Murray-Darling Basin
Dry Inflow Contingency Planning

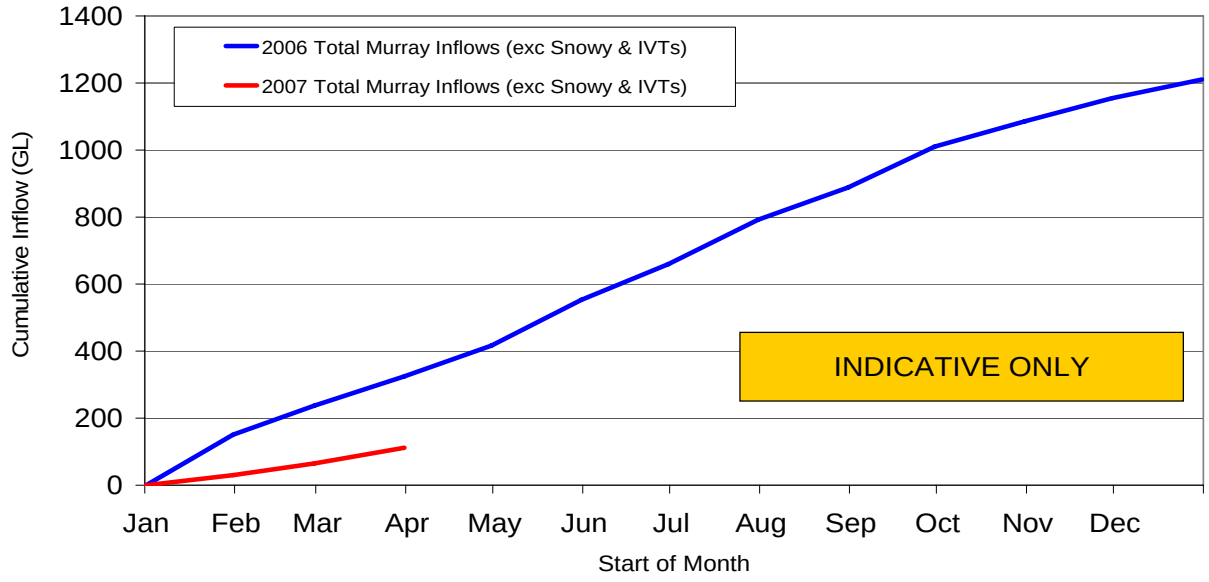
Overview Report to First Ministers

April 2007

Overview of Report

Inflows in the Murray-Darling Basin have continued to set new record lows in recent months. Whilst there has been near average rainfall in February and March 2007 and Bureau of Meteorology advises that the El Nino event is finished, catchments remain extremely dry. Dry catchments have led to inflows in February and March 2007 being the lowest ever recorded. (Figure 1)

Figure 1: River Murray System Inflows excluding Snowy (approx.) and excluding inter valley transfers (Calendar year; as at 11 April 2007)



Source MDBC

The situation is sufficiently critical that State water sharing under the Murray-Darling Basin Agreement should be amended as a matter of urgency. It is proposed that the quantities of water currently in storage and estimated to be available in 2007-08 based on the minimum inflow scenario, be first allocated for critical domestic water consumption needs, currently estimated for 2007-08 to be 141 GL for South Australia (requiring 487 GL as a cross border flow, subject to salinity issues that may emerge), 75 GL for New South Wales and 53 GL for Victoria (Figure 2). Under the worst case scenario used in the analysis for this report, use is expected to be around 300 GL. This compares to a total permitted use under the cap for the southern Murray-Darling Basin of around 4300 GL.

Governments can move to announce their intention in this regard by an exchange of letters. The proposed exchange of letters between First Ministers will include a commitment on the part of the State Contracting Governments to take such complementary action under State law as may be necessary to implement the proposed limitations on allocations and prohibitions on uses

To enable critical domestic demand to be met effectively, the current water sharing provisions of the Murray-Darling Basin Agreement must be temporarily suspended.

Figure 2: Murray system hydrology update for Scenario A: inflows in 2007-08 are the same as 2006-07.

