

NATIONAL GROUNDWATER COMMITTEE

Reporting Jurisdictional Progress on Groundwater Reforms

Second Report

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Prepared by Salient Solutions Australia Pty Ltd

Preface

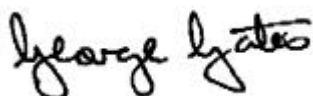
This is the second of three annual reports that will assess jurisdictional progress on national groundwater reforms. Progress is being measured against the 12 recommendations in the 1996 COAG document "ALLOCATION AND USE OF GROUNDWATER – A National Framework for Improved Groundwater Management in Australia".

To obtain an independent view on progress, the National Groundwater Committee commissioned Salient Solutions Australia Pty Ltd to prepare this report. Information was provided to Salient Solutions by the various jurisdictions through the completion of a proforma and through phone interviews. It is recognised that there has not been an opportunity to independently verify the information provided.

The report shows that up until the end of 2000 progress has been made in the majority of the of the twelve recommendations an improvement from the baseline report for 1999. In particular good progress has been made with recommendations 3, parts of 5/6, 9 and 12. No progress however has been made on (recommendation 10) "determining Federal government costs of involvement in groundwater activities".

It is clear that much activity has occurred in establishing suitable groundwater policies consistent with the relevant COAG recommendations. It is now appropriate that NGC consider alternative ways of reporting implementation of these policies so that this information can be included in the third and final report, next year.

The outstanding issue of a nationally consistent definition for sustainable yield (part recommendation 1) is still to be resolved, though the National Groundwater Committee has submitted a proposed definition. It is hoped that this may be progressed by the new Natural Resources Management Ministerial Council.



George Gates
Chair
National Groundwater Committee

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Introduction

A National Framework for Improved Groundwater Management in Australia

The 1994 Water Reform Agreement required ARMCANZ to provide advice to jurisdictions on improvement in groundwater management, with particular reference to pricing of groundwater. To meet this requirement, a Policy Position Paper: *Allocation and Use of Groundwater, A National Framework for Improved Groundwater Management in Australia* was prepared by the Subcommittee on Water Resources and the COAG Task Force on Water Reform. It was subsequently accepted by ARMCANZ and published in December 1996.

The Policy Position Paper contained 12 recommendations, implementation of which was adopted in the 1996 Water Reform Agreement. Table 1 provides a summary list of the recommendations.

In early 1999, SCARM approved a proposal for the National Groundwater Committee (NGC) to assist the States/Territories to implement the report's recommendations and to monitor and report on progress.

SCARM recognised that the proposal is for the purpose of assisting national and State agencies to implement the recommendations; and that the implementation timeframe may be varied according to individual State priorities and may differ from that recommended.

The National Groundwater Committee, as part of its assistance endorsed by SCARM, developed a series of tasks under each of the recommendations that would enable jurisdictions to better progress towards the implementation of the recommendations. Part of the monitoring of the performance of jurisdictions in the implementation of the Water Reform Recommendations, and in the implementation of groundwater management reform generally, was to establish a reporting mechanism, over three years, where progress could be measured.

Table 1: Summary list of recommendations

Recommendation	
1	Groundwater management policies should employ the principles of ecologically sustainable development and should be directed at achieving the sustainable use of the resource. ARMCANZ should develop a nationally consistent definition and approach to sustainable groundwater yield.
2	All States should adopt the National Drillers Licensing system for water production wells by 1997 and should seek to expand the system to all drilling.
3	Groundwater and surface water management should be better integrated including approaches to pricing (especially adjacent to public surface water regulated schemes), water allocations and trading to ensure consistency.
4	In preparing groundwater management plans, policies and strategies, States should ensure that the efficient utilisation of groundwater resources is not compromised by the protection of existing users with inefficiently designed or constructed wells. This particularly applies to domestic and stock wells.
5	States should develop groundwater management plans based on a sound understanding of the resource. These plans should be the primary support for the development of groundwater allocation and property right systems to support intra-aquifer trading both within States and across State borders.
6	In developing groundwater management plans, State agencies responsible for

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	groundwater management ensure that those plans include identification of the sustainable yield and the levels of allocation and use of aquifers. Those plans should also include an identification of environmental water provisions in accordance with the principles set out in the joint ARMCANZ and ANZECC "National Principles for the Provision of Water for Eco Systems". Where allocations exceed the sustainable yields, the agencies should develop strategies to reduce abstractions to sustainable levels within time frames that minimise permanent damage to the resource.
7	The provision by the driller, to the relevant State Authority, of well construction data should be mandatory requirement, with provision made for exemption in area, or circumstances, where the information is not required.
8	In all areas where there are high yielding wells, monitoring and data collection of water levels and water quality should be undertaken to a sufficiently high standard to ensure adequate information is available to manage the resource sustainably. Where licensing is used as the primary mechanism for data collection, the provision of necessary management information will generally require the licensing of high yielding wells. Definitions of high yielding wells will vary between resources, as the criteria used to define such wells would include their significance of impact on the resource, other users and dependent ecosystems. The States will need to define these separately.
9	<p>The full cost of groundwater management should be identified by the States. The cost of direct management activities should be recovered from users and within the context of the overall water cycle, appropriate apportionment of indirect costs be given consideration. Outside urban water supplies, the remaining subsidies should be transparent where full cost recovery is not achievable. The necessary charges should be implemented progressively by 2001, and particular attention should be given to timely resolution where, and as trading in groundwater is likely to be demanded by the market. Public communication on these matters will be important.</p> <p>With reference to Recommendation 3, States should give consideration to the consequences of differential pricing between surface and groundwater. States should examine the means for meeting the indirect costs of groundwater management, including investigations which are not appropriately apportioned to users; options may include a direct but transparent subsidy. Recovery of management costs from domestic and stock well owners is to be considered by the States as part of their overall cost recovery strategy.</p>
10	The Federal Government should publicly identify its full costs of involvement in groundwater activities to assist in the negotiation of priorities for Commonwealth funding of groundwater management activities.
11	State and Federal agencies should develop and implement organisational arrangements and processes which specifically eliminate conflict of interest situations in groundwater assessment and management.
12	SCARM should assess the opportunities for increasing public awareness of the value of groundwater, its vulnerability to over use and damage through other activities and the need for groundwater management as key issues and encourage the States to develop appropriate awareness programs.

Reporting of Progress

A report detailing progress by jurisdictions against the various recommendations and tasks up until 31 December 1999, was released in June 2000 and provides a benchmark for jurisdictions to assess progress over time.

This report, the second of three, details jurisdictional progress against those recommendations for the 12 months to December 2000.

Summary of Progress up to December 1999

In general, much progress was achieved against the 12 recommendations of the Groundwater Management Framework. However, that progress was patchy, both across jurisdictions and across recommendations. It was apparent that some jurisdictions still did not have full ownership of all recommendations. The following points summarise progress to that time:

- There appear to be some fundamental impediments against progress in some areas.
- Measurement of progress towards implementation of the recommendations suffered due to the broad nature of each recommendation.
- There had generally been only fair to poor performance against the tasks set by NGC – in fact there has been better performance against the 12 recommendations.

Primarily, States have responsibility for all recommendations except for Rec 10 and 12. They have secondary carriage for Rec 1. Rec 10 is the responsibility of the Federal Government, whilst SCARM/NGC (on behalf of all jurisdictions) is responsible for Rec 12

New South Wales – Has made significant progress on Rec 4, 7 & 8; progress on Rec 1, 5/6 & 11; minor progress on Rec 3 & 9; and is awaiting action from others on Rec 2.

Victoria – Has made significant progress on Rec 7, 8, 9 & 11; progress on Rec 1, 3, 4 & 5/6; and is awaiting action from others on Rec 2.

Queensland – Has made significant progress on Rec 3 & 8; progress on Rec 1, 4, 5/6, 7 & 11; no progress on Rec 9; and is awaiting action from others on Rec 2.

South Australia – Has made significant progress on Rec 7, 8 & 11; progress on Rec 1, 3 (though its seen as a minor issue) & 5/6; minor progress on Rec 4; no progress on Rec 9; and is awaiting action from others on Rec 2.

Tasmania – Has made significant progress on Rec 7; progress on Rec 1; minor progress on Rec 3, 5/6, 8 & 11; no progress on Rec 4 & 9; and is awaiting action from others on Rec 2.

Western Australia – Has made significant progress on Rec 7, 8 & 11; progress on Rec 1, 3 (though its seen as a minor issue), 4 & 5/6; minor progress on Rec 9; and is awaiting action from others on Rec 2.

Australian Capital Territory – Has made significant progress on Rec 7; progress on Rec 1, 3 (though its seen as a minor issue), 4, 8 & 11; no progress on Rec 9; and is awaiting action from others on Rec 2 & 5/6.

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Northern Territory – Has made significant progress on Rec 7, 8 & 11; progress on Rec 1, 3 (though its seen as a minor issue), 5/6 & 9; sees Rec 4 as a minor issue; and is awaiting action from others on Rec 2.

Federal Government – Has made minor progress on Rec 10

National Groundwater Committee/SCARM – has primary carriage of Rec 12 and part of Rec 1. NGC has progressed the issue of defining Sustainable Yield in a satisfactory manner, albeit slowly. Rec 12 appears to have stalled in progress. NGC has also been slow to progress national coordination aspects associated with other recommendations.

Progress during the reporting period 1 January 2000 to 31 December 2000

Progress has been made by jurisdictions during the reporting period, though it is mixed in across the recommendations. Some areas of endeavour have shown significant progress, whereas other areas have shown none. In some cases, particular jurisdictions have assessed that they have met most recommendations and that further progress is not possible, while others have not progressed due to apparent complexity of the task associated with the recommendation and the lack of resources to carry them out. It is also significant that the few recommendations that were reliant on SCARM or associated sub-committee input have not been progressed.

