notice.

Answer:

ABARES modelled three scenarios.

Scenario 1: 2800 GL SDL without Australian Government investment in water saving infrastructure (SDLs no infra.)—the total reduction in irrigation water availability as a result of the proposed (2800 GL) SDLs in the draft Basin Plan. This scenario assumes SDLs are satisfied solely through water entitlement buybacks (in the absence of infrastructure investments).

Scenario 2: 2800 GL SDL with Australian Government investment in water saving infrastructure (SDLs with infra.)—the reduction in water availability as a result of the SDLs, after accounting for offsetting water savings achieved through government investments in irrigation infrastructure, via the Australian Government's Water for the Future (WftF) program. This infrastructure includes projected investments under the Sustainable Rural Water Use and Infrastructure Program, from estimates provided by DSEWPaC. Water savings achieved through these infrastructure programs reduce the volume of water recovered through entitlement buybacks from 25.88% of baseline use to 18.8% of baseline use.

Scenario 3: 2800 GL SDL with Australian Government investment in water saving infrastructure, after accounting for government water entitlement buybacks to date (SDLs with infra. after BB to date)—the reduction in water availability as a result of the SDLs, after accounting for water buybacks to date (including the Australian Government Restoring the Balance program, as well as state programs such as NSW RiverBank) and water savings from WftF. This scenario reflects the expected future reduction in water supply remaining (that is, buybacks remaining) after progress of buyback programs to date.

Summary results for each scenario are presented below from ABARES (2011). The first table gives Water Trade Model results, which describe changes in agriculture. The second gives AusRegion results, which describe the economic flow on effects of these changes in agriculture.

Reference:

- ABARES 2011, *Modelling the economic effects of the Murray–Darling Basin Plan,* ABARES report to client prepared for DSEWPaC, November 2011. http://mdba.gov.au/files/bp-kid/1716-ModellingTheEconomicEffectsOfTheMDBPlan.pdf

TABLE 8 WTM results, percentage change in all variables relative to baseline—after interregional trade

		Baseline	Scenario 1 SDLs no infra.	Scenario 2 SDLs with infra.	Scenario 3 SDLs with infra., after BB to date
			% change	% change	% change
Southern MDB					
GVIAP	$m	3 895.8	−14.8	−10.9	−8.0
Land use	'000 ha	1 197.9	−25.8	−18.5	−13.7
Water use	GL	6 570.9	−32.0	−24.1	−16.9
Profit	$m	1 354.9	−10.7	−7.5	−5.6
Northern MDB					
GVIAP	$m	2 144.2	−8.8	−5.5	−0.7
Land use	'000 ha	638.8	−7.7	−3.9	−0.6
Water use	GL	3 297.3	−13.7	−8.4	−1.0
Profit	$m	595.4	−2.5	−1.3	−0.1
Total MDB					
GVIAP	$m	6 040.0	−12.7	−9.0	−5.0
Land use	'000 ha	1 836.7	−19.5	−13.4	−8.3
Water use	GL	9 868.2	−25.9	−18.8	−10.5
Profit	$m	1 950.2	−8.2	−5.6	−3.6

TABLE 19 Summary of key modelling results

	Scenario 1 SDLs no infra.	Scenario 2 SDLs with infra.	Scenario 3 SDLs with infra., after BB to date
	Long-run percentage change relative to baseline		
Basin irrigated agriculture			
Water use	−25.9	−18.8	−10.5
Land use	−19.5	−13.4	−8.3
GVIAP	−12.7	−9.0	−5.0
Profit	−8.2	−5.6	−3.6
Basin total agriculture			
GVAP	−4.3	−3.1	−1.7
Basin macroeconomic indicators			
GRP	−1.13	−0.81	−0.48
Household consumption	−0.41	−0.28	−0.16
Employment	−0.05	−0.03	−0.01

Note: All results after interregional water trade.

Note: Employment refers to a change in the value of wages expenditure after accounting for changes in pay rates, rather than in a change in the number of jobs. That is, how many hours of labour are bought, rather than how many people it is bought from.

8. HANSARD, PG 14

Senator EDWARDS: Thank you. I want to continue with the theme of the viability of farmers. I will come specifically to South Australia in relation to water efficiency later. But, if I can take you to your submission, at the bottom of page 11, under 'Financial performance of irrigation farms in the basin', you make the comment, referring to data that was collected four years ago, that equity was about 80 per cent. I presume it is farmers' equity that is the 80 per cent in that comment—of property, their loan-value ratios? I think that is probably one for you, Mr Morris.

Mr Morris: Sorry, we were just looking for the relevant reference in the report. Yes, that is referring to our irrigation surveys. We have been undertaking irrigation surveys in the basin for several years now and we do a calculation of, effectively, the farm equity ratio for farmers in the basin.

Senator EDWARDS: Okay. You say you have been doing it for a number of years. Have you done one for 2009-10? Otherwise, that excludes two years of serious drought for farmers where, I would suspect, their working capital governance was probably being breached every year, and the equity ratio would have changed dramatically. Have you done one for that period of time, 2009-10?

Mr Morris: The report you are referring to is our submission, which dates back to December 2010. Since that time we have released further analysis from the irrigation surveys that we have done in subsequent years. I would be happy to provide you with the numbers on notice. Unfortunately, I do not have the copies of those reports with me at the moment.

Answer:

Average farm business equity ratios for irrigation farms have remained at 80 per cent or above over the period from 2006-07 to 2009-10. Increases in farm debt have been largely offset by increases in the value of agricultural land and permanent water access entitlements. Equity ratios for dairy farms increased slightly between 2006-07 and 2009-10, but fell slightly for irrigated broadacre and horticulture farms. However, results were mixed for individual farms across the Basin.

Farm business equity ratio, irrigated farms, Murray-Darling Basin				
	2006-07	2007-08	2008-09	2009-10
Horticulture	85%	82%	81%	80%
Broadacre	85%	83%	81%	80%
Dairy	82%	81%	83%	83%
MDB	85%	82%	81%	80%

Farm business equity is defined as the value of owned capital, less farm business debt at 30 June.

Farm business equity ratio is calculated as farm business equity as a percentage of owned capital at 30 June.

9. HANSARD, PG 15-16

CHAIR: ... On the modelling—and I am sorry that I have picked on the modelling—in the 2,700-odd gigs, is any of that water terminal?
...
Mr Sanders: ... what do you mean by terminal? Do you mean that it reaches the end of the system?
CHAIR: A terminal system...
CHAIR: ... Is it in the Lachlan? Is it in the Macquarie? These are terminal waters...
CHAIR: These rivers are not connected to the system.
Senator RHIANNON: You mean that they are closed systems—
CHAIR: Yes.
...
Mr Sanders: Some of our systems are terminal and not disconnected from the whole system.
...
CHAIR: But how much of the water, for your modelling purposes, is terminal?
...
Mr Morris: We will have to take that on notice, I think.

Answer:

The ABARES Water Trade Model is a model of water use that allows water to move between irrigation activities and regions depending on relative economic returns and constraints on water trade.

Regions were deemed connected or disconnected for the purposes of water trade based on direction from the MDBA. The main requirement for trade was sufficient hydrological connectivity between regions. Specifically, the analysis assumed:

- the northern and southern parts of the Basin are not connected for the purposes of water trade;

- there is interconnectivity within the southern connected system of the Basin and there is also interconnectivity between some of the northern regions;

- some regions are entirely disconnected from the rest of the system for the purposes of water trade (Paroo, Warrego, Gwydir, Lachlan, Ovens, Wimmera, and the Eastern Mount Lofty Ranges).

- water trade is also constrained by the Barmah Choke and by within catchment environmental requirements as directed by the MDBA.

SENATE RURAL AND REGIONAL AFFAIRS AND TRANSPORT REFERENCES COMMITTEE

Inquiry into the management of the Murray Darling Basin

Public Hearing Tuesday, 24 April 2012

Questions Taken on Notice

Department of Sustainability, Environment, Water, Population and Communities

1. HANSARD, PG 54

Senator NASH: I would like to ask about the 985 gigs of water that has been bought back so far. We have had some discussion over the last couple of days about whether or not those who sell entitlement actually stay in the community. Do you have any follow-up mechanism when you buy the water to go back and actually track the sellers to see if they stay in the region or leave?

Ms Harwood: Not for every seller. We are at the moment doing a survey of sellers to look at issues relating to that, but we do keep information about how many are selling part of their entitlement and how many are selling the whole of their water entitlement.

Senator NASH: I appreciate you might not have those with you now. Are they figures you can supply for the committee—the part and the total?

Ms Harwood: Yes. Overall, it is about 70 to 71 per cent part and the rest whole.

Senator NASH: Could you provide for us also—you might have these figures now—the total number of sales of that 985 gigalitres

Ms Harwood: I probably can.

Senator NASH: I am quite happy for you to take that on notice.

Ms Harwood: Yes, I will take that on notice.

2. HANSARD, PG 54-55

Senator NASH: And give the breakdown of each individual purchase. Obviously, do not give that to me with any names attached, but just the amounts of water against each of the individual purchases. That would be really useful if you could do that.

Ms Harwood: Sorry, you mean the total number of trades and the total volume of trades?

Senator NASH: Yes, the total number of trades and the volume. If you have gone to a farmer and you have bought back 100 megs from that farmer, could we just have that itemised as an individual purchase?

Ms Harwood: Do you want a histogram of the volume of trade? I am not quite sure what you want. There are probably about 2,000 trades.

Senator NASH: Have you got a print-out of that?

Ms Harwood: Let me take that on notice. I think that in terms of how the information is compiled we need to respect the privacy of the irrigators, and some trades can be obvious from the—

Senator NASH: Absolutely. I am talking about volumes. I am not talking at all about interfering with any privacy, but as best you can could you break down into as much detail as you can, each of the purchases that the Commonwealth environmental water holder has made to attain that water.

3. HANSARD, PG 55

Ms Harwood: Yes. The Commonwealth is making purchases. Could you tell me the information you are wanting so I can do that?

Senator NASH: In terms of the 985 gigalitres of water we discussed how many different individual contracts there are.

Ms Harwood: Yes.

Senator NASH: That is pretty much it.

Ms Harwood: Yes, we can do that.

...

Senator NASH: I am quite happy for you to indicate if there has been a collective that has sold it to you as a parcel. That is fine.

4. HANSARD, PG 55

CHAIR: Do you include in that further detail, price per megalitre?

Ms Harwood: We have average prices per megalitre by entitlement. We have them on our web and we can provide those to you. For each type of entitlement, say South Australian Murray or whatever, at the end of a tender process we publish the average price paid for that type of entitlement. So that tells people that information.

CHAIR: So can someone who wants to sell water look on the web, or wherever it is that you would look, and think, 'Joe Bloggs—geez, they've done him over,' or, 'God, he got a good price.' Is there much variation?

Ms Harwood: No, they cannot see the individual trade prices. But we do also publish a regular independent market survey of the whole-of-water trade so people can see what water is trading for generally for each entitlement.

