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HOUSE OF REPRESENTATIVES

STANDING COMMITTEE ON ENVIRONMENT AND HERITAGE

Reference: Catchment management

TUESDAY, 2 MAY 2000

MELBOURNE

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HOUSE OF REPRESENTATIVES

STANDING COMMITTEE ON ENVIRONMENT AND HERITAGE

Tuesday, 2 May 2000

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

Members in attendance: Mr Barresi, Mr Billson, Mr Causley, Mrs Gallus, Ms Gerick 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.

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SUTHERLAND, Mr Peter Donald, Executive Director, Department of Natural Resources and Environment

CHAIR—I declare open this public hearing of the inquiry by the House of Representatives Standing Committee on Environment and Heritage into catchment management. The committee has gathered evidence for this inquiry by inviting submissions and then holding inspections and public hearings across Australia. We are nearing the end of the process. Yesterday the committee visited Shepparton and Kerang to see first hand how the catchment management authorities are working.

At today's public hearing, we will hear evidence in relation to submissions from the Victorian state government, the CRC for Catchment Hydrology, Melbourne Water, rural water authorities and other groups and individuals involved in catchment management. I advise 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.

We have received a submission from the Victorian government and have authorised its publication. Before we ask questions, would you like to give an overview of your submission.

Mr Sutherland—I will briefly run through some overheads to highlight some of the key issues raised in the discussion paper.

Overhead transparencies were then shown—

Mr Sutherland—The goal of catchment management in Victoria is to ensure sustainable development of our natural resource based industries and to protect the land and water resources on which those industries depend and the conservation of our natural and cultural heritage. The goal is fairly broad and encompassing and includes social, economic and environmental outcomes.

The outcomes in more detail that catchment management in Victoria seeks to achieve are, firstly, community involvement and commitment to natural resource management. It is fundamental that the community is engaged in identifying the solutions and the problems in relation to catchment management. Other outcomes are sustainable development of our natural resource based industries, maintenance and improvement of water quality and the condition of our rivers, prevention and reversal of land degradation, conservation and protection of biodiversity, minimisation of damage to public assets from flooding and erosion and, finally, minimisation of the economic and environmental impacts of pest plants and animals. Again, the

range of outcomes that we are seeking to achieve is quite broad. In Victoria, we are seeking to ensure that those outcomes are achieved in an integrated way.

The underlying principles of the framework established in Victoria for catchment management involve, firstly, empowering the community to address problems that are relevant to their local and regional catchments; taking an integrated approach which recognises the interactions between land and water management, the importance of catchment processes and understanding those processes to achieve effective outcomes; the importance of targeting investment to priority areas, both scarce community and government resources, to ensure that the greatest benefits are achieved for the resources that are invested; accountability, which is a key underpinning principle in Victoria's framework, to ensure that there is clarity of roles and responsibilities amongst the various players; and minimising inefficiency in terms of duplication of activity between the various players in the partnership.

The underpinning legislative framework for catchment management in Victoria is the Catchment and Land Protection Act 1994. This establishes the state-wide Victorian Catchment Management Council, nine regional catchment management authorities, a metropolitan catchment and land protection board and enables the development and implementation of regional catchment strategies which effectively are the blueprint for both government and community to work together to achieve the outcomes of catchment management. The Catchment and Land Protection Act operates in conjunction with a number of other particular issue and sector focused legislation, including the Environment Protection Act 1970, the Flora and Fauna Guarantee Act 1988, the Water Act 1989, the Forests Act 1958 and the National Parks Act 1975.

Very briefly, the institutional arrangements comprise an overarching catchment management council, which provides state-wide policy advice to the Minister for Environment and Conservation, advice on research priorities and advice on priorities in terms of the natural resource management issues facing the state. Nine regional catchment management authorities have been established in nine catchments in regional Victoria and, as I mentioned, one advisory committee of the board known as the Catchment and Land Protection Board in the metropolitan region of Victoria.

CHAIR—Is the Catchment Management Council formed from the catchment management authorities?

Mr Sutherland—No. The Catchment Management Council is established quite separately under the act. It is a skills based board with a charter to address state-wide issues. It does not have a formal relationship with the regional catchment boards.

CHAIR—So there is no representative of the authorities on the council?

Mr Sutherland—That is true. The CMAs are responsible for coordinating the development and implementation of regional catchment strategies. These strategies encompass the full range of issues and outcomes I referred to earlier in terms of land and water management and pest management issues. They have been developed in consultation with local communities and Landcare groups to ensure that there is understanding not only of the causes of the problems but

also of the solutions and that there is commitment to joint action between communities and government.

The regional catchment strategies provide the strategic framework for catchment management in Victoria by setting out the priorities across the region. They also indicate the various roles and responsibilities of the stakeholders in the partnership. I will briefly run through the key stakeholders. The Catchment and Water Division within the Department of Natural Resources and Environment is responsible for the overall program and programs related to catchment management. A number of service delivery arms of the department, including Catchment and Agricultural Services, provide technical support and advice to catchment management authorities, Landcare groups and community groups. Agriculture Victoria represents a number of research and development institutes across rural and regional Victoria which undertake research in relation to sustainable agriculture and land management and pest management issues. Parks, flora and fauna are involved in delivering services in relation to the management of national parks and, similarly, the Forests Service and Land Victoria are responsible for managing the crown estate in relation to native forests and crown land respectively.

The Environment Protection Authority is responsible for pollution control in particular in Victoria and has a close relationship with NRE particularly in relation to water quality issues and monitoring water quality outcomes as a result of catchment management strategies. Local government is a key partner in concert with regional communities in achieving outcomes. There have been quite explicit guidelines prepared to ensure that the statutory planning processes of local government and the catchment planning processes of the CMAs are closely coordinated and the CMA regional catchment strategies are identified as part of the state-wide planning scheme arrangements.

Rural water authorities are responsible for delivery of water supply and drainage services to rural Victoria and, in a number of cases, undertake significant works in relation to salinity management in irrigation areas, particularly subsurface and surface drainage. Non-metropolitan urban water authorities are responsible for servicing regional centres in terms of sewerage and water supply and clearly have a major interest in the quality of water that is delivered from the catchments.

Regional coastal boards have been set up in a similar way to catchment management authorities. In relation to the major estuaries throughout the state—including Port Phillip Bay, Western Port Bay and the Gippsland lakes—there is close interaction between the catchment management authorities and the coastal management boards to ensure that the water quality derived from the catchments is not impacting adversely on the opportunities for coastal development and recreation. Probably most importantly, we have around 900 Landcare groups in Victoria with almost 50 per cent of the farming community involved in those Landcare groups. They are key partners in delivering on the priorities in regional catchment strategies.

The catchment management authorities are responsible for the ongoing review and amendment of regional catchment strategies. Currently the catchment management authorities are reviewing the salinity management components of those regional catchment strategies in light of the emerging new evidence from the Murray-Darling Basin salinity audit. They identify priority activities and work programs for implementation of the regional catchment strategy on

an annual basis. A three-year rolling regional management plan is developed in conjunction with the CMAs and the Department of Natural Resources and Environment and sets out the resourcing arrangements for implementation of the plan and coordinating activities across government and the CMAs. The CMAs advise both the state government and the Commonwealth in relation to resourcing issues at a regional level and particularly have an important role in advising the Commonwealth government in relation to assessment of projects submitted under the Natural Heritage Trust. They have powers under the Water Act to provide specific services related to integrated waterway, flood plain and regional drainage services to regional Victoria.

The CMAs are structured to ensure maximum community input. They have a skills based board of up to 15, including a representative nominated by the Secretary of the Department of Natural Resources and Environment, and they have a number of implementation committees to involve the local communities in the decision making process related to work programs, either on a subcatchment basis or on an issues basis.

A number of the authorities have adopted a subcatchment arrangement where an implementation committee will take carriage of developing the priorities and programs related to a particular subcatchment for consideration by the board of the authority. In other CMAs, they have adopted an issues based approach where you may have, for instance, a salinity management implementation committee, a nutrient management implementation committee and a pest management implementation committee. There are obviously advantages and disadvantages of both approaches. We are still looking with interest at the experience that is emerging out of those different models. The authorities also have a number of staff with particular oversight of their executive functions in relation to flood plain management and waterway management.

In terms of the responsibilities of the other players, the Victorian Catchment Management Council advises government in relation to the condition of land and water resources. It is required on a five-yearly basis to provide a major report to government on the condition of the management and the water and land resources in the state. It is required to advise the government on priorities for catchment management from a state-wide perspective and on research priorities. The council also encourages education and awareness campaigns in relation to major natural resource management issues.

NRE is responsible for overall integrated management of the state's natural resource base and has, in addition to the catchment water program, a number of programs that are relevant to catchment management, including a number of crown land based or public land based management programs. As I have indicated, EPA is responsible for pollution control and protecting the environmental values through state environment protection policies which set out objectives for the protection of the air, water and land within the state.

We believe the strengths of the Victorian approach that have emerged over recent years are that we now have a lot more clarity in relation to the roles and responsibilities, particularly at a regional level. Prior to the establishment of the catchment management authorities, there were over 48 organisations involved in one form or another in various aspects of catchment management. That led to significant confusion in terms of the roles of those organisations and

also to a degree of overlap and duplication. The CMAs now provide a clear focal point for the community and government in pursuing common goals in the implementation of their regional catchment strategies.

The second outcome that is particularly important as we understand better the linkages between land and water management and the various catchment processes is being able to adopt integrated approaches to catchment management. The catchment management authorities and the regional catchment strategies can look at the need to move resources between various types of activities to achieve the best outcomes. They can also ensure that we deal with end-to-end processes. For instance, in relation to salinity control, they can address pest animal control, like rabbit control, revegetation programs and weed control that are all involved in revegetation programs for salinity management. They can also look at the consequences of control measures such as drainage in irrigation areas in terms of things like nutrient management and programs that are addressing salinity control. In other words, we are increasingly seeing the community identify a suite of strategies which have multiple benefits. Rather than dealing with specific issues in isolation, they can deal with a package of measures which are going to generate outcomes across a range of natural resource management issues. This has led to an increase in the effectiveness of investment at a regional level, with the focus on achieving changes of a sufficient scale at a regional level to have a significant impact, particularly as we are aware that salinity issues can be tackled effectively only at a catchment scale.

The CMAs have also been important in engaging community leaders and people with credibility in the community to empower the community to take decisions to contribute to policy advice to government and to lead the implementation processes at a regional level. The department is seen very much as supporting the CMAs in that leadership role, rather than the department seen to be leading programs. The CMAs are now clearly seen as the leaders of natural resource management in their communities. It has also increased accountability in the use of both government and community resources. The catchment management authorities are required to report annually to parliament and take very seriously their charge in terms of the use of the resources that are allocated by government and the investment of time and effort that is put in by the community in achieving regional catchment strategy outcomes. The emphasis has been very much on achieving on-ground action.

The CMAs are very lean organisations. The bulk of the resources are focused on achieving action on the ground, but recognising that that action will only be effective if it is well planned and targeted within a strategic framework. The CMAs have an important role of reporting back to government and their communities on monitoring the outcomes of both their efforts and the efforts of the community in implementing their strategies.

The submission to the committee at that time outlined the framework that was in place for raising a catchment levy to assist in resourcing waterway management activities within the purview of the catchment management authorities. The new government that has come into power in Victoria has abolished the catchment levy. The levy was charged to provide services with a general benefit to the catchment management areas, but without necessarily providing any direct benefit to individual land-holders. The current government's view is that the funding of catchment health should be provided from the whole of government because the beneficiaries of that activity represent the whole community. There is also a view that rural communities

contribute significant resources to controlling land and water management problems through the activities of individual farmers through their involvement in Landcare groups and their own actions on farms. The raising of a levy was seen as disadvantaging those members of the community that were contributing actively to addressing the problems.

Additional state funding has been provided for waterway management activities to replace the levy. The government has made a commitment to replace the funds collected by the CMAs by state allocations. There continues to be a provision for CMAs to raise a levy in relation to works and measures, particularly for activities such as flood plain management, where there is a defined group of beneficiaries. Where there is a clear flood protection scheme or drainage scheme which benefits a distinct number of land-holders, the act still provides for the CMAs to collect a levy in relation to that activity.

In conclusion, the arrangements in Victoria highlight the importance of a partnership between the government and the community in achieving progress in relation to natural resource management through a catchment focus and the importance of clear roles and responsibilities between the various parties. Thank you for the time to present. I would be happy to answer any questions.

CHAIR—The way the catchment management authorities are set up in Victoria interests us. The committee is very interested in the mechanics of how they are set up. How are the members of the catchment management authorities appointed? What criteria are there for those people to be on those authorities?

Mr Sutherland—The Catchment and Land Protection Act sets out the requirements for appointment of the authorities by the Minister for Environment and Conservation in consultation with the minister for agriculture, who is responsible for the Agricultural Industry Development Act. Both ministers are responsible for effectively appointing the boards, which are skills based boards. The range of skills are identified in the act and cover an understanding of environmental water resource business and agricultural and local government expertise. There is a requirement in the act that 50 per cent of the members of the authorities have a background in primary production. That requirement was to ensure that there was adequate understanding of the realities of farming in catchments and the importance of farming throughout catchments.

CHAIR—Are the authorities set up on local government boundaries, catchment boundaries or subcatchment boundaries?

Mr Sutherland—The boundaries are physical catchment boundaries. The nine catchments are based on physical water catchments. They do not align perfectly with local government boundaries, which is a shame in some ways. In most cases, the catchment management regions would encompass between five and perhaps 10 shires—some of those not completely, of course. There is an opportunity for the authorities to coordinate reasonably effectively with that number of shires.

CHAIR—You said that the whole agenda was dynamic and changing as you gained more and more experience. Are there any ideas at the present time that could improve the catchment management authorities in Victoria?

Mr Sutherland—We are essentially in the third year of the catchment management authorities. The catchment management authorities are already starting to think about reviewing their regional catchment strategies. The experience has suggested that the model is working effectively. However, as we have experienced in the Murray-Darling Basin, things do not stand still in terms of information and understanding the problems. We will continue to see a need for readjustment of those regional catchment strategies. The experience to date suggests that the model is an effective one. What the CMAs are clearly aware of is the need to constantly look at their regional catchment strategies and their action plans that underpin those to make sure that they are relevant with the latest technical information and the latest priorities of their communities and government.

CHAIR—You put up on the board the stakeholders involved from government and the Victorian government position for different departments. Having had some experience with the turf fights amongst departments, how do you coordinate that effort between the departments to make sure you get maximum benefit?

Mr Sutherland—It is worth while briefly recounting some of the history. Prior to the establishment of the Department of Natural Resources and Environment, there were up to eight agencies previously involved in delivering the salinity program. That required a major effort in coordination at the ministerial and agency and regional level. The formation of the Department of Natural Resources and Environment bringing together agriculture, water and conservation and environment agencies has significantly streamlined that process to the point now where we effectively have a one-stop shop in terms of advisory services to the farming community and Landcare groups at the regional level.

Catchment and Agricultural Services essentially delivers the suite of advisory and extension activities ranging from agriculture and primary industries through to salinity control, landcare, pest plants and animals. In a sense, we are not faced with significant problems in coordination between agencies. We do have within the same portfolio the separate statutory authority of the EPA. Whilst that has a regional presence, particularly in relation to pollution control, it has an important state-wide function in setting ambient water quality objectives, for example, in state environment protection policies. However, the coordination between EPA and NRE does not involve significant boundary issues because the roles in a sense are quite complementary.

In summary, by bringing together the Department of Natural Resources and Environment, we have effectively brought all the parties together that are involved in delivering services in relation to catchment management.

CHAIR—You would be aware that this inquiry is looking at efficient catchment management in Australia and the interaction between local, state and federal governments, and also programs in particular from the federal government, which is funding particular areas. You made comment in your submission about the different programs from the federal government, the

controls that are in place and maybe the inefficiencies that you see in place. Could you make further comment on that.

Mr Sutherland—I will confine my comments to the Natural Heritage Trust. One of the important understandings that has emerged with communities and the state and Commonwealth agencies working with the Natural Heritage Trust is the importance of ensuring the alignment of priority setting at the national, state and regional level. There is clearly an important role for the Commonwealth in setting some national objectives and goals in relation to environmental outcomes for Australia. They need to be underpinned by more detailed priorities at the state level. At the regional level, we believe the appropriate management unit is the catchment unit to ensure that integration. The NHT process has raised the awareness of the importance of making sure that partnership between the national, state and regional level is well coordinated and that there is an alignment of the planning at each of the appropriate levels so decisions about outcomes are made at the appropriate level.

From a Victorian perspective, given our focus on catchments and the institutional arrangements we have in place, we would like to see more devolution of program delivery through programs such as NHT to CMAs, as we have devolved much of our funding in Victoria to the regional level. This year as an experiment, the Mallee CMA region is working with the state and Commonwealth agencies in essentially putting forward a single proposal to NHT for an integrated package of activity that would be funded by the Commonwealth and state government in partnership as a pilot as to how a more integrated approach to funding at the Commonwealth and state level might work.

CHAIR—It is not just NHT; we have a myriad of programs. Are they all being coordinated towards the priorities that you have in your catchments as far as the catchment management is concerned?

Mr Sutherland—One of the important issues in relation to the role of the CMAs has been a charter that they have also been given to work with regional development bodies in their catchment, local government and other economic development groups to ensure that we are looking not only at the importance of protecting our resources but also at the opportunities for sustainable use and development of our land and water resources to achieve economic outcomes for the region. Communities are certainly sending the signals that they want more of a whole of government approach to how we deal with natural resource management and regional development activities. Certainly we would see that as a significant benefit if some of the Commonwealth programs related to infrastructure and regional development and natural resource management provided the opportunity for communities to put together integrated packages that, in a sense, dealt with some of the resource protection issues at the same time as dealing with some of the sustainable development opportunities.

CHAIR—The applications that come through from programs such as Landcare, Rivercare, Bushcare and Green Corps are all taken through your department, aren't they, as far as recommendations and priorities are concerned and then sent to the Commonwealth?

Mr Sutherland—The process involves the evaluation of all submissions that are relevant to certainly land and water management through regional assessment panels. The regional

assessment panels have representation from the catchment management authorities, but also wider representation within the community. Those recommendations then regionally proceed to a state assessment panel which basically involves representation from the Victorian Catchment Management Council supplemented by additional membership as agreed between the Commonwealth and state ministers, and they then go to the Minister for Environment and Conservation before being submitted to the Commonwealth ministers for approval.

CHAIR—How much consideration does that state council take of the priorities that are set by catchment management authorities?

Mr Sutherland—I can only speak for Victoria. The state assessment panel places a high degree of priority on the recommendations from the regional panel. In fact, the state committee would only recommend amendments to the proposals from regional assessment panels where they believe that projects were ineligible. Generally there are not any cases of changing the priorities that have been determined at the regional level.

CHAIR—Some of the reporting problems that we have in the bureaucracy, the federal bureaucracy in particular, stem from the fact that state treasuries are very adept at either withdrawing funds or transferring funds. Don't you have to have some sort of system to ensure the funds are being used in the areas where they are being directed?

Mr Sutherland—Under the partnership agreement which determines the financial management arrangement rules for both Commonwealth and state investment, the requirements are quite clear in what states have agreed to in terms of contributing to projects funded by NHT. In most cases in Victoria, the state would be contributing more than the funds received through NHT. For example, this financial year, of the order of $50 million is expected to be received through the NHT program from the Commonwealth government. That compares to about $150 million that will be invested by the state government directly in catchment management programs. In most cases, the state government will be contributing significantly more than the Commonwealth government in terms of relevant projects. From a regional catchment strategy perspective, the communities are wanting to see an acknowledgment of their community developed priorities and objectives in terms of those regional catchment strategies that have been agreed to by government and those used as the basis for investment by both the Commonwealth and the state government.

Mrs VALE—Mr Sutherland, could you just clarify something for me: I was interested in the make-up of the Catchment Management Council. What does it do? You said that it gives advice to the minister. You answered Mr Causley by saying that it also makes recommendations to the minister that are presented to it from the catchment management authorities. Who makes up the membership of the council?

Mr Sutherland—The council is appointed by the ministers. On the basis of skills, there is a call for expressions of interest. Then the members are appointed based on the skills that are identified in the act. One of the formal functions of the council is to respond to terms of reference that are provided from time to time by the minister. Through the course of the council's term, ministers will present the council with inquiries or reviews that they might want the council to make some recommendations to them on in relation to, perhaps, an emerging

issue related to catchment management. They do have some standing requirements in terms of this fairly fundamental requirement of reporting under the act every five years on the condition of land and water resources within the state.

Mrs VALE—What is the length of time of appointment to be a member of the council?

Mr Sutherland—The council is usually appointed for three years.

Mrs VALE—It is a skill based council.

Mr Sutherland—It is a skill based board.

Mrs VALE—You say that there is no representation on the council from people or delegates from the catchment management authorities.

Mr Sutherland—That is true.

Mrs VALE—Was there any reason there was not that connection or linkage?

