National Farmers' Federation

Submission to the

Guide to the proposed Basin Plan

Volume 1 & Volume 2 Part I

17 December 2010

National Farmers' Federation

Member Organisations

AGFORCE

Australian Dairy Farmers

ADFA

Australian Livestock Exporters' Council ALEC

ALPA

Australian Veterinary Association

CANEGROWERS

Cattle Council of Australia

Corporate Agricultural Group

Cotton Australia

Goat Industry Council of Australia Inc.

GrainCorp

NSW Farmers Association

Northern Territory Cattlemen's Assoc. N.T.C.A

RGA Ricegrowers' Association of Australia Inc.

RIDLEY

Sheepmeat Council of Australia

TFGA Agriculture's Future Your Future ↔ Our Future

The Pastoralists' Association of West Darling

Victorian Farmers Federation

WAFARMERS The Western Australian Farmers Federation

WOOLPRODUCERS AUSTRALIA

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1. Executive Summary

The National Farmers' Federation (NFF) has been a strong advocate in support of water reform in Australia. If done appropriately the development of a new Basin Plan can add to what we have already achieved – unfortunately the Guide as it stands will not deliver in this intent.

NFF believes the Government must show leadership to deliver a robust workable Basin Plan that truly delivers a balanced Plan. This requires early instruction to the MDBA on what the Government expects the final Basin Plan to look like. It will also require a fundamental change to the way in which the Basin Plan is being developed to be inclusive of the Basin's communities and particularly the States. Otherwise, the Commonwealth risks the withdrawal of State support and a Basin Plan that is unworkable.

NFF believes the Guide is so fundamentally flawed that it cannot be used as a basis for moving forward and we need a new approach. There is a better way, which ultimately will also be good for the environment.

The preferred NFF options looks to a discussion on what environmental outcomes are desired as the starting point, i.e. what environmental assets are key and what are the trade-offs? Once this has been developed, in a manner that all stakeholders can engage in a discussion about, what are the desired environmental outcomes we seek to deliver in regard to these assets? Then, what are the smart ways, leaving no stone un-turned, to deliver these outcomes? Clearly, non-flow issues cannot be dealt with via water quantity solutions. For flow related solutions, what environmental works and measures will deliver outcomes for least water, what river operations changes are required, what policy changes might require less water for the environment and a requirement to count all environmental water products?

While this submission deals with the issues under the purview of the MDBA, NFF believes this new approach must be supplemented by significant infrastructure investment, both on-farm, through irrigation systems and environmental infrastructure, as well as significant investments in R&D so farmers have the tools to adapt. Lastly, the tools we are already developing as part of water reform, such as water markets, must be transparent and used in sequence with an overall package, not one tool favoured over another.

Importantly, where any gap between the Cap and new SDLs remains, the NFF supports the Government continuing to invest (infrastructure, efficiency and purchase) to close the gap.

NFF stands ready to work constructively to progress water reform in Australia, but we will not stand by and let a flawed Guide translate into the destruction of our communities and industries, particularly when there are smart, better ways of delivering the outcome.

2. The National Farmers' Federation

The National Farmers' Federation (NFF) is the peak national body representing farmers and, more broadly, agriculture across Australia. It is one of Australia's foremost and respected lobbying and advocacy organisations.

Since its inception in 1979, the NFF has earned a formidable reputation as a leader in the identification, development and achievement of policy outcomes - championing issues affecting farmers and dedicated to the advancement of agriculture.

The NFF is dedicated to proactively generating greater understanding and better-informed awareness of farming's modern role, contribution and value to the entire community.

One of the keys to the NFF's success has been its commitment to presenting innovative and forward-looking solutions to the issues affecting agriculture, striving to meet current and emerging challenges, and advancing Australia's vital agricultural production base.

The NFF's membership comprises of all Australia's major agricultural commodities. Operating under a federated structure, individual farmers join their respective state farm organisation and/or national commodity council. These organisations collectively form the NFF.

The NFF recently implemented a re-structure of the organisation. Through an associate category, this has enabled a broader cross section of the agricultural sector to become members of the NFF, including the breadth and the length of the supply chain.

Each of the state farm organisations and commodity councils deal with state-based 'grass roots' issues or commodity specific issues, respectively, while the NFF represents the agreed imperatives of all at the national and international level.

3. Introduction

The NFF welcomes the opportunity to make a submission to the Murray-Darling Basin Authority's (the "MDBA") Guide to the Proposed Basin Plan (the "Guide").

The NFF has been a strong advocate in support of reform of water management in Australia. It was the NFF who advocated to the Council of Australian Governments (COAG) for recognition of water and biodiversity property rights. While the latter failed, COAG agreed to improve on the 1993 Water Reform Framework and introduced the National Water Initiative (NWI). The Water Act 2007 (Clth) seeks to improve the Basin's water management in a more holistic and sustainable way. If done appropriately it can deliver this. However, the Guide will not deliver in this intent.

While the MDBA is constrained in what they can deliver in the Guide, the Government must show leadership to deliver a robust workable Basin Plan that truly delivers a balanced Basin Plan. This may require early instruction to the MDBA on what the Government expects the final Basin Plan to look like. It will also require a change to the way in which the Basin Plan is being developed to be inclusive of the States. Otherwise, the Commonwealth risks the withdrawal of State support and a Basin Plan that is unworkable.

The NFF believes that the process requires adjustment to the following:

- **An identification of the environmental outcomes being sought for each key environmental asset (KEA) and key ecosystem function (KEF).** This necessarily includes a decision around tradeoffs to reach a final list of KEAs AND KEFs.

- **Identification of the non-flow outcomes for each environmental asset.** These cannot be resolved by flow and the MDBA needs to work with the States to deliver appropriate solutions.

- **Development of an environmental watering plan and environmental water requirements (EWR).** This requires:

    - An environmental works and measures program to ensure that efficient use of water for the environment as well as minimising the amount of water required to be transferred to the environment.

    - Investigation of changes to river operations that will lead to improved environmental outcomes. This may or may not result in water savings.

    - An assessment of the deliverability of environmental water to environmental assets, such as physical constraints and the unaccepted and unintended flooding of private land. This may lead to a decision not to water certain assets at certain times or to use other options to deliver environmental water.

    - An investigation of policy changes that may minimise the amount of water for the environment, e.g. tailored carry over provisions for environmental water.

    - The inclusion of all environmental water products to offset the EWR. This includes Commonwealth, State and privately owned held and planned/rules based water.

- **Determination of the Sustainable Diversion Limit**

    - Ensure that Critical Human Needs (CHN) is offset by considering alternative water sources such as desalination and storm water harvesting, efficiency measures and international trends in human consumption.

    - The SDL must be set in a way that considers the other changes that will affect entitlement reliability, e.g. the temporal and spatial changes to irrigation allocations, reduced dam airspace, reserves policies, harmony rules, spillage rules etc.

- **Development of the Basin Plan**

- **Implementation of the Basin Plan via Water Resource Plans**

    - This must be simple and workable

- **Monitoring and Compliance**

- **Review**

    - 10 yearly with any adjustments to the EWR being delivered through investment in more efficient delivery of the environment's share of water, i.e. no further change to irrigation SDLs or policy changes that further reduce the reliability of water.

The MDBA and others might believe that this is being done already via the Guide. However, some aspects are clearly not being considered. The MDBA indicates in the Guide that if Government's chose to do certain things, then the SDL might be changed. NFF is adamant that this must occur now to deliver a balanced, robust and sustainable long-term management regime for the Basin and its communities.

4. Sustainable Diversion Limits

The MDBA has decided on consulting on three Sustainable Diversion Limit (SDL) scenarios for decision – 3000 GL/annum, 3500 GL/annum and 4000 GL/annum. While the MDBA considered that the upper limit of additional water for the environment was a Sustainable Diversion Limit (SDL) of 7600 GL/annum, the MDBA believed that this would deliver unacceptable socio and economic consequences. NFF agrees and particularly for agriculture, this level of SDL would result in a 92% reduction in agricultural water take, specifically irrigated agriculture as shown below in Table 1. Therefore, requests by environmental groups and scientists to include the 7600 GL/annum scenario in the decision making process are misguided at best.

Table 1 SDL scenarios and reduction in agricultural water use

	MDBA CONSIDERING THIS RANGE DUE TO SOCIO-EC IMPACTS			SCIENTISTS & ENVIRO GROUPS
Current Diversion Limit (CDL) - surface water[1]	10942	10942	10942	10942
CDL - interception[2]	2735	2735	2735	2735
Total CDL	13677	13677	13677	13677
Proposed SDL[3]	3000	3500	4000	7600[4]
SDL	10677	10177	9677	6077
Less interception[5]	-2735	-2735	-2735	-2735
Less estimated regulated non-agricultural use[6]	-2188	-2188	-2188	-2188
Less minor unregulated surface water use[7]	-272	-272	-272	-272
Residual Basin agricultural use	**5482**	**4982**	**4482**	**882**
Estimated Ag water use				
80% of surface water CDL	8754			
Plus farm dams BLR CDL[8]	591			
Plus farm dams irrigation CDL[9]	1803			
Total Estimated Ag Water Use	**11148**			
% reduction in agriculture water use	**-51%**	**-55%**	**-60%**	**-92%**

It should be noted that **Table 1** considers the Current Diversion Limit (CDL) as a given. NFF does not accept this as a statement of fact and seeks further clarification from the MDBA on the changes from the MDB Cap to modelled regulated surface water and modelled groundwater use that result in the CDL and a clear substantiation of the estimated use for unregulated water use and groundwater use that have resulted in these CDLs.

The MDBA has claimed that implementation of the SDL will result in impacts ranging from 27% to 37% at the Basin Scale, and impacts at regional levels ranging from 0% (e.g. Wimmera-Avoca and Paroo) to as high as 40-45% (depending on the scenario and capped at this amount by the MDBA). In making this assessment, the MDBA has clearly based the impact on an across the board reduction for all water use. Nevertheless, the States will not apply this methodology but will need to implement in accordance with their legislative requirements and as a result, there will be quite different impacts on different water users.

The NFF has analysed (with the exception of Queensland) the impact that the proposed SDLs might have at a water product level. Essentially, the NFF analysis allocates the SDL according to the State legislated hierarchy, i.e. riparian/basic landholder rights, town water supply, industry, recreation, high security/reliability water products, and finally general security/low reliability

[1] As per Guide, includes major unregulated water use
[2] As per Guide
[3] As per Guide
[4] As per Guide – upper limit but not a proposed SDL
[5] Taken off as unlikely to be reduced by the States
[6] The Guide states that agricultural water use is 80%, this figure is 20% of surface water use. Unlikely to be reduced by the States and legislation generally prioritises this above irrigation water use
[7] As per Table 4.13, Vol 2, Part I, p. 181 of the Guide. Subtracted, as again, States are unlikely to reduce use due to large numbers of smaller water users
[8] As per Table 4.13, Vol 2, Part I, p. 181 of the Guide.
[9] Ibid

water products. The analysis for Victoria, NSW and South Australia is located at Attachment 1 on page 18. In this analysis, NFF included more current information on water recovered than the MDBA considered in the Guide but due to lack of information could not include State based water recovery that the MDBA included.

The NFF analysis clearly shows that some there will be insufficient water to deliver against some water products such as low reliability products in a number of Victorian catchments. The MDBA indicated that South Australia's high security entitlements would be affected between 26% and 35%, whereas the NFF analysis shows this range is likely to be 34% to 47%. For Victorian high reliability water products, there was significantly more variability with a range of impacts from 12% through to 69%. For NSW, high security entitlements are largely shielded likely due to the much smaller volume of these entitlements when compared to the total pool of entitlement than Victoria and South Australia (the latter having only high security entitlements). However, like Victoria there was significant variability in the impacts to general security entitlements ranging from 11% to 89%.

The reason for the differences between the impacts predicted by the MDBA and the NFF analyses in agricultural water use is that the implementation by States requires agricultural water to be the last water allocated, i.e. prioritising water for towns, industry, environment and recreation first, and then followed by higher security entitlements then lower reliability water products. Moreover, monitoring and compliance of interception activities (e.g. basic landholder right farm dams and plantation forestry) and unregulated surface water use is challenging. This is mainly due to the large number and small amount of diversions in comparison with irrigated agriculture. In other words, the cost of such compliance will outlay the benefits of doing so.

Moreover, the MDBA claims that the three nominated scenarios can deliver the needs of the environment but with varying risk profiles. Good planning requires such a trade off, i.e. a decision that trades off preferred risk against socio economic impacts. In this case, there is a divergence of views on whether this ought to be the role of the MDBA, Government or indeed the Parliament.

Certainly, the role of the MDBA is to develop the risk profiles and the role of scientists is to provide the relevant information on the range of risks and appropriate tradeoffs. The decision maker is the Minister and ultimately the Parliament.

5. Impact of the Guide to the Proposed Basin Plan

NFF notes that the Guide suggests that entitlement reliability will be affected in essentially two ways – establishment of the SDL and through a whole range of other measures that will affect reliability, e.g. reserves policies or prioritising environmental water above irrigation water.

NFF notes that the SDL process (while there might be disagreements on the actual figures and how these were determined) is more transparent than the range of other factors that may affect entitlement reliability.

The MDBA has stated that they cannot determine the quantum of these impacts until the States have accredited water plans. This is clearly incorrect. The MDBA is using State models, which are benchmarked to the existing water resource plans and it is these models that have set the current reliability enjoyed by entitlement holders. The models should be run with the range of new proposals to determine the impact to entitlement reliability. A comparison between the existing reliability and the new reliability (determined by the Basin Plan) is not only doable but it

is required to inform stakeholders of the extent of the impact to entitlement holders – including the Commonwealth.

Moreover, this is required to differentiate the risk assignment liabilities for the Commonwealth as opposed to the States. NFF recommends that this work is done for the proposed Basin Plan.

6. Specific Guide Concerns

The NFF has undertaken a comprehensive critique of the Guide and rather than go into the detail of each of the significant number of issues within the substantive submission, it is included at Attachment 2 on page 21. NFF encourages the MDBA to consider each of the issues and address these concerns in the proposed Basin Plan when this is released in 2011.

7. The importance of local and cooperative solutions

NFF is of the view that local catchments/regions and local communities can assist in identifying and delivering real solutions to some of the challenges facing the MDBA.

NFF notes that many in these communities (including State agencies and private and public water delivery business) are very aware of:

- Environmental assets and ways in which these can be watered efficiently, i.e. maximising environmental outcomes and minimising water use;
- Works that ought to be implemented under an environmental works and measures program to assist in delivering the above;
- Improvements to river operations that will deliver outcomes without the need for additional water; and
- How private land managers might be able to assist in delivering environmental outcomes.