CHAIR: My point is that this committee discovered in another inquiry, the coal seam gas inquiry, that the coal seam gas companies played cockies on a break. They let some people in for $1,200 a well and others for $10,000 a well. If I am selling water to you, how do I know that I am going

to get what you would call the peak of the market if I went to auction? How do I know that you are not going to dud me simply by saying—

Ms Harwood: You are choosing the price that you want for your water. So you are choosing the price at which you are prepared to sell your water and offering it to the tender.

CHAIR: And I inform my decision on that by going where?

Ms Harwood: You can inform that from the general market. You can look at our independent survey of market prices and see what water traded for in the recent quarter. You can look at the prices we paid in the most recent purchase activity.

CHAIR: Would those figures include the likes of Twynam?

Ms Harwood: For that time period? Yes, I think it would. I will check that but I am pretty sure it does...

5. HANSARD, PG 56

CHAIR: ... I have been trying to get a breakdown today of what is included in the 900-odd gigs—the types of water that are being sold...

...

CHAIR: Could you explain to the committee when supplementary water is available.

Ms Harwood: It varies according to the catchments. The rules under which supplementary entitlements would receive an allocation are set out in the water-sharing plans for the relevant catchment.

CHAIR: The leader in this market—which in my view was a serious error—was the Victorian government. But would it be fair to say that most supplementary water would have been described originally as off allocation? You get a phone call saying, 'You can pump now and you don't have to meter it; turn the pump off next Monday.' That became a tradeable water instrument. What proportion of the water you have purchased would be supplementary water?

Ms Harwood: A small proportion.

CHAIR: And could you give us the breakdown.

Ms Harwood: We will.

6. HANSARD, PG 56

Senator NASH: Could you also do a breakdown for us of the type of water in those 985 gigs—whether it is high security, general security and so on—and put them in those categories as well? That would be really useful.

Ms Harwood: Yes. That is also publicly available on our website.

Senator NASH: The reason I ask is that there are 4,000 billion pages of information out there in the ether and there are very specific things we would like an answer to, so it would be very useful if you could do that.

7. HANSARD, PG 56-57

Senator NASH: ... When did you start managing the water that was bought back by the Commonwealth?

Mr Robinson: I think the first input to the holdings was in the first part of 2008. I could get you an exact date if you like.

Senator NASH: No, that is all right. Can you provide me with a rolling tally of purchases along the way? Is that any information that you might have with you now? We have got to 985 gigs now; I am just trying to get a year-on-year tally and the increase.

Mr Robinson: We can provide that, yes.

...

Ms Harwood: We have the contracted amounts, but do you want them at the point they arrived in the holdings for the CEWH? In which case, Ian can give you those figures.

Mr Robinson: I can. At the end of 2008-09, we had 65 gigalitres of entitlement in the holdings; the following year was 738 gigalitres entitlement; the year after that was 993 gigalitres of entitlement; and, at the end of March this year, it is 1,238 gigalitres of entitlement. That is the entitlement volume, which differs from the long-term average annual yield.

Senator NASH: Can you give me those figures for just the buyback water?

Mr Robinson: We can take that on notice.

Senator NASH: All right. Please take that on notice. What I am interested in is the allocation you received against that entitlement for the buyback component.

Mr Robinson: We can take that on notice.

8. HANSARD, PG 57

Senator NASH: ... Also, given that you are holding water for the environment and you have then received an allocation, can you provide for the committee where that water went—whether it was held, whether it was used for the environment; what the actual use of that water was once it was allocated to the Environmental Water Holder.

Mr Robinson: We can do that. Are you asking about just the water under the buyback program?

Senator NASH: Just the water under the buyback program.

Mr Robinson: Okay.

9. HANSARD, PG 57

Senator NASH: Is there any kind of limit or discussion or percentage component of the infrastructure efficiency water from works and measures from that 2,750, or does it not matter? Do you just work to the cap, or is there any kind of requirement that a certain amount of water should come from irrigation efficiency?

Ms Harwood: We have the Sustainable Rural Water Use and Infrastructure program which is the program that invests in efficiency measures both on and off farm. We track the yields against that, but we have also estimated the total yield from all the known investments that we have in train as well as, basically, a projected conservative yield from moneys that have yet to be committed. The total expected yield from all that funding is 600 gigalitres.

Senator NASH: That is to date.

Ms Harwood: That is—

Senator NASH: Sorry—everything that is in the system to date, with a prediction of the ten- or twelve-year program.

CHAIR: The Environmental Water Holder has how many?

Mr Robinson: At the end of March, 1,238 gigalitres of entitlement.

CHAIR: And the breakdown between general purpose, high security and supplementary is—

Mr Robinson: We can provide that to you. I have the numbers here by catchment, but it is a long list.

10. HANSARD, PG 57

CHAIR: Do you have a mean average of what you have paid for the various water types in the various states?

Ms Harwood: We can provide that information. We can extract that out for you.

11. HANSARD, PG 58-59

Mr Robinson: I have got the aggregated numbers of how much water we have been allocated and how much water we have used.

Senator NASH: ... just going back to the 2008-09, the 65, the 738, 993 and 1,238.

Mr Robinson: In 2008-09, we were allocated 13 gigalitres and used 13 gigalitres. In 2009-10, we were allocated 187 gigalitres and used 154. In 2010-11, we were allocated 690 gigalitres and used 387, and this year up until 24 April, we have been allocated 956 gigalitres and we have used 490 and continue to have actions underway.

CHAIR: How much of that is supplementary?

Mr Robinson: I would have to take that on notice.

12. HANSARD, PG 59-60

Senator NASH: Do you have available—and I am happy for you to tell me that this is on the website somewhere, because I would like to have a look at it—your yearly plans that you were talking about. At what point do you determine how much water you are going to give in a given year? Do you assess it at the beginning the year? Do you say: 'This is how much water we are likely to use because these are the environmental assets we want to water or this is how much more water we want to flush down the system.? How clear a picture do you have at the beginning of any given year of what you are going to use and what you are going to need it for, and where can we find that?

Mr Robinson: We are a function that is in its first few years of business. We did not make publicly available last year's annual plans, although they are discussed with CMAs and the states et cetera.

Senator NASH: Are they available now?

Mr Robinson: I would be happy to make them available. We have not done so, but I would be happy to.

Senator NASH: I have been concentrating on 2010-11 so that I can get an example; but, if you could do it for all the years, that would be very useful.

Mr Robinson: We probably cannot do it for all the years, but we are in our planning process—

Senator NASH: Why can't you do it for the other years?

Mr Robinson: I am not sure that our documents for the first few years were fully scoped.

Senator NASH: So that was a bit hit and miss.

Mr Robinson: I will have to check, but I would happily take it on notice.

13. HANSARD, PG 60

Mr Robinson: We are separately releasing what we call 'delivery documents', which are available on the website. They are not annual plans for the catchments; they are a scoping of what the environmental assets are and a scoping of what all the operational arrangements are for them. I think there are about eight or nine available now, and there are about eight or nine more coming. In addition to that, there are state agency delivery plans. So there is an adaptive environmental water plan, for example, for the Macquarie Marshes, which is a state government document that is also part of our planning process. And, importantly, when the basin plan comes into effect, we need to act in accordance with the Environmental Watering Plan. So we will be doing that when that is in place.

Senator NASH: Insofar as you can and as best you can, could you provide the planning process detail around those early years. I know that in 2009-10 you used 154 gigalitres of the allocation. That is a significant amount of water. It would be useful to have whatever you have insofar as the planning process around that. ...

14. HANSARD, PG 60-61

Senator NASH: With all that on-the-ground reporting back to you from CMAs and state agencies, can you provide to the committee the reporting for each of those events you have let go?

Mr Robinson: I would have to take that on notice.

Senator NASH: Would there be any reason why you could not?

Mr Robinson: I will have to take it on notice.

15. HANSARD, PG 61

CHAIR: There is something very bizarre going on in the lower Lachlan at the moment. There is the Torriganny Creek System, which the state government put some regulators on to try and get water—at the wrong time of the year environmentally—to the ibis rookery. They put a regulator on the Merrimajeel Creek and the Muggabah Creek, which is part of the Torriganny system. It was an overflow out of the Merrowie this time. But we are having a major flood event down there—or a reasonable flood event—and the Muggabah Creek is not running. Do you ever supervise what is happening to the water? We have a major flood and a major part of the creek system, which is an offset of the river, is not running. Obviously, we have taught the department over the years that, if you are going to run water down some of these creeks, you do it in the winter because, due to the build up of rubbish in the summer, the water just does not flow. As the environmental water holder, are you able to find out what has happened to the water that is supposed to be going down Muggabah Creek?

Mr Robinson: We do have staff who go out and have a look at what is happening. I know I am on difficult territory to talk about—the operational side of the Lachlan—but we would be very happy to come back to you with it.

CHAIR: Can you make a note?

Mr Robinson: Absolutely.

16. HANSARD, PG 61

Senator NASH: Has any of the reporting that you have gotten back from the CMO or state agencies, or whoever does it for you, ever indicated that the water did not get to where it was supposed to, do what the intent was, or that the volume did not turn up?

Mr Robinson: In some cases yes, and for good reasons—that is, sometimes there were other flows in the river, and that can affect it. That is normally discussed with us as it is happening. For example, we may agree to a particular volume for a particular site but, if the river flows happen to be higher or lower, we might not be able to deliver that volume. That sometimes varies, though normally not significantly—we are in a real-time business.

Senator NASH: Absolutely. Would you mind taking that on notice as well. You could perhaps give us a more detailed answer on when it has not occurred as intended and the reasons for that.

17. HANSARD, PG 61

Senator HANSON-YOUNG: Does the department have advice in relation to the court action being foreshadowed by the South Australian state government?

Mr Slatyer: I will have to take that on notice.

18. HANSARD, PG 61-62

Senator HANSON-YOUNG: Okay. My question was: does the department have any advice as to whether there would need to be amendments to the Water Act in the event of the plan being allowed by the parliament?

Mr Slatyer: The department has the advice that was tabled in the parliament, which went to that question about the manner in which the Basin Plan should be made consistent with the Water Act and the circumstances that could be taken into account.

Senator HANSON-YOUNG: Yes, but we now have a draft plan. That advice was in the context of having no plan and was about what a plan should look like. We now have a plan. My question is what advice the department has in relation to any amendments that may be needed as a consequence.

Mr Slatyer: I will take the question on notice.

19. HANSARD, PG 65

Senator NASH: I have just a couple of things to finish up. Mr Robinson, if you would not mind, could you provide to the committee on notice the roles of the 42 staff?

20. HANSARD, PG 65-66

Senator NASH: ... You also very kindly—thank you—undertook to take questions on notice about each of the releases. Obviously it would be good if you could provide the volume of those releases as well, and the actual detail around the environmental benefit—so, for each of those releases from that allocated water, what you are actually intending to do at the end. Could you tell us, in more detail than just 'fill up the marshes', what it was actually intending to do and whether that environmental benefit was achieved. That would be really useful. ...

21. HANSARD, PG 66

Senator NASH: The last thing I wanted to have a look at was this. Ms Harwood, were there two tenders this year? Is that right?

Ms Harwood: There were some tenders late last calendar year in the northern basin. Those were in the Namoi and Border rivers, and there was also the Balonne.

Senator NASH: Have they concluded now?