Mr Sutherland—The arrangement seeks to ensure that the issues addressed by the council are addressed from a state-wide perspective and seeks to have members who have expertise and a background that would enable them to take a state-wide perspective. However, there is nothing in the act preventing them from drawing on expertise that, in a sense, is also on the CMAs. However, one of the important roles of the council is to consult with regional communities, including catchment management authorities, in providing advice to the minister. There is a regular forum of catchment chairs which addresses some of the operational policy issues across the CMAs. That has been an important framework for CMAs to deal with some of the issues across their boundaries and to exchange information and approaches. When it comes to the state council, the membership and the approach is to focus on state-wide issues and—

Mrs VALE—They are the big picture people, if you like.

Mr Sutherland—The CMAs report directly to the minister. In other words, the state-wide council does not intercede between the minister and the catchment management authorities. The catchment management authorities have direct access and report directly to the minister.

Mrs VALE—Why is it considered necessary to have them both? Is it because of the bigger picture of the council being a state perspective?

Mr Sutherland—That is right. There are issues which clearly cut across all the CMAs. The council tends to look at those emerging issues that might be an issue in one or two regions at the moment, but could be a significant issue state wide in the future. They also need to look at research priorities, for example. There may be research activities that can be undertaken at a state-wide level that will benefit all CMA regions or a significant number of CMA regions. Part of their function is to look at the overall research effort within the state related to land and water management and to make some recommendations about future directions of that research in a way that picks up the individual interests of CMA regions, but takes a state-wide perspective.

Mrs VALE—You say the appointment time is three years. How long is the appointment time for the CMAs?

Mr Sutherland—It is also three years.

Mrs VALE—Is that synchronised in any way or does it overlap?

Mr Sutherland—It will synchronise, but there is nothing in the acts that requires it to be synchronous.

Mrs VALE—One of the things I found by speaking to people on the ground was the importance of the stability of certain personnel in key positions—how they could lose the talent. That is always a quandary. Could you explain or expand or the relationship between the catchment land protection boards and the catchment management authorities?

Mr Sutherland—The Catchment and Land Protection Board—and there is only one—relates to the Melbourne metropolitan region. Prior to the establishment of the CMAs, all regions had catchment land protection boards. Those boards were purely advisory. There was also a raft of other committees involved in catchment management: river management authorities, salinity management committees, et cetera. When the CMAs were established, they were established in regional Victoria. Because Melbourne Water undertakes significant functions in relation to waterway and drainage functions in the metropolitan region, there was not the same requirement to develop a catchment management authority with those functions as there was in regional Victoria. You will be hearing from Melbourne Water later today in the hearings. At the present time, the Catchment and Land Protection Board has most of the advisory functions of the CMAs, but it does not have any executive powers in relation to works and measures related to waterway management and drainage which are executed by Melbourne Water within the metropolitan region.

Mrs VALE—It is mainly an urban focus.

Mr Sutherland—That is right.

Mrs GALLUS—The CMAs have a preponderance of people involved in primary industry. Would you agree that is a summary?

Mr Sutherland—Under the act, they are required to have at least 50 per cent of members that are involved in some way in primary industry.

Mrs GALLUS—The other 50 per cent is usually made up with people from local areas who are fairly connected with primary industry?

Mr Sutherland—It varies from authority to authority.

Mrs GALLUS—I understand that. Having been on field visits yesterday, does this end up with a bias towards, rather than the conservation of water or looking at the best outcomes for the catchment as a whole, the best outcomes for the primary producers as a whole?

Mr Sutherland—I think the importance of the skills in relation to environment and conservation on the boards means that those skills are there on the boards. That issue has been raised from time to time. One of the issues that faces both the department and the catchment management authorities is that, given that in most cases, with a few exceptions in terms of some regulations, we are reliant on land-holders changing their practices to achieve the outcomes of catchment management, the importance of having the cooperation and the understanding of all land-holders—primary producers in particular—is critical. The involvement of people from the farming community on the CMAs certainly helps to forge that linkage between the land-holders and members of Landcare groups that ultimately will need to implement a lot of the works.

The experience is that the catchment management authorities are seen as very strong advocates of environmental protection, whether it be in terms of water quality or environmental flows within our river systems. However, I understand the point that you are making. Certainly some of the environment groups have raised concerns about the requirement in the act for that degree of representation of the farming community.

Mrs GALLUS—Without mentioning any particular CMA, of all the CMAs, would you say there were some that you think were operating much more in the interests of the primary producers in the area? For instance, they have a good outcome in an environmental sense in that they have improved the efficiency of water usage and the productivity of their own land, but that is overriding, in the end, environmental considerations? So although it is better off in the way the water is used, there is too much focus on that outcome for primary producers. Is that happening in any of the CMAs?

Mr Sutherland—It does not occur to me that that is the case. One of the important things about the catchment focus is, if you take, for example, salinity management, the issue is often the need to involve primary producers, if you like—land-holders—upstream in the catchment in undertaking works and measures that will not necessarily benefit their own properties in order to protect resources downstream in the catchment.

The key issue is not so much whether it is in the interests of farmers. Different farmers have different interests in relation to some of these catchment management outcomes. The important thing about the catchment management approach is to ensure that, in effect, the outcomes are looked at from a catchment perspective. The experience in both the salinity program in Victoria and the work of the catchment management authorities has been that the community, by tackling the problems on a catchment scale, has had to address that interaction. Generally what we are seeing is communities taking tough decisions in the interests of outcomes for the catchment as a whole.

Mrs GALLUS—Do you have anything to do with the price of water?

Mr Sutherland—The rural water authorities establish the price for water, but the Department of Natural Resources and Environment is responsible in a policy sense.

Mrs GALLUS—We are running out of time. Can you quickly take me through from the beginning to end. For instance, when you take water out of the catchment, is it a state

responsibility to pay for that water? How does it go through the steps down to the various users?

Mr Sutherland—In the time available, it might be worth while distinguishing the situation in relation to irrigation areas as opposed to unregulated streams; in other words, systems that involve storages compared to systems that involve offtakes or farm dams in unregulated streams. The process in Victoria involves, firstly, allocating the resource through a bulk entitlement to rural water authorities. The rural water authority is allocated a particular allocation by the state that they must operate within in terms of then retailing that water to land-holders within their irrigation district.

Mrs GALLUS— Do you put a price to those rural authorities on the water at that stage?

Mr Sutherland— No, but there are policies in relation to the requirement for rural water authorities to present a business plan to the minister for approval. That business plan must set out the rationale for the water price determinations of that authority. Authorities generally have water service committees of local irrigators that are involved in setting and determining those prices to ensure that not only the operation and maintenance costs are covered, but also the renewal and replacement costs of assets within their irrigation districts.

Individual irrigators are allocated an entitlement. Subject to water availability and working within their bulk entitlement, the water authority will on an annual basis allocate what is called sales water over and above the high security entitlement of irrigators. For example, this year in the Goulburn-Murray water irrigation district, only entitlement is being allocated because of the dry seasonal conditions. There is no sales water. The price of the water is determined by the market. In terms of transfers and trading between irrigators, water can be bought and sold either on a temporary or a permanent basis.

CHAIR— Mrs Gallus is looking at full cost recovery including amortisation of the capital assets.

Mr Sutherland—In Victoria, rural water authorities are essentially achieving self sufficiency in terms of covering the costs of their operating and maintenance costs and in covering the costs of depreciation and renewals of assets.

Mrs GALLUS—It is really asset based, so you are looking at the covering of the costs of the existing infrastructure, maintaining that infrastructure and presumably putting in future infrastructure as well, but there is no opportunity cost for the cost of the water per se.

Mr Sutherland—That is true.

Mrs GALLUS—The costing is totally based on infrastructure with no opportunity cost for water?

Mr Sutherland— It is the cost of delivering the water and ensuring that the assets are in place to deliver the water and the management costs associated with undertaking things like licensing functions, et cetera.

Mrs GALLUS—Has it ever been mooted that there would be an additional cost for the opportunity cost of the use of the water over and above the infrastructure costs?

Mr Sutherland—There has been no policy in relation to moving down that track.

Mr BILLSON—We have travelled into other states and posed the question: what is the most effective catchment management model around? The feedback generally has been Victoria with the tariff and the removal of the tariff has been a retrograde step. Have you had any chance to observe what that policy change means for public support, interest, participation and ownership of catchment management activities within the CMA areas?

Mr Sutherland—It needs to be understood that this is the first year of the abolition of the tariff. There is clearly significant opposition to the previous tariff for a range of reasons. The current government policy recognises that it is often very difficult to identify the beneficiaries of catchment management activities in the sense that the whole community effectively benefits. In many ways, a lot of the rural and regional communities are contributing significantly to the cost of catchment management through works that they are undertaking, investment of their own time and resources on their own properties and as part of the Landcare movement.

The government's policy was, in recognising those contributions, to determine that it was really the responsibility of government to provide for the costs of the works and measures that were undertaken by catchment management authorities on behalf of good environmental management for the community at large. That is a policy decision. We certainly have not sensed any diminution of the community's enthusiasm for contributing in kind and in being involved in catchment management activities as a result of the abolition of the tariff.

Mr BILLSON—The information put to us was that there was a significant boost in ownership of activities; it was a good education exercise because people want to know where their money is being spent and for what purpose. They were quite compelling advantages, notwithstanding the early implementation grief that was experienced. I guess what I took from that was—particularly when you have intra-catchment transfers going on—your earlier point that higher up in the tributaries is where, increasingly, more work needs to be done, but there is no direct benefit, and that it seemed a good balance between public good, private benefit and community involvement in those difficult decisions. You do not see that dropping off at all?

Mr Sutherland—We are certainly not seeing any evidence of that. From a government perspective, the fact that the government has now abolished the tariff and is indicating that it will invest on behalf of community outcomes possibly strengthens the call for the community to also put in its in kind resources and to maintain its voluntary effort in relation to activities like Landcare; whereas with the tariff, there may have been a tendency for some members of the community to have the view, 'If we are paying a tariff, we perhaps should not be needing to contribute in terms of our time and effort in relation to activities like Landcare.' I am not saying that was a widespread view in the community, but certainly that was one view that was heard.

The sense is that the catchment management authorities now, with their implementation committees, have a high degree of understanding and commitment from their communities about the importance of the work that they are undertaking. Certainly the tariff raised awareness

about what CMAs were and what their roles were. We sense that in Victoria, the Landcare movement, despite the falling off of other voluntary movements, is increasing and growing both in numbers of groups and the level of participation.

Mr BILLSON— In the national trade argy-bargy, the farm subsidy argument and those sorts of things, there seems to be a growing view that in our country, we are inherently subsidising agricultural production by not fully internalising externalities—sorry about the jargon—such as natural resource management. We recognise that is a bogus argument, but it is one that is being run increasingly in Europe.

It seemed to be a good way of inoculating our trade interests by having that modest tariff, which is less than the metropolitan tariff that remains, to help buttress our trade credentials and therefore provide improved access to markets. Is the Victorian government canvassing those sorts of access to market questions when it is looking at these sorts of policy settings?

Mr Sutherland—That is really a national policy issue in the sense that it could be argued that the Natural Heritage Trust is a subsidy to achieve environmental outcomes in terms of trade. I certainly do not profess to have any expertise in the area, but it would seem to me that, given the sorts of subsidies that occur internationally, Australia is fairly well placed to defend its position in relation to the rural community and rural producers basically paying their own way in terms of sustainable agriculture and their production. I hear what you say about the issue that can be raised. From a national perspective, investment in ensuring environmental outcomes is a legitimate role of governments and should be seen to be a separate issue from subsidisation of trade.

Mr BILLSON—I have one last question on the metro tariff. Am I to report back to my taxpayers that, in line with the CMA decision, the Melbourne metropolitan rate will come off?

Mr Sutherland—That might be a question for Melbourne Water. One of the issues in terms of the services that Melbourne Water provide is that there is certainly quite a different type of service. Certainly the Melbourne Water waterway and drainage services have things in common with the services provided by CMAs. However, they tend to be at a far more significant level of intensity and service delivery, particularly in relation to the drainage services that an organisation like Melbourne Water provides. There are significant issues in terms of comparison between the metropolitan area and rural Victoria.

Mr BARRESI—My question can be taken on notice, but I will ask it now anyway. I am not sure whether it was discussed—my apologies if it has been. Regarding yesterday's discussion paper that was reported to be released by the state minister—we were out in the field, so I do not know whether it actually happened—there have been various stories written about the implications for water management and water retention. Can you comment on that? Can you clarify the position, particularly as it relates to the ongoing operations of the catchment management authorities? If you cannot do that now, can you get back to us on it? I imagine there would be some pretty significant implications if the headlines are correct.

Mr Sutherland—May I clarify that. We are referring to the release of the farm dams discussion paper, is that right?

Mr BARRESI—Yes.

Mr Sutherland—I am happy to talk about it now, or take it on notice.

CHAIR—Carry on.

Mr Sutherland—The previous government commissioned two committees to undertake reviews in relation to the process of licensing farm dams. One was a panel that was charged to review some licensing decisions made by Wimmera Mallee Water in western Victoria in relation to the construction of a number of farm dams. The north-east coordinating committee was also asked to look at the issue of farm dams, particularly in relation to Victoria's commitment to the cap on diversions in the Murray-Darling Basin. Those two committees had reported to the minister earlier this year. Over the weekend, the minister released those reports together with a discussion paper for a period of public consultation over the next three months.

Firstly I need to point out that we are talking about farm dams for commercial irrigation purposes. None of these discussion papers really have any bearing on farm dams for stock and domestic use. Farmers have the right under the Water Act to construct farm dams off a waterway for, effectively, any use without a licence. If a farm dam is constructed and deemed to be on a waterway by the water authority, the water authority is required to license that farm dam. In northern Victoria where there is a cap on the Murray-Darling Basin—and that applies to the Wimmera—that also means that that licence would come within the commitment of Victoria to the Murray-Darling Basin cap and therefore would require the water to be purchased on the water market. So a person building a farm dam on a waterway would be required to buy the water on the market.

One of the difficulties that has been exposed is the definition of a waterway. The definition of a waterway in the Water Act is a very broad definition. Clearly in terms of the very variable hydrology that we have in Australia, it becomes a very subjective view about whether a depression that has intermittent flows is in fact a waterway or not a waterway. Certainly the expert panel that was established in the case of reviewing the Wimmera Mallee licensing decisions had some degree of difficulty in terms of coming to any unanimous view about whether the dams that have been constructed were or were not on a waterway.

The discussion paper sets out a range of options that might be considered as part of this public consultation process to review the mechanism of having a waterway determination as the basis of licensing farm dams or, in fact, dealing with the issue in some other way. Effectively, the issue is one of ensuring that resources are equitably allocated in a catchment. Clearly, if there is continued development of farm dams off waterways that involve significant interception of flows within a catchment, existing users downstream will be impacted, not to mention the environment and environmental flows. It is a significant issue, both in northern Victoria in terms of the state's commitment to the cap, and in southern Victoria where in many catchments we are approaching the physical limits of the resource. So in a sense, the cap is a physical cap in terms of the resources available.

Mrs GALLUS—Is the allocation of water based on people who have an historical allocation or is there some other formula for properties?

Mr Sutherland—There are two processes. The bulk entitlement process essentially attempts to convert the existing rights of users into an illegal entitlement. However, in that process, there is an attempt to ensure better outcomes for the environment in terms of the way storages are managed and operated. However, it is essentially a conversion process.

Mrs GALLUS—So there is a historical element in that, of what—

Mr Sutherland—Of what previous rights have been. In relation to unregulated catchments, the process is to develop stream flow management plans. Those stream flow management plans again identify what diversions are currently occurring in a catchment, to identify what is the sustainable yield of a catchment and whether there is any scope for additional licensing of water resources within a catchment.

A similar approach is taken with groundwater resources. Groundwater protection zones are established where the extraction of groundwater exceeds 70 per cent of the permissible annual volume. A groundwater management plan is then developed by a community-based committee established by the minister to advise on the management of that resource to ensure that is maintained within sustainable yields.

CHAIR—Thank you, Mr Sutherland, for your submission and your evidence. It has been very interesting.

[10.20 a.m.]

MEIN, Professor Russell Gordon, Director, Department of Civil Engineering (Head Office), Cooperative Research Centre for Catchment Hydrology, Monash University, Victoria

CHAIR—Welcome Professor Mein. We have received your submission and have authorised its publication. Would you like to make some opening comments?

Prof. Mein—Yes, briefly. For the committee's information, the CRC is an unincorporated venture put forward under the Commonwealth Cooperative Research Centre program. It involves most of the land and water management agencies in the three eastern mainland states, together where two major urbans—Melbourne and Brisbane—the Bureau of Meteorology and three universities with strong water programs. So there are 14 agencies in all. Its mission is to deliver to resource managers the capability to assess the hydrologic impact of land and water management decisions at the whole of catchment scale. The two key things here are the catchment scale, and land and water interactions. We know that water moves down slope, so a catchment is a logical unit when you are dealing with water. But water carries sediment, salt and nutrients, so water quality as well as water quantity is involved in this.

Since so many community activities depend on water, it makes sense to deal with the issues at catchment scale and the community at large as well. So you bring in the socioeconomic aspects. The picture I am painting here is that the whole of catchment approach is needed for effective land and water management. Some of the resource problems we have today could have been avoided or certainly better predicted if we had taken that approach in the past. I want to make the point also that the issues are not all in the past. For example, the forest plantations that we are talking about in the upland areas of major catchments will have quite a big impact on water quality and quantity. I do not think that has been fully understood. Another example I gave in the submission was on the use of catchment management in water supply catchments. That is something that is not widely enough practised.

On a final point, this cooperative research centre is about producing tools for the catchment managers. It is to set and support systems that take into account at catchment scale all of the issues that are needed for improved catchment management; for example, to evaluate the impact of forest plantations on water flow and quality, and evaluate the sustainability of water transfers in a highly variable climate. That is the essence of the cooperative research centre which is funded for the next seven years.

I have a one-page document that I would like to table which covers what the cooperative research centre is about. Today I am not mostly talking about institutional issues, it is more about the scientific issues and the challenges we have.

CHAIR—Is it the wish of the committee that the document be accepted as an exhibit? There being no objection, it is so ordered.

Prof. Mein—What this diagram shows, and perhaps we can look at the bottom part first, is that the national benefits from catchment management are healthier rivers, cleaner lakes and

bays, more efficient water use, reduced hydrologic risk and cost-effective catchment management. These line up with a lot of national policies. The goals for the CRC are listed in the line above that. These are the things that we can do with the skills that we have. The theme, really, is predicting catchment behaviour—prediction is an important part of that. We cannot do it at the moment. All of the research that has been done to date is generally at much smaller point scales. We look at things like transpiration from a tree not from a forest, and not the impact on the catchment downstream. We have the current skill base shown on the left. The new initiatives that the CRC is bringing into this are shown on the right. You will notice that includes socioeconomic input—so for CRC catchment hydrology, one of our programs is a socioeconomic program.

Mrs GALLUS—Could you describe what a stochastic method is, please.

Prof. Mein—A stochastic method is one which takes into account the full variation of the process involved. It is generally a method that includes all of the variable statistics. We have a mean, we have a variation around the mean and—

Mrs GALLUS—I see. That could be statistical methods, really?

Prof. Mein—Yes, but as applied to hydrology.

CHAIR—What are the connections between your CRC and other groups who are doing similar work? I am talking about the CRC for Freshwater Ecology in Canberra and maybe the CSIRO. Are they close connections?

Prof. Mein—They are very close. The CSIRO is a party to both of them. Both CRCs are run by a board of management and many of the same parties. In fact, the Department of Natural Resources and Environment is a party to both CRCs, as is Melbourne Water. The chair of both CRCs is the same person, Dr John Langford, and we have a number of projects and programs that are common to both. We work closely together.

CHAIR—I think I understand how they work, but just for the record could you tell us how the CRCs are funded. Who are the players?

Prof. Mein—The Commonwealth government is funding this CRC for $16.25 million over the next seven years. That is being matched by the other parties with $41 million over seven years. We are looking at a total of $56 million.

CHAIR—Science is very important in our understanding and management of many of these areas. With this particular research, is it just to do with the movement of water or does it involve the salinity data or the nutrients and minerals that might be in that water?

Prof. Mein—It is involving all of those things. It is water plus water-driven processes. We are looking at the sediment movement. The sediment often carries the nutrients with it like phosphorous, which attaches to the sediment. If you control the sediment, you control a lot of the phosphorous. We are looking at riparian zone management, trying to prevent material

getting into streams. We are looking at river restoration, trying to improve the rivers that we now have. Salinity is certainly part of it.

CHAIR—You would be a vital part of the MDBC's planning and identification of salt loads and movements of salt.

Prof. Mein— Yes. The MDBC is a party to the CRC and a very strong supporter of us. It allocated quite a lot of additional funds to our project.

CHAIR—The committee has heard evidence from MDBC and CSIRO. There have been suggestions that to address the problems we have in this salinity—I suppose you could nearly call it—crisis in Australia, there will have to be dramatic changes to land management and, in some cases, reafforestation of some areas. You mentioned that reafforestation has the effect of withholding water from the streams. Would this just be when a new forest is growing? Would it still be the same in a mature forest or would a mature forest then release the usual amount of water back to the stream?

