COMMONWEALTH OF AUSTRALIA

Official Committee Hansard

HOUSE OF REPRESENTATIVES

STANDING COMMITTEE ON ENVIRONMENT AND HERITAGE

Reference: Catchment management

MONDAY, 20 SEPTEMBER 1999

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HOUSE OF REPRESENTATIVES

STANDING COMMITTEE ON ENVIRONMENT AND HERITAGE

Monday, 20 September 1999

Members: Mr Causley *(Chair)*, Mrs Irwin *(Deputy Chair)*, Mr Barresi, Mr Bartlett, Mr Billson, Mrs Gallus, Ms Gerick, Mr Jenkins, Dr Lawrence and Mrs Vale

Members in attendance: Mr Billson, Mr Causley, Mrs Gerick, Mrs Irwin, Mr Jenkins and Mrs Vale

Terms of reference for the inquiry:

To inquire into catchment management, with particular attention to the following matters:

- the development of catchment management in Australia;
- the value of a catchment approach to the management of the environment;
- best practice methods of preventing, halting and reversing environmental degradation in catchments, and achieving environmental sustainability;
- the role of different levels of government, the private sector and the community in the management of catchment areas;
- planning, resourcing, implementation, coordination and cooperation in catchment management; and
- mechanisms for monitoring, evaluating and reporting on catchment management programs, including the use of these reports for state of the environment reporting, and opportunities for review and improvement.

WITNESSES

Committee met at 9.11 a.m.

CHAIR—This is the first public inquiry into catchment management for the House of Representatives Standing Committee on Environment and Heritage. The inquiry into catchment management arose out of the committee's most recent report, which was a review of the annual report for 1997-98 of the Department of the Environment and Heritage. In that review the committee identified the management of Australia's water resources, particularly regarding the health of urban and rural waterways and water quality standards, as a topic warranting further investigation.

Therefore, the committee resolves to continue its investigation of water resource issues through an inquiry into catchment management. The inquiry is looking at a number of issues, including the value of catchment approach to the management of the environment, the best practice methods of achieving catchment health, the roles of governments, the private sector and the community in catchment management and planning and monitoring mechanisms.

The committee is pleased with the response to the inquiry, with 140 submissions so far. The submissions have come from community catchment groups, catchment management and water authorities, farming and industry groups, scientists and all levels of government. Later this year the committee will be holding public hearings and inspections in New South Wales, Queensland and Canberra and will visit other states next year.

Today we will be hearing from the Department of the Environment and Heritage; Agriculture, Fisheries and Forestry Australia; the Integrated Catchment Assessment and Management Centre and the Australian Association of Natural Resource Management.

[9.13 a.m.]

CAMPBELL, Mr Andrew, Assistant Secretary, Sustainable Landscapes Branch, Environment Australia, Department of the Environment and Heritage

EARLY, Mr Gerard, First Assistant Secretary, Natural Heritage Division, Environment Australia, Department of the Environment and Heritage

KOMIDAR, Mr Peter, Director, Water Reform Section, Environment Australia, Department of the Environment and Heritage

CHAIR—Before proceeding, I advise the witnesses that committee public hearings are recognised as proceedings of the parliament and warrant the same respect that proceedings in the House of Representatives demand. Witnesses are protected by parliamentary privilege in respect of evidence they give before the committee. Witnesses will not be asked to take an oath or to make an affirmation; however, they are reminded that false evidence given to a parliamentary committee may be regarded as a contempt of the parliament.

The committee prefers that all evidence be given in public, but should witnesses at any stage wish to give evidence in private, they may ask to do so and the committee will give consideration to the request. I welcome representatives from the Department of the Environment and Heritage. We have received your submission and have authorised its publication. Perhaps you would like to make an opening statement before we ask you questions.

Mr Early—I will make a short opening statement. As you would have seen from the submission and from the letter from our parliamentary secretary, Dr Sharman Stone, the department strongly supports the notion of catchment management in Australia. I think it is fair to say that all jurisdictions now recognise that, and the movement in Australia is very much towards integrated catchment management across the board. As Dr Stone has pointed out in her letter, I guess there are a number of issues. Some of the institutional arrangements are still developing. The issues are quite complex in terms of catchment versus the larger regions and, in particular, there tend to be some overlapping interests in relation to local government, et cetera.

In relation to integrated catchment management, there is also an issue about the level of statutory support that there might be for what happens at the catchment level. The other issue that Dr Stone alluded to, which also comes out of our submission, is the need for information, monitoring and evaluation at the catchment level. There is a lot of activity going on but, once again, in the same way as the institutional arrangements, there is sometimes some overlap and confusion. I think all jurisdictions are well aware of that and are all moving in the direction of trying to solve some of these problems.

CHAIR—Unless other witnesses would like to make a statement, maybe I can start off with a few questions. Having been around these rural portfolios in the state for a few years, I find it a fairly sensitive issue. I suppose that is one of the biggest problems we have—to try, firstly, to make sure that we are not duplicating in all levels, which is always a problem in

Australia; and, secondly, to come up with ideas that are practical that people can see will work and are not impinging upon what they see as their rights. Do you have any comment on that?

Mr Campbell—Yes. I think that issue is a very central one. We are seeing the emergence of new bodies at a scale that is somewhere between local government and state government, variously called catchment management authorities or catchment coordinating committees or various other types of regional organisations. Understandably, there is a tension when you form a new level of administration as to the extent to which it duplicates stuff that either happens at local government or state government level or replaces that. So we have a very big issue in Australia to work out just what it is sensible to be trying to manage at that scale that is somewhere between local and state government.

In many regions of Australia, water catchments are not a very sensible division because the land is very flat and the issues are not really about water catchments. In the eastern seaboard and southern Australia, it is certainly a very sensible way to go. But I think the point you raise is a very germane one, and it is going to take quite a while to sort out just what powers local government should cede to these regional organisations and state government and which ones it is more sensible not to try to create another layer of administration to do. Understandably, that is something that I suspect will take quite a lot of settling out through an evolutionary period. I do not think it is something where you can start with a clean sheet of paper and just design a perfect system and go out and implement it in a blueprint measure.

At the moment we have a range of experiments happening simultaneously around the country. Victoria has one system; New South Wales has another; Queensland has another. Over time the benefits of different approaches will become more apparent and there will start to be a consensus as to the most appropriate way to go in different circumstances, and they will be different. Even within a state like New South Wales, as you well know, the approach that works best along the west of the divide is quite different from that east of the divide.

CHAIR—When we set up catchment management in New South Wales, rightly or wrongly we believed that, if we did not get the support of the actual land-holder, then we could make all these grand plans and never get anywhere because obviously they are the people who are managing the land in the first place. One of the concerns that came up very early on was the fact that this was a precursor to a system of levies that would be levied on land to fund this, and the land-holders were very wary of that. In fact, they even went to the extent of asking us to put in place legislation that would preclude that.

What I am getting at is that a lot of work needs to be done with people, at the state level in particular. I think everyone recognises the need for that, but there is a cost. Who is going to pay for it? How is it going to be funded? We ask this particularly when certain rather extreme groups—and you have them on either side—put forward ideas that would really make the enterprise unprofitable. Do you think we are addressing that? That is probably one of the primary things we have to do.

Mr Campbell—Through the Landcare movement and the various programs that are running under the Natural Heritage Trust, we are giving people at the real grassroots level, at

the individual property level and at the small subcatchment group level more resources and more capacity to do things in their own backyards than they have ever had before in terms of government investment at that level. Undoubtedly, we are dealing with very big issues, so the amount of resources we have will never seem to be enough to do that quickly enough at that level. But we are putting much more public investment directly into capital works to try and address these land and water degradation issues at a grassroots level than has ever been the case in the past.

The relationship between a Landcare group, say, and a catchment based body is another thing that is still evolving around the country. There are instances where Landcare groups feel that another layer has been created in which they do not feel direct involvement. In some places that is something that needs work; in other places it is working extremely well. At the land-holder level, we have to give land-holders as much information as possible to enable them to make well-informed decisions about the long-term impact of their actions on their own productivity. There is also—and that is why these catchment based bodies exist—the fact that what we do on one farm may well have very significant impacts on a regional scale, particularly if a lot of people are carrying out actions which are not consistent with the long-term productive capacity of the resource. There will inevitably be adjustment issues for some land-holders. This is a very challenging business because, in some cases, people's expectations are that they will be able to continue doing what they have always done in the way they have always done it. Where that is not realistic you have a very significant social issue to manage.

Mr Early—Picking up Andrew's point and the point that you made about keeping the land-holders involved in the processes, I understand that there has actually been quite a mixed history with these levies. In some places in Victoria, for example, where there has been a lot of consultation with the community and the community feels it has some ownership of what the levy is going to be used for and so forth, it has actually gone reasonably well, whereas in other places, even within the same state, all hell breaks loose when there is a suggestion of it. The point you made is extremely important: that it has to be something that is owned by the community, that the community feels it is getting some value out of and that it is going to be able to use to try to solve some of its own problems.

CHAIR—Do you think the Victorian model at this stage is probably closer to the community than other models in other states?

Mr Early—It is patchy. I used Victoria as an example because my understanding, from talking to the Victorians, is that they have actually had different experiences in different areas. Whereas in some areas it has been quite well received, in other areas, as was explained to me, the initial thing went reasonably well, and perhaps they were a bit complacent and expected that other levy arrangements would go equally well, so they did not consult the community quite as much. That was how some of the Victorian government people explained it to me. I think they realise now that there is a very big job in selling the approach to the community and in making sure they understand that this is money raised locally, that is going to be used locally and that decisions are made locally to deal with some of their own problems.

CHAIR—These are really state departmental areas which, I suppose, is hard for you to comment on, although you would see some of it operating. Do you think we are doing enough with extensions through some of our departments? Obviously, land-holders are fairly innovative at times if you can prove to them that there is a benefit in this or that it can be done—for instance, river bank protection. Do you think there is enough being done through the departments on extensions just to prove how these things can be done, so that land-holders can pick it up from that?

Mr Early—It is a bit hard for us to comment on that. It would be fair to say that our minister, Senator Hill, has been concerned about what he perceives perhaps as a withdrawing of some state agencies from that activity, hoping that Natural Heritage Trust funds will replace them.

CHAIR—That is almost endemic in all of this. I have been on both sides.

Mr Campbell—It is very hard to pin down because whether or not the NHT had existed, state governments were changing the way in which they were delivering extension services anyway. All state governments have been getting out of the type of extension where you ring up to find out how much herbicide you should put on a given crop. People have been saying that that is not really the role of government, that is for Elders, Wesfarmers-Dalgetys or ICI to be doing that sort of work. There would have been a significant wind-back in a certain type of extension activity at a state level whether or not the Commonwealth government had got involved since the beginning of the early 1980s.

But there are many people who have seen that the number of people involved in the public good and conservation type of extension perhaps has not increased as markedly as it should have with the extra investment coming out of the Natural Heritage Trust. So I think there is no doubt that we could always be doing more in terms of informing land-holders about the long-term impacts of certain actions. There has been a tremendous improvement in recent years through the research and development corporations seeing extension as part of their research responsibilities. It is not just to develop new information, but to actually ensure that it is being used. We have seen programs—through the Land and Water Resources R&D Corporation with its guidelines on riparian management, through to programs like Top Crop, Crop Check, Target Ten, and a whole range of other extension programs that have been run by the R&D corporations—that make sure that the best information we have is getting right to the people who need to be using it.

So that has been a very positive development. There has also been a dramatic increase in investment in extension from some of the agribusiness corporations. One of our challenges now is to work with industry to ensure that the hundreds of people they have out there talking to farmers are well informed about these public good issues as well, so that they can see that inappropriate fertiliser use in the long term is not going to be a benefit but it is going to hurt you. There is no point in paying for superphosphate that actually does not get used by your crops and plants but goes straight through to the ground water and into the river systems or the estuaries. I think there is a tremendous opportunity there to work with private extension providers—not just assume that it has all got to come from the public purse.