Ms Harwood: Yes. Some of the trades take a while to settle in Queensland because of the multiyear accounting rules and the separation of licences, but they are complete.

Senator NASH: And what were the results for those in terms of that?

Ms Harwood: I have a grand table here. Do you want them by tender? Why don't I provide that on notice as to the outcomes?

Senator NASH: Yes, that would be fine.

22. HANSARD, PG 66-67

Senator NASH: So you would not have had any ability to reject any one of those catchments if you did not think it had an environmental benefit in your view. You did not have the opportunity to do that. What was the total entitlement and the total value?

Ms Harwood: The total value of the entitlements purchased was $303.3 million.

Senator NASH: And the volumetric amount of the total entitlement?

Ms Harwood: In long-term yield terms from memory it was 102 gigalitres, but I will take that on notice. That is converting all the entitlements to long-term yield.

23. HANSARD, PG 67

Senator NASH: ... So of that 102 gigs how much water has been allocated to that, for environmental purposes, in that time?

Mr Robinson: I can take that on notice.

Senator NASH: You do not have that?

Mr Robinson: There are a whole bunch of different types entitlements across a range of catchments. I am happy to take it on notice, but I will just point out that once the entitlements are purchased they become part of the holdings and are essentially pooled.

Senator NASH: I understand that. I would expect you as the environmental water holder to have for the committee information around the purchases that the Commonwealth has made. Are you saying that you cannot separate out the allocation against that particular purchase?

Mr Robinson: I will have to take that on notice, but I can—

Senator NASH: If you cannot, how do you determine value for money?

Mr Robinson: The value for money is assessed at the purchase point. We can certainly tell you what allocations we have had against equivalent types of entitlements since they have been purchased. But we do not distinguish between previous ownership of entitlements when they come into the holdings. We do not say, 'Those entitlements used to belong to someone in particular.'

Senator NASH: So you spent $303 million of taxpayers' money and yet you do not keep track in any way, shape or form of the allocation you actually got from the $303 million that you spent.

Mr Robinson: No, that is not what I said. We do keep track of all our allocations against all our entitlements, but it is a different question as to whether we can separate out particular entitlements. But I did say I would take it on notice.

Senator NASH: I understand that and I appreciate that.

24. HANSARD, PG 69

Senator NASH: Can we just go back to my question first. Did they put up a tender in each of the five catchments to you initially?

Ms Harwood: What they put to us was a parcel of water entitlements covering five catchments—

Senator NASH: Yes, I follow that bit.

Ms Harwood: and a number of licences in each of those catchments—

Senator NASH: I follow that bit.

Ms Harwood: but different reliabilities. I can provide you with the full suite of the licences they placed on offer to us.

Senator NASH: Excellent.

25. HANSARD, PG 69-70

Senator NASH: Did they have a value attached to that, with each of those tenders they put up in each catchment?

Ms Harwood: They were offering it to us as a complete parcel. We did the job of assessing—

Senator NASH: I am asking a really simple question. In each of those catchments you have said they put all those licences forward. That is fine; I follow that so far. Did they have a value attached to each of those offers in each of those catchments?

Ms Harwood: They were offered as a single package.

Senator NASH: So they did not? Just a yes or no. Did they have a value attached in each of those parcels of entitlement by catchment in each of the five catchments?

Ms Harwood: I do not believe they did but—

Senator NASH: They did not, okay.

Ms Harwood: we will take it on notice, but it was offered as a single package.

Senator NASH: Why not? When everybody else has to, why didn't they?

Ms Harwood: I will take my response to your most recent remark on notice as well, in that this bid was in accordance with or met the terms of the tender at the time.

Senator NASH: But when everybody else—as you were explaining the process before—

Ms Harwood: What I am—

Senator NASH: Hang on just a sec, Ms Harwood. As you were saying before, in the tender process, those out there with entitlement come to you and say what they are happy to take for it. Why didn't Twynam have to follow the same process as everybody else?

Ms Harwood: What I am trying to say is that I think at that time people could offer combined licences. That is what I need to take on notice and come back to you about. That is, it was not just them who could offer a package of licences or one or two or more licences together, and that is what I need to come back to you on.

Senator NASH: So subsequently you realised that that was not an appropriate way to do it?

Ms Harwood: No—

Senator NASH: If you changed it.

Ms Harwood: I am not saying that at all. I am just saying that at the time, the way that tender operated, the Twynam bid was compliant with the tender process that was in operation at the time.

Senator NASH: If you could take it on notice, that would be great.

Senate Rural and Regional Affairs and Transport References Committee

Inquiry into the management of the Murray-Darling Basin

Public Hearing Tuesday, 24 April 2012

Questions Taken on Notice

Department of Sustainability, Environment, Water, Population and Communities

Program: Division or Agency: 4.1:Water Efficiency Division **Question No:** 1

Topic: Water Buyback Program

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Senator NASH: I would like to ask about the 985 gigs of water that has been bought back so far. We have had some discussion over the last couple of days about whether or not those who sell entitlement actually stay in the community. Do you have any follow-up mechanism when you buy the water to go back and actually track the sellers to see if they stay in the region or leave?

Ms Harwood: Not for every seller. We are at the moment doing a survey of sellers to look at issues relating to that, but we do keep information about how many are selling part of their entitlement and how many are selling the whole of their water entitlement.

Senator NASH: I appreciate you might not have those with you now. Are they figures you can supply for the committee—the part and the total?

Ms Harwood: Yes. Overall, it is about 70 to 71 per cent part and the rest whole.

Senator NASH: Could you provide for us also—you might have these figures now—the total number of sales of that 985 gigalitres

Ms Harwood: I probably can.

Senator NASH: I am quite happy for you to take that on notice.

Ms Harwood: Yes, I will take that on notice.

Answer: As at 29 February 2012, the government had secured the purchase of 1,326 gigalitres of water entitlements through the Restoring the Balance in the Murray-Darling Basin program. This has involved 4,189 trades.

Since November 2010, the department's records indicate that 72% of pursued offers from water purchase tenders were sales of part of a larger entitlement holding.

Senate Rural and Regional Affairs and Transport References Committee

Inquiry into the management of the Murray-Darling Basin

Public Hearing Tuesday, 24 April 2012

Questions Taken on Notice

Department of Sustainability, Environment, Water, Population and Communities

Division: Water Efficiency **Question No 2**

Topic: Water Buyback Program

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Senator NASH: And give the breakdown of each individual purchase. Obviously, do not give that to me with any names attached, but just the amounts of water against each of the individual purchases. That would be really useful if you could do that.

Ms Harwood: Sorry, you mean the total number of trades and the total volume of trades?

Senator NASH: Yes, the total number of trades and the volume. If you have gone to a farmer and you have bought back 100 megs from that farmer, could we just have that itemised as an individual purchase?

Ms Harwood: Do you want a histogram of the volume of trade? I am not quite sure what you want. There are probably about 2,000 trades.

Senator NASH: Have you got a print-out of that?

Ms Harwood: Let me take that on notice. I think that in terms of how the information is compiled we need to respect the privacy of the irrigators, and some trades can be obvious from the—

Senator NASH: Absolutely. I am talking about volumes. I am not talking at all about interfering with any privacy, but as best you can could you break down into as much detail as you can, each of the purchases that the Commonwealth environmental water holder has made to attain that water.

Answer: Details of the number of secured water entitlement purchases, by catchment and entitlement category, are provided in the following table.

Catchment	Entitlement Type	Number of trades	Secured Purchases (ML) [b]	Average price paid per trade ($/ML)
QLD: Border Rivers	Medium Priority	14	6,832	$2,276
QLD: Condamine Balonne	Unsupplemented	6	21,735	$1,517
QLD TOTAL		**20**	**28,567**	
Gwydir	General security	21	88,520	$2,239
	Supplementary	6	19,101	$1,045
Barwon-Darling [a]	Unregulated	6	22,273	$836
Warrego [a]	Unregulated	1	8,106	N/A
Namoi	General security	8	6,203	$2,050
Macquarie	General security	34	57,631	$1,268
	Supplementary	6	1,888	$161
Lachlan	High security	5	733	N/A
	General security	38	81,671	$683
Murrumbidgee	High security	1	103	N/A
	General security	107	147,230	$960
	Supplementary	4	20,821	$218
Murray	above the Choke - General Security	287	175,439	$1,217
	below the Choke - General Security	146	40,546	$1,151
	below the Choke - High Security	28	2,636	$2,140
Lower Darling	General security	1	492	N/A
NSW TOTAL [a]		**699**	**673,393**	
Campaspe	High reliability	42	6,366	$2,174
	Low reliability	3	395	N/A
Goulburn River System	High reliability	1,284	224,203	$2,091
	Low reliability	94	26,233	$196
Loddon	High reliability	28	2,796	$1,802
	Low reliability	6	644	$200
Ovens	High reliability	1	50	N/A
Murray	above the Choke - High Reliability	331	70,651	$1,948
	below the Choke - High Reliability	956	181,029	$2,094
	above the Choke - Low Reliability	49	9,942	$193
	below the Choke - Low Reliability	40	13,370	$199
VIC TOTAL		**2,834**	**535,680**	
Murray	High security	636	88,226	$2,132
SA TOTAL		**636**	**88,226**	
TOTAL		**4,189**	**1,325,866**	

[a] This data includes the water entitlements acquired from Toorale Station. It is counted as two separate trades as the entitlements are spread across two catchments.

[b] This includes the water purchased from the Victorian Government related to the NVIRP project. The water purchased in this transaction is specified in entitlement volume. This trade is counted as six individual contracts, as the entitlements are spread across three catchments, with two different security levels of water per catchment.

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Questions Taken on Notice

Department of Sustainability, Environment, Water, Population and Communities

Division: Water Efficiency **Question No:** 3

Topic: Water Buyback Program

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Ms Harwood: Yes. The Commonwealth is making purchases. Could you tell me the information you are wanting so I can do that?

Senator NASH: In terms of the 985 gigalitres of water we discussed how many different individual contracts there are.

Ms Harwood: Yes.

Senator NASH: That is pretty much it.

Ms Harwood: Yes, we can do that.

...

Senator NASH: I am quite happy for you to indicate if there has been a collective that has sold it to you as a parcel. That is fine.

Answer:

As at 29 February 2012, the Australian Government had secured the purchase of 1,326 gigalitres of water entitlements through the Restoring the Balance in the Murray-Darling Basin program. This has involved 4,189 trades.

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Inquiry into the management of the Murray-Darling Basin

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Questions Taken on Notice

Department of Sustainability, Environment, Water, Population and Communities

Division: Water Efficiency **Question No:** 4

Topic: Twynam

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CHAIR: Do you include in that further detail, price per megalitre?

Ms Harwood: We have average prices per megalitre by entitlement. We have them on our web and we can provide those to you. For each type of entitlement, say South Australian Murray or whatever, at the end of a tender process we publish the average price paid for that type of entitlement. So that tells people that information.

CHAIR: So can someone who wants to sell water look on the web, or wherever it is that you would look, and think, 'Joe Bloggs—geez, they've done him over,' or, 'God, he got a good price.' Is there much variation?

Ms Harwood: No, they cannot see the individual trade prices. But we do also publish a regular independent market survey of the whole-of-water trade so people can see what water is trading for generally for each entitlement.