Prof. Mein—It perhaps depends if we are talking about plantations or natural forests. Plantations tend to be planted to maximise the number of trees and to maximise the number of trees, you are maximising transpiration, so you are maximising water use. On average, a typical figure is two megalitres per hectare per year. There is more use by forests than by pasture. If you are looking, as I mentioned in the submission, at a proposal that 300,000 hectares of new plantation be put in in northern Victoria, that is 600,000 megalitres of water use. It is not dealt with as an extractive industry, but that is what it is. That is the equivalent of 25 per cent of Victoria's divergence from the Murray system. It is a massive thing. The point I am making here is that the proposal to put in the plantations is not even referred to the water authorities. They only find out about this by accident. It will affect the water they have available. To me it is quite a deficiency in the catchment management approach.

CHAIR—So it is something that people really have not thought about or taken into consideration in trying to address the salinity problem?

Prof. Mein—Not directly. The salinity problem, as we now know it, stems from the wholesale clearing of native forest in the past, often 100 years ago. The feeling is that by planting trees, we will reverse this extra water that we got by clearing forests—we put the trees back, and use up the water. In the long term, that will work. But in the shorter term, the impact will be very major because the plantations are proposed for the upland areas where there is a reasonable amount of water. They will use the water that I just talked about and there will be less water in the streams, which has quite an impact on the people whose livelihood depends on having water to irrigate with. Also, most of the salinity is coming via the groundwater to the streams. That has all been mobilised. It is moving slowly and steadily to the stream. That will keep moving there and with less water in the streams and less dilution, the salinity levels will go up. We are talking about a number of decades where that will be the case.

Mrs VALE—When you made that statement, you said that plantations in the major catchments have an important impact on catchment management. I want to follow on from that. It has always been the view amongst the general population that the reason we have salinity is

that we took all the trees out. You also said in your answer to the chairman that you feel that it will help eventually but not in the short term. Would you like to expand on that?

Prof. Mein—By clearing the trees, you increase the recharge to groundwater. The groundwater that used to be, perhaps, 15 or 20 metres below the ground has come up and given a gradient to the stream. So the groundwater is moving to the stream. Groundwater moves very slowly, but it is a very large mass of water. It is hard to have much impact on that once it has mobilised the salt and is moving. If you stop the recharge going in, the groundwater will take a long time to level out and for the gradients to be away from the stream rather than towards the stream. The salinity in the groundwater going into the stream will continue for a long time, even after the recharge has stopped. It is long term.

Mrs VALE—Even replacing natural forest and natural bush would not stop that? Is it just because we are replacing it with plantation trees?

Prof. Mein—No. What I am saying is if we stop the recharge—however we do that—it will take quite a long time for the system to reach a new equilibrium. There is a lot of inertia in the system, if you like.

CHAIR—In other words, you do not see any way around it?

Prof. Mein—There is no quick fix to this salinity problem. What we are pushing in the CRC is the need for management tools and a decision support system so managers can try a number of scenarios and pick the one that is the most favourable. We do not want a knee-jerk reaction saying clearing the trees caused this, so let us put the trees back and reverse it. That may not be the least painful approach.

Mrs VALE—What I was asking, perhaps in a rather clumsy way, is does it matter what kind of trees are replanted? I note that there is a commercial investment in putting in plantation pines. As you said, that will not have a short-term effect, but it will eventually have a long-term effect. Would it matter what kinds of trees are planted? Would it matter if we tried to replace it with natural bush if it had the same effect—if it is still going to be a long-term investment anyway?

Prof. Mein—I think plantations are the most efficient way of taking water out, looking at it from that point of view, and to maximise the wood. But by taking out that amount of water, you are reducing that amount of water in the streams.

Mrs VALE—I know, and that has another negative impact.

Prof. Mein—Yes. If you are saying put in a less dense plantation and have a lesser effect, that is true; it would. But I cannot give you the figures on that.

Mrs VALE—That is all right. I just wanted to know if you thought it made a great deal of difference on what kind of timber or what kind of plant you put back in.

Prof. Mein—The density of plantation will have an impact.

Mrs VALE—Initially where did all the salt come from in the soil in Australia? Does it exist in other countries or is it just in Australia that we have such a high level of salt within the soil?

Prof. Mein—In many areas, there is a small amount of salt in rainfall. That has come in from the oceans. Over the many hundreds of centuries, that has leached below the root zone with the natural vegetation roughly in equilibrium with the amount of rain coming in. The salt is not used by the trees. It is washed gently down below the root zone. It has stayed there in a dry area above the watertable. The watertable has come up and that salt has collected. Most of that salt has come over many centuries of accumulation.

Mrs VALE—Do other continents have the same problem as Australia does regarding salt?

Prof. Mein—As you know, Australia is a very dry continent and we have less natural leaching because of that. South Africa is perhaps the most comparable to us. There are certainly parts of the US which have this problem.

Mrs VALE— Have other countries had any success in their management and return to normal soils?

Prof. Mein—I think they are fairly few. It is not an easy problem at all.

Mrs GALLUS—I was fascinated by the comment you made earlier, but following up Mrs Vale's question: is there any difference between, for instance, a softwood pine plantation and a hardwood blackwood plantation in the rate they take up? I just wonder, as the pines grow quicker, are they a greater user of that water?

Prof. Mein—I am not aware of those differences, but certainly the major differences are between trees and grass.

Mrs GALLUS— Following through what you said about the trees—and certainly that was a fascinating thing—it occurred to me that we should have thought of that earlier. Now I am trying to get my mind around it. What we are saying is it will take a long time to get that groundwater down. So we are looking long term, I would imagine—a minimum of 50 years before we are really getting the effect. At the same time, we are losing water through the transpiration of this forest. Is the water we are losing the surface water, the rainwater that would normally go into the streams?

Prof. Mein—Yes, and the relatively salt free water, the dilution water.

Mrs GALLUS—The chairman tried to put in a question which summed things up by saying damned if we do and damned if we don't. I suspect that you have an answer to this because it happens all the time that, when you move in one direction, you create another problem. You say, 'Hold on, let's take this into account.' Professor, where do you see the pay-off here? How do we balance the fact that we need to get in these long-rooted trees and grasses against the fact that we cannot afford to lose too much transpiration? How do you see the management of that?

Prof. Mein—I think what I am saying is that we do not yet have the tools to fully evaluate the effect of different scenarios. The CRC is about building those. It will be six or seven years before we have them. To be more specific, a lot of the plantations are in the upland areas where there is a high amount of rainfall and a fairly high amount of run-off. That run-off will be directly reduced. If the plantations were brought down slope a bit to try and keep the run-off going, and also extract some of the water from the catchments, that could be a better solution. We do not have the tools to do that yet.

Mrs GALLUS—Your research priority is water allocation. Do you have concerns with the way water is currently allocated in regional areas?

Prof. Mein—Yes, but only general concerns. As was explained by Peter Sutherland, there is a historical component to that in Victoria. Water is allocated to the land and is a land right. In New South Wales that is also the case, but there are a lot of licences which they call sleeper licences there. As soon as water trading has come in, all of those licences have value. In New South Wales, because it was more overallocated, it was a bit like airline bookings. You overbook an aircraft to keep it full and I guess that was the case in New South Wales.

CHAIR—The minister became very popular by allocating them at the time—not this minister!

Mr BILLSON—Did you turn it around, maybe?

CHAIR—Tried to.

Prof. Mein—Okay. It is overallocated if everyone uses it, but everyone did not use it. By putting a value on that, people who have those licences want to realise the value and sell it to people who do want to use it and we do not have the water.

Mrs GALLUS—This is what is concerning me. I was talking to a property owner yesterday who was selling part of their allocation. They found it was much more economical in the long run to use it themselves. That they own that allocation and can sell it worries me in the whole idea of catchment management. Do you see your CRC at any stage suggesting that maybe those links with historical allocation should be broken?

Prof. Mein—I do not think the CRC will be recommending that, but we will have the tools for those who make policy to evaluate the impact of different policies.

Mr BILLSON—In your submission, you talk about some shortcomings in the catchment management approach, as we understand it now. Drawing out from what you have already said so far it seemed to be focused on land use issues and its interaction with catchment health and the like. Is that the sort of area where, if you were to recommend improvements in an integrated catchment model, you would start with the Victorian type of model and then look at improved connections with local government land use planning people? Is that the sort of thing you had in mind?

Prof. Mein—Yes. The Victorian model of catchment management authorities has certainly been a good one. The rural water authorities also has been a good model for the water. But the links between the two have been only informal links and I see that as a bit of a problem. They do cooperate, but it is not a forced cooperation. Then you have some of the regional urban authorities and councils who also do cooperate, but it is not really forced cooperation.

Mr BILLSON—As I understand it, nearly all of the CMAs are referral authorities under the planning sections, certainly up in the north-west, where it is an irrigation project. Are you suggesting that the definition needs to be expanded to look at any project that has an impact on water yield and quality, using the same tools, or would you restructure the tools?

Prof. Mein—I think I am saying that. We have to take a more holistic approach to catchments. If you look at something like forests, what are the impacts of forests? They reduce water yield; that is a negative, perhaps. They reduce recharge; maybe that is a positive. They tie up some of the carbon in the air; that is another tick. They help with our trade deficit on wood imports; that is another tick. They also reduce flood levels to some extent. There are a whole lot of positives and some negatives. You need some kind of environmental scoresheet where you can assess the impacts of larger scale afforestation.

Mr BILLSON—I was interested to read in *The Weekend Australian* that the Shire of Upper Yarra is appointing a director for sustainability. The whole focus of that senior executive role was to try and bring those sorts of functions together. I wonder whether the catchment authority should have been putting that person on or the council. There seem to be some encouraging moves in that area, but maybe not enough and not quick enough.

Prof. Mein—There are certainly a lot of encouraging moves. On the scientific side, there are a lot of encouraging moves. Some of the remote sensing is offering big opportunities for catchment scale things rather than getting away from point measurements which is so expensive and so unrepresentative.

Mr BILLSON—Using telemetry and that sort of thing?

Prof. Mein—That kind of thing—computing power and the GIS databases, which are common now across all these different layers. That is really streamlining things on the scientific side; that is great. On the institutional side, there is a lot more of the catchment thinking. The CMAs is one example of that. We are seeing that repeated in other states. There are a lot of positives, but there is a way to go. The link between what happens on the land and what happens in the waterways is not really being addressed well enough. The last speaker raised the issue of farm dams. That is an issue. That way is extractive—taking water out of the catchment that otherwise went to the streams. Forests are the same.

Mr BILLSON—I am interested in your analysis of water yield and forestry. I was the chief of staff to the natural resources minister when we pulled forestry out of the Thomson catchment on the basis that that would increase the yield. I am glad you explained about plantations and native forestry. I had some comfort from that because the thinking at the time was a little bit different than this.

Prof. Mein—I would be hesitant to generalise too much. The Thomson catchment and some of the Melbourne water supply catchments have this species called mountain ash, which is highly regarded by the foresters if they can get their hands on it. It is one that regenerates very densely. It starts off about 5,000 stems per hectare and the mature forest is 30 to 50. After about 30 years, it is using water at the maximum rate. It is using water at about twice the rate of the mature forest. If you are logging and you have a fair bit of the Melbourne water supply catchment at about 30 years old that is bad news for Melbourne Water.

CHAIR—We do not want a fire.

Prof. Mein—If you know what is happening, you can stop it all being 30 years old at once. You can manage it.

Mr BARRESI—From your research, I imagine you have been working closely with a number of catchment management authorities as part of the implementation study. A number of CMAs that we have seen have made the point that they believe they have the right balance of people on their authorities in terms of the skills base, where they all seem to come from industry groups themselves. Do you believe the CMAs have the ability to implement what you are trying to do, or are we looking for a different species of individual on those CMAs?

Prof. Mein—We are really looking for a partnership that involves not only the CMAs but the water authorities for the region and the state agencies too. It needs a combined approach. It is not just one of those that will be able to deal with it.

Mr BARRESI—It is not the approach, but do they have the skills to be able to put in place what you are looking at? Are the skills and the interests of those individuals going to prevent the decisions being made according to what you are proposing?

Prof. Mein—Some of the things we are talking about go right down to land-holder level as well. I mentioned in the submission the Tarago study which is a Melbourne Water reservoir with a catchment where a lot of the land is in private hands. From the research we did on that reservoir, looking at the cause of the nutrients that were coming in and causing blue-green algae in 1991, the solutions that we came up with were implemented by Melbourne Water and the landowners in a combined effort. Ninety per cent of them signed up.

Mr BARRESI—In a roundabout way, I am also trying to find out whether there is a more ideal CMA structure that you have seen which suits your needs. If so, what structure is there out there that you have worked with where you would say this is the type of group that we can really work with?

Prof. Mein—When we were putting the bid together for the renewed CRC, we did ask the CMAs to be involved. They were very keen, but they did not have the financial wherewithal to join up. They said, 'Come and talk to us later,' which is probably about now. The CMAs are not parties to the CRC, but we have had close working relationships with a number of them. That is working well. I think the CMAs with their structure are excellent. I share the concern about losing the tariff and that there might be some loss of ownership. That is a personal concern.

Mr BARRESI—Going back to your afforestation argument, which Danna Vale picked up earlier, decisions like this are often made based on either the political imperatives or the squeaky wheel syndrome. Which way do you believe the argument will go? Will those who are arguing for 'salinity must be controlled at all costs' win the day against those who are saying that water resources are far more important in terms of the quantity of water that we have? How will we address those two arguments in a short period of time? In your opinion, is it going to be a political decision that is made at the end of the day?

Prof. Mein—Absolutely. I can recall my very first job which was in the Murrumbidgee Irrigation Area, where we were looking at the new area at Colleambally. The question was: do we allow rice to be grown there? The scientific view was that rice had been a problem in the area. For the Colleambally irrigation areas, the political decision was to allow rice for the first six years just as a cash crop to start them up; then it was made permanent. Now the watertables have come right up to the surface. People are saying, 'What is the solution to this?' The solution was known before they even opened up those areas and was presented and the department put that point of view. However, the political decision was to let the rice grow. The answer is that it will be a political decision and it will be a hard decision.

Mr BARRESI—That makes me think that your argument, at the end of the day, is probably the one that will prevail.

Prof. Mein—We are trying to provide the knowledge base and the tools for the decision makers. But it is so complex. We are dealing with people who do actions up slope that affect someone down slope, 100 kilometres away, 75 years later. How do you handle that?

Mr BARRESI—The Murray-Darling Basin Commission mentioned to us as one of their solutions massive afforestation projects to deal with salinity. They are one of your partners on the CRC. Why are they proposing a remedy which is in direct opposition to what you are saying?

Prof. Mein—That is not in direct opposition to what I am saying. I am saying the short-term impact of these can result in an increase in salinity in the short term—30 to 50 years. They have taken a lot of advice from us on this. So we are working with them. In the longer term, we think this could be one of the solutions. I do not think it has been fully thought through into the impact on water yield, the impact on the cap and on-stream water quality in the shorter term.

Mr BILLSON—My question relates to one of the five areas that you have identified as an area of concern. That is urban run-off, stormwater run-off and the like. Where are we at with that? CDS Technologies at Mornington, not far from the Frankston campus of Monash, are doing some good things. Internationally there is interest there. If you go to Chicago in winter, their urban run-off has all sorts of stuff in it designed to kill snow and the like. Where is that heading? Do you see any cause for optimism there because of the out-of-sight, out-of-mind thinking disappearing? Is urban stormwater run-off likely to be a water supply alternative in some communities where water is scarce?

Prof. Mein—The answer to the second one is yes. As water becomes more and more scarce, there is more we can do with the resources we have. To date, stormwater run-off in most cities

has been regarded as a nuisance, something to get rid of. We will see much more use of it as an asset. In terms of urban stormwater quality, as the community becomes more aware, as we know more ourselves and as we apply more treatment measures, we will see much improved stormwater quality.

Mr BILLSON—Do you see grey water reuse and stormwater reuse coming together? Is there likely to be a change in some of the health regulations about the use of grey water for irrigating our leaf vegetables and the like? Do you see some change in thinking there that means there is more of a market for it?

Prof. Mein—It will be market driven. We are not really short of water yet. Melbourne had its driest three years on record. The reservoirs are just under half full. We are in reasonable shape. If that were not the case, there would be a lot more interest in the alternative uses and that would be stepped up. It will happen in the future.

Mr BILLSON—In your socioeconomic input, is price a consideration? There is an argument that potable water is so cheap, the delivery infrastructure for grey water reuse is uneconomic. Is that some of your work?

Prof. Mein—We are not doing that work, but it is a true statement.

CHAIR—New subdivisions certainly could have dual reticulation if they were planned that way, couldn't they?

Prof. Mein—They could. There are some examples of that at the moment, but it is certainly not widespread.

CHAIR—Thank you, Professor. You have given us some challenging evidence.

[11.07 a.m.]

RONAN, Mr Nick, Manager, Strategic Planning, Waterways and Drainage Group, Melbourne Water

YOUNG, Mr Ross, General Manager, Waterways and Drainage Group, Melbourne Water

CHAIR—Welcome. We have received your submission and have authorised its publication. Would you like to give us some opening comments?

Mr Young—I will keep my opening overview quite succinct and brief to allow members of the committee ample opportunity to explore the areas of their interest. I will start off telling you a little about the functions of Melbourne Water in the context of catchment management, the provision of potable water and sewerage. As the overhead demonstrates, as an organisation we have a board of management which reports to the Minister for Conservation and Environment and also to the Treasurer, particularly in relation to business planning matters. A managing director oversees the three product groups of Melbourne Water. The three product groups are the Waterways and Drainage Group, which I am the general manager of, the Water Supply Group and the Sewerage Group.

By virtue of the terms of reference of the committee, the majority of my attention this morning will relate to the functions of the Waterways and Drainage Group. However, because of the interdependency in managing water, there are overlaps between the supply of potable water and the treatment of sewage which invariably impact on catchment management issues. I would be pleased to answer any questions about those other two important functions of Melbourne Water.

At the outset, you can see there are three major functions there under the Waterways and Drainage Group. I will go through those individually. Before I do that, Melbourne Water is known as the main drainage authority for the greater Melbourne metropolitan area. We manage all main drainage and waterways once a catchment becomes larger than 60 hectares. Upstream of 60 hectares, the responsibility rests with local councils. This is an historical agreement that goes back to about 1932.

In reality, it results in councils managing the street side drains and the side entry pits and very local issues. Once it gets to the end of the street, it becomes Melbourne Water's responsibility. It results in the need for Melbourne Water and the local councils to work in partnership to ensure that the systems are managed as a whole.

Main drainage originally was the responsibility of councils in Melbourne until there were some major floods earlier on this century. The councils displayed a propensity to build pipes to their municipal boundary and then let it rip into the adjacent municipal boundary. The creation of a main drainage authority, which was then given to Melbourne Water, reflected the need very early on that because water flowing downhill under the power of gravity does not respect jurisdictional boundaries, a whole catchment approach was required. That is one of the virtues

of the model that exists within the greater Melbourne area in the sense that you have Melbourne Water overseeing the big picture and the planning of infrastructure and the management of the water resources from virtually a total catchment perspective.

In relation to our three key accountabilities, the first being waterways management, there is over 5,000 kilometres of waterways in the area for which we have responsibility. We are managing them in an integrated way recognising their importance for water supply, recreation, environment, aesthetic and the like values. Water quality management is now a key part of what we do as an organisation. In the old days, the mentality or the paradigm that drove stormwater management was out of sight, out of mind and get it out of the catchment in the quickest possible time.

I often say that if you want the quintessential example of this philosophy in place, you only have to look at the Moonee Ponds Creek which is along the Tullamarine Freeway coming in from Melbourne airport where you have a beautifully slippery trapezoidal concrete channel. Its sole purpose is to convey stormwater from the catchment quickly into Port Phillip Bay. It certainly does that very efficiently, but there is no emphasis at all on the fact that the waterway would have a recreational value for the community, an environmental value and a landscape value. We have come a long way from there. Thank goodness for that.

There is in excess of 60 million visits to Melbourne's waterways per annum by people riding bikes or just observing the open space. The community is very passionate about the waterways, in particular the bay beaches. Addressing stormwater quality is where there has been a real renaissance in stormwater management and a paradigm change. We believe what we are doing is probably at the forefront of what is happening in Australia—indeed, we are certainly up with best practice in what is occurring around the world.

We are also the Regional Drainage and Flood Protection Authority. We are responsible for dealing with the land development industry in ensuring appropriate standards of infrastructure are provided in new subdivisions, fixing up flood problems where they arise and looking after substantial assets. There is over 1,100 kilometres of drains, many kilometres of levy banks and pump stations and nearly 150 retarding basins. It is a very substantial asset base, which the community generally take for granted until there is a problem with flooding and rains. We have not had that over the last couple of years. As members are probably aware, the community has a very short memory in relation to these issues until something goes wrong.