	April 2007 data Lower Bound measures	Comments
	(GL)	
Total Murray Reserves plus inflow 2007/08	**1310**	
Losses upstream of South Australia Border	**-750**	Confirmed by MDBC
Supply Restricted Vic Murray urban and D&S (27 GL &26 GL)	**-53**	
Supply Restricted NSW Murray urban and D&S (35GL & 40GL)	**-75**	
	=432	
Losses SA Border to Wellington	**363**	Lower water levels downstream of Lock 1 will dry out shallow wetlands reducing evaporation .
SA Restricted Adelaide and country town urban and D&S demands	**+201**	60GL will be pumped in advance in 2006-07 leaving 141 GL to be supplied in 2007-08 .
Required Minimum Flow to SA (prior to contingency measures)	**=564** (req if SA losses high)	Estimated requirement. Actual South Australia Flow would comprise demands plus actual losses South Australia border to Wellington. Refer also note 3.
Shortfall with no interventions	**-132**	Positive indicates net available for other purposes (Irrigation, Critical Environmental etc)
Proposed Measures to increase water availability		
Reduced Minimum flow (10 - 100)	**10**	
Early pumping to Adelaide (2006/07 only)	**+60**	50 GL advance pumping was included in previous contingency planning but was not deducted from requirement in 07/08. Pumping will continue for as long as necessary in 07/08.
Disconnect selected wetlands	**+75**	Upper estimate = 30GL SA and 45GL upstream
Store late 2006/07 inflow improvement	Some	Included in end of 06/07 reserve. NSW has advised that allocations withdrawn in 06/07 will be re-instated in late 06/07 if feasible, however most is expected to be carried over due to limited opportunities remaining to utilise re-instated volumes.
Total Volume of Offset Measures	**145**	
Revised Minimum Flow to SA	**487**	**Includes reduced losses & critical requirement in SA as a result of offset measures in SA, along with 13 GL unallocated which flows to SA.**
Net available for other purposes	**0**	**<- Volume Range expected to be available for (Irrigation, Critical Environmental etc)**

Source MDBC

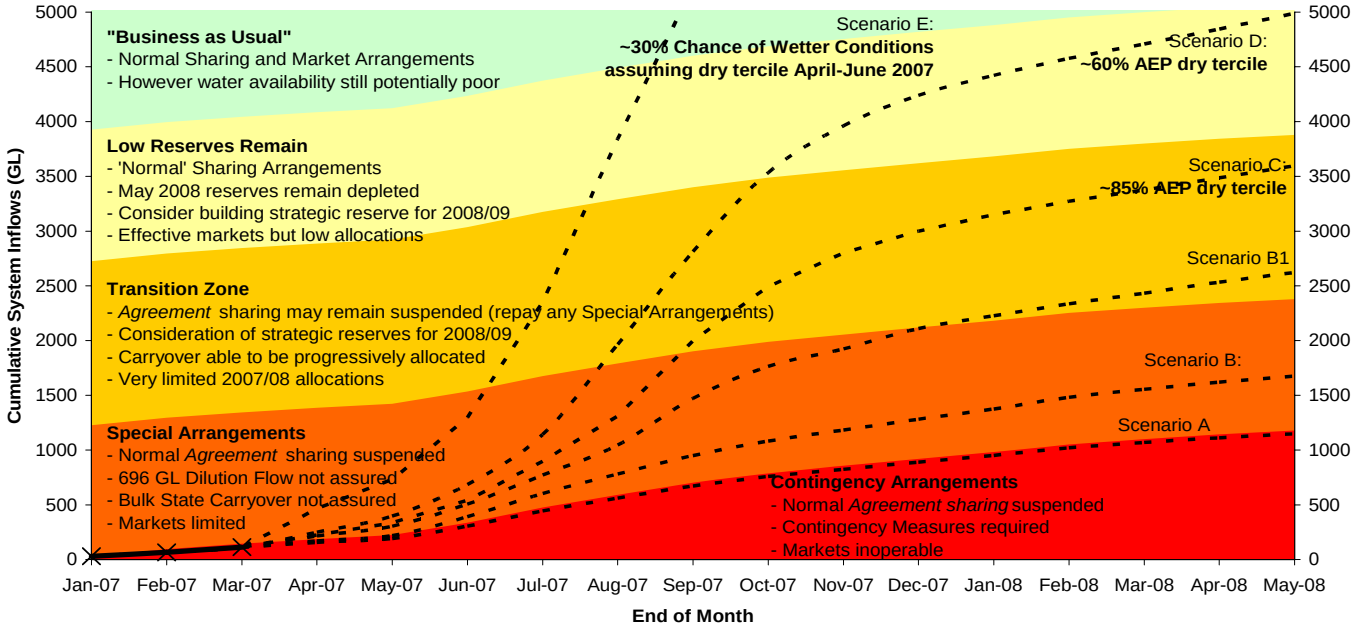
Unless there are very substantial early, inflows there will be insufficient water available to allow any allocation at the commencement of the 2007-08 water year for irrigation, the environment or any purpose other than critical domestic supplies[1]. Restricted water availability could have a significant impact on industry, particularly the horticulture and dairy industries.