CHAIR: My point is that this committee discovered in another inquiry, the coal seam gas inquiry, that the coal seam gas companies played cockies on a break. They let some people in for $1,200 a well and others for $10,000 a well. If I am selling water to you, how do I know that I am going to get what you would call the peak of the market if I went to auction? How do I know that you are not going to dud me simply by saying—

Ms Harwood: You are choosing the price that you want for your water. So you are choosing the price at which you are prepared to sell your water and offering it to the tender.

CHAIR: And I inform my decision on that by going where?

Ms Harwood: You can inform that from the general market. You can look at our independent survey of market prices and see what water traded for in the recent quarter. You can look at the prices we paid in the most recent purchase activity.

CHAIR: Would those figures include the likes of Twynam?

Ms Harwood: For that time period? Yes, I think it would. I will check that but I am pretty sure it does...

Answer:

The average price of offers pursued through each water tender conducted since January 2010 is publicly available on the department's web site at http://www.environment.gov.au/water/policy-programs/entitlement-purchasing/average-prices.html

Market price information for water entitlements in the Murray-Darling Basin has been collated by independent consultants and has been publicly released since the September quarter 2008 on the department's web site at http://www.environment.gov.au/water/policy-programs/entitlement-purchasing/market-prices.html

The Twynam purchase is not included in the comparison of prices received in recent water purchase tenders. The Twynam application to sell water was lodged on 19 December 2008.

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Questions Taken on Notice

Department of Sustainability, Environment, Water, Population and Communities

Division: Water Efficiency **Question No:** 5

Topic: Water Buyback Program

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CHAIR: ... I have been trying to get a breakdown today of what is included in the 900-odd gigs—the types of water that are being sold...

...

CHAIR: Could you explain to the committee when supplementary water is available.

Ms Harwood: It varies according to the catchments. The rules under which supplementary entitlements would receive an allocation are set out in the water-sharing plans for the relevant catchment.

CHAIR: The leader in this market—which in my view was a serious error—was the Victorian government. But would it be fair to say that most supplementary water would have been described originally as off allocation? You get a phone call saying, 'You can pump now and you don't have to meter it; turn the pump off next Monday.' That became a tradeable water instrument. What proportion of the water you have purchased would be supplementary water?

Ms Harwood: A small proportion.

CHAIR: And could you give us the breakdown.

Ms Harwood: We will.

Answer: The details of secured water purchases, by catchment and entitlement category, are publicly available of the department's website at:

http://www.environment.gov.au/water/policy-programs/entitlement-purchasing/progress.html

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Questions Taken on Notice

Department of Sustainability, Environment, Water, Population and Communities

Division: Water Efficiency **Question No:** 6

Topic: Water Buyback Program

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Senator NASH: Could you also do a breakdown for us of the type of water in those 985 gigs—whether it is high security, general security and so on—and put them in those categories as well? That would be really useful.

Ms Harwood: Yes. That is also publicly available on our website.

Senator NASH: The reason I ask is that there are 4,000 billion pages of information out there in the ether and there are very specific things we would like an answer to, so it would be very useful if you could do that.

Answer: The details of secured water purchases, by catchment and entitlement category, are publicly available of the department's website at:

http://www.environment.gov.au/water/policy-programs/entitlement-purchasing/progress.html

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Division or Agency:	CEWO	**Question No:**	7 & 8
Topic:	Commonwealth environmental water allocations for buyback water		
Proof Hansard Page	56-57		

Senator Nash asked:

(page 56)

Senator NASH: ... When did you start managing the water that was bought back by the Commonwealth?

Mr Robinson: I think the first input to the holdings was in the first part of 2008. I could get you an exact date if you like.

Senator NASH: No, that is all right. Can you provide me with a rolling tally of purchases along the way? Is that any information that you might have with you now? We have got to 985 gigs now; I am just trying to get a year-on-year tally and the increase.

Mr Robinson: We can provide that, yes.

...

Ms Harwood: We have the contracted amounts, but do you want them at the point they arrived in the holdings for the CEWH? In which case, Ian can give you those figures.

Mr Robinson: I can. At the end of 2008-09, we had 65 gigalitres of entitlement in the holdings; the following year was 738 gigalitres entitlement; the year after that was 993 gigalitres of entitlement; and, at the end of March this year, it is 1,238 gigalitres of entitlement. That is the entitlement volume, which differs from the long-term average annual yield.

Senator NASH: Can you give me those figures for just the buyback water?

Mr Robinson: We can take that on notice.

Senator NASH: All right. Please take that on notice. What I am interested in is the allocation you received against that entitlement for the buyback component.

Mr Robinson: We can take that on notice.

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Senator NASH: ... Also, given that you are holding water for the environment and you have then received an allocation, can you provide for the committee where that water went—whether it was held, whether it was used for the environment; what the actual use of that water was once it was allocated to the Environmental Water Holder.

Mr Robinson: We can do that. Are you asking about just the water under the buyback program?

Senator NASH: Just the water under the buyback program.

Mr Robinson: Okay.

Answer:

Parameter	**2008-09** (end of year)	**2009-10** (end of year)	**2010-11** (end of year)
Total volume of buyback entitlement (GL)	65	723	904
Estimated long term average annual yield of buyback entitlement (GL)	38	456	617
Estimate of water available against the buyback entitlement (GL)	14	183	706
Percentage utilisation of all available Commonwealth environmental water (including buyback entitlement)	100%	82%	53%[i]
Largest environmental actions in the year	• Inundate River Red Gums at Hattah Lakes • Contribute to flows in the Barwon-Darling • Enhance flows to Lindsay Island in the Riverland Chowilla complex	• Improve salinity in Coorong and Lower Lakes and maintain freshwater and estuarine environment • Increase flows to the Yanga National Park (Murrumbidgee catchment)	• Provide catchment flows to mid-Murrumbidgee wetlands • Support bird breeding in Macquarie Marshes • Provide instream flows in the Goulburn River to enhance fish habitat

The percentage utilisation of Commonwealth environmental water in 2011-12 is forecast to be similar to 2010-11 and to the average use by other entitlement holders. The largest environmental water actions in 2011-12 to date have been:

- to contribute to increased flows to the Lower Lakes, Coorong and Murray Mouth, and to support longitudinal connectivity and wetland habitat in the lower Murray River; and
- to provide and maintain oxygenated fish habitats in the Murray and Edward Wakool following blackwater events in April and May 2012.

[i] floods during summer (late October 2010 to February 2011) increased allocations, reduced environmental demand and constrained use

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Division or Agency:	CEWO	**Question No:**	9
Topic:	Commonwealth environmental water holdings by reliability class		
Proof Hansard Page and Date	p. 57 (24/04/12)		
or Written Question:			

Senator Heffernan asked:

Senator NASH: Is there any kind of limit or discussion or percentage component of the infrastructure efficiency water from works and measures from that 2,750, or does it not matter? Do you just work to the cap, or is there any kind of requirement that a certain amount of water should come from irrigation efficiency?

Ms Harwood: We have the Sustainable Rural Water Use and Infrastructure program which is the program that invests in efficiency measures both on and off farm. We track the yields against that, but we have also estimated the total yield from all the known investments that we have in train as well as, basically, a projected conservative yield from moneys that have yet to be committed. The total expected yield from all that funding is 600 gigalitres.

Senator NASH: That is to date.

Ms Harwood: That is—

Senator NASH: Sorry—everything that is in the system to date, with a prediction of the ten- or twelve-year program.

CHAIR: The Environmental Water Holder has how many?

Mr Robinson: At the end of March, 1,238 gigalitres of entitlement.

CHAIR: And the breakdown between general purpose, high security and supplementary is—

Mr Robinson: We can provide that to you. I have the numbers here by catchment, but it is a long list.

Answer:

Entitlements by reliability class held by the Commonwealth Environmental Water Holder as at 31 March 2012 are included in the table below.

Reliability class	**Total registered (GL)**
High	455.4
Medium / General / Low	695.4
Supplementary	41.8
Unregulated / Unsupplemented	45.6
Total	**1,238.2**

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Questions Taken on Notice

Department of Sustainability, Environment, Water, Population and Communities

Division: Water Efficiency **Question No 10**

Topic: Water Buyback Program

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CHAIR: Do you have a mean average of what you have paid for the various water types in the various states?

Ms Harwood: We can provide that information. We can extract that out for you.

Answer: The details of secured water purchases, by catchment and entitlement category, are publicly available of the department's website at:

http://www.environment.gov.au/water/policy-programs/entitlement-purchasing/progress.html

Purchases Secured under the Restoring the Balance in the Murray-Darling Basin Program as at 29 February 2012

	Catchment	Entitlement Type	Secured Entitlement Purchases (ML)	Secured Entitlement Purchases - Average Annual Yield (ML)	Other Purchases - Average Annual yield (ML)[b]	Average price paid per trade ($/ML)[c]
Northern Basin	Gwydir	General security	88,520	31,867		$2,239
		Supplementary	19,101	3,629		$1,045
	Condamine Balonne	Unsupplemented	21,735	21,735		$1,517
	Intersecting Streams(inc NSW Warrego) [(a)]	Unregulated	8,106	8,106		N/A
	Namoi	General security	6,203	4,776		$2,050
	Macquarie	General security	57,631	24,205		$1,268
		Supplementary	1,888	397		$161
	QLD Border Rivers	Medium Priority	6,832	2,255		$2,276
	Barwon-Darling[(a)]	Unregulated	22,273	22,273		$836
Southern Basin	Ovens	High reliability	50	48		N/A
	Goulburn-Broken	High reliability	178,210	169,300	43,188	$2,091
		Low reliability	10,286	3,600	7,783	$196
	Loddon	High reliability	2,796	2,656		$1,802
		Low reliability	644	174		$200
	Campaspe	High reliability	6,366	6,047		$2,174
		Low reliability	395	194		N/A
	Murrumbidgee	High security	103	98		N/A
		General security	147,230	94,227		$960
		Supplementary	20,821	2,915		$218
	Murray	NSW General security - above choke	175,439	142,105		$1,217
		NSW General security - below choke	40,546	32,842		$1,151
		NSW High security - below choke	2,636	2,504		$2,140
		VIC above Choke - High reliability	54,151	51,444	15,790	$1,948
		VIC below Choke - High reliability	150,792	143,253	28,936	$2,094
		VIC above Choke - Low reliability	5,406	1,297	2,354	$193
		VIC below Choke - Low reliability	5,762	1,383	3,947	$199
		SA High security	88,226	79,404		$2,132
	Lower Darling	General security	492	399		N/A
Disconnected Tributaries	Lachlan	High security	733	733		N/A
		General security	81,671	34,302		$683
	TOTAL		**1,205,045**	**888,165**	**101,998**	
	TOTAL LONG TERM AVERAGE YIELD			**990,163**		

Notes:

All average annual yield figures in this table are calculated using SEWPaC's estimates of the long term average annual yield for each entitlement. It was advised in the Murray-Darling Basin Ministers' Communique of 4 November 2011 that these would be used to determine how much of the 'gap' between the Baseline Diversion Limit (BDL) and the Sustainable Diversion Limits (SDL) has been 'bridged' through purchase and infrastructure projects.