Mr Ronan will hand out a map of our operating area. There are a couple of points I need to explain to the members about this operating area. This is essential to the understanding of Melbourne Water's role as a waterway and flood plain management authority.

CHAIR—Is it the wish of the committee that the map be accepted as an exhibit? There being no objection, it is so ordered.

Mr Young—I want to start off with some basic facts. The light green area on the map is the area Melbourne Water has responsibility for. The combination of the yellow shaded area and the light green area is the total catchment. We do not have responsibility for the total catchment, particularly out into the north and western area around Sunbury and Melton. We have various

CMAs which join our boundary on the outer extremity. There is an issue for the Port Phillip area in that there is really this no person's land, which is the shaded yellow area where there is not a waterway manager. Local councils deal with the stormwater and drainage issues. We are currently in discussions with the Department of Conservation and Natural Resources about what may be some solutions for the provision of stormwater services in there, given the fact there is significant urban development there and the discharge from that area ultimately ends up in Port Phillip Bay.

Going on to the area under our jurisdiction which is the light green area on the map, approximately 3.5 million people live in that area. That is nearly 23 per cent of the Australian population. Only 12 per cent of the area is urbanised. The remainder of the area we have accountability for is rural. Some of it is on the urban fringes. This area includes the beautiful and pristine Melbourne Water catchment areas which are locked up for water supply purposes. I cannot off the top of my head recall what percentage of the catchment they comprise, but several hundred thousand hectares of forest there is locked up solely for water supply purposes. In total, that light green area is just a shade under 5,000 square kilometres. That is to give the members an idea of the extent of our responsibilities.

The one anomaly you should be aware of is that the Mornington Peninsula area, which is shaded, is currently an area where we do not levy a drainage rate in, even though it is within our particular area. That comprises the former shires of Flinders and Mornington. That is one small anomaly within that area.

I will finish off by explaining what the drivers are for the way we operate our business and our organisation. The first thing is, as I said in my introduction, that community and stakeholder expectations have risen dramatically. You might recall that in the early 1980s, there was an emphasis on creating trails. A lot of these were built with Commonwealth funds along our major waterways. Up until that point, the community mentality had been 'build your back fence up against the waterway and dump your lawn clippings and the like behind it'. We turned our backs on our waterways. Once these major recreational and urban trails were created along the major waterways, throughout Melbourne in particular, it exposed the community to the waterways themselves. It also exposed them to just how beautiful some of these areas were, but also to how degraded some areas were in the negative sense. Since that point, there has been a great deal of emphasis on waterways and the values they have for the livability of a city.

It is also true that as a drainage authority, we have been educating the development industry to redesign their subdivisions. I can recall that in the early 1980s, we really had to thump the table to get developers to build boulevards along the waterways and have the houses fronting the waterways so they were an integral part of the urban fabric. Now it is standard practice, but it was considered to be quite radical.

I will talk about how the development industry, in partnership with Melbourne Water, has been integrating water into new subdivisions. This has all helped to engender a greater community empathy and focus on the waterways and, of course, clean beaches. You only have to see the issues that arose in Victoria during this summer about syringes on beaches to see the degree of passion and empathy that the community have for clean beaches, which are

abundantly sacred to our way of life. Of course, the stormwater and waterway systems need to be managed so those impacts are minimised at the bay beaches.

I mentioned before that we managed over 5,000 kilometres of waterways; they are both urban and rural. Some of these waterways vary in condition from being excellent to quite degraded in condition and some are almost beyond the point of no return, such as Moonee Ponds Creek, which is a 100 per cent trapezoidal concrete channel. We have a healthy waterways program, we have a system for prioritising works along waterways and we involve the community in that. Without going into the detail, our priority is to protect what is in good condition so it is not being degraded. Once a lot of these natural values of the waterways are lost, they are lost pretty much forever. Despite attempts to revegetate and restore the area, you can only bring back an assemblage of what would have been there in the first instance. We have an ongoing program of restoring the degraded areas, arresting erosion, putting the habitat back in, revegetation, removing barriers to fish and the like and encouraging other cuddly things like the platypus to inhabit our waterways.

The next point to raise is that we are the flood plain management authority for the greater Melbourne metropolitan area. This is a role that does not make us very popular with the development industry and others from time to time because people do not understand the role of flood plains in terms of storing of water. All of our major waterways are flood plain mapped. That information is included in council planning schemes as land subject to inundation.

We have also been through a process recently where we have flood plain mapped the overland flow paths from the underground drains through the suburban areas. We are in the process of amending council planning schemes to incorporate this information into the planning schemes as a special building overlay. Once again, that is a flag to anyone who may want to redevelop a property within an existing area. There may be a constraint from flooding in that area. We then put conditions on those subdivisions to make sure that the costs of complying with the new standard is internalised in the price of the new house.

We are involved in the provision of fully integrated stormwater infrastructure. Melbourne Water is a referral authority for main drainage and waterway issues. All major subdivisions and major developments are referred to us by councils. We see this role as absolutely critically important to securing better catchment management and stormwater outcomes into the future. To give you some indication of how important we see this is, about 30 per cent of the staff in the entire Waterways and Drainage Group are dedicated to this. If you do not get things right in the planning stage, you are playing catch-up football for the rest of your life and devoting large sums of community resources to fixing problems that should never have happened in the first instance.

It is relatively easy to get it right in the greenfields stage where you can integrate overland flow paths into parks, roads and the like. It is incredibly difficult to do it in the inner suburbs where you do not have space to do it. In our interaction with the development industry, there has been a renaissance. The industry initially were quite slow to see the virtues of having an integrated approach to stormwater management. Now they have realised that prudent and astute management of stormwater in new subdivisions creates a marketing advantage. You see Sanctuary Lakes and Palm Springs Cove and all of these names where the retarding basin and

the water quality treatment pond is put right at the front of the subdivision and people drive by it and it is the main marketing part of the subdivision.

There is a whole integrated approach. Silt and litter traps and wetlands are all incorporated into new subdivisions now. The waterway is not put underground in a pipe. It is put out as a main feature of the subdivision. People are taking pride in the stormwater. We have turned it from being a public bad into a public good. The development industry has seen the light of day and are really using this to market their subdivisions.

The final two points, the protection of Port Phillip Bay and the protection of Westernport Bay, I will deal with together. Essentially, these are the two sinks that collect all of our stormwater and run-off from urban and rural areas. If you take the principle that what is happening in the catchment can be reflected by the quality of the water that passes out into these particular areas, you can see why our interest is in catchment management.

To give you some background, in the early 1980s Melbourne Water was under a lot of pressure to build a pipeline from its Werribee sewage treatment plant, which is down in the western suburbs, and not have it charge into Port Phillip Bay because there was a perception that the sewage treatment plant was having a deleterious impact on the bay. Melbourne Water commissioned the CSIRO to undertake a five-year, $12 million study into the health of Port Phillip Bay. It is one of the most sophisticated environmental studies of a body of water like this that has been undertaken around the world. The conclusions of that study were that, with some minor reductions in nitrogen for the treatment plant, what was happening was sustainable from a Port Phillip Bay health perspective. There were minor impacts from stormwater, particularly along the eastern shoreline where the waterways and the main drains discharged into the beach. Efforts needed to be undertaken to improve the quality of stormwater and, in particular, reduce nitrogen and other nutrient inputs into the bay. Our focus on the water quality side of things has been to ultimately protect the two sinks which are Port Phillip Bay and Westernport Bay. That is not downgrading the importance of having healthy waterways in between. As a matter of principle, our overriding philosophy is that prevention is better than cure. I have told you about the resources we put into making sure that developments get it right in the first instance.

The other principle that dictates the way we work is to address the problem at the source rather than try and fix it down at the end of the pipe or in the waterway. You find, once you get down to the end of a pipe or the waterway, that you are dealing with large volumes of water, with huge capital costs to build something and with major operating costs to keep the infrastructure functioning. If you go back up into the catchment, quite often you can adopt the Pareto principle where you can fix pretty much 80 per cent of the problem by going through and looking at 20 per cent of the sources. That is what we do. That involves a whole integrated approach, with community education and identifying where the hot spots are. If it is litter, it could be the strip shopping centres, the schools or the commercial centres. It is fixing the problem on a localised basis rather than putting the big macro solution in at the end of a pipe, which is quite often costly and sub-optimal.

That is a very brief overview of what we are on about. Our role is very much water centric. We have been involved in a number of catchment management related activities and integrate

with the catchment management structures in the Port Phillip and Westernport area. I would be pleased to stop there and take questions from the committee members as they please.

CHAIR—I understand that you are probably one of the very few water authorities in the world that have total control over the catchment areas where your water comes from. Is that correct?

Mr Young—That is true. In particular, our role as a referral authority is quite unique. I was overseas last year in both Europe and the States looking at institutional arrangements there. Not one of the authorities that I visited had our powers as a referral authority to stop developments if they were going to have a deleterious impact on the waterway or the river environment or from a flood plain perspective. A number of other authorities were referral authorities, but the councils or the responsible authority could choose to accept or reject that advice. We are in a relatively unique position, both in Australia and worldwide, in our integrated functions of flood plain, waterway and water quality management and with referral authority status as well.

CHAIR—Given that you have articulated the benefits of that, how could we then extrapolate that across other catchments in Australia?

Mr Young—I have to express my ignorance of what is happening outside Victoria. I would have thought the general principle of clear accountability, making sure that the authorities have the appropriate powers, whether it be through planning schemes and the like, to ensure that land use decisions take into account the impact on the environment, and also making sure that there is an emphasis on on-ground solutions, on-ground action and community empowerment—not just having authorities and others tied up in producing strategies and other documents that may never see the light of day.

CHAIR—The practicality of it is that you do not have any development in your catchment, but other catchments do.

Mr Young—Are you talking about water harvesting?

CHAIR—There is no doubt that, because of your unique position, you can really control water qualities because of the fact that you can control what goes on within the catchment. It is a bit more difficult to then go outside that catchment and talk about other catchments.

Mr Young—We do not have complete control over what happens in the catchment. For instance, we have no role in involving farmers and dairy farms in best practice management and—

CHAIR—How much of that is within the catchment? Is there much agricultural?

Mr Young—Absolutely.

Mr BILLSON—I think we are getting the water quality more generally confused with the water harvesting where the catchment for water harvesting purposes is closed, but Ross's and Nick's role is in water quality and in the waterways as well.

CHAIR—I am talking about the Melbourne catchment.

Mr Young—For drinking water?

CHAIR—Yes.

Mr Young—I am sorry. I misunderstood your question. Melbourne Water operates a closed catchment policy. The water that flows out of that catchment is of a very high quality. It is our intention—

CHAIR—That is difficult, then, to extrapolate to other catchments because you do have other activities.

Mr Young—That is exactly right. That is unique from a world perspective. If you go overseas, they cannot believe you can be so lucky to have such a large area of land tied up for the sole purpose virtually of water production.

CHAIR—In your position at present, you own the infrastructure that holds the water, the catchment areas, the water itself, and then there are commercial organisations that sell the water?

Mr Young—You are talking about drinking water quality?

CHAIR—Yes.

Mr Young—The water supply catchments are crown land. Melbourne Water, until a number of years ago, used to be the management authority for those catchments. It has now been made a national park. The Department of Conservation and Natural Resources and Parks Victoria are responsible for the management of those areas, but there is a special agreement in that particular area which makes water quality preservation the overriding imperative. That is why access is somewhat limited for hiking and other activities compared to other national parks.

In terms of the infrastructure, Melbourne Water can be considered to be the wholesaler of the water. We own the major dams, the major transfer mains, the major storage reservoirs and pump stations. Once the infrastructure gets to a retail nature—this is a distribution type asset, such as the smaller pipes and in particular the customer service interface—within Melbourne that is the responsibility of three retail water companies. Out in the west, there is City West Water, Yarra Valley Water and South East Water. Melbourne Water, for a bulk agreement, sells bulk water to those three retail companies. Those three retail companies then bill their customers, operate the customer service function and the operations and maintenance of the retail assets, which are primary pipes and treatment plants and the like.

CHAIR—Then you receive the water back again?

Mr Young—That is exactly right. The same is true for sewerage, in that the retail water companies own the small sewerage assets—the small sewer mains down the backs of properties and down streets. Once they get to a certain size, they then become Melbourne Water's

responsibility. The main trunk mains and sewerage mains are ours. Melbourne Water operates two major treatment plants: one at Werribee and the eastern treatment plant at Carrum.

CHAIR—You set the price of water to sell to the retail companies at full cost recovery. Are there conditions put on that to the return of water to you in a reasonable condition?

Mr Young—The pricing of the water through the bulk services agreement is negotiated between Melbourne Water, the three retail water companies and government. Any pricing matter that we deal with in relation to water or anything requires the approval of government. Any price increases or any change in pricing at all requires the approval of the Department of Conservation and Natural Resources. The bulk water agreement covers a whole range of issues regarding the quality of water, chlorine, fluoride and the pressure. There is a whole range of parameters and performance measures at the interface points between the wholesale retail system where Melbourne Water has to supply the water to that standard in order to comply with its agreement.

At the other end of the scale, on the sewage end, the retail water companies are obliged to alert Melbourne Water of any major spills into the sewerage system which may alter the quality of the sewage which may have some influence on our ability to treat the effluent at the treatment plants and therefore comply with our EPA licences.

Mr BILLSON—Trade waste agreements?

Mr Young—Yes, trade waste.

CHAIR—Are you looking for a profit on the water that you sell to the retailers or is it just cost recovery?

Mr Young—No, we are required to get a commercial return on our assets.

Mrs GALLUS—How much of your sewage waste water is treated and recycled and how much is discharged into Port Phillip Bay?

Mr Young—At the moment, if you discount what is used down at the western treatment plant for irrigating the pastures down there—

Mrs GALLUS—I would include that as a recycling.

Mr Young—From memory, about 10 per cent of the total effluent. If you disregard the Werribee farm irrigation program, there is only about one per cent of the effluent.

Mrs GALLUS—Is that not a very small amount?

Mr Young—It is relatively small, yes.

Mrs GALLUS—Is that because you do not have the capacity to use it in your catchment or is it because the cost of the infrastructure of doing that is too much?

Mr Young—I think it is a combination. It is really the fact that water has been plentiful in Melbourne so there has not been the drivers for it and also potable water has been too cheap. Therefore, the costs of recycling, particularly the cost of the provision of infrastructure, really kill any opportunity to come up with an economically feasible way of using the treated effluent again. That is changing. We are doing a major feasibility study at the moment for using up to 60 per cent of the effluent from the eastern treatment plant which would involve the construction of a pipeline out towards Koo-Wee-Rup so the effluent there could be used for market gardening and other purposes.

The other thing we are doing is a major upgrade of the treatment process at the Werribee treatment plant. That is an investment of $120 million. That will result in a higher grade of effluent there which will make it much more attractive for reuse purposes. There have been major impediments to getting a much greater use of recycled effluent. It really requires the big picture approach of looking at planning and getting the Department of Infrastructure and everyone working together if you are going to make it work in terms of land use and the like.

Mrs GALLUS—If you are discharging at present 90 per cent of that effluent into Port Phillip Bay, what is the effect of the nutrients?

Mr Ronan—Half of Melbourne's effluent is treated at Werribee treatment plant and the excess from there does go into Port Phillip Bay. The other half is treated at the Carrum plant and is discharged into the ocean at Boags Rocks. The bay only receives about 40 per cent of Melbourne's effluent.

Mrs GALLUS—Is that a problem at all for the bay?

Mr Young—According to the Port Phillip Bay study, which I said was a very extensive study, by the year 2005 there has to be a 1,000-tonne reduction of nitrogen into Port Phillip Bay. The $120 million upgrade that we are doing at the western treatment plant at the moment, plus what we are doing in the catchment in terms of stormwater, will ensure that that—

Mrs GALLUS—You are treating the water going into the bay at the moment rather than looking at the ways to reuse it in the—

Mr Young—It is both. The fact that we are taking out a lot of the nitrogen and making it a higher quality will mean it will be more attractive.

Mrs GALLUS—How much are you charging for your potable water? How much are you charging for your reused effluent?

Mr Young—You really have me there on the detail in the sense that the retail water companies charge their customers directly for potable water. I cannot recall.

Mr BILLSON—It is 65c—

Mrs GALLUS—You are paying 65c for the potable. Do you know what it is for the effluent?

Mr Young—No. I cannot recall off the top of my head.

Mr BILLSON—It was running below 27c for awhile—17c I think was the best for a golf course that was—

Mrs GALLUS—I am asking particularly from a South Australian point of view where we are charging 92c for the potable and 0.2c for the recycled effluent, which hardly shows the relative costs there at all.

Mr BILLSON—On the issue about where to from here, can you talk about some of the good things that I know you are doing, because they affect my electorate, where you are looking at water quality of some of the lesser waterways by adding flows—such as Kannanook Creek, the recycling in the lagoon arrangement at Patterson River and things like that. Can you explain some of those things where you are reintroducing water into waterways as a flushing mechanism.

Mr Young—I will address that in the context of water quality generally, because the two are inextricably linked. When I was talking about our interaction with the development industry, I meant to mention that we released last year best practice environmental guidelines for the development industry. That really is a cookbook of all of the things that the developers and major authorities like VicRoads can do and what is best practice stormwater management.

Our drainage manual, which used to be all about quantity, the sizes of pipes and valves and the like, also now provides guidance on what the developer should do from a quality point of view. More often than not, if you are building a retarding basin for flood protection purposes, you can do it in a way where you build a wetland in the base of it and have your quality and quantity dealt with in the main and in a complementary manner.

In terms of what we are doing to fix up some of the sins of the past, I will address that at a couple of levels. We were successful 18 months ago in receiving NHT funding for what we have called the healthy bay initiative. We received $3.5 million of funding from the Commonwealth. We kicked in $4 million ourselves. We are building in excess of 200 hectares of urban stormwater treatment of wetlands in the south-eastern corridor.

This is probably one of the most ambitious stormwater improvement programs ever undertaken in Australia. We are about 50 per cent of the way through that project and it is going very well. That is on a macro scale. When we get down to the minor waterways, we are doing a whole range of things there like, as I said, removing fish barriers, looking at the environmental flows to see whether we can get flushing flows down when they are required, revegetating the waterways and involving the community in a whole range of things. We have been using the platypus as an icon to engage the community. Litter is also one of those key things which people associate with the matter. To the average person, the presence or absence of litter dictates to them whether the waterway is in a good condition. You can have quite poor water quality in a waterway, but if the average person sees no litter, they think it is good, and the converse is true. That is why there is quite an emphasis on litter.

Mr Ronan—Going further up the system than Ross has mentioned, we are also involving municipalities in the development of municipal stormwater management plans, accepting that we only manage the system up to about the 60 hectare catchment size and then it is a municipal responsibility. We have had a very good response from the municipalities, whose constituents are keen to make sure that things are being operated well in their area. We are talking about stormwater run-off quality here, its management, its best use and that sort of thing. There are at least a dozen stormwater management plans now virtually available. Some are completed and some are in advanced draft form. That is the next generation in partnership arrangements and working on a whole-of-cycle basis—not handing the problem from one person to the other down the chain, which has traditionally been done.

The thing that marks the region and Melbourne Water's operation is that it is an integrated management of the domestic water supply function, the sewage treatment function and the stormwater and rural run-off functions in a cycle within a catchment basis, although, as Ross has said, we do not have the full catchment. We think that ingredient gives us a perspective that is often lacking in other arrangements for catchment management where some of those functions tend to be disaggregated into various semi-government instrumentalities and the water cycle itself is not managed on an integrated basis. Bits of it are managed well.

Mr BILLSON—Can you talk about the rating structure, the changes over time with the parks and waterways rates, the catchment tariff—to use non-metro jargon—and how that has evolved over time and supports upper catchment activity so that people in my electorate can enjoy the benefits of activity that is going on a long way away.

Mr Young—The waterways and the drainage function of Melbourne Water is funded by levying a property rate on the ratable properties within that light green area, with the exclusion of the Mornington Peninsula. The minimum rate is $44. The average rate is about $57 within that area. That generates about $100 million of revenue a year. Melbourne Water is obliged to pay a dividend to the state government out of that money. In essence, we have an operating budget of about $30 million and a capital budget of about $35 million.

The important point is that quite often councils will come to us and say, ‘Look, we know you collect $2 million from our municipality but you have only spent $500 million in there. There’s a cross-subsidy going on here.’ But our priorities are dictated from a catchment point of view. A good case in point which Mr Billson would be aware of is that there was a major flood problem on the Nepean Highway at Mentone, which is halfway between Melbourne and Frankston. We had to spend $13 million fixing up this flood problem. Even though that was all within one municipality, the City of Kingston, you could argue that all people who use the Nepean Highway between the central business district of Melbourne and Frankston benefit from the application of those funds to improve the flood protection there. Likewise, all of the people who use the waterways and enjoy the clean waterways and clean beaches derive a benefit from that. That may mean that the works to clean that up do not necessarily need to be done in the bayside councils, but need to be done further up the catchment.

Another good example would be down in the bayside area. We had a major flood problem in the municipality of Port Phillip. That necessitated our building a retarding basin in a park in the adjacent upstream municipality. Knowing the way local government works, if it were not for a

catchment based authority like us, councils would have trouble negotiating those most efficient, best community outcomes if it were left up to the individual municipalities.