One of the major issues to emerge from the reporting of progress relates to performance measurement of outcomes. The recommendations related to the reform of groundwater management in Australia were framed due to the observations that groundwater resources were being managed in an unsustainable manner. The main outcome of the reforms was to be sustainable groundwater management, at some time in the future. No performance measures were developed that would allow those managing the resource to know when reforms were successful, but it is obvious that those performance measures would have related to groundwater resource outcomes – for instance, the number of groundwater management units where groundwater allocation and usage was previously unsustainable but where it now is sustainable. It is quite clear from the Australian Water Resources 2000 report of the National Land and Water Resources Audit that a significant number of Groundwater Management Units nationally are being managed in an unsustainable fashion (based on data supplied by jurisdictions). The ultimate test of the success of national groundwater policy will be whether the number of GMUs reported as unsustainable is reduced over time.

The National Groundwater Committee has framed a number of subsidiary tasks that were intended to promote the implementation of the reforms. It was envisaged by NGC that these tasks might assist jurisdictions to progress towards the recommendations according to a more detailed work plan. This report was to have been based on jurisdictions' progress against those tasks. However, to a large extent the tasks posed by NGC are based on a range of input activities. That is, they are related to getting the inputs right and assume that the outputs will flow from those actions. For example, there is a great deal of reliance on establishing correct policy as a means of implementing reform, without taking the necessary steps of considering whether the policy has been effectively implemented or whether the policy will engender the changes promulgated via the reform recommendations.

The place of good public policy related to groundwater management is not being questioned. Obviously, good policy is a necessary pre-requisite. However, the point

being made is that it is not sufficient to enact good policy alone. Bearing this in mind, it then becomes critical to consider how the policy is being implemented, and measures as to whether it is effective. The NGC tasks that relate to reporting can now be seen as being critical in terms of measuring longer-term progress. It is these tasks, however, that appear to be the least considered. For future reporting it may be more appropriate for jurisdictions to report on the progress of groundwater management programs.

In the end, the NGC tasks were seen as only being partially effective in progressing the recommendations and progress in this report is gauged against the recommendations themselves. The jurisdictional responses to the tasks for the current reporting period are given in Appendix A for information and completeness.

In an attempt to highlight where progress might be most significant, the National Groundwater Committee prioritised the 12 recommendations (as suggested in the first progress report). The priority list is given below.

High priority – Recommendations 1, 5, 6 and 9
Moderate – Recommendations 2, 4, 10 and 12
Low priority – Recommendations 3, 7, 8 and 11

The progress against the **high priority** recommendations has been mixed, but positive. NGC has provided a national definition of sustainable yield for consideration by the new Natural Resource Management Ministerial Council; however, it is not being progressed due to perceived deficiencies from the previous ANZECC. All jurisdictions have adopted policies that ensure that groundwaters are managed according to the new sustainability principles. Progress against Recommendations 5 and 6 has again seen the adoption of the principles espoused in the recommendation into public policy, but the degree to which the implementation of those policies is occurring is difficult to gauge. NGC has not taken an active role in developing a reporting framework whereby others can easily measure the implementation of the policies. There has been no progress reported during the current reporting period on groundwater pricing.

Progress against the **moderate priority** recommendations has been mixed. Recommendation 2 has been effectively implemented with all jurisdictions having adopted the NUDLC recommendations concerning the water drilling industry. The issue of which sectors other than water drilling would be subject to the provisions of the licensing system has been resolved by the NUDLC decision to now limit licensing to the water industry (rather than make it drilling industry wide). Progress against Recommendation 12 has been significant during the reporting period. Originally, it was intended that the major output of recommendation 12 would be a national groundwater education plan. After some deliberation NGC has concluded that it would be better to execute groundwater education programs at the regional level where it was easier to link to local issues and to gain stakeholder support. Effectively this recommendation has been fully implemented. There has been no progress against Recommendations 4 and 10 during the reporting period. Most jurisdictions either believe that they have met the recommendations in full, or do not have the resources to undertake the work required.

Progress against the **low priority** recommendations is also mixed. The most progress against any recommendation has been made against recommendation 3 (related to treating the resource holistically, rather than as surface water and groundwater). Nearly all jurisdictions are now implementing a holistic approach to water planning – one that appears set to overtake groundwater management plans.

The other three recommendations have essentially not progress past the status in the last report. All jurisdictions report that they have fully implemented the intent of the recommendation and further progress is unlikely. It is also apparent that jurisdictions take a risk management approach to some of the tasks associated with groundwater management. In those areas where the resource is under pressure, the recommendations are more likely to be fully implemented than in those areas where the resource is under little development pressure. This approach most probably results from the lack of adequate resources to be able to implement all recommendations fully and in every situation given the need to manage a range of priorities.

Jurisdictional responses to the recommendations

The following section lists a summary of progress by jurisdictions against each recommendation, together with a summary of progress from the previous year. In some cases, a commentary on progress is included. Where the recommendation has been completed previously, no further comment is given.

Scoring

The actions by jurisdictions against the recommendations have been given a score out of ten. This score is a measure across all jurisdictions and is intended to be a guide to progress. As with all such measures the actual score is entirely subjective and depends on a range of issues. The way in which the score has been decided in this second report, compared with the first report, has changed as the quality of the information from the jurisdictions has improved. This has led to a more liberal approach in some cases and a stricter approach in others.

The criterion adopted in formulating a score includes an appreciation of the recommendation and its intent; a view of the amount of progress achieved during the reporting period; and a view of where groundwater management should be headed nationally.

The score is not measuring an agencies approach to the wording of each recommendation; rather it is attempting to measure a jurisdiction's approach to the intent of national groundwater management as guided by the recommendations.

Objectivity can only be attained once a clear set of national goals for groundwater management are enunciated, and a set of performance measures is developed.

Recommendations

Recommendation 1: Groundwater management policies should employ the principles of ecologically sustainable development and should be directed at achieving the sustainable use of the resource. ARMCANZ should develop a nationally consistent definition and approach to sustainable groundwater yield. (High Priority)

Summary Progress to December 1999

NGC agreed on a definition for sustainable yield and forwarded this to SCARM for endorsement.

NGC task deadlines (see Appendix A): Three tasks were identified to help implement this recommendation and all have substantially been completed.

Score: For the first part of the recommendation - 7; for the second part of the recommendation - 9

Progress to December 2000

There has been little progress on this recommendation in the 12-month reporting period. The definition as supplied to SCARM was not endorsed and has been revised on a number of occasions. The issue is now dormant due to some comments received from ANZECC. It is perceived that the issue may be resolved once the role of the new Natural Resources Management Ministerial Council is established.

Jurisdictions have adopted the concepts of sustainability into their various legislations. In some instances this means that the definition as devised via the NGC is not specifically adopted – for instance, some jurisdiction's legislation does not mention sustainable yield. In all cases though, jurisdictions are practicing what the sustainable yield definition embodies. Jurisdictions also point out that they are bound by what is in their Water Acts, not by definitions devised by NGC.

However, there is still some question regarding the way the policy will be implemented in practice related primarily to one of quality control over the practice and adequate resourcing for works associated with defining sustainable yield.

Comment: At the detailed level, a major impediment now exists regarding the acceptance of a national definition of sustainable yield, relating primarily to the nature and timing of acceptable impacts due to groundwater abstraction. Some interpretations of the definition are seen as mining and as such are deemed to be unacceptable in a sustainable sense. In the short term it will be important for these issues to be resolved so that there is clear direction of the way forward for quantifying sustainable yield in practice. At the broader level, it is unclear how the NGC will have the definition adopted in the various legislations that have been passed in the last few years.

It is also clear that the jurisdictions have moved on from the debate of a few years ago, and are now implementing approaches that essentially are defined by what the community is willing to accept in terms of sustainable yields from groundwater systems.

Another impediment also relates to the provision of adequate resources to allow the implementation of sustainability principles within water planning processes, so that the attainment of sustainability outcomes will be accelerated.

Score: For the first part of the recommendation – 9; for the second part of the recommendation – 8.

Recommendation 2: All States should adopt the National Drillers Licensing system for water production wells by 1997 and should seek to expand the system to all drilling.

(Moderate Priority)

Due: 1997

Summary Progress to December 1999

The National Uniform Drillers Licensing Committee (NUDLC) has undertaken a range of tasks on behalf of NGC. Not all actions have been completed at this stage, however major progress has been made.

Preliminary advice from NUDLC is that expansion of licensing to all drilling is inappropriate.

NGC task deadlines (see Appendix A): Four tasks were identified to help implement this recommendation. Tasks 6 & 7 remain outstanding but are within the nominated timeframe.

Score: For the first part of the recommendation – 9; for the second part of the recommendation – 5.

Progress to December 2000

All jurisdictions have implemented the National Drillers Licensing system for water production wells except ACT and TAS. It appears most jurisdictions are awaiting advice from NGC regarding the expansion of the system to other forms of drilling, in view of the advice from the NUDLC that it is not appropriate to extend the system as envisaged.

Comment: It would appear that this recommendation has been applied to an extent that is appropriate and that further work is not warranted. There is some comment from jurisdictions that they are still waiting for clarity in terms of which parts of the drilling industry will be subject to the Licensing system, but effectively this recommendation has been fully implemented.

Score: 10

Recommendation 3: Groundwater and surface water management should be better integrated including approaches to pricing (especially adjacent to public surface water regulated schemes), water allocations and trading to ensure consistency.

(Low Priority)

Summary Progress to December 1999

There is a varied national response to this recommendation. In some jurisdictions there are few water resources that need to be managed conjunctively at a higher level than is currently done. In other jurisdictions, more work is required. All jurisdictions understand the issue behind the recommendation, and have in place principles that allow the recommendation to be implemented. Actions to date have generally been in a reactive sense, rather than proactively working towards implementation.