[(a)] This data includes the water entitlements acquired from Toorale Station.

[(b)] This includes the water purchased from the Victorian Government related to the NVIRP project. The water purchased in this transaction is specified in average annual yield terms.

[(c)] Average price paid per entitlement trade – excludes the purchase from the Victorian Government related to the NVIRP project.

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Division or Agency:	CEWO	**Question No:**	11
Topic:	Commonwealth environmental water supplementary water		
Proof Hansard Page and Date	pp.58-59 (24/04/12)		
or Written Question:			

Senator Heffernan asked:

(page 58)

Mr Robinson: I have got the aggregated numbers of how much water we have been allocated and how much water we have used.

(page 59)

Senator NASH: Okay. If you want to give that to me now and take the other on notice that would be useful—just going back to the 2008-09, the 65, the 738, 993 and 1,238.

Mr Robinson: In 2008-09, we were allocated 13 gigalitres and used 13 gigalitres. In 2009-10, we were allocated 187 gigalitres and used 154. In 2010-11, we were allocated 690 gigalitres and used 387, and this year up until 24 April, we have been allocated 956 gigalitres and we have used 490 and continue to have actions underway.

CHAIR: How much of that is supplementary?

Mr Robinson: I would have to take that on notice.

Answer:

Supplementary water entitlements were registered in the Commonwealth environmental holdings during 2009-10. There are holdings of supplementary water entitlements in the Murrumbidgee, Macquarie and Gwydir catchments.

Use against supplementary water entitlements is shown below.

Year	**Supplementary entitlement holdings** (GL)	**Estimated long term average annual yield** (GL)	**Use against supplementary entitlement holdings** (GL)
2009-10	41.8	6.9	2.5
2010-11	41.8	6.9	25.8
2011-12 (to 24 April 2012)	41.8	6.9	0

Additional water has been made available against supplementary entitlements over this period but it has not been taken as immediate environmental requirements may have been met or there were risks of unintended inundation of sites. This is an example of active management.

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Division or Agency:	CEWO	**Question No:**	12 & 13
Topic:	Commonwealth Environmental Water annual water planning documents		
Proof Hansard Page and Date	pp. 59-60 (24/04/12)		
or Written Question:			

Senator Nash asked:

(page 59)

Senator NASH: Do you have available—and I am happy for you to tell me that this is on the website somewhere, because I would like to have a look at it—your yearly plans that you were talking about. At what point do you determine how much water you are going to give in a given year? Do you assess it at the beginning the year? Do you say: 'This is how much water we are likely to use because these are the environmental assets we want to water or this is how much more water we want to flush down the system.? How clear a picture do you have at the beginning of any given year of what you are going to use and what you are going to need it for, and where can we find that?

Mr Robinson: We are a function that is in its first few years of business. We did not make publicly available last year's annual plans, although they are discussed with CMAs and the states et cetera.

Senator NASH: Are they available now?

Mr Robinson: I would be happy to make them available. We have not done so, but I would be happy to.

(page 60)

Mr Robinson: We are separately releasing what we call 'delivery documents', which are available on the website. They are not annual plans for the catchments; they are a scoping of what the environmental assets are and a scoping of what all the operational arrangements are for them. I think there are about eight or nine available now, and there are about eight or nine more coming. In addition to that, there are state agency delivery plans. So there is an adaptive environmental water plan, for example, for the Macquarie Marshes, which is a state government document that is also part of our planning process. And, importantly, when the basin plan comes into effect, we need to act in accordance with the Environmental Watering Plan. So we will be doing that when that is in place.

Senator NASH: Insofar as you can and as best you can, could you provide the planning process detail around those early years. I know that in 2009-10 you used 154 gigalitres of the allocation. That is a significant amount of water. It would be useful to have whatever you have insofar as the planning process around that. Can we again use as an example the 2010-11 year. It was 387 gigalitres, and you are going to provide the information on how that was determined as the appropriate figure. How do you then measure the benefit of releasing that water to the environment?

Answer:

Annual water use options are developed to scope the range of possible environmental watering actions that may be undertaken in the following year. These options are identified in cooperation with state agencies, other environmental water managers, local groups and landholders, and are assessed using published criteria as set out in the *Framework for determining environmental watering actions* at:
http://www.environment.gov.au/ewater/frameworks/index.html

Before making water available for a particular action a number of additional factors are considered, including:

- availability of environmental water
- rainfall, river and catchment conditions
- operational feasibility of delivering water
- cost effectiveness of the use
- a detailed assessment of potential risks.

Water use options identified at the start of the year may not be pursued if conditions change. Water use options are also developed and refined throughout the year taking account of changing conditions within the Murray-Darling Basin.

Water use options have been developed at the start of every water year since Commonwealth Environmental Water had environmental water available for use. Examples of Commonwealth Environmental Water water use documents are provided at Attachment A.

Annual water use options are informed by, and complement, planning at the catchment level, by State jurisdictions, which supports the management of state held environmental water and provides links to broader natural resource management arrangements. Some examples of planning at the state and catchment level are provided at Attachment B.

Commonwealth Environmental Water has undertaken work to improve information about environmental assets as well as delivery arrangements and operational feasibility (Attachment C). These documents are also available at:
http://www.environment.gov.au/ewater/publications/index.html

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Division or Agency:	CEWO	**Question No:**	14, 16 & 20
Topic:	Commonwealth Environmental Water operational monitoring		
Proof Hansard Page and Date	pp. 60-61, 65 (24/04/12)		
or Written Question:			

Senator Nash asked:

(page 60)

Senator NASH: With all that on-the-ground reporting back to you from CMAs and state agencies, can you provide to the committee the reporting for each of those events you have let go?

(page 61)

Mr Robinson: I would have to take that on notice.

Senator NASH: Would there be any reason why you could not?

Mr Robinson: I will have to take it on notice.

...

Senator NASH: Has any of the reporting that you have gotten back from the CMO or state agencies, or whoever does it for you, ever indicated that the water did not get to where it was supposed to, do what the intent was, or that the volume did not turn up?

Mr Robinson: In some cases yes, and for good reasons—that is, sometimes there were other flows in the river, and that can affect it. That is normally discussed with us as it is happening. For example, we may agree to a particular volume for a particular site but, if the river flows happen to be higher or lower, we might not be able to deliver that volume. That sometimes varies, though normally not significantly—we are in a real-time business.

Senator NASH: Absolutely. Would you mind taking that on notice as well. You could perhaps give us a more detailed answer on when it has not occurred as intended and the reasons for that.

...

(page 65)

Senator NASH: ... You also very kindly—thank you—undertook to take questions on notice about each of the releases. Obviously it would be good if you could provide the volume of those releases as well, and the actual detail around the environmental benefit—so, for each of those releases from that allocated water, what you are actually intending to do at the end. Could you tell us, in more detail than just 'fill up the marshes', what it was actually intending to do and whether that environmental benefit was achieved. That would be really useful. ...

Answer:

Operational reporting is provided to the Commonwealth Environmental Water Office for all watering actions. Operational reports come from a range of sources, including river operators, state agencies and catchment management authorities, and are provided as agreed over the course of each watering action. Operational reporting for completed actions is consolidated in a single report as part of the water accounts at Attachment A and the annual reports at Attachment B.

Watering actions are actively managed in response to changing circumstances, such as rainfall and variable river flows. In some actions listed at Attachment A, the full volume of water made available was not required because environmental water needs were met by rainfall or other sources of environmental water. Operational reporting indicates that water has reached the targeted area for every watering action.

Operational reporting indicates water was delivered outside the scope of the action that was intended on only one occasion. This occurred in June 2011, when New South Wales State Water Corporation, for a period of around 20 hours, released a higher flow rate than was approved in the Murrumbidgee River. The provided water did however go to the targeted sites and reports on environmental outcomes from this action have been published.

All use of Commonwealth environmental water is reported in an annual report to parliament (Attachment B). Outcomes from the use of Commonwealth environmental water is reported in an outcomes report, which is published each year (Attachment C).

Senate Rural and Regional Affairs and Transport
References Committee
Answers to questions on notice
Sustainability, Environment, Water, Population and Communities portfolio
Senate Inquiry, 24 April 2012

Division or Agency:	CEWO	**Question No:**	15
Topic:	Muggabah Creek		
Proof Hansard Page and Date or Written Question:	p. 61 (24/04/12)		

Senator Heffernan asked:

CHAIR: There is something very bizarre going on in the lower Lachlan at the moment. There is the Torriganny Creek System, which the state government put some regulators on to try and get water—at the wrong time of the year environmentally—to the ibis rookery. They put a regulator on the Merrimajeel Creek and the Muggabah Creek, which is part of the Torriganny system. It was an overflow out of the Merrowie this time. But we are having a major flood event down there—or a reasonable flood event—and the Muggabah Creek is not running. Do you ever supervise what is happening to the water? We have a major flood and a major part of the creek system, which is an offset of the river, is not running. Obviously, we have taught the department over the years that, if you are going to run water down some of these creeks, you do it in the winter because, due to the build up of rubbish in the summer, the water just does not flow. As the environmental water holder, are you able to find out what has happened to the water that is supposed to be going down Muggabah Creek?

Mr Robinson: We do have staff who go out and have a look at what is happening. I know I am on difficult territory to talk about—the operational side of the Lachlan—but we would be very happy to come back to you with it.

CHAIR: Can you make a note?

Mr Robinson: Absolutely.

Answer:

NSW State Water has advised that Muggabah Creek has been flowing steadily since floodwaters arrived in early-mid March 2012. As the operator of water infrastructure in Muggabah Creek, NSW State Water further advised that dropboards in Torriganny Weir were removed and the regulators at both Merrimajeel and Muggabah Creeks were opened to ensure unhindered flow.

Senate Rural and Regional Affairs and Transport References Committee

Inquiry into the management of the Murray-Darling Basin

Public Hearing Tuesday, 24 April 2012

Questions Taken on Notice

Department of Sustainability, Environment, Water, Population and Communities

Division: Water Reform **Question** No 17

Topic: Foreshadowed South Australian court action

Proof Hansard Page 61

Senator Hanson-Young asked: Does the department have advice in relation to the court action being foreshadowed by the South Australian state government?

Answer: No.

Senate Rural and Regional Affairs and Transport References Committee

Inquiry into the management of the Murray-Darling Basin

Public Hearing Tuesday, 24 April 2012

Questions Taken on Notice

Department of Sustainability, Environment, Water, Population and Communities

Division: Water Reform **Question No 18**

Topic: Amendments to Water Act due to Basin Plan

Proof Hansard Page 61 -62

Senator Hanson-Young asked: Does the department have any advice as to whether there would need to be amendments to the Water Act in the event of the plan being allowed by the parliament?

Answer: In accordance with the Commonwealth's Legal Services Direction, the Department has seen legal advice obtained by the Murray-Darling Basin Authority on compliance of the draft Basin Plan with the *Water Act 2007*

Senate Rural and Regional Affairs and Transport
References Committee
Answers to questions on notice
Sustainability, Environment, Water, Population and Communities portfolio
Senate Inquiry, 24 April 2012

Division or Agency:	CEWO	**Question No:**	19
Topic:	Commonwealth Environmental Water staff		
Proof Hansard Page and Date	p. 65 (24/04/12)		
or Written Question:			

Senator Nash asked:

(page 65)

Senator NASH: I have just a couple of things to finish up. Mr Robinson, if you would not mind, could you provide to the committee on notice the roles of the 42 staff?