Town-by-town contingency planning is now largely complete. State resources will be available to put these plans into place should the need arise. Indeed, many towns have put in place water restrictions, sought alternative water sources (e.g. bores) or are carting water for domestic use.

Owing to the critical water situation (Figure 3), it is recommended that, unless there are significant inflows to the storages, all outside water use for domestic purposes dependent on southern Murray-Darling Basin supplies should be prohibited from 1 July 2007. Industrial water users should be required to adopt stringent water saving measures and major users should be required to develop water efficiency plans incorporating industry best practice water efficiency targets from 1 July 2007.

[1] Please note water for stock is dealt with in the Frequently Asked Questions section on page 16.

Figure 3: River Murray System Contingency Decision Paths (subject to review and change as conditions develop)



Source MDBC

Notes for Figures

Scenario A: Inflows in 2007-08 are the same as 2006-07.

Scenario B: Inflows in 2007-08 are representative of the previously recorded historical minimum (prior to 2006-07).

Scenario B1, C, D and E: inflows received are less than 95%, 90%, 75% and 50% respectively of the years in the historical record.

These probabilities are the likelihood of these scenarios being exceeded based on the entire historic record. The probabilities for Scenarios C, D, and E have been refined to 85%, 60% and 30% respectively, using the statistics from the driest one third of the historic record ("dry tercile") which is likely to be more relevant to the current outlook.

AEP (Annual exceedance probability) is a measure of the rarity of an inflow sequence. AEP is defined as the probability that a given inflow accumulated over a given duration will be exceeded in any one year.

Dilution flows to South Australia is a component of South Australia's entitlement flow, as defined in the Murray-Darling Basin Agreement, 1992. Unless the Murray-Darling Basin Commission determines otherwise, it is set at 58 GL per month to allow for dilution and losses in the lower Murray and is supplied equally by NSW and Victoria

Losses to South Australian border includes water lost through evaporation and seepage.

IVTs are inter valley transfers.

Reduced minimum flow targets - Historically the river is operated during low flow periods to achieve agreed minimum flows at nominated locations. With extreme dry conditions being experienced these minimum flow targets are being reduced to conserve water in upstream storages.

As agreed by First Ministers, a number of measures have been progressively implemented over recent months. This includes the commencement of additional pumping into Mount Lofty storages from the River Murray to ensure water supply for Adelaide, the disconnection of certain wetlands, lowering the target end of season reserve in Lake Victoria and implementing reduced minimum flow targets. Further wetlands will be disconnected in 2007-08. A group of wetlands in South Australia and NSW has been identified as offering relatively high yields in evaporative savings, with manageable costs and impacts. It is recommended that these wetlands undergo further on-ground assessment including under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) before commencement of construction of works to disconnect them. State governments and the Murray-Darling Basin Commission are identifying triggers to guide the management of the closure and reopening of wetlands.

Usually, substantial inflows to the major storages in the southern Murray-Darling Basin do not occur until late in winter and into spring. Until that time, governments will not know which inflow scenario is likely to eventuate. Any action to allocate water through normal processes before the inflow situation becomes apparent could compromise the ability to provide water supplies for critical uses in 2007-08 if dry conditions continue through 2007.

A strategic reserve is being progressed as part of contingency planning to ensure critical urban water supplies in the event that a dry scenario eventuates in 2007-08. Work between the South Australian Government and the Commonwealth Government has commenced to progress this issue.

Measures relating to the construction of a temporary weir near Wellington are also being progressed for implementation should they be necessary later in 2007. South Australia has identified that urban water supply pump stations downstream of Lock 1 can be lowered to extend the time that pumping can continue. Work to achieve this is underway. This has delayed the need for a decision on the construction of a temporary weir near Wellington. The South Australian Government has announced that it will review the need for a weir in June 2007. A site for a temporary weir has been located across the neck of Lake Alexandrina, adjacent to Pomanda Island. The South Australian Government has finalised the initial concept design. The Commonwealth Minister for the Environment and Water Resources, the Hon Malcolm Turnbull MP, will consider EPBC Act exemption for the construction of the temporary weir once a decision on whether or not to proceed has been made by South Australia.