The progress towards implementation of this recommendation will benefit from the development of some clear, measurable performance indicators. The approach to pricing is bound up with recommendation 9 in all jurisdictions

NGC task deadlines (see appendix B): Three tasks were identified to help implement this recommendation. There has been progress against all three, but they remain incomplete outside the deadline originally set.

Score: 5

Progress to December 2000

There now appears to be two elements to the response to this recommendation – the need for an integrated policy and administration, and the implementation of this policy via actions that ensure the integrated management of the total water resource.

To a large degree all jurisdictions have adopted an integrated policy approach to total water management, and integrated administrative institutions support this – as documented in the previous progress report.

The current reporting has shown that there is now a move to implement this policy via specific planning instruments (variously labelled in jurisdictions – but effectively the same approach). The degree of sophistication of this approach varies between jurisdictions. In NSW, SA, Qld, ACT, Tas and NT, water resource planning is now integrated across surface water and groundwater via relevant planning instruments. Some jurisdictions were progressing these measures prior to the reporting period, and other jurisdictions have adopted them during the period. In yet other jurisdictions, the issue is not seen as a high priority due to the lack of significant surface water interaction with groundwater resources.

This progress into integrated water management plans will have implications for some other recommendations, most notably Recommendations 5 and 6.

Comment: The move to integrated water management is positive and to be commended. However, much still needs to be done to achieve an outcome of fully integrated water resource management. The interesting issue to arise from the

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progress documented above is the low priority rating that has been allocated to the recommendation by NGC.

As well, the issue of trading, water allocation and pricing are also bound up in other recommendations.

Score: Reflecting the concerted move to implement a framework to deal with this issue - 7

Recommendation 4: In preparing groundwater management plans, policies and strategies, States should ensure that the efficient utilisation of groundwater resources is not compromised by the protection of existing users with inefficiently designed or constructed wells. This particularly applies to domestic and stock wells.

(Moderate Priority)

Summary Progress to December 1999

Generally, jurisdictions deal with well interference and efficient bore construction on a case-by-case basis. NSW has adopted specific actions as a consequence of this recommendation, with most other jurisdictions continuing with existing approaches.

Most jurisdictions believe that their current policy approach adequately deals with the intent of the recommendation. Some of these policies existed prior to the formulation of the recommendation, which implies that either the recommendation was unfounded, or that the jurisdictional approach is not as effective as perceived.

NGC task deadlines (see appendix A): Two tasks were identified to help implement this recommendation. Progress has been made against both tasks, but they are incomplete outside the deadline.

Score: 6

Progress to December 2000

There has been no change in jurisdictions positions since last report. It would appear that jurisdictions have implemented approaches that they are satisfied will implement this recommendation.

This raises the issue of relevance since most jurisdictions have continued with policy approaches that existed at the time the Recommendation was framed – which was presumably done in response to a perceived need to change the approaches that existed at that time.

It is difficult to assess the position against this recommendation, given the lack of change from the previous reporting period, but the contention by most jurisdictions that this recommendation has been fully implemented. If it is felt that this recommendation is still important, there is a clear need to assess future actions required by each jurisdictions. The score below reflects a view that some future work is still required.

Score: - 7

Recommendation 5: States should develop groundwater management plans based on a sound understanding of the resource. These plans should be the primary support for the development of groundwater allocation and property right systems to support intra-aquifer trading both within States and across State borders. (High Priority)

Recommendation 6: In developing groundwater management plans, State agencies responsible for groundwater management ensure that those plans include identification of the sustainable yield and the levels of allocation and use of aquifers. Those plans should also include an identification of environmental water provisions in accordance with the principles set out in the joint ARMCANZ and ANZECC “National Principles for the Provision of Water for Eco Systems”. Where allocations exceed the sustainable yields, the agencies should develop strategies to reduce abstractions to sustainable levels within time frames that minimise permanent damage to the resource.

(High Priority)

Summary Progress to December 1999:

Little progress has been made against this recommendation. Some national leadership is required in developing a generic approach to groundwater management plans, and NGC has taken on that role. However, no progress beyond an outline of an approach has been made.

There has been little discussion nationally as to what constitutes a “sound” understanding of the resource (Rec. 5). It would seem that jurisdictions are adaptively managing towards a sound understanding of their various resources. This is probably a more pragmatic approach and performance against this recommendation should be measured in that regard.

Some work has occurred related to identifying environmental water provisions, but this task is complex and lengthy. An approach to managing over-allocated systems is currently being developed via a proposal to hold a national workshop.

There is a view that the notion of “Groundwater Management Plans” pre-dates COAG Water Reform and should be replaced with the all-embracing Water Resource Management Plans if we are ever to achieve the professional/technical culture shift now required.

There appears to have been very little progress, when viewed nationally, towards reducing abstractions to sustainable levels.

There are two main impediments – the level of confidence and accuracy required; and the related issue of time/resources to achieve an outcome.

There appears to have been minimal discussion related to the level of confidence required when sustainable volumes are defined in GMPs. This is particularly important in over allocated systems where trading may be one instrument employed to achieve industry adjustment. One of the key’s to ensuring efficient trading to occur is to define a robust property right to a share of the resource that enables certainty in transaction. The robust property right and an adaptively managed (ie, evolving) sustainable resource volume are somewhat at odds. A minimum level of confidence in the available resource volume is required.

Summary Progress to December 1999 (cont.):

Even if there were some agreement on what constituted sound understanding, there would be major difficulty in rectifying this in those resource regions where they fall short of the agreed definition, both in terms of the time available and the resources required.

Equally, the definition of environmental water provisions for all high priority ecosystems in Australia will require a massive input of resources.

NGC task deadlines (see appendix B): Four tasks were identified to help implement this recommendation. Some progress has been made against one of the tasks (national guidelines for Groundwater Management Plans), but no progress has been made against the other three.

Score: Recommendation 5 – 3; recommendation 6 – 1

Progress to December 2000

There are a number of elements within the two recommendations that can be addressed separately.

Firstly, at the broad level, most (if not all) jurisdictions have enacted legislation that promotes the intent of the two recommendations – the use of groundwater management plans as the primary tool for resource management. These plans are put in place to manage groundwater resources in incorporated areas only - each jurisdiction has a different name for regions that have been incorporated (proclaimed, regulated, controlled, etc). Areas that are unincorporated are not necessarily subject to the provisions of a plan.

Secondly, all jurisdictions use the best available data to hand when developing groundwater management plans. Where required, this data may be supplemented by additional investigations, but this response is undertaken via a risk assessment approach – data is acquired where the resource is seen as significant. The major outstanding issue now appears to be one of quality assurance related to the management plan. Some jurisdictions now have an approach in place where private consultants, as well as public agency staff undertake the development of groundwater management plans. It is important in the future that all plans are subject to rigorous scrutiny and quality control and are publicly defensible.

Thirdly, the principles of groundwater trading are embodied in jurisdictional legislation, but the degree to which it is implemented relies heavily on the degree of commitment of the groundwater resource. Most water acts provide for both temporary and permanent trading of groundwater. In regions where the resource is not fully allocated, there is no trading as potential buyers can effectively purchase groundwater from the allocator. In areas where the resource has been capped (or embargoed) trading is encouraged. However, experience seems to suggest that trading is not a very effective way to manage over-allocated groundwater resources. Recommendation 5 deals explicitly with intra-aquifer cross-border trading – as yet no trading of this type is occurring (it is effectively confined to three or four specific aquifers – the GAB, the Tertiary alluvial sediments under the Border Rivers, the Murray Group Limestone and possibly the Officer Basin).

Fourthly, all jurisdictions are now moving away from volumetric allocations for environmental provisions, preferring to employ regional targets for the maintenance of ecosystems. This is usually done by specifying a key indicator related to the ecosystem's continued viability – a minimum head specification for a wetland; a minimum flow specification for a surface water system. This move represents a major shift in jurisdiction's response on this issue. However, some jurisdictions are still employing a State-wide policy of allocating a percentage of recharge to the environment, as well as applying the ecosystem maintenance approach.

Finally, jurisdictions are employing a limited number of options to manage regions where the groundwater system is over-allocated or over used. Generally, the best recourse is to reduce the allocation property right, either by fractional resource share approaches, or by targeted claw back specifically aimed at aquifer sub-regions. As mentioned earlier, trading is used, but is not seen as an efficient option. In one jurisdiction, these approaches have culminated in public discussions of the role of compensation for the loss of property right associated with a reduced allocation. As well, the Federal Government has indicated that part of their funding approach to jurisdictions via the NHT is to compensate for loss of property right. Some jurisdictions are employing source substitution (where additional sources of water are used as a substitute for over allocated groundwater) as a means of managing particular aquifer systems.

Comment: The role NGC is taking in these recommendations could be more direct and more active. Some work has been done by NGC on compiling best practice examples nationally, but this has not come to fruition, and its utility is somewhat diminished by the different approaches that each jurisdiction has adopted under their water acts. However, detailing best practice may still be an effective approach to performance monitoring. These guidelines could form the basis of a reporting framework within which jurisdictional approaches can be documented. These reporting frameworks will become more significant over time as people look to see the benefits that should flow from better groundwater management.

One jurisdiction raised the issue of the role of whole of aquifer management in a cross jurisdictional environment. Specifically, the issue is whether aquifers are being managed as best they can with the current set of jurisdictional boundaries, as in most shared aquifers each jurisdiction has a different set of policies related to the way the groundwater is managed. For instance, are there opportunities for trading if jurisdictional boundaries were removed from within shared aquifers?

Score: - 5; These are very broad recommendations that contain a number of important issues. On balance, progress has been better than average. The substantially higher score than the previous reporting period is due to a change from scoring the NGC tasks (see Appendix A) to scoring the approach to the recommendation.

Recommendation 7: The provision by the driller, to the relevant State Authority, of well construction data should be mandatory requirement, with provision made for exemption in area, or circumstances, where the information is not required.