NFF notes some good examples, such as Murray Irrigation's program to water private wetlands using their irrigation delivery system and recently, farmers in the Lowbidgee Floodplain using their irrigation works to deliver water to assist bird-breeding events. A recent ABC news story clearly shows how farmers are practicing environmentalists:

"And what makes the Lowbidgee wetlands unique is the landholders who have become bird lovers. They have helped make this mega breeding event happen. Farmer Steve Blore and a couple of his neighbours have given up some of their water allocation and even diverted the flows through channels to deliver what the birds need to breed.

"We run water, reticulate the water through. We're able to micro manage the water here for best outcome for birds. Everybody gets a buzz out of it.

"We're showing lots of people through, you can see we've got a line-up of boats here and fuel cans on the levy banks, there's a lot of interest in it and we get a lot of enjoyment out of it.""[10]

[10] ABC News 2 December 2010, Birds from rejuvenated wetlands take flight, online: http://www.abc.net.au/news/stories/2010/12/02/3082394.htm. Accessed 9 December 2010.

Perhaps this cooperative model can be adopted by the MDBA in the development of the Basin Plan.

Moreover, three notable academics agree. In an article in the Australian on 1 November 2010, Prof. John Langford, Prof. John Briscoe and Dr Michael Porter noted that, since the release of the Guide, three things were clear:

- "*An acceptable strategy cannot be an either-or, but a solution that will improve environmental outcomes while also improving the lives of farmers*";
- "*The idea that "science will tell us the answer" is flawed, both because of the limitations of the ecological knowledge, and because balancing competing needs is a political and not a scientific question*"; and
- "*Solutions cannot be devised behind closed doors and must actively engage both the environmental and the rural communities*".[11]

NFF can only agree. The NFF has been advocating a balanced approach that delivers efficiency and effective environmental outcomes while maintaining food production and vibrant Basin communities.

Moreover, the MDBA itself acknowledges the constraints of the science, with this being listed as one of the biggest risk factors. The Basin Plan itself is not about any new science or knowledge but collates existing data much of which is of only moderate quality and even in some cases low quality, i.e. are unpublished reports. Importantly, the use of such data for the Basin Plan likely goes beyond its intended purpose.

Finally, solutions that engage both environmental groups and rural communities, and particularly the farm sector can deliver real solutions. The NFF has also worked with the National Irrigators' Council (NIC) and the Australian Conservation Foundation (ACF) to advocate for other approaches including an environmental works and measures program, looking at river operations and investigating appropriate policy changes that could be implemented without third party impacts on entitlements holders. It would appear that Governments, at least, are hearing the message.

8. A More Robust Process

NFF has been advocating to the MDBA and to the Government for a better process – one that will deliver on environmental outcomes but also minimise the social and economic impacts. A balanced robust Basin Plan is one that will provide for the environment, maintain food production and have vibrant sustainable communities.

NFF has never advocated for no change. In fact, NFF has been a strong supporter over a long time for time for water reform. Nevertheless, this water reform must deliver on the triple bottom line. Moreover, Moreover, this can be done.

[11] The Australian 2010, *Creating wealth from our water*, John Langford, John Briscoe and Michael Porter, 1 November 2010, online: http://www.theaustralian.com.au/creating-wealth-from-our-water/story-fn6nj4ny-1225945844874. Accessed 1 December 2010.

Figure 1 on page 12 shows what a better process might entail. Essentially, the MDBA could claim that the existing process meets those boxes coloured in the darker green. However, the process clearly omits those lighter green coloured boxes.

Figure 1 NFF view of a more robust Basin Plan Process

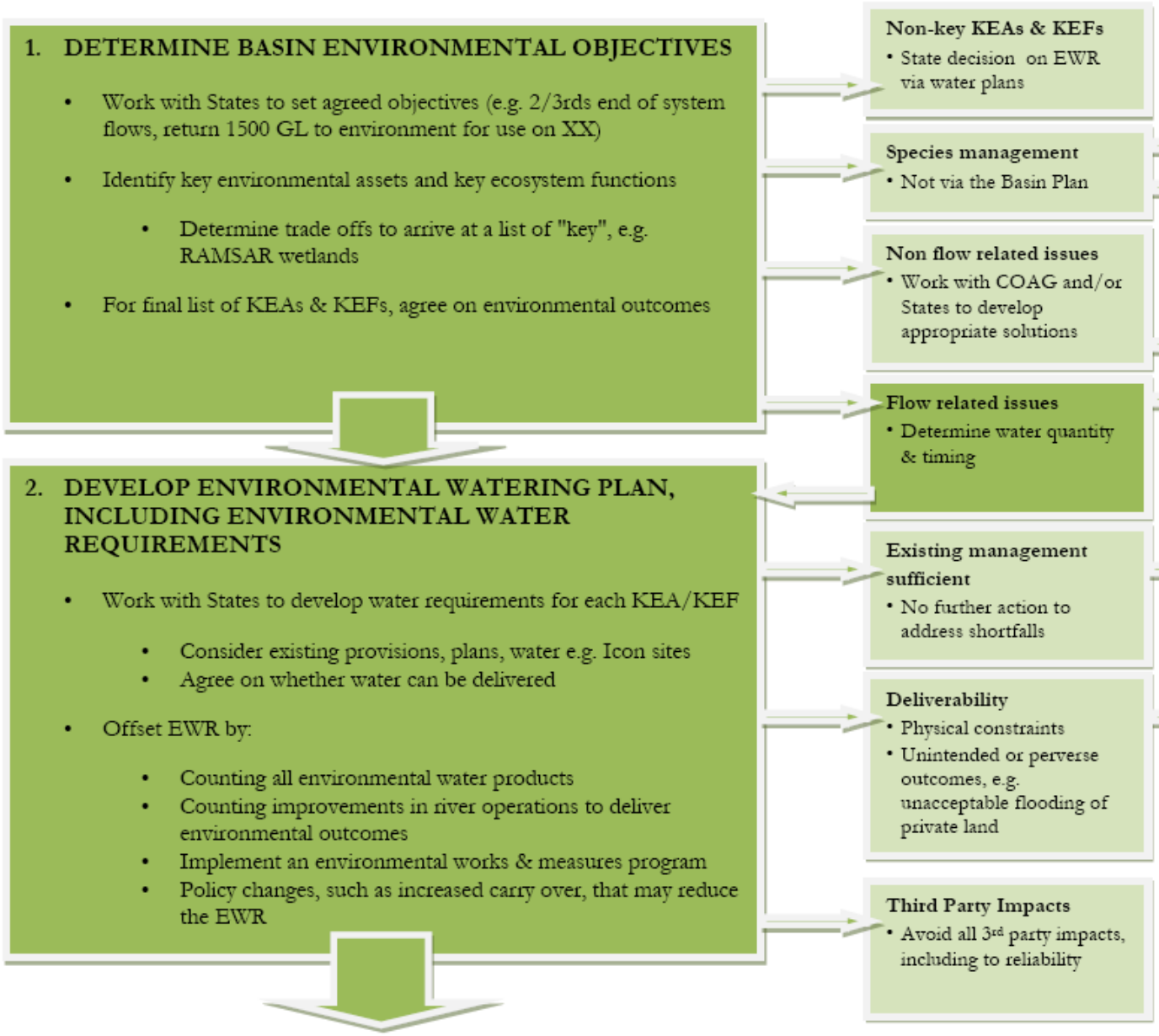
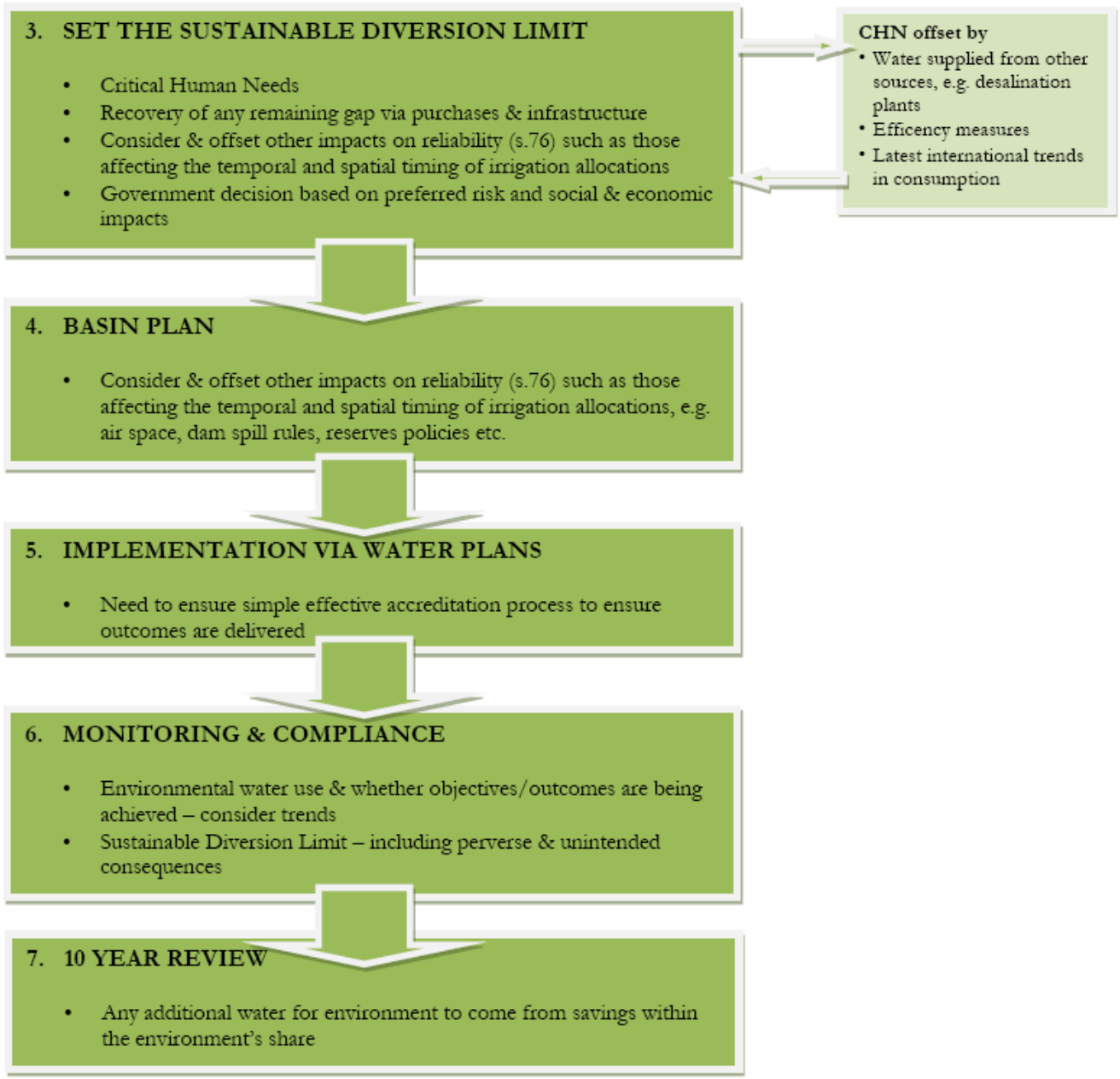


Figure 1 NFF view of a more robust Basin Plan Process continued...



An important differentiation on the NFF proposal is also that the MDBA and indeed the Government, needs to work with the States to deliver such an outcome. The statement issued by the Chair of the MDBA, Mr Mike Taylor, on his resignation, points to such an approach:

"*A successful plan would require both the Commonwealth and States to work together on a comprehensive range of policy, planning and implementation issues....While the Authority has an important part to play, it is neither empowered nor equipped to undertake the entire complex task.*"[12]

Mr Taylor also points that the decision on a sustainable Basin Plan would require far more than a decision by the Authority on how much water ought to be transferred to the environment. In other words, the outgoing Chair has clearly indicated the need for a different process, which encompasses the States and delivers on a truly balanced and sustainable management of water in the Basin. NFF can only agree.

The difference between the NFF proposal and the process outlined in the Guide is that the Guide can only seek to deal with the environment by flow quantity alone. Many of the causes for environment concerns do not relate to flow quantity. For example, the Sustainable Rivers Audit states that the reason for the poor rating of many catchments is alien fish in upper catchments. This is about pest management and its resolution cannot be simply dealt with via water quantity. Moreover, looking at end-of-system flows as a measure of environment health cannot be justified. Again the Sustainable Rivers Audit states:

"*When all valleys were ranked by Ecosystem Health rating, the Lower Murray and Darling valleys were toward the middle. This indicates that impacts are not simply cumulative from headwaters to the mouth of the Murray.*"[13]

What is also required is some clarity on the MDBA roles in regard to the Basin Plan, what the Government expects to see in the Basin Plan and perhaps most importantly, how the balance is to be delivered, i.e. via the Basin Plan or other mechanisms. A water recovery and a structural adjustment program is a start but is not the only or best solution. A more comprehensive program must include:

- Determining the trade off between key environmental assets, key ecosystem functions, productive base and key environmental outcomes on which the environment's water requirement is based. It is the NFF's view, given the external powers basis for the Water Act, that this list encompasses RAMSAR wetlands.
    - Those assets etc that are determined to be non-key are a decision of the States on whether to provide additional water.
    - Species are not included as key environmental assets. Recovery plans under state and federal legislation should provide for recovery measures. For those without a recovery plan, a decision of the relevant jurisdiction is required on whether a recovery plan is needed.
- Any environmental issues caused by non-flow drivers.

[12] Murray-Darling Basin Authority 2010, *Plan for the Murray-Darling Basin – Role of Authority Chair*, statement issued by the MDBA on the resignation of Mike Taylor, 7 December 2010

[13] Sustainable Rivers Audit Report Key Findings and Recommendations. Available online http://mdba.gov.au/sustainable-rivers-audit. Accessed 1 December 2010.

- The appropriate solution must be negotiated between the State and the Commonwealth, e.g. removal of floodplain barriers, fish passage, pests and weeds.

- For flow related issues:
  - Determine whether existing provisions deliver against the agreed environmental outcomes. If so, include the provisions in the Basin Plan. If not, determine additional water requirements.
  - Offset the additional water requirements by:
    - The inclusion of all environmental water – both public (State and Commonwealth) and private and including all held and planned/rules based water.
    - The implementation of an environmental works and measures program to reduce the environment's water needs while maximising environmental outcomes. This may include a trade-off in the level of outcome to be achieved against the additional costs of doing so, e.g. by installing regulators and pumps is the optimal outcome watering 60% of a floodplain with 20% of the required water. If such measures are reasonable, is this an acceptable cost and benefit rather and a near perfect natural watering regime.
    - Investigating changes to river operations to deliver environmental outcomes. This is not about additional water but using the existing water to deliver both extractive use and environmental outcomes. A good example is the dropping of Steven's Weir during autumn/winter to allow revegetation of the Edward River banks, which in turn reduces bank slumping.
    - Determining if the proposed environmental water requirements are deliverable given physical constraints (e.g. chokes) and unintended and perverse outcomes for private landholders (e.g. flooding). An agreement with the landholder might be required. Otherwise, this may rule out delivering some environmental water.
    - Investigating changing certain policies to allow less water to be used to deliver better environmental outcomes. This might mean increasing the carry over provisions for the environment, providing there is available airspace and the environmental water is the first to spill. The caveat NFF place on this option is that there should be no third party impacts to other entitlement holders. The current example is the Barmah Millewa Forest Allocation.
  - Setting the SDL
    - The Government has agreed to offset the SDL by water recovered. NFF supports this; however, it should be noted that the previously mentioned measures will significantly close this gap.