First Ministers agreed in November 2006 that no immediate action to intervene in Snowy Hydro Ltd commercial arrangements should take place in 2006-07. Consideration is being given to the role of the Snowy Hydro in 2007-08 and further advice will be provided in later reports.

A communication strategy to inform stakeholders is being developed. Key messages and frequently asked questions and documents have been developed (Appendix A1 and A2).

Recommendations

The Senior Officials' Group recommends that First Ministers:

1. **AGREE** the water supply situation in the Murray-Darling Basin remains critical and contingency planning should continue;

2. **AGREE** that the quantities of water currently in storage and estimated to be available in 2007-08 based on the minimum inflow scenario (Scenario A), be first allocated for critical human water consumption needs, estimated for 2007-08 to be 141 GL for South Australia (requiring 487 GL as a cross border flow, subject to salinity issues that may emerge), 75 GL for New South Wales and 53 GL for Victoria;

3. **AGREE** that the quantities of water required for critical human water consumption needs, taking account of the need to maintain potable water quality, should be kept under ongoing review and reported back to First Ministers in mid-May;

4. **AGREE,** to enable the allocations at recommendation (2) to be made:

    a. not to undertake measures that would further reduce reserves or inflows;
    b. that the provisions of the Murray-Darling Basin Agreement that require minimum monthly quantities of River Murray water for dilution and losses, should not be applied by the Murray-Darling Basin Commission after 31 May 2007, until further notice; and
    c. to introduce and seek to pass appropriate legislation to amend the Murray-Darling Basin Agreement to this effect by 1 July 2007;
    d. that each government will indemnify the President, Deputy President, Commissioners, Deputy Commissioners and officers of the Commission for any losses or costs incurred by all or any of them in the bona fide execution of the direction set out in this recommendation, in the manner set out in clause 38 of the Agreement

5. **NOTE** that unless there are very substantial inflows prior to mid May 2007, there will be insufficient water available (including of high security water and water carried over from 2006-07) to allow any allocation for irrigation, the environment or any purpose other than meeting critical urban supplies at the normal commencement of the 2007-08 irrigation season;

6. **AGREE** to coordinate efforts to ensure farmers have access to information about water supplies and their implications for allocation decisions at critical decision making times for business planning;

7. **AGREE** that officials will keep allocation decisions under review and provide timely advice to Ministers to ensure that the impacts on the irrigation sector are minimised given the likelihood that allocations in 2007-08 will not be sufficient to avoid losses of income and assets;

8. **AGREE** that options for allocation between States of quantities of water over and above the amounts required for critical human water consumption needs be developed as a matter of priority and recommended to First Ministers in mid May;

9. **AGREE** that, unless there are significant inflows to the storages, all outside water use for domestic purposes and dependent on southern Murray-Darling Basin supplies should be prohibited from 1 July 2007, and that industrial water users

should be required to adopt stringent water saving measures, and that major users should be required to develop water efficiency plans incorporating industry best practice water efficiency targets from 1 July 2007;

10. **AGREE** South Australia should continue with preparations for a temporary weir near Wellington, and supply all necessary information as soon as possible to the Commonwealth to enable decisions to be made under the EPBC Act;

11. **AGREE** further on-site assessment be conducted of each of the eight wetlands identified as having high evaporative savings potential before the commencement of construction;

12. **AGREE** a comprehensive communications strategy should be agreed as soon as possible; and

13. **AGREE** a joint statement be released to inform stakeholders of current circumstances, key actions and further work.