Mrs VALE—In your submission, you seem to argue that we need to get on and implement solutions rather than do more planning and research. Yet, the Cooperative Research Centre for Catchment Hydrology virtually suggested there was an urgent need for more research, especially on predictive modelling tools, to provide a basis for better catchment management. We are seeing a dichotomy between the two points of view. How confident are you, with your current state of knowledge? Would you like to make a general comment on that?

Mr Young—It is fair to say there is a whole range of areas where our level of knowledge is not as good as we would like it to be. That is why Melbourne Water is a funding member of both the CRC for Catchment Hydrology and the CRC for Freshwater Ecology. We see the research they are doing as being absolutely pivotal to ensure we can allocate our resources in an efficient way in the future to deliver the best demonstrable environmental outcomes.

There is also a whole range of areas where there is enough knowledge known so that you can go in and do things. We were saying in our submission that the community generally are sick of management plans, concept plans and consultative processes and the like. They are looking for on-ground action. That is what that was saying. Quite often, within a given area, people know what to do. It is just a matter of having the organisation with the resources, the resolve and the authority to go and do it.

Mr Ronan—An example of that is that we run a stream frontage management assistance program with farmers in the rural areas around Melbourne. We provide the capital required to buy fencing materials and do some weed control. They do the fencing, plant out the areas and restore the stream-side corridors. We do not do extensive community involved planning in order to go ahead and do that. We do not need strategies and these sort of things. Where you can take action, there are often a million sensible things you can do to achieve it.

Mr Young—The value of buffer strips is well established.

Mrs VALE—How wide are those buffer strips or stream corridors that you require?

Mr Young—It varies, but the work that Prof. Mein was talking about in terms of Tarago dictated the whole size of buffer strips. It depends on slope and what the land use is, but we generally go for 10 or 15 metres, if we can get it, in negotiation with the landowner. That program has been going for three years or more, and we are pretty much up to over 100 kilometres of waterway that we now have fenced out on both sides.

Mr Ronan—The committee might be interested to know that in some of the areas where we have been doing this for a number of years, there is now a perception that properties have increased in value as a result of the effort that has been maintained. They are getting higher values on the market when they are sold. It is a positive message to take back that there can be direct benefits.

CHAIR—Agriculture or urban sprawl?

Mr Ronan—No, this is agriculture.

Mrs VALE—If that is demonstrable, that is a very good case.

Mr Ronan—The Poowong area of Gippsland and these sort of areas, which is dairy farming and very rural. It is not a result of the fringe.

Mrs VALE—It is excellent encouragement, isn't it?

Mr Ronan—It is.

CHAIR—Thank you, Mr Ronan and Mr Young.

[11.55 a.m.]

DAINTON, Mr John, Alternate Member, Association of Rural Water Authorities

FLETT, Mr Denis William, Member, Association of Rural Water Authorities

LETTS, Dr Goff, Chairman, Association of Rural Water Authorities

REDDAN, Mr Luke Thomas, Secretary, Association of Rural Water Authorities

CHAIR—Welcome, gentlemen. Do you have any further information regarding the capacities in which you appear today?

Dr Letts—Thank you for the invitation to appear before the committee. I am also chairman of Wimmera Mallee Water and I am a member of the North Central Catchment Management Authority.

Mr Dainton—I am also the deputy chairman of Goulburn-Murray Water and chairman of the Goulburn Broken Catchment Management Authority.

Mr Flett—I am also the chief executive and a director of Goulburn-Murray Water and a Victorian commissioner on the Murray-Darling Basin Commission.

Mr Reddan—Apart from being the secretary of the association, I have had a long-time involvement in water administration.

CHAIR—We have received a submission from you and have authorised its publication. Would you like to give us some opening comments?

Dr Letts—We have brought with us a map of Victoria showing the boundaries of the various water regions.

CHAIR—Is it the wish of the committee that the document be accepted as an exhibit? There being no objection, it is so ordered.

Dr Letts—Some of what I am about to say by way of introduction would be very familiar to Mr Billson but probably not to other members of the committee. I need to go back nine or 10 years to point out that rural water authorities in Victoria were created by customer power. In about 1990, there was considerable dissatisfaction amongst rural customers with the way water was being administered in Victoria. That culminated in a barricade of the head office of the Rural Water Corporation at Orrong Road in Melbourne with trucks, livestock, hay and what have you. More importantly, as far as the government was concerned, it resulted in the withholding of the payment of water bills by a large section of customers during that year. The money was paid into trusts and withheld.

As a result of that, the then Kirner government established a committee of inquiry into rural water industry matters in Victoria. It was headed up by Stuart McDonald and there were a number of eminent people on that committee. In 1991, they brought down a recommendation which has led to a lot of what has happened in the nine years since. Basically, they set a blueprint for devolving and decentralising rural water management in Victoria, the phasing out of the central Rural Water Corporation and its replacement by, in the first instance, a series of regional boards and then regional water authorities.

In terms of the timetable, the regional water authorities and the catchment management authorities evolved together in somewhat the same time frame. Even before official recognition of those entities, there was cooperation at the management level. When the salinity management plans in Victoria started to evolve from the middle of the 1980s through to the present day, and there were community groups set up on a number of river basins that started to look at salinity plans or land and water management plans, I think in every instance there were officers from the forerunners of the rural water authorities who sat in during the planning process and provided technical advice, liaison and networking. That was very important. That kind of relationship has continued and strengthened.

Our association was formed in 1995. That is when the Rural Water Corporation ceased to exist and the former regional boards created by Mr Crabb became water authorities with increased delegations and responsibilities under the Water Act. As the covering letter to your committee indicated, there are five rural water authorities with responsibilities for headworks, farm and bulk supplies throughout rural Victoria.

The catchment and land protection boards were created in 1994-95 as a new approach to catchment management in Victoria and incorporated some of the old functions like pest animal and plant control and soil erosion. As it turned out, they were basically a planning group. Their work for the first two years was producing the regional strategies. As I said when I appeared before a committee of inquiry, they were virtually at the end of their life. When consideration was being given to establishing catchment management authorities, they were basically without teeth. They evolved into catchment management authorities in 1997. These authorities were set up, as Peter Sutherland has told you this morning, to achieve a number of things. Basically, the two most important aims were to make sure that the planning and the action that followed the planning were community driven. In that way, they also parallel the regional water authorities. The catchment management authorities have their implementation committees and they in turn are backed up by Landcare groups and various community groups.

In the case of the rural water authorities, throughout the system, we have our customer service committees or our customer consultative committees. They are similar bodies under different names. In Wimmera Mallee Water, we now have six of those customer consultative groups representing the whole of the geographical and sector spread and incorporating over 100 customers who, under section 108 of the Water Act, provide us with advice on a frequent and regular basis. So the customer focus is all important. That is in line with the recommendations of the McDonald report and stems from the problems we had back in 1990. I believe that the administration of regional water has improved considerably by the regionalisation and the greater reliance on customer committees.

The other purpose of the CMA formation, as Peter Sutherland has fairly comprehensively covered this morning, was to coordinate and focus the efforts of the various stakeholders. Mr Sutherland told you about the stakeholders this morning. They include individual land-holders, both rural and urban; local government bodies; departmental agencies; Landcare and allied groups; and water authorities.

The rural water authorities work under the Water Act; the CMAs work under both the Water Act and the Catchment and Land Protection Act. Optimum results in these partnerships will be obtained through the partnership and when the supporting networks can work together to make the most effective use of available resources. That is the aim. We still have a little way to travel. There is some room for improvement. Governments have an important role to play, as the benefits of successful catchment work extend to all Australians and the funding required often exceeds the capacity of local communities. We believe that with the catchment strategies and structures now in place, including the partnership with the rural water authorities, Victoria has taken some preliminary steps down a road which will never end. There are challenges along the way; most of those are predictable. The road points in the right, and probably the only possible, direction.

Our submission is structured so that it relates to your terms of reference. All the subheadings are there. I will not attempt to run through it. It is better to leave some time for questions. I would suggest that John Dainton may have a couple of points to iterate that came up in his encounter with your committee.

Mr Dainton—As Goff has indicated, the rural water authorities' accountabilities really connect them to catchment regions and the environment, but rural water authorities are more commercially focused as a business. The catchment and the environment are critical to our business.

I will reiterate the four points about lessons learnt that I made yesterday to most of you. I have had a fair bit of experience over the years through the salinity program, land protection boards and catchment management authorities. You have to look at land and water on a total catchment basis. There is no point in just doing a little bit on a subcatchment here and there and saying that is good enough. Where I come from, in the northern part of the state, which is part of the Murray- Darling Basin, we strongly endorse the Murray-Darling Basin salinity and drainage strategy and nutrient strategy. Southern areas of Victoria have similar issues as well.

You need good science. While I am very keen to get work on the ground, we need to do the scientific work to ensure that what we are doing is right and is sustainable into the future. We have to work in partnership with all the players. The water authorities are very much integrated. Two of the speakers here today are members of water authorities and also members of catchment management authorities. We need to be very much integrated with local government. Of course, the catchment management authorities are partners with DNRE. The other point is that cost sharing must be right. I think that cost sharing is one of the key issues that we all have to confront.

CHAIR—Thank you, Mr Dainton. Does anyone else want to make a comment?

Mr Flett—No. I am happy to leave it to questions.

CHAIR—You are a loose association of the catchment management authorities, are you?

Dr Letts—No, the rural water authorities.

Mr Flett—As the submission says and as Goff touched on, rural water authorities manage dams and supply water in bulk to other water authorities which look after the services in towns and cities in regional Victoria, as well as our own retail sections, which is irrigation and drainage. We have a wholesale and a retail role: managing dams and bulk water service delivery on the one hand, and managing rural retail supplies on the other for irrigation or domestic and stock purposes. Typically that is to support dryland agricultural activities.

CHAIR—How do you tie in with the catchment management authorities?

Dr Letts—We tie in in several ways. There is this cross-fertilisation. When the catchment management authorities were being appointed and they called for expressions of interest, they had their statutory range of skills that were required for appointment to that authority. Knowledge and skills in water administration was one of those. As it happened, there were probably a number of people from the water authorities or from the customer groups that we created under the act who put in expressions of interest. As it turned out, there was Southern Rural Water, which had John Tilleard who is on the state catchment board. In the case of the Wimmera CMA, my deputy chairman from Wimmera Mallee Water—

CHAIR—You had a cross-fertilisation between the commercial operations and the catchment management authorities.

Dr Letts—We had more than that. At the technical level, there were our implementation committees that Peter Sutherland referred to this morning. In every case, when they meet, there is virtually an ex officio member from the rural water association who is the technical advisor to the implementation committees. John Martin, our manager of operational services, sits down with the CMA's water services manager at the implementation level.

Mr Flett—I have five points to make in answer to that. I will read them. You may like to have the document tabled. The document talks about our roles. How do rural water authorities and catchment management authorities relate? The water catchments are clearly, from a rural water authority point of view, the water production factories. Unlike Melbourne Water we do not have closed catchments. They are open for a whole lot of varied land use. Those water production factories are the catchments that catchment management authorities fundamentally are charged to keep as healthy catchments. How do we relate? There are a couple of ways. Rural water authorities are a catchment employer and a stakeholder whose employees or customers offer relevant skills to the various components of the catchment management authorities' organisational structures. People on boards and people at management work on their working groups. Sometimes people who are our customers also get involved in the Landcare groups, not surprisingly, or in the implementation committees. That is the first point: direct provision of human capability.

We are also a catchment corporate citizen adapting our water utility practices, where necessary, consistent with the catchment management strategy. In that sense, we are subordinate to the broader issue, the broader catchment management strategy. We are a contributor of funds for catchment programs under identified cost sharing arrangements. Where there is a catchment related program that appropriately identifies rural utilities as contributors of funds, we provide those. We often contribute to river programs, for example, because we utilise rivers as carriers in our system. We are a service provider with particular water management expertise, land and water management and catchment management, as Mr Dainton indicated. We are basically regional bodies with some water management expertise. Water resource management is an integral part of catchment management, so you need to work together. We are also a manager of assets which are necessary for sustainable natural resource use. If it is an irrigation region, for example, drainage is recognised worldwide as a vital part of sustainable irrigation. That involves infrastructure. We manage that infrastructure. One of its outcomes is sustainable resource management; it is beyond the utility service. We relate in five ways.

Mrs VALE—Are any members from your authority bodies represented on the Victorian Catchment Management Council?

Dr Letts—Yes.

Mrs VALE—This is the special council which advises the minister?

Dr Letts—Yes. Southern Rural Water is not here today, but it is a partner in the Association of Rural Water Authorities. John Tilleard from Southern Rural Water is a member of the state catchment council.

CHAIR—Is he the only one?

Mr Flett—Christine Forster, who is a member, was involved in the rural water sector previously, but is not currently a director.

CHAIR—So there are some connections?

Mr Flett—There are some direct connections.

Dr Letts—At our last meeting of the Association of Rural Water Authorities, John Tilleard came and gave us a presentation on the state council's vision for water in 2050 for rivers.

CHAIR—Why are you opposed to having an environmental group on your catchment management authorities?

Dr Letts—Sorry?

CHAIR—Someone must have been opposed to it. Why did the government not appoint an environmental group on the catchment management authorities?

Dr Letts—I think we have to get some structure into the answering here. Where I can, I will answer it; if I cannot, I will call on one of the others; otherwise we will all be talking at once.

The question as to what the government did in relation to appointment of catchment management authorities is really one for the catchment management authorities rather than the Association of Rural Water Authorities, but with our other hats on we may be able to help in this regard. I thought that environmental skills were in fact one of the statutory conditions or skills that were looked for under the act for appointment to catchment management authorities. I think that is right.

CHAIR—Is it true that environmental groups complain that they have no representation on these authorities?

Dr Letts—That would be as a result of the judgments made as to the best people from the list, but certainly environment is one of the qualifications. Environmental people in the sense of environmental lobby organisations may feel that, but if you look at the people on these authorities, there are people like John Dainton who goes back to the mid-1980s in his grassroots contact with the evolution of this kind of catchment management business. I started in 1986 with a community whole of catchment public meeting in Donald when I came back from the Northern Territory. Within three months, I had been at a public meeting. I was on a committee that was going to look at the whole of the catchment for the Avon Richardson.

Lance Netherway, who is Chairman of the Wimmera Catchment Management Authority and Deputy Chairman of Wimmera Mallee Water, was the driving force in the land and water management plans for the Wimmera area and the Wimmera River. If you look at the catchment management authorities, you will find that there are people whose qualifications are beyond reproach.

Mr BILLSON—The emphasis was on skills not a walk-up start for any interest to be represented. That is where sometimes you get disagreement. A range of groups—not necessarily conservation— are saying, 'We should have a representative on this organisation,' whereas the test was, 'What can you contribute in terms of horse power?'

Dr Letts—The same thing might be said by the Victorian Farmers Federation, 'Why isn't there a designated VFF member on this?' It is not. It is primary production skills that are mentioned here.

CHAIR—Haven't you paid your levies? I will ask a question with great temerity. Mrs Gallus has gone, but she asked a question previously, which I think should be asked again: why isn't there charge for water, not just cost recovery? Linked to that, can you give me any other examples anywhere that you know of where water users pay an extra charge other than cost recovery for water?

Dr Letts—If I can start on the answer, but there are people alongside me who could probably add to it in much more detail. Accountancy was not one of the reasons I was selected to be on Wimmera Mallee Water. We do happen to have one of the world's best accountants on Wimmera Mallee Water, so we are pretty lucky. I do not think it is true to say that we are just on

a cost recovery basis. The 1991 McDonald report that started this business going recommended, in addition to the regionalisaton of water, that we go to full cost recovery and set a time schedule to do that—2001 basically was the time factor. That happened to coincide fairly well with what COAG decided four years later. When COAG endorsed the concept of full cost recovery, it endorsed something the Victorians had decided three or four years before, and in a similar time frame. In fact, the Victorian government does take a dividend from the rural water authorities. I presume that reflects the fact that we are using their assets in order to provide the water to the customers. There is a dividend which is something over $1 million a year at the moment. I do not know whether that is supposed to be a public figure or not.

Mr BILLSON—Chris's question was about factoring in opportunity costs as in if the water was used for some other—

Dr Letts—I heard her ask that question this morning. If she had been here and asked the question of us again, I was going to ask her if she could clarify exactly what she meant by opportunity costs.

CHAIR—I think what she was getting at probably was that if the price of a commodity is such, then people are very wise in how they use it. I think that was what she was getting at. Pricing structures certainly have an effect on the use of the product.

Mr BILLSON—If the water is not used for irrigation, for instance, the good folk of Adelaide might drink it.

Mr Flett—If I could just make a comment. I am trying to understand the question. There has to be a differentiation here between the price for the provision of a utility service versus the price that the water user will put on alternative uses of that water, regardless of who the service provider is. We already have a water market that will pay a capital price of $1,000 per megalitre to move water to new enterprises. Urban authorities can already enter that market and buy water to provide water to towns and industries. There is a market with an opportunity cost concept operating in it day to day, but that is quite a different concept from the utility cost of that water service provision. From that regard, I would say that the target that has been established for rural water—and I am now talking retail rural water—is clearly one that is based on commercial viability. We need to look and see a consistency.

If you look across to New South Wales, I am sure the committee chair is very familiar with the privatised arrangements which exist where the customers under those arrangements are the shareholders. Their pricing motive, their pricing objective, is the lowest possible long run price without a deliberate return to the shareholder. The return to the shareholder, who is the customer, is the lowest long run price for the water service. Back over the river where we are not privatised but the government is the shareholder, we have exactly the same objective for our rural retail segments which we as rural water authorities deliver: the lowest possible long run price for the water service.

CHAIR—Is that the same in most irrigation areas that you know of?

Mr Flett—Of course it is not the same in all jurisdictions. If you move to South Australia—the jurisdiction that the member who is not here is from—then clearly there is not that sort of cost recovery at the rural retail sector. It is heavily subsidised from the urban sector, so the utility service cost is not at what you would call equivalent cost recovery.

The other dimension, of course, is bulk water. The bulk water side is another area. It is a small component, I might add—about 20 per cent in Victorian terms—of the total retail price for rural water; about 20 per cent is the bulk water cost. The bulk water cost is set at the full cost recovery for the dams and the infrastructure that provide that bulk water, a long run business cost. Where you get into a complication is that, in the headworks segment, you have this issue of the standard of dams and dam improvement. The government as shareholder of our businesses is contributing capital towards upgrading dams. It is from that segment of the business that the return to government comes, not from the retail segment of the business. We can talk about that complication further, but I think the question that was being raised is really a question that has its proper answer in the difference between full cost recovery pricing or long-term business viability cost pricing for rural water service delivery versus the opportunity cost for people to buy and sell access to water in a water market which already exists.

CHAIR—I think you have answered that. Mr Barresi, you had a question?

Mr BARRESI—I have a couple of questions. Dr Letts, you mention in your submission that there should be greater coordination or work with local government authorities. In fact, you propose the following point:

> If local government planning provisions do not coincide with sustainable resource management requirements in catchments, the expectations of communities and developers can be distorted and inconsistent. Hence, there is a need for CMA type bodies to take a lead role in co-ordination and co-operation in catchments.

Is that not taking place? If not, why not? You have highlighted that. By implication, that has to be a very major concern for you.

Dr Letts—I can speak personally on this one in relation to both the hats I wear. Several years ago—two or three years ago—I was also the chief commissioner of the Shire of Loddon, which is right in the middle of our water region, at the time of amalgamation. It is one of those areas I mentioned earlier where we still have a bit of catching up to do, but there is movement there. There are 16 municipalities which are whole or part of the north central catchment management region and authority. There is a great range of how well they have come to the party in terms of the concepts and the practice of catchment management. It is fair to say that, if you went back two years, you would find that some of those local government authorities saw catchment management authorities as almost in competition and, to some extent, an unnecessary addition to the administration of things in Victoria. That is a personal view. That was when I was fairly close to the local government scene.

This variation in how well local government has responded to this catchment management initiative has also appeared in the way that the regional catchment management plans were accepted, adopted or used in relation to the new planning schemes that were brought about during post-amalgamation. Some councils recognised that the regional catchment management

plan must be taken into account in consideration of actions under the planning scheme; others did not go quite that far.

The latest opportunity for working together and networking probably came when the tariff was brought in under the previous government. There were two things required. One was to negotiate with local government bodies as to whether or not they might include this as a line item or in some way on their billing schedule. The second issue was the database that was required by catchment management authorities in order to be able to levy the tariff. Local government authorities were the obvious and logical source of most of that material.

Once again, I would have to say that the response varied tremendously in the kind of cost factors that they were prepared to put—some did not want to have anything to do with the billing side of it at all—on the provision of data varied in the extreme from, say, $1 an allotment, up to, in one particular case, I think I am right in saying, about $6. That made it pretty prohibitive. This is something we are working on. The Association of Rural Water Authorities, and in particular the catchment management group which parallels our association, needs to get close to the Municipal Association of Victoria and the Local Government Association of Victoria. We all recognise, if we are being fair dinkum about this, that there is still some way to go. Everybody recognises now that there is a general acceptance amongst local government of the work of catchment management authorities. Things have improved a lot in two years. We are going in the right direction. We are working on it.