- In terms of the arrangements for critical human needs and the associated conveyance water, this must be offset by:
    - Water able to be substituted from other sources, e.g. stormwater harvesting and desalination;
    - Efficiency measures; and
    - International trends in average water use.
- Actions or alternatives that would ameliorate any impacts from non-SDL reliability impacts, e.g. impacts through the prioritisation of water for the environment in Spring at the cost of irrigation allocations and preventing the "ceasing" of individual carry over to use for other water users.

The above will deliver a balanced Basin Plan that delivers on a long-term sustainable environment, enable food and fibre to continue to be produced at levels comparable to today and leaves a vibrant Basin community intact. However, the Government must show leadership and clearly show how and when the above will occur. It is the view of the NFF that this needs to happen as part of the proposed Basin Plan. To do otherwise will mean a duplication of effort by the MDBA and significantly risk the ongoing goodwill and support of the States. Moreover, the discussion with the States must commence immediately.

Much of the extreme conditions experienced by farmers and the environment over the past decade are now being resolved. Many of the wetlands are full, the Lower Lakes are 92% full and water is flowing over the Barrages and is flushing the Coorong. Water will fill remaining wetlands as it passes through the system – most of these located either in the Lachlan and west of Barham on the Murray River. The Basin is now alive with fish and birds, and breeding events are underway. The vegetation of the Basin is recovering and new trees are germinating.

The significant rainfall events currently occurring over much of the Basin has bought valuable time to enable the MDBA and Government to put in place a good process and deliver a robust Basin Plan.

In the end, however, if the above fails to deliver the approach described by the NFF, then the NFF does support a bipartisan approach to changing the Water Act.

9. Conclusion

NFF remains concerned about recent comments that indicate that the MDBA will continue to use the Guide as the basis for the proposed Basin Plan, albeit with some changes to account for the first consultation process. This is driven by the MDBA's legal advice.

NFF views this as a flawed process that will not deliver a robust long-term solution to improving environmental outcomes in the Basin while still maintaining food production and viable rural communities. There is a better way, which ultimately will also be good for the environment.

The preferred NFF options looks to a discussion on what environmental outcomes are desired as the starting point, i.e. what environmental assets are key and what are the trade-offs. Once this is known, what are the desired environmental outcomes? Clearly, non-flow issues cannot be dealt with via water quantity solutions. For flow related solutions, what environmental works and

measures will deliver outcomes for least water, what river operations changes are required, what policy changes might require less water for the environment and a requirement to count all environmental water products. Moreover, for critical human needs, other water sources must be used to offset these needs.

Importantly, where any gap remains, the NFF supports the Government continuing to invest to close the gap.

Then there remains the issue of the myriad of proposals in the Guide that will further negatively affect water entitlements. These must be removed.

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Attachment 1 – Impact of proposed SDLs on Entitlement Reliability

Victoria SDL Area	SDL Range (min = 4000 GL/y; max = 3000 GL/y)	Proposed SDL	Interception	Stock & Domestic/Town Water Supply	Conveyance	Unregulated use	SDL	High Reliability Entitlements	Less environmental water (SEWPC)	Net High Reliability Entitlements	New Reliability	Old Reliability	% Change High Reliability	Net SDL	Low Reliability Entitlements	Less Environmental Water	Net Low Reliability Entitlements	New Reliability	Old Reliability	% change Low Reliability
		A		B			C=A-B	D	E	F=D-E	G	H	H/G-1	I=C-F	J	K	L=J-K	M	N	O=N/M-1
Ovens	Min SDL	72	58	6	0	0	8	26	0.1	26	31%	96%	-68%	0	No Low Reliability Water Products					
	Max SDL	73	58	6	0	0	9	26	0.1	26	34%	96%	-64%	0						
Murray	Min SDL	1109	45	52	440	0	572	1182	135	1046	55%	95%	-42%	0	301	11.2	290	0%	24%	-100%
	Max SDL	1259	45	52	440	0	722	1182	135	1046	69%	95%	-27%	0	301	11.2	290	0%	24%	-100%
Broken	Min SDL	50.7	43	2	0	0.5	5	18	0.0	18	29%	95%	-69%	0	3	0.0	3	0%	29%	-100%
	Max SDL	51.4	43	2	0	0.5	6	18	0.0	18	33%	95%	-65%	0	3	0.0	3	0%	29%	-100%
Goulburn	Min SDL	1109	109	29	360	29	582	993	117	877	66%	95%	-30%	0	439	10.3	428	0%	35%	-100%
	Max SDL	1260	109	29	360	29	733	993	117	877	84%	95%	-12%	0	439	10.3	428	0%	35%	-100%
Loddon	Min SDL	142	90	3	0	1.6	47	21	1.6	20	95%	95%	0%	28	8	0.6	7	27%	27%	0%
	Max SDL	147	90	3	0	1.6	52	21	1.6	20	95%	95%	0%	33	8	0.6	7	27%	27%	0%
Campaspe	Min SDL	103	40	26	0	2.8	34	37	5.3	32	95%	95%	0%	3	19	0.0	19	14%	29%	-52%
	Max SDL	115	40	26	0	2.8	46	37	5.3	32	95%	95%	0%	15	19	0.0	19	29%	29%	0%
Wimmera Avoca	Min SDL	136	62	37	0.9	36	No High or Low Reliability Water Products as primarily a stock & domestic and town water supply system													
	Max SDL	136	62	37	0.9	36														

NSW SDL Area	SDL Range (min = 4000 GL/y; max = 3000 GL/y)	SDL	Interception	Stock & Domestic	Town Water Supply	Conveyance	Unregulated use	SDL	High Security Entitlements	Less Environmental water (SEWPC)	Net High Security Entitlements	New Reliability	Old Reliability	% Change	Net SDL	General Security Entitlement	Less Environmental Water	Net General Security Entitlement	New Reliability	Old Reliability	% change
		A	B					C=A-B	D	E	F=D -E	G	H	(H/G) -1	I=C-F	J	K	L=J-K	M	N	(N/M)-1
Border Rivers	Min SDL	249	95	1.2	0.6	0.0	18.3	134	2	0.0	2	100%	100%	0%	132	265	6.8	258	33%	33%	0%
	Max SDL	262	95	1.2	0.6	0.0	18.3	147	2	0.0	2	100%	100%	0%	145	265	6.8	258	33%	33%	0%
Gwydir	Min SDL	330	125	4.2	3.8	0.0	11.6	185	15	0.0	15	100%	100%	0%	170	510	88.5	421	38%	38%	0%
	Max SDL	361	125	4.2	3.8	0.0	11.6	216	15	0.0	15	100%	100%	0%	201	510	88.5	421	38%	38%	0%
Namoi/ Peel	Min SDL	415	165	16.4	18.8	0.0	78.0	137	4.3	0.0	4	100%	100%	0%	132	287	6.2	281	47%	77%	-39%
	Max SDL	437	165	16.4	18.8	0.0	78.0	159	4.3	0.0	4	100%	100%	0%	154	287	6.2	281	55%	77%	-28%
Maquarie-Castlrgh	Min SDL	600	310	14.3	22.7	0.0	50.4	203	19	0.0	19	100%	100%	0%	183	632	57.6	575	32%	42%	-24%
	Max SDL	631	310	14.3	22.7	0.0	50.4	234	19	0.0	19	100%	100%	0%	214	632	57.6	575	37%	42%	-11%
Barwon-Darling	Min SDL	249	108	0.1	1.9	0.0	Incl in col. K	139	Unregulated system, therefore no high reliability products						139	173	22.3	151	92%	100%	-8%
	Max SDL	262	108	0.1	1.9	0.0		152							152	173	22.3	151	100%	100%	0%
Intrsctng Streams	Min SDL	4.4	2.4	0.2	0.1	0.0		2							2	24	8.1	15	11%	100%	-89%
	Max SDL	4.6	2.4	0.2	0.1	0.0		2							2	24	8.1	15	12%	100%	-88%
Lower Darling	Min SDL	39	6	0.6	10.2	0.0	0.0	22	8	0.0	8	100%	100%	0%	14	30	0.0	30	47%	90%	-48%
	Max SDL	45	6	0.6	10.2	0.0	0.0	28	8	0.0	8	100%	100%	0%	20	30	0.0	30	67%	90%	-26%
Lachlan	Min SDL	549	316	13.1	15.5	17.9	15.0	171	26	0.3	26	100%	100%	0%	145	593	81.7	511	28%	42%	-32%
	Max SDL	574	316	13.1	15.5	17.9	15.0	196	26	0.3	26	100%	100%	0%	170	593	81.7	511	33%	42%	-21%
M'bidgee	Min SDL	1670	501	35.6	23.4	373	42.0	695	298	0.0	298	95%	95%	0%	397	2043	84.2	1959	20%	82%	-75%
	Max SDL	1897	501	35.6	23.4	373	42.0	922	298	0.0	298	95%	95%	0%	624	2043	84.2	1959	32%	82%	-61%
Murray	Min SDL	1190	104	14.5	33.3	330	28.0	680	198	0.4	198	97%	97%	0%	483	1670	187.8	1482	33%	83%	-61%
	Max SDL	1351	104	14.5	33.3	330	28.0	841	198	0.4	198	97%	97%	0%	644	1670	187.8	1482	43%	83%	-48%

South Australian SDL area	SDL range (min = 4000 GL/y; max = 3000 GL/y)	Proposed SDL	Interception	Stock & Domestic	Town Water Supply	Conveyance	Unregulated use	SDL	High Security Entitlements	Less Environmental water (SEWPC)	Net High Security Entitlements	New Reliability	Old Reliability	% Change
		A			B			C=A-B	D	E	F=D-E	G	H	H/G-1
Murray	Min SDL	433	0	7	184	0	0	242	554	47	507	48%	90%	-47%
	Max SDL	492	0	7	184	0	0	301	554	47	507	59%	90%	-34%

Attachment 2 – NFF critique of the Guide to the proposed Basin Plan

Issue	Reference	NFF comments
Imperative for Change	Vol 1, p. xv	Claim that a combination of drought and historic diversions are the cause of significant reduction in flows out the Murray Mouth since 2002. This is acknowledged also by John Langford, John Briscoe and Michael Porter in an article in the Australian, "[t]*he main cause o f the tension over the Murray-Darling Basin water rights is the decade-long drought*".[14] The drought commenced in earnest in 2002/03, but in reality, there was a decline, due to drought, from 1997 onwards. The intervening period saw storages being "mined" to continue to provide for the environment (e.g. SA's Additional Dilution Flows from Menindee & Lake Victoria during the early part of the "Noughties"), irrigation and other uses. Therefore, the primary driver for the reduction in flows to the Murray Mouth from 2002 was a significant drought – the worst in over 300 years (CSIRO Sustainable Yields Audit). While there is acknowledgement of significant drop in water extraction over last decade, there is no corresponding concurrence that many of the highly contentious environmental issues are a result of not extraction but drought... Question is whether our water management framework should be set up to deal with a 1: 300 year event?
	Vol 1, p. xiv	The MDBA recognises that the impacts for adjustment fall on today's generation. In reality, there should be an appropriate sharing of these adjustments between today's and tomorrow's generation.
Method used to prepare Basin Plan	Vol 1, p. xvi	"[MDBA] *has attempted to examine both direct and indirect effects*" and "*inherent limitations with data analysis and hydrologic modelling of this scale and complexity*" These statements imply that the Guide is not robust? So given the sheer scale of change, how can the Basin's communities be confident that this is right and correct and balanced and appropriate?
Establishing a baseline	Vol 1, p. xvii-xviii	The current MDB Cap limits Basin surface water extraction from regulated systems to 11183 GL – and this figure does not include some floodplain harvesting or unregulated water use. Essentially, the Gap between the Cap and new SDL (for all water uses) is 2982 GL. This means that regulated surface water users will take a bigger cut as not only is the amount

[14] The Australian 2010, *Creating wealth from our water*, John Langford, John Briscoe and Michael Porter, 1 November 2010, online: http://www.theaustralian.com.au/creating-wealth-from-our-water/story-fn6nj4ny-1225945844874. Accessed 1 December 2010.