(Low Priority)

Summary Progress to December 1999

All jurisdictions have reported that legislation is either already in place, or will be in place shortly. Whilst it appears that there has been little change from the status quo within most jurisdictions, much progress has occurred in this area since the recommendations were first devised in 1995.

NGC task deadlines (see Appendix A): Two tasks were identified to help implement this recommendation. One task was met within the specified deadline, the other task is still outstanding, and past its deadline.

Score: 7

Progress to December 2000

Effectively, this recommendation has been implemented by jurisdictions. All jurisdictions have in place relevant policies to allow the collection of drilling data where required. The only outstanding issue might be the collection of information on Stock and Domestic bores/wells, which are exempt in most jurisdictions.

The recommendation is closely linked to Recommendation 2.

Score: - 9

Recommendation 8: In all areas where there are high yielding wells, monitoring and data collection of water levels and water quality should be undertaken to a sufficiently high standard to ensure adequate information is available to manage the resource sustainably. Where licensing is used as the primary mechanism for data collection, the provision of necessary management information will generally require the licensing of high yielding wells. Definitions of high yielding wells will vary between resources, as the criteria used to define such wells would include their significance of impact on the resource, other users and dependent ecosystems. The States will need to define these separately.

(Low Priority)

Summary Progress to December 1999

All jurisdictions have some form of licencing approach to high-yielding bores, however, not all high-yielding bores are licenced in some States.

The approach in some jurisdictions appears to be based on the need for the information from high-yielding bores. That is, where the resource is perceived to be under little threat of over-development, no provision is made to require high-yielding bores to be licenced.

Equally, it is difficult to gain a view of how well licencing provisions related to the return of information, is policed.

Jurisdictions generally take a pragmatic approach to where increased levels of information are required. It would seem that where levels of usage and allocation are well below sustainable levels and there is little pressure for further development, the increased burden on groundwater users is deferred.

Another impediment relates to the accuracy of the data supplied, and the tracking of non-compliance with licence conditions.

Some commentary also suggests that lack of political will mitigate against implementing high-yielding bore licencing.

NGC task deadlines (see appendix A): One task was identified to help implement this recommendation. Progress ahs been made against this task, but it is difficult to measure this performance.

Score: 8

Progress to December 2000

All jurisdictions have in place policies that allow for the collection of the required data related to high-yield production bores in incorporated areas. There has been little change to the position of most jurisdictions since the last report. It would seem that most jurisdictions have progressed this recommendation as far as they intend. Most jurisdictions take a risk assessment approach to when and where high-yielding bores are licensed outside of the incorporated groundwater areas.

Reporting Jurisdictional Progress on Groundwater Reforms

One jurisdiction applies a policy of licensing all bores (other than stock and domestic) together with a volumetric licence, regardless of whether they are in a designated area or not. This jurisdiction has also installed 1427 meters in the last 2 years to better gauge bore usage volumes.

Score: - 9

Recommendation 9: The full cost of groundwater management should be identified by the States. The cost of direct management activities should be recovered from users and within the context of the overall water cycle, appropriate apportionment of indirect costs be given consideration. Outside urban water supplies, the remaining subsidies should be transparent where full cost recovery is not achievable. The necessary charges should be implemented progressively by 2001, and particular attention should be given to timely resolution where, and as trading in groundwater is likely to be demanded by the market. Public communication on these matters will be important.

With reference to Recommendation 3, States should give consideration to the consequences of differential pricing between surface and groundwater. States should examine the means for meeting the indirect costs of groundwater management, including investigations which are not appropriately apportioned to users; options may include a direct but transparent subsidy. Recovery of management costs from domestic and stock well owners is to be considered by the States as part of their overall cost recovery strategy.

(High Priority)

Summary Progress to December 1999

Some jurisdictions have not established the need to identify full costs of groundwater management, as they have little intention to pass these on to resource users. The philosophy is, "if they are not to be recovered, why identify them".

The achievement of this recommendation is likely to be significantly affected by government policy within some jurisdictions.

NGC task deadlines (see Appendix A): Four tasks were identified to help implement this recommendation. None of the tasks has been achieved within the deadlines set. Some jurisdictions have embraced and implemented the principles embodied in the recommendation, but some jurisdictions have made no progress.

Score: 1

Progress to December 2000

Very little progress has been achieved on this Recommendation during the reporting period. That does not indicate though the true nature of the jurisdictional positions related to the recommendation.

In some jurisdictions, they have progressed pricing and cost apportionment so that the recommendation has been fully implemented. In other areas, pricing is seen as a matter for Governments and they are awaiting direction on the way forward. Other jurisdictions have laid significant groundwork that will see rapid progress in the near future.

Comment: There is some difference of interpretation related to this recommendation. The Recommendation seems to imply that costs of groundwater management should be identified and subsidies made transparent regardless of whether pricing will be introduced. In some cases, jurisdictions have not made an explicit political decision to

implement pricing regimes aimed at recouping the full cost of groundwater management. In these cases the jurisdiction does not regard it as essential that they pursue the information gathering as required under the recommendation.

It is difficult to make a judgement on progress against this recommendation. There has been little progress over the reporting period, with some jurisdictions waiting on the outcome of the political process. Whilst it is difficult to progress actions without the political authority, it must be concluded that on the whole, jurisdictions are not progressing towards cost recovery for groundwater at a rate that may have been envisaged within the original recommendation.

Score: – 3

Recommendation 10: The Federal Government should publicly identify its full costs of involvement in groundwater activities to assist in the negotiation of priorities for Commonwealth funding of groundwater management activities.

(Moderate Priority)

Summary Progress to December 1999

The rationale behind the recommendation lay with the fact that various vehicles for Commonwealth investments (CSIRO, MDB, NLP/NHT, etc.) have their own consultative mechanisms for developing priorities for investment. This does not necessarily allow national priorities to be progressed in a coordinated fashion.

There appears to be slow progress against this task due to lack of resources available to complete the work. As well, the willingness of funding programs to participate in some form of national approach to deciding groundwater priorities may not be forthcoming in the first instance.

NGC task deadlines (see appendix A): Two tasks were identified to help implement this recommendation. Neither task has been achieved.

Score: 1

Progress to December 2000

There has been no progress on this recommendation during the reporting period.

Comment: It would appear that the Commonwealth regard this as a low priority due to their inability to allocate appropriate resources to the task.

Score: - 1

Recommendation 11: State and Federal agencies should develop and implement organisational arrangements and processes which specifically eliminate conflict of interest situations in groundwater assessment and management.

(Low Priority)

Summary Progress to December 1999

There is some confusion regarding the wording of the recommendation. It is assumed that the wording of assessment and management as the two functions to be separated, actually refers to the assessment of the resource versus the supply of the resource.

On the information supplied by jurisdictions it appears that much progress has been made in the separation of functions related to water regulation from those of water supply.

NGC task deadlines (see Appendix A): One task was identified to help implement this recommendation, and this has not been achieved within the deadline set.

Score: 7

Progress to December 2000

Most jurisdictions have implemented actions over the past 5 years to provide the separation of powers that are suggested by the recommendation.

There has been little change during the current reporting period, perhaps indicating that most jurisdictions feel they have made the necessary changes to satisfy the requirement.

Confusion regarding the wording of this recommendation still occurs.

In some jurisdictions, the authority to allocate groundwater is still retained by the organisation that also manages groundwater. In these cases, a safety net exists that ensures sustainable management via legislation which states groundwaters must not be over allocated or over used.

Score: - 8

Recommendation 12: SCARM should assess the opportunities for increasing public awareness of the value of groundwater, its vulnerability to over use and damage through other activities and the need for groundwater management as key issues and encourage the States to develop appropriate awareness programs.

(Moderate Priority)

Due: Jun 1999

Summary Progress to December 1999

NGC task deadlines (see Appendix A): Two tasks were identified to help implement this recommendation. One task has been completed, with the other progressing outside the timetable set.

Score: 3

Progress to December 2000

Most actions related to this recommendation were completed prior to the current reporting period.

The original intention was for SCARM to adopt a national position that would guide the States in the production and implementation of awareness programs. NGC has taken the view that a national strategy is not required, and State-level awareness programs are best driven by local issues. There will be an opportunity to facilitate exchange of information between States, as well as a sharing of regional-level program activities.

This new approach appears sound, but is still in the early stages of development. It is difficult at this time in the absence of any detail of the proposed alternative approach to gauge actions against the recommendation. It is also important that an awareness program related to groundwater is developed and implemented in those areas where groundwater management is a significant task.

NGC will also need to clarify who will replace SCARM as the stakeholder for this recommendation.

Score: - 5

Conclusions and Recommendations

There are a number of conclusions that can be drawn from the responses and commentary above.

1. Progress has been made in terms of the 12 recommendations endorsed by COAG – though it is highly variable.
2. The National Groundwater Committee has reduced the emphasis on the devised tasks as a guide to the implementation of the 12 recommendations. It has been recognised that although many tasks have been completed, more work is occurring than has been identified in the tasks and that some tasks are not well focused.
3. The reported progress is difficult to objectively verify given the nature of this reporting exercise. This is not to suggest that the progress has not occurred, rather to point out that the process adopted does not allow any significant independent checking of progress.
4. There are no performance measures that can be used to track the success of the implementation of the 12 recommendations. Much activity has occurred in establishing the suitable public policy consistent with relevant recommendations; however, little has been reported that would support an objective assessment of how well these are being implemented.
5. Some recommendations are effectively seen as redundant by some jurisdictions as they have undertaken little activity associated with the recommendation, but believe that they have fully implemented the required actions. Those jurisdictions may have believed they were significant issues to be addressed, but by another jurisdiction.
6. It is evident that some recommendations will require a significant increase in the level of resources applied by jurisdictions so that issues, associated with quality control and implementation within a timeframe that is driven by priority, can be addressed.