A1: Key messages

1. Calendar Year 2006 was very dry over most of south-eastern Australia.
2. Over the high yielding alpine catchments the twelve months ending February 2007 is the driest on record.
3. During this water year (since June 2006) inflows to the River Murray have been less than 60% of previous minimum.
4. At end March 2007, Murray storages are at record low level (post-Dartmouth construction) and are expected to continue to fall into April.
5. Notwithstanding near average rainfall in February and March, Murray inflows were at new record low for both February and March, due to extremely dry catchments.
6. The probability of repeating record low inflows of 2006 in 2007 year is low.
7. However, until such time as there is sufficient rain and inflow to be certain that the potential crisis has passed, dry inflow contingency plans should be further developed and implemented.
8. Progress to date includes:
    - end of May minimum target level at Lake Victoria has been set at 150 GL;
    - selected wetlands disconnected;
    - investigation by South Australia of a range of measures including a possible temporary weir in the lower Murray and modifications of major pumping stations to allow pumping to continue even if lower lakes fall well below historic minimum levels;
    - as end of irrigation season approaches, minimum flows in River Murray are being reduced to less than normal minimums, including gradual lowering of weir pools into early winter at Yarrawonga, Stevens Weir and Lock 8 and possibly other weirs; and
    - pumping to the Mount Lofty storages to build reserves for Adelaide.
9. Further measures to be progressively implemented in coming months include:
    - further wetlands will be disconnected;
10. Further measures to ensure critical urban and stock and domestic requirements are met will be implemented in spring or early summer 2007, if winter rains fail.
11. There is high level of confidence that even under driest scenarios, critical urban and stock and domestic supplies can be met, including Adelaide, in 2007-08.
12. However, under the driest scenarios:
    - there will be no irrigation allocations.
    - there would be no water for critical environmental needs; and
    - economic and social impacts would be substantial.
13. The extent of irrigation allocations next year depends entirely on how wet the coming year is, as reserves have been almost fully consumed this year.
14. Opening allocations for 2007-08 year are likely to be zero or very low.
15. Modelling indicates only about a 60% chance that sufficient allocations to support a robust water trade market in 2007-08 will be available before September 2007.
16. It is likely that it will take a number of years of above average rainfall before storages return to long term average levels.
17. Murray-Darling Basin Commission and States will continue putting out regular advice on water availability.
18. A lot of discussion has been going on at various levels including with individual communities. Partner governments are committed to continuing consultations.

A2: Frequently asked questions

1. Outlook

1. Will the situation get worse in 2007?
A repeat of last year's rainfall patterns in 2007 would see inflows lower than the record low inflows received in 2006. In addition reserves are nearly all used for critical domestic requirements so water availability would be extremely low.

The probability of this happening is very low and it is much more likely that there would be sufficient inflow to meet critical water requirements for restricted domestic use. However, until such time as there is sufficient rain, it is prudent to continue to develop and progressively implement contingency plans.

2. Will we have enough drinking water?
Contingency planning is being progressively implemented to ensure that there is sufficient water available for domestic use in all communities that rely on water from regulated rivers. For some smaller towns, where access is interrupted and where water quality issues arise, special measures, possibly including trucking potable water, may be required.

3. How much rain do we need to break drought?
If by “breaking the drought” we mean that there has been sufficient rain to provide run-off sufficient for storages to return to long term average levels then this will require well above average rainfalls most likely for multiple years.

4. Will the breakdown of El Nino break the drought?
Seven out of ten *El Nino* events end in floods. However, the breakdown of some *El Ninos* is more subdued. A recent example is the breakdown of the 2002-03 *El Nino* which did not lead to above-average inflows.

5. How bad (serious) is the drought?
This drought, which in many parts of the basin dates back to 1997, is at least as serious as the major prolonged droughts 1895-1903 and 1938-1945. The year of 2006 has been as dry if not drier than the previous extreme drought years of 1902, 1914, 1938, 1940, 1944, 1967, 1982 and 2002 across much of the Basin. In the Murray Valley inflows have been less than 60% of the previous minimum.

6. Is the river going to run dry?
What happens over the next year depends on how much rain falls and where. In the extreme dry case as measures to manage the situation are implemented it is possible that the Murray could cease to flow downstream of Yarrawonga over summer 2007-08. Even then there would still be water in all the weir pools and in the deeper holes at major bends.

7. Is this a result of climate change or just drought?
Australia has a variable climate and it is difficult to separate normal climate variability events from climate change trends. There have been similar dry periods in the past, for example the Federation drought which began in 1895 and ended in 1903. The current dry period could be consistent with predictions of climate change.

2. Contingency measures to secure critical demands

8. Do we have any plans in place?
Operational planning is a normal and continuous process for river operations. Plans are adjusted for actual conditions being experienced. Operational plans for 2007 reflect that we are experiencing the lowest inflows since records began in 1892.

9. Is it worth building desalination plants?
Desalination is a longer term option. A desalination plant requires long lead times for planning and construction before it is operational. However, desalination could play a role in securing future water supplies in dry conditions. While desalination uses a lot of energy, it may be cost-effective for drinking water where good quality water is scarce or costly. It is unlikely to be appropriate for irrigation uses, due to cost.

