



COMMONWEALTH OF AUSTRALIA

# Official Committee Hansard

## SENATE

RURAL AND REGIONAL AFFAIRS AND TRANSPORT  
REFERENCES COMMITTEE

**Reference: Water policy initiatives**

WEDNESDAY, 16 AUGUST 2006

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## SENATE

### RURAL AND REGIONAL AFFAIRS AND TRANSPORT REFERENCES COMMITTEE

Wednesday, 16 August 2006

**Members:** Senator Siewert (*Chair*), Senator Heffernan (*Deputy Chair*), Senators McEwen, Nash, O'Brien and Sterle

**Participating members:** Senators Abetz, Adams, Allison, Bartlett, Bernardi, Boswell, Brandis, Bob Brown, George Campbell, Carr, Chapman, Colbeck, Coonan, Crossin, Eggleston, Chris Evans, Faulkner, Ferguson, Ferris, Fielding, Hutchins, Joyce, Ludwig, Lightfoot, Lundy, Ian Macdonald, Sandy Macdonald, Mason, McGauran, McLucas, Milne, Murray, Nettle, Payne, Polley, Robert Ray, Santoro, Stephens, Trood, Watson and Webber

**Senators in attendance:** Senators Heffernan, McEwen, Nash, Siewert, Stephens and Sterle

**Terms of reference for the inquiry:**

To inquire into and report on:

The impact on rural water usage of recent water policy initiatives and the possible role for Commonwealth agencies, with particular reference to:

- a. the development of water property titles;
- b. methods of protection for rivers and aquifers;
- c. farming innovation;
- d. monitoring drought and predicting farm water demand; and
- e. the implications for agriculture of predicted changes in patterns of precipitation and temperature.

**WITNESSES**

**FESSEY, Mr Edward Michael, Chair, Brewarrina Branch, New South Wales Farmers Association; and Member, Lower Balonne Floodplain Graziers Association ..... 2**

**GILL, Dr James Ian, Chief Executive Officer, Water Corporation of Western Australia ..... 19**

**TREWEEKE, Mr Rory Hamline, Chairman, Lower Balonne Floodplain Graziers Association..... 2**



**Committee met at 4.32 pm**

**CHAIR (Senator Siewert)**—I declare open this public hearing of the Senate Rural and Regional Affairs and Transport References Committee. This committee is hearing evidence on the committee's inquiry into the impact on rural water usage of recent water policy initiatives. This is a public hearing and a *Hansard* transcript of the proceedings is being made. The committee has authorised the recording, broadcasting and rebroadcasting of these procedures in accordance with the rules contained in the order of the Senate of 23 August 1990.

Before the committee starts receiving evidence, I place on record that all witnesses are protected by parliamentary privilege with respect to submissions made to the committee and evidence given. I remind witnesses that parliamentary privilege does not extend to statements repeated outside of the committee's proceedings. Any act by any person which may disadvantage a witness on account of evidence given by him or her before the Senate or a Senate committee is a breach of privilege.

While the committee prefers to hear all evidence in public, the committee may consider a request to hear evidence in camera and may determine that certain evidence should in fact be heard in camera. If the committee takes confidential evidence it may publish or present all or part of the evidence to the Senate at a later date. The Senate also has power to order production and/or publication of confidential evidence. The committee would consult the person whose evidence the committee is considering before publishing such evidence.

[4.34 pm]

**FESSEY, Mr Edward Michael, Chair, Brewarrina Branch, New South Wales Farmers Association; and Member, Lower Balonne Floodplain Graziers Association**

**TREWEEKE, Mr Rory Hamline, Chairman, Lower Balonne Floodplain Graziers Association**

*Evidence from Mr Treweeke was taken via teleconference—*

**CHAIR**—Welcome. Would you like to make an opening statement?

**Mr Treweeke**—Yes. Firstly, I would like to add that I am a landholder on the Narran River flood plain in northern New South Wales. I would like to follow up on the written submission that we made to the committee in November by making a few comments on some of the evidence that was given to you in Toowoomba the week before last and also to accentuate some of the matters that we raised in the material we sent to you in November.

Our association has been fighting this battle in excess of 20 years. We believe that the Queensland government has erred in its water management policy in the area of allocating licences and extraction rights in the Lower Balonne flood plain. I would like to support that by reference to the Cullen report, which was commissioned by the Queensland government and which reported to the Queensland government in 2002. We have stated we believe that that report was misused by the government. The impacts that Cullen was clearly alluding to in the long-term degradation of the flood plain because of the then current level of development was not recognised and acted on by the appropriate Queensland government agencies.

Professor Cullen clearly indicated, and his committee backed him, that the long-term degradation might take as long as 40 years, but certainly the system had not been tested by the level of development that existed at that time. In private conversations with Professor Cullen he has stated to me that he believes that system to be at least 50 per cent overallocated. Comments were made by the representatives of Cubbie and Smartrivers that the scientific research they commissioned and funded shows no degradation to the stretches of the river from which they sampled. I cannot comment on the quality of the work that has been done. All I will say is that there is no linkage whatsoever to the flood plain and that is an essential part of the whole system. The river channels cannot be divorced from the flood plain.

A comparison was made by John Grabbe of the 1981 and the 2004 flows in the system. I suggest that the comparison is an interesting one in that in 1981 there was very little development on the Lower Balonne, although the Beardmore Dam had been constructed and the St George irrigation scheme was partly operational. Clearly the figures show that in 2004 there was a reduction in the peak flow at Angledool, where I reside, of 37 per cent and a drop of 46 per cent in the volume. Grabbe talked about antecedent conditions. In 1981, after the 1980 drought, in the six months prior there was 215 millimetres of rain recorded at Angledool. I am an official voluntary rainfall reader for the Bureau of Meteorology. Our records are in the 121st

year this year. The antecedent rainfall for the same period for the 2004 event was 307 millimetres, so it was slightly wetter.

Basically that shows the impact of development in the Lower Balonne is fundamentally as was predicted by the Queensland Department of Natural Resources and Water in the modelling data that they presented to the Cullen review and in the modelling data subsequently done by the New South Wales Department of Natural Resources. To expand on that, the New South Wales department did some figuring, looking at all flood events from 1922 to 1995 and classified into major, large, medium, small and minor. Fundamentally those figures show there will be a reduction in at least half the numbers of those events in their respective categories by the time they reach the border.

John Grabbe also alluded to the area of water in the Narran Lakes as a result of the respective 1981 and 2004 flows. As I said previously, the 1981 flood produced about 1,000 acres of flooding on my property. The 2004 event produced absolutely nothing; it did not even reach minor flood height. Subsequently, in March, we had a major rainfall event that led that March total to being the second highest in the then 118 years of records. The water from that reached moderate flood height for a very brief period, and added substantially to whatever water was currently then in the Narran Lakes from the first flow event of that year. That had a big impact. The amount of water that came from the first flood into the Narran Lakes was very little.

I also take issue with some comments that Councillor Buchan made to the effect that compensation is owed to the flood plain landholders, that we are basically irrelevant. I would suggest there are about 1.2 million hectares of flood plain affected by this water development, and also an irrigation community at Bourke—some 10½ thousand hectares that has historically relied upon some 20 to 25 per cent of their water source being provided from the Culgoa River and the Bokhara River that feeds into it and ultimately into the Barwon from the Condamine-Balonne. The gross production from that vast flood plain area—some of which is in Queensland, the majority of it in New South Wales—would equal or surpass the economic production from Cubbie that was quoted in their submission.

I also take issue with John Grabbe as to the accuracy of his stated ability to measure the extractions on the flood plain and even into storages. The measurement of vast quantities of fluids moving at relatively high speed is a very inexact science in those circumstances, particularly in relation to monitoring what happens in a vast area of flood plain and in big channels that divert the water off it.