CHAIR—I am well aware of the changes in the attitudes of government departments. Two things you mention there, I suppose, really come down again to the core of fear that is held in the community. I talk to a lot of these people. They are in my office a lot of the time. If you mention riparian management, they get terrified because the extremists go out there and say there have to be 40 metres along every waterway—all the waterways have got to be fenced et cetera. The people just turn off; they do not want to be involved. They run for the hills because they do not want to get involved. They think they will get drawn into this and they will have to do it. It is an attitude, and it is a real problem thing. I agree that, in many instances, people are not stupid. If you can show them that there is a benefit, they will accept that very readily. But they are wary about getting involved because of these extreme angles that come up.

Mr Komidar—You have got to watch city folk, haven't you?

CHAIR—Yes, you have got to watch the Melbournites.

Mr Campbell—Especially from the outer eastern suburbs.

Mr BILLSON—The south are all right.

Mr Campbell—I would have to say, though, that there would be many hundreds of projects being funded through the Natural Heritage Trust that are providing incentives for exactly that, for fencing off and revegetating riparian areas. That would be one of the most popular types of projects that comes forward and is funded through Landcare, Rivercare, Bushcare and a range of Murray-Darling Basin 2001 projects, as I am sure my colleagues from Agriculture, Fisheries and Forestry will point out in an hour or so. Those programs are investing a great deal in incentives for local groups to do just that, and there is no shortage of uptake and interest in doing that sort of work. I think the point you make is that, if it is attempted to be imposed, that often goes against the grain.

CHAIR—That then comes to the make up of some of the catchment management committees. I know there was an attempt in the early stages in New South Wales to make sure that about 60 per cent were land-holders, so that you had a majority of land-holders because they were the ones you needed to get involved. Unfortunately, those sorts of committees are government appointed. I think that is where we lose it a bit, if you put people on there who are extreme, not practical or not level in their thinking. The ones you want are the practical ones; these are the ones you are trying to get to. Have you seen any models around where there are elected personnel or not government appointed?

Mr Campbell—Victoria used to have a system like that for what were then called land protection advisory committees; they are the ones that preceded the catchment management authorities. But a subsequent government chose to appoint all those members and state governments have tended to hold that sort of thing quite dear.

Mr BILLSON—I can tell you why that was done. At the time, we wanted a skills based focus. It is the same with us, Mr Chairman: you do not always get the cream of society being involved in elected positions. The point there was that we were not sure whether the horsepower was there on those committees, and the act actually prescribed a skills

framework with that subtlety of balance as well as an overlay, but it was an attempt to get the horsepower on those committees, on those boards, that would be able to drive the program forward. I am not sure quite how we went with that, but that was the idea behind it.

CHAIR—Probably saying it is more important to win the psychological battle.

Mr BILLSON—It was a question of competence, too. People looking at apprentice politicians running them, when they were really looking for more decisive technically correct judgments to be made.

Mr Campbell—It is a crucial point if some of these Victorian ones now have budgets of between $5 million and $10 million a year, much of it public funds. It is crucial that they are competent to manage those types of resources.

Mr BILLSON—One of the driving things behind the inquiry was a sense that the promise of catchment management has not been delivered. We have got some good examples—for instance, the Murray-Darling Basin. There are some tributaries that are seeing improvement, but the system across the board is not improving. The hope of it being a way of not only stopping degradation of natural systems, of actually turning it around and improving it, has not quite been delivered. We have halted mangling the systems; we have not had a lot of success turning them around. Do you guys want to comment on that thought?

Mr Early—I think that is true. It is an evolving business, I guess. For example, the Murray-Darling Basin Commission have been looking recently at integrated catchment management: where to from here; what is the next quantum leap? Certainly, they are attempting to pick up some of those issues that you have raised. I guess it is difficult when you have got the different jurisdictions and, as Andrew said before, there are different approaches. We are still learning about what works and what does not work. I think it is just an evolving process at the moment.

Mr BILLSON—That is what we are hoping we can do: to actually pick the bits that seem to be delivering results and understand why and see whether they are applicable more widely as providing some leadership on structural issues.

Mr Campbell—I think it is also important that we do not try to load a catchment based approach up with the expectation that it is going to deliver for every issue right across the board. I think it is important that the expectations for what a catchment based approach can deliver are realistic. It is obviously the way to go for water quality issues and for water allocation type issues, and it is an important component of an approach to salinity at an implementation level. But ground waterprovinces are more important than watersheds and it is of mixed utility for dealing with biological issues.

If you are trying to save an endangered species, you need to be working with the habitat of that species. It is quite unlikely that it will follow water catchment boundaries. I think there is a danger in investing in one set of boundaries that finishes up being quite suboptimal for a number of other things. In some cases, particularly in the drier parts of the country, the social boundaries where people are much thinner on the ground are the really critical ones in

terms of getting effective responses. I think we need to be realistic about where it is appropriate to take a catchment approach and to have systems in place that ensure that where that is not the best way to go we have other things happening.

Equally, for natural resource management, market based measures obviously completely ignore catchment boundaries. An incentive system, whether it involves tax or grants or philanthropy, again, is likely to be reasonably indiscriminate in the way it works. We have to come up with ways of marrying these measures that apply right across the board—research and development is another one—and those that pertain to this catchment and this place in time with this group of stakeholders. I think there has been a danger in some of the early optimism about catchment based approaches that was infected with some expectations that this was going to deliver what we had not been able to do in the past. I think some of that was a tad overoptimistic. There will be a new realism which is more likely to be effective in the long term.

Mr BILLSON—The state governments are examining water service boundaries and local council areas. Is that an opportunity to try to get some of the connections a bit better?

Mr Campbell—Yes.

Mr BILLSON—I cannot see any of those public utility-cum-government structures delivering what is expected of them, albeit in some cases overinflated expectations, without having those connections there. From Victoria's point of view, it looked like an opportunity missed when there was institutional restructuring on the table not to recognise those connections. Is that something we should talk about and encourage the states to look at when they are going through another phase?

Mr Early—Yes, I think so. One of the problems—not so much a problem perhaps but a lack of opportunity—is where the catchment management authority, or whatever it is called, is not actually making the on-ground planning decisions and so forth which have been made by a local government which may or may not have good connections.

Mr BILLSON—Yes. I think that feeds into what the chair was talking about.

CHAIR—Yes.

Mr BILLSON—To give ICM the best chance it has got, I think they need better links there, but those links have a fundamentally political flavour to them about choices and opportunities forgone. For instance, we are not going to recover your waterway; it is going to be the salt drain and that is going to really make you unhappy. They are fundamentally political choices. I wonder whether that is partly what is missing and that we do not have those structures in place to make those pretty hard calls.

Mr Campbell—We certainly see local government as one of the real frontiers in natural resource management in that often you have a catchment body that has developed a catchment strategy and yet that is superimposed over local government zoning, planning and rating and—

Mr BILLSON—Running their own land use plans, vegetation clearance controls—

Mr Campbell—That is right. They are, in a very real sense, the things that drive where developments occur and where they do not occur.

CHAIR—So they are not integrated—

Mr Campbell—No. Our submission points out that that is both a matter of vertical and horizontal integration—

Mr BILLSON—A good point.

Mr Campbell—across salt, water, vegetation, coastal, estuary, biodiversity issues, and so on.

Mr BILLSON—Do we need to go back and remarket the whole idea? My sense is that we need to sell the broader dividend to the public and point to emerging things like greenhouse emissions, training and sequestration measures, and all that, and say, 'Hang on, this is a pretty big deal.' It is often looked at in policy terms—we all get excited about it because we live and breathe the stuff—but it is pretty hard to engage people outside the interest. You think of things like access to market where ISO 14,000 and environment management performance are criteria to market access, particularly with exports. There is the intergenerational theft argument that you cack up the natural systems today and leave them for our kids to fix up later. And there is even the natural systems landscape management issue beyond sustainable productive capacity. Do we need to go back and say, 'There are some pretty big deals wrapped up in this that we have not traditionally associated with them to try and get the public world to put some more dough in and get the private land—

CHAIR—It is one way of getting the Melbournians to pay—

Mr BILLSON—But I think that is part of it, Mr Chair, frankly. Picking up on the Victorian experience—we just had an election at the weekend—one side of politics said that we will scrap any notion of catchment levies.

CHAIR—Is that right?

Mr BILLSON—Yes. That is politically pretty popular but we are going backwards in terms of politics, and it just troubles me that we need to go back and actually remarket the whole exercise again and say, 'This is a big deal.' It sounds a little like a statement rather than a question. Do you think that is a reasonable point?

Mr Campbell—I think it is and I think we need to come up with a more saleable term than 'externalities'—

Mr BILLSON—Yes.

Mr Campbell—as a way to get people to understand the downstream and offside or down the track impacts of some of their actions. It is not too hard, if you are talking to an

Adelaide water consumer, to talk about the importance of water quality at a Murray-Darling Basin level, but if you are talking to someone in Queensland who believes that any water that goes over the border is a waste, you have to get a dialogue going between those groups. I know the basin is working hard to do that but I think, in terms of the communication challenge, we have to come up with some language that is a little bit more saleable than dealing with externalities.

Mr BILLSON—Even to justify public funding. If you argue that the taxpayer should pay for that research monitoring, the structural stuff, planning and political choices, while levies and land-holder funds go straight into works, there is still a need for the public sector to ratchet up its effort. Things like carbon credits and environmental flows and access to market for export are pretty good dividends for the taxpayer. I think we have to go back and sell the animal again almost.

Mrs VALE—On the issue you raised about the catchment bodies and how they actually spread across several, if you like, local council areas, we have this problem in the Georges River which is the boundary of my electorate. There are something like 14 councils which have a riparian interest along the river. Do you have strategies by which they could be encouraged or coerced or forced or whatever to consider their responsibilities to the river especially through their foreshore planning laws? Generally, they all have some sort of foreshore planning scheme in place but it often has not to do so much with the life and the lifestyle, if you like, of the river, as with the built-up environment. Do you have any suggestions at all? I suppose a state law would be the only thing, would it?

Mr Early—It is very difficult to get into that sort of business with local government—

Mrs VALE—Yes.

Mr Early—because the states jealously guard their responsibility for local government. Certainly we try to encourage local governments to get together. In terms of funding through the Natural Heritage Trust, there has certainly been a big push to get councils to get together to have big regional projects and to pick up some of those issues. Apart from that, if you like, incentive approach, there is not a lot we can really do.

Mrs VALE—There was a strategy that Sutherland Council put in for the Hacking River called a 'river keeper'. There are only two councils that have access to that river, which are Wollongong Council and Sutherland Council. Together, both of them have contributed to put in a river keeper. That was a voluntary action from both of the councils. It seems to me that, if the states could be coerced into forming that sort of legislation to make sure that all the councils contribute towards a river keeper, that river keeper then has some input into the foreshore planning schemes and it might have some impact. Would you like to comment on that? Is that too deep into the wish bag?

Mr Early—I do not quite know how we would go with coercing the states. I imagine the states would react pretty badly.

CHAIR—It used to be done with money.

Mrs VALE—Yes, the big carrot effect.

Mr Early—As I said, we are certainly encouraging local governments to take that approach. They come forward and we support them, but we do not hit them over the head if they are not doing it.

Mrs VALE—I would have thought that the only way you are going to get local governments to concede on that point is through state legislation—and perhaps with the big money carrot.