It is recommended that:

1. The NGC devise and implement a series of performance measures that will quantitatively establish progress towards the desired outcomes of the 12 recommendations. In some cases it may be necessary to initially consider the intent of various recommendations. NGC should also formalise a reporting framework for jurisdictions, so that longer-term progress can be reported to the relevant stakeholders. It is also important that an agreed timeframe for implementation is established in association with jurisdictions.
2. The NGC formally remove the associated task list from any further reporting of progress against the 12 recommendations.
3. The NGC consider actions required should recommendations not be implemented by jurisdictions.
4. The NGC consider any new recommendations required to progress the intent of the National Framework for Improved Groundwater Management given the changes in circumstances brought on by the passing of time.

APPENDIX A: Jurisdictional Responses to NGC Tasks

Reporting Jurisdictional Progress on Groundwater Reforms

The following tables outline a range of tasks adopted by the National Groundwater Committee as jurisdictional responses to the reforms contained in the report *Allocation and Use of Groundwater: A National Framework for Improved Groundwater Management in Australia* adopted by ARMCANZ.

The tables set out the task, the deadline and the responsibility; each jurisdiction's progress (including the National Groundwater Committee where appropriate) and a comment on progress made.

Each jurisdiction's response's to each of the task actions is outlined in Appendix A below.

Recommendation 1: Groundwater management policies should employ the principles of ecologically sustainable development and should be directed at achieving the sustainable use of the resource. ARMCANZ should develop a nationally consistent definition and approach to sustainable groundwater yield.

Task	Due Date	Responsibility
1. NGC to complete the discussion paper concerning definition of sustainable groundwater yield and communicate the full understanding of the definition.	Sept 1999	NGC

Comment: Task achieved

Task	Due Date	Responsibility
2. Have the definition of sustainable groundwater yield adopted by ARMCANZ and ANZECC through the NGC.	Sept 2000	NGC and all jurisdictions

Achievement	Jurisdictional response
A definition of SY has been forwarded to SCARM for endorsement (April.2000)	NGC – No formal adoption of the definition has been forthcoming. The definition of SY has been held up in SCARM due to negative comments from ANZECC. This may be resolved when the new Natural Resource Management Council commences.

Task	Due Date	Responsibility
3. Adoption of the principles of sustainable groundwater yield by the States and have it incorporated into State policy.	July 2001	All jurisdictions

Achievement	Jurisdictional response
In progress	<p>NSW – no change since last report – task implemented</p> <p>ACT – no change since last report – task fully implemented</p> <p>NT – NGC definition of SY adopted and regional water allocation policy and planning is based on full adoption of the definition</p> <p>Qld - The Water Act 2000 adopts principles of ecologically sustainable development as a means of advancing sustainable management and efficient use of groundwater. Sustainable management is implemented via a statutory water resource plan that amongst other things regulates the taking of water</p>

Reporting Jurisdictional Progress on Groundwater Reforms

	<p>including groundwater. Sustainable management of a groundwater system involves management that allows for the allocation and use of water within limits that can be sustained indefinitely and protects biological diversity and health of natural ecosystems. Thus the principles have been included in the regulatory framework</p> <p>Vic – Out of the 60 GMAs in Victoria, management plans for 6 areas have been finalised and the remaining 10 are currently being developed by consultative committees. The plans are specifically geared to achieving sustainable use of the resource. In many other areas when the authorised allocation reaches 70% of the sustainable yield, there is a moratorium placed on further allocations.</p> <p>WA - Sustainable yield principles adopted for both surface and groundwater in WA. Objects of the Rights in Water and Irrigation Act 1914, as amended 2001, now include 4.(1)(a) “ to provide for the management of water resources, and in particular (i) for their sustainable use and development to meet the needs of current and future users; and (ii) for the protection of their ecosystems and the environment in which water resources are situated, including by the regulation of activities detrimental to them;”.</p> <p>The RIWI Act now provides a statutory planning and policy framework requiring plans to set the sustainable yield that may be taken within the environmental limits.</p> <p>Principle of sustainable use is contained within Policy Statement on Water Sharing (adopted 26/6/2000), Environmental Water Provisions Policy for WA (adopted 2000) and draft Transferable (Tradeable) Water Entitlements for WA (currently open for public comment).</p> <p>SA – No change since last report – definition adopted</p>
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Comment: Most jurisdictions have progressed incorporation of sustainable yield concepts into their groundwater management planning/regulations. It appears that the task will be met by the due date. Further performance monitoring of progress by jurisdictions towards ensuring that allocations meet the agreed national definition should be considered.

Recommendation 2: All States should adopt the National Drillers Licensing system for water production wells by 1997 and should seek to expand the system to all drilling

Task	Due Date	Responsibility
4. Adoption of the National Drillers Licensing system	Mar 1999	All jurisdictions

Comment: Task completed

Task	Due Date	Responsibility
5. NGC to define what the situation is in each State regarding the licensing of drillers outside the water industry under the National Drillers Licensing system	Mar 2000	NGC States

Comment: Task completed – Qld awaiting ratification of recommended NUDLC standards before adoption.

Task	Due Date	Responsibility
6. NGC to recommend which sectors of the drilling industry should be covered by the National Drillers Licensing system with a proposed strategy for implementation based on negotiation with Australian Drilling Industry Association.	Dec 2000	NGC ADIA States

Achievement	Jurisdictional response
NUDLC has put together for NGC, a preliminary report on who should be licensed and will finalise its report mid-2000.	<p>NSW – no change since last report</p> <p>ACT – no change since last report – task fully implemented</p> <p>Qld - The water bore drilling industry should be covered. Nevertheless we are regulating drilling in mining and petroleum industries to extent that activities impact water quality and water flow.</p> <p>NT – awaiting advice, but understands that ADIA does not support extension of system</p> <p>WA - completed</p> <p>SA - No action. Await advice from NGC.</p> <p>Vic - No change since last report</p>

Reporting Jurisdictional Progress on Groundwater Reforms

Comment: Task awaiting final deliberation on the NUDLC report. Some jurisdictions are already moving to act upon outcomes from the report.

Task	Due Date	Responsibility
7. States to implement the recommendations.	Dec 2001	States

Achievement	Jurisdictional response
Draft Paper completed	Implementation is dependent on the final NUDLC report due June 2000.

Comment: Task awaiting other actions

Recommendation 3: Groundwater and surface water management should be better integrated including approaches to pricing (especially adjacent to public surface water regulated schemes), water allocations and trading to ensure consistency.

Task	Due Date	Responsibility
8. States to identify where ground and surface water resources are significantly interconnected or where use of resources is substitutable, but where management and allocation regimes are incompatible or insufficiently integrated.	Dec 1999	States

Achievement	Jurisdictional response
Preliminary review only	<p>NSW – currently supporting research in the area of surface and groundwater resources. Results however are not expected before the medium term. This is being carried out in conjunction with other agencies (eg. BRS and CSIRO.) In areas where there is known high connectivity, discussion has begun to agree on ways to adjust management accordingly.</p> <p>ACT – no change since last report</p> <p>NT – Regions of interconnected/substitutable groundwater and surface water well known and managed through an integrated allocation, pricing and trading approach in accord with COAG Water Reform Framework</p> <p>Qld - Management of groundwater and surface water resources will be under a single water resource plan as the plans are completed. A plan covers the whole of a stream catchment. The current licensing regime allows for conjunctive use of groundwater and surface water where there is intimate connection between the two water sources. The plans and any modelling that supports plan development take into account any connection between groundwater and surface water systems. Whilst most coastal shallow aquifer systems and the Condamine and Border River systems are hydraulically connected to the main streams, a more explicit treatment of the nature of the stream-aquifer interconnection is or is being accounted for in the Gooburrum, Woongarra, Isis/Elliot, Burdekin, Pioneer, Atherton and Central Lockyer models. There are no known parts of the State where the management and allocation regimes are incompatible and if incompatibilities should emerge then changes to licensing and policy arrangements would be made. Under the water resource planning process full integration of the licensing and allocation process occurs under a single plan for a catchment.</p>

Reporting Jurisdictional Progress on Groundwater Reforms

	<p>Vic – Victoria is beginning to seriously identify situations of significant groundwater – surface water interaction. For example the Campaspe Draft Groundwater Management Plan will recommend water levels in recharge areas of the Campaspe River not drop below 1993/94 levels (the Cap) to protect surface water ecosystems. Stream flow management plans are being developed throughout Victoria and these will consider groundwater issues. Victoria has recently introduced legislation into Parliament to enable conjunctive management of surface water and groundwater through a planning process.</p> <p>WA – no change since last report – not considered significant for this jurisdiction</p> <p>SA – Most of the significant groundwater resources within SA have been prescribed under the Water Resources Act 1997. The prescribed resources have management and licensing controls in place.</p> <p>Water allocation plans have been prepared for the prescribed resources under the <i>Water Resources Act 1997</i> which will take into account any interaction between groundwater and surface water as appropriate.</p> <p>Where resources are not prescribed, catchment water management plans, being prepared by catchment water management boards, will address the issue of integrated management of the resource.</p> <p>Tas – Management of water resources is now governed by the State Water Management Act. Water catchment management plans are being developed, to incorporate whole resource management in catchment areas. These are presently in the early stages of development. The legislation allows for holistic integration of pricing, allocations and trading.</p>
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Comment: Most jurisdictions have yet to implement the task. The framework appears to be in place in all States, but the pro-active identification of interconnected surface-water/groundwater resources has still to be done.