There was comment made that there is community approval for what has gone on with regard to the processes up there. From my personal experience of involvement for some 20-odd years, any point of view that has been contrary to that which was pro development to the ultimate extreme was derided, ignored or refused to be accepted. It happened to a large extent with the Lower Balonne Advisory Committee. It certainly happened within the community reference group for the water resource plan. The point that we made and which the New South Wales government made very strongly—and the New South Wales government submission has been included as part of ours—was that consultation may have taken place and can be shown to have taken place, but the actual information that came out of it, if it was contrary to somebody's preconceived idea, was totally ignored.

The last point I would like to make, coming back to the submission we put into the draft water resource plan, is that we fail to see how that plan and the resource operations plan that hangs off it are in sync with section 10(2) of the Queensland Water Act of 2000, which specifically states:

... *sustainable management* is management that—

(a) allows for the allocation and use of water for the physical, economic and social well being of the people of Queensland and Australia—

and I emphasise the inclusion of that word, Australia, in the clause—

within limits that can be sustained indefinitely; and

(b) protects the biological diversity and health of natural ecosystems ...

What has gone on there is fundamentally in breach of the principles of ecologically sustainable development. Thank you.

**CHAIR**—Mr Fessey, you have some further comments to make, don't you?

**Mr Fessey**—Yes; I will keep them brief. Thank you for the opportunity to come here today. This issue has caused immense grief to our family and immense grief to about 74 other families on the flood plain in New South Wales. There are seven in Queensland who do not harvest water—they actually still graze—and it has caused enormous grief to those families; so much so that one fellow is actually going to sell up and move out. Basically the unsustainable and irresponsible overallocation of water in the Lower Balonne has had a profound effect on many families. My submission details the cost of providing alternate water supplies and the average loss of income—grossed up over a 10-year period to some \$450,000. The alternate water system cost us \$104,000 to replace and we are still paying that off, with no subsidy from the government. I know of 27 other businesses which have had similar problems. This is largely due to the reduced income and reduced river flows in the Lower Balonne. My submission also details the loss of vegetation, in particular the deaths of vast areas of coolibahs of all ages.

My submission also details the effect of change in river flows past the Weilmoringle community, where many Muruwari people reside. The flows are smaller, less frequent flows and of shorter duration. This has deeply disappointed and disillusioned these people. The coming of the river creates great excitement as they know that they will soon experience the renewal of their landscape. Although the flood plain graziers and Aboriginals have different expectations for and outcomes from water on the flood plain, we share a common bond that we agree that the process by which this has occurred is deeply flawed. The colourful history of the process is well-documented in the Betts' and the Lower Balonne submissions, and also in Rory's recent submission. This is highlighted by the flippant, nonchalant and at times dismissive attitude that successive Queensland natural resource ministers have shown to due process—the appointment of a chair who will enjoy significant personal gain from the process; the complete ignorance of a very strong and detailed submission by the New South Wales state government in 2004; and the very select use of Peter Cullen's scientific report to endorse their plan whilst ignoring the clear warnings that significant ecological problems will occur. I do not know whether you have seen the photos of those trees showing the stresses which were warned about—

**CHAIR**—They have just been circulated.

**Mr Fessey**—There is some 4,000 acres on my property that is affected similarly. The New South Wales Department of Natural Resources has experienced difficulties in getting Queensland DNR to model a full range of scenarios to stress-test the allocation model. The Queensland DNR say that they cannot afford to and will not do it until the resource operations plan is signed off on.

We believe that the concept of overland flow is too variable to apply an entitlement to, as every flood occurs under different seasonal and changed landscape conditions. The application of overland flow entitlement on one section of the flood plain to the mutual exclusion of the rest of the flood plain does not recognise the pre-existing rights or common-law right of overland flow for the whole flood plain. Further, we find it incredulous that these entitlements in overland flow are going to be granted license status with the stroke of a pen—not by a minister of the Crown but by a deputy director-general. This turns a very loose concept into a compensatable right which could cost all Australian taxpayers hundreds of millions of dollars. It is well worth remembering that all of this comes about as a result of a chair who has a very confidential arrangement with the largest irrigator.

On the resource operations process, all non-irrigator interests bar one have withdrawn from the process over the non-independent chair, the past history of lack of good faith and the very tight terms of reference. This sends a very clear signal to flood plain graziers, green groups, Aboriginal communities, the New South Wales government and local government representatives that they are only there to tick the community consultation box. Compliance measures, such as the visual checking of pumping and extraction sites, are virtually non-existent in the Lower Balonne. In December last year a small flow was passing down the system with the assistance of some water lent by irrigators to ensure an end-of-system flow. Some 700 megalitres disappeared out of the Narran River on 24 December 2005. This represents one day's consumption for the entire Brisbane-Gold Coast region. To this day, nothing has been done. The flow in the Narran River fell short of the Narran Lakes by a couple of kilometres. There is a clear need for a culture change within the Queensland government and department of natural resources to reflect a balanced due process, integrity, duty of care and corporate and social responsibility to all stakeholders. The transfer of water out of the Brewarrina Shire has seen a loss of 1,100 people out of the shire since 1950. In other words, the development up in the Balonne Shire has not produced any more jobs for people in terms of the number of people coming into the shire. There has been a static population of 6,500 people since 1950 to the last census in 2001.

Looking to the future, there is no place in Australia for disunity over water. Twelve out of the 53 submissions to this Senate inquiry have been from those directly and adversely affected by exorbitant water allocations in the Lower Balonne. They are all out of my area. The irrigators blame the drought, but the 1940s was drier for a longer period over the catchment and yet the Lower Balonne experienced a number of beneficial floodings over that time. The stolen flood of 2004 and other flows have been dramatically reduced by high-level diversions at low flows.

Essentially there are three key goals we need to achieve in the Lower Balonne: we need an annual volumetric cap—at the present there is none; we need a complete dismantling of the overland flow and bunding concept; and we need reductions in the extractions of critical flows at

low levels. We believe our rivers are the arteries and icons along which, through the extremes of seasons, occur the unique and diverse landscape Australia is so widely recognised for. We can only sustain the levels of development and live within the limits of our landscape. We must allocate our water not solely to the highest bidder but to a range of bidders to ensure we retain a diversity of production and industry as well as a diversity of natural systems. As Senator Heffernan commented, this has been a corrupted process. John Anderson said there was a need for an honest broker. Lastly, Peter Cullen said that by the time you get the science right, the patient is dead.

**CHAIR**—Thank you very much.

**Senator HEFFERNAN**—Thank you very much for that, Mr Fessey. In the current political climate in Queensland during an election you can be sure of one thing: neither the government nor the opposition will have the guts or the gumption to mention anything about this dreadful process that has gone on down there.

Firstly, can I correct a couple of things that were incorrectly stated. Rory, you may have picked up on them. It was stated during the last hearing in Toowoomba that flows were attempted to get through to people who are carting watering further down the river.

**CHAIR**—Senator Heffernan, who stated that?

**Senator HEFFERNAN**—Mr Grabbe. There were three attempts, were there, Mr Fessey?

**Mr Fessey**—Yes, there were three attempts. It is a unique flow. I have been trying to get some information out of St George today. One of the things we fall short on all the time is actually getting decent information. It is interesting that in their last correspondence the New South Wales Department of Natural Resources omitted to give a gauge reading from Brenda, which is downstream from Cubbie Station. The Balonne River had 112,000 megalitres come out of St George and 46,000 at Whyenbah. It basically splits the same way. But there is no reading at all at Brenda Station. We find that incredible.

**Senator HEFFERNAN**—Would it be a fair summary to say that, in the three attempts that have been made to run water in the last 12 months to people who are carting water, for most of them over the border it failed? The Culgoa ran, didn't it?

**Mr Fessey**—The Culgoa ran through and I believe the Bokhara ran through with the assistance of some local rain—there is some run-off country there. At the bottom end it fell short about seven kilometres, from my memory. But the quality of the water and the period of time it actually ran for down the bottom end did not allow them long enough to actually fill the groundwater tanks. These groundwater tanks are for stock and domestic use and are their only sources of water in the bottom end of the shire, because there is no bore water there. One family has been out of water for two years and another family, who run a homestay—they had 2,000 people through their homestay last year—had to cart water for 18 months. I think that is an appalling state of affairs.