Mr Campbell—We have funded some work that has looked at just what local government is able to do in each jurisdiction under existing legislative arrangements. That research was carried out by CSIRO, and it has identified some quite significant impediments to some local governments being able to do that because of the legislative framework within which they work. Even something as simple as rate capping can prevent a local government from reorganising its rating system to put less rating pressure on areas that should be managed for conservation as opposed to production. We have funded that sort of work, and we are certainly using that sort of work, in cooperation with our colleagues in the states, to say, 'What about a change here and there to this legislation to improve it?' We are also funding work to identify best practice at a local government scale right across Australia and then to promulgate that through the Local Government Association to show shires and councils in one part what others have been able to do. But at the end of the day, this is an issue that the states are responsible for, and they take that responsibility very seriously.

CHAIR—I know we are keen to get natural heritage money on the ground, but could it be tied to a water quality or catchment management plan that has to be in place to ensure that it is effective, gets on the ground, does not duplicate work or waste money, that it gets the job done? Could it be tied to that?

Mr BILLSON—More teeth in the partnership agreement.

Mr Campbell—Our colleagues in AFFA would also have something to say on that. We certainly try to ensure that we are not funding large projects where there is not a soundly based catchment strategy. One of the criteria that are used to evaluate whether or not a project will be funded is the soundness of the strategy underpinning it. It is not in the legal agreement but it certainly is an important criterion in determining whether or not we invest money. It has been a very big incentive for the production of a hell of a lot of catchment and regional strategies.

Mr Early—I should mention too that Environment Australia has funded work through the Biological Diversity Advisory Council, BDAC, and ALGA, and have recently developed a local government biodiversity strategy. Through ALGA, that has been worked with local councils. But, again, it is a voluntary program. It is really up to the councils to take that up, but at least some of these ideas are out there.

Mrs VALE—My understanding is that the biggest problem with councils, especially urban councils, is how they handle the stormwater that goes into the rivers—and they all do it differently.

Mr Early—Yes.

Mr BILLSON—Post NHT, if we are going to accept that natural systems are important to our nation's future, and looking at our interests and protecting them as, say, defensive, surely if the federal government is going to finance a big share of that we have got to get beyond the 'Gee, it would be nice for the states and territories to do certain things' and say, 'If we're going to carry the can on regeneration of some of our natural systems, you guys don't even step up to the plate unless you've got some effective tools to stop degradation within your jurisdiction,' and have that fight. Otherwise we are going to plant trees in one place and have them mown down somewhere else.

Mr Early—I think one of the things we say in our submission is that integrated catchment management to date has been driven largely by voluntary action through the Landcare movement and through the NHT. So there is that issue of whether the next step should have a more regulatory approach in some aspects.

Mr BILLSON—Or even regulatory underpinning?

Mr Early—Yes.

Mr BILLSON—So you can encourage positive action. At least you would not be out there saying, 'This would be really good,' while carnage is going on in another part of the catchment without the tools or the political will to tackle that. So it is a step forward, a couple back routine. That would be fun.

CHAIR—I am sure we could have a very interesting discussion for a lot longer, but we have run out of time. Thank you very much. We might need to come back to you and talk to you again, but thank you very much for what you have contributed.

[9.52 a.m.]

DALTON, Mr Ross Kenneth, Acting First Assistant Secretary, Natural Resource Management Policy Division, Agriculture, Fisheries and Forestry Australia

GOODBURN, Ms Wendy Denise, Assistant Manager, Monitoring and Evaluation Section, Natural Resource Management Policy Division, Agriculture, Fisheries and Forestry Australia

WALKER, Dr Joseph, Senior Principal Research Scientist, CSIRO

WILLCOCKS, Mr Charles George, Assistant Secretary, Landcare and Natural Heritage Trust Branch, Agriculture, Fisheries and Forestry Australia

CHAIR—We have received your submission and it has been authorised for publication. Would you like to make an opening statement?

Mr Dalton—Thank you for the opportunity for AFFA to present and respond to questions you have may have on catchment management. The submission includes the major points that AFFA wishes to present, but we also wish to present, with your agreement, some further information on current progress on the assessment of catchment health and that is the reason that we have invited Dr Walker from CSIRO to make a short presentation on some aspects of catchment health. Dr Walker is on temporary secondment to AFFA.

There are a couple of quick points I would like to make in opening. In AFFA's experience, catchments are a useful scale for integrating natural resource management. Catchments, however, do not provide all the answers to resource management issues. The management of catchments, I am sure in your own view, is both difficult and complex involving diverse groups and a myriad of resource issues and a range of scales to manage them. We believe there is scope for governments to further develop the catchment management model to improve both the targeting and natural resource investment and to get individual and group action on critical resource issues.

That is all I wanted to say by way of opening comment, although perhaps I will just add one other item. This was not raised in our submission which is before you, but of course we have carriage of the rehabilitation program for the Great Artesian Basin. That is a catchment in another sense as well. If there are any questions that you wanted to raise on that issue—

CHAIR—Something dear to my heart, actually.

Mr Dalton—I am in your hands.

CHAIR—Are there any other statements? Dr Walker, could you give the committee a brief overview of what we know about the quality of our catchments at the present time?

Dr Walker—Can I use the overheads?

CHAIR—Yes.

Overhead transparencies were then shown—

Dr Walker—In essence, what we are talking about—and certainly we are providing some answers to questions that you were asking the EA representatives—is that in some way we have got to link the best scientific knowledge we have with action that is on the ground. We have to be able to do that in such a way that people who are managing on the ground have the ability to get on with the real business, and I think that is very important. One way that has been developed to do this is to consider how to measure catchment conditions or the health of catchments. Measuring the health of catchments does involve economic issues, biophysical issues, as well as social issues. But underpinning it all we have got to be concerned about how the resource base is coping.

In terms of how catchments function, we should be very proud of the science that actually exists in Australia. I think we are world leaders in that area. In terms of how we deliver—that is, the Landcare movement, how people actually are responding to a lot of this information—is something again in which we in a sense lead the world. There is a little bit of a problem in terms of getting information on the ground more quickly. That is something that we need to be concerned about.

In essence, there is a lot of information that is collected at points, and we have Waterwatch and those sorts of things. Traditionally what happens is that information is amalgamated, right up to even national scale products. In many cases that does not work because there is a natural break somewhere in here. What we are suggesting in terms of catchment condition is that, if we can identify broadly what the state of Australia's catchments are, then we can target which are in good condition and which are in poor condition. As a means of doing that, we use indicators. Indicators take a few attributes rather than many, and they follow the same kind of logic as economic indicators.

What we attempt to do and what we have done is take a series of catchments. This happens to be the local area. Canberra is in here, Yass is up here and Cooma is down here. The question is what roughly is the state of these catchments. Instead of producing a very complicated picture of what we want to do, we do what we call a traffic light—that is, red, orange, green. Red means that things are not as good as they could be; green that they are fine. Obviously I am not going into the fiddly details in that, but we end up, for example, in that area with a picture that looks like this. I guess it is not too surprising that the catchments that are in the poorest condition happen to be along a corridor. That happens to be where most of the development occurs.

The general idea is that, once you have got a very broad picture like that, then community groups can relate to the general condition of the catchment. Just out of curiosity you can superimpose on the map. This is the red overhead, but that is the distribution of current NHT projects within this area. You can see that most of them have in fact fallen within the area that is determined as needing attention, which in itself is interesting. It shows that the technique is not complete garbage.

It also raises a question which I think you were hinting at, Mr Chairman, and that is: if we do understand the conditions of catchments, which should be actually targeted for NHT grants? In a lot of cases we tend to target those that are the most degenerate or the most

affected, whereas in a lot of cases we could actually be targeting those that are more recoverable and/or actually preserving areas that are feeding into this problem area. Once we can identify what the condition is, then we can make a step forward.

My last overhead shows a result which involves community groups getting involved in this particular activity. This is one of the catchments that was designated as being red—specifically, it is this one with the little dot—so community groups got in there and collected environmental information. You can see that not all of the catchment is in poor condition, but there are three catchments that actually need attention. In this particular case—this is Belconnen in here, by the way, and part of Canberra, so it is a rural catchment as well as an urban catchment—these two catchments actually join up and flow through this lake. You can see that unless something is done up here, the lake, which is out at Belconnen, will eventually have a major problem. So my message is that there are methods available to look at catchment condition, they do employ good quality science and they are at a level that community groups can pick up on and get some action going on the ground.

CHAIR—Thank you.

Mr BILLSON—It was an interesting point you made about moderately degraded catchments being a focal point for effort. Are we ready to write off some catchments, or are we in a position where we need to? I was at SARDI earlier in the week, and some of their aquaculture type ideas are trying to turn degradation into a bit of virtue in some respects. I am interested in your feel on where the thinking, the science and the policy is at on those difficult choices.

Dr Walker—I can answer on behalf of the science.

Mr Dalton—And we will pick up the policy answer.

Dr Walker—It might be a bit of an unpopular view but I think there are some catchments that are essentially beyond hope.

Mr BILLSON—Cactus.

Dr Walker—I think the sooner we identify those the better. That does not mean to say that public funds should not still be spent on catchments, because one of the virtues of having a catchment approach is that you are very much aware of off-site effects, so that the cost of not repairing may be picked up somewhere like Adelaide, further down the stream. So, to answer your question, yes, I think there are some areas that are beyond hope.

Salinity is obviously a big issue nowadays. I think people do appreciate that salt is, in fact, a natural part of our environment. We live in an old landscape, and it is something that we have got to live with. There are a lot of land uses that are just not compatible with reducing salinity.

Mr BILLSON—So in those areas you would take an approach like with, say, the Regional Forest Agreements, where there is a view of unsustainability and then public funds

get into a transition emphasis, rather than a fix the resource or expand the resource type of approach?

Dr Walker—Yes. I think stabilisation and utilising the good parts of the landscape and maybe modifying land use is the way to go.

Mr Dalton—I will open for AFFA, then I will ask Charles Willcocks to continue. We certainly agree with Joe's assessment. One aspect is that there are large parts of the landscape where the cost of remediation would be highly unequal to the benefits. In some areas of salinity, the salt is being mobilised through the landscape. It is bit like King Canute, in some respects. So I think a point is approaching where we have to make a judgment about where individuals and the public would want to make the investments to get the best returns.

There is also the issue of getting the right balance of environmental values protected or bedded down, if you like, so that that underpins a continuing operation of the system and the ecological processes continue to operate so that rivers downstream provide the same benefits that they do upstream. Do you want to add anything to that, Charles?

Mr Willcocks—I would only add that what we have got is a situation where, as with a lot of decisions in the economy and business and private decisions, there is a limited amount of money to invest. It is a question of trying to find the priorities and identifying priorities, so we need some sort of investment strategy. Joe identified a strategy: do you go to the good areas and focus on those, or do you go to the bad areas and focus on those? I think it is a question of how you make those decisions. The catchment based approach can provide a mechanism for doing that. You will never get the answer 100 per cent right, but you will at least identify those areas where the investment should be targeted.

Mr BILLSON—Are those alternative uses of the natural systems conditions that we have created realistic—the aquaculture, the salt tolerant plantation forestry, or flora just for the heck of trying to stabilise the land form? Are they realistic in areas where you accept that remedial action of itself is not going to bring about a defensible result in terms of the expenditure of public money? Or should we look at some more creative use to stabilise the condition and try and do something virtuous with what we have created?

Mr Willcocks—One principle that we are very keen to apply—and this is covered in our submission—is that we are trying to treat causes, not symptoms. What you are talking about is where we are forced to deal with symptoms. The focus of attention should be a balance on causes and symptoms.

Mr BILLSON—I agree. I was not suggesting that exclusively, just for those very rare exceptions where you write it off.

Mr Willcocks—If we can focus our attention on addressing the causes of problems, which, as Joe has said, quite often lie in socio-economic rather than just biophysical aspects or elements of a catchment or area, then I think we have a better chance of getting a better return for our dollar, if you like.