Mr BARRESI—Earlier on we had Professor Mein talk about afforestation and the problems that can occur if we start growing forests back as a way of preventing salinity. The point he was making was that, if you start putting forests back, it will take water out which may be used downstream. He said that there is possibly a halfway solution, that is, that you do plantations further down the slope rather than up the slope where they are traditionally done. If that takes place, won't that severely impact on the general land use of the rural community? How acceptable will that be to a lot of the primary producers?

Dr Letts—That is a good question and Denis can add to it. As the Chairman of Wimmera Mallee Water, I am very much in the firing line as to what is happening in the upper catchment and I shudder when I think of some of the things that have been said about us and when I think of some of the interviews I have done on the subject.

There is no easy answer and no one single answer to the problem of what should be done on the upper catchment. Let me say that for a start. When the upper catchment was cleared in the western area—and it is pretty much true along the whole of the northern slopes of the divide; it was not replaced with vegetation that would arrest rainfall and run-off—some terrible things happened and are still happening. Some of the gully erosion that took place, some of it in the area where I live, just about put the city of Melbourne in some of the gullies that are around that area. It is huge and some of it is still going on.

That kind of erosion, damage and degradation has a great effect on some of our water interests in terms of water quality and all the things that go with it. How do we repair it? One of the results of clearing and excess run-off was that, further down on the flat, you had areas that have much more flooding now than they had in the pre-clearing days. The guys who live down

on the flat, have a rising watertable and have this more frequent flooding going on, as around Marnoo and Donald and some of those areas, would say, 'Do whatever you can in the upper catchment. Cover it with trees. Build a thousand dams. Stop that excess water. It did not used to come down here and flood the plains. Stop that.' There are other people who would not subscribe to that theory at all. People on the Wimmera River would say, 'It is 30 years since any water got to Lake Albacutya, and it will never get there again if people keep taking water or arresting the flow in the upper catchment.' They would be the two ends of the spectrum. The answer to the question, to some extent, has to be tailored almost to each individual catchment and each individual situation. I am sure that Denis would have something to add.

Mr Flett—Firstly, I would like to make the point that rural water authorities contribute financially directly from our customers to the CRCs. One of my executives is on the board of Russell Mein's CRC on behalf of the Association of Rural Water Authorities which all contribute to the research and development program. We are very actively integrated with important research that relates not only to catchment yield but also to the catchment pollutant processes, et cetera. We are very actively involved. We are very much aware of the potential impacts on water yield from changed land use in catchments and, for that matter, climate change impacts with rainfall and run-off relationships.

From a Victorian point of view, the bulk entitlement orders that have been progressively issued for catchments in northern Victoria, which is a model to apply across the state, are very robust. It obviously contemplates the fact that you can have yield changes. It is not just the bulk entitlement processes, but the subsidiary reforms that we are working on to truly specify water property rights so the water market can operate; identify water entitlements not just in terms of volume, but in terms of reliability; and recognise that, if yield changes, you can make changes by volume or reliability when you are sufficiently certain, from a scientific point of view, that you have had fundamental changes from either yield run-off relationships, climate change or whatever is the driving force. As such, the bulk entitlements envisage the potential for that sort of change and have mechanisms in them. The important principles are that they will be open, transparent mechanisms. The power is clearly with the minister to be able to modify those, but in a way that is open and transparent and deals with the issues with the stakeholders. That helps indicate that.

Very importantly, it also provides a very strong focus on the efficiency of total water system management. You cannot harvest more water in the Murray-Darling Basin because of the sensible policy decision called the cap, et cetera. That puts an emphasis back on one other source of water, whether it is for the environment or productive use, which is from water efficiency savings. Wimmera Mallee has been very proactive in the northern Mallee pipeline. I am sure the committee is aware of that. Those concepts are alive and well within the northern Victorian water systems as well and provide some opportunities for adjustments.

We have to recognise that water systems are dynamic, we need good science to understand the dynamics over time and we need good policy which can be adjusted as time goes on. While not all the problems are solved, the problems are envisaged and the mechanisms exist which could potentially deal with them.

Mr Dainton—If I could just add a little bit here: in the Goulburn Broken and north-eastern part of Victoria, which has similar problems to Wimmera and others in regard to these issues, there is a major project called Heartlands. The Myer Foundation and CSIRO are doing work—what you might call valuing ecosystem services. There is a study in New South Wales, but I am not quite sure where that is happening. On that mid-slope in our part of the world, the commodity prices for wool and other things have deteriorated. The land is not really suitable for agriculture. We are looking at what is the best way to move forward. Some people might call this landscape change, but to get a value first of what you are going to have is quite critical. That project would have a lot to do with the outcome of water and sustainable agriculture or tourism and recreation.

Ms GERICK—So far this morning we have heard from two groups, one of which said the priority was funding for research. The following one said, 'No, let us get on and do what we know.' I am interested in your views.

Dr Letts—I do not think you can talk about it as an either/or kind of situation. Certainly there was a period I referred to when the CALP boards were set up, for example, in that area where all the accent was on planning. In order to plan properly, you have to have the background information and the best available data.

A lot of the community and Landcare groups felt that they could get money for planning in those early NHT and NLP days pretty easily. They reached a point of saying, 'When are we going to see the results on the ground? We have the plan.' There has been an emphasis, and I think it is true in the NHT Commonwealth guidelines, on outcomes and getting some work done. Certainly there was a need to get a shift in that direction, plus evaluating the work that is done. That does not mean that the need for some further planning and the research that backs it is not as critical now; it will probably be an ongoing need.

A classic example in my mind is environmental flows. Part of the deal between the Commonwealth and the state is in relation to the northern Mallee pipeline, with $50 million being provided for a major infrastructure project to save 50,000 megalitres of water. The land-holders are contributing in the order of $15 million and the Commonwealth and the state are sharing the balance. It is a three-way partnership. Part of the deal was that two-thirds of the 50,000 megalitres that was saved in the process would go into environmental flows. At the end of the day, we will have 35,000 megalitres going into environmental flows in the Wimmera and the Glenelg rivers in Victoria. That is a beautiful thing; it is a wonderful concept, a wonderful idea. I can do nothing but support it.

How to use that water properly is the problem. There is water going down the Wimmera River right at this moment, as we speak, at the end of the driest period of the driest three years ever on record. We have people writing to the *Wimmera Mail Times* and there are front page stories at the moment saying, 'Who are the stupid bastards who are letting water go down what would normally be a dry river?' There are various interests in having the water go down there at this time, but there are a lot of well-meaning people who say, 'Let the water go. Any time is good.' That is not right. Professor Peter Cullen told us a couple of weeks ago, 'Perhaps we should be mimicking the natural pulses, but we do not really know. We do not have the basic data from which to measure this.' That fairly long answer says it is not an either/or situation. We

still need to do both. We need to have more outcomes on the ground for sure and we also need to do some research.

Mr Dainton—I said that we needed good science. I am also a farmer and I want work on the ground at the same time. There is a lot of information out there that wants to be integrated. There is information in lots of places. I point out the Geographic Information Systems which are not compatible on various computer programs. You have the Land Profiler, which has come into force. We need to get all our information together into a package and then see what the gaps are. I strongly believe that, without good science, we will not advance very far.

Mr Flett—Perhaps the balance changes over time.

Mr BARRESI—Melbourne Water told us before of the incredible powers they have which are the envy of the world. In contrast, what are your powers? Are they sufficient to counter some of the resistance you get? You mention local government, for example.

Dr Letts—The Water Act is a very voluminous act which has grown like topsy over the years. I sometimes liken it to the Bible in that you can find whatever you want to find in it and argue both ways if you want to. Ostensibly, we have some very strong powers under the Water Act, but you do not know what powers you have until you come to use them. We said to a man in the upper catchment that, for all the good, legal reasons under the act, the Murray-Darling Basin cap—all the factors—he should take out a licence to build a 30-megalitre dam and pay a one-off water entitlement fee, but we found out the powers that we had under the act, which were designed for the fair and equitable distribution of water amongst all parties, were only as good as the media could construe them to be—what we were doing and their view of what a good story would be. Something which started 12 months ago as almost a test case is still going on. Not one cent has been paid, I might add, in contradiction to what the *Herald Sun* would like you to believe. Like most old acts, the Water Act could do with a bit of review. I was in Nagambie on Sunday when the minister launched the new discussion paper. She said, for example, that the concept of waterway as put in the act needs to be revisited. I would certainly agree with that. We need to find a simpler way, which is easier to enforce, of putting it so that everybody can understand.

Mr BILLSON—The Wimmera Mallee pipeline is a fantastic project. Congratulations, Goff. It is a good model where a public dividend can be derived from public investment in delivery infrastructure. My sense is that we have not done enough of that. When we were touring with John yesterday, we were getting 30 per cent losses on earth and delivery infrastructure and the like. There are big opportunities there. That is a lot of water that could be saved. Do you have any thoughts on that as a mission?

Dr Letts—You are absolutely right. There is the obvious horrific loss of water in a situation like the northern Mallee where only five to 10 per cent of the water that we let go from the Grampians gets to the farm or to the town. That is just a totally untenable situation in Australia, but it has taken 50 years to recognise that and do the job. Congratulations to the federal government for its recognition of it.

There are a lot of other opportunities. Denis mentioned before more efficient use of water. We are now working our way back in the system. Something like three kilometres of the Donald main channel, that runs through a very sandy belt and loses half its water in the process, is being lined. We have several channels in this category and we are still doing test work. Most of it is polylining and there is a bit of clay lining going on too.

Our scheme here is for self help rather than government reliance—that is the sale of savings scheme, as you realise. If somebody wants to build a dam in the upper catchment and take some water from up there, we have to save some water somewhere in the system. We are in full commitment and that is pretty true across the whole of northern Victoria. If somebody pays us $10,000, that will be earmarked for the sale of savings scheme, which might be the price of a 30,000 megalitre dam of water. That money will go directly into further saving measures down within the channel system or somewhere in the system. We will save the 15 or 20 megalitres that guy will use. We are using the money he has given us to save it downstream. That is a very fair and equitable way to do things.

Mr BILLSON—In South Australia, they were saying that, in most cases, the business case itself stacks up water efficiency improvement. We are trying to get a sense of how consistent that thinking is.

Mr Flett—Looking at the water distribution side of a typical irrigation supply authority, if you went back several decades, you would have had inefficiencies or losses in your distribution from when you have taken it from the river before you have got it to the boundaries of the farms within your district of probably 40 to 45 per cent. We are gradually assimtoting as distribution practices and infrastructure improve. Currently in our systems, the ones that I am more familiar with, we average a distribution loss of about 27 per cent between both systems. Natural systems lose quite a lot of water. The best pipe systems in this city lose 10 per cent of their water. Studies are being done—they are in progress at the moment—which will focus on this. Yes, there are opportunities, but the economics of this depend in the end on the water market to a degree. You can invest in this to save water or there is a water market out there that now has a price on it as well. I want to indicate that, while there are opportunities, we will have open earthen channels for a long time and they are not all highly inefficient. It is very easy to get that issue out of perspective. There are opportunities and they are being taken on the farm as well as in the distribution systems. There is further to go on this, but gradually this is going to be an assimtotic thing that approaches a levelling off.

Mr BILLSON—It came up in the context of zero escape from a farm property and what impact that may have on yield. Really that is a poopteenth of what the water loss challenge is.

Mr Flett—There is still obviously a lot of opportunity. The difference between worst practice and best practice for on farm application of water can still save considerable water.

Mr BILLSON—In terms of economic instruments, water trading markets, property rights and that whole question, how crucial is an equivalence in the allocation between jurisdictions within the one catchment to making that work well? For instance, in parts of New South Wales, your water rights are not worth the paper they are written on; whereas in Victoria, you have resource security that means that paper value arguably is much stronger, or does the market sort

that out itself? I am interested in whether that is still a barrier to getting the whole tradable scheme up and going as fully as it could be.

Mr Flett—The full extent of the water market will not be there until the property right specifications are well understood and you can convert. The key parameter is reliability. The key parameter is that, if you buy a water entitlement, it is not the volume of the entitlement, it is the reliability. How often will you have all of the volume or only part of the volume? It is needing to understand that reliability that is the important aspect. The price in the market does replace that, but there is still a need to increase the understanding of the reliability of the property rights.

Dr Letts—Just quick point on water markets. We have an unusual situation in our area where there is a limited amount of entitlements along rivers like the Avoca. Some of those people with entitlements have not used them for years and do not intend to use them and the guys upstream or somewhere else in the system who are trying to get hold of some water, cannot do it. Those people are sitting on those entitlements and waiting for the market to go up to a point where they believe that it is going to be of benefit. That has to be looked at by the people administering the market scheme. Can people deprive development somewhere else by just sitting on this for 50 years and waiting until it increases in value 10 times?

Mrs VALE—That is exactly the question I want to ask. As someone who comes from an urban electorate, and I did not want to brook any criticism of anyone, I was hoping you could explain to me something that is missing in the puzzle. It did seem very strange to me that someone could have an allocation of a water right, not use all that allocation and, because they have the licence, sell it at a profit. When you are looking at an incredibly scarce resource, it seems strange that that could happen. I was thinking that maybe I was missing something along the line. Is this something that you are trying to encourage? Do you think it is as strange as I do?

Dr Letts—Not exactly the same. I want to see them being able to sell it and I want to see the water go to a higher value usage. In other words, rather than putting it out on the flat and it going all over the place and out on to the road and trying to fatten a few lambs infested with liver fluke, which they should never damn well be doing, the water needs to go to grow some good red wine or some higher value usage. We want to encourage that to take place. I have a problem with people sitting on it; they will not let the water enter the market—

Mrs VALE—I do too, because they are manipulating the market.

Mr Flett—There is not that much water in that category. Most of the water is clearly utilised because it has a value. You will not need very many years at all of experience with the water market before people understand the value and it moves. That is the experience that is already showing through in areas. Water volumes can be orders of magnitude apart. You talk urban water and we price it per kilolitre, which is a thousand times—you probably all know this—different than the unit the rurals use, simply because, to use water for irrigation, you are talking orders of magnitude difference in terms of the quantities of water you utilise. It is not surprising when you think of water for a farm use versus water for a house block use.

There are a lot of volumes out there but, as a percentage of all of the volume, the under-utilisation of water is not that much. But it will naturally occur in significant volumes in years of low demand. You will have wet years when supply does exceed demand. But in the current circumstances which we are experiencing, you are talking about a small single digit percentage of water that is not utilised or sold.

Mrs VALE—Fair enough.

CHAIR—Even before, the water market people could still sit on a quota and not use it.

Mr Flett—Part of it is related to the issue that people have put forward, which is: if the price in the past has been small, water has traditionally been subsidised because water systems were developed for social and not just economic reasons. As price moves up to cost recovery, in rural terms, that still is a significant amount of money. If you have 100 megalitres and it costs $20 per megalitre, you might say, 'If I'm not using it, why shouldn't someone else?' because you still have to pay the bill.

Mrs VALE—Is the allocation of the licence something that is historical? Does it go back to a pre-existing use right, is it something that is changeable or is it a static amount?

Mr Flett—Fundamentally, it is a static amount where people have historically had a chance to apply for it or have it allocated. Once that one-off process has occurred, it tends to be static. The reality is that things like water licences or water rights have been paid for whether they are used or not. That has basically been the tariff. The other argument is that historically they have paid less than the cost of producing the water, whereas now we have moved to the stage where that is no longer the case. Historically, it is true, which is one of the reasons why some people have not developed. They basically saw it as a drought security to use only in extreme years, not all the time. Most of the water that is used rurally is used on a regular basis. If there is not much rainfall during the growing period and there is high evaporation, you need irrigation if you are going to grow anything.

CHAIR—Gentlemen, thank you for your evidence. We will have to wind up. It is a very interesting subject.

Proceedings suspended from 12.53 p.m. to 1.34 p.m.

LONGMORE, Ms Sue, Committee Member and Former Swan Bay Catchment Facilitator, Swan Bay Integrated Catchment Management Committee

SMITHYMAN, Mr Steven, Swan Bay Catchment Officer, Treasurer and Secretary, Swan Bay Integrated Catchment Management Committee

CHAIR—We have received a submission from you and have authorised its publication. Would you like to give the committee an outline of your projects.

Mr Smithyman—Yes, we would. We also have an additional submission which we have handed out.

CHAIR—Is it the wish of the committee that the document be received as evidence and authorised for publication? There being no objection, it is so ordered.

Mr Smithyman—Located north of the town of Queenscliff, Swan Bay is one of the most intact areas of wetland and marine ecosystems in Port Phillip Bay. It covers approximately 3,000 hectares. It is of state, national and international ecological significance. Its catchment is approximately 170 kilometres square and made up of predominantly cleared agricultural land and increasing urban settlement. Many of the catchment issues have the potential to adversely affect Swan Bay. Major factors potentially affecting the bay include siltation, nutrient and stormwater run-off, excess algal growth and loss of seagrass.

In 1997, a committee was formed with representation from all key stakeholders from Swan Bay and the catchment. Its membership reflected the integrated approach to catchment management, with representatives from local government; state government bodies; local industry, including Alcoa Australia; coastal management bodies; volunteer and Landcare groups. A part-time catchment facilitator was employed to raise public awareness of the catchment issues and to assist the community to prepare and implement an action plan to address the issues. Through extensive community consultation, priority catchment issues were identified and the action plan developed to address the major environmental land and waterway management issues through involving government, industry and the community. The plan takes into account local, regional and state management plans and strategies. The priorities of the plan are water quality, stormwater run-off, remnant vegetation and wildlife corridors, pest plants and animals, sustainable agricultural practices, and community awareness and participation.

Ms Longmore—I have a few overhead transparencies, to put you in the picture.

Overhead transparencies were then shown—

Ms Longmore—Our project began because we had a concern for this Ramsar wetland at the base of the catchment—a concern right across both community levels and agencies who were responsible for the Swan Bay management. The Ramsar wetland has great value for migratory waders and resident waders. It is an important nursery area for many of our commercial species

of fish in Port Phillip Bay. There was great concern as many of the scientists who work in that area felt that subtidal seagrass species were disappearing from the area.

We felt that the best way of protecting the environmental values of Swan Bay, both within the water column and around the fringes—this transparency refers to saltmarsh, which is a critical habitat for the endangered orange-bellied parrot—was to form this integrated catchment management committee and make a combined effort.

One of the projects that we have instigated over the last three years is Waterwatch along all our catchment creeks. We have nine intermittent creeks that flow into Swan Bay as well as major stormwater channels from the urban areas. The Waterwatch program, which is conducted both by volunteers and by the catchment coordinator, has fed data to us over the last five years. We know for a fact that nutrient loads from both urban and rural areas are excessive, particularly in phosphates, when they enter Swan Bay waters. This year MAFRI, which is the Marine and Freshwater Resources Institute in Queenscliff, has funding to carry out nutrient monitoring within the bay as well, where our volunteers do not have sufficient expertise to carry that out. So we will get both sides of the picture forming soon.

To prevent or help reduce sediment from eroding waterways entering Swan Bay, where they can smother the seagrasses and make the water turbid so that the seagrasses cannot grow properly, many of our programs focus on educating farmers, finding funds to assist them in fencing off their waterways, revegetating waterways in the urban areas along the stormwater channels and also protecting remnant vegetation. It might not look like a lot in that photo, but in our catchment most old growth trees have gone. We have very few hollows left. This is a handful of what we have left. It is linking up some of those remnant areas that are of vital importance.

Within the urban areas, we have a lot of community awareness raising activities. Some of them take the form of obvious signs along stormwater channels, which involve community schools and so on in awareness talks and going out on a practical activity to remind people of their links to Swan Bay. Some of our urban towns are not necessarily adjacent to Swan Bay; they are further back. People do not realise how they are connected and can affect Swan Bay.

A lot of our remnant vegetation is low growing species—saltmarsh vegetation in particular. There is not a great awareness of the value of that both as a buffer to Swan Bay and as a habitat in its own right for many animals, including orange-bellied parrots. We have worked to persuade farmers to fence off saltmarsh areas, thus protecting that habitat from grazing. Within the parks and reserves where there are saltmarsh areas, we have either put in boardwalks to channel traffic away from the sensitive areas or allowed them to go through a snippet of it but protected further back. We have also raised community awareness through interpretive signs, explaining why it is important to look after these areas and what uses these areas.

A lot of our project is not just about fencing and how many trees there are in the ground, it is about that community awareness component that goes through all our activities, be it field days, events, weed awareness or whatever. We feel that all those things help to make our project stronger than it otherwise would be.