Answer:

The structure and roles of the Commonwealth Environmental Water Office is outlined below.

Commonwealth Environmental Water Office
The role of Commonwealth Environmental Water Office is to support the Commonwealth Environmental Water Holder to meet his / her obligations under the *Water Act 2007* to manage the Commonwealth's environmental water holdings to protect or restore the environmental assets in the Murray-Darling Basin.

ENVIRONMENTAL WATER DELIVERY BRANCH

Southern Basin Delivery section
The Southern Basin Delivery section is responsible for planning and delivery of environmental water in the southern Basin, comprising the Murray catchment, Victorian catchment, the lower Darling catchment and the Murrumbidgee catchment. This section is also involved with *The Living Murray* environmental watering group.
Northern Basin Delivery section
The Northern Basin Delivery section is responsible for planning and delivery of environmental water in the northern part of the Murray-Darling Basin, comprising the Lachlan catchment and the Darling River catchment upstream of Menindee Lakes including its tributaries in NSW and Queensland.
Program Evaluation section
The Program Evaluation section is responsible for the evaluation of the uses of Commonwealth environmental water, reporting and information management.

POLICY AND PORTFOLIO MANAGEMENT BRANCH

Water Holdings section
The Water Holdings section is responsible for the administration of the water holdings register and the Environmental Water Holdings Special Account. This includes budgeting for, and reporting on, the holdings and associated costs. The section also administers water transfers to make water available for delivery or to implement trading actions.
Environmental Water Policy section
The Environmental Water Policy section provides policy advice including on the development of improved business and operational frameworks, including in relation to risk management.
Portfolio Management section
The Portfolio Management section advises on management of the water portfolio, including its composition, acquisitions, trading and carryover strategies.
Stakeholder Engagement section
The Stakeholder Engagement section is responsible for managing stakeholder engagement activities, and for the preparation of public reporting, including the annual report, outcomes report and website information.

Senate Rural and Regional Affairs and Transport References Committee

Inquiry into the management of the Murray-Darling Basin

Public Hearing Tuesday, 24 April 2012

Questions Taken on Notice

Department of Sustainability, Environment, Water, Population and Communities

Division: Water Efficiency Division **Question No 21**

Topic: Water Buybacks

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Senator NASH: The last thing I wanted to have a look at was this. Ms Harwood, were there two tenders this year? Is that right?

Ms Harwood: There were some tenders late last calendar year in the northern basin. Those were in the Namoi and Border rivers, and there was also the Balonne.

Senator NASH: Have they concluded now?

Ms Harwood: Yes. Some of the trades take a while to settle in Queensland because of the multiyear accounting rules and the separation of licences, but they are complete.

Senator NASH: And what were the results for those in terms of that?

Ms Harwood: I have a grand table here. Do you want them by tender? Why don't I provide that on notice as to the outcomes?

Senator NASH: Yes, that would be fine.

Answer:

The department ran three Northern Basin tenders in the second half of 2011.

A water purchase tender was undertaken in the Queensland Lower Balonne from 26 September to 21 October 2011. As a result of the tender, the department is pursuing the purchase of almost one gigalitre of entitlements.

A water purchase tender was undertaken in the Namoi and the Queensland and New South Wales Border Rivers from 17 October to 11 November 2011. As a result of the tender, the department is pursuing the purchase of over one gigalitre of entitlements from the Queensland Border Rivers. The department is not pursuing the purchase of any offers in the New South Wales Border Rivers or Namoi catchments.

A water purchase tender was undertaken in the Queensland Lower Balonne from 14 November to 9 December 2011. As a result of the tender, the department is pursuing the purchase of over two gigalitres of entitlements.

Senate Rural and Regional Affairs and Transport References Committee

Inquiry into the management of the Murray-Darling Basin

Public Hearing Tuesday, 24 April 2012

Questions Taken on Notice

Department of Sustainability, Environment, Water, Population and Communities

Division: Water Efficiency **Question No:** 22

Topic: Twynam entitlement value and volume

Hansard Proof Page 66-67

Senator NASH: So you would not have had any ability to reject any one of those catchments if you did not think it had an environmental benefit in your view. You did not have the opportunity to do that. What was the total entitlement and the total value?

Ms Harwood: The total value of the entitlements purchased was $303.3 million.

Senator NASH: And the volumetric amount of the total entitlement?

Ms Harwood: In long-term yield terms from memory it was 102 gigalitres, but I will take that on notice. That is converting all the entitlements to long-term yield.

Answer:

The long term annual average yield of the water entitlements purchased from Twynam Agriculture is 107 gigalitres.

Senate Rural and Regional Affairs and Transport
References Committee
Answers to questions on notice
Sustainability, Environment, Water, Population and Communities portfolio
Senate Inquiry, 24 April 2012

Division or Agency:	CEWO	**Question No:**	23
Topic:	Twynam purchase		
Proof Hansard Page and Date	Draft p. 67 (24/04/12)		
or Written Question:			

Senator Nash asked:

Senator NASH: .. So of that 102 gigs how much water has been allocated to that, for environmental purposes, in that time?

Mr Robinson: I can take that on notice.

Senator NASH: You do not have that?

Mr Robinson: There are a whole bunch of different types entitlements across a range of catchments. I am happy to take it on notice, but I will just point out that once the entitlements are purchased they become part of the holdings and are essentially pooled.

Senator NASH: I understand that. I would expect you as the environmental water holder to have for the committee information around the purchases that the Commonwealth has made. Are you saying that you cannot separate out the allocation against that particular purchase?

Mr Robinson: I will have to take that on notice, but I can—

Senator NASH: If you cannot, how do you determine value for money?

Mr Robinson: The value for money is assessed at the purchase point. We can certainly tell you what allocations we have had against equivalent types of entitlements since they have been purchased. But we do not distinguish between previous ownership of entitlements when they come into the holdings. We do not say, 'Those entitlements used to belong to someone in particular.'

Senator NASH: So you spent $303 million of taxpayers' money and yet you do not keep track in any way, shape or form of the allocation you actually got from the $303 million that you spent.

Mr Robinson: No, that is not what I said. We do keep track of all our allocations against all our entitlements, but it is a different question as to whether we can separate out particular entitlements. But I did say I would take it on notice.

Senate Rural and Regional Affairs and Transport
References Committee
Answers to questions on notice
Sustainability, Environment, Water, Population and Communities portfolio
Senate Inquiry, 24 April 2012

Answer:

Records of allocations and use against entitlements are kept for each catchment and entitlement type on a pooled basis. Separate records based on the previous ownership of individual entitlements in the portfolio are not tracked. However, for the purpose of answering the question the following information, including percentage end of year allocation, and estimated end of year allocations against the entitlements from the Twynam purchase, has been prepared. The estimated allocation (in gigalitres (GL)) against unregulated and supplementary licences is water taken against those licences.

				End of 2009-10		**End of 2010-11**		**2011-12 (to 30 April 2012)**	
Catchment	**Type**	**Entitlement** from the Twynam purchase **(GL)**	**Estimated Long Term Average Annual Yield** from the Twynam purchase **(GL)**	**Allocation %**	**Estimated allocation (GL)** against entitlements from Twynam purchase	**Allocation %**	**Estimated allocation (GL)** against entitlements from Twynam purchase	**Allocation %**	**Estimated allocation (GL)** against entitlements from Twynam purchase
Barwon-Darling	Unregulated	14.6	14.6	-	0	-	0	-	0
Gwydir	General	47.1	17.0	0	0	83	39.1	150[4]	70.7
	Supplementary	16.3	3.1	-	0	-	3	-	0
Macquarie & Cudgegong	General	39.1	16.4	0	0	100	39.1	100	39.1
	Supplementary	1.9	0.4	-	0.8	-	1.9	-	0
Lachlan	General	52.3	22.0	0	0	117	61.2	136	71.1
Murrumbidgee [5]	General	47.6	30.5	27	12.9	100	47.6	100	47.6
	Supplementary	20.8	2.9	-	2	-	20.8	-	0
	Total	*240*	*107*		*15.7*		*213*		*228.5*

Senate Rural and Regional Affairs and Transport References Committee

Inquiry into the management of the Murray-Darling Basin

Public Hearing Tuesday, 24 April 2012

Questions Taken on Notice

Department of Sustainability, Environment, Water, Population and Communities

Division: Water Efficiency Division . **Question No** 24

Topic: Twynam purchase

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Senator NASH: Can we just go back to my question first. Did they put up a tender in each of the five catchments to you initially?

Ms Harwood: What they put to us was a parcel of water entitlements covering five catchments—

Senator NASH: Yes, I follow that bit.

Ms Harwood: and a number of licences in each of those catchments—

Senator NASH: I follow that bit.

Ms Harwood: but different reliabilities. I can provide you with the full suite of the licences they placed on offer to us.

Senator NASH: Excellent.

Answer:

Water Source	**Volume of Water Offered (ML)**
Barwon – Unregulated – B Class	4,488
Barwon - Unregulated – C Class	6,095
Barwon – Unregulated – B Class (Collymongle)	1,836
Barwon – Unregulated – B Class	872
Barwon - Unregulated – C Class	1,312
Gwydir – Regulated – General Security	5,832
Gwydir – Regulated – General Security	19,916
Gwydir – Regulated – General Security	21,384
Gwydir – Regulated – Supplementary	2,019.5
Gwydir – Regulated – Supplementary	6,899.9

Gwydir – Regulated – Supplementary	7,404.8
Lachlan – Regulated – General Security	572
Lachlan – Regulated – General Security	3,000
Lachlan – Regulated – General Security	31,776
Lachlan – Regulated – General Security	16,935
Macquarie and Cudgegong – Regulated – General Security	399
Macquarie and Cudgegong – Regulated – General Security	368
Macquarie and Cudgegong – Regulated – General Security	2,468
Macquarie and Cudgegong – Regulated – General Security	36
Macquarie and Cudgegong – Regulated – General Security	34,259
Macquarie and Cudgegong – Regulated – General Security	1,584
Macquarie and Cudgegong – Regulated – Supplementary	30.4
Macquarie and Cudgegong – Regulated – Supplementary	28.1
Macquarie and Cudgegong – Regulated – Supplementary	188.3
Macquarie and Cudgegong – Regulated – Supplementary	2.7
Macquarie and Cudgegong – Regulated – Supplementary	1,518
Macquarie and Cudgegong – Regulated – Supplementary	120.9
Murrumbidgee – Regulated – General Security	18,472
Murrumbidgee – Regulated – General Security	9,452
Murrumbidgee – Regulated – General Security	24,412
Murrumbidgee – Regulated – Supplementary	11,056.5
Murrumbidgee – Regulated – Supplementary	1,129
Murrumbidgee – Regulated – Supplementary	6,143
Murrumbidgee – Regulated – Supplementary	2,491.5

Senate Rural and Regional Affairs and Transport References Committee

Inquiry into the management of the Murray-Darling Basin

Public Hearing Tuesday, 24 April 2012

Questions Taken on Notice

Department of Sustainability, Environment, Water, Population and Communities

Division: Efficiency Division **Question no 25**

Topic: Twynam purchase

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Senator NASH: Did they have a value attached to that, with each of those tenders they put up in each catchment?