Mr Dalton—One other aspect, and we refer to it as part of our best practice methods, whether it be at Commonwealth-state level or within catchments, is that all of us are looking for innovation and better synergies between approaches. Some of that, as Charles was saying, is informed by a better understanding of the causes. Take your example of a reafforestation as being part of addressing the movement of water through the system which has contributed to the movement in salinity. A large part of the effort that governments will make will be in research and development. I think I heard some comments earlier about passing information back down to a scale and on the level where it can be operationalised and made meaningful.

CHAIR—That is the point, I think. That is my hobbyhorse, I suppose. I have had a lifetime of dealing with farmers and foresters and those types of people on the ground. We can do the science, and I am sure that the science can be done very well, but in reality it is going to take an awful amount of taxpayer money—if you are going to do it with money—to turn some of these things around. The other way to do it, of course, is to try and prove to some of the land-holders that in fact by changing some of their management practices it is beneficial to them and to the whole environment, and therefore you can get it done quicker. Again, it comes down to finding out whether they can afford to do some of these things or not, but if you can convince them that in fact these practices are better, I think sometimes that can be done quite easily. This is where I get back to the extension that are we out there showing people how these things can be done? They are the people who come up with innovative and cheap ideas for doing it—if they can see there is a benefit in it.

Mr Dalton—Do you want to comment on R&D and some of the uptake in your experience?

Mr Willcocks—The other point that we have made in the submission is that what we are dealing with are fairly complex systems, and that includes the people. We have people who are private land-holders, we have people who manage public land on a relatively small scale and we have people who manage public land on a large scale. Some of the land is reserve land and some is used for a variety of activity—farming, forestry, recreation and so on. So we have to deal with this very complicated system. We are obviously very keen to involve the farming community because one way or another they own or manage 60 per cent of the land out there. If you do not have them on board with their investment—and their investment is huge; annual farm costs are in the order of $23 or $24 billion a year—then you probably do not achieve much in this area. But, having said that, unless their activity is married together with their neighbours' activity and the local area activity and maybe the catchment activity on a broader scale, state and Commonwealth, then we are probably not getting the best result.

Dr Walker—Could I have a go at that one as well, because I think this is an absolutely crucial point. To some extent, the knowledge base that existed with extension officers has gone away, and the question is: who do land-holders turn to to get knowledge? If you put too much into the private sector—say, a fertiliser company or whatever—the kind of information you get is going to be biased.

I think there are actually a number of very good examples around Australia that have developed out of the Landcare and NHT work where communities have actually developed in a sense their own knowledge bases. I can think, for example, of Mount Barker in South

Australia and there is Blackwood in Western Australia. In other words, there is a knowledge base that exists within the community where information is put in and there is GIS and it is funded by NHT. Those are the people that are now being looked towards for information about the environment. I guess that needs to be backed up with linkages to private businesses, but I think that is possibly one way to go so people have the opportunity to collect their own information, put it in a databank and then be able to access that through time.

CHAIR—To encourage, say, maybe the private sector into setting up models and putting their name all over them and saying, 'This is our contribution,' is that a way to go to encourage them to do something like that?

Dr Walker—I think that would be one definite way to go.

CHAIR—Get some advertising going.

Dr Walker—Yes, exactly. The key thing is benefits. No farmer is going to turn around just out of the goodness of his heart and go bankrupt to fix up, as you were saying, a riparian zone or something like that. It is how you actually explain to people what the costs are likely to be and what the benefits are. You need to have a green economic analysis as well as just the production side of things. It is how to develop a new kind of knowledge base. I think it is a really big challenge.

CHAIR—I once had a fair bit to do with property in New South Wales when I was there. I had an embryonic idea, having spent five years on the Murray-Darling Council with the problems we had there, of property rights, particularly in the larger Murray-Darling system where maybe nutrients could be taken out of the system, private wetlands, et cetera, and those property rights then sold to someone who couldn't and had no option but to pollute. Do you think that is a way of getting some money into the system and of being able to address some of these problems?

Mr Dalton—That is an extension of what is already happening with salinity.

CHAIR—Yes, that is true.

Mr Dalton—In other spheres you can argue the same thing with carbon emissions and so forth. Those types of techniques give us a few more strings to the bow, if you like.

CHAIR—What about the science? Can we measure those types of things?

Mr Dalton—It is easier from the end of a pipe rather than for diffuse sources. The science can show us the kinds of movements through the landscape.

Dr Walker—The problem that I think science has had in the past is that, because catchments and soil in general are so complicated, a lot of the attention focuses on small areas, so all the detailed models are at that scale. You have to jump from a small scale to a regional plan and that has always proven to be very difficult. That is one of the reasons why

I am suggesting you start off at a reasonably big scale and then burrow down into data where it exists.

To answer your question directly, I think a lot of the pathways for nutrient movement, where sediment goes to and so on, is very well understood. At a general level, and certainly at a level that can be applied to develop property management plans or regional plans, I think a lot of that knowledge does exist. What doesn't exist is the spatial distribution of problems. That is a tricky one. In other words, you know perfectly well how fertilisers recycle through certain types of soil, but you don't know where all those types of soil are, except in a generalised way.

CHAIR—How far down the track are we at identifying point sources of problems? I am not saying erosion, although river bank erosion is one of our biggest problems.

Dr Walker—It is. Again, I think we are a reasonably long distance along that path. The problem is that if you want to do that for the whole of Australia then it is very expensive. I think the strategy is to have local communities with sufficient knowledge to be able to go out and assess the health of the stream or catchment.

CHAIR—Wouldn't the states have a lot of information?

Dr Walker—Yes. What you have to do is to build on that, but actually do it at a much more local level. A lot of blame is put on blue-green algae, for example, and phosphate moving from fields into the streams. A lot of work has shown that that is not necessarily the case.

CHAIR—I was the minister when that blew up.

Dr Walker—A lot of subsequent work has shown that, in fact, is not true. A lot of the sediment is just coming from basalt areas which are rich in phosphate. Again, you have to combine current knowledge with observations on the ground.

Mr JENKINS—To clarify a point, you were saying that we don't know the base data about the soil types sufficiently to then take the knowledge that we have on the micro and to extrapolate it.

Dr Walker—Most soils mapping is a generalisation. While you know generally the kinds of soils that occur, say, within a farm, you don't know specifically what occurs in a paddock—that is, as a map. The person who knows what occurs in his paddock is a farmer and, as long as a farmer can recognise that, then there is a set of rules and guidelines that he can link into, but he has to make that connection.

Mr Willcocks—This is a very difficult area. Obviously, if you can identify the cause of a particular form of degradation or pollution, there are ways that you can then address the causes in this area. I think what Joe was saying is that, where there are diffuse sources of pollution, solutions involving the identification of property rights and applying a 'polluter-pays' principle are very difficult to apply. As in Joe's example of the phosphates, if you get

it wrong—and there is a high risk of getting it wrong—your policy response is actually not addressing the problem at all and maybe creating other problems.

CHAIR—What you are saying is that, if it is an industry or a town, it is reasonably easy to source the pollution. But if it is on a broader scale, it is very difficult.

Mr Dalton—That is right. This is an issue that comes up in a lot of the debate about the application of a range of incentives or disincentives in economic instruments. You can say to the industrial processor or a manufacturing processor that there is a pipe with which you can meter the contents and the composition of something. But when it comes across a broader scale through a catchment through a combination of practices and interactions in the natural environment, as Charles was saying, the level of precision about who is in fact the polluter is made a bit harder to identify. That does not mean that we should give up the hope that a good range of instruments can actually become available to us. To pick up your point earlier of whether it is voluntarism or regulation, the challenge for policy at all levels, and for people in the communities, too, is to find the appropriate mix of interventions, behaviours, incentives or disincentives that can apply. We are all focusing on that.

CHAIR—In Australia we have been notorious for setting up schemes in each government area and never coordinating them. How well are we coordinating this?

Mr Willcocks—Which schemes?

CHAIR—When we look at the funding that comes from the federal government in particular, we have funding from the Natural Heritage Fund, we have salinity funding and maybe some other funding. We did hear earlier, and it is not news to me, that states tend to shift their money out when federal money appears. How well are we coordinating the efforts? Is everyone trying to do these things? Are we are not coordinating between the states, the Commonwealth or local governments? How well is the effort going?

Mr Dalton—The Murray-Darling Basin—and you may be speaking to these people later—is an example that I am sure you are familiar with. That is very much an attempt not only at integrated catchment management but also at the integration of the various programs and parts of government. The operation of the cap on water diversions is a program and a policy that is implemented among governments.

The council also has a salinity and drainage strategy, which is an integrated approach across governments. We operate the Murray-Darling 2001 program under the NHT, but the states are genuinely matching that. It is integrated between the Commonwealth and the states in respect of the kinds of objectives and activities that are funded. Under its basis sustainability program, the commission also has a program of trying to establish agreed areas of action between governments. They would all be responsible for initiating and developing their own programs, but these are all directed at a particular range of objectives, which are directed at improving the natural resource condition.

CHAIR—Is the council developing a natural heritage plan—or whatever—right across the catchment?

Dr Walker—The 2001 program.

CHAIR—Is that basically it?

Mr Dalton—It has a broader range of objectives that come under its charter, if you like. It is not developing a single plan. As I said, it is a basin sustainability program which is a fairly complex amalgamation of what the various governments are doing, and that is within the framework of the objectives that the council is seeking for improved natural resource management within the basin. The council is also developing a basic salinity management strategy for the basin at the moment. The council intends to have that developed by the middle of next year. So that is very much along the lines of a single statement about how the council, and therefore the contributing governments, would seek to address a series of actions directed at the management of salinity both from irrigation and also on dry land. The activities of the NHT Murray-Darling Basin 2001 program are consistent with that basin sustainability framework, and I would imagine that whatever range of actions come out of the salinity program will be a major influence upon the direction of the remaining funding until 2002.

CHAIR—Are you happy that the councils are discussing these issues to make sure that the issues are coordinated?

Mr Dalton—The individual aspect of dryland salinity is a major issue for them. I think if you asked each of the members of the council, and certainly the commissioners, they would see salinity as part of the broader picture of natural resource management. That is very much the charter of the council. There are different levels of intervention. The Commonwealth has its program basis under the NHT and the states make their contributions to the NHT through the Murray-Darling Basin 2001 program. They then have their own action plans, regional committees and programs through the various states, but they are all acting in concert.

Mr Willcocks—I think we have a situation where there are some national strategies and some programs at the national level and arrangements whereby we work cooperatively with the states and the community. Landcare is quite a good example of that. So the Natural Heritage Trust operates under a number of national strategies, and the decade of Landcare plans is an example of where there is an agreed national plan and a Commonwealth and state plan. The decade is nearly over, so AFFA is working on a natural resource management statement that is reviewing that strategic framework. Then, sitting under that, you have the NHT programs—Landcare, Rivercare, Bushcare and so on—which deliver against those strategies. So, if you like, the strategy is the investment framework and the programs are how we deliver. The programs under the trust are our working arrangements with the states. So we have partnership agreements with the states, and the programs, the objectives and the performance measures are set out in those partnership arrangements.

That probably does not mean a lot to people on the ground doing the planning, so at lower levels, at regional and catchment levels, the performance is patchy. For example, the Blackwood Catchment group in Western Australia has, after several years of regional or catchment activity, reached a fairly high degree of sophistication—we can provide more information on that if you like—whereas the work of other groups in regions or catchments

runs from a high degree of sophistication to a fairly low degree of sophistication in areas where you still have fairly patchy, small Landcare group activity. Obviously that is supported because it is a way of getting people in the door.

Mr BILLSON—Nearly all of the submissions talk about a need for additional investment. I would like to talk about the public and the private sector push on that. From a public sector point of view, should we be looking more creatively at the dividends for public investment? For instance, are the sequestration credits for greenhouse gas emissions and environmental flows a virtue in landscape management that is a public good that warrants additional government injection of funds?