10. Will water trading solve the problem?
Water trading cannot create additional water. However, water trading can allow the use of water to be reallocated both within sectors (eg, agriculture) and between sectors (eg, purchase of town water from irrigators). A recent Productivity Commission study showed that allowing water trade halved the cost to the agricultural sector of reduced water allocation.

11. Are more dams the answer?
Low rainfall means that there would not have been the inflow to fill more dams. In general dams can have a substantial impact on other water users, including the environment. The National Water Initiative requires that these impacts be taken into account, along with the economic costs and benefits of a proposed dam and whether the full cost pricing of a dam's construction and operation can be supported by users.

12. Which towns are in trouble and why?
The towns that are most drought affected and which are experiencing severe water restrictions are those that have relatively small catchments in lower rainfall areas, such as Goulburn in NSW and Bendigo in Victoria. Some country towns and communities in South Australia downstream of Lock 1 and around the Lower Lakes are also experiencing water supply difficulties. Other towns depending on the River Murray for water supplies are not currently experiencing these difficulties. However, if there were a repeat of the conditions in 2006 during 2007, towns relying on the River Murray would experience similar restrictions to Bendigo and Goulburn.

13. How will they get water?
Contingency measures to source alternative supplies are generally available for towns supplied from channels. Mostly, this would involve drilling bores to access suitable groundwater reserves. For Adelaide, several contingency measures are being progressively implemented, including pumping extra water to the Adelaide Hills reservoirs, disconnecting suitable wetlands along the length of the Murray to save water for later, lowering Adelaide pump station offtakes and fast-tracking the completion of new water filtration plants. The South Australian Government has also announced that if necessary, it will construct a temporary weir near Wellington to establish a pool level in the lower reach of the river to enable water to be pumped for urban supplies.

14. Why can't we pipe water in from the North?
Water is bulky, heavy, and expensive to transport. In general, piping water is not a cost effective solution. A Marsden Jacob report indicated that the cost of long distance pipelines from the Ord to Perth would cost about $7.00 per kilolitre.

15. Why aren't we putting more money into cloud seeding?
Snowy Hydro is undertaking a cloud seeding program and results are being watched with keen interest. While cloud seeding might enhance long term yields it is not such an effective means of drought relief as it works best when there are lots of suitable clouds to seed.

16. Why aren't we buying out cotton and rice farms?
Rice and cotton are annual crops, allowing irrigators to react to available water supplies, planting more in wetter years, and less (or none) in drier years. In 2006-07, the rice crop in NSW is only about 13% of average, and much of this has been grown using groundwater or unused water, carried over from the previous year. The plant and machinery required for growing rice and cotton is similar to that required for many non-irrigated crops allowing farmers to respond to changing climatic sequences.

3. Environmental impact of drought and contingency plans

17. Will the drought make the Coorong worse?
Yes. The drought will result in less freshwater flows entering the Coorong, which will further degrade its condition. This comes on the back of a decline in health observed in recent decades as a result of factors like reduced freshwater inflows because of river regulation and water abstraction. Initiatives such as The Living Murray have been designed to arrest this decline.

18. Will there be fish kills in the Lakes and Coorong?
Native fish living in the Coorong are mostly estuarine or marine species. Provided the Murray Mouth remains open and sea water can enter the Coorong, the salinity levels should remain within the range tolerable by these fish and thus fish deaths are unlikely.

Native fish living in the Lakes include those that are adapted to freshwater and those that can tolerate brackish and estuarine conditions. If drought conditions persist, salinity levels in the Lower Lakes rise and fish are not able to find low salinity refuges, deaths of some freshwater native fish are possible.

19. Will we get more algae blooms?
The risks of algae blooms are generally higher due to low flows. However, most towns have sufficient treatment facilities and, where possible, flows will be manipulated to break up blooms.

20. What will happen to salinity?
During drought salinity levels in the lower Murray have been relatively low as there have been little or no inflows from higher salinity tributaries and there have been no return flows and lower groundwater leakage from saline floodplains.

As flows reduce river salinity levels will increase. In all but the most extreme circumstances river salinity levels, at least upstream of Lock 1, should be reasonable.

21. Won't disconnecting wetlands ruin them?
Wetlands in the River Murray and the native plants and animals that live in them are adapted to periodic wetting and drying. Re-introducing wetting and drying cycles can have positive environmental outcomes.