Task	Due Date	Responsibility
9. States to develop their response to this at a policy level including allocation, pricing and trading that will lead to better integrated management.	Jun 2000	States

Achievement	Jurisdictional response
Limited progress at this stage	<p>NSW – no change since last report</p> <p>ACT – no change since last report</p>

Reporting Jurisdictional Progress on Groundwater Reforms

	<p>NT - regional natural resource management strategies for ecologically sustainable development are established in accordance with COAG Water Reform</p> <p>Qld - The Water Act 2000 provides for the existence of only one integrated plan for consistent management, allocation and trading of surface water and groundwater resources. The exception to this is the Great Artesian Basin for which a separate plan may exist. Allocation and licensing systems operate as a single approach both under a water resource planning framework and in an area that is not yet covered by a plan. Policies specific to allocation and management in a catchment are integrated into a water resource plan. They are operationalised through a resource operations plan. Where trading is feasible then the resource operations plan establishes rules for trading. The framework for allocations separate from land is provided for in a water resource plan and is created by a resource operations plan. For groundwater resources managed by SunWater (a government owned corporation), prices are set by pricing direction by government. The price provides for appropriate cost recovery with explicit subsidies identified as Community Service Obligations paid for by government. There are charges applicable in some non-supplemented systems where there is a need for intensive management. In these intensively managed areas resource management charges are applied to contribute to management costs. In other less developed areas no charges apply.</p> <p>WA – no change since last report – not seen as a significant issue within jurisdiction</p> <p>SA – No change since last report</p> <p>Vic – see task 8</p> <p>Tas – see task 8</p>
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Comment: This task will rely on the successful completion of Task 8. Most jurisdictions appear to be establishing the necessary framework to enable the outcome to be achieved

Task	Due Date	Responsibility
10. States to identify and remove subsidies that provide artificial preference to use one resource in preference to another, or failing to do that, make such subsidies transparent and implement the State policy position.	Dec 2001	States

Comment: It appears that this task is unrelated to Tasks 8 and 9, and that States are confident that any such subsidies have been removed, or were never there in the first place. One jurisdiction is still to establish if any subsidies exist.

Recommendation 4: In preparing groundwater management plans, policies and strategies, States should ensure that the efficient utilisation of groundwater resources is not compromised by the protection of existing users with inefficiently designed or constructed wells. This particularly applies to domestic and stock wells.

Task	Due Date	Responsibility
11. States to adopt a policy that ensures inefficient well design does not compromise efficient utilisation of groundwater resources.	Dec 1999	States

Achievement	Jurisdictional response
	<p>NSW – no change since last report</p> <p>ACT – no change since last report – task completed</p> <p>NT – no change since last report – not an issue within jurisdiction</p> <p>Qld – no change since last report – task completed</p> <p>Vic – Generally not an issue in Victoria. Inefficient bores are not protected. Groundwater management plans specifically deal with this matter – task implemented</p> <p>WA – The intent of this principle was adopted through the General Principles and Policy for Groundwater Licensing in Western Australia (March 1990) and is fully implemented. In licensing new wells the Commission endeavours to locate the new wells to minimise likely interference effects. Where interference effects are unavoidable, negotiated solutions are sought. There are no instances where the resource is locked up because of inefficient bores.</p> <p>In Western Australia's case, the recommendation appears unfounded and may require review for all jurisdictions.</p> <p>SA - A specific policy position has not been adopted in the State Water Plan. Strategies are being implemented at a local resource level through a local consultative process. It is being addressed, specifically in a number of prescribed areas through the application of special purpose levies to fund deepening/replacement of stock and domestic bores, the setting of separation distances between wells, the establishment of zones of influence in fractured rock aquifers and through specific conditions on permits for well construction.</p> <p>Tas - The development of water management plans incorporates collation of data that will allow these issues to be addressed under the Water Management Act if required.</p>

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Comment: Some uncertainty exists over what constitutes an inefficient bore. Some States have moved explicitly to address this issue retrospectively; others have implemented measures to ensure no future problems; yet other States appear to have not addressed the issue preferring to leave it to case by case resolution. Strictly, this task has not been met, though NGC may want to redefine the performance measure.

Task	Due Date	Responsibility
12. Implementation of policy by States	Dec 1999	States

Comment: Task only met by those jurisdictions for which this is an issue

Recommendation 5: States should develop groundwater management plans based on a sound understanding of the resource. These plans should be the primary support for the development of groundwater allocation and property right systems to support intra-aquifer trading both within States and across State borders.

Recommendation 6: In developing groundwater management plans, State agencies responsible for groundwater management ensure that those plans include identification of the sustainable yield and the levels of allocation and use of aquifers. Those plans should also include an identification of environmental water provisions in accordance with the principles set out in the joint ARMCANZ and ANZECC “National Principles for the Provision of Water for Eco Systems”. Where allocations exceed the sustainable yields, the agencies should develop strategies to reduce abstractions to sustainable levels within time frames which minimise permanent damage to the resource.

Task	Due Date	Responsibility
13. NGC to provide a supporting guideline document for the States for the preparation of Groundwater Management Plans for aquifer systems which take into account all aspects of Recommendation 6 taking into account water quality where appropriate: <ul style="list-style-type: none"> • identification of sustainable yield, environmental requirements and consumptive allocation and use; • where necessary, principles for reduction of consumptive allocation to sustainable yield within suitable time frames. 	Mar 2000	NGC

Achievement	Jurisdictional response
	<p>NGC - An outline of what should be in a plan has been developed.</p> <p>This outline has not been progressed as it was believed that the differences in jurisdictional approaches and legislation will make the document difficult to apply.</p>

Comment: This task has not been met.

Task	Due Date	Responsibility
14. NGC to develop a reporting format for the States.	Mar 2000	NGC

Achievement	Jurisdictional response
Completed October 1999	<p>NGC - A draft proforma document was discussed at the October meeting of NGC. The proforma asks questions about implementing the 12 COAG groundwater recommendations. It has been sent to the CEO's of the State water agencies together with a covering letter</p>

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	requesting completion of the proforma by end March 2000. The current situation is unknown.
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Comment: This task has not been met.

Task	Due Date	Responsibility
15. States to report on an annual basis on the progress of development and implementation of Groundwater Management Plans to NGC which will forward on information.	Oct 1999	States

Achievement	Jurisdictional response
In progress	<p>NSW – As part of the implementation of the Water Act 2000, twelve groundwater systems within the State have been designated as lying in priority areas where water sharing plans are to be developed by the end of 2001. These areas are: Upper Namoi, Lower Namoi, Gwydir, GAB, Tomago, Lower Murray, Lower Murrumbidgee, Mangrove Mountain, Lower MacQuarie, Lower Lachlan, Stuarts Point, Alstonville.</p> <p>ACT – no change since last report</p> <p>SA – The Water Resources Act 1997 has been based on the principles underlying this recommendation – therefore Water Allocation Plans embody the same principles. Water Allocation Plans have been adopted in 14 out of 15 prescribed areas.</p> <p>Where allocation exceed sustainable yields further technical work is being undertaken to support the development of strategies to address over allocation in consultation with communities. Initial assessment of environmental water needs have been identified. Criteria for acceptable groundwater level and quality needs have been set for the assessment of applications for the transfer of water allocations and long term management have been made in some plans.</p> <p>Non-prescribed resources will be covered in catchment water management plans currently being prepared. Catchment water management plans which encompass the management of both surface and groundwater have, or are developing more detailed analysis of environmental water requirements to sustain healthy catchments. Eight catchment water management boards have been established in South Australia which cover all but an area in the mid-north of the state. Four boards are in the process of preparing catchment water management plans.</p> <p>Non prescribed resources do not have groundwater allocations and property right system. These systems are</p>

	<p>introduced as the level of demand increases to a stage where formal management is required. Catchment water management boards with the Department for Water Resources maintain an overview of the need for formal groundwater management arrangements in their catchment areas.</p> <p>Vic – Very active development of groundwater management plans is underway. Detailed trading rules being developed in many cases. In some areas only temporary trading is permitted. In view of moratoriums in place in many areas where allocations reach 70% of the sustainable yield, detailed consideration is being given to how to allocate the remaining 30%. For example, new entitlements (7000ML) in the Mid-Loddon GMA will be auctioned during early 2002. [This is unlike the old system of “first come first served” which resulted, in one case, of all the remaining 30% being taken up by one new applicant.] Detailed consideration is being given to the issue of property rights for purchased entitlements.</p> <p>All GMUs in Victoria have a defined sustainable yield. All bores (other than domestic and stock) are licensed and a volumetric allocation applies as opposed to other jurisdictions that may only require licensing in designated areas. Actual usage data is being gathered by the installation of 1427 meters in the last 2 years. Further metering is planned. Methods to reduce allocations and usage in over-allocated GMUs vary and are tending to evolve into the setting of minimum water levels. The sustainable yield will ultimately be the annual average extracted volume to achieve the minimum levels. This is an evolving and significant new development.</p> <p>Qld – Queensland has a review process in place to identify priority areas and areas of increasing risk. Water Resource Plans are in various stages of development for the following areas – Pioneer Valley, Woongarra, Gooburrum, Isis/Elliot, Burdekin Delta, Giru Benefited Area, Burdekin River Irrigation Area, Atherton Basalts, Barron Delta and Central Lockyer. The remaining priority areas will be progressively addressed. In priority and non-priority areas current licensing and allocation policies apply including placing administrative moratoriums on further groundwater development where appropriate.</p> <p>WA – WA is well progressed in the development of groundwater management plans. All plans are based on the best available information and a review of the information available is an important step in the planning process.</p> <p>The Rights in Water and Irrigation Act 1914 has been amended to incorporate a 3 tier structure of regional, sub-regional and local water management plans. Regional Management Plans guide overall water resource</p>
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	<p>management in a region, identify sources to be used and large scale allocations, and promote the integration of land and water management. Sub-regional Management Plans identify significant environmental, social and cultural values, describe potential source development sites and propose sustainable yields for individual sources, and recognise significant proposed developments for the purpose of identifying cumulative impacts. Local Management Plans define allocation and water use policies for local water resources, stipulate licensing and trading rules, provide guidance for decision-making on individual applications, and describe environmental water provisions and flow maintenance requirements.</p> <p>In accordance with the Transferable (Tradeable) Water Entitlements Policy for WA, all trades must be consistent with any approved plan for management of water resources and environmental water provisions that apply to the water resource management unit in question.</p> <p>The objects of the Rights in Water and Irrigation Act 1914 now include: to provide for the management of water resources, and in particular (i) for their sustainable use and development to meet the needs of current and future users; and (ii) for the protection of their ecosystems and the environment in which the water resources are situated, including by the regulation of activities detrimental to them;”. The Commission must seek to ensure that the objects are achieved and other persons are to do so to the extent that they have relevant functions.</p> <p>The Act now requires management plans to address matters such as: the definition of water resource values, including environmental values, and the protection of those values; how rights in respect of water are to be allocated to meet various needs, including the needs of the environment; the environmental impact of developing sources; and monitoring and reporting requirements.</p> <p>The National Land and Water Resources Audit identified two groundwater systems in WA where usage was unsustainable according to the definition prepared by the NGC. In both cases, strategies have been agreed with water users to reduce usage to sustainable levels over an acceptable timeframe with actions taken to mitigate impact where required.</p> <p>NT - Prefer Water Resource (not Groundwater) Management Plans, as in NT regional water resource strategies which aim for ESD of water resources, consistent with NGC SY definition and, thereby, preclude over-allocation occurring. The need and purpose of the reports is not clear, however NT report could be provided if NGC advises format required.</p>
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	Tas - The catchment management plans being developed to implement holistic water resource management planning are being based on available information and will incorporate consideration of environmental flows, aquifer use and sustainability of development. The plans will be refined in the future, as monitoring and other information collected during operation of the initial plans becomes available.
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Comment: This task has not been met