Let me put it another way: say we provided the money for vegetation measures and said to the land-holder, 'You forgo productive activity on the areas needed to carry out that vegetation. We will provide the resources, you get the productive capacity benefits and we will keep the carbon credits.'

Mr Dalton—I think we are all searching for innovations to maximise the benefits that can come from public investment. There are carbon sequestration possibilities. I think we also had some interesting interplay with how we might try to address dry land salinity as well. I think that would certainly be the kind of benefit that can come from, if you like, the improvement to the commons, which is the classic reason for public investment. I think the principle is fine; we are looking for ways in which it can work in trying, as I said earlier, to capture many of those mechanisms and possibilities that exist.

I think we are always conscious, as those in charge of government programs, to be aware of the line between public benefit and private gain. In all of the partnership programs, we look for contributions from those who are likely to be in a position to gain. Where we go beyond Commonwealth-state, you can get into individual land-holders and regions. I think they are a rich source of potentially being able to leverage additional investment and more, therefore, from the Commonwealth involvement. In fact, many of our involvements under the NHT and other programs are seen in that catalytic and leveraging type of arrangement.

Dr Walker—What I think you are talking about are trade-offs. If it is possible to grow trees in an area where trees are likely to grow very well and therefore you can make a profit out of it, and that has environmental implications downstream, then you have got something that is very useful. The question then is, 'What are the benefits to the public in terms of dollars saved by doing that?' Should you actually put that kind of money up front to encourage very large projects to get under way?

CHAIR—How does the property owner benefit from that?

Dr Walker—The property owner would benefit, for example, by having ground waters reduced.

CHAIR—It is usually the bank manager who he has got to look after.

Dr Walker—That is true. Or by having better quality water going past his property for irrigation.

Mr BILLSON—What we did in the Victorian law was actually separate ownership where the trees become a chattel and the land-holder can then derive an annuity from those with the resources to invest in that. There was a whole lot of legal framework we set up for that which I think is transportable.

Dr Walker—It is understanding the trade-offs; you are quite right. What does the property holder benefit? There are ways of actually doing that.

Mr BILLSON—In private sector terms in the European farm subsidy argument, we are hearing around the place that we are being accused of subsidies for not fully recovering the cost of our agriculture production because of the natural systems degradation. Therefore, what the Europeans are doing is contributing to the environment, not to a farm subsidy, and we are evil for not doing that. That metatheme, combined with some of the—

CHAIR—That is code for a tariff.

Mr BILLSON—Yes—combined with some of the multinational supermarket chains looking for ISO 14,000 compliance for agricultural products. Should we be out there now saying to primary producers, through the work you are doing, 'Guys, we've just got to get this right, otherwise we're going to have market barriers put in our road because our product doesn't pass ISO 14,000 certification.'

Mr Dalton—I think you have touched on a very major theme of where to next. Your earlier question of what happens post-NHT is relevant to this. Without getting into the arguments about the European policy of multifunctionality—

Mr BILLSON—Leave that to the pollies.

Mr Dalton—I am sure there are plenty of people around the place who can give you some views on that. The issue of consumer acceptance is at the heart of what you are talking about. I expect that is one of the things that will be an issue for producers of food, just as it is for producers of motor vehicles and producers of pharmaceuticals or any other service or product you want to make. Customers and markets will want independent verification that products are safe and that they have been produced—

Mr BILLSON—Produced virtuously.

Mr Dalton—I will not make any comments on the words. But I think that is an additional frontier. That is a next step for agricultural and natural resource users throughout Australia. The temptation is to put your hands up and I think that would be a nod acknowledger.

Mr BILLSON—The tools are all there. You could look at the Forest Stewardship Council and those sorts of international movements that are designed to differentiate forestry plans.

Mr Dalton—I think the critical national interest point of view for Australia is to be able to have systems which are independently verifiable by creditable verification agencies. There

is the temptation to jump on one bandwagon more than on another, so it then becomes a judgment about which is the system which we think is internationally best practice in that area.

CHAIR—Some farmers are already trying to develop that niche market, are they not?

Mr Dalton—I am sure they are.

Mr BILLSON—Picking up Joe's point, we are in many respects at world's best practice for our science. My sense is that we should be leading that argument. We have traded on the back of clean and green products for the last 25 years. Surely, if that debate is going to be a part of its global training environment, which I am convinced it will be, we should be out there shaping and driving the argument and making sure that the rigour that we know we can withstand is involved in the sorts of tests that other producers have to withstand.

Mr Dalton—I could not agree more. I think that is right.

CHAIR—Except that we are not America. I hate to break this but I am going to have to and we are going to have a little break for a few minutes. I would like to recall soon after 10.45 a.m. if I could. Thank you very much.

Proceedings suspended from 10.39 a.m. to 10.49 a.m.

BULLER, Mr Christopher, Manager, Integrated Catchment Assessment and Management Centre, Australian National University

GILMOUR, Ms Juliet, PhD student, Integrated Catchment and Assessment Management Centre, Australian National University

CHAIR—We have received your submission and authorised its publication. Would you like to open with a statement?

Mr Buller—Thank you. It would be helpful if we could elaborate on a couple of points in our submission. Firstly, Professor Tony Jakeman, who wanted to come in and lead us off today, is unable to do so due to illness. He fears that he has giardia, a nice water borne ailment. This will commit him to an increasing emphasis on water quality.

Mr BILLSON—That is research at the sharp end.

Mrs IRWIN—A man to be admired.

Mr Buller—We have a major project in northern Thailand and we get some pretty good comparisons in water and land use management quality issues. I will start off by my emphasising a couple of points from our submission and Juliet, who has experience at both state and local level environmental management, could follow up on a couple of points.

Firstly, our commentary comes from the point of view of a research and education institution, but not one which remains behind the walls or on the top of the ivory tower. We are very committed to working with local catchment management communities and in applying the techniques which we are developing not just at the biophysical level because, as previous speakers this morning have said, there is a fair understanding of issues at the biophysical level. We might want to debate some of points there. The other major drivers of change for both quality and quantity of assets are social and economic.

Our centre looks at the catchment scale, the broad scale, and it integrates biophysical, social, and economic issues. As our submission suggested, the catchment is the right format of landscape to address many of the issues of natural resource management. There are many biological and ecological processes which are driven by the hydrological cycle. Upstream, downstream issues can only be considered if you take a catchment approach. Often trading issues, trade-offs, occur within catchments and can only be managed within that environment.

Secondly, we believe that integrated catchment management is crucial because the factors which have been illustrated over the last few years in terms of environmental degradation have not happened because of lack of goodwill on many people's parts. They have happened because of poor institutional structures, poor understandings of the linkages between biophysical and other drivers of change. By way of illustration, we have been approached by one catchment management committee within the last month or so. They brought to us a map of the catchment looking at ground water in its current state and a projection 20 years

hence. Two areas of that catchment are probably going to go out of agricultural production. These maps have not been available to the people within the catchment—

CHAIR—Is that the Liverpool Plains?

Mr Buller—No, it is not. It is basically secret to the catchment management committee because they fear the impact that this information will have. Firstly, it will be challenged, of course. But even if it is proved to be half right, there are substantial investments in agriculture and society in these two parts of the catchment which are going to undergo massive change. The value of the land will drop. The further investment in those two parts of the catchment will crash.

They are sitting on scientific information but they do not know, socially and economically, how to handle it. What do they do? How do they present it? That is the sort of issue that we, as an independent research and education organisation, have an opportunity to make an input into. Some of the things which we have suggested here, such as regional information systems and working closely with catchment management groups over the long term, are ways to help apply the investment which society has made in education and training at the catchment level.

The last thing I would like to talk about is time frames. We have talked a bit about scale but time frames are critical. Biological and physiological processes take a long while to flow through. The interdependencies and the feedback loops are not always well understood. Those processes are not amenable to the political cycle. The Commonwealth has a major role in the way it takes leadership and can, in the future, introduce a natural resource management strategy which will put emphasis on understanding those long-term frameworks and seeking community investment and community response to a set of processes which have to be understood in that long time context. I am sorry that took a little bit longer than I intended. Juliet might like to comment on a couple of points as well.

Ms Gilmour—From my perspective, I have worked in local and state government with catchment groups and being involved in formulating plans, carrying out catchment plans and implementing different actions. It would be pertinent for the inquiry to have a good handle on the positive aspects of catchment management at this point in time and also the negatives. What is going wrong? Why aren't catchment management committees reaching their goals? They are fairly obvious questions as to why we are all here.

The general feeling that I have gathered from my work throughout state and local government is that generally the catchment scale is the scale at which natural resource management should be carried out. Most catchment committees are quite comfortable being able to administer plans and funds at the catchment level. Secondly, as a philosophical mechanism for management, ICM, or integrated catchment management, is the management tool that the catchment committees are happy to utilise for managing at this particular scale.

With these two combined, I feel that TCM has been successful in raising individual land-holder awareness of their cause and effect relationships and impacts upon the environment, both upstream and downstream. In that respect, I think the TCM philosophy and the use of

catchment management committees at a community scale has been successful to date, given the fact that it really is only a recent initiative as far as environmental management goes.

The idea that TCM is a community based implementation process is perceived in local government as the best method of carrying out TCM. In conjunction with that, we have also looked at monitoring programs such as state of environment reports and state of catchments. There have been questions raised as to whether these are the best mechanisms for gathering information for catchment plans.

At this stage, the actual process of monitoring is perceived to be amenable with catchment plans but there is a gap between how funds are allocated, how the monitoring process is coordinated with the catchment management committee and the people who are carrying out monitoring programs on the ground.

That is pretty much the perceived success of catchment management at this stage, but there are quite a number of negatives that I have gathered, that I guess the inquiry will deal with. We are looking at different methods of managing at the catchment scale, if that was the scale that was chosen.

Basically, there are a number of best management practices available, but these are not accessible or available to catchment management committees. In all states, with the exception of Victoria, catchment committees are being pretty much unable to move past the planning stage into implementation. There are various reasons for that which you can question us on later. I guess one of these really is, from my perspective, the largely inadequate coordination between the catchment committee and local government. Seeing that we are operating at the local level, there is often confusion and antagonism between the role and responsibilities of local government and what the catchment committee should be doing.

Lastly, at the local level catchment committees have not been able to provide the information for stakeholders and local government that is required for coordination in carrying out of TCM. So that is generally where I feel that catchment management is, at least in the states of Queensland, New South Wales and Victoria, although I do feel the Victorian model is slightly more advanced for several reasons.

I guess I would move on to why specifically catchment committees have not met their goals. I will run through these very quickly and, obviously, there will be plenty of time for questions after that. Firstly, there is resource allocation funding. It is not a question of the amount of funds that are being allocated—the investment in natural resource management is at an all-time high—but the avenues for funding, which is through Natural Heritage Trust and government departments. Typically, these funds are of a short-term nature and this makes it very difficult for the catchment committee to be able to implement a long-term strategic solution at a catchment scale. Considering that that is the goal of the catchment committee, NHT funding proves quite difficult for these committees.

Secondly, there are procedural steps in managing the catchment committee with which, I feel, there are several problems. In New South Wales, at least, not so much in Victoria, large amounts of time and resources are spent gathering information for compilation of the plan. There is very little technical expertise on these catchment committees to carry the process

through to implementation and I feel that that is a large constraint to the progress of TCM in New South Wales and Queensland, at least. I think the CMAs are slightly more advanced.

The monitoring within the catchment committee is another issue, which is largely one reason catchment committees have not been able to attain their goals. There are administrative constraints, technical constraints, and very little access to BMPs to implement these strategies. Often access to information channels is fairly poor. That would tie in with catchment committees having links to State of Environment reports, and I feel that currently that is a very narrow channel.