However, after long periods of flooding some wetlands may become acidified or salinised if they are then disconnected and dried out. This is the case for many parts of the Murray following regulation of the river through construction of weirs. On the other hand, sites flooded for long periods may now have become important refuges for threatened native plants and animals.

Therefore, while disconnecting wetlands may deliver environmental benefits, environmental managers need to strike a balance between avoiding drying out those wetlands where long term damage may occur, and focussing on sites where long term benefits can be gained.

Some wetlands have an impact on threatened species that come under the Ramsar Convention. Actions in relation to these will be subject to the *Environmental Protection and Biodiversity Conservation Act 1999*.

22. Why were we wasting water on the environment?
The main purpose of environmental watering in 2006-07 was to provide small ecological refuges for riverine plants and animals that can recover at the internationally recognised wetlands once water resource availability improves.

Without the recent watering program, the condition of some areas of the Lower Murray icon sites would have continued to decline, in some cases beyond the point of recovery.

Trade-off decisions in the distribution of water between icon sites were made. Water was only provided to sites that are of high value and were most likely to survive. Large areas will continue to decline regardless.

The small volumes of environmental water used at the Icon Sites provided ecological refuges and improved ecological condition at a local scale. However, the ecological health of the Lower Murray Icon Sites, in particular, continues to decline as a result of regulation and overallocation of water, exacerbated by the current drought. Significant additional volumes of water are needed to arrest this decline. The Living Murray Initiative aims to recover an average of 500 gigalitres per year, to be acquired by 2009, to address the problem.

4. Environmental watering

23. Why haven't we returned any water to the environment (the Living Murray)?
The Living Murray target for water recovery is an average of 500GL of water by 30 June 2009.

Before water is recovered, extensive project development needs to occur, much of which is currently taking place. As originally anticipated, most water will become available in the final two years of the five year timeframe.

5. River operations

24. Does the drought threaten the structure of dams?
No. All structures are designed for all load cases that could arise as a consequence of drought operation.

25. Why do we keep dredging the Murray mouth?
Waves at the entrance of the Murray Mouth stir up sand which is carried into the Coorong and Goolwa Channels by incoming tides. River flows to the sea restrict the amount of sand entering the mouth and remove sand that has entered.
Whenever flows to the sea are low or zero there will be accumulation of sand and dredging is required to prevent blockage. Good connectivity is needed to allow exchange of fresh, oxygenated sea water into the Coorong to sustain the health of this wetland.

26. Are we going to pulse the river?
Consideration may be given, as a measure of last resort and in the event of extreme dry conditions persisting through 2007, to suspend flow in the Murray and major anabranches over summer 2007-08, as a means of reducing total system evaporation and thus conserve water for critical urban use. Such a measure would have very serious salinity impacts particularly in the Lower Murray.

27. Why is the river running so high if we are short of water?
Flows in the Murray over 2006-07 season are set to meet irrigation and industrial demands in all three states for those licensed water users who have rights to that water. In 2006-07 water diversion in the Murray will be about 70% of long term average use. Much of the water being used this year has been stored in Dartmouth exactly for the purpose it is currently meeting (i.e. a drought reserve).

28. Will a weir at Wellington solve Adelaide's problem?
Not by itself. However, in the event that extreme low flows to SA persisted long enough for Lake Alexandrina level to fall below the level at which major SA Water pumping stations can operate, then a temporary weir would help maintain a pumping pool and ensure that water can still be supplied.

29. Won't a weir at Wellington ruin the Lower Lakes and the Coorong?
No. In continuing extreme dry scenario, the lower lakes would fall to the same level, whether or not a weir is in place.

30. Why didn't we warn people earlier?
As the 2006 season progressively deteriorated, Governments and the MDBC undertook a wide range of communication activities to provide public advice on the situation as it evolved. For example:

- Weekly updates in the *River Murray Weekly Report*, which has a weekly distribution of several thousand readers;
- 8 comprehensive "Drought Update" papers;
- more than 40 MDBC E-letter news items reporting the growing seriousness, effects of and other aspects of the drought in the Basin;
- 2 editions of the MDBC "Water Resources Factsheet" and a new regular publication – the "River Murray Water Operational Update"
- countless media interviews by MDBC senior managers and senior officers of each state to ensure accurate reporting of the situation.

The rapid deterioration in water resource availability that has been experienced is unprecedented, and so the seriousness of the situation could not immediately have been predicted.