Task	Due Date	Responsibility
16. NGC to develop a discussion paper which covers all aspects of intra-aquifer trading of groundwater allocation, both intra and inter state.	Dec 1999	NGC

Achievement	Jurisdictional response
	NGC - NGC held a workshop (organised by the High level Steering Group on Water). The recommendations of the workshop are with the HLSG for consideration.

Comment: Task completed up – outcome now dependent on HLSG sign-off.

Recommendation 7: The provision by the driller, to the relevant State Authority, of well construction data should be mandatory requirement, with provision made for exemption in area, or circumstances, where the information is not required.

Task	Due Date	Responsibility
17. States to review legislation to determine whether they have the power to implement the recommendation.	Dec 1999	States

Comment: Most jurisdictions either have a regulation in place, or are in the process of implementing such regulation, to enable the collection of relevant information. Task appears to have been met.

Task	Due Date	Responsibility
18. States to develop a strategy to ensure compliance by drillers and report implementation progress to NGC.	Mar 2000	States NGC

Comment: Task appears to have been met. No agreed reporting framework to NGC appears to have been established.

Recommendation 8: In all areas where there are high yielding wells, monitoring and data collection of water levels and water quality should be undertaken to a sufficiently high standard to ensure adequate information is available to manage the resource sustainably. Where licensing is used as the primary mechanism for data collection, the provision of necessary management information will generally require the licensing of high yielding wells. Definitions of high yielding wells will vary between resources, as the criteria used to define such wells would include their significance of impact on the resource, other users and dependent ecosystems. The States will need to define these separately.

Task	Due Date	Responsibility
19. States to review current situation and consider and adopt a formal policy position regarding collection of data and licensing of high yielding wells.	Sep 1999	States

Achievement	Jurisdictional response
Licence conditions specify metering and data provision	<p>NSW – no change since last report</p> <p>ACT – no change since last report</p> <p>NT – no change since last report – task completed</p> <p>Qld - All of the areas where there is a moderate to high level of development are regulated. In most of these areas all bores except those used for stock and domestic purposes require licences and in other highly developed areas stock bores require a licence. In a few areas all bores are licensed. In the past the licensee has been required to supply the drilling and bore construction details. The onus is now shifting to require drillers to submit details of all water bores drilled. In most moderate to highly developed areas high yielding bores are metered. High yielding bores are those used for irrigation, town water supply, industrial or stock intensive purposes. Monitoring of water levels in regulated areas occurs in a dedicated network of bores. Monitoring of seawater intrusion occurs in areas at risk and is used in conjunction with water level data in the annual announced allocation process.</p> <p>Vic – Construction of all bores (>3m deep) requires licensing. Licensing of extraction of all bores, other than domestic and stock, has been mandatory since 1969. There is generally (with some significant exceptions) a comprehensive groundwater level monitoring program in place. 121 new groundwater monitoring bores have been constructed in the last 3 years. Funding to pay for refurbishment of old existing deep monitoring bores is a major issue. There is an extensive metering program in highly allocated GMAs.</p> <p>WA - The Rights in Water and Irrigation Act 1914 makes</p>

	<p>provision for terms, conditions and restrictions to be placed on licences. The General Principles and Policies for Groundwater Licensing in Western Australia establishes the policy for licensing and monitoring usage. Specific conditions are placed on each licence with respect to the monitoring requirements in accordance with the policy. Requirements for metering are currently under review.</p> <p>All substantial groundwater resources where there is a demand are subject to licensing.</p> <p>SA - Most of the significant groundwater resources in the State have been prescribed and have management and water licensing controls. These controls do not extend to high yielding wells in non-prescribed areas.</p> <p>Monitoring of water levels and salinity occurs in a majority of significant groundwater resources areas in both prescribed and non prescribed areas though out South Australia. This coupled with monitoring of the level of water use development is used to determine whether formal management and licensing is required.</p> <p>The Management of high yielding wells outside prescribed areas is being considered in a current review of the operations of the <i>Water Resources Act 1997</i>.</p> <p>Tas - Regular monitoring is being carried out in areas regarded as representative of the of the State's groundwater resources. These include areas in which high yielding wells are present. Information produced as the water management plans are introduced will be considered in assessing whether any wells should be licensed, and in also assessing future locations for expansion of the monitoring network.</p>
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Comment: All jurisdictions have reviewed their respective positions on the licencing of high-yielding wells. In most cases they have adopted a position on the collection of information via this route. However, the positions adopted differ from jurisdiction to jurisdiction. In some States, they have fully embraced the task. Other States have allowed some discretionary power in when this provision will be enforced. No explanation of when the discretion might be applied is available. The issue of whether the metering of usage is part of this task is also problematical. Two jurisdictions address metering explicitly, the others don't. The task is very difficult to measure, and does not explicitly define a series of actions – it would benefit from some reinterpretation.

Recommendation 9: The full cost of groundwater management should be identified by the States. The cost of direct management activities should be recovered from users and within the context of the overall water cycle, appropriate apportionment of indirect costs be given consideration. Outside urban water supplies, the remaining subsidies should be transparent where full cost recovery is not achievable. The necessary charges should be implemented progressively by 2001, and particular attention should be given to timely resolution where, and as trading in groundwater is likely to be demanded by the market. Public communication on these matters will be important.

With reference to Recommendation 3, States should give consideration to the consequences of differential pricing between surface and groundwater. States should examine the means for meeting the indirect costs of groundwater management, including investigations which are not appropriately apportioned to users; options may include a direct but transparent subsidy. Recovery of management costs from domestic and stock well owners is to be considered by the States as part of their overall cost recovery strategy.

Task	Due Date	Responsibility
20. States to identify the full cost of groundwater management, including and identifying both the cost of direct management activities and indirect costs such as policy, planning, monitoring and assessment. Subcommittee on Water Resources to provide direction based on cost apportioning studies being done by other bodies.	Mar 2000	States Subcommittee on Water Resources

Achievement	Jurisdictional response
Achieved	<p>NSW – see task 9</p> <p>ACT – no change since last report – task not applicable to jurisdiction</p> <p>NT – Direction on cost apportioning studies awaited, action by all jurisdictions should be to consistent reporting framework in order to have any value</p> <p>Qld - the Sub Committee on Water Resources has not provided Direction on cost apportioning.</p> <p>In Queensland costs of groundwater management in supplemented systems are identified. Groundwater management costs are a subset of water management costs in general and are being considered in the context of a review of water licence fees and charges, including apportionment of costs between users and government.</p> <p>Vic – Groundwater fees and charges in Victoria are set to recover operational costs. These fees are reviewed annually. Typically an application fee for a bore construction licence</p>

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	<p>now costs approximately \$500. Annual charges for groundwater extraction licences consist of a two-part tariff consisting of a service fee varying from \$60 to \$200 and an allocation volumetric charge of \$1.40/ML. At these rates it is believed, with more qualifications discussed below, that Victoria is at about a 90% cost recovery of direct management activities. The direct management costs do not include some cross subsidies where salinity management plans exist. Government is also meeting the capital costs of metering 50% of commercial bores in areas where allocations exceed initial estimates of the sustainable yield. Government also meet the cost of groundwater level monitoring as part of its water resource assessment responsibilities. Further review of tariffs is underway to implement full cost recovery for ongoing management activities. Recommendations on charging for domestic and stock bores is contained in several GMPs.</p> <p>WA - The Water and Rivers has developed a framework and strategy for apportioning the costs of water resource management between all users including government as the <i>state good beneficiary</i>. Costs for water resource management are divided into three categories: direct, indirect and administration. A recent Machinery of Government Review has proposed an independent advisory council on water pricing. Implementation is dependant upon WA State Government decisions.</p> <p>SA – no change since last report</p> <p>Tas – The full cost of groundwater management has not yet been identified</p>
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Comment: The direction from the Sub-Committee on Water Resources did not eventuate. NGC will need to clarify where it will seek direction on this issue. Some jurisdiction shave progressed in the meantime, but others appear to be waiting on direction. Task not met.