Finally, and perhaps the most pertinent issue for at least coastal catchment committees, is the accountability of the catchment committee to its community and to the funding sources. Quite often, for instance, there are plans and strategies which are implemented, but their implementation is quite ad hoc and there is no accountability to a peak body. If you compare that to the Victorian example, where the CMAs are accountable to a peak body, I think you would probably find that could be one reason TCM is more successful in Victoria than it would be in New South Wales. So that is a general overview of where I feel TCM and catchment management committees are at, at least in coastal areas.

CHAIR—Thank you. Going back to the issue you raised, which I see as being quite important, where you said that scientific research has shown in one particular catchment that sections of farming will have to close down, this really comes back to a responsibility of government, doesn't it? I daresay the same argument also applies to certain areas that were inappropriately cleared in the past, and I think we can all identify some of those—not that I am in the doomsday cult. Government would have to be involved; I do not see any other resolution to it.

Mr Buller—I agree with you. I think that many farmers in that sort of environment are like the frogs in the slowly warming pot: they will die before they realise it has got too hot. We are seeing it on the Monaro at the moment with the structural adjustment that is occurring pressed by low commodity prices, demographic change and lack of reinvestment. I think there is a case for government encouragement of community understanding, and government investment where there is a long-term perspective and where it can be seen that nationally valued natural resources are being depleted, because those are the sorts of things which are not going to be able to be handled by local investment or by local activity. Many things can be and will have to be implemented by the community, but they are unlikely to be driven by the community.

Ms Gilmour—The community is the level at which the ownership or responsibility for landholders is greater. I do not think there would be an effective alternative to moving away from a community-based catchment.

CHAIR—Can we can identify these areas where there is obviously a problem? I do not see any resolution to that except to say that government should come in and buy up a property or whatever. If it is an area that is in the national interest ecologically, maybe that is an area where government has to be involved because otherwise it will get worse and worse and it will not be of any benefit to the environment.

Ms Gilmour—That is right. I definitely feel there is a role for government departments to coordinate the catchment committees and for communities to be involved through that administrative body to uptake responsibility for their actions on the ground. I think government would have a central role, as we have seen. But at the moment there are problems with accountability for these small catchments on the ground. I guess that if a department such as DNR or the DLWC were to focus or create a peak body where these catchment committees were accountable for what they did at the end of the year—very much like the Victorian model—I think that TCM, as far as implementation was concerned, would start the ball rolling. I think we are up to a stage where landholders pretty much have a good handle on what their impacts are on the land, but as for coordination and actually implementing a process, there is no driver behind that. I think that is a central role of government to be that driver.

CHAIR—I understand New South Wales, but in Victoria—Bruce can comment on Victoria. My assessment of the catchment management committees in my area, and I made a comment earlier, is that, firstly, they are politically appointed, so for a start that is where a lot of landholders get upset, particularly with certainly personnel. Then what seems to happen is that the money is then used to drive an agenda of a particular group to get information to prove their particular position, instead of getting some satisfactory work done which is going to improve the environmental position. I do not know whether you would like to comment on that.

Ms Gilmour—I would. I guess we can ask that with the political agendas we are generally finding and all this money going to natural resource management why we do not have some sort of solution at least on the ground strategies. That is a huge question. Yes, I think a lot of the resources are squandered away in these political agendas. Getting back to the idea of government involvement and a peak body, I think that would be able to drive those political agendas off the main agenda of what a catchment committee should be about, which is implementing and administering its objectives or long-term strategies. I feel that often the catchment committee identifies its long-term strategies and what needs to be done and to a very accurate extent, but the point that they can be implemented is restricted obviously by the politics. I feel that it is the role of state and local government to separate those two out through accountability and through various funding mechanisms in addition to NHT funding.

Mr Buller—I think in New South Wales you also the structural difficulty where you have catchment management committees set up with a degree of local representation and often a reasonable degree of local ownership. The funding that they get often goes into plan preparation, so the plan preparation is seen as the objective. How it is delivered, who then owns the outcome and who takes it up, is not nearly as well established or run. Perhaps that is because of the periodicity of funding. Perhaps it is because it is easier to do the plan than to actually implement it.

You also in New South Wales get this overlap between the river management committees and the catchment management committees. They are still not totally integrated under the TCM process in New South Wales, and yet the river management committees have access to funding which the CMCs do not. So who is actually driving the activity? It is water quality and water delivery. The department responsible at the state level is most concerned about

things like the water trading environment and the cap. But a lot of the drivers of poor water quality, of sedimentation, of phosphorous, salt and so on, are not within the stream banks, they occur elsewhere in the catchment. That interlinking between an understanding of what is happening on a broad scale within the catchment, which the CMCs have, at the moment, at least in New South Wales, does not marry up, from our observations, with what is happening in the better funded river management committees.

CHAIR—Are you familiar with the acid sulfate management committee on the North Coast of New South Wales? What was done there was that the main players were put together and told to work out their problem, and they seem to be doing a reasonable job of that.

Ms Gilmour—I just want to add a point there which would reinforce what you are saying in relation to the acid sulfate committee, in New South Wales at least, and Chris might be able to elaborate on the Victorian example. The representatives of government departments and various stakeholders are a predefined structure for these committees. At the onset of planning there is no predefined authority or role of these particular representatives. From my own experience, you will often have a strategy on the table, for instance, a water quality strategy, and you will have the EPA, the DLWC and a whole host of organisations and stakeholders that are willing to get together to solve this problem, and none of them have the authority or have their own personal agenda set in order to be able to say, 'I can make a contribution in that perspective.' They have no authority from their stakeholder group. So a lot of these committees, even if there is something on the ground that they could do, cannot carry it back to their groups.

CHAIR—I know what you are saying. That is the way the committees are constituted; they are not going back to the main representative groups who can make a contribution.

Ms Gilmour—Who can make a decision. From that perspective, the acid sulfate soil group might be a good example of how a catchment committee can make a decision. There is a lack of decision makers in catchment committees, in New South Wales at least. Victorian CMAs have substantially more authority when you compare the two.

Mr BILLSON—They have a head of power of their own. I was curious about some things you were saying. We in Victoria went for a skills and competency based appointment process.

CHAIR—Don't get a big head about this, will you?

Ms Gilmour—But it is a plus.

Mr BILLSON—It is in the law. We put that in the law, when it went to parliament, saying that horsepower is going to be the key. Picking up local interests as part of that is fine; if you are looking for a particular professional or technical skill, sure, try and draw it from the local area, but we need the skill. That is what made the difference. The other point was that government took on the role of funding the plan preparation and the research that backed it up, and then went to the local communities saying, 'Can you guys contribute to the implementation of the plan?' So there was a bit of a definition—

CHAIR—Did the departments do that?

Mr BILLSON—No. There was a funding stream from the department, but it was not done by the department.

CHAIR—So did a consultant do it?

Mr BILLSON—It was done by the local catchment authorities. They had some talent and support from the departments, but it was a core function of government to actually set the plan up so the land-holders and other stakeholders were not feeling they were paying for something that was a core state government role. Then you went back to the community saying, 'How about helping us out with works to implement it?' My point is, though, that there has been a reduction in the appetite for actually funding the work now.

Ms Gilmour—That is right.

Mr BILLSON—As was mentioned earlier, the Labor opposition, or the Labor minority government—depending on how you score the result on the weekend—actually has a policy of no catchment levies, which I think is an enormously backward step. It is great politics—

CHAIR—Popular.

Mr BILLSON—but rotten, because now all of a sudden you have a message to the broader taxpayer that says, 'The local land-holders, who are direct beneficiaries, do not see there is virtue in coughing up some money, why should you?'

Ms Gilmour—That is right.

Mr BILLSON—I am just wondering how you see the longer-term resourcing question being addressed when I am troubled by the signals that mean no one is willing to put their hand up to pay for the remediation.

Ms Gilmour—For the long-term funding works.

Mr BILLSON—Yes. Post NHT, we are going to have to sell a better argument to the taxpayer to kick some dough in.

Ms Gilmour—That is right. You would need 10 Telstras.

Mr BILLSON—That is right—another one round the corner. What do you see for the future in terms of resourcing?

Mr Buller—Resourcing has to be directed at problems. Part of your charter is looking further down the track. We have heard in recent weeks about salinity in the Murray-Darling Basin. That is going to be one of the biggest issues facing Australia's regional, rural, wildlife and quality of life issues over the next 20 years. I do not see how you can remediate that level of problem without having a very well coordinated set of practices. You do have to pick hot spots and you do have to have mechanisms for directed action, but that is where

federal, state and local activities can come together to deliver both on-ground benefit but also downstream benefit.

One of the problems with part of the NHT funding has been that it has been uncoordinated. To outsiders it seems to have been driven more by locally managed, locally assigned problems, which may be a back paddock here and a back paddock there, more because they could be argued than because they were actually going to have an impact. To answer your question, something has to come after NHT because, without some central philosophy which addresses the three scales—national interest, state interest and community interest—we are not going to reverse, we are not going to remediate, the problems of the MDB and we will be forfeiting a lot of responsibility collectively.

CHAIR—It is a huge challenge, so we have to develop carrots somewhere along the line to get these programs working. Given that we are a free society, and given that we have Torrens title and any government that tries to impinge upon people's rights will do so at their own peril, somewhere along the line we have to develop carrots for these property owners to develop these management plans.

Mr Buller—Yes, we do. We are probably not doing it particularly well at the moment, but there are ways of encouraging retirement of land. The previous speakers from AFFA mentioned a couple of those options, although wholesale revegetation of areas where trees will grow will have a massive impact on yield to stream. That cannot be overlooked.

We have done work on farm dams. Farm dams are good for encouraging drought proofing of farms and they are included in best practice in many areas of the eastern seaboard. In some catchments which we have studied there has been a very significant impact on the catchment's yield during periods of expansion when farm dams have been put in. The Yass catchment has had that somewhat, with a 30 per cent reduction of water to stream. There are rivers in Queensland which are run dry most of the year because of the amount which is captured before it hits the stream. So the integration issues have to be given a level of importance which they have not received in the past.

Mr BILLSON—On the integration question, it seems to me that local government reform—and I will talk about one I know best, which was in Victoria—missed an enormous opportunity to try to align catchment boundaries more with local government boundaries, more with water and waste water boundaries.

I cannot see how a promise of integrated catchment management is going to be delivered when you have this structural fragmentation that ignores some of the causal factors and puts them somewhere else.

CHAIR—This is when the new local government areas were set up.

Mr BILLSON—Yes. You can get around it by state based land use planning overlays and those sorts of things. Is that something we should be addressing in our report where state jurisdictions are reviewing these accepted structures, that they should have an eye to catchment concepts with boundary definition and tools that are made available?

Ms Gilmour—Even though the catchment boundaries are clearly important and set quite obscurely on local government boundaries—and I think there have been some examples in Victoria where they have been quite successful—to a certain extent—

Mr BILLSON—We had a bit of a go.

Ms Gilmour—That is right; where the agendas of the catchment management committees—let us say there would be three in one local government jurisdiction—and the strategies and long-term goals are incorporated or integrated into council's corporate plans. That defines council's clear role and responsibilities for that year. From my experience, there is a clear mechanism for accountability and review of council's plans in that corporate structure. I think that is an excellent vehicle for implementing ICM. It is just a matter of somehow getting local government to incorporate TCM and catchment management committees into their corporate plan.

That is a problem that I have found in New South Wales. No matter how successful a catchment committee was, unless it went through council, and council already had too many other issues to deal with, it really was not going anywhere in the long term. Council's corporate structure is designed for long-term goals and for annual reviews. It is all part of their planning process. I think there is an excellent avenue there.

CHAIR—It is included in the LEP?

Ms Gilmour—That is right. There have been examples in New South Wales—for instance, with the group that I was working with: the DLWC developed a riparian policy. That was obviously bumped down to local government to implement.

Mr BILLSON—Do we have a revenue stream?