**Senator HEFFERNAN**—Would it be fair to say that maybe, given that in the last hearing in Lightning Ridge we were told by the Queensland department that they simply did not have the

resources or the wherewithal to work out what is going on, it was because people were given permission to extract too early?

**Mr Fessey**—I think there are a couple of key issues here. Rory, you might like to come in in a sec. Essentially the irrigators are allowed to pump after 735 megalitres per day. Once it gets to that trigger, it makes it very difficult. That figure was determined by a fellow called Leon Leech, who wanted to work out how much water there was before it actually started to break out of the main rivers. So once you get to 735 megalitres a day, they lose it out of the main stream, and they say, ‘Why lose it? We’ll just pump it out.’

For it to transit the whole system, from St George to the bottom end of the river, end of system flows, it takes 40 days. In hot weather and dry conditions we need to have a continuous flow for 40 days. It just didn’t happen, because they were able to access their pumping things and it kept interrupting the flow all the time. There is no monitoring of these pump sites. It is all mates’ rates—you come in and tell them afterwards. We did ask the Queensland DNR for the 2004 flow. We should have real-time updates on these pumps because of the volume of flow that they can actually pump. It is incredible.

**Senator NASH**—How do they measure how much they pump out?

**Mr Fessey**—They do have measurements on their pumps, but on the overland flow they have nothing. They are just gaps in the wall and away they go.

**Senator NASH**—How do they know when to stop?

**Mr Fessey**—They don’t.

**Senator HEFFERNAN**—It is completely out of control.

**Senator NASH**—I am asking the question so we can get it clear—that’s all.

**Mr Fessey**—Essentially what happens is they have meters on the pump sites or on the extraction sites. In the case of Cubbie there is just a big open wall there. Depending on the height of the wall, they apparently gauge it, but I am very dubious as to the mathematics of all this.

**Senator NASH**—So it is just left up to them, and their determination of when they should do it.

**Mr Fessey**—Essentially, yes. I know of one DNR representative who has been down there on the day before they were starting to pump, and they found a couple of blokes who had already opened their sluice gates and let it go. That was in the 2004 event. The compliance and the cooperation from up there are almost nil. Since the 2004 event they have realised they have to lift their game.

**Senator HEFFERNAN**—I am just trying to correct some things that were put on the record up there. I asked up there, ‘In the 2004 event you said you got about half the event.’ What I should have said is half the event in the Culgoa. I did say to him that I would find where he said it. He said it in the *Australian* newspaper on Friday 26 March, 2004. He said he didn’t know

exactly what proportion of the Culgoa's real flow had been diverted to Cubbie but 'probably 50 per cent is not a bad figure'. That is the metering system they use. They have no idea.

I turn to the other correction I would like to make. There was an understanding by you guys, Rory, and your committee, that the chairing of the management plan for the implementation of the river plan would be by what you considered to be an independent chair. That was a fair assumption on your part. Some guidance was given to you by the state government that there should be an independent chair.

**Mr Treweeke**—We understood that that would be the case. Minister Knowles, who was the relevant minister in New South Wales at the time, made representation to his Queensland counterpart. My understanding is he suggested that they would jointly suggest a chair who had experience in water but no relationship to either New South Wales or Queensland. ‘

**Senator HEFFERNAN**—The present chair—whom I had a very pleasant discussion with this morning at the Senate door—is a potential major beneficiary of a process that is designed to legitimise, authorise and license past earthworks which have been used to develop overland flow extraction—for which the law was silent—in a manner which will allocate a licence to all the people who have the earthworks, including the chairman or the chairperson's own property, on which presently a crop grows which is by gratis of the confidential financial arrangement with Cubbie Station. As I often say, this is the only place in the world I know where you can grow a cotton crop with a blunt axe, a sledgehammer and no water licence. It would be fair to say that the bulk of cotton grown on Cubbie is grown with water that is not licensed. Would that be a fair statement?

**Mr Treweeke**—Senator Heffernan, I honestly could not comment on that. I know they have a certain amount of licences but I don't know what their claimed overland entitlement is.

**Senator HEFFERNAN**—From *The 7.30 Report* in 2004 and out of the manager's mouth, it seems that 135,000 megalitres was the extraction on Cubbie Station. Poor old Ballandool is downstream. I am at a loss to understand the equity of how you can harvest water with earthworks, which are unlicensed, in a system where there is no environmental planning and where it is first in and buggers the rest. They extracted, I think, less than 5,000 megalitres in the same time that Cubbie Station extracted 135,000 megalitres. And they wonder why some people are disadvantaged. Thanks very much for that.

**Senator STEPHENS**—First of all, it was quite difficult to hear the early statement and evidence, so I want to go back to how things may have developed since you provided your submission, which was in 2005. In terms of this impasse with the water management plan, what is the process currently in place? I heard you say that the non-irrigator members have withdrawn, all bar one. How is that being dealt with?

**Mr Fessey**—In Queensland they have two processes. The first is the actual water allocation plan, which they formalise into a water resource plan. That is signed off by the minister. That has been in place since 2004. It has a life of 10 years and has a review at five. From what I understand, there is no intention to have a review other than to tick the box. Subsequently to that, they also have a water resource operations plan, the ROP. The same chair that chaired the CRG, the original process, also chaired the WRP. Is that right, Rory: the CRG?

**Mr Treweeke**—Yes, the community reference group.

**Mr Fessey**—That chair of the CRG also chaired the WRP, the water resource plan, and was then reappointed to the ROP. The original plan had 12 irrigators to three outsiders; this plan has, I think, six each, roughly. The non-irrigators, the New South Wales and Queensland graziers, the New South Wales local government and the Aboriginal and green groups are out of it on the basis of lack of independence. We were basically there to tick the box and approve it. We had no ability to change it because of the terms of reference.

**Senator STEPHENS**—Have you advised the minister in New South Wales and the minister in Queensland that that is the situation?

**Mr Fessey**—We had many exchanges of letters and conferences with the Queensland minister. Rory is not on the committee. I am on the committee as an appointee and I represent most of the other people. He was of the opinion that the chair was independent and he said everyone had conflicts of interest. We said, ‘That’s okay, because that’s a committee.’ But, in this particular case, the chair should not have a conflict of interest where the allocation of enormous amounts of natural resources is involved. There is no precedent for this sort of thing. We think there should be an independent chair and, to that end, there has been cooperation.

**Senator STEPHENS**—How long ago was that discussion?

**Mr Fessey**—That discussion went on basically last year and it has been going on this year too. We said that we wanted to meet with him and that we wanted him to come out onto the open flood plain. Our second letter went to him in, I think, about April. He suggested we go to Brisbane. I then wrote back and said that that is not acceptable and said, ‘Come out on the flood plain and we will show you, and then we can have a discussion.’ There has been no Queensland minister on the flood plain in New South Wales to understand the problems. He wrote another letter and said, again, ‘Come to Brisbane.’ And then I said, ‘Okay, we’ll come to Brisbane.’ When I said, ‘Can you come and pick us all up and take us there?’ he said: ‘We’ll give you tea and coffee and that will be about it. Get yourself down here.’ The level of cooperation we are getting on this is pretty poor.

**Senator STEPHENS**—On the New South Wales side of the equation, what has happened with the New South Wales government?

**Mr Treweeke**—In 2004, the New South Wales government, through Minister Knowles, for the first time in a substantial way took the argument up to the Queensland government. Minister Macdonald who succeeded Minister Knowles has again tried to see whether an independent chair could be put in place. He has also had discussions with his Queensland counterpart, who, as you would be aware, has recently changed from Minister Palaszczuk to Premier Beattie. The Premier has taken over the portfolio. Now there is to be an election in Queensland, so we will have to await that outcome. New South Wales has tried through negotiation to see whether there could be a change of attitude on behalf of the Queensland government. My understanding is that, at this stage, the Queensland government refuses to be shifted.