Ms Harwood: They were offering it to us as a complete parcel. We did the job of assessing—

Senator NASH: I am asking a really simple question. In each of those catchments you have said they put all those licences forward. That is fine; I follow that so far. Did they have a value attached to each of those offers in each of those catchments?

Ms Harwood: They were offered as a single package.

Senator NASH: So they did not? Just a yes or no. Did they have a value attached in each of those parcels of entitlement by catchment in each of the five catchments?

Ms Harwood: I do not believe they did but—

Senator NASH: They did not, okay.

Ms Harwood: we will take it on notice, but it was offered as a single package.

Senator NASH: Why not? When everybody else has to, why didn't they?

Ms Harwood: I will take my response to your most recent remark on notice as well, in that this bid was in accordance with or met the terms of the tender at the time.

Senator NASH: But when everybody else—as you were explaining the process before—

Ms Harwood: What I am—

Senator NASH: Hang on just a sec, Ms Harwood. As you were saying before, in the tender process, those out there with entitlement come to you and say what they are happy to take for it. Why didn't Twynam have to follow the same process as everybody else?

Ms Harwood: What I am trying to say is that I think at that time people could offer combined licences. That is what I need to take on notice and come back to you about. That is, it was not just them who could offer a package of licences or one or two or more licences together, and that is what I need to come back to you on.

Senator NASH: So subsequently you realised that that was not an appropriate way to do it?

Ms Harwood: No—

Senator NASH: If you changed it.

Ms Harwood: I am not saying that at all. I am just saying that at the time, the way that tender operated, the Twynam bid was compliant with the tender process that was in operation at the time.

Senator NASH: If you could take it on notice, that would be great.

Answer:

Twynam submitted 34 applications through the Northern and Southern Basin water entitlement tenders in 2008-09. Each application was for a single entitlement, but they were offered as a combined package with a single asking price. The Evaluation Committee assessed the 34 applications as a combined bid in accordance with the tender evaluation plan. This involved assessing the combined bid against the following criteria:

- Ability to provide more water in a catchment where scientific evidence indicates that water needs to be recovered for the environment;
- Capacity to deliver the water for an environmental benefit; and
- Price including offer prices, transaction costs, and management costs.

Australian Government

Commonwealth Environmental Water Office

Our reference: 2012/05937

Senator the Hon Bill Heffernan
Chair, Senate Rural and Regional Affairs and Transport References Committee
Australian Senate
P.O. Box 6100
Parliament House, Canberra, ACT 2600

Dear Senator Heffernan

I refer to your letter of 4 September requesting on behalf of the Rural and Regional Affairs and Transport References Committee, a summary of documentation that the Commonwealth Environmental Water Office provided to the Committee in relation to its inquiry into the Management of the Murray-Darling Basin.

Please find the requested summary enclosed with this letter. It is arranged by category of document, specifically annual planning documents, a summary of all Commonwealth environmental water use to 30 April 2012, and annual reporting on Commonwealth environmental water use.

Questions on Notice numbers 12, 13, 14, 16 and 20 refer to these documents.

Yours sincerely

David Parker

Commonwealth Environmental Water Holder

20 September 2012

The Senate Rural and Regional Affairs and Transport References Committee Inquiry into the management of the Murray–Darling Basin – summary of attachments provided by the Commonwealth Environmental Water Office

The Commonwealth Environmental Water Office (the Office) provided a number of attachments in response to Questions on Notice (QoN) arising from the Commonwealth Environmental Water Holder's appearance at the public hearings of the Inquiry into the management of the Murray–Darling Basin, held by the Senate Rural and Regional Affairs and Transport References Committee (the Committee) on 24 April 2012.

To assist the Committee to consider these attachments, a summary of the documents is provided below.

Commonwealth environmental water use options documents (Attachment A to QoN 12 & 13)

Documents detailing the environmental water use options available for the year and an assessment of these options have been prepared for each water year since the Commonwealth had environmental water available for use.

These documents record the Office's assessment of proposed watering options against five criteria: the ecological significance of the asset(s), the expected ecological outcomes, the risks associated with the watering actions, the long-term sustainability of the asset(s), and the cost effectiveness and operational feasibility of the actions.

The documents have become progressively more detailed as the volume of water available for use has increased. By 2010-11, in addition to an assessment of watering options against the criteria, they also included a description of the catchment and its environmental assets, the long-term and annual watering objectives, current catchment condition and outlook, environmental water availability, and water delivery arrangements (including constraints and risk management).

The water use options presented were developed in consultation with a range of stakeholders including Basin state government departments and agencies, river operators, catchment management authorities, local environmental watering advisory groups, the Murray–Darling Basin Authority, and the Commonwealth Environmental Water Scientific Advisory Panel.

See: *Assessment of proposed watering sites against 2008–09 criteria for prioritisation;*
Assessment of proposed watering actions in 2009–10
Site Assessment for 2010-11 environmental watering actions
Monitoring & evaluation for 2010-11 water use proposals in regulated rivers
Water Use Strategy 2011-12 Border Rivers Regulated System
Water Use Strategy 2011-12 Gwydir River Catchment
Water Use Strategy 2011-12 Lachlan River Catchment
Water Use Strategy 2011-12 Lower Darling River Catchment
Water Use Strategy 2011-12 Lower Murray River Catchment
Water Use Strategy 2011-12 Macquarie River Catchment
Water Use Strategy 2011-12 Mid-Murray River Catchment
Water Use Strategy 2011-12 Namoi River Catchment
Water Use Strategy 2011-12 Northern Victoria Rivers

Environmental water plans prepared by other environmental water holders, state and regional bodies including catchment management authorities (Attachment B to QoN 12 & 13)

Victorian Catchment Management Authorities

Prior to the establishment of the Victorian Environmental Water Holder, annual watering plans were prepared by Victorian catchment management authorities. These plans mostly focus on documenting how environmental water available for use within a catchment will be managed. They describe the use of bulk entitlements available for environmental water management and consider risks, constraints, environmental need, scenario planning and options for environmental water delivery. They also provide a review of the previous year's operations. The plan for the Lower Broken Creek was prepared specifically with respect to the impact of the Northern Victoria Irrigation Renewal Project on the hydrology and ecology of the system.

See: *Lower Broken Creek and Nine Mile Creek Environmental Watering Plan May 2010*
2009–10 Annual Watering Plan Loddon River System
2010–11 Annual Watering Plan Loddon River System
Environmental Watering Plan for the Campaspe River Downstream of Lake Eppalock
2010–11 Annual Watering Plan for the Campaspe River Downstream of Lake Eppalock

The Victorian Environmental Water Holder (VEWH) Seasonal Watering Plan

The 2011–12 Seasonal Watering Plan is the first produced by the VEWH. As described in the introduction to the plan, it "considers how to coordinate delivery of water from the Victorian Water Holdings with environmental water managed by others, including the partners in the Living Murray program and the CEWH." The plan proposes seasonal priorities for environmental water use and provides the scientific data and rationale underpinning these priorities. Expected environmental water use in the 2011–12 water year is described under a range of different planning scenarios. Schedules for specific catchments are attached to the plan.

See: *VEWH Seasonal Watering Plan 2011–12*
VEWH Loddon System Seasonal Watering Plan 2011–12
VEWH Goulburn System Seasonal Watering Plan 2011–12
VEWH Campaspe System Seasonal Watering Plan 2011–12
VEWH Broken System Seasonal Watering Plan 2011–12
VEWH Northern Wetlands and Floodplains Seasonal Watering Plan 2011–12

The Living Murray

The Living Murray's (TLM) annual environmental watering plans, from 2008–09 to 2011–12, outline the decision framework for prioritising the use of TLM water for each water year. In particular, these plans provide an overview of the River Murray system, review watering activities for the previous water year and provide a summary of TLM's portfolio of environmental water. The documents also outline TLM's planning framework for the upcoming water year and detail the prioritisation process for determining environmental water use.

See: *The Living Murray Annual Environmental Watering Plan 2008–09*
The Living Murray Annual Environmental Watering Plan 2009–10
The Living Murray Annual Environmental Watering Plan 2010–11
The Living Murray Annual Environmental Watering Plan 2011–12

New South Wales

The New South Wales (NSW) Office of Environment and Heritage (formerly Department of Environment, Climate Change and Water, and Department of Environment and Climate Change) develops annual environmental watering plans for all catchments that are RiverBank target valleys (i.e. the Gwydir, Macquarie, Lachlan and Murrumbidgee) as well as for the NSW Murray. Based on advice received from Environmental Water Advisory Groups, these documents identify watering priorities for the year under different climatic conditions and various water availability scenarios.

See: *Environmental Watering Plan for the Lachlan Valley 2010–11*
Environmental Watering Plan for the Lachlan Valley 2011–12
Environmental Watering Plan for the Macquarie Valley 2008–09
Environmental Watering Plan for the Macquarie Valley 2009–10
Environmental Watering Plan for the Macquarie Valley 2010–11
Environmental Watering Plan for the Macquarie Valley 2011–12
Environmental Watering Plan for the Murrumbidgee Valley 2008–09
Interim Environmental Watering Plan for the Murrumbidgee Valley 2009–10
Environmental Watering Plan for the Murrumbidgee Valley 2010–11
Environmental Watering Plan for the Murrumbidgee Valley 2011–12
Gwydir Environmental Watering Plan 2010–11 Water Year
Gwydir Environmental Watering Plan 2011–12 Water Year
Interim Environmental Watering Plan for the Murray Valley 2009–10
Adaptive Environmental Water Plan for the Murray Valley 2010–11
Murray and Lower Darling Valleys Annual Environmental Water Plan 2011–12

Adaptive environmental water management plans have been developed which provide a link between environmental water management and catchment action plans. They identify environmental assets and values, assess water use priorities, and outline the water and land management issues that need to be addressed to support environmental values. To date, environmental water management plans have been developed for the Macquarie Marshes and the Gwydir Wetlands.

See: *Gwydir Wetlands Adaptive Environmental Management Plan*
Macquarie Marshes Adaptive Environmental Management Plan

Commonwealth Environmental Water Delivery Documents (Attachment C to QoN 12 & 13)

Environmental water delivery documents were prepared by the Commonwealth Environmental Water Office to provide information on environmental assets and potential water use options across selected catchments and assets of the Murray-Darling Basin. A key aim of these documents was to prepare scalable water-use strategies that maximise the efficiency of water use and anticipate different climatic circumstances. Operational opportunities and constraints have been identified and delivery options prepared. This has been done in a manner that will assist the community and environmental water managers in considering the issues and developing multi-year water-use plans.

Each document collates current knowledge of the operational and administrative arrangements for the delivery of environmental water to the particular region it focuses on and provides an overview of the environmental assets and potential environmental water use options for the catchment. This work has been undertaken to support the efficient and effective use of environmental water and to engage communities on how this may best be achieved.