Ms Gilmour—That is right. The CMC were able to implement the riparian policy once we had the backing of the riparian policy when it was specifically put into the LEP. Land-holders then had to take responsibility for their riparian lands. They began to work with the catchment committee to implement this policy. Actually, I thought it was a good example of how ICM and local government—

Mr BILLSON—At least with land use planning decisions the jurisdiction has an eye to ICM objectives.

Ms Gilmour—That is right.

Mr BILLSON—So they do not have someone who goes off on a massive repair and reveg measure, and then someone else comes up with a feedlot proposal that wipes out 17 hectares of vege—so there is not an issue that needs to be worked through.

Ms Gilmour—That is right. In this particular LEP, obviously they were prohibited. You would have to wipe out those. That would be a mechanism, I would see, of overcoming that constraint which people see straightaway when they think the catchment boundary does not match up with the local government boundary and they think, 'Oh, my gosh.'

Mr BILLSON—Yes, you can bridge it.

Ms Gilmour—That is right. I think they are bridged through the legislation.

CHAIR—Mind you, the New South Wales government flicked past a policy to the councils on septic tanks which caused local councils an enormous political problem.

Ms Gilmour—That is right.

Mrs IRWIN—We are actually visiting the Liverpool Plains region in October. There is one question I would like to ask: would you give an overview of the ICAM's project on sources of phosphate and sediment in the Liverpool Plains region?

Mr Buller—Yes, certainly. This was a Land and Water R&D Corporation funded project which was collaborative between ANU and CSIRO Land and Water. We assessed two separated problems into phosphorous and sediment. We were looking at what generates the sources of these two: are they same or are they different? Under what conditions can you establish where material is coming from? The phosphorous turned out to be largely natural phosphorous. It was coming mainly from stream bank and stream bed. The sediment sources were largely the result of land management practices.

Not all the principles can be applied equally across the country, because landscape, geology and climate change things. But you could see that land practices in the last century and in the 1930s had a fairly major impact on the amount of sediment which was being delivered at the time. Clearing of hilltops caused a major increase in mobilisation of sediment. The reduction of value of the pasture industries around the 1950s, I think it was, led to stock being accidentally taken off the hilltops. There was regrowth of shrubby vegetation and the amount of sediment being yielded to stream was reduced.

Land management practices in other parts of the catchment showed that strategically placed erosion banks reduced sediment to stream. Again, when the value of agricultural products in some areas was reduced, the farmers could no longer invest in the maintenance of those banks, levies and the like, and there was an increase in delivery of sediment.

The other thing I should say is that, basically, you cannot do anything about major rainfall events. It does not matter where you are in the catchments, if you have soil which can be mobilised, in major events it will be mobilised; that just washes any sort of management practice out of the way. So you have to accept that you will get major activities which you can do nothing about.

If climate change increases the occurrence of peak events, then we are going to see more sediment nutrient being delivered to stream no matter what we do. However, you also get big pulse flows and then you have the dilution factor. So it is not all bad. But, at the level you can manage, land management practices are very significant in reducing the amount of sediment going into the streams.

CHAIR—Thank you very much. Unfortunately, we are going to have to stop our discussions there. We wanted to discuss a few other matters as well, so if needs be we might

call on you again some time. We have a number of witnesses to hear, and maybe after we have listened to some of those witnesses we might want to come back to you.

Mr BILLSON—To check out how the ANU catchments is going!

CHAIR—The area around Canberra is one of the most eroded in Australia, isn't it?

Mr Buller—It certainly is. We would be very pleased to provide any comment and assistance we can. I think one of the interesting points is just the way this inquiry has in itself generated more information into the system. We did a submission analysis, and it was interesting to note that people are making tide lines on where they are in terms of how institutional processes are changing. So I think you are generating activity as well as recording it, which is very positive.

CHAIR—We are glad to know that we are of assistance. Thank you very much.

[11.39 a.m.]

KIRK, Mr Lawrence Ross, National President, Australian Association of Natural Resource Management

CHAIR—Welcome. You have probably heard my previous statement to witnesses. We have received your submission and have authorised its publication. Would you like to make an opening statement?

Mr Kirk—Yes, thank you. In listening to all your previous speakers, you might be thinking that the glass on the table is empty. I would like to say that it is half full, and I would like to celebrate what we have done for catchment management in the last 10 years.

I am currently employed by the Murray-Darling Basin Commission. I have been granted leave by my employer, which I think is wonderful, to be here today. The inquiry has raised some issues with our members, and our members are very keen to respond because the majority of our members have been very active in natural resource and catchment management since its inception. We believe that, yes, there are some concerns, but we would not like to think that a dim picture is being painted of what has been set up in the last 10 years as an early awareness of catchment issues.

However, as a general rule, there has been concern across our members about the lack of involvement with local government. We have heard that again today, and we have some ideas there. Cascading down from that, there is also the belief that local government, because of its involvement, has the ability to tap into the entire community and deal with social change. We believe it holds the key to what we should be working towards with regard to catchment management in the future. We have highlighted one particular need, the need for end-of-valley targets. I believe we have had a wonderful ability to raise awareness in the last 10 years. If we are now going to convert that to behavioural and attitude change, we probably need to institute some targets.

Today we are within the Murrumbidgee catchment, which, if you think about it, is 25 per cent bigger than Tasmania for the same population base, so let us not assume that we are dealing with very large catchments here. I would also like to table for the proceedings today a map of surface water catchments and local government areas in the Murray-Darling Basin. There are some 36 different local government areas in the Murrumbidgee catchment alone. I have left my glasses behind: I think it is 36; it could be 37 or 38. So our members believe very strongly that we should be looking at prioritised action and targets for the next 10 years.

In conclusion, I would also like to say that there is a time factor here, a gestation period for catchment management. I worked with the former soil conservation service in New South Wales. I managed their advisory service and then their salinity program. But I want to start with the wage pause employment program at Wagga. You may remember that wage pause fairly well. That was an investment by the Commonwealth, and the foresight of one of our soil conservationists there let us get into catchment issues. I was able to repay that investment by working with the LEAP program in directing those people into real action and

helping them resource that. So I believe there is a gestation period where perhaps we need to look at going into that behavioural change. That is why it has been great to be involved in this submission today. Thank you.

CHAIR—Thank you. I think the Murray-Darling Council is a good model. From very early on, the community were involved in decisions that had been taken by the commission. I cannot think of the exact term, but there was a community committee.

Mr Kirk—Yes, the community advisory committee. It is still active and is the peak body for advice to council.

CHAIR—Do you have any background in that? Can you tell us exactly how that worked and what you think were some of the achievements in getting some of those fairly difficult decisions through to the community?

Mr Kirk—I have been with the commission for only 12 months, but I was an observer prior to that when I worked with the state. I dealt with the catchment management chairs very regularly in conjunction with the salt action program I ran, and it was very rewarding that they felt they could actually take those state issues directly to a higher level. I think we cannot underestimate that. I think we are going to see a more active role with the community advisory committee in the forthcoming salinity strategy; there is a very active involvement there.

But it is also very hard on those representatives themselves when you consider that there is one representative representing an area of this size. We are not going to get over that, so we have to take a leap of faith in that regard. I think we should also consider that we are dealing, particularly in the basin, with one of the largest examples of integrated catchment management in the world. I think that is something we cannot underestimate.

CHAIR—Soil conservation in New South Wales was probably the greatest extension department I can ever remember.

Mr Kirk—That is wonderful to hear.

CHAIR—It did a lot of good work which was basically extension—getting out there and working with property owners on how to overcome a problem. I suppose you are a little biased, but do you think we could learn something from the way that department worked in the past in trying to get these messages across?

Mr Kirk—I would say that I am very biased, Mr Chair, but I would. I started as a soil conservationist and went through as a district soil conservationist. It was interesting that in those times we had a system where we could actually assist land-holders with earthworks. I do not believe there has been a better training ground. We have missed that training. With extension you were actually putting your expertise on the line. You would plan, implement, design, cost, supervise the implementation and the back-up service and arrange funding. When you think about professional training for soil conservationists, that project planning, et cetera, was a wonderful tool that we probably undersold.

The soil conservation service also undersold what we were doing, which was really integrated catchment management. In the advances scheme we were not just pushing up dams and banks; we were changing fences to land class boundaries and working on reafforestation and pastoral improvement. It is interesting to note that the association I represent today used to be known as the Soil and Water Conservation Association. Approximately two years ago our members wanted to change the title to the Association of Natural Resource Management. I think we actually moved on from soil and water conservation and our members realised that they were dealing with broader issues.

CHAIR—Would you say that your members accurately reflect the attitudes of the land-holders you represent, and do you get that message back to the particular land-holders?

Mr Kirk—It is an interesting demographic. Interest in our association is largely from agency people. I am pleased to say that we are getting an increase in local government in our corporate membership. We are also getting an interest from some other professionals. With the downsizing in the state departments in the extension area, some professionals are realising they need an association to either air their opinions or provide a forum for debate.

In the five years, for example, in an active New South Wales branch, we have brought forums together to debate issues such as vegetation management in the Monaro and in Moree; urban salinity in Wagga; and, in Orange, the natural resource aspects of mining. These issues have been discussed in forums, but we were actually able to bring the parties together.

Our membership is increasing in its Landcare base—and that is an area we are looking towards. One push in the next 12 months is to get local government more involved in our association. We do not push an agenda. We are literally there to air both points of view and to bring people's points of view together. Because that act is very difficult to do, we have found that it has not been happening in the last three to four years in the state departments.

CHAIR—What changes have you seen on the ground? Have you seen things starting to be done in areas that were or concern?

Mr Kirk—Yes.

CHAIR—In the inland of New South Wales, in particular, river-bank erosion is a very big problem. Is any work being done in those sorts of areas?

Mr Kirk—Yes. I also think we have not promoted our success stories well enough—right from 10 years ago. Soil conservation projects have actually been implemented. You can now drive through some areas where we have changed the whole landscape, yet there is a poor carryover. I think Jo Walker hit the nail on the head earlier when he said that we have not carried that knowledge forward: we have made landscape change, but people have forgotten and assume that the landscape always looked like that.

If we are looking at case studies—and I am pleased you are going to my colleagues at Liverpool Plains—you will see that there is change happening. It is wonderful to hear a land-

holder not talk of managing cropping, but of managing his water with his cropping. That is a fundamental change in attitude, and you are seeing that change come through.

Look at Wagga City Council, how they embraced the problem of urban salinity and made some terribly brave statements by putting them on section 49 certificates—'You are in a high salinity hazard.' The first budget that they put into salinity two or three years ago in Wagga that went through, the community said, 'No, that is not enough,' and, within two weeks, they got the budget changed. So the resource allocation can be made with the will of the people that are there. So there are some wonderful examples floating around. Maybe it is the Australian cringe: we haven't actually highlighted those.

Mr BILLSON—That is what we are about, trying to find those, and then pick out those characteristics that contribute to them being one-for-one and saying, 'We are not talking about something surreal here; here is what has happened on the ground. Here is how we can walk the talk, basically.' So if you have some 'Ah, ha's' on that—like, 'Ah, ha, that is a good idea'—fire them in because that is the sort of thing we are trying to pick out to work out why they are successful.

Mr Kirk—Yes, I certainly will.

Mr BILLSON—The first question is about the institutional structures. We have talked about land use planning, overlays, cooperative work between CMAs and local government. Is there a role for us to revisit the ROCS, the Regional Organisation of Councils—

Mr Kirk—Most definitely.

Mr BILLSON—and maybe work with some of those where there are some cooperative relationships now and re-tweak their areas to better reflect catchments? As Sir Humphrey would say, 'Local government restructure is a very courageous move, minister.' So I cannot see that happening in a screaming hurry, but maybe working through with the ROCS might be a way of getting those connections that you and others have talked about. Is it afoot?