**Senator HEFFERNAN**—So what we are talking about here is a process which will license overland flows in lieu of what were going to be A and B licences, which are for banded water

and flood harvesting, based on earthworks, of which most are in place but some have been removed, to allow water onto the likes of Owen Betts's property, because there was no environmental planning and no licensing. It is fair to say that this process is all about licensing after the event. The process for water extraction, most of which has no charge to it and which grows the bulk of the cotton, is chaired by a person who at the present time does not have a water licence but has a cotton crop gratis, with a confidential arrangement for an immediate upstream neighbour. Wouldn't you consider that to be a serious conflict of interest?

**Mr Treweeke**—Yes. I believe that the proposed licensing of the flood plain harvesting after the bunding was put up is definitely a gazumping. An embargo was put on the issuing of river extraction licences as far back as 1992, and there was an extensive list of applicants at that time. All of the people who did have licence applications at that time will be gazumped by people who have taken advantage of the bunding regime on the flood plain.

**CHAIR**—Can I clarify one point: does the withdrawal of the nonirrigators, the greenies and the Aboriginal people from the process leave just the irrigators?

**Mr Fessey**—That is correct.

**CHAIR**—Is the process ongoing?

**Mr Fessey**—The process is ongoing. They are still holding minuted meetings and subcommittee meetings to determine the flow rules and the flow operation rules.

**Senator HEFFERNAN**—And to issue themselves millions of dollars worth of water licences.

**Mr Fessey**—That is essentially right.

**Senator STEPHENS**—Whether or not things were proceeding was going to be my question. I do not mean to sound foolish in asking this question, but what is the one thing that would resolve this issue? What needs to change, in a very straightforward sense, to remove the emotional stress of the people whom your association represents? In practical and ecological terms, what is the real solution to this?

**Mr Treweeke**—If flood plain harvesting could be banned—that would probably go 90 per cent of the way to resolving the problem—if the licences that have been issued for river extraction were sensibly managed; if recognition were given to the need for appropriate environmental, stock, domestic and town water supply flows; and if recognition of the flood plain requirements—the need for it to have flooding—could be catered for. Once the flow reaches 60,000 megalitres a day at St George, no increase is allowed in the take of water by the licences issued for extraction from the rivers. There is no ceiling on the flood plain harvesting licences. It does not matter whether the flood flow reaches a record of 200,000-odd megalitres a day at St George, diversions can continue. On a graph, that means at least 50 to 60 per cent of the total flow of the system is being extracted right through the flow curve, and that is in excess of anything that is sustainable on any inland river.

**Mr Fessey**—There is no actual volumetric cap on extractions. The river could run like it did in the period from, say, 1988 through to about 1990—there was a substantial amount of water

during that period—and there is no volumetric cap or extraction rules to apply to every flow that comes down. The only thing that is capped in Queensland is actual storage space. Everything else is fair game. So if they have airspace in their ring tanks they can continue to fill. That is why Cubbie are expanding the area that they can farm: so that they can use water faster. So sooner or later they are going to get one of these years where continuous flows come, and away they will go. There is no control on that at all. Whilst ever there is airspace, they can use it.

**Senator HEFFERNAN**—I do not want to get away from the difficult position you fellows have found yourselves in. We were given evidence that the water that is used in a confidential commercial arrangement with the so-called independent chair of this committee that is going to resolve all this is actually considered by them to be the equivalent of that property's overland extraction, even though the water never gets to that property. Have you got any idea how they measure that water?

**Mr Fessey**—I have no idea at all, and the other thing that worries me is the science that they keep rabbiting on about. I think it was just an evaporation pan that they put out in the middle of the scrub. I have serious problems with that because when a flood comes down the river there is lots of grass and vegetable matter in it, reducing that actual evaporation rate. From rainfall events that we have in the district, I know that once we get to 75 millimetres in a single day the flood plains—the heavy, opening, cracking flood plains—start to fill up, and that equates to about 0.75 of a megalitre.

In the Toowoomba presentation I think Mr Grabbe showed you some photos of the 1981 flow into Narran Lake and also the 2004 flow. He only exclusively talked about Narran Lake. There was very little difference in what happened there. Traditionally, 60 to 80 per cent of the water goes down the Culgoa River. It does not go down anywhere else, and that is why Cubbie is situated on the Culgoa. The other issue that he did not tell you about is that in 1981 we had about 3,000 acres of flooded country. We were able to bring stock home in a very dry period of time—we had four years of drought. We brought them home from agistment. We also filled our major water storage, which I can show you on this property map over here. It shows how it affects us on an individual level and across the flood plain. But essentially what he said is that in 1981 there was no change because of extraction rights on the Culgoa flood plain and that in 2004 it was massive. It did not even break the river's banks.

**Senator HEFFERNAN**—In fact, it was barely half a river. Can I point out while you are there that it was not only the graziers downstream who were disadvantaged or inequitably treated. I want to go back to Ballandool. Because Ballandool is below the weir, it is never going to get an overland flow, because the capacity to intercept the whole flow is upstream of it. It would be fair to say that their cropping capacity, just from your local knowledge, has been greatly retarded by what has gone on upstream.

**Mr Fessey**—I would agree with that. According to New South Wales DNR figures, there were 112 gegalitres, plus I think 51 gegalitres, extracted from the Culgoa flood plains in 2004. If you do the maths quickly, it is a bit over 160,000-odd megalitres. Allowing for losses in between, it is unlikely that Ballandool would have got a very big amount of water.

**Senator HEFFERNAN**—I understand they may have got less than 5,000. Is that your understanding?

**Mr Fessey**—My understanding is they may have got less than 5,000 megalitres a year. We certainly know that they only grew 700 hectares of cotton.

**Senator HEFFERNAN**—In a time span when the more or less immediate upstream got between 125,000 and 135,000 megalitres.

**Mr Fessey**—That is correct.

**Senator NASH**—I have a couple of very quick questions. Chair, you can probably help me out. In Toowoomba, I think the submission by Cubbie gave three reasons that the water they gathered off the flood plain would have disappeared anyway, even if they had not used it. Are you especially aware of that principle?

**Mr Fessey**—I am challenging that. We challenge that very strongly.

**Senator NASH**—That is my question. What is your view of that? They were very strong in their submission in that the water they took off the flood plain was going to disappear anyway, so it did not interfere at all with any kind of flow.

**Mr Fessey**—That 1981 flow challenges that completely, because if that flow had been noninterrupted in 2004 it would have achieved a very similar area of country flooded. As to their science behind that—they keep rabbiting on about science—we have not seen a reasonable discussion on how that actually applies across the flood plain. We challenge the area where they say they keep having ecological checks every six months. I do not think I have ever seen them down at the bottom end of the plain to see what actually happens to the flood plain. There are two areas I challenge a great deal. Essentially, there is the volume of water that actually travels across the flood plain. They claim that that belongs to that piece of land. In fact it does not. That is one of the key areas that need to be investigated—the amount of water that is actually taken up by the subsoil to get the flood plain wet in the first place. So, as it comes down, there is the amount of water that transfers across that flood plain, then there is the amount of water that has actually evaporated. Evaporation for the period of flow is probably quite low. The amount of water that goes in—I think they call it transpiration—is probably not a big issue. The volume of water that goes across the flood plain is the critical issue.

**Mr Treweeke**—If I could add to that, in relation to the tool that was referred to—the decision support tool that the Snowy Mountains Engineering Corporation, SMEC, developed—my understanding is that SMEC no longer recommend that that tool should be extended to use on the flood plain in New South Wales. I suspect there are some severe problems with its accuracy. From my knowledge—

**Senator NASH**—Mr Treweeke, where could we get clarification of the comment you have just made?

**Mr Treweeke**—I will see if I can track that down and forward it to you.

**Senator NASH**—That would be good, thanks. Mr Fessey, at the end of your opening remarks you said that John Anderson said that there was a need for an honest broker. What did he mean by that?