Issue	Reference	NFF comments
	Vol 2, Part I, p. 138	of use reduced but also other water users, including unregulated use, share the new limit. In reality, and in practice, the brunt will be borne solely by the lowest priority/category water access entitlement. States have a priority system under which they allocate water, usually the environment, basic landholder/riparian rights, high reliability water products (including towns, industry and irrigation) followed by the lower reliability water products. It is unlikely that State will not spend money on compliance of a large number of small users in unregulated systems or riparian/basic landholder/stock & domestic water use, nor will they reduce water to higher priority rights. All the brunt will be borne by these lower reliability products resulting in actual massive impacts. NFF modelling has shown this is significantly higher than estimated by the MDBA for the reasons outlined above. Moreover, reductions to irrigated water use will shift remaining use to the next lowest value (e.g. rice and cotton to pasture and winter crops) jeopardising the nation's principle of moving water to higher value uses.
	Vol 1, p. 132-134	The proposed watercourse diversions are 29% less than the existing MDB Cap and 27% less than the CDL for the 3000 GL/yr scenario.
Surface Water Cap	Vol 1, p. xix	The proposed range of additional water for the environment is 3000 GL/y to 7600 GL/y resulting in a total environmental water requirement of 22100 GL/y to 26700 GL/y. If the total water resource of the Basin is 32800 GL/y, the range of environmental water is 67.4% to 81.4%. Clearly, scientists have been saying over the past decade that a healthy working river is one that continues to receive two thirds of its flow as environmental use. If this "scientific" general rule of thumb is applied, the Basin's environmental needs are 21845 GL/y – some 255 GL/y less than the 3000 GL/y SDL scenario. Perhaps this ought to be the starting scenario for consideration.
Groundwater SDLs	Vol 1, p. xix	The proposed groundwater SDLs may be significant for individual aquifers but are very small in comparison to the total groundwater resource, i.e. 99 GL/yr is 0.4% of the groundwater recharge of 26500 GL/y and 227 GL/yr is 0.9%. While NFF accepts the "exclusion" of some aquifers from groundwater cuts, there remains 11 aquifers that will be affected substantially – many on top of other recent reductions.
Use of Indicator Assets	Vol 1, p. xviii and elsewhere	NFF questions the "validity" of using indicator assets as a proxy for determining the environment's water requirements. The Water Act requires the MDBA to determine the water requirements for key environmental assets, key ecosystem functions, productive base and key environmental outcomes. Essentially, the NFF understands that the knowledge base around these issues is insufficient on which to make a determination – and would likely require a 30-year research

Issue	Reference	NFF comments
		program (and undoubtedly, this might still be required). It would be appropriate to seek a legal opinion on whether such a process is legally compliant with the Act.
Social & economic effects	Vol 1, p. xx	NFF welcomes the observation that the current circumstances have arisen from decisions of Government not individuals. However, individuals will wear the pain. NFF acknowledges that the impacts will be far reaching, e.g. home values in small towns may be affected leaving non-farming sector affected for the long-term.
	Vol 1, p. xx	While the MDBA notes that, the task is to "balance" social, economic & environment; in reality, the task is to maximise the environment while trying to minimise the social & economic consequences. NFF concurs that the impacts will not be felt evenly and that there will be substantial effects in more irrigation dependent smaller communities and those irrigators using larger volumes. The MDBA notes a number of regions most affected socially and those most affected economically. Of note is that the regions common to these lists are the Murrumbidgee, Murray, Macquarie and Loddon. It would appear that these are likely to suffer dramatically more than others.
Transitional arrangements	Vol 1, p. xx	NFF agrees that the transitional arrangements may not be sufficient and that all Governments, but primarily the Commonwealth Government, will need to look at additional measures to support and underpin the social & economic fabric of these communities.
Scenarios for assessment of reductions	Vol 1, p. xxi	While the MDBA has settled on scenarios between 3000 and 4000 GL/y, the question should be asked why scenarios under 3000 GL/y were not put up for discussion. Certainly environmental groups are calling on levels above 4000 GL/y. However, the MDBA clearly state that the required environmental outcomes can be achieved at 3000 GL/y but with some additional risk. The MDBA has also advised (at the Technical Workshop held in Canberra) that the MDBA could consider below 3000 GL/y where tipping points for environmental assets could be established that might allow a higher risk to be taken. The question remains whether it is the Commonwealth Government's decision or the MDBA's decision to consider an SDL less than 3000 GL/y. Ultimately the Government and Parliament, are the decision makers and is int he position to determine these trade-offs. Clarity around this would be helpful.
Long-term	Vol 1, p.	It currently remains unclear what long-term average SDL means. In particular, how is to be managed on an annual basis

Issue	Reference	NFF comments
average SDL	xxi Vol 2, Part I, p. 264	(audit/compliance process) and over the longer term? If on an annual basis as implied by Vol 2, Part I, then we face the same issues as management of Cap, i.e. if the long-term is met but annual exceeded there will continue to be a outpouring of outrage! Moreover, keeping an annual compliance will ultimately result in a long-term downward trend in extractive use as the average is usually made up of "overs and unders" to deliver the average. An average that never gets to the average results in a downward trend, unless the average is met each year.
	Vol 1, p. 132	The average SDL does not show what the variation in SDL looks like across all recorded history, i.e. what does water availability under the proposed Basin Plan look like for 1940, 1965, 1973, 1988, 1997 and say 2007. This information is critically important and will allow stakeholders to understand what this means. This information should not just be at a Basin scale but at an individual valley scale and most importantly at an entitlement scale.
% reduction in watercourse diversions	Vol 1, p. xxiv	NFF has already made comment on the impacts on individual entitlements being somewhat different to those in Table on page xxiv of the Guide (the table has no label or number). This is largely driven by the MDBA assuming that an average equal level of cut will apply across all watercourse diversions – when in fact this will not occur. To do what the MDBA is proposing would require legislative change across all states. NFF modelling shows the actual cuts to be nil against most higher priority entitlements and significantly more that indicated by the MDBA for lower reliability water products – in some cases, as high as 90%.
Climate change	Vol 1, p. xxv-xxvi, p. 33-34 Vol 2, Part I, p. 119	The MDBA notes that climate change impact is 10% over the period to 2030. Much of the major drought impacts are already incorporated into the 1895-2009 models (these figures being widely noted as deliver more severe impacts than climate change would ever deliver). This was noted by CSIRO in its advice to the MDBA on climate scenarios, i.e. 40% lower than long-term mean. MDBA has agreed. The MDBA has also used the CSIRO report (Chiew, Cai & Smith 2009) perhaps a little misleadingly. The Guide claims, "*there is an apparent link between the dry conditions and global warming, the recent period can also be used to represent a very dry scenario for conservative risk based considerations*". While NFF concurs with the last recommendation, it should also be noted that Table 1, p. 12 of the Chiew et al report relating to the Southern MDB shows that there is little difference in the mean annual rainfall and run off under the last 10 years and the last 15 years. Moreover, **historical** climate is similar to the last 30 years. The important point is that the Sustainable Yields Project shows that the recent drought has a return period of 1: 300 years that shows the severity of this recent event. NFF notes that future climate modelling shows likely improvement in rainfall/runoff in the Northern Basin but a decline likely in the Southern Basin. However, the CSIRO report fails to make a specific recommendation on the climate change impact at 2030. Therefore, it is difficult to ascertain how the MDBA has derived the 10% impact (presumably in runoff as

Issue	Reference	NFF comments
		distinct from rainfall decline) over the period to 2030. NFF concurs that inclusion of the "*full effect....is unwarranted*" in the Basin Plan. Furthermore, the climate change factor is 3% of the current diversion limit NOT the SDL. The CDL is 10942 GL, which presumably has already been adjusted for climate change. To get this figure, the non-climate adjusted CDL is 11280 GL, which makes the climate change 3% around 338 GL. However, in Volume 2 under a discussion on risk allocation, the MDBA indicates that the Government responsibility for risk allocation less climate change is 2,590 GL, which equates to a climate change volume of 410 GL or 3.7% of watercourse diversions. This begs the question of how the climate change component has been calculated and included. NFF does not support the approach taken. Climate change/variability is a function of rainfall and runoff that translates to water yield and water availability. Moreover, the drought impacts are now part of the models. Therefore, future allocation announcements will be more conservative than during the drought, resulting in more resilient water plans. Surely, a better outcome is to have climate change reflected in annual allocation announcements through rainfall variability. To do otherwise is actually a double whammy for entitlement holders as climate change is included through the calculation of the SDL as well as losing out through allocation announcements through reduced rainfall and water availability into the future. NFF recommends that the reduction in SDL for a climate change factor is an additional conservative approach that is unnecessary and will continue to undermine entitlement reliabilities over the longer term. Such an approach should not exclude water resource plans demonstrating how reduced water availability is through a dry inflow sequence (say with exceedance conditions of 90%) will be managed.
	Vol 2, Part I, p. 121	NFF rejects the statement "*Including climate change into the SDL is needed to manage long-term average trades in water availability rather than year-to-year variations*". Is the SDL proposed to be set along long-term average water availability that includes both wet and dry inflow sequences? Moreover, the recent drought has a return period of over 300 years that is now part of the statistical set underpinning modelling. MDBA has stated that this period is "worse" than any outcome from the Basin Plan. Surely, by

Issue	Reference	NFF comments
		including another factor for "year-to-year" variations is unwarranted. A pertinent question is what percentage of the predicted 10% climate change over the period 1990-2030 is already within the models, i.e. what percentage of the 10% is already embedded in the models and what is left to be accounted for over the next twenty years. What part of this is relevant to include over the life of a ten-year plan (noting NFF's previous comments rejecting this approach).
Environmental benefits	Vol 1, p. xxvi	While NFF cannot claim to be experts in ecology, a couple of observations can be made. The drought has resulted in impacts on the environment. Much has been made of this being related to over extraction/allocation. However, recent rains have shown the resilience of native species – with waterbirds returning and breeding, fish breeding, recovery by many trees (including red gums) and so on. It is acknowledged that there has been drought related loss from which some individual plants & animals will never recover. But there will be recovery – previous surveys of cod for example, show significant return in numbers in the year or two after substantial water flows such has occurred in 2010 and is likely to continue over 2011. Secondly, migratory birds are not dependent on Australia as their sole source of life. Migratory birds in the Basin are here for feeding – not breeding. Moreover, the actions of other countries cannot be rectified by Australia. An example is the destruction of migratory bird habitat in Korea for development.
	Vol 2, Part I, p. 154	From the Sustainable Rivers Audit, it is known that alien fish species in upper catchments is the main cause of poor environmental health. This includes recreational species such as trout. Yet recreational fishing is highly valued particularly in these upper catchments as compared to the Coorong ($366/person compared $173/person).
	Vol 2, Part I, p. 155	NFF seeks whether the MDBA has considered the impact of the SDLs on irrigation that creates artificial wetlands that have underpinned endangered species over a long period. Does this require an EPBC Act referral?
Other benefits	Vol 2, Part I, p. 155	The MDBA notes that the tangible benefits accrue to the Lower Lakes and Coorong from recreation, tourism and fishing. The MDBA notes that additional work is required to determine benefits to other areas of the Basin. Notably, if the benefits principally accrue to one area at the disbenefit of other areas of the Basin, then this creates an inequity.
Risk assignment	Vol 1, p.	While there is agreed risk assignment for surface water (particularly regulated river entitlements), there are some missing

Issue	Reference	NFF comments
and groundwater	xxviii	applications, notably groundwater and unregulated systems. The MDBA has agreed with NFF that the Basin Plan is 100% change of Government policy and therefore 100% Commonwealth responsibility. This is welcome. However, NFF now looks to the MDBA and NWC to make some informed comment on the need to extend risk assignment/allocation to groundwater and unregulated systems in an effort to treat all water users equitably.
Risk assignment & CDL	Vol 1, p. xxix	If the CDL and/or SDL are incorrect, then there will be additional impacts on the recovery of water and payment of any residual risk assignment.
Risk assignment	Vol 1, p. xxix	NFF welcomes the MDBA advice that the Basin Plan is 100% responsibility of the Commonwealth Government for any residual risk assignment.
Temporal Diversion Provisions (TDP)	Vol 1, p. xxix	NFF supports the widespread use of TDP phased in over the five years. While this is a requirement of the Act, NFF would support any measures that seek TDP over a ten year timeframe. This would seem prudent given recent rains have significantly reduced the negative environmental effects of the drought and provides an opportunity to phase in the Basin Plan over a longer timeframe than first envisaged under the Act. If this was to occur, it would seem reasonable that Victoria is granted a five (rather than ten) year transition. However, NFF does NOT support that the TDP has an adjusting factor for climate change. This would appear to be a double dipping of climate change, which was already considered and included in the SDL. Moreover, if NFF's views on where accounting and policy for climate change should rightly sit (i.e. in the allocation of water, not the policy settings), then this reduction in calculating the TDP would seem unjust.
Water Recovery	Vol 1, p. xxix	NFF supports the recovery of water through a range of measures (noting that this will offset any risk assignment obligations of the Commonwealth). However, the NFF is concerned that there appears to be a lack of clarity on what is being counted and what is not. For example, it would appear that only water able to be controlled by the Commonwealth is included. Moreover, there has been considerable effort to return water to the environment through a range of private, State and Commonwealth activities. All of this should be counted towards offsetting any SDL. However, it is difficult to make informed comment until there is clarity around what environmental water is available and

Issue	Reference	NFF comments
		what has/should be counted.
Structural Adjustment	Vol 1, p. xxviii	While there is risk assignment for regulated surface water users, NFF acknowledges that the remainder of the community will be affected and have no recourse. Therefore, the NFF has adcoated and will continue to advocate for a parallel structural adjustment process for regional communities to assist them cope with the social and economic impacts and transition to an economy with less water use. Such an approach must consider a range of suitable outcomes, in cohort with affected communities. The approach should also consider assisting affected processing industries and water delivery businesses.
Water Trading Rules	Vol 1, p. xxxi	NFF notes that the major volumetric limit is the trade cap supported by the NWI and that states have agreed to its removal from 2014. The issue is the difference between how this is applied. An important point is the NWI mandated trade cap removal is 2014 – when most water resource plans compliant with the Basin Plan commences. In reality, there is no improvement in this situation in the meantime. It must be questioned whether the effort in seeking removal of this trade cap has been worth the collective effort. Moreover, the major volumetric limit in place that is having a major impact on markets is the agreement between the Commonwealth and NSW/Victoria.
Projected salinity increases	Vol 1, p. xxxii	NFF notes one of the "signposts" of success, i.e. "avoid projected increases in median salinity levels in South Australia beyond Australian Drinking Water Guidelines within 100 years". This is interesting. Actual salinity has been declining in SA over the longer term – primarily due to significant investment in salt interception schemes. However, the Basin Plan looks at water volume as the solution. It is well known that existing and future salinity is due to dryland clearing. For South Australia, the biggest threat is an underground mound of saline water moving towards the SA Murray. No amount of adjustment in water use will resolve this issue. Importantly, a research program is required to deal specifically with this issue.
Signposts of success re certainty of access to available	Vol 1, p. xxxiii	It is interesting to note that many of the listed success points are outside of the functions of the MDBA and Basin Plan, e.g. Basin water market and water charge rules. The latter are particularly ineffective (see NFF submissions to ACCC on this matter).

Issue	Reference	NFF comments
resource		
Signposts of success re better adapted to reduced water	Vol 1, p. xxxiii	One of the keys to success is R&D. However, there is no longer a Land & Water Australia, the CRC for Irrigation Futures has ended, and the National Program for Sustainable Irrigation ends in June 2011. Moreover, the Productivity Commission is recommending a phase down of what is seen as "private" benefits. Whilst work is underway under PISC for a Water Use In Agriculture cross-sectoral strategy, this is neither funded nor even agreed at this point. If agriculture is to continue to have similar levels of productivity/output as today, there needs to be a significant ramp up in R,D & E effort around irrigation efficiency, suitable crops, new crops, technologies etc.
SDL compliance	Vol 1, p. xxxiv Vol 2, Part I, p. 123	It would appear that the proposed compliance method is similar to the existing Cap model. It begs the question then of why this whole new scheme has been derived and established, particularly given the large number of criticisms relating to annual Cap management (as opposed to longer term compliance to the average diversions). An issue of concern is how allocation announcements will be made in the future and how this varies from the current situation. For example, will Basin states become more conservative and only announce water in dams – if so, this will result in significant impacts and reductions to agricultural production. The same result is also likely if water is prioritised for the environment early in the season when irrigators also need certainty of allocation to underpin commencing planting (i.e. early vs. later season starting allocations). Any reasonable allocation delivered after November will impact production levels.
Future Amendments	Vol 1, p. xxxiv	The Guide flags future amendments as an "adaptive" management approach. It is significant to note that farmers and their communities are suffering from reform fatigue. Future certainty is required to underpin agricultural and other investment. Flagging continual change in the future, does not assist meet these expectations? However, it may be appropriate to flag the "range" of changes that are likely to occur in the future, and how this is might affect stakeholders.
Land Management	Vol 1, p. 4	The challenge for Governments (or perhaps COAG) is to agree how to resolve environmental issues that are derived purely from land management issues (such as pests, weeds, incorrectly placed levees/roads/culverts etc). Using flow volume to deal with this is an inappropriate solution.
Objectives of	Vol 1, p. 7	It is interesting to note that there are no social and economic objectives.