Mr Smithyman—The resources that we use to undertake the catchment project come from a wide variety of places. We draw on the expertise and intellectual resources from all the stakeholders in the committee and also in the catchment. The majority of the financing comes from funding grants from Coast Action/Coastcare, NHT, Corangamite CMA, Parks Victoria, Myer Foundation, Waterwatch and Tree Victoria. There is a whole range of grants. We have numerous grants on the run. We also receive environmental expertise and funding from Alcoa Australia. On-ground works and monitoring are undertaken by a high level of community participation. Within the catchment we have 12 schools and five environmental groups. We use the ATCV and the Green Corps program quite a lot, and the general community.

Over the last year, our group has had a facilitator for about 75 per cent of the time. The committee's success was highlighted this year when it won the Victorian Landcare Catchment Award for the best practice in catchment management. The committee intends to continue employing a coordinator for the next two years, if we can receive the funding, to fulfil the aims of our action plan.

Ms Longmore—And drive all the projects because there is a lot of paperwork and so on involved behind them.

Mr Smithyman—The employment of a coordinator is considered to be the quickest and best method to get the action plans rolling on the ground. It is probably the most efficient and effective way to coordinate the wide variety of activities that our committee undertakes in the catchment. We think the federal government could assist us by freeing up and securing longer term funding for employment of coordinators which will link to long-term catchment management projects such as ours and have defined outcomes and plans in place.

Our future direction is to maintain the momentum by facilitating a holistic approach to catchment management with input from as many people in the catchment as we can get. We are looking to make bigger inroads into facilitating the motivation of rural land-holders to adopt sustainable farming practices through the promotion of whole farm planning and access to whole farm planning courses. A greater emphasis will be placed on field days and demonstration sites with the intent of favourably influencing the rural community networks. We have funding for additional on-ground works, which we will keep promoting in the catchment, trying to protect the catchment by fencing off waterways and things like that.

The federal government could greatly assist us by improving funding rates to approximately 50 per cent of the costs of the on-ground works, or at least by bringing them into line with some of the other funding bodies like the CCMA's grants. At the moment, there are different funding bodies. Land-holders get used to one funding rate and then we get another greatly reduced funding rate. It causes some confusion and often reduces the motivation for farmers using the money. We aim to maintain and improve community awareness programs, working with the catchment schools and the wider community, with the goal of motivating greater awareness and participation in all aspects of catchment management.

CHAIR—I have a map here that was supplied this morning by Melbourne Water. I notice over on the south-western corner of the bay there are rivers coming in. Which river are you closest to?

Ms Longmore—We have a series of intermittent creeks. Our creeks probably will not even show up on that small map. If you can find Queenscliff at the head of Port Phillip Bay, there is a little indentation for Swan Bay, near the Geelong arm.

CHAIR—You mentioned that there is farming land involved. Is it all farming land or is there some crown land involved?

Ms Longmore—There is a mixture of crown land, in particular around the Ramsar wetland's edges, and the coastal strip bordering Bass Strait. Then there are three urban areas and the rest is basically farm land.

CHAIR—Your committee is more or less a local volunteer committee?

Ms Longmore—It has agencies sitting on it. For example, Parks Victoria and NRE and so on are represented on it, but often it is in their own time. It is an extra thing for them which will benefit them. They volunteer their extra time to be on our committee.

CHAIR—What is the general representation of the committee? Is there a mixture of the whole community, including farmers?

Mr Smithyman—The committee is made up of representatives from the Bellarine Landcare Group and there are three other environmental groups—the Friends of Edwards Point, the Swan Bay Environment Association and the Friends of Buckley Park, which is another new friends group.

Ms Longmore—That is urban and rural. Landcare is predominantly the rural input.

Mr Smithyman—We have the City of Greater Geelong and Coast Action/Coastcare.

Ms Longmore—The Queenscliff Borough Council and the Barwon Coast Committee of Management who manage the crown land along the foreshore areas. It is a mixture of agencies, communities, rural and urban.

CHAIR—In your submission, you mentioned you receive quite a number of grants from different government programs, both state and federal, and also the Catchment Management Authority. One of the things we are looking at is the coordination of government funding. Are you happy with the way these funds are administered and what we mere mortals would call red tape?

Ms Longmore—No. We find the red tape time consuming. We may have eight or 10 grants going in one year, all with different reporting times. Sometimes you are reporting on the same things, but in a slightly different way. It is not just the reporting, it is the applying. Because we are an integrated catchment management committee, usually every section on every grant form applies to us, because we cover so many aspects. We do not just have revegetation as a focus; it is a whole smorgasbord. Usually, our applications end up being very full ones. They all have different rates. It is very onerous, but essential.

CHAIR—So you have to focus on what you want to do and then all of a sudden you will see a program and think, 'We could probably fit into this program,' and you have to get the funds that way.

Ms Longmore—That is right.

Mr Smithyman—We are basically looking for funding all the time. We see new openings and we apply for the funding to try to enhance the plan and get the catchment repaired, basically.

Ms Longmore—Some of it is through industry, too. We have been fortunate in the last two years to have funding from Alcoa. That has finished and we have to reapply again and hope for the best. There is also the Myer Foundation. Wherever we see something that we could pull in to help get another project on the ground, we do it. That could only be done if you have a facilitator or a coordinator. If you are relying on volunteers, there is not the time when they have other jobs.

CHAIR—With the Catchment Management Council of Victoria, do your wetlands have a priority with the council?

Ms Longmore—Yes. We are in the Corangamite catchment. Ramsar wetlands, including ours, are a high priority. It means we have the opportunity to sit well in their ranking of funds. We find, when it gets up to the federal level, if it is on-ground works, it is fine. If it is the coordinator one in particular, there seems to be different ranking happening there. Projects that are highly ranked at a regional catchment level suddenly seem to be turned around or the last—

CHAIR—What about the state level?

Ms Longmore—State is fine. The state might say, 'We have heard at the federal level this, this and this,' so you are best to try to come at it from a different way.

CHAIR—Where does that come from at a federal level? Does it come from the minister's office?

Ms Longmore—I guess it must. This is in particular for facilitators or coordinators.

CHAIR—Yes, I was going to raise that issue. It is really in that facilitator area, because I think there is a general policy that was set down by the federal government that it would not fund facilitators; it would fund on-ground works. We have had submissions from a lot of different people saying that they do not agree with that. From what you are saying, you do not agree either.

Ms Longmore—It is beyond part time now because we have so many projects on the go. This time we have full-time funding, but we have had to pull it in from different places because we only secured 15 per cent of a person through NHT when we had applied for full time. We had to spend time looking elsewhere, because we just cannot drive all our projects unless we have at least one person in that seat driving them.

CHAIR—It is the concern about another layer of bureaucracy. I suppose that is where the concerns are.

Ms Longmore—If that is the way the federal government thinks, those sorts of things should be in the guidebook that comes out with NHT funding.

CHAIR—And the 20-page application form.

Ms Longmore—That is exactly right. It is when you know you have met all the criteria in that booklet and in your regional area in the state and then it still manages to come back with, 'But we are really looking for this.' You think, 'Why can't it be in the instructions in the first place?'

CHAIR—Does your funding comes back from the federal government through the department of natural resources?

Ms Longmore—Yes, but we all get the same information booklet that makes us think we have a good chance to apply for various sorts of funding. Part of the frustration comes when it seems there is a set of rules on paper, but there is also this feeling at the federal level or wherever of, 'We're not looking quite so favourably on this now.'

CHAIR—When your local federal member proudly announces that you have some funds, do you get all those funds?

Ms Longmore—How do you mean?

CHAIR—Is any of it siphoned off?

Ms Longmore—No, we do.

Mr Smithyman—We get the funding they say they will give us, but they will not give us the money we asked for initially. We had to rearrange some funding initially. We applied to NHT last year for a 100 per cent facilitator position because we did not realise it would not get funded. That was knocked back. We had to go to the CMAs and talk to them and rearrange additional funding. They have now partially funded the money for a facilitator position. NHT has given 15 per cent and they have given the rest. NHT has also given us significant funding for on-ground works. There is a fair bit of confusion involved.

We were hoping to get the on-ground works through the CMA because the rates are much more favourable. Fencing is $2.25 a metre. That is what they pay. NHT pay only $1.20 per metre. It is a big difference. If you are trying to get farmers and rural people to fence off waterways and things, which some of them do not see as important, if you can give them $2.25 a metre instead of $1.20, you are that much better off. You are starting to heal the catchment because at least the trees and the fencing are getting in and stopping some of the issues that are going on.

Mrs VALE—Do you have a facilitator now, because of the cooperation of the CMAs?

Ms Longmore—Yes, but we now have twice as much paperwork to do for that one facilitator.

Mrs VALE—How long have you had this facilitator?

Ms Longmore—We have had a part-time one—primarily me—for the last two years. I resigned at the end of last year and Steve has recently come into the role with full-time funding. We went full time halfway through last year.

Mrs VALE—It is a full-time role.

Ms Longmore—Yes. I have been doing paid part-time work full time for a long time.

Mrs VALE—What were the processes that went into developing the Swan Bay catchment action plan? Obviously, you had a great deal of community input into that. How long did it take? Is there any comment you would like to make on that?

Ms Longmore—I have been on the committee since the inception. I was not in the role of facilitator when our action plan was being developed. The part-time facilitator called together the various stakeholders or interest people to talk about what they perceived as the priority areas. We came up with the six categories in your notes. He went out and visited all the various interest groups and then called general meetings as well to get in those individuals who were not necessarily in a group. It was a pooling of all their ideas and then streamlining it into a legible action plan. Our action plan is quite a dynamic document in that it is continually getting added to as funding opportunities and so on come along or as a need is perceived.

Mrs VALE—There seems to be quite a commitment. You have mentioned twice the orange-bellied parrot. Is that an endangered species?

Ms Longmore—Yes. It is on the Australian endangered species list. There are 200 left in the wild. There is a captive breeding program going on. Swan Bay is one of the major over-wintering sites for the bird. It spends most of the time in the north-west of Tasmania, but migrates roughly from April through to September to mainland Australia. In mainland Australia its favoured habitat is saltmarsh, whereas back in Tasmania it is button grass plains, a different environment there. Saltmarsh is usually the land that gets filled in because it is muddy and smelly. It is close to the water, so it has good vistas.

Mrs VALE—I do not know very much about birds, but it did seem strange to me that a parrot would be attracted to that kind of terrain.

Ms Longmore—It feeds on the seeds of the various saltmarsh plants. Saltmarsh is really diverse. There can be many different shrubs.

Mrs VALE—It is not a water bird; it is a land bird, isn't it?

Ms Longmore—It is. It roosts in trees at night.

Mrs VALE—Are there any other land birds that are attracted to your particular habitat besides the orange-bellied parrot?

Ms Longmore—Saltmarsh is just one of the habitats that fringes Swan Bay. There is also remnant woodland and so on. There is the whole smorgasbord of land birds. That is the key endangered one, which is why it gets mentioned a fair bit.

Mr Smithyman—Swan Bay is listed under a number of agreements. There is the Ramsar agreement and the JAMBA and CAMBA agreements because of the migratory birds which use this area of mudflats, too.

Ms Longmore—It is an intertidal area. At low tide, there are thousands of migratory waders there; at high tide, they roost along the shoreline.

CHAIR—Does the state government give you support through its agencies or is it just information?

Mr Smithyman—We draw on the expertise within the departments. If we have a certain issue that we need to address, we will draw on the various relevant parts of local or state government bodies. We might talk to the Coast Action people or the pest plant and animal people or pastures. We draw on all those sorts of levels of people for information.

Ms Longmore—We also have Parks Victoria and the Coast Action part of the Department of Natural Resources and Environment. Their members sit on our committee in their own time, generally speaking. I think Coast Action can claim back our evening meetings, but Parks Victoria attend in their own time. Parks Victoria is based at Queenscliff so they will give us in-kind support, which might be availability of meeting rooms or use of various equipment, as well as the expertise. There is sharing of resources where possible.

CHAIR—You were not a catchment management authority; you did not benefit from the levy system that was in place?

Ms Longmore—We benefit further down the tiers in that the funding that we do secure from the CMA eventually filters down when we apply for grants. We still have to go through the grant application process and apply.

Mr Smithyman—There is no direct link or handouts of money related to that. We have to apply and go through the normal processes.

CHAIR—Would you be better off receiving funds directly from federal government grants?

Ms Longmore—It would certainly help. We won the Victorian Landcare Catchment Award in November and therefore became finalists in the national awards which were held in Melbourne in March. The catchment committee that took out the national award was from South Australia. They mentioned that they receive Ramsar funds directly to help them look after the Ramsar wetland without them putting in for it, because Australia is obligated to look after its Ramsar wetlands. Then it is directed to key programs in that area. We pricked up our ears at

that because we usually have to go through the many tiers of applications for that. That would certainly free up time to do more on-ground things instead of paperwork. Obviously, paperwork is necessary to be accountable, but it would certainly speed that up.

Mr Smithyman—It would make it more efficient on the ground.

Ms Longmore—We have had sponsorship from Alcoa Australia for a set amount each year and an Alcoa person sits on our committee, too. They have let us use that money where we see fit to give on-ground outcomes. That has been really useful to have because it means if some situation arises where you want to take direct action, you do not have to wait a year for the right fund to come up to slot into.

CHAIR—Do they require a sign on the road saying that Alcoa is a marvellous citizen?

Ms Longmore—Not necessarily. They say they are already well known and have a reasonable reputation. This is Alcoa Point Henry. Some of their workers live on the Bellarine Peninsula and their main reason for doing that is to try to give their workers an opportunity to get out and see money used in their area in a beneficial way. Having that Alcoa money has been useful to us because we can dive in and use it straight away on this project and not have to wait until November before applying and then in another year's time we can maybe do this. That has been quite valuable.

Ms GERICK—In your submission you said you had conducted a community survey. What were the results of that and how have you been able to use those results?

Ms Longmore—That was done about a year and a half ago. The main things we got out of that were that there seemed to be a gap in environmental awareness on issues within our catchment in the 35- to 45-year-old age group in a large urban area within our catchment. They seemed to have the least environmental awareness of or interest in any environmental process within the catchment. It did help us to channel some of our community awareness raising activities or think of strategies for getting that age group on board. For me, that was the biggest thing I got out of it. It showed a real hole there.

Ms GERICK—You have been able to use that to target—

Ms Longmore—Target certain audiences in certain ways, yes. We have not had a follow-up one. Further on we will hopefully have another one.

Mrs VALE—At that age they would be parents, aren't they?

Ms Longmore—That is exactly right. They are perhaps busy with families and sporting activities and have no room for anything.

Mrs VALE—Even having Woody Weed is something. If you educate the under 10-year-olds, you would probably find that, indirectly, you would be targeting that parent group, too.

Ms Longmore—That was exactly the strategy we decided to use. All our schools now have on-ground projects within the catchment which their parents sometimes come to, or awareness of things that filter back home. We thought it was useless going to the sporting centre. I know when I take my own kids to a sporting centre, I am there to watch my child play and then go home. I do not look at the boards. It is through the schools and making sure we involve them, and through them the parents.

CHAIR—How wide was this catchment survey? Was it just the local area? Was there a township involved? How big was the catchment of the survey?

Ms Longmore—It is the Swan Bay catchment, which is 170 square kilometres. It is a relatively small catchment focusing around this wetland, but it involves four towns and an urban area. It involves Queenscliff, Point Lonsdale, Ocean Grove, part of St Leonards, the outskirts of Drysdale.

CHAIR—It is predominantly a residential area, is it?

Ms Longmore—No, but there is a huge lump of—

CHAIR—I mean in numbers of people.

Ms Longmore—Yes. Most of the residents live in urban areas with some scattered in the rural areas.

Mrs VALE—This is very important work that you are doing of a fundamental preserving nature, especially when you look at the rare birds. I can see a lot of value in being able to have somebody there who is going to coordinate it at a formal level.

CHAIR—Thank you for your evidence.

Proceedings suspended from 2.08 p.m. to 2.23 p.m.

BRIZGA, Dr Sandra Olga, Immediate Past President, River Basin Management Society

LLOYD, Mr Lancelot Neil, President, River Basin Management Society

CHAIR—We have received a submission from the River Basin Management Society and have authorised its publication. Would you like to make an opening statement?

Mr Lloyd—Yes, I will do so with the help of some overhead transparencies.

Overhead transparencies were then shown—

Mr Lloyd—Our submission has been prepared by the society, which is a group of 400 professionals and interested parties in the profession of integrated catchment management. Our aim is to advance a balanced approach to land and water and natural resource management on a catchment basis. It does this in four or five different ways. It acts as a place to bring people together in terms of different forums; it fosters commitment by government and land managers to take this approach; it acts by transferring information by producing reports, conferences and so forth; it supports postgraduate research students by way of the Ernest Jackson Memorial Grant Scheme; and ultimately it sees its role as being an advocate for the practice and the profession of catchment management.

In the submission which has been put together by the committee and other members, we address these major points, being the history of catchment management. We have made a couple of points that related to the history. It has been developed on a state basis. Federal input has been minimal. There has been a focus on rural areas and the rural-urban fringe and the urban areas have, to some degree, been neglected.

In terms of the value of catchment management, we see that the value is basically that it is a logical, spatial basis for integration of different activities. In terms of best management practices, we see that there are numerous technical methods but no standards or methods in terms of applying the process of managing ICM or catchment management. The successful case studies that we have seen mesh both the top-down and bottom-up approach. Effective communication is the key to catchment management working. That becomes a thread in some of our other comments as well.

In terms of the roles of different levels of government, we see in the future that federal government should be involved in the strategic directions and the standard setting; that state government should be facilitating the appropriate institutional arrangements; and that the local groups, whether they be local government, CMAs or however they are structured, are really involved in the implementation of catchment management. In terms of the whole area of planning through to cooperation, at the end of the day, we believe that more resources are needed, not less, and that obviously the practice needs to be as efficient as possible and the focus should be on on-ground activities.

We have also seen in the past that frequent changes in structural arrangements tended to be counterproductive. We see that a process solution is required for integration, not a structural solution for integration. One might see a number of different groups involved in rivers and it might be logical to put those together or there might be different funding groups that are funding different programs on the rivers. By amalgamating them into one organisation, it may well be counterproductive. What we need to look at is a process solution of putting mechanisms together for them to communicate effectively. That is where I am harking back to that other point about effective communication being the key. Lastly, we support that monitoring and reporting is a high priority for catchment management because of the loop in terms of adaptive management and making sure that that occurs. I am happy now to take questions.

CHAIR—Thank you. In a nutshell, you are an association of professionals involved in integrated catchment management; that is basically right, is it?

Dr Brizga—Basically all the professions involved in catchment management and river management.

CHAIR—In Victoria or Australia wide?

Dr Brizga—We started off being a Victorian organisation. Our constitution sets us up as a national organisation. At the moment, I am not 100 per cent sure of our membership split, but I think we have about 250 members in Victoria and 150 in other states—something in that order.

CHAIR—Without showing any bias, and having a look at all programs across Australia, which is the best system or are there parts of some systems that you might amalgamate to put forward the best possible system of catchment management?

Mr Lloyd—That is a big question. There are elements of a number of the systems that we think are important. The element that we think is particularly important is that the local individuals and groups are committed to the process that occurs in their particular catchment. That commitment needs to be gained by a number of different ways. We see that certainly local levies have been useful in terms of gaining that commitment and that understanding. That has been applied certainly in South Australia, in the past in Victoria, they are currently considering it in New South Wales and I am not sure about Queensland. Sandra is more familiar with the situation in Queensland than I am.

Certainly that process of having to answer to a local constituency that has paid some sort of rate sharpens the saw, I suppose, in terms of having to be locally accountable. That is an important aspect of linking that together. Equally, we have seen, in a professional sense, that there often can be duplication if there are no overlays between different catchment groups and different states as well. That is another element which is pretty critical. There needs to be that overview and that integration and meshing. For instance, a technical solution might be reinvented in two or three different locations. That has certainly happened and is obviously inefficient.

Dr Brizga—Following on from Lance's comment, my comment would be, from what I have seen of catchment management, that the strongest implementation of catchment management

occurs in the areas where catchment management is an integral part of the management system, such as the Victorian catchment management authorities where everything for those organisations is structured on that catchment basis, as opposed to other areas. An example might be some of the ICM efforts in other states where it has been one of many programs, but it is on the side rather than an integral or core function of the organisation. So it is less effective in those areas. It is something that people can push to the side, whereas organisations like the catchment authorities, which have financial clout and their own powers, have a greater strength in terms of implementing catchment management.

CHAIR—You would need to get the on-ground land managers involved if you are going to get any results?

Dr Brizga—To get results, it really needs to happen at all levels. It cannot just be something that is a program on the side that some people do and no-one else gets involved in it. It has to be something that the land managers—and I am not just talking about people on their properties, but people at various—

CHAIR—That includes government.

Dr Brizga—Certainly they need to be involved, but it needs to be something that is a core activity rather than a peripheral activity.

CHAIR—In your paper you mention that the Commonwealth government should take a lead role. How would it do that considering our constitution and the guarding of rights by the states? COAG, from my memory, came out of an agreement between Prime Minister Hawke and Premier Greiner at the time, and I dare say there is some help through COAG and particularly competition policy with the reforms, et cetera. But what other ways could the Commonwealth get involved? I dare say there is always the money lever which is a way, but most of that will be disappearing on 1 July.