**Mr Fessey**—I had been trying to get Mr Anderson engaged, as my local member, for a significant period of time. He came out last year and had a look at the flood plain and saw how it affected us. By that stage he had realised that there was a real need for somebody who had a balanced and independent opinion and he could see the influence that could occur from a person of that nature in that particular position. As a result of that, we were able to get Malcolm Turnbull out there on 2 May this year, who listened to our story, and I guess it is the first time we have had someone of that significance out here.

**Senator NASH**—So is he the honest broker?

**Mr Fessey**—I think that was the way that John was hoping it might be. We would like to see that.

**Senator NASH**—Thank you.

**Senator STEPHENS**—I wanted to go back to the point that you made about needing 40 days flow to get through.

**Mr Fessey**—Yes. There may be only 20,000 to 30,000 megs a day coming into St George. Once you get over 735 megs a day below St George, that triggers the pumping. If the flows only occur for 12 to 15 days at that period of time, there is no way in the world that there is enough volume of water there to push it through in that length of time unless they actually link up. They nearly linked up last year, in November and December. DNR in Queensland went around to irrigators in St George and asked them for donations of water, which were donated to the system to push it through, but they had to be paid back on the next flow level, and we still could not get it through to the end of system on all four rivers. Narran Lake has not had an inflow since 2004—Rory, is that correct?

**Mr Treweeke**—As far as I know, that is correct. The problem is that the so-called compensation flow was set totally by guesswork after Beardmore Dam was constructed in about 1978. The actual commence to pump height for the lowest licences issued on the system is 1,200 megalitres a day. But the problem with releasing water at 735, as Ed indicated, is that once you go above that it does start to back up into little gullies and things that some people regard as a waste. It is probably performing a very useful environmental and ecological function.

It is very rare that you get flows down the system that are steady for a period. They tend to come down in a pulse. You have a lead, a quick rise to whatever the peak is and, depending on the volume in the system, the peak will hang there for a few days and then taper in to the system. The only controlling structure is Beardmore Dam. Once it is full, they cannot control whatever comes in over and above the full mark; they have to let through whatever flow rate is left in the river system. It is virtually impossible to extend that 735-megalitre flow for up to 40 days. There is no storage capacity to do it. It is not a regulated system apart from the Beardmore Dam-St George irrigation area and a few kilometres downstream to the first bifurcation—in other words, the first junction in the river where it goes out into the effluent stream system of the Culgoa and the Balonne Minor. Then, later on, the Birrie, the Bokhara and the Narran break out of the system as well.

**Senator HEFFERNAN**—When they put the new height on the Culgoa Weir at Cubbie, was there an environmental study or any thought given to the impact of, first, the diversion height that that enabled and, secondly, the flow-through volume that would be enabled? One of the problems, as I understand it, was when they let that 50,000 megalitres go earlier in the piece to try and get water down the system, it was linked up with other water that automatically triggered the water harvesting. So, instead of it being a steady flow, it was just let go with some storm event. Is that correct?

**Mr Treweeke**—Sometimes there are irrigators downstream from Jack Taylor Weir, which is the smaller of the two weirs and just below St George township. There are irrigators below there who have both water-harvesting rights from the river and also water licences in Beardmore Dam. Sometimes they piggyback water for compensation purposes and for those licence holders in that part of the river down the system. As long as everything is managed appropriately, there is no damage to either party in that instance. Given the inaccuracy of metering, each lot of water helps the other for that first portion of the journey down the system, but it is dependent upon relatively accurate metering of extractions and, fundamentally, the honesty and the integrity of the operating system.

**Senator HEFFERNAN**—Is the Culgoa Weir constructed in a way that, after a certain volume—and obviously there is a huge diversion channel just above it—it automatically harvests the water and only a limited amount of water can go through the weir?

**Mr Treweeke**—On certain flows, as I understand it, there is a pipe through the bottom of the weir. For small flows, the flow goes through that pipe. Once a certain sized flow is reached, the weir overtops, depending on what is being diverted into the diversion channel.

**Mr Fessey**—To support that, prior to 1986, the longest period of no flow that my parents experienced was nine months. Since then we have had a 16-month period in the early nineties, and we have just gone through a 22-month period in the early 2000s.

**Senator HEFFERNAN**—Of course, they will say that is the dry weather.

**Mr Fessey**—The problem is that there has been significant development up and down the river.

**Senator HEFFERNAN**—But in reference to the dry weather it is fair to say that in those periods there was water harvested.

**Mr Fessey**—That is right. There certainly was.

**Senator STEPHENS**—I want to ask about the New South Wales government's response to the water resource plan. We have been provided in your submission with the response to the consultation of the water resource plan in 2003 by the New South Wales government. It raises some very serious questions besides the issue of the membership of the CRG and the process, which this submission argues is very flawed. It raises some very important issues about the environmental provisions in the plan, which you have kind of touched on, but I wondered whether you could tell me what came out of this document in terms of a response?

**Mr Treweeke**—Unfortunately, the problem was that while submissions in response to the draft water resource plan were collated and noted there was absolutely no response from the Queensland government publicly in any way and, as far as I am aware, none back to the minister or his department in New South Wales.

**Senator STEPHENS**—So even though there were issues raised about requirements under Ramsar and compliance with the Murray-Darling Basin Commission cap there has been no response or modification of the plan?

**Mr Fessey**—None whatsoever.

**Mr Treweeke**—None that I am aware of.

**Mr Fessey**—We have found their cooperation at every level to be absolutely atrocious.

**Senator HEFFERNAN**—If you had a message for the Commonwealth of Australia, the New South Wales government and the state government of Queensland, what would it be over these issues?

**Mr Treweeke**—Basically, to do away with flood plain harvesting. As we have said, that is the inequitable portion of this. It cannot be measured accurately and it has allowed people to gazump others who are legitimately in a queue in a process sanctioned by the water act at the time. I think that if that were removed and proper environmental studies done of the impact of water extraction, it would help. It is going to take a period of time to resolve, because one of the major issues now, having gone this far down the track, is the cost and how the restoration of any development that has been done should be carried out to make the flood plain the healthy place that it was previously.

**Senator HEFFERNAN**—But it would be fair to say, wouldn't it, that the present process from which you have withdrawn is still continuing? Your riparian water rights on the system have been completely intercepted—and I have said it many times even though the people who are the beneficiaries of your disappointment say otherwise. Would that be a fair assumption?

**Mr Treweeke**—That is true. The process is continuing. My understanding of the time frame at the moment is that the draft resource operations plan will be released for public comment probably about December—so again we are in the silly season as we were with the water resource plan—and public submissions will be called for. There will be no travelling roadshow as there was with the water resource plan to St George, Dirranbandi and Brewarrina. This time it will purely be the seeking of responses from people. They will then be collated by the department of natural resources in Queensland and referred to an independent committee of experts. My information is that the Queensland cabinet have approved 14 experts, I think—I do not know their names or qualifications—and the responses would be referred to a panel drawn from that experts committee.

**Senator HEFFERNAN**—It is fair to say also, isn't it, that this so-called independently chaired committee—which I think is a serious conflict of interest—would have as an outcome of that process the issuing of licences for what is now an extraction right? At the present time the bulk of the water that is extracted is actually unlicensed and uncharged because the law is silent,

as it were. But it is fair to say that when that process is complete there will be licences issued, given the evidence we were given in Toowoomba, which will trigger automatically huge compensation if there is a need to reallocate the water resources in the area.

The mayor of St George said: ‘Don’t worry about us; compensate the poor silly buggers down the river and leave us as we are. Buy Ballandool and Clyde and get that water return.’ They do not get that to the system, which was a dream. It would be fair to say for the taxpayers of Australia that, if common sense and fairness do not prevail and this system is at least halted until some reasonableness is brought to the process, we will be looking at issuing millions of dollars worth of water licences. Subsequently, if environmental damage occurs, which has been flagged by everyone from Peter Cullen down, upon the implementation of the full capacity of the system to extract water, the people who are sitting in judgement on whether they should give themselves a water licence will be eligible for huge compensation payments.