Issue	Reference	NFF comments
Basin Plan		
Consultation Process	Vol 1, p. 8	Stakeholders might state that much of the list was about ticking boxes. Community members were also overheard (by media no less) at public meetings noting that attending had been for nothing as there would be no change to the guide. NFF has warned the MDBA about these views previously. The challenge now is showing that the MDBA has listened by significantly changing what has been presented in the proposed Basin Plan.
		NFF would encourage the MDBA to continue to consult with key stakeholders during the period that commences from the conclusion of the statutory consultation phase until the presentation of the Basin Plan to Parliament. Otherwise, there will be no ability to influence and change key issues. Also it provides an opportunity for stakeholders to ensure that the final Basin Plan is different to the proposed Basin Plan.
Drought Impacts	Vol 1, p. 29, 119-121	The statement regarding GVIAP is misleading as prices during the drought were much higher (due to production reductions) than the pre-drought prices. A true comparison would make an appropriate adjustment for this issue. Table 8.1 does not appear to include post farm gate impacts, which will result in misleading results and likely underestimate the impacts on irrigated agriculture. In terms of commodities, care should also be taken in interpreting GVIAP for products such as cotton and rice. Both are driven by world commodity issues and for rice, the farm gate income was driven by considerable subsidiary company success in products such as olives etc. Wine grape prices were also a factor of oversupply that will continue into the future. In terms of salt impacts, it must also be remembered that irrigation farms/areas are salt sinks as most import more salt than is exported – this is true even in the middle catchments like Murrumbidgee. The discussion around trade is generally correct and the increased trade volumes for annual allocations was around drought while permanent trade was influenced by the Commonwealth's acquisition program and distressed sellers. The drought trend may or may not be replicate as the norm during non-drought periods.
	Vol 2, Part I, p. 140-	NFF notes comments regarding horticulture. NFF observes that the Commonwealth Government's Exit Package for small block irrigators failed to consider these issues, i.e. had a major design fault. While the Commonwealth obtained

Issue	Reference	NFF comments
	141, 203	water, and farmers could stay in the family home, many farms were unable to be sold to the neighbours. Instead, farmers were required to strip the property of functioning irrigation assets (permanent plantings and irrigation structures). The result was that it has prevented structural adjustment for horticultural properties and left farmland riddled with weeds and pests as well as being an OHS and fire hazard. The sad reality is that many of the neighbours were actively seeking to expand and obtain economies of scale. The Exit program should have been designed to allow farmers to stay in the family home, sell their water but also sell their farm land to the neighbours (i.e. not the home).
	Vol 2, Part I, p. 203	NFF also notes the comments in relation to the horticulture industry apropos that any decline will be relatively modest. It is important to note that where horticulture industries are also in an area where other agricultural industries will be severely impacted and at risk of closure, then the residual economies of scale will threaten the viability of the remaining horticultural industries. This includes the resultant level of water pricing as well as the size of the distribution network.
Long-term impact of current management arrangements	Vol 1, p. 30	Much of this discussion is, in reality, about the impact of drought. The appropriate question is whether the environmental impact is drought, or longer-term management, and what is the split between these. Establishing draconian water management arrangements based on drought and not the latter is unjust to social and economic impacts.
Risks	Vol 1, p. 32 Vol 2, Part I, p. 75	Water Act requires identification (s22.1, Item 3) of risks regarding water take, climate change, land use change and knowledge limitations and strategies to manage or address risks (Item 5). It is not clear whether the actions to address risks have resulted in a decrease in water take (i.e. SDL) or whether other management actions have been adopted. If the former, to what extent? It would appear that the MDBA has gone beyond the above – identifying 140 "contributing factors" – none of which were identified – grouped into four "residual" risks: 1. Insufficient water for environment (53% or 35% with policy issues removed); 2. Unsuitable water quality (ranges from 99% for aquatic ecosystem protection, 59% for irrigated agriculture, 22% for drinking water and 23% for recreation);

Issue	Reference	NFF comments
		3. Poor health of water-dependent ecosystems; and 4. Policy with unintended adverse impacts. These would appear to be "residual" risks after the Basin Plan has commenced but it is unclear how many are mitigated and how many of the 140 remain? Interestingly, the first three appear to be the same or similar issues. None related to impacts on communities and agriculture. Importantly, the MDBA notes that there are significant links between contributing factors in the first three risks. Central factors are lack of knowledge and lack of compliance – neither of which relate to water flow/volume. Interestingly, Table 3.1 on p. 79, notes that none of the four risks are high. The MDBA did not assess adverse policy impacts via the Bayesian network – as it was difficult to quantify and that more research was needed, particularly around the nature and scale. In terms of management strategies, the following risks were regarded as highest priority to address: • Improved environmental knowledge, including quantifying watering requirements (which begs the question of why there is such a stringent Basin Plan proposal); • WRP compliance; • Effective enforcement; • Improved modelling of groundwater; • Improved flow management via the Basin Plan (in relation to water quality); • Poor linkages between the EWP and local/regional processes; • Improved knowledge and mapping of wetlands;

Issue	Reference	NFF comments
		• Understanding of policy interactions with adverse consequences with the Basin Plan. However, it interesting to note the first one – which would appear to be a common theme in the Guide, i.e. there really is insufficient information and research to substantiate and quantify the water needs of the environment. In terms of risks to water availability (a separate requirement under the Water Act), the following were identified: • High risk - limited knowledge; • Low risk – taking and using water (once the Basin Plan was introduced), changes to land use (but this could be higher at a water resource plan level) and climate change (as included in the Basin Plan). A key question here that the MDBA has failed to answer is whether the plans to address risks has resulted in a reduced SDL, or is this whole framework just a management tool for the MDBA?
Suspension of water plans & equity between consumptive use & the environment in low resource years.	Vol 1, p. 34 Vol 2, Part I, p. 123	Much has been made in the document about the suspension of water plans and the impact on in the "sharing" of water in low resource years. It is important to note that water for the environment in low resource years is an equity argument between the environment and critical human needs. It is NOT about irrigated agriculture as implied and continues to be implied. A more severe outcome on irrigated agriculture should not result due to this issue.
	Vol 2, Part I, p. 123	In terms of the discussion on water plan compliance, it would appear that in spite of a climate change component and water plans be able to demonstrate low inflow sequence compliance, the Plans will be based not on the SDL but on the 2030 climate scenario for that valley. Again, the Basin Plan is requiring too many caveats and exemptions that will continue to erode entitlement reliability over the longer term. If the SDL is the long-term average limit, then this is what water plans must be based on, not some arbitrarily conservative estimate on top of other conservative estimates. NFF views this as multiple double dipping!
Science – and its robustness	Vol 1, p. 37-38 Vol 2, Part	The MDBA notes the data limitations of the science for the Basin Plan – with much falling into the "medium" confidence level. Yet most documents get to "medium" by being Government datasets or publications that have not undergone any significant peer review (Vol 2, Part I, p. 87).

Issue	Reference	NFF comments
	I, p. 87	NFF does not believe that this is good enough information to justify the significant impacts proposed to be imposed on agriculture or communities. The MDBA has relied upon the "best available science" which may not be robust (Vol 2, Part 1, p. 87 "*new or emerging scientific knowledge may have a low confidence level, but at the same time may still be the best available scientific knowledge*"), the Basin Plan should not be construed to be new science nor be about new science. In other words, the Water Act proposes a new process for determining how water is shared in the Murray Darling Basin. While the MDBA may have commissioned particular studies to inform the process, the majority of work around the environment has been about collating various pieces of existing work. However, there are many data gaps. This is clearly showcased by the MDBA selecting an alternative process of "indicator assets" to assess the watering requirements of KEAs and KEFs. It is questionable whether this is compliant with the process required by the Water Act. Moreover, scientists have been saying for some time that a healthy working river is one that requires around two thirds of flow. The Basin Plan proposes approximately 80%. What has happened, in terms of science, to change this view? If the former view is considered, then according to the Guide (Vol 2, Part I, p. 211), then adjustment is required in the following valleys: • Condamine Balonne – increase in outflows from 56% to 66% = 24%; proposed 21% • Gwydir – from 40% to 66% = 26%; proposed 20% • Lower Darling – from 43% to 66% = 23% (which may be a function of the above two in any case); proposed 26% • Goulburn – from 49% to 66% = 17%; proposed 26% • Loddon – from 42% to 66% = 24%; proposed 21% • Campaspe – from 54% to 66% = 12%; proposed 26% • Murrumbidgee – from 56% to 66% = 10%; proposed 21%

Issue	Reference	NFF comments
		In terms of the Northern Basin, end-of-system flows may not be appropriate at all. It is not the % of long-term average flows that is important in an ephemeral river system but the management of the river on a flow event basis. Moreover, the late Peter Cullen was involved in analysing the Condamine Balonne system (ahead of the finalisation of its water plans). He suggested changes that were included and the plan was subsequently approved from a scientific perspective.
International Peer Review	Vol 1, p. 43 Vol 2, Part I, p. 87	What are the terms of reference that were given to the panel as this determines how the Panel may have responded to the MDBA? NFF is somewhat cynical in the value that an international peer review of the process can bring to the process given that Australia is leading the world. In fact, scientists may well have signed up to a learning process for them rather than delivering value. Moreover, there is no report available on the recommendations of the peer review. Interesting, one such Panel member has made public comments on the process. Generally, his view is that the MDBA ought to be assessing a range of environmental outcomes and trade offs, with a range of social and economic outcomes and trade offs. Importantly, it is the role of Government and perhaps the Parliament, to determine the right approach. Fundamentally, the Water Act does not allow this approach.
Groundwater base flows	Vol 1, p. 44	While comments were made on the contribution of groundwater to streams, particularly in dry times, there was no supporting data on what volumes these might be in catchments. Interestingly, part of the significant impact during the drought was this issue, not take from rivers. In fact in some situations, creeks/streams normally flowing into rivers were literally running backwards thus increasing losses.
Floodwater	Vol 1, p. 45	NFF notes that not all floodwater is assessed via gauges. The latter sit within rivers while floodwaters clearly progress beyond the constraints of riverbanks.
Unregulated water use	Vol. 1, p. 46-50	The MDBA does not provide any clarification on the figures used for unregulated water use, which has been included in the surface water SDLs (with the exception of a table 4.13 on p. 181 of Vol 2, Part 1, which does not isolate major unregulated from regulated at all). To provide some better information, NFF suggests that the unregulated components are clearly specified to enable effect comparisons and transparency.

Issue	Reference	NFF comments
Current Diversion Limits (CDL)	Vol 1, p. 46-50	The Basin Plan does not transparently show how the CDL figures have been determined, i.e. the step changes from 2004 water resource plan volumes of average long-term availability (i.e. that currently determines reliability) to the CDL. NFF seeks immediate release of all changes incorporated by the MDBA to determine the CDL. Depending on this analysis, the outcomes in terms of SDLs may be different, i.e. what is included/excluded may change the CDL and therefore the SDL (either positively or negatively). Moreover, the SW diversion totals must be broken down into floodplain harvesting, regulated and unregulated components. Interception CDL are likely to be of low quality due to the paucity of information. If new information comes to light, particularly if interception is higher than thought, it will continue to erode property rights.
Treatment of water recovery	Vol 1, p. 48 Vol 2, Part I, p. 282	<u>TLM, WFR & Wimmera pipeline</u> There would appear to be significant confusion over the treatment of these infrastructure projects within the Guide. Some stating that CDLs were adjusted and at other points, saying it is not included. NFF suggests that the recovery of "held" or entitlement water is offset against the SDL and that the CDL is NOT adjusted for either planned or held environmental water <u>Water for the Future</u> Treatment of the Water for the Future program – both infrastructure and water recovery must offset the Gap. However, the volumes must be transparently communicated to allow various stakeholders to determine the true gap (entitlement volume & LTCE on a valley basis). <u>State and Private "Held" Environmental Water</u> Held environmental water must be counted as contributing to the Gap and transparently communicated to stakeholders (entitlement volume & LTCE on a valley basis). Importantly, each jurisdiction and private owner of environmental water must provide this information to the MDBA to ensure that it is accounted for in the offsetting arrangements for the Gap, and for privately held water, to ensure that this

Issue	Reference	NFF comments
		is accounted for outside the consumptive pool.
Interception	Vol. 1, p. 51-52 Vol 2, Part I, p. 37, 39	NFF notes the discussion on interception. NFF also notes that the MDBA has primarily relied on work commissioned by the NWC from SKM, CSIRO & BRS (2010). NFF has analysed these figures and notes the following: 1. Interception is broken into farm dams (BLR), farm dams (irrigation) and plantation forestry 2. In the Guide Vol 1 (Table 5.2) there is a breakdown. The figures for BLR & Plantation Forestry are largely derived from the SKM et al report, with some minor changes that result in negligible total changes. 3. However, it would appear that the irrigation from farm dams has been treated differently. The difference between the NWC report and the Guide is 924 GL (net) with the Guide being significantly higher than the NWC Report: 4. The NWC report considered: o Flood diversions & rainfall runoff diversions (including overland flow take) but not pumped diversions from watercourses (i.e. unsupplemented or unregulated flows). o The method included identifying storages (using 2008 for NSW and 2006 for Qld), calculating the surface area (using GIS), converting the surface area to volume (using an assumed depth of 3.5m on average) and then estimating the hydrologic impact (two components: diversions of flood waters and diversions of rainfall-runoff and tail water). 5. The Guide only refers to this work. The Knowledge database does not refer to additional or other work – only the NWC work. 6. The guide is a better result for four systems: Condamine Balonne (454 GL compared to 203 GL in the Guide); Nebine (0.48 GL compared to 0.3 GL in the Guide); Qld Border Rivers (90 GL compared to 61 GL in the Guide) and Gwydir (140 GL compared to 104 GL in the Guide). 7. Five systems have nil impacts (these are all effective zero anyway) 8. The remaining systems have significant impacts totalling 1246.3 GL of which the following are the most affected:

Issue	Reference	NFF comments
		○ Murrumbidgee 0 GL to 340 GL ○ Lachlan 0 GL to 230 GL ○ Macquarie-Castlereagh 8.2 GL to 156 GL ○ Namoi 58 GL to 139 GL ○ NSW Murray 0 GL to 70 GL ○ Loddon 0 GL to 59 GL ○ Barwon Darling 51 GL to 105 GL ○ Warrego 0 GL to 50 GL There are a couple of questions that arise: • Whether the 3.5m average depth is reasonable. NFF is seeking clarification of this but it would appear that this is an overestimation particularly in Northern NSW where up until 10 years ago, the standard wall height was 3 m, meaning that the average depth is likely to be somewhat less than this. Few dams or ring tanks would have been contructed over the past ten years due to drought. More work is required on this. In Queensland, the maximum height of ring tanks was 5 metres so the average depth might be reasonable here. Since that time, the maximum height was been increased to 8 m however, no additional storage capacity was allowed. This means that farms such as Cubbie Station have actually increased the height of dams but reduced the area by shifting the location of the bank. The positive thing is such action would reduce the evaporation level, as water is now deeper. • NFF understands that the NWC report calculated Queensland irrigation interception as a uniform figure across the entire catchments. However, this is unlikely to be appropriate. For example, west of Roma (Warrego & Paroo systems) water use is primarily from the Great Artesia Basin not ring tanks. East of Roma is primarily cropping. Yet the figures of east of Roma are extrapolated west of Roma. Clarification of this approach is warranted. • Why has the MDBA used different figures and how have these been derived? It is now unclear on what basis the

Issue	Reference	NFF comments
		MDBA has derived floodplain use. • It is unclear whether the interception figure relates to storage capacity or actual use. This should be clarified. • There is much confusion over the figures for watercourse diversions and irrigation farm dam interception activities. There is a real risk that there has been double accounting, for example overland flow harvesting in Queensland is authorised under water plans and it is likely that this figure is included in both. In reality, changes in interception may not affect the level of the total SDL but is an equity sharing between interception and other surface watercourse diversions/use – and is primarily an agricultural equity issue.
Groundwater Diversion Limits	Vol 1, p. 53-56	NFF notes the figures used for average measured take are those during the drought period and are likely to be at the higher end of use. It is well known that groundwater use increased in reaction to reduce surface water availability. This take is unlikely to be an indicator of long-term average extraction.
Productive Base	Vol 1, p. 59 Vol 2, Part I, p. 90	This was always referred to as the social and economic aspects during debate with the former Howard Government during negotiation about the Water Bill 2007. It would be an act of good faith if the MDBA began to treat productive base as this rather than the espoused environmental definition. Moreover, the definition provided by the MDBA reiterates that for ecosystem services so would appear to be duplication.
"secure" waterbird populations	Vol 1, p. 60	An interesting comment is that a healthy Basin has abundant, secure waterbird populations. Surely, waterbird populations are as much a function of water availability generally, i.e. good resource years, than just new water management regimes. Moreover, international species are dependent on the actions of other countries, particularly those affecting breeding sites in those countries.
Criteria for Environmental Assets	Vol 1, p. 62-63 Vol 2, Part I, p. 97	NFF notes that almost anything would get on the list based on the criterion listed, i.e. there is no environmental asset that would not meet at least one criteria. There is no discussion on the trade off between/of environmental assets. Clearly, in a fully regulated system and with so much likely impacts on regional communities, it is worthy of discussion on what environmental assets/ecosystem functions etc are worthy of protection (and watering) and what are not. NFF notes the MDBA is proposing that an environmental asset gets on the list when it meets only one of five criteria. On what basis was this decision made? Why not two or three or four or all five criteria? What does the environmental assets lists look like are such a process and what might the EWR look like under these scenarios? Are all these criteria

Issue	Reference	NFF comments
		related to the Commonwealth's external affairs powers? As an example, Cooby Creek in Queensland has a dam, which when built had an environmental flow downstream. The Toowoomba City Council stopped this environmental flow in the early 1990's. With no water flowing down Cooby Creek how is it an environment asset? Has the MDBA ground truthed the accuracy of its list or had any contact with the locals who might actually know? As the Act is dependent on international agreements for its very basis – it would therefore be prudent to assume that this is the minimum requirement. NFF supports the use of RAMSAR sites primarily as the basis for key environmental assets. The issue is how far beyond this is the MDBA's responsibility? Listing of 2442 environmental assets would not appear to be looking at "key" environmental assets. The Water Act does not define "key". NFF notes that "key" ought to be some high level essentially environmental assets – not all. This means that a trade off is required but has not been entertained by the MDBA. NFF notes that the basis for the Water Act is the international agreements – primarily waterbirds and RAMSAR. RAMSAR sites are required to be maintained at listing, however, many of the ecological character descriptions have only recently been drafted. Therefore, there is likely to have been little data collation of what these sites were at actual listing.
	Vol 2, Part I, p. 266	NFF is perplexed as to why Basin States must identify environmental assets, ecosystem functions and their watering requirements that require consideration in water resource plans. Why is this being done if the MDBA have already done this work? Is there a difference in what is included in the Basin Plan and what is in State water plans? Is this duplication of effort and resources?
End of system flows	Vol 1, p. 67, 111 Vol 2, Part I, p. 110	The MDBA notes that end of system flows less than 60% result in poor ratings. NFF seeks clarification of the scientific basis for this decision. Why not poor if less than 40%, moderate 41-60%, good 60-80% and very good +80%. Importantly, the MDBA has advised that the target range is between 60% and 80% of without-development flows (Vol 2, Part I, p. 110). On what basis? Why hasn't land use change been incorporated – as without development is clearly inappropriate today and cannot be reversed and go back to a pristine without development Basin? What happened to the recent claims by scientists that a healthy working river required two thirds of flows (66%)? If this

Issue	Reference	NFF comments
		were applied, what would the proposed SDLs look like? Using Table 4.4 on p. 112 of Vol 2, Part I, six catchments are affected (Condamine-Balonne, Gwydir, Campaspe, Goulburn-Broken, Loddon, Murrumbidgee and as a result Murray as a function of the whole of Basin). Such an approach would see increases in current development environmental flows of between 17% and 26% - surely a better outcome than is being proposed by the Guide. Does this table include or exclude water recovered to date – this might markedly improve the before mentioned figures. Total end of system flows for these named systems is 7584 GL and total current development end of system flows is 3497 GL or 46%. By including 705 GL in the Guide for water recovered already, the new end of systems flows is 4195 GL or 55%. The difference is now only 12%. By including State based and other environmental water as well as predicted future water recovery, it may be easy to meet this objective. In Vol 1, p.111, the MDBA indicates that end of system flows do NOT represent a particular environmental outcome or ecosystem function. The MDBA indicates that this is a "broad measure of environmental flow provision". It is therefore perplexing why the MDBA appears to be using this as a (de facto) measure of environmental health (see Figure 8.3 on p. 112) as per the community consultation meetings. Either it is mischievous at best or deliberately misleading. Comments in the Sustainable Rivers Audit (on the website) are interesting and support stakeholder concerns about the use of end of system flows as a measure of health: "*When valleys were ranked by Ecosystem Health rating, the Lower Murray and Darling valleys were towards the middle. This indicates that impacts are not simply cumulative from headwaters to the mouth of the Murray*." To stakeholders, it would appear that simply putting more water into each system to deliver improved end of system flows would not necessarily result in improved ecosystem health.
	Vol 2, Part I, p. 114	NFF notes this comment: "*MDBA is undertaking modelling and other analysis to verify that this end of system flow approach provides an aggregate environmental water share that aligns with specific estimates of environmental water requirements for key environmental assets and key environmental functions, and that these environmental water requirements can be implemented within operational constraints*." Does this mean that the MDBA simply is no further advanced and doesn't really know? Furthermore, the MDBA advises that "*there will be operational efficiencies associated with environmental water delivery*". If so, how

Issue	Reference	NFF comments
		much and is this included in setting the SDL and, if not, why not? NFF has been calling for this work to ensure that the SDL is set in a way that minimises the impacts to irrigators and their communities.
	Vol 2, Part I, p. 115	NFF also notes the comment that "*there are also inherent uncertainties associated with measurement of flow, diversions and interceptions, estimation of environmental water requirements; and hydrologic modelling*". If so, why on earth is the Commonwealth Government proposing such significant impacts on the Basin's communities in the light of such poor knowledge and uncertainty.
	Vol 2, Part I, p. 115	NFF notes that the MDBA's best estimates are that end of system flow represents the environmental water requirements with a confidence level +/- 20% for the high uncertainty target (although it is yet to be clarified how this relates to SDLs) going down to +/-10% for the low uncertainty scenario. In either case, this is certainly a large confidence range and it is therefore perplexing why so much focus is on end of system flows. It should be noted that irrigators are required to put in water meters with a confidence level much lower than this (cannot exceed +/-5% when installed). Does this mean that a double standard is being applied?
Environmental water requirements (EWR)	Vol 1, p. 67 Vol 2, Part I, p. 98	NFF agrees that it would take years to test the EWR for each of 2442 environmental assets. However, if the NFF approach discussed above is adopted, the information is readily available, i.e. there is sufficient knowledge about RAMSAR sites but little knowledge on most of the remainder. NFF questions the scrutiny of EWR against modelled without development, unless the model also includes modifications to account for land use and land use change. In other words, is the "without development" scenario appropriate any more given the significant changes to land use in the Basin – and it is unlikely that this development will be addressed.
	Vol 2, Part I, p. 105, 183	NFF notes that the MDBA has used eFlow Predictor to determine the additional EWR required. Yet NFF understands that this software tool is under development. If so, it is questionable whether is is appropriate to use this model for this purpose. Moreover, how does this model relate to the hydrologic models or in fact the simplistic spreadsheet called an analytical tool that was used to determine the SDLs!
	Vol 2, Part I, p. 114	Table 4.5 is confusing – is there any direct correlation between high uncertainty and reductions of 3856 GL and the 3000 SDL scenario and likewise the 6983 GL and which SDL scenarios? How does this table relate to SDL scenarios? Why is the volume under "additional reduction required in the northern Basin" increased under a high uncertainty and is less under a low uncertainty – which is the reverse of every other Northern Basin region?

Issue	Reference	NFF comments
		How does this table relate to Table 4.4 on p. 112?
	Vol 2, Part I, p. 161	The MDBA has not provided any information on each catchment's EWR and how this is different than is currently provided under a transitional or other water plan. Where are the gaps and how is the EWR justified?
Key ecosystem function EWR	Vol 2, Part I, p. 103-104	NFF questions why target values for the flow metrics have been set as a proportion of without development flows. NFF notes that this is the same framework as used in the Sustainable Rivers Audit and refers the MDBA to the NFF's previous observations on the shortcomings of this "environmental" assessment methodology, in particular the high chance of getting a poor or lower rating. According to Figure 4.6 on p. 104, there is a 60% chance of getting a poor rating for KEFs. Therefore, the NFF questions the relevance of using this approach. The MDBA proposes to "protect" existing flow regimes, have taken a "no change" approach to moderate flow regimes and are proposing to "improve" poor to moderate. Yet there is no information on which 88 KEFs have rated poor and will be targeted for additional water. How much of the proposed transfer from extractive use is proposed for KEFs versus KEAs?
KEA Indicator Assets	Vol 1, p. 69	It is questionable whether the indicator assets process adopted by the MDB would meet the test of compliance with the Water Act. Moreover, the absolute size of these 18 sites is guaranteed to require a significant amount of environmental water.
Improvements in end of system flows	Vol 1, p. 74	At the 3000 GL/y SDL scenario, 10 regions do not improve their ratings. Of the remainder, three improve from moderate to good (Namoi, Macquarie-Castlereagh and Moonie) and five improve from poor to good (Murrumbidgee, Campaspe, Goulburn-Broken, Barwon-Darling and Wimmera-Avoca). The last of these is now a stock & domestic system, which only flows into the Basin on very rare occasions. Therefore, in terms of reward for the entire effort of the Basin Plan, four systems address poor environmental ratings. On another note, this assessment is based on end-of-system flows not on improved environmental outcomes. It is therefore hardly an accurate indication of improved health and environmental outcomes.
Groundwater	Vol 1, p.	Given that many groundwater aquifers are not impacted by SDLs, is there any scope to increase use (within the SDL) to

Issue	Reference	NFF comments
SDLs	79	offset the impact of surface water SDLs?
	Vol 2, Part I, p. 117	Regarding Table 4.6, the MDBA notes that seven groundwater systems will have an average cut of between 99 GL and 227 GL or 21% to 48%. At the upper end, all seven groundwater systems will be affected. However, at the higher risk end, only three groundwater systems are proposed to be cut, i.e. four will not. This markedly affects the average % cut, i.e. the average cut should actually be 33% over three aquifers not 21% over seven aquifers. The three aquifers targeted at the high uncertainty level are the Lower Lachlan, and the Upper Condamine Alluvium & Basalts aquifers. Effectively, the remainder will not be cut.
Socio economic data	Vol 1, p. 81, 121 Vol 2, Part I, p. 142, 198-201	The MDBA has relied upon a comparison of 2000-01 and 2005-06 water use and gross value of irrigated agricultural production (GVIAP) which has resulted in "reduced water use equals little change in GVIAP". NFF rejects this as the comparison is hardly fair and does not compare like with like. While water use indeed reduced during the two periods – due to drought, the factors affecting GVIAP are not so simple. GVIAP is affected by drought (less commodity equals a higher price), poor product quality (reduced value), world commodity prices, global food scarcity (higher prices) and oversupply (e.g. wine grapes left on the vine to rot) just to name a few influencing factors. Moreover, Australia's horticulture sector is highly sensitive meaning the production of a small additional quantity can markedly reduce prices. In some industries (e.g. rice and dairy) where farmers own the processing companies, farm income may also relate to the returns of subsidiaries companies, e.g. SunRice owns CopRice (stock, horse, dog feeds) and Always Fresh (range of bottled foodstuffs like olives) which prospered during the drought. The MDBA comments in relation to socio-economic work undertaken externally fails to indicate any timeframe against which the purported impacts are gauged, i.e. is this 5 years, 10 years or 50 years.
Impact of reductions on irrigated agriculture	Vol 1, p. 81	The reality of the Basin Plan is that those entitlements (and productions systems) most resilient to climate variability (i.e. lower reliability products and annual crops) will be the first impacted by implementation of the SDLs. This will deliver a future entitlement system that is less resilience and able to adapt to lower resource years, i.e. permanent plantings.
Financial lending	Vol 1, p.	NFF agrees with the observations. Moreover, it may also trigger repayment of loans as the farmer may now be outside