This aims to encourage community discussion and feedback on the use of environmental water, to identify future opportunities and recognise operational risks and constraints.

See: *Environmental Water Delivery Edward Wakool System*
Environmental Water Delivery Lower Goulburn River
Environmental Water Delivery Yarrawonga to Tocumwal and Barmah-Millewa
Environmental Water Delivery Loddon River
Environmental Water Delivery Campaspe River
Environmental Water Delivery Lower Broken Creek
Environmental Water Delivery Murrumbidgee Valley
Environmental Water Delivery Lachlan River
Environmental Water Delivery Koondrook-Perricoota Forest
Environmental Water Delivery The River Murray - Coorong, Lower Lakes and Main Channel below Lock 1
Environmental Water Delivery Gunbower Forest
Environmental Water Delivery Namoi River

Record of Commonwealth environmental water use 2008–09 to 2011–12 (Attachment A to QoN 14, 16 & 18)

A data record is available for all Commonwealth environmental water use from 2008–09 to the 2011–12 water year (as at 30 April 2012). Each environmental watering action undertaken using Commonwealth environmental water has been listed in order of financial year. The document also provides details regarding the catchment, asset targeted for environmental watering and volumes delivered (including those delivered by delivery partners such as State agencies).

The information contained in this document is also available in both graphical and tabular format on the Commonwealth environmental water website. The table provided to the Committee provides further information for the public and researchers looking to break down environmental water use for each asset by water year.

See: *Commonwealth Environmental Water Use as at 30 April 2012*

Commonwealth Environmental Water Holder (CEWH) Annual Reports (Attachment B to QoN 14, 16 & 18):

Section 114 of the *Water Act 2007 (Cwlth)* requires that an annual report be given to the Minister, by the CEWH, concerning the CEWH's operations during a water year. This report must contain the following:

a) achievements against the objectives of the environmental watering plan;
b) management of the Environmental Water Holdings Special Account;
c) all directions that the Secretary of the Department, or the Minister, gave the Commonwealth Environmental Water Holder during the year.

The report is tabled in parliament and a copy given to the relevant State Minister for each of the Basin States.

In addition to this required information the CEWH's annual report contains detailed descriptions of environmental water use throughout the year and the outcomes this has achieved. The annual reports also provide information about how environmental water is managed, the role of advisory committees and data regarding water availability, carryover,

trade and use. Finally, case studies for selected environmental assets, updates on progress of key stakeholder issues and an outlook for the upcoming water year are also provided.

See: *Annual Report of the Commonwealth Environmental Water Holder 2008-09*
Annual Report of the Commonwealth Environmental Water Holder 2009-10
Annual Report Commonwealth Environmental Water 2010-11

Commonwealth Environmental Water Outcomes Reports (Attachment C to QoN 14, 16 & 18)

Commonwealth Environmental Water Outcomes Reports have been produced for the 2008-09, 2009-10 and 2010-11 water years. The Outcomes Reports are produced to complement the information contained in the Annual Reports. In particular, Outcomes Reports are prepared to provide information on the preliminary outcomes of environmental watering during a water year. This is because a complete picture of environmental outcomes will take time to emerge and long term outcomes can take months and sometimes years to become apparent. Each Outcomes Report provides information on the early results of the use of Commonwealth environmental water in a particular water year and revisits some key areas where water was delivered in earlier years. They are designed to be an easily accessible and illustrative tool for the public to use in understanding environmental watering and the work of the CEWO.

See: *Commonwealth Environmental Water 2008-09 Outcomes Report*
Commonwealth Environmental Water 2009-10 Outcomes Report
Commonwealth Environmental Water 2010-11 Outcomes Report

SENATE RURAL AND REGIONAL AFFAIRS AND TRANSPORT REFERENCES COMMITTEE

Inquiry into the management of the Murray Darling Basin

Public Hearing Tuesday, 24 April 2012

Questions Taken on Notice – Murray-Darling Basin Authority

1. HANSARD, PG 76-77

CHAIR: Perhaps I should give you a copy of the document. The Culgoa has a mean annual flow—sorry to burden you with this—of 1,230 or 1,270 gigs. It has on-farm licence storages off river of 1,500 gigs. It has a variability of 835 per cent flow. In fact, up until 2007-08, 25 per cent of the flow since 1921 occurred in four years. We have a proposition—which I presume has now been ticked off—for Cubbie Station to have a 500-odd-gig overland water licence. They have heightened the weir at Cubbie on the Culgoa, so there is an automatic harvest. To get a pulse down the river, which they sometimes do, they sent 50,000 megs down there two or three years ago and it disappeared, because there is an automatic harvest arrangement into Cubbie. I do not know whether you have your heads around this or not, but they wanted A and B licences a few years before that, but there were issues under the ROP, which was advised by Leith Boully, who was a beneficiary immediately downstream where they cut the fence and used to grow cotton for it, and put the cheque in the bank—that is, Cubbie Station; she had no storage of her own. Under the environmental flow arrangements, in the recent drought when these pulses were sent down, places like Brenda Station downstream could not track them because they did not have the resources to know what happened to them.

Cubbie tried to throw me off there for trespassing one day. They have several hundred gigalitres of storage, and downstream Ballandool had 100 gigs of storage, but they used not to get the water because it was all intercepted upstream; it was first in, best dressed with the environmental plan. The largest flood plain in the Murray-Darling Basin is downstream, and peculiar to that system—not peculiar to all systems—when the water leaves the river and goes out on the flood plain and is captured by the likes of Cubbie, that water would, if it were not captured, go back into the system and go down to Brenda.

...

CHAIR: ... But how in God's name do you manage the system when you allow the Queensland government to issue a licence which is not sustainable? And, before it was issued, the receivers of Cubbie Station—which has now had a good cotton crop and might get through—were offering to sell it back before they even bought it.

Ms Sweripik: With all due respect, we cannot interfere in the licensing framework. The Water Act does not give us the capacity to take over the licensing framework of the states. What it does give us the capacity to do is set what we think is a sustainable diversion limit. Under the Basin Plan, we believe all of those should be treated as diversions, and we have set a sustainable diversion limit. Now we need the Queensland government to work with us to meet that

diversion limit, if you like, and they will be the ones who decide what the implications are for the licenses that they have issued. Part of the whole adjustment is bringing in the Commonwealth to purchase licences which are beyond that sustainable diversion limit. I am unaware of the specific example that you are talking about. I am happy to take it on notice to look into the issue. ...

2. HANSARD, PG 79

Senator HANSON-YOUNG: On what basis? You have said to me that there is a variety of figures you have been able to put through the model. You will not go to 4,000 gigalitres. I say that that is just stubborn. I do not think that there is particularly any other reason aside from that. In addition to that, you are saying you could put more water down but you cannot be bothered modelling it.

Dr Dickson: No, that is not what I said.

Senator HANSON-YOUNG: What is the rationale for $2,750?

Dr Dickson: We have explained this all in our documents but I will go through it step-by-step if you like.

Senator HANSON-YOUNG: No, I just want a simple, one-line answer.

Dr Dickson: A one-line answer.

CHAIR: Do you want to table the answer to the question?

Dr Dickson: Yes, sure. We can provide you—

Senator HANSON-YOUNG: Is there a one-line answer?

Dr Dickson: There is probably not a one-line answer. It is probably about a 10-point answer, but we will give you something like that in simple terms.

3. HANSARD, PG 81

Senator HANSON-YOUNG: I was going to ask Dr Dickson to take on notice why that response is inconsistent with the National Water Commission's position on the connectivity between groundwater and surface water.

Senator NASH: That is a fair question.

Dr Dickson: Can I just say, in relation to groundwater, we have certainly heard a lot of the concerns. It is a very complex area and we would acknowledge it is difficult to find your way through it on the information we have provided. What we have already started to do, now that the consultation period is finished, is work with a lot of the groundwater experts who are in fact the experts who did a lot of the original modelling and who have also done the peer reviews of all the methods that we have used. We are keen to work with the groundwater experts in

looking at what sorts of changes they think may be needed according to their assessment. We have already heard from CSIRO in their submission about some of the issues they think require further attention. So we had a plan, we had a consultation period and now we are doing further analysis. We have the opportunity right now to work it through.

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ANSWER

A brief rationale for the2750GL reduction in long term average surface water use is as follows:

- Hydrologic modelling and related scientific and socio-economic assessment by MDBA suggests that a Sustainable Diversion Limit (SDL) represented by a reduction in current diversions of 2750GL per year on a long term average is sufficient to achieve most of the key ecological targets and objectives set by the Authority, while also ensuring that social and economic impacts on the Basin community are manageable.

- MDBA also conducted sensitivity testing of 2400GL and 3200GL reduction scenarios. The analysis showed a number of key ecological targets and objectives of the proposed Basin Plan might not be achievable with the 2400 GL/y scenario, whereas the 3200 GL/y achieved some marginal improvements over the 2,800 GL/y scenario, but not sufficient to justify the potential additional socioeconomic impacts. In addition, flow delivery constraints such as roads, bridges, or rules to avoid flooding private property, limit the capacity to actively use extra environmental water available under the 3200 GL/y scenario.

- Under the 2750GL reduction, some of the higher flow targets also cannot currently be achieved due to the existence of flow delivery constraints. MDBA considers there is potential to improve the achievement of environmental flow targets through removing or modifying some of these constraints. This will require investigation, consultation with affected parties, approval and (in some cases) funding from governments. MDBA does not have the legal authority to address constraints, which are generally under state control, however we are working proactively with our partner governments to scope this work.

- MDBA views the 2750GL as a starting point for an adaptive process. The proposed 2015 review of SDLs provides an opportunity to take into account any new information about more efficient river management and ways of achieving better environmental outcomes. We expect this work will incorporate outcomes from the review by Basin governments of river operating rules, any proposals to address constraints, any efficiencies gained through environmental works and measures, as well as any new science or other knowledge.

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ANSWER

The MDBA are aware of the position of the National Water Commission that states: Unless otherwise established, it should be assumed that all surface and groundwater systems are connected and that the eventual impact of groundwater pumping on surface water flow may be as high as 100%.

The MDBA considered this position in determining the groundwater SDLs in the draft Basin Plan by considering the potential risk of groundwater extraction on surface water resources in all groundwater SDL areas.

In response to the submissions and consultation associated with the draft Basin Plan released on 28 November 2011, the MDBA carried out further investigations on particular matters associated with groundwater, including the connectivity between surface and groundwater resources. This work included issues raised in individual submissions and also the convening of

a review workshop of groundwater professionals to review the MDBA groundwater methodology and discuss the applicability of the methods used to determine the proposed groundwater SDLs.

In response to the additional work, the MDBA decided to change the proposed volume of the total of groundwater SDLs by 1,156 GL from 4340 GL to 3,184 GL in the revised draft of the Basin Plan released on 28 May 2012. This change is based on uncertainties due to data quality, reducing the risk of future impacts on surface water flows resulting from groundwater pumping and a change in the SDL for the deep groundwater resource of the Gunnedah-Oxley Basin.

Further information regarding the groundwater revisions can be found in the proposed Basin Plan consultation report at http://www.mdba.gov.au/proposed-basin-plan/consultation-report.