**Mr Treweeke**—That is a pretty fair statement. I would also like to comment that when Malcolm Turnbull visited the flood plain in May, which Ed previously referred to, after our conversations with him—we had had one previously in about October last in Dirranbandi but it was not on site—he eventually realised and said, ‘You blokes are not after financial compensation; you want water restoration.’ We said, ‘That’s exactly it; we’re not looking for anything from the taxpayer by way of compensation, but we want restoration of the natural flooding regime.’ Nobody referred to the interests of the flood plain landholders when they allocated the water to somebody else.

**Mr Fessey**—In addition to that, in a number of discussions we have had with people in the Queensland Department of Natural Resources and Mines, they keep saying that they have to license the overland flow so that they can compensate it or withdraw the water. At the moment they claim they are in no-man’s-land. I said that it is only an entitlement and that it is a nothing issue. What we are worried about is that massive amounts of water have been allocated on a wing and a prayer.

**Senator HEFFERNAN**—The rules at present are: the bigger the bulldozer you use and the bigger the bank you put up, the bigger will be the extraction right you have—so the bigger the licence that will be issued, depending on the size of your bulldozer. Could you reflect to the committee, if you have the knowledge, on the situation Mr Owen Betts found himself in immediately downstream in 2004 when Cubbie Station had to send a couple of bulldozers over onto the so-called independent chair’s Kelso property to break the bank to let some water down? There was absolutely no environmental planning. Do either of you gentleman have any knowledge of what happened in that episode?

**Mr Treweeke**—I know the area, because I have personally done some tractor driving on the paddock owned by Owen Betts. I was doing some contract farming work for him.

**Senator HEFFERNAN**—You had better declare an interest there.

**Mr Treweeke**—He ended up with about 300 acres of flooded country. The difference in the yield of the crop that was next sown there was from about 18 bags on the area that had been flooded to about eight bags on the non-flooded area.

**Senator HEFFERNAN**—The reality was that with the banks that were put in place he would not have got anything if the banks had not been broken.

**Mr Treweeke**—Correct.

**CHAIR**—Can I just go back to what happens if the committee decides that too much water is currently being used.

**Mr Fessey**—I do not think that is possible.

**CHAIR**—You do not think that is possible because of the nature of the committee?

**Mr Fessey**—Because of the nature of the committee. In essence, the ROP only endorses a quasi operating plan. The water resource plan that has been issued is the actual licensing of it. As I said in my statement, there is a problem once they sign off on the ROP. It does not go to a minister; it goes to the deputy director-general. He signs off on it and then creates the licence. That is why they are pushing it so emphatically to go through. There is only one person who is allowed to go to the minister on any of these issues, and that is the chair. Through the operations of it we cannot go to anyone else. We have no power once we go into the committee room; we lose our power.

**CHAIR**—From what we have just been talking about, my understanding is that the plan will go to a panel of independent experts. Who do they report to?

**Mr Treweeke**—I assume that they report back to the appropriate minister, the minister for natural resources, in Queensland. That is my assumption. I only became aware of this process last week and I do not have the details of it.

**Mr Fessey**—I think that is correct. The other thing is that, at the same time, the chair basically has the flow of the information and takes the recommendation to the minister.

**Senator HEFFERNAN**—Would it be fair to say that some years ago, to his credit, the Premier went out there to fix all of this and was politically hijacked?

**Mr Fessey**—I think the problem there is that you do not go to the area where the problem is and ask them to do exactly the opposite—of course you are going to get a negative answer. You have to stick up for yourself.

**CHAIR**—I am trying to get to the bottom of how this independent committee is going to work, to your knowledge. You were saying that you were not sure if the report is going to the minister or to the chair.

**Mr Fessey**—You are talking about the report from the scientific committee?

**CHAIR**—Yes.

**Mr Fessey**—I understand that five are going to be selected to review that, out of those 14 names. I have not seen the names. I think they will remain anonymous until such time as it is officially appointed.

**CHAIR**—We might follow up that process. If there is nobody on the committee other than the irrigators then there is a need for the minister to get information from somewhere else.

**Mr Fessey**—I will qualify my statement on the irrigators: there are town interests and that sort of thing, but there is no-one else. I think Sarah Moles is the only green interest from Queensland who has not resigned as yet. We have not actually resigned; we have just stood down until such time as there is an independent chair.

**CHAIR**—We might try to get some more information on who is on it and the process that will be used because at the moment it seems unclear, even to the people involved, what the process is. We will try to get some more information on that.

**Mr Fessey**—Yes, I think that is a work in process. From what I understand they probably will not let us know until the last minute.

**CHAIR**—Does anyone have any final burning questions?

**Senator HEFFERNAN**—Pray for rain, boys!

**CHAIR**—Thank you very much. We very much appreciate your submission and the time you have taken to appear before the committee today.

**Mr Fessey**—Thank you for the privilege of appearing.

[5.40 pm]

**GILL, Dr James Ian, Chief Executive Officer, Water Corporation of Western Australia**

*Evidence was taken via teleconference—*

**CHAIR**—Welcome, Dr Gill. I understand you have already been sent the spiel I am supposed to give about parliamentary privilege and I know that you have appeared before committees before. I invite you to make an opening statement and then we will ask you some questions.

**Dr Gill**—I am very pleased to have the opportunity to speak to you. The broad area I would like to cover, and perhaps you would like to discuss, is the remarkable climate change that appears to have been happening in the south of Western Australia. It has become particularly evident over about the last 10 years and it appears to be strongly linked to global warming, although the extent to which the phenomenon has been caused by global warming as opposed to the normal, random variations of climate is simply unknown. But there has been a phenomenal shift of climate and weather in the south of WA and it does appear to be unique worldwide. We have looked at other parts of the world, at the west facing parts of the southern continents and at other parts of the globe, and there seems to be no other place that is drying quite as fast as the south of Western Australia.

We have had to cope with that over the last 10 years. It has been a trend, we now know with the best of hindsight, for about 30 years. Since the mid-1970s the rainfall has been declining and the run-off has been declining at a greatly amplified rate. The reason for that is the very porous catchments, catchment vegetation and catchment behaviour generally, including increased evaporation due to higher temperatures. What we have done over the last 10 years is to develop many new water sources. Up until the beginning of this decade we actually, in theory, doubled the yield of the water sources available. That is only in theory because all the time that we were doing that the weather seemed to be retreating further.

In 2001 we had the driest winter in living memory, the driest since 1914. We embarked then on further new source development. By 2004 it had become clear that 2001 was not a one-off—we had had some recovery but not all that much—and we had better get on and develop still further new sources. In summary, for the last eight or nine years the rainfall has been down by about 21 per cent on what it was up until 1974, and the run-off has been down by 64 per cent. Actually now it is becoming clear that for the last four or five years, since 2001, we seem to be down still further. In terms of stream flows we seem to be running on about a quarter of what the scheme was designed for up until the mid-seventies.

As I said, in 2004 we took stock and realised that we were on yet another new trend. It was then that we embarked on the construction of the desalination plant and stepped up trading with the irrigators at Harvey, south of Perth. We also embarked on proving up the south-west Yarragadee—a big aquifer about 300 kilometres south of Perth. We have not started to develop that yet, but it is in the advanced stages of community consultation and environmental approval. That has been the situation.

As I said, the dams are performing at about a quarter of the yield one would have expected 30 years ago. In Perth we are lucky in that, unlike most other parts of Australia, we sit on an enormous aquifer. Everything west of the Darling Range, in about a 30-kilometre wide strip that stretches hundreds of kilometres north and south, is sedimentary and has mostly very good aquifers. Today we are pulling about 60 per cent of our water supply from underground. That is replacing what used to come from the hills and into the dams. In November, the desalination plant will begin to put water into the system and that will represent a 17 per cent augmentation of supply—a very substantial increase. It will actually be the biggest single source in our entire system and the biggest reverse osmosis plant outside the Middle East. It is a bit of a first. It is on time and on budget, and we are quite proud of that.