Mr Lloyd—NHT?

CHAIR—No, there will be no more premiers conferences because GST goes directly to the states. I am just wondering how the Commonwealth government gets involved as a lead player, because states do not usually like the Commonwealth as a lead player.

Mr Lloyd—One of the ways that we meant was really in terms of developing some of the strategic directions. An example might be that currently we have peak R&D corporations that stem out of Commonwealth legislation. They produce R&D that is focused on the problems in different sectors. Certainly there is a land and water one. That is probably the closest to catchment management. They are certainly currently producing some of the techniques that are used across the area. Maybe a similar idea to that is the Commonwealth developing some ideas in terms of the process that we were talking about before for this communication and integration. Developing a process solution and showing examples of that may be a role that the Commonwealth might be involved in.

CHAIR—We have an example in the Murray-Darling Basin Commission. Basically what focused everyone's attention there was South Australia saying they would sue the other states. I do not know how you could expand it past that. There was certainly a focus given to that particular issue. I dare say a lot of the problems are in that catchment. When you go away from there, it seems a little difficult for the Commonwealth to take an overriding position.

Mr Lloyd—If you look at it in terms of there are other catchments that cross state boundaries, are there not? There is certainly Lake Eyre in the Murray-Darling Basin. That is at least one other example that I can think of. Perhaps there are others; I am not sure. Taking the process and distilling it into a mechanism of how that has worked at that level, in terms of the Murray-Darling Basin Commission, and being able to produce a manual for how groups at smaller levels may well produce the same degree of integration and cooperation, and certainly the—

Mr BILLSON—A 'how to' sort of thing.

Mr Lloyd—Yes, indeed. Generally because the basis of catchment management is scientists, engineers or a technical basis, they do not come with necessarily the skills of facilitation and group dynamics. There is need for injecting some other expertise into that approach.

Mr BILLSON—Does the society have a particular aim or is it a professional love-in thing that shares ideas? Is it more of a networking thing rather than having an objective of having integrated catchment management in the lexicon of every Australian? Can you give me a sense of how you know when you have done what you are supposed to be doing?

Dr Brizga—It is a more professional group in terms of bringing people together to improve their skills in areas related to catchment management and to foster integration. What we are doing is not particularly radical now, given that a lot of things are becoming more multi-disciplinary and catchment management is mainstream. When we started 13 years ago, the engineers did their things, the biologists did their things, the managers did their things and no-one talked to each other. A key role was to let engineers know what biologists did and vice versa. We are still fostering those multi-disciplinary linkages.

Mr BILLSON—So it is networking, professional development and information sharing?

Dr Brizga—That is it.

Mr BILLSON—I was interested to get your sense of whether the whole idea of integrated catchment management is permeating its way through the broader community to the point where it is almost a core theology, not some sort of new religion. Do you have a sense of where that is at? When you talk to people about what it is you do, are you still hitting some blank faces from people who should know better?

Dr Brizga—It is becoming a lot more mainstream. For example, when we started, it was quite unusual for people from these various disciplines to talk to each other and to think about integrated management. Our newsletter was one of the only publications that let people know what was happening in catchment management. Now we have lots of other groups, like the

cooperative research centres, who also have taken on catchment management. There are groups like LWRRDC which is working within the field of catchment management and a lot of state agencies too. There is a proliferation of information on catchment management which was not there 10 or 15 years ago. For someone within the professional community or the scientific community, the idea of catchment management has become very mainstream.

Mr Lloyd—That was one of the original aims of the society. The way we saw it was that once it did become mainstream, in a sense that was our major role, but—

Mrs VALE—It is a measure of success.

Mr Lloyd—Yes. I have not been involved from the very start, but probably halfway through. The work we do is becoming more ingrained in terms of the farmers and the people in the street. We get quite a bit of interest. We do not get as many blank looks as we used to, but it is certainly not there in everybody's lexicon, as you call it.

Mr BILLSON—We went to Gunnedah and were collected by a bus at I think the international terminal. Something that has stuck with me, and I was gobsmacked to hear it, was some local community leaders saying, 'We are worried about the degradation of our natural systems. Populations are leaving. Our business base is deteriorating. The whole sustainability of our community is under threat. We don't have time for catchment management.' Whereas I thought, 'Hang on.' At that opinion-leading level, is the idea gaining traction or are you still finding that the technocrats and the experts understand that as a framework for sustainable communities and you are still running into some councillor saying, 'It's all too hard; we won't worry about it'? Have you got a view on that?

Dr Brizga—I have come across people who have had both views. I have heard people who have said things along the lines of what you are saying and worse.

Mr BILLSON—It sounds like it would be the first thing you would do, given that shopping list of community concerns.

Mr Lloyd—The problem with that is there is an overlay in terms of people being drawn by a whole lot of community responsibilities that as a society we are doing more and more. Certainly in country towns, people are not only involved in the local catchment management group, but they are also involved in the school, they are also involved at the hospital and they might be involved in something else.

Mr BILLSON—Meeting overload!

Mr Lloyd—You have been there. That is probably the reason why you are getting that sort of response because I have certainly heard that as well. I have heard the other, that they do see being involved in catchment management as an important thing to do.

Mr BILLSON—I am getting a sense we are at a crossroads where the people that were pushing the idea have just about had it. They are exhausted. You go to these particularly regional and rural communities where, through Landcare and what not, they have been

beavering away on this for 10 years and they are just about exhausted. Yet, the next group coming along thinks it is so mainstream, they do not get excited about it and you end up with this, 'What do you do?' In addition, some of your members are hearing some of the funding arrangements for good quality, able facilitators who can get things done, translate the science into action on the ground and perform an almost extension role for the land-holders. The contracts are 18 months to two years on and they have no certainty there so they are nicking off the minute they can get a job with NRE or something like that. Can you talk about that human side and the horsepower that is needed to move it on.

Mr Lloyd—That is a critical factor. I was talking before about communication—we need to find new ways of communicating and allowing people to feed back their ideas into things like catchment management in particular, because there are always demands on people's time. We do need to find new ways of doing that. Obviously, one of the critical ways and the best way of communication—presumably that is why you are running these sessions—is face to face. Therefore, you need people to do that and that costs money. That was probably the principal thing behind our point about needing more resources rather than less in general because you need people out there summarising the science, translating it for the person on the land or the person doing the river management. At the end of the day, we have a lot of those techniques, but there is a gap between applying this—

Mr BILLSON—Can you just talk about that professional security issue and that corporate knowledge stuff? I have got other questions, but I will wait until everyone else is done.

Dr Brizga—You made the point about people having 12- to 18-month contracts for a lot of catchment management type roles and, as soon as they get offered a more permanent job, they leave. That is again an issue of catchment management becoming more mainstream with more secure and defined career paths, rather than forcing people to develop their careers as a manager or a consultant, or to step into different roles rather than into some of those key roles like Landcare facilitators because of lack of job security. So that is a fairly critical issue.

CHAIR—You have a political problem there, don't you, because the terms of governments are between three and four years. The classic is Victoria. We have just had a change of government and a change of policy. How do you get around that? I do not know. Unless you can get absolute bipartisan support for long-term planning and funding, you are not going to get around that.

Mr Lloyd—In terms of the catchment management organisations that have been developed in South Australia and Victoria that I know some examples of, they have become the focus of hiring those facilitators or those people working with the community, rather than the muddy creek Landcare group, which really has very little certainty in terms of its financial backing and its dependence on a number of volunteers for the organisation to stay there. When we create a catchment management organisation, that provides somewhat more of a solid base for hiring those individuals and, as you say, a career path that they can then move through.

Dr Brizga—Adding to that, again I think it is a question of catchment management becoming mainstream. People would not question the need to hire flora and fauna people in an agency like

DNR or NRE down here, whereas catchment management people are still a little more out to the side than that.

Mr BILLSON—I saw an ad in *The Weekend Australian* for the Shire of Upper Yarra for a director of sustainable communities. I was quite heartened by that because it seemed to bring together land use planning, economic strategies and happy, viable communities into a real core focus for the council. I hope that is the start of a lot of trends in that direction.

Mr Lloyd—The same Sydney paper advertised a position for a director of environmental sustainability as well. Obviously they are going through some thoughts about how they might deal with that. I also saw the ad that you saw and I thought I must find out about the background to it was because I had noticed the one beforehand.

Mr BILLSON—Some of the evidence we have received rightly emphasises the scientific, technical and the engineering stuff. It concerns me that the next generation of catchment management will have to offer more than that, because a lot of it is about cold, hard community choices. If someone tells you, 'We have written off your waterway because it is so salt affected that we cannot possibly recover it. How would you like to be doing something else with your life?' that has politics written all over it. How do you see that some of those socioeconomic choices are going to be fed into what has been a pretty much 'leave it to the experts' type of policy idea?

Mr Lloyd—It is central to the ultimate success of—did you call it a religion earlier?—catchment management in that sense, because it needs to be taken from that level. That is where the gap is. I am afraid I do not have any answers for you, but I do think it is critical. In recent times I have seen some of the things that the communication professionals have been doing in terms of trying to understand how people need to get involved and how they can influence decisions on a broader government or local community basis.

Mr BILLSON—I strongly support the idea of having skills based horsepower on boards. I do not think you can challenge that as an idea, but then you get those on the other side of the fence saying, 'Hang on. There are choices being made that are affecting people's lives. You need more accountability back to the broader public.' People immediately think, 'Therefore, they should be elected.' I am wondering whether, with respect to a skills based appointment with two elected people who are told to go out there and face the music for the decisions they make, you almost need a new democracy to back up this idea, because we are getting into the hard choice zone in some catchments. I am not sure who will wear it at the end of the day.

Mr Lloyd—That is a big problem because sometimes those hard choices may be made between two different catchments, so it is not even within subcatchment A or B in one catchment. Those decisions need to be made at both the single catchment level and across catchments, because there will never be enough money and funding will need to be directed to one or the other—or, as you say, land may well need to be retired in one catchment and not another, or in one subcatchment and not another.

CHAIR—What about a tax that will allow some people to manage on behalf of the environment?

Mr Lloyd—The idea of an environmental manager, in that sense—

CHAIR—In some areas, in some instances?

Dr Brizga—People are generally becoming more responsible in their environmental management practices.

CHAIR—It all comes down to economics. You can manage a lot of different ways but, at the end of the day, you have to be profitable, otherwise you cannot be there.

Dr Brizga—That is right.

CHAIR—If large areas have to be reafforested, which is being suggested at the present time, could it be that the general community have to pay people to manage on behalf of the environment to ensure that we have a better environment overall?

Mr Lloyd—How is that different? I am now asking you questions.

CHAIR—It is a question we have to tackle. We have to come up with the answers.

Mr Lloyd—I cannot see how that is different from how some of the catchment authorities across the country have local levies that they then put together and do that environmental or catchment management on that catchment basis.

Mr BILLSON—Resource reallocation is one thing. Career relocation and lifestyle adjustment is another.

CHAIR—The reality of life is that the majority of Australia lives in Melbourne and Sydney. Therefore, it is physically impossible for those who live in rural areas to manage this. It is a national problem. We really have to tackle it nationally. We have to do a bit of lateral thinking. We have to say that some areas will have to be taken out of production. How do we compensate? What is the carrot that will allow these people to take that responsibility? They will be up on the slopes where they are saying, 'We're not doing any harm at all.' How we get those people to accept that is really the challenge.

Dr Brizga—I am not sure we have any off-the-cuff answers.

CHAIR—Think about it, because we all have to come up with the answers.

Mr BILLSON—We have another inquiry coming up, too.

CHAIR—It is all tied together. We have an inquiry into public good conservation.

Dr Brizga—Certainly, those arguments about who should wear it and who should benefit come up in catchment management as well. I have been fairly intimately involved in the WAMP process in Queensland. Again, there is the argument where some people might live on a pristine

river and people are suggesting, 'You've got very high environmental values here; you really shouldn't tap into the water resources. You should maintain its natural values.' They are saying, 'That's not fair. How come, if we have kept our river in good condition, we can't take the water, if that guy down there has stuffed their river and they can take all of it?' It is a problem that comes up over and over again and it does need to be addressed.

Mr BARRESI—With respect to your 350 members, including practitioners, managers, academics and scientists, what proportion would be academics and scientists?

Mr Lloyd—At one stage we had so few scientists that we had to go out and make sure we recruited them. Academics cover both the engineering and the scientific fields.

Mr BARRESI—I am getting at the differentiation between those who are doing and those who are not doing, who are researching. What proportion would that be?

Dr Brizga—I do not have the figures with me. About two years ago, we did a survey of the demographics of the society. In terms of practitioners, we have a lot of people who are involved as government agency employees or working in management areas and people working as consultants. Probably 200 to 250 or so of our members would be in those areas.

Mr Lloyd—A large proportion would be on the practising side, whether at a government level or at a local level—or these days, increasingly, consultants providing services to those.

Mr BARRESI—You said you played a lead role in providing forums for discussion, so very much an educative type role or information sessions. What role are you playing in terms of improving some of the skills that Bruce was talking about that perhaps are lacking at the catchment management level? Do you have a direct role in making sure that the necessary skills are there and to complement them through some sort of in-depth education or input into the formalised qualifications process at an institute level?

Dr Brizga—We have played a role at both of those levels. We have drawn people together in terms of the professional development level. Our first hurdle was bringing together the practitioners, the academics, the engineers and the scientists. We had a conference on accounting and the environment about 18 months ago, bringing together the financial resource managers with the environmental managers. We are now working on bringing together the social aspects of it.

In terms of having input into formal training programs, we have been involved in developing a curriculum for a TAFE course for training on the ground operators on river management. It was in conjunction with a couple of the government or semi-government organisations down here. It got to about one hurdle before the accreditation process when there was a change in government and the organisation who was sponsoring it was disbanded. The market simply was not there for the course at the time. We basically got the package ready to go. We have had a lot of dealings with universities. On an informal basis, we have influenced what happens in courses in some of the universities. We also have fairly good relationships with the cooperative research centres for catchment hydrology and fresh water ecology.

Mr Lloyd—Another seminar that we run is called 'back to basics'. They are principally about skills development for catchment managers or people working in the catchment management area. We have run a series of those. We run the broader forums where we get the different groups together, but we also run the 'back to basics' series which is very much about training.

Mr BARRESI—Earlier on we heard from the Association of Rural Water Authorities. They indicated that the key players, apart from the land-holders and the catchment management authorities, are local government and private enterprise. They gave the example of the Wimmera Mallee project—project platypus, I think it was. I would have thought that you as an organisation would have a role to play there in terms of getting this message out to two of the perhaps fringe players in all of this, being private enterprise and local government, to try to sell the economic benefits, let alone the environmental benefits of it. Are you playing that role? How successful are you? What hurdles are you coming up against if you are not?

Mr Lloyd—Local government is one area in terms of our membership that we have done very poorly with. Very honestly, part of our directions in terms of strategies and tactics, in terms of growing society and pushing the message of catchment management, is to start directly attempting to get not only local government people as members, but also getting catchment management on the local government agenda.

We have run a couple of conferences on planning. They have been reasonably well attended, but relatively poorly attended by local government members. We obviously have not captured their imagination. We are planning a conference next November that will be looking at planning and land capability. That is an area of linking something that local government should be concerned with. We acknowledge we have not been all that good in terms of local government, but we see that as probably being the next step of our campaign in the sense of putting the message out.

Mr BARRESI—Have you had any success with private enterprise? There are some good successes out there. One of the barriers to a player getting involved is that perhaps they do not see the benefits to their own organisation or community. You could play that role as a professional organisation to showcase some of the successes that are out there to large corporations or less enthusiastic local government authorities.

Mr Lloyd—The society has been nervous in the past about having corporate donations or corporate members because it has always wanted to maintain an independent voice role, where government or a catchment authority can come and get an opinion. We have played that role in a number of circumstances. One example was in terms of getting feedback on the catchment and land protection legislation in Victoria when it was first developed many years ago. We put together groups to do that.

As a result, we have been quite nervous about that. In the last 18 months, we have developed and are about to launch what we are calling the Catchment Management Foundation, which is a non-profit foundation that will enable it to receive tax deductible donations from organisations, and then to have some arm's length between that and investment in catchment management

trials or initiatives. That is something that may at least start to address some of your ideas in terms of involving the private—

Mr BARRESI—Who is going to manage this foundation?

Mr Lloyd—The society has already set up seed funding for that. The society at the moment is the manager of that foundation. It hopes to be able to attract and leverage funding from the private sector to do initiatives and to expand things we have done for many years like the post-graduate funding program. But we would also like to see that we could trial some on-ground works that are risky and that the particular organisation might not be involved in. We may well be able to publicise different catchment management ideas. That is another mechanism. It is probably not the only one, but it is as far as we have got.

Mr BILLSON—A billion dollars has been spent from the Natural Heritage Trust. Have we got good value for money? On the strength of the outcomes that have been achieved from that billion dollars, could you argue to the taxpayer that we need a couple of billion more to keep doing the work?

Mr Lloyd—I thought that the NHT had funded a whole lot of evaluations to do that professionally. I have not seen the results of those. That is a tough question. I certainly cannot answer that question; I do not think we can. The society has not looked at it overall, but maybe the society could look at putting together a whole pile of people to ask that question in terms of—

Mr BILLSON—I am getting at the sense of value for money and the fact that we will have to go back to the taxpayer and say, 'We've sunk a stack of dough into this,' and argue that it has been money well spent. I am not certain how well placed we are to run that argument. I am interested to know whether you feel sufficiently confident, having regard to what we can demonstrate as being the positive benefits of spending that amount of money, to argue that we need to expend multiples more to get somewhere with natural systems renewal in the country.

Mr Lloyd—Apart from our personal opinions, we certainly cannot talk on behalf of the society, but even if we had as a collective discussed that idea, we have only been funded collectively via the NHT for three years. To see the result of environmental change and restoration of environmental degradation will take many more than three years.

Mr BILLSON—Do you think we still have public sentiment on our side? You could build the Scoresby transport corridor for that money. I know a fair number of folk who think that would be a pretty good thing to do with the money. Really, we have to mount an argument saying, 'Let's put it into natural systems renewal,' where the benefits are a little less obvious. We will have to be a bit more clever in communicating why that should be a priority.

Mr Lloyd—If that is the comparison, that is pretty good value that we have had so far—

Mr BILLSON—I tend to agree with you. Do you think the broader public is with us on that?

Mr Lloyd—in terms of what we have done around Australia with NHT.

Mr BILLSON—Do you think the public is with us on that?

Mr Lloyd—Certainly, a lot of the people that we talk to, and they are not necessarily the public, would be, in a general sense.

Dr Brizga—Certainly, people working in the field can see where the progress has been made. For the general public, it is a little more difficult to demonstrate these things and it is much easier to build a freeway. In terms of reversing environmental degradation, it takes two minutes to cut down a tree and 100 years to grow it back. It is a slow process. That is probably something people need educating about.

Mr BILLSON—One of the things behind this inquiry is that integrated catchment management has done a good job of putting a brake on further degradation. How effective has it been in turning it around and getting natural system renewal? I do not know whether we have an answer for that.

Dr Brizga—Turning things around is certainly very difficult.

Mr Lloyd—The monitoring, evaluation and reporting function that we highlighted, and you have as well, has been quite critical. That is what you need to be targeting in terms of getting that message across. Those things need to be funded as part of the process. It cannot be left off, otherwise we have wasted our money.

Mrs VALE—Mr Lloyd, you mentioned setting up a catchment management trust and hoping to fund projects yourself. You also mentioned that the society already had seed funding. Who funds your society? Does that come from the individual members?

Mr Lloyd—Basically it has been membership funds over time. We run a number of conferences; sometimes we are lucky and get a surplus and sometimes we do not. At the end of the day, mostly we have been more on the plus side than the minus side. So that is where we have accumulated those funds. There has also been some individual donations that society members have made.

Mrs VALE—They felt sufficiently moved.

Mr Lloyd—Yes, or they have provided their services. There is some remuneration, but they have donated that to the society because they have been doing it on the society's behalf.

Mrs VALE—In your submission you state that catchment management should involve consideration of all aspects of the physical and socio-economic environments which impinge on the catchment and its use. How do you propose to incorporate the social values into a catchment management framework? Even what you are doing does that in a way—the fact that you have the funding that you are raising and the impact that you are having. But what about the general community? Do you have any vision for how that is going to happen?

Dr Brizga—In terms of the society's activities, our vision was to have it happening in the same way that the integration so far has happened, in terms of bringing people who work on the

social side of things together with the people who work in the more traditional catchment management scientific and technical fields and to develop it from there. It is not something we can give you a quick answer on. It is something that we hope in five years time will have evolved, given that we are now at a stage where everyone is recognising that this is the critical obstacle to going forward and that we need to draw these fields together in order to progress.

Mrs VALE—It will be part of an evolutionary process of attitude, too.

Dr Brizga—Attitude and involving people who have expertise in those areas.

CHAIR—Thank you, Mr Lloyd and Dr Brizga, for your evidence.

Resolved (on motion by **Mrs Vale**):

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

Committee adjourned at 3.11 p.m.