Mr Kirk—Yes, I believe that. I think that that is where, when we put our submission together, we thought, 'If you have end-of-valley targets'—let us say, the Murrumbidgee, the catchment we are in today, and they have also broken up their strategic plan which has raised all the issues—a wonderful document in that regard—into lower, mid and upper Murrumbidgee—straightaway there is a role to say, 'Well, righto, this is the end-of-valley target for turbidity, for salinity, for a whole range of other issues, so, right, team, what are we going to do here?' It may be broken up into those areas, but we have got to involve the ROCS because the words 'cumulative impact' I keep coming back to. What is the cumulative impact of a quarry in this upper Murrumbidgee to the overall end of target? 'Yes, it is a brave move—end of target—minister,' but the point is it is a starting point.

I see now that the success of the salinity and drainage strategy in the Murray-Darling Basin has been because of that, because someone drew a line in the sand and said, 'This is it.' It does mean—if you are actually doing your salinity trading correctly—if there was good reason why those salinity credits could not have been reached, that that could not be tabled and explained.

Mr BILLSON—Is it also a product of the problem becoming so patently obvious that it mobilised action and political will?

Mr Kirk—Yes, that is right.

CHAIR—South Australia threatened to sue; that is what mobilised the action.

Mr Kirk—That heightened the awareness.

Mr BILLSON—Out of sight, out of mind stuff, when you see salt loads going up. It is pretty hard to say, 'Look, make some calls based on a consequence.' You think, 'Oh, it is not such a big deal; what are you going on about?' That is the sort of concern I have.

Mr Kirk—We are dealing with an awareness issue. At the same time in 1988-89, I was very fortunate to help a former director, Warwick Watkins, on the Hawkesbury Nepean Catchment Management Trust. It is the same thing as awareness. At that same time we were starting this trust think about the effort on recycling and waste minimisation. Now look in 10 years where that has come to compared to where we were. Now it is has actually gone, I believe, from awareness to actual behavioural attitude change. My children know: if I put a stubbie in the garbage, I get criticised.

Mrs IRWIN—It is education, isn't it?

Mr Kirk—That is right. However, we are dealing with natural resource management. We have a longer time frame. It is a longer time frame that we have to accept and work within, and also, if we look at the lessons that have been learned from the likes of waste minimalisation, we should be piggybacking on those campaigns I think a lot better.

Mr BILLSON—There are just a couple of other things related to it. In our travels, should we just rock up to some farmers and say, 'What material is available? Who do you ring for advice?'

CHAIR—We have not taken all the guns away.

Mr BILLSON—I was just making the point that extension work is pretty significant. I do not have a feel for what that is like on the ground. Should we go and see what the average farmers have available to them and who they can ring, just to get a sense of whether that advice is there or how isolated they are?

Mr Kirk—Certainly this has been a question, and I will put on my other hat—that with the commission. I manage the education program for the commission. The question that we have been asking in the commission is, how do people—this particular target audience—want the information? I can provide you with that research and the report that was recently completed. I will undertake to do that.

The other thing is that there are some very interesting farmers not too far off from here. I can certainly pinpoint a number who have actually published papers and said what is wrong.

They have taken the next step—where do they get information. I would be happy to provide that to you.

CHAIR—There has undoubtedly been a lot of work done. In my time I can recall the work that has been done in the irrigation areas to reduce usage of water. Obviously, price focuses the mind.

Mr BILLSON—I am sure, but we can put greater policies and programs in place. If the person on the ground does not know the first thing about it, that is a bit of a waste of effort.

Mr Kirk—That is the point I made in the submission as well. The recent work by Neil Barr has highlighted the fact that the average age of farmers in the Murray-Darling Basin—and I do not want to keep concentrating on the basin but that is an example on which I have the data—

Mr BILLSON—It is a good place to have a look, though, isn't it? It is not a bad starting point.

Mr Kirk—The average age of the farmer is 55.

CHAIR—That is across-the-board. I think you can just take that across-the-board.

Mr Kirk—Some of the work that Neil is now looking at is mapping this out. When you see it mapped out and overlaid on the local government area, no matter how good the technical message may be of salinity, phosphorous control or whatever, we have not really taken that data set of demographics seriously.

Mr BILLSON—Just two more questions. I am mindful of the time and I have a couple I want to wrap up with. I think we need a big marketing push to prepare both the taxpayer and the broader community for the investment that is required, and also to get the message out that some constructive things are happening and to celebrate best practice. Could the government sponsor some awards, best practice awards, with you guys and the AWWA? Is that something we could look at doing to get the message out there that this is a big issue and that there are some constructive gains being made and here is what they are—'What are you doing in your area,' type of thing.

Mr Kirk—Yes. I will speak for my association. The association has an award called the McKell Medal. The McKell Medal is for excellence in Australia's soil and water conservation. We usually get them struck in lots of 10. We have now got approval from ARMCANZ to change the terms of reference to make that for excellence in natural resource management, not just soil and water conservation. So we are finishing this decade with a fundamental change in awarding that. We have great support from ARMCANZ to raise the profile, and that is something our association does. We can raise that excellence of management of our natural resources, and we should be proud of it.

Mr BILLSON—I agree.

CHAIR—So the prize is just a medal?

Mr Kirk—It is a medal. The other thing that I have instigated in our association is that that person then becomes the patron for that year. That aspect of a patron we did not have. That person has demonstrated that they have contributed above and beyond.

Mr BILLSON—I am talking about the broad aspect of these things.

CHAIR—Bruce may have been getting at the fact that dollars drive the world. If there was a prize of so many thousand dollars—

Mr Kirk—Yes, and anything like that to assist as well. At this stage it is the distinction of having the McKell Medal. But we certainly would need and welcome anything else to raise the—

Mr BILLSON—The flip side to it, though, is that I think we all agree that there needs to be a continuation and increase of public investment post-NHT. Take defence: we need a blue up north to get people to realise we have been running down our defence expenditure. We need something similar to that to highlight to the broader tax base, the broader community, that we really have to sink some more dough into this. I thought the awards might be a way of doing it.

I have one final point. Given the natural resource theme, the broadest theme, when are you guys merging with the Australian Water and Waste Water Association so that the professionals are actually leading what they are all talking about but have not been prepared to do themselves?

Mr Kirk—I have not done it with them, but we have started to merge with the Irrigation Association so that we are trying to get our—

Mr BILLSON—Slightly facetious example.

CHAIR—Irrigation council or association?

Mr Kirk—Yes, Irrigation Association of Australia. We are now saying, 'We have got this role. Where do we all fit in?' Our role is specifically doing that to assist with forums. We are one of the few groups that publish scientific reports in our journal. This does not happen in many other areas but we are doing that.

Mr BILLSON—It is a bit hard for us to say our institutional structures are wrong.

Mr Kirk—That is right.

Mr BILLSON—The professions are saying we need to work more carefully but you guys have Balkanised your own arrangements.

Mr Kirk—I take that.

Mr BILLSON—Is the issue about attracting private sector money still on your agenda? In Victoria, we have had catchment management authorities with levies that have been

reasonably well accepted in some areas but rejected outright in others. Now the Bracks opposition are saying they are going to scrap the lot, which is great politics but rotten for policy. Are you guys tackling that?

Mr Kirk—Yes, I would say that, through local government. If you look at the local government, it is the best institution in that area of private investment you can get. Take the way that we are influencing the Wagga area where we really did have a big push. We actually influenced that budget significantly—

Mr BILLSON—So you are getting a piece of that existing action rather than—

Mr Kirk—Exactly. There is existing resource. If we are going private against public, that is probably the best. If you take the local council as the board, the shareholders in Wagga said, 'No. We want you to redo that budget.' They jolly well did it. I think that is our attitude to private investment.

Mr BILLSON—Local government farming rate discounts can be used. I am on the Mornington Peninsula in Victoria and in Melton we are pushing to have land management values as part of the deal for a 50 per cent reduction on your rates. It is not just a matter of you being a primary producer. You actually have to meet some land management objectives as well to get the discount. Is that something you see more generally?

Mr Kirk—Yes. We can do that if we tie into inter-valley targets. The catchment management committee would have mid valley targets; we would say, 'To meet that target we believe we have to do that.' So we are aiming to a target which may actually buy a credit point or buy a natural resource credit that they can then say, 'If the upper Murrumbidgee want to do that, then you will get a credit for this.' Whereas the mid Murrumbidgee may say to get our natural resource credit it may be something else in that regard.

Mr BILLSON—In terms of pollution/waste, it was once put to me that waste is someone else's resource in the wrong place. Are we doing much in the way of waste water reuse or using nutrient loads in water systems for other productive uses that might not immediately be top of mind?

Mr Kirk—Spasmodically. We probably have not showcased widely enough really in those areas. I can think of isolated incidents but there has not been that broad-scale adoption. I come back to the triggers with the end of target. To meet the target that was the trigger. We have got that awareness. To change it, we need a trigger to meet that target.

CHAIR—What happened to the program in New South Wales of getting the sewage of inland towns onto timber lots or tree lots or things like that? There was a definite policy when I left New South Wales to do that.

Mr BILLSON—There was a distribution system and getting it from A to B.

CHAIR—What happened with the Murray and the blue-green algal bloom, for instance, that we had for 1,500 kilometres? The evidence that came out of that was that about 50 per

cent of the phosphorus was natural. The rest was being in put by either sewage works along the towns or by agricultural practices. The sewage was an easy one to address. We put a policy in place to say the government would actually put funds towards getting these sewage systems on the land and, because most of it is a semi-arid area, onto timber lots. Has that bogged down?

Mr Kirk—I cannot give specific knowledge. I know that they have looked at particularly the one at Wagga that has been a major reuse. There is also the other complication that is raised is that it is wonderful to use effluent but has it actually caused recharge for their salinity problem. It has actually been an interesting development from one issue into another.

CHAIR—Yes, into another.

Mr Kirk—That is the only concern that has been raised in some of those areas.

Mr BILLSON—On Friday I was at SARDI—the South Australian Research and Development Institute—opening their conference on wastewater management and aquaculture. I thought, 'What is the connection, other than stopping fish swimming undeterred?'—but that is a discussion for another day! What they were looking at doing was running saltwater aquaculture projects inland for waterways that are heavily salt affected. Is that a genuine prospect as a way forward or is that fluff and icing stuff?

Mr Kirk—No, it is certainly not. There is a national committee on the productive use and rehabilitation of saline land—PURSL—and they are having their conference in November—I helped organise it two years ago in Tamworth. That is very positive, saying that if we have got saline land we can learn to manage and work with it. And that is one of the aspects that is being picked up. That is the kind of attitude that says that natural resource management means we have to deal within those parameters. There are people like that who are promoting it.

CHAIR—Big money for live prawns into Japan.

Mr BILLSON—And they are running barramundi.

Mr Kirk—It is fascinating what they are doing.

Mr BILLSON—One last point. In those high event storms we are getting high volume water running through catchments, particularly urban catchments. I know there is some work going on where they are trying to capture that and fire it back into recharge aquifers that are then drawn from throughout the rest of the year when it is dry. Do you see much happening in that area, where you have got groundwater under stress and the engineering solutions are about putting water from where we have got heaps of it when we do not want it into places where it would be useful? It is fascinating. Do you see much of that going on?

Mr Kirk—I have not got specific knowledge on that.

CHAIR—It would depend on the underground geology too.

Mr BILLSON—Yes. They are trying it in South Australia. There is also the question of the quality of the water going in, because you get all the hydrocarbon load off the pavement and they do not want to chuck that into a good aquifer.

CHAIR—The map that we have just received from Mr Kirk is very interesting. Is it the wish of the committee that the map be incorporated in the transcript of evidence? There being no objection, it is so ordered.

The map is as follows—

CHAIR—I thank all the witnesses for appearing today.

Resolved (on motion by **Mr Jenkins**):

That, pursuant to the power conferred by paragraph (a) of standing order 346, this committee authorises publication of the evidence given before it at public hearing this day.

Committee adjourned at 11.58 a.m.