The other thing I should mention is the winter we are currently having. Until now, we had used 2001 as our blackest of black-hat scenarios. We used that as the downside in any budgeting process. 2006 has been far dryer than 2001. It has been absolutely appalling. As at this morning we have had a net inflow of eight gigitalitres, or eight billion litres. Until the mid-1970s the average inflow was 338 gigitalitres, so we have had virtually no inflow this winter, to date. This week is looking a bit more promising, but winter is nearly over so it is far too late. Were it not for the desalination plant, this summer we would almost certainly have total sprinkler bans in Perth, and that is something we tried very hard to avoid. I have talked mostly about supply. We have done quite a lot of work in demand management as well. Perhaps you would like to ask me some questions now.

**Senator NASH**—I am from New South Wales, so I do not have much knowledge of Western Australia. In your remarks you mentioned that the rainfall had declined over there since the seventies. How far back do your rainfall records go in WA?

**Dr Gill**—The rainfall records go back to probably the 1870s. Run-off records, which are the ones we are particularly interested in, go back to 1911.

**Senator NASH**—You have records since the 1870s and you said the rainfall has declined since the seventies. Is there any other period between the 1870s and now when there has been a significant decline or a downturn over a number of years or decades?

**Dr Gill**—I am not really an expert on rainfall—I know more about run-off—but certainly if you look at the period from about 1870 to about 1906 you will see that it was very dry. It was not quite as dry as it has been for the last, say, 20 or 30 years, but there was a notably dry period then. It was punctuated in about 1892 and 1893 by two extremely wet years. In fact, there were some very wet years in the 19th century. I think it was in 1863 and 1873 when there were some floods of the Swan River to levels which have never since been reached—very high levels of flooding. With the vicissitudes of climate, it is pretty hard to fit any kind of regular curve to climate. Science is really battling to explain what on earth has been happening in Western Australia over the last 10 or 30 years. Science is battling to catch up.

**Senator NASH**—I am just trying to look at any potential trends. Do you think that what has happened since the 1970s is worse than any decline or downturn that has happened previously? You were just saying that the period between the 1870s and the early 1900s almost seems to mirror the last 30 years. But do you think that this is the worst 30-year decline we may have seen over there?

**Dr Gill**—Yes, I do think that. I have no doubt that it is linked with global warming. Equally, I have no doubt that it is the normal variation of climate at play. Which proportion of which is in play at the moment, who knows? But to the extent that it is linked to global warming one could expect it to continue to get worse, I think.

**CHAIR**—Could I just interrupt, Dr Gill. I think that the work of the Indian Ocean—what is that mob called?

**Dr Gill**—The Indian Ocean Climate Initiative.

**CHAIR**—You might just want to quickly touch on the findings they had. My understanding was that they thought the situation was due to natural variation in climate and to global warming but that, as you said, they are unable at the moment to work out what percentage is due to each. Is that right?

**Dr Gill**—Yes, I think that is the case. A few years ago, they released some information which suggested that, over the 60-year period between 1970 and 2030, we would see a decline in rainfall in the south of Western Australia of up to 20 per cent or perhaps an increase of five per cent. That was the range of the modelling output: between minus five and plus 20 decline of rainfall over that 60-year period. That was purely based on atmospheric concentrations of greenhouse gases. What has been observed is that, over the first half of that period, the first 30 years up to the present, we have actually had a 21 per cent drop-off in rainfall. So we have had effectively the maximum decline in half the period. As I say, there is some randomness at play as well.

When you are running a water utility, all you can do is look at the aquifers and look at the dams and decide whether to build a new source and to campaign for people to use less water. It would be nice if the science could back up our decision making and explain what might happen in future but, as it happens, we do not have that luxury, and we have to make our own predictions.

**Senator NASH**—True. Thanks, Dr Gill.

**CHAIR**—There are a couple of things that I would also like to talk about which we might get onto a bit later. You were referring to the trading situation. Also, across Australia, we have come across the issue of urban versus rural water use, so I would like to touch on that. But, before that, could we explore this: the Water Corporation went through a fairly extensive community consultation process when this phenomenon started to be identified. For a start, the water authority, the Water Corporation, was going through consultation anyway with the community over decision making over water sources.

**Dr Gill**—That was back in about 1995. We produced a very comprehensive 50-year plan, and that was a very consultative process.

**CHAIR**—I am going on my recollection, which is that a process had already been started and you had made decisions. Then, when this information became available, you started going back to reconsider the decisions that had been made.

**Dr Gill**—In 1995 we produced that document, *Perth's Water Future*. It used the average of the entire run-off record as the best predictor of the future. Immediately it was published, we started questioning that basic assumption, and we started saying, 'Why not use the last 20 years, since the mid-seventies, as the best predictor of the future?'

We got some international experts in and we ran a major seminar in early 1996. On that basis we accelerated the development of new sources. We took what was in that *Perth's Water Future* plan and simply accelerated it. It was great to have the plan; it gave us the options for the future. We investigated them in more detail. In some cases we reprioritised them, but then basically built them and got into much more aggressive demand management, training the community to use less water and so on. Since then we have reviewed the situation as the climate has sent us continually drying signals.

About last year we did, not a consultative, more of a desktop review of the forward plans because the original 1995 plans were by then getting a bit out of date. We put that on our website—a new plan looking ahead. It is our intention now to do a thoroughly consultative new plan because things have changed and the time has come to go to the community and involve everybody in a new plan.

**Senator STEPHENS**—We have some information from the Water Corporation about the managed aquifer recharge process, which I found quite intriguing. What makes the Swan coastal plain ideal for that project? Is it something about the geology of the aquifer?

**Dr Gill**—Yes, exactly. As I mentioned earlier, everything west of the Darling Range is sands and sediments. Basically, the inland from Perth is granite; it is igneous rock. The Darling fault line, which runs north and south, is pretty much a vertical fault, as I understand it, where the ground has actually slipped over billions of years. I believe it is about 15,000 metres of vertical slip. What that has meant is that a coastal plain has built up on the ocean side of this north-south fault line, and it is on that coastal plain that Perth sits and the Swan River meanders, and there are other waterways and wetlands and so on these days. So that coastal strip, about 30 kilometres wide at Perth, is underlain by sands and sediments. It is a magnificent system of aquifers and it runs from the very south of the state, about 400 kilometres south, right up towards Geraldton, 400 kilometres north. So it is a magnificent system of aquifers. They are partitioned at different depths.

We have knowledge about the different depths of water, and draw from the different depths depending on environmental factors, basically. It provides us with a huge opportunity in relation to treated waste water from our waste water treatment plants, which are all situated on the coast because after treatment—advanced treatment—the effluent is fed out through ocean outfalls. So it gives us the opportunity to take that water, treat it further, probably through reverse osmosis, and then inject it into the aquifers. It will dwell there for a while—in some cases up to years or tens of years—and then it can be taken out again through the existing bores that are used for taking out water for the scheme. It is a pretty good opportunity to use water more than once, rather than putting it in the ocean. The aquifers are a bit stressed at the moment, mainly caused by the drying climate. The aquifer levels and pressures have been declining. It is an opportunity to top those up and a better way to manage the overall water cycle. Sydney is on rock and Melbourne is on clay—I am oversimplifying, obviously—but Perth is on this sand and sediment. Therefore, we have a unique opportunity to do this.

**Senator HEFFERNAN**—I am on hot coals. I understand that the water you propose to inject into the aquifer will later be used for some sort of industrial use.

**Dr Gill**—It would be for scheme water—in other words, it would end up in the drinking water system.

**Senator HEFFERNAN**—Under the present filtration arrangements, before reinjection will you be removing things like heavy metals?

**Dr Gill**—As I said, we will probably be doing reverse osmosis, which is the desalination process—and the answer is yes, it would remove atoms and molecules of that size. I would like to add to my previous remarks that we are trialling this at the moment. We have some small trials, which are basically ground infiltration. We are planning a major trial from our Beenyup waste water treatment plant. We are going to trial it extensively. We think it will be the middle of the next decade before it becomes a major augmentation to the current drinking water supplies. We think we have to take the time to prove up the concept, to get scientific and health regulator endorsement and to win the community over. If we do not get community confidence then there is no point in doing it at all, so we are going to take the time to do that. But we do see it as a tremendously valuable source of water for the future—and there are not all that many other sources available in Western Australia.