6. Water for irrigation

31. Can allocations be relied upon next year?
Until such time as there is sufficient inflow as a consequence of widespread and heavy rain there can be no guarantee on what levels of allocation will be announced for next year.

32. Do domestic restrictions really help?
Yes, as they raise awareness and understanding of the current drought and encourage people to conserve and use water more efficiently, resulting in lower water consumption.

33. Should the government buy farmers' water rights?
There is widespread recognition that our water resources have been over-allocated. The Commonwealth Government National Plan for Water Security addresses this.
Purchase of farmers' water entitlements on a willing seller/willing buyer basis is one means of addressing this over-allocation. This measure, along with others, is currently being considered on a longer-term basis by the Commonwealth and State Governments.

34. Should the irrigation industry move North?
Opportunities for more irrigation (on a total water use basis) in Australia are more likely to exist outside the Murray-Darling Basin. However, opportunities for expansion through water use efficiency remain within the Basin.

7. Water for recreation

35. Is there enough water for boating and recreation in the rivers?
Through 2006 there has been sufficient depth of water along the Murray from Hume Dam to the sea for normal boating activities. Very low levels in Lake Hume have resulted in speed restrictions on that Lake and some boat ramps have become difficult to access. Should extreme dry conditions persist through 2007 there are likely to be some local impacts that emerge.

Particularly in the upper reaches of weir pools, levels may be lower than experienced in recent years and skippers of vessels should take extra care to check conditions.

36. Is Mulwala going to have enough water for water ski races in late April?
Yes. Barring unforeseen circumstances it is expected Lake Mulwala will be within its normal operating range until about mid May.

8. Water for industry

37. Why are we still giving water to industry?
Water for industry is in most cases covered by high security allocations for towns and cities. Such water generally supports very high levels of economic output when assessed against volumes of water used. And of course, industry is not given water as such – it has to pay for the water it receives.

Industry is subject to the water restrictions that apply to towns and cities. Where industries divert water directly from the river, these are subject to the same restrictions as other diverters with the same level of water security.

9. Governance and policy

38. Why should NSW and Victoria give water to South Australia?
It is not a case of 'giving' water to South Australia. The arrangements for sharing water between the three States is fundamental to the Murray-Darling Basin Agreement . Special sharing arrangements are being considered in 2007 to ensure that all those who rely on the Murray for urban and stock and domestic water can continue to be supplied.

39. Why is it necessary temporarily to suspend the operation of a provision of the Murray Darling Basin Agreement?
The particular provision of the Agreement does not contemplate the severe drought conditions which have arisen in the southern Murray-Darling Basin. It must be suspended in order to ensure that critical human, stock and domestic uses can continue to be supplied while the drought persists.

40. Will Queenslanders make the problem worse by taking an extra 8GL of water for irrigation in the Warrego?
The action is unlikely to make a difference beyond the Warrego itself.

41. Does Cubbie Station make the problem worse?
The influence of Cubbie Station is very small on the overall Basin.

42. What will be the future role of Snowy Hydro Ltd?
Water releases by Snowy Hydro Ltd are vital to securing reliable water supplies in the Murrumbidgee and Murray Valleys and is expected to continue that role in the future in line with its Water Licence. Snowy Hydro Ltd is also experiencing record low inflows and as a result transfers to the Murray and Murrumbidgee in 2007-08 will also be at record low levels if dry conditions persist.

10. Stock and domestic water supplies

43. What is meant by domestic and stock use?
The following definitions of domestic and stock apply:

- Domestic: For ordinary household purposes and includes the watering of a garden used in conjunction with a dwelling.
- Stock: The provision of drinking water for grazing stock only. (ie stock does not include water for intensive livestock production uses, use such as feedlot production.

44. Will water be available for domestic and stock use?
Where water is available, supply for domestic purposes will be subject to restrictions announced and varied from time to time by State Governments. Unless there are significant inflows to storages, all outside domestic use is likely to be prohibited by 1 July 2007. Depending on the State, drinking water for grazing stock (ie not including intensive farming stock) will be expected to apply the same level of restrictions as for towns. Domestic and stock supply to users reliant on channels or unregulated streams where high transit losses occur can not be guaranteed supply.

45. What can I do if stock water is not deliverable by the usual method, such as regulated channels?
Where conditions have made water unavailable by the usual supply sources, and no other suitable sources are available, other options such as water carting or de-stocking should be considered.