Issue	Reference	NFF comments
impacts	88	lending terms or in default.
Potential sector impacts	Vol 1, p. 89	NFF notes that trade will only maintain current production of high value commodities/permanent plantings using high reliability entitlements. Of note is that opportunistic watering of winter crops may also be affected reducing the yields of these crops (from less residual irrigation the following winter or less water for use to supplement rainfall during the growing season). The effect is that there would be less winter cropping.
Irrigated agriculture farm profitability	Vol 1, p. 94	It is important to note that the Land & Water Resources Audit shows that irrigated agriculture is the most profitable agriculture sector – returning 80% of net farm profits from 0.5% of the arable land (or 1% of the entire landscape). It is questionable whether the impact of reducing this farm profit has been adequately modelled.
Gap	Vol 1, p. 99	It is unclear in the Water Act whether the assessment of the Commonwealth's risk assignment obligations is legitimately calculated from the CDL or the 2004 Water Plan (Water Act s.75 earliest long-term average and 10 year period would imply the original 2004 Water Plan levels).
Risk Assignment	Vol 1, p. 99	May also be triggered if there is a change in reliability or there is a reduction in water allocation. The question is whether the Commonwealth obligation is for both where one is dealt with via recovery but does not address reliability.
Long-term average quantity of water	Vol 1, p. 104	The first paragraph under Heading 8.4 describes the long-term average quantity of water as water that can be taken for consumption in any year and implies that the long-term average is an annual (static) limit. NFF understands that the long-term average will vary each year depending on climatic conditions providing that the long-term average remain at or under the SDL. To have a static or annual cap will eventually result in the long-term average actually declining over the long-term. It is the "unders" and "overs" that ultimately determine the average. This is clearly not what is intended and NFF seeks urgent clarification on how the MDBA propose that the States actually manage, account, monitor and comply with the SDLs.
Impact to entitlement holders	Vol 1, p. 104	NFF agrees that how the States implement the SDLs will result in differing impacts on different entitlement holders. In reality, State law determines how water is prioritised to different water products. Essentially, the lowest reliability water products which are usually the last to receive water, will suffer the most substantial impacts. Basic landholder rights, interception, town water supply, industry, recreation and in most areas high reliability water products will essentially be shielded. So too will unregulated streams as these are generally smaller quantities of water (with the exception of some

Issue	Reference	NFF comments
		Queensland rivers), extractions that are managed by "commence to pump" flow rules. As a result, it will difficult for States to manage and limit this extraction. Because the MDBA has assumed that all water uses will receive the same reduction, the proposed cuts to usage significantly understate the impacts to these lower reliability products. Use of the models (rather than the "analytical tool" would have shown the MDBA what these impacts are likely to be as it is these models that the States use to determine entitlement reliability. It is clearly not good enough to state that the impact will not be known until the States develop the relevant water plans as the MDBA has the same models with the same entitlement volumes etc that are available to the States. The danger when some products will take all the cut is that some irrigated industries be forced to close entirely, but the flow on effect through lack of economies of scale and water pricing will also be felt by those remaining irrigators using higher reliability products and any stock & domestic supplies particularly from gravity fed irrigation schemes. In other words, it may affect the viability of schemes and their ability to continue to supply high reliability products, town water supply, industry, recreation and stock & domestic/peri urban water.
Variability	Vol 2, Part I, p. 215	The MDBA has noted that the SDL may also affect the temporal variability of supply (as indicated above). Other causes have been mentioned but NFF notes that the list is not exhaustive (e.g. fails to mention conveyance reserves and CHN reserves). NFF supports further work being done in this area as proposed but would encourage the use of the hydrologic models in the first instance. Of particular interest are the temporal and spatial impacts of the Basin Plan and supporting water resource plans (i.e. both levels not the whole). Importantly, will preferencing water for the environment delay allocation announcements such that a whole irrigation season does not occur (i.e. beyond the planting window) and particularly the impact on any starting season allocations?
Wetter decades	Vol 1, p.104	NFF notes the concerns should any one decade be wetter than the long-term average, i.e. might result in the SDL being exceeded during this time. If SDLs are built on a climate history that spans over 100 years, this risk is minimised. Moreover, if the climate is wetter during any period (decade or otherwise), then at some point there will be a climatic adjustment during a drier period. What is meant by "long-term" is clearly not defined. However, being ultra conservative with SDLs based on this risk is clearly attempting to manipulate and reduce irrigation reliabilities and impinge property rights.

Issue	Reference	NFF comments
Sharing of water in low resource years	Vol 1, p. 106 Vol 2, Part I, p. 118	Much is being said of the sharing of water between extractive uses and the environment in low resource years – and one of the foci for the Basin Plan is to establish a more equitable sharing of limited water. Yet there is little or no information on a catchment-by-catchment basis on this actual issue, i.e. how biased is each existing plan? NFF notes that in low resource years like that last decade, this is an equity issue between critical human needs and the environment. The Basin Plan will not resolve this. Moreover, irrigators now understand the threat of low resource years to the highest property right – carry over (as this is unused water stored in the dam from the previous season) – which Governments have shown a propensity to take for other uses. The Basin Plan does nothing to protect this water. Moreover, Governments may choose to take water carried over for the environment for critical human needs so this issue is as much about protecting property rights generally. The other effect will occur if water is not allocated to irrigation until after the planting window for annual crops, in order to prioritise water for the environment during spring (for the southern connected system). Undoubtedly, this will have a major impact on commodities, including finishing winter crops. To establish a Basin Plan with critical human needs provisions that are archaically conservative and that effectively seeks to penalise irrigators under dry inflow sequences will add further impacts to entitlement reliability. That is of course, unless flexibility is built into the SDLs that allow irrigators to take a higher proportion of water in wetter years to make up for this issue.
Setting up management of the Basin water management for a 1: 300 year event	Vol 1, p. 106	NFF notes that that MDBA propose to ensure that water plans can deal with a repeat of the recent drought. The question needs to be asked whether management of the water resources of the Basin ought to reflect a 1: 300 year event (CSIRO Sustainable Yields Audit shows that the southern Basin drought has a return period of three hundred years). In reality, this must be considered in the risk profile taken by the MDBA both in terms of the SDL and in terms of the effects of the recent drought on the environment. Recent rain and flood has shown that with a return of good water flows, the environmental has proved to be extremely resilient despite claims of death, dying and destruction (some of which will be permanent loss, offset by a new regeneration due to flooding occuring now, but perhaps not a drastic as the media and some environmental groups are claiming).
Defining optimisation	Vol 1, p. 106-107	The last two key environmental outcomes (top of p. 107) are clearly not about the environment.
River constraints	Vol 1, p.	The MDBA notes that physical and operational constraints may affect their ability to deliver environmental water

Issue	Reference	NFF comments
to delivering environment water requirements	108 Vol 2, Part I, p. 113	requirements (e.g. Barmah Choke). NFF questions why the MDBA has not already modelled this and factored this into determining the Environmental Water Requirements used to determine the SDLs. Clearly, setting up a water regime that will lead to increased flooding and losses (some of which is more than likely to occur on private land and affect livestock & crop production) is unacceptable. `
3000 GL/year	Vol 1, p.108, 109	NFF notes that the MDBA states that 3000 GL/year will achieve the required and "substantial" environmental benefits & outcomes albeit with a higher risk than higher environmental water requirements. Moreover, 3000 GL/year meets the requirements of the Water Act. Clearly then, any discussion should be from 0 GL/year to the 3000 GL/year limit, i.e. in order to optimise social and economic, any future discussion should consider 3000 GL/year to be a maximum upper bound reduction in Basin level diversions.
Ability to increase interception SDL or interception use	Vol 1, p. 109 Vol 2, Part I, p. 264	The MDBA has indicated a preference to allow the States' flexibility to increase interception SDL but at the expense of watercourse diversion SDLs. NFF absolutely rejects this notion. Again, this will affect a smaller number of water entitlement holders unfairly. NFF also notes that the MDBA will allow an increase in the take of individual components (this is read to be annual use) but that this means a reduction in other forms of take, i.e. offsetting components of take. Like the above, this could benefit watercourse diversions but is more than likely to be a disbenefit due to reluctance by states to adequate monitor and manage diffuse and smaller volumes of water that are not easily metered. NFF does not support such approaches unless the States get the agreement of relevant stakeholders. The NFF's preference is for the States to use other forms of management, e.g. efficiency measures to offset any increased SDL or increased use. The reason for this is a there will continue to be an undermining of the property rights attached to entitlements and continuing erosion of reliability. These have obviously flow on impacts such as lending arrangements with financiers.
Outcomes for Murray Mouth	Vol 1, p. 113, 127	The MDBA has discussed and modelled closure of the Murray Mouth. Interestingly, Figure 8.4 attempts to demonstrate that under a without development scenario, the Murray Mouth was open 97% of years. NFF questions whether the Murray Mouth was open for 97% of years due to flows originating from upstream or due to the tidal flows from the ocean. Clarification of this would be appreciated. Moreover, a without development scenario is irrelevant with the Barrages in place. A more appropriate baseline would be without development but with Barrages as this may show

Issue	Reference	NFF comments
		whether the Barrages have any effect on the Mouth closure in and of itself. This exercise may be useful even if to silence critics. The take home message for Figure 8.4 is that regardless of the SDL scenario, a range of 3000-4000 GL/year will only make marginal difference in the time the Mouth is closed, i.e. 2%, yet the cost will be substantial. Discussion on p. 127 indicates that a 22% reduction in diversions will result in only a 6% increase in average flows out the Murray Mouth (from 56% to 62%).
Waterbirds	Vol 1, p. 114, 116	While the MDB wetlands may be important for endemic waterbird breeding, these are not the breeding sites for waterbirds covered by International Convention on Migratory species (CAMBA, JAMBA & ROKAMBA). The importance of the MDB wetlands for migratory birds is as feeding sites. The MDBA notes, "since 1983, waterbird abundance in the Basin has declined by about 80%". The MDBA refer to Figure 8.5 on p. 116. Where is the data pre-1983? What did waterbird abundance look like? Were there highs and lows that reflect the sequence of floods and droughts? Are these figures for endemic species, and if so, is the MDB the primary breeding site? Is a lack of water the primary, secondary or tertiary cause? What might the other causal factors be? Is predation an issue (e.g. foxes and cats)? Is this for the Basin as a whole or for particular water sources/specific wetlands? 1982-83 was a massive drought so what was the cause of the significant breeding event? None of the projected abundance is likely to reflect actual occurrences, simply because this is a straight-line outcome. One would expect projected abundance to reflect different climate scenarios – if this can be predicted via climate change models; surely the calculation of bird abundance is straightforward?
Native fish	Vol 1, p. 115	NFF concurs with statements regarding alien fish species. The Sustainable Rivers Audit states that the reason for poor environmental health in many rivers is alien fish species in upper catchment streams and rivers. It is questionable, then, whether the proposed environmental flow regimes will resolve this problem. Moreover, it will exacerbate it as increased flow will allow migration along the entire length of water sources. While flow extraction is a causal factor, the remaining causes (regulation, barriers & poor habitat) may be resolved in other ways. Regulation is undoubtedly going to continue but the barriers imposed by regulation can be modified to assist both fish migration and spawning (cold-water pollution). This requires investment in environmental works & measures. Poor habitat can be related to flow however, much can also be done through other environmental initiatives, e.g. re-

Issue	Reference	NFF comments
		snagging, removal of alien trees (willows), bank revegetation and so on. In terms of flow, investigation of river operational changes, to assist for example fish passage, would be a worthwhile initiative particularly if this does not require additional or increased flows. Perhaps if Governments are serious about native fish, then removal of a significant recreational species (trout etc) must be contemplated as should ban any remaining commercial and recreational fishing. This of course is a sensitive issue along the entire length of the Basin, including the Lower Lakes & Coorong. But if parts of the social and economic fabric of the Basin's communities are going to have some impact, then it is time to look at all aspects and particularly the whole range of societal use of the rivers – not just perceiving irrigators as being solely responsible for the state of the Basin's ecological health. Figure 8.6 is used to justify the position of the MDB. These are flows to South Australia and Chowilla. However, no or little discussion is provided elsewhere in the Basin. What are the relevant thresholds for each of the RAMSAR sites? What is the current situation? What are the proposed environmental water requirements going to deliver for each of these sites? The Barmah Millewa Forest is the main cod breeding wetland along the Murray River and likely should have been the site included. What about non-RAMSAR sites? What about the impact of European Carp on Murray Cod? In terms of spawning and migration, all of the proposed scenarios gain around one additional month (from December under current conditions to January) – which is halfway to natural conditions of February. Moreover, apropos access to wetland & floodplain habitat for large bodied native fish, the three proposed scenarios really do not assist. Under without development conditions, flows above 40,000 ML/day for the period October to New Year were required. The proposed scenarios indicate a window of less than 45000 ML/day from October to early November. Therefore, an alternative is required such as a fish passage to and from these areas when being artificially flooded through environmental works & measures. NFF understands that environmental works & measures on Chowilla have commenced, yet no comment is made on how fish passage might be promoted to and from the floodplain.
TLM works & measures	Vol 2, Part I, p. 196	The MDBA should also clarify what the Living Murray Environmental Works & Measures have been completed, are in implementation or are about to commence, what the likely water savings are from these works & measures, and how these savings will be taked into consideration in setting the SDL. Moreover, how these environmental will reduce the environmental water requirements and therefore, the level of the SDL.

Issue	Reference	NFF comments
River Red Gums	Vol 1, p. 117	NFF concurs that the recent drought has had a major impact on river red gums. However, recent rain shows just how resilient this important species is. Many trees are both regenerating canopy cover (albeit there might remain some "dead" areas of trees that will be replaced by new growth), flowering and many new seedlings are generating (so many in fact that nature will result in many dying due to the competition). A recent media article noted that NSW Forests has not decreased its forest area by one hectare and that tree mortality was around 1%. Is this within normal bounds for such a significant drought event? How will this be offset by a regeneration of seedlings due to the current flood events? NFF encourages the MDBA to redo the survey of red gums undertaken during the drought to establish exactly what the result is. Moreover, the MDBA notes that river red gum forests & woodland have been in decline for 20 years. However, what was the history like before this? We know that the riverboat trade of the 19th and early 20th Centuries resulted in significant harvesting of timber close to the Murray River. Where one could see for "miles" has been replaced by significant forests again. To view the real impact on important species like river red gums, a long-term history is important. A 20-year snapshot is clearly inadequate. The actual causes are also important. For example, during the 1990's a caterpillar invaded many red gums along the Murray River resulting in significant mortality particularly of young trees. The MDBA has indicated repeatedly that the profile of the river hydrograph is important and that the Basin Plan is seeking to restore a variety of flow components (see Figure 6.4 on p. 66). River red gums are close to the river and require low to moderate floods. Because black box are often further out on the floodplain, it is likely that these will need larger flood events for a watering event. It is widely acknowledged that it is the medium flood events that have been significantly reduced by regulation. It is also widely known that management of red gum forests has resulted in decline because they have been over watered.
Salinity outcomes	Vol. 1, p. 118-119	It is a bit disingenuous to suggest that all irrigation will have improved water quality. While this is true for the lower reaches of the Basin, it must be remembered that much of the salinity issues of the Basin have arisen from clearing of vegetation (in upper catchments and the Mallee). As a result, salt is being imported into gravity fed irrigation areas and being stored in the soil, i.e. these are acting as salt sinks. The Basin Plan will not resolve this as the Water Act prevents the MDBA from dealing with land management issues.