**CHAIR**—Senator Heffernan has just asked me whether you qualify for Commonwealth funding. I understand this is part of a CSIRO project.

**Dr Gill**—Yes, CSIRO is helping us out in the trials on that, but we also hope to get National Water Initiative funding for that work.

**CHAIR**—That nicely segues into my next question. Has Western Australia signed up to the National Water Initiative?

**Dr Gill**—Yes, we have—earlier in the year.

**CHAIR**—I thought that we had, but I was not positive about that. So you would be trying to access funding for this process under the National Water Initiative?

**Dr Gill**—Yes, we certainly will. We have a Department of Water here. The interface with the National Water Commission is primarily managed by the Department of Water, but we work closely with them on initiatives that we are particularly interested in—and managed aquifer recharge is one of them.

**Senator HEFFERNAN**—Have you had a visit from our eminent parliamentary secretary for water?

**Dr Gill**—Yes, we have. I have not actually met him—I was away at the time—but yes.

**Senator HEFFERNAN**—I am just being corrected here: the shadow parliamentary secretary for water, Senator Stephens, also visited.

**CHAIR**—What other projects are you looking to be funded under the National Water Initiative?

**Dr Gill**—I can tell you what they are from our point of view, but I may miss some that are being handled by the Department of Water. There is the managed aquifer recharge, as we have discussed. There is funding for the Harvey water project, which consists of replacing opening irrigation channels with a pipe network that will deliver water more efficiently to farmers and save a lot of water en route to the farm gate. The idea is that that water then becomes available for public drinking water.

**CHAIR**—So that water is then put into the Perth water supply?

**Dr Gill**—Perth and beyond. It is put into the integrated water supply. Another project is the Kwinana water reclamation plant stage 2. We commissioned in late 2004 a filtration and reverse osmosis plant at Kwinana. It takes treated waste water from the Woodman Point waste water treatment plant and purifies it to quite a high level for industrial use. In fact, it reduces the salt level to less than that in normal scheme water. It is used for industrial purposes, such as boiler feed, demineralised water and that kind of thing. Our intention is to cater for the entire expansion in water demand on the Kwinana industrial strip by using that technology. Hence, we are applying for funding for stage 2 from the National Water Initiative. That is one. There are various others. It is really something that one would need to discuss with the Department of Water.

The state was asked recently for significant water projects for joint funding under the National Water Initiative—under the Water Smart Australia program, in fact. One of them is the south-west Yarragadee proposal, which is the big new aquifer development we are proposing for 300 kilometres south of Perth. We see that as the next major augmentation of supply after the current desalination plant. That is probably the main project that we are putting forward in answer to this request for more significant and ambitious water projects. I have not given you a complete picture of the state's requests for National Water Initiative funding because that really is the province of the Department of Water.

**CHAIR**—Is it possible for us to have access to that? I realise that you do not know it off the top of your head, but is it possible to get a list of what you are looking at?

**Dr Gill**—Yes, that would be possible. I am happy to talk to the Department of Water about getting that to you.

**CHAIR**—That would be much appreciated, thank you. Another issue is the rural-urban issue. We were very brave and went to Toowoomba two weeks ago. Besides the whole issue of water recycling, the issue of urban water again came up there, and that has come up in other areas. How are you handling that issue?

**Dr Gill**—I am talking from the point of view of the Water Corporation of Western Australia. The Department of Water has the overarching responsibility for water, recycled water and so on. We are interested in three particular areas, two of which we have mentioned. One is the managed aquifer recharge. Was your question relating to recycled water?

**CHAIR**—No, water in general.

**Dr Gill**—I am sorry; I misunderstood. You are talking about urban water in general.

**CHAIR**—What we are finding is that there is now increasing conflict over rural use of water and water being transferred from rural areas for urban use. It is an increasing area of conflict. I am aware of the work that you have been doing in terms of converting from open to closed pipe. Has that been an area of conflict? Do you think that the measures that you are putting in place are overcoming that?

**Dr Gill**—It has not been an area of conflict here; it has been an area of terrific cooperation, in fact. We worked with the Harvey irrigators 10 years ago to get them to form a private cooperative. They came to us with a proposal whereby we would put up the money to put their open earthen irrigation channels into pipes. We in return would receive the water saved for the public drinking water supply. The advantage to them would be that they would have a pressurised water supply at the farm gate instead of just a gravity one. That means that they can use more modern reticulation systems, subsoil irrigation, better sprinklers and drippers and so on. We would benefit from the water saved on the way to the farm gate. They would then save further water on the farm and trade that with us or with others, and that would be in our interests as well. It was a classic win-win. No dollars have changed hands, and yet by the end of next year we expect to be receiving 17 gigalitres per year in a trading deal. They end up with an irrigation scheme that they can have far more confidence in and the benefits that come with that. And no dollars have changed hands. That has been an area of really great cooperation.

In the future, we can see more of that happening in the irrigation areas south of Perth. Probably the area where there is not conflict but where there is work to be done is working out the future allocations of water from Gngangara mound—in other words, the groundwater area north of Perth. Especially with the drying climate and the declining aquifer levels, it has become more important for the government to be aware of how much water market gardeners and horticulturalists are using, how much is accounted for by pine tree plantations and, of course, how much we pull out, and to achieve a sensible balance there. For example, now there is an extensive program of metering taking place to get the knowledge of how much water the horticulturalists are using. That is a process that the state is now working through. It is important, especially because of drying climate and also because of the growth of the state, that we get a handle on this and then sensible water allocations and trading can take place.

**Senator HEFFERNAN**—Thank you, Dr Gill. I have a very strong view that Australia ought to develop a new agriculture frontier in Northern Australia, which would include some of your state. Given that, especially where we live, the Murray-Darling Basin is completely overworked and we have got to remove some activity, do you give consideration in the approval processes over there for plantation, the interception and aquifer effect?

**Dr Gill**—It has not happened to date because it has not needed to happen. It is only in the last decade or two that the growth of the state's economy and residential areas and so on have got to the stage where it has become an issue. For any new plantation development, water would absolutely be a consideration. For the last 100 years, we have had the luxury of not having to do that.

**Senator HEFFERNAN**—You do not have to answer this directly, but if there was a view that we ought to develop a new agricultural frontier, for instance, in the Timor catchment, that would open up a lot of opportunities for Western Australia, wouldn't it?

**Dr Gill**—At the moment there is the Ord River Dam, and there is an irrigation area which, from memory—

**Senator HEFFERNAN**—70,000 hectares is pegged out.

**Dr Gill**—Yes, I think only about 13,000 of it is—

**Senator HEFFERNAN**—14,000.

**Dr Gill**—yes—used at the moment. While I was aware of plans that have been around for some years to perhaps treble or quadruple that, I have not heard the number 70,000, but it is quite possible. There is no reason why we cannot. Certainly there is scope, given the existing head works, the existing Ord dam, to have a great increase in agriculture up there. If you get into more efficient agriculture—more efficient water usage; not open channels with seepage and evaporation and so on, but pipes—then I am sure you could take it further. It is outside my area of expertise I must say, but it is an opportunity.

**Senator HEFFERNAN**—I would love to talk to some people in the Western Australian government about those opportunities that may present themselves to Australia in the near future. Thank you very much for that.

**CHAIR**—I think we have exhausted our questions. Are there any final things that you want to say?

**Dr Gill**—I guess in Western Australia we think we have been pretty successful over the last 10 years in recognising climate change and acting on it, and working with the community, but every year or two seems to give us a new signal, and somehow the business of planning way ahead—to sum it up, we might think we are doing well and some of those other Australian cities are either on total sprinkler bans or worse, but the minute we think we have solved the problem then we have got a problem over here.

**Senator HEFFERNAN**—They are wise words.

**CHAIR**—Thank you very much.

**Dr Gill**—It was a great pleasure.

**Committee adjourned at 6.15 pm**