Task	Due Date	Responsibility
21. States to determine a strategy for apportioning all costs between users and government authorities in accordance with the outcomes of the Tripartite Meeting on implement of the requirements of the COAG Water Reform Framework, 14 January 1999.	Mar 2000	States

Achievement	Jurisdictional response
Achieved	<p>NSW – no change since last report</p> <p>ACT – no change since last report – task implemented</p> <p>NT – see task 20</p>

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	<p>Vic – see task 20</p> <p>WA – see task 20</p> <p>SA – no change since last report</p> <p>Tas – see task 20</p>
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Comment: It is unclear from jurisdictional responses as to how closely the various approaches follow the outcomes of the Tripartite meeting. No jurisdiction has detailed its strategic approach to the task. Completion of the task is difficult to gauge.

Task	Due Date	Responsibility
22. Implementation of strategy by States, ensuring cross subsidies between surface water and groundwater are transparent.	Mar 2000	States

Achievement	Jurisdictional response
Achieved	<p>NSW – no change since last report</p> <p>ACT – no change since last report – task implemented</p> <p>NT – see task 20</p> <p>Vic – see task 20</p> <p>WA – see task 20</p> <p>SA – no change since last report – task implemented as no subsidies exist</p> <p>Qld - For supplemented systems cross subsidies are transparent. For non-supplemented systems see response to task 20.</p> <p>Tas – see task 20</p>

Comment: No strategies have been defined by jurisdictions

Task	Due Date	Responsibility
23. States to report progress to NGC	Annual	States NGC

Comment: No reporting has occurred. NGC will be required to re-confirm that the reports are required and establish jurisdictional support, and develop a suitable reporting framework.

Recommendation 10: The Federal Government should publicly identify its full costs of involvement in groundwater activities to assist in the negotiation of priorities for Commonwealth funding of groundwater management activities.

Task	Due Date	Responsibility
24. Department of Agriculture, Fisheries and Forestry to identify Commonwealth Government expenditure on groundwater and report to NGC.	Jun 1999	AFFA NGC

Achievement	Jurisdictional response
Not achieved	AFFA – no progress

Comment: This task has not been met

Task	Due Date	Responsibility
25. NGC to develop an appropriate action list to assist in the negotiation of priorities for commonwealth funding of groundwater management activities.	Mar 2000	NGC

Achievement	Jurisdictional response
Not achieved	This task has not commenced and is dependent on a response to task 25, which has not been achieved to date.

Comment: This task has not been met due to the non-completion of task 24

Recommendation 11: State and Federal agencies should develop and implement organisational arrangements and processes which specifically eliminate conflict of interest situations in groundwater assessment and management.

Task	Due Date	Responsibility
26. States and Commonwealth to review and report on organisational arrangements and processes to eliminate conflict of interest in the assessment and management of groundwater.	Sep 1999	States Commonwealth

Achievement	Jurisdictional response
	<p>NSW – no change since last report – task completed</p> <p>ACT – no change since last report – no conflict of interest under existing regimes</p> <p>NT – no change since last report – not applicable to NT</p> <p>Qld - SunWater has been established as the operator (service provider) of schemes, including the supplemented groundwater areas. Two water supply boards operate artificial recharge schemes and the groundwater systems in their respective board areas. Water management and planning/policy functions (Regulatory) have been separated into separate parts of the Department from service delivery areas. The water planning function is responsible for development of water resource plans. Water resource plans are developed using a cooperative arrangement between the Department’s planning function (assessment), technical reference panels for environmental water provision and community reference panels. Operation (Service Delivery) including monitoring of the resource response of the groundwater resources occurs in regional areas with separate lines of responsibility to the Office of the Director-General (the Regulator).</p> <p>WA – no change since last report – task fully implemented</p> <p>SA – no change since last report – Protection of groundwater quality resides with the Environment Protection Authority</p> <p>Vic – no change since last report – task fully implemented</p> <p>Tas – no significant conflict of interest exists</p>

Comment: There has been little change during the current reporting period, perhaps indicating that most jurisdictions feel they have made the necessary changes to satisfy the requirement.

Recommendation 12: SCARM should assess the opportunities for increasing public awareness of the value of groundwater, its vulnerability to over use and damage through other activities and the need for groundwater management as key issues and encourage the States to develop appropriate awareness programs.

Task	Due Date	Responsibility
27. NGC to collect and collated educational material on groundwater on a national basis.	Oct 1998	NGC

Comment: Task has been completed

Task	Due Date	Responsibility
28. NGC to prepare a paper specifying a plan and strategies to further public awareness building on existing programs.	Jun 1999	NGC

Achievement	Jurisdictional response
Achieved	NGC has prepared a draft paper for consideration by members. The strategy proposed is a multi-pronged approach designed to reach a variety of audiences. The paper will be completed in June 2000 and forwarded to SCARM for consideration.

Comment: Task has been progressed, but yet to be completed.

Appendix B: Groundwater Management Plan update

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Status of Water Management Plans for Priority Groundwater Systems, NSW (as @ 22 August 2001)

Groundwater System	Existing Management Plan	Replacement Water Sharing Plan (WSP)	Current Status of WSP Plan	Target Completion
Lower Namoi	Yes	Yes	Early Draft	Dec 2001
Upper Namoi	Yes	Yes	Early Draft	Dec 2001
Lower Gwydir	Yes	Yes	Early Draft	Dec 2001
GAB	No	Yes	Advanced Draft	Dec 2001
Tomago-Tomaree	Yes	Yes	Advanced Draft	Dec 2001
Lower Murray	No	No	Just Started	Dec 2001
Lower Murrumbidgee	No (draft only)	Yes	Advanced draft	Dec 2001
Mangrove Mountain	No	No	Advanced Draft	Dec 2001
Lower Macquarie	Yes	Yes	Early Draft	Dec 2001
Lower Lachlan	Yes	Yes	Early Draft	Dec 2001
Stuarts Point	No	No	Moderate Draft	Dec 2001
Alstonville	No	No	Moderate Draft	Dec 2001

Note: Twelve (12) Water Sharing Plans (WSP) will be produced this year (2001). The remaining systems will have plans completed in the following years.

GROUNDWATER ALLOCATION PLANS & MANAGEMENT REPORTS COMPLETED (WA)

Goldfields Regional (1994) – **UNDER REVIEW 2000/01**
 South West Coastal Groundwater Management Review (1989)
 Broome Subregional (1994)
 Derby Local (1992) – **REVIEW 2001/02**
 Exmouth Local (1999) – **REVIEW 2002/03**
 Jurien Subregional (1995) – **UNDER REVIEW 2000/01**
 Arrowsmith Subregional (1995) – **UNDER REVIEW 2000/01**
 Gingin Subregional (1993) – **UNDER REVIEW 2000/01**
 Gngangara Groundwater Resources, Env. Review and Management Program (1986/1992)
 Swan Subregional (1997) – **UNDER REVIEW 2001/02**
 Perth Northwest Corridor Groundwater Management Plan (1992)
 Wanneroo Local (1993) – **UNDER REVIEW 2001/02**
 Rottnest Groundwater Management Review (1987)
 Bolgart Groundwater Management Review (1990)
 Cockburn Subregional (1993) – **UNDER REVIEW 2000/01**
 Rockingham/Stake Hill Subregional (1988) – **UNDER REVIEW 2000/01**
 Jandakot Groundwater Review (1991)
 Busselton-Capel Subregional (1995) – **UNDER REVIEW 2001/02**
 Bunbury Subregional (1994) – **REVIEW 2002/03**
 Collie Water Resource Management Strategy (1988) – **REVIEW 2002/03**
 Murray Subregional (1997) – **UNDER REVIEW 2000/01**
 Albany Local (1991) – **UNDER REVIEW 2000/01**
 Esperance Local Draft (1997) – **UNDER REVIEW 2000/01**

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Bremer Bay Groundwater Protection (1995) – REVIEW 2001/02
La Grange Subregional – IN PROGRESS (2002/03) Dependant on WAI progress
Pilbara Regional – IN PROGRESS (2001/02)
Kimberley Regional – IN PROGRESS (2002/03)
Carnarvon Local – IN PROGRESS (2001/02)
Gascoyne Junction Interim Local – IN PROGRESS (01/02)
Marbellup Interim Local – IN PROGRESS (01/02)
Kemerton Local – IN PROGRESS (01/02)
Cape to Cape (Vasse) Subregion – IN PROGRESS (01/02)
Bremer Bay local – IN PROGRESS (01/02)

Groundwater Management Plans - Victoria

<i>Groundwater Supply Protection Areas</i>	<i>Declared</i>	<i>Consultative Committee</i>	<i>Management Plan (Target)</i>	<i>Current Status</i>	<i>Revised Targets</i>
Completed					
Kooweerup Dalmore	Long established	NA	In place	Completed	NA
Shepparton Irrigation Area	September 1985	NA	In place	Completed	NA
Underway					
Denison	November 1998	Established	December 2001	Initial Draft plan	July 2001
Campaspe Deep Lead	December 1998	Established	December 2001	Draft plan released for public comment	December 2001
Katunga	December 1998	Established	December 2001	Draft plan to be released for public comment by mid Feb	December 2001
Spring Hill	December 1998	Established	December 2001	Draft plan released for public comment	May 2001
Murrayville	December 1998	Established	December 2001	Draft plan released for public comment	April 2001
Neuarpur	February 1999	Established	December 2001	Draft plan submitted for approval	April 2001
Yangery	February 1999	Established	December 2001	Draft plan released for public comment	April 2001
Nullawarre	February 1999	Established	December 2001	Draft plan released for public comment	April 2001
Sale	April 1999	Established	December 2001	Initial Draft plan	July 2001
Wy Yung	May 1999	Established	December 2001	Draft plan released for public comment	April 2001
Deutgam	January 2000	To be established	December 2002	Consultative Committee submitted for approval	December 2002
Warrion	August 2000	Established	December 2002	Initial meetings held	December 2002
Telopea Downs	January 2001	To be established	December 2002	Consultative Committee to be established by April 2001	