Issue	Reference	NFF comments
		Therefore, it is important that there is a high level COAG agreement that deals with land management, and specifically how the Basin Plan will interact with regional NRM plans. Figure 8.7 does not show without development scenario! Why, when every other graph does? The data is modelled data – where are the actual figures to modelled Figures? Importantly, it is well known that salt levels have been decreasing at Morgan and Figure 8.7 clearly shows the positive influence these have had on salt loads out of the Murray Mouth since the mid 1950s. Moreover, it must be acknowledged that droughts result in less salt and any flood event will result in higher salt loads due purely to the dynamics of groundwater and surface water pressures. Due to the dynamics and different climatic conditions, it is unfair to state that the salt target would not be reached in individual years! It is also likely to show that this would also have been the case in the without development scenario. NFF rejects the notion of a "drought deficit" when in fact it is known that salt loads reduce during drought but there are spikes immediately following good rainfall and flows. On what basis has the MDBA decided that the export target is to be 2 million tonnes per annum? The reasons/basis have not been clearly enunciated.
Permanent Water Sales	Vol 1, p. 124	The MDBA notes that some farmers have sold permanent water as a drought measure to reduce debt and acknowledge that this may restrict recovery options particularly when facing reduced water availability. Many farmers have sold on the assumption that they will be able to repurchase post drought, and at reduced prices. It is doubtful this will occur as this water use has been permanently removed from agriculture. These farmers are likely facing significantly increased costs to replace this water, which may have reduced reliability, ongoing increased costs to buy additional allocation water (or temporary trade) and will undoubtedly face increased annual water charges.
Greater certainty	Vol 1, p. 125 Vol 2, Part I, p. 270	While much is being said about water reform and the certainty this will provide entitlement holders, this is not actually occurring. Irrigators have been going through water reform since 1993 – and it still going on and will continue. The statutory 10-year review of the Basin Plan, reviews at the request of the States, and review of water plans will mean ongoing reform and changes to entitlements. Moreover, NFF is concerned with the MDBA's view:

Issue	Reference	NFF comments
		"*Although water resource plans will be accredited for 10 years, they may be amended at any time during their operation*". Irrigators face an uncertain future. At some point, there must be an end to major changes. NFF would support a period of at least 10 years of certainty. This is needed just as much to recover from the drought, as it is to have respite from water reform. NFF would also support that enough is enough. Future reviews of the Basin Plan and Water Resource Plans must be restricted to minor refinements. Any advances in scientific knowledge that requires additional water for the environment must be found within efficiency and other measures within the environment's pool of water. Moreover, any refinements that would allow increases in the SDL must also be considered.
Environmental Watering Plan	Vol 1, p. 126	It is incongruous that the MDBA could release the guide without actually having developed an environmental watering plan that seeks to determine the prioritisation of environmental water, including whether this may result in less reductions to the current diversion limits through the more efficient and effective use of environmental water.
	Vol 2, Part I, p. 274	It is also incongruous that the MDBA would seek to have an environmental watering plan which has a key component "*a method to identify key environmental assets and key ecosystem functions that require environmental watering*". This goes to the very heart of the major issue with the Guide, i.e. there has been no real identification of KEAs and KEFs and more importantly, the trade offs and how to determine the water requirements. Moreover, the SDL is based on no science but a direct grab in lieu of imperfect knowledge. The question is whether this methodology is robust enough to justify the impact on the Basin communities, farmers and economy.
	Vol 2, Part I, p. 279	There remains a question about what happens if the use of water on identified KEAs and KEFs does not match those used to determine SDLs, in particular if the SDLs have been over conservative. Where is the process for the MDBA to adjust the SDL upwards to lessen the impacts?
	Vol 2, Part I, p. 289	NFF notes the proposed targets. However, as stated elsewhere, these do not consider any legacy effects including from drought. How does the MDBA propose to manage legacy effects?
Maximum acceptable impact	Vol 1, p. 127	The MDBA has a policy that the maximum acceptable impact from implementation of the SDLs is 40% with 45% for the 4000 GL scenario. At these levels, the average cut is substantial and is based on the cut being equally shared by all uses. NFF knows this will not be the case that the impacts will be significantly higher than this. At the broad Basin scale, the

Issue	Reference	NFF comments
		following table provides some insights into total agricultural impacts (i.e. not based on the hierarchy of water allocation applied by the States but agriculture versus non-agricultural use):

CDL - surface water	10942	10942	10942
CDL - interception	2735	2735	2735
Total CDL	13677	13677	13677
Proposed SDL cut	3000	3500	4000
SDL	10677	10177	9677
Less Interception	-2735	-2735	-2735
Less estimated regulated non-ag use (20% of CDL)	-2188	-2188	-2188
Less minor unreg use[15]	-272	-272	-272
Residual Basin agricultural use	**5482**	**4982**	**4482**
Estimated Ag water use			
80% of surface water CDL	8754		
Plus farm dams BLR CDL[16]	591		
Plus farm dams irrigation CDL[17]	1803		

[15] Guide to the proposed Basin Plan, Table 4.13, Vol 2, Part I, Pt 1, p. 181
[16] Ibid
[17] Ibid

Issue	Reference	NFF comments
		Total Estimated Ag Water Use **11148** **% reduction in Ag water use** **-51%** **-55%** **-60%** The 7600 GL scenario being demanded by some including over 50 scientists (as reported in the media on 1 December 2010) would actually wipe out irrigated agriculture in its entirety. The above calculation resulted in a 92% reduction in agricultural water use. At individual catchment levels, for the 3000 GL/year scenario, NSW Murray and Murrumbidgee General Security, NSW Intersecting Steams, all Victoria low reliability products except Loddon, and Ovens & Broken High Reliability Water Products fall outside the 40% limit. NFF is still waiting on clarification of Queensland reliability factors to determine the impact in Queensland. Obviously, at the 4000 GL/year scenario, many more products are affected and the above-mentioned list of water products is affected much more severely.
Localised environmental trade off	Vol 1, p. 127	It is interesting that the MDBA notes that the difference between scenario 1 and 2 is that scenario 1 trade off local environmental outcomes for downstream environmental outcomes. This is likely to be extremely contentious as everyone is willing to look after his or her own patch first! The question must be asked why there is also no compromise downstream, i.e. everyone has to give something up!
Environmental contingencies	Vol 1, p. 128	The MDBA note that there are no contingency arrangements to achieve environmental water requirement targets should environmental water be inefficient and/or future climate change has severe impacts on flows. This is surely a poor outcome and one that will lead to a further demand for more water from irrigators. It is a responsibility of both the MDBA and Government to stop this continual ask for more and more water for the environment. Any future requirements for the environment must be found from system savings, engineering or other infrastructure investment, innovation or technology or system efficiencies.
Basin Scale impacts	Vol 1, p. 129-131	It is clear from Figure 8.9 that there is a transfer from consumptive to the environment. Consumptive use is proposed to reduce by 27%-37% on average. Environmental water requirements increase by between 7.4% and 9.7% and Murray Mouth flows would increase between 39% and 51%. Therefore, most of the benefit in the Basin Plan is derived at the Murray Mouth not the majority of key environmental assets, key ecosystem functions, productive base or key environmental outcomes. Moreover, it has been publicly stated that the Basin Plan cannot be worse than the recent drought. However, Figure 8.10

Issue	Reference	NFF comments
		dispels this myth. All three proposed scenarios will be worse than actual (i.e. not average) extractions during the period 2002-03 to 2006-07. In other words, the Basin Plan will deliver an outcome that is worse than the first part of the drought but better than the last three years of the drought. Not something the Basin can look forward to as a whole.
Scenarios; Tables 8.3-9.5	Vol 1, p. 132-134	It is difficult to ascertain where the inclusion of climate change is portrayed in any of these tables, nor in Appendix C.
Barwon-Darling contribution to Murray	Vol 1, p. 135	Due to the very nature of this catchment, NFF concurs that it is difficult for this catchment to contribute to flows downstream of Wentworth. However, in a limited number of years, flood flows from this catchment will contribute substantially.
	Vol 1, p. 135	The following statement needs clarification: "*The Darling catchment above Menindee Lakes was not included in the southern system, though additional water that would flow to the Murray as a result of reductions in the Darling catchment was accounted for in this analysis*." What does this mean – is the water included or excluded? How was it accounted if not included?
Environmental water requirements	Vol 1, p. 135	It is not clear how much environmental water is used in each catchment, how much contributes to downstream catchments and how much is purely end of system flows (or is this the same thing)? Perhaps a better way of clarifying this is for each environmental asset & ecosystem function, how much water is from within catchment and how much is contributed from upstream catchments (and from which catchments).
Take limited by the SDLs	Vol 2, Part I, p. 174-175, p. 266	NFF seeks clarification on how the MDBA proposes to limit the evaporation from "private" storages and impoundments that form part of a distribution network. The examples given were Barren Box Swamp and Waranga Basin. Both of these examples will largely rely on metered extractions at river offtakes (Murrumbidgee and Murray respectively) that will be limited under surface water take. How does the MDBA propose to monitor and ensure compliance?
		NFF supports the requirement that water access entitlements be held for some types of interception activities such as mining, forestry and commercial use farm dams. NFF also supports that unauthorised use is dealt with via compliance, rather than including this in the SDL. This would only penalise existing users who take water legally.
	Vol 2, Part	NFF seeks clarification on whether improved knowledge (e.g. where estimated water use is less than the relevant SDL was based on) that results in less take (e.g. for interception) will result in an adjustment to other take (e.g. surface water

Issue	Reference	NFF comments
	I, p. 177	SDLs). Given that these were originally set for an overall level of take but with separate components, it seems reasonable to make this adjustment and to do so as soon as the information becomes available, rather than as proposed by the MDBA in future amendments to the Basin Plan.
	Vol 2, Part I, p. 178	In terms of Table 4.12, it would appear that despite statements to the contrary, the MDBA as proposing to include future plantation forestry expansion, reafforestation and mining etc under the current SDLs.
Offsetting take components	Vol 2, Part I, p. 178	NFF is concerned the proposal to allow states to offset take components against each other, e.g. increasing interception at the expense of surface water. While it may be acceptable to adjust these components from more accurate information, it must be remembered that states are likely to be able to adjust one component (irrigation access entitlements) more easily than it will regulate other components (e.g. plantation forestry). This mechanism must not be used as a way of State deliberately favouring increased use due to land use planning decision (e.g. urban expansion or peri urban farm dams) at the expense of other uses such as irrigated agriculture. Increased use within the SDL must be achieved through savings.
Return flows	Vol 2, Part I, p. 182	Much has been said about the impact of reduced return flows. However, this is a catch 22, i.e. improved efficiency means that return flows are reduced. However, return flows have been relied upon downstream for development – it could be stated that downstream users have relied upon inefficient use to underpin their own property rights. This is particularly the case when such flows were already metered at the diversion offtake. There is a precedent with the setting of the MDB Cap and how this was applied at a local level particularly in NSW. While average use across a catchment determined the Cap, the NSW legislation determined how water is allocated in the hierarchy (this is a similar process for all jurisdictions). This meant that despite high security water users having a history of use around 56% in the NSW Murray, these users were allowed to have their full property right respected. By contrast, NSW Murray General Security water users had a history of use of 87%. The MDB Cap was set at 83%, meaning that water that was previously used and enjoyed general security users, now needed to be purchased from high security users. A similar example was in the argument about activation of trade of sleepers and dozers that is now a mute argument. This situation is the same as the argument that reduced return flows affect downstream users. Yes, it does, however, it could be stated that upstream users have now become more efficient and are fully utilising their property right rather than partly as was experienced in the past. Downstream users' reliability unfortunately was partly derived from inefficient upstream use. It is therefore questionable whether this component ought to be included in the Basin Plan provisions in determining the

Issue	Reference	NFF comments
		SDLs.
Hydrologic models	Vol 2, Part I, p. 183, 185	NFF seeks clarification to the actual changes made to the models ("*refined them for the purposes of the proposed basin plan*"). Such changes must be documented and explained. Moreover, the MDBA must make available the instructions given by the MDBA to the modellers. NFF has made other comments regarding the use of the analytical tool (i.e. spreadsheet) to determine the SDLs. Such an approach is a crude method and in reality the models would have enabled a full understanding and appreciation of the full impact of the range of measures proposed in the Basin Plan on each water product's reliability. NFF rejects this approach as a "cop out" and notes that this has led to a significant shortcoming in the Guide – and is a major issue for farmers. The excuse given (i.e. the complexity makes it difficult to use in a timely way) is simply unacceptable. Nor is saying that the ultimate impacts will not be known until the State water plans are developed. Ultimately, stakeholders will want to know what the impact of the Basin Plan component is, then what the impact of State implementation is. The risk allocation framework is also dependent on this information. NFF notes that hydrologic models are very limited in allocating absolute numbers. The IQQM model is unable to measure tributaries and overflows without major adjustment and assumptions nor can it model rainfall between sparsely spaced rain gauges. Particularly in the northern Basin this means that the modelling has the inflows incorrect, the demand take is wrong and the assumptions made on crop use and overland flow take in wrong.
Analytical tool	Vol 2, Part I, p. 186	Despite this explanation, stakeholders are no closer to understanding how existing environment water (planned and/or held) has been taken into consideration. This must be done on two counts – as a separate component in the CDL, as well as water not taking into account in the CDL or SDL but available to close the gap (e.g. Commonwealth water recovery). Perhaps a table might assist that includes each type of environmental water and where it is accounted, i.e. columns for program, water product, total water product volume as entitlement and LTCE and whether included in the CDL or available to offset the SDL.
Salt Interception Schemes	Vol 2, Part I, p. 197	NFF seeks clarification of the water take for salt interception schemes, and why NSW and Victoria will be required to include this take in their SDLs but not South Australia. Importantly, salt harvesting occurs from some salt interception schemes. Perhaps it is appropriate that those harvesting

Issue	Reference	NFF comments
		the salt be required to obtain an offsetting entitlement, particularly as income is earned from its use, no water charges are paid and yet State Governments receive royalties. Such arrangements ought to apply for existing and future SIS.
Managed Aquifer Recharge	Vol 2, Part I, p. 197	While NFF agrees that water from the Basin's water resources is used for recharging aquifers, there is an anomaly in that coal seam gas extraction of water is largely shielded. NFF expects the Basin Plan to make adequate arrangements to ensure this water is accounted for and offset by any water reinjected into aquifers (i.e. net use). This might encourage the petroleum industry to treat the water and reinject it to attenuate their impacts on the aquifer and landholders.
Groundwater SDLs	Vol 1, p. 138	NFF notes that 67 groundwater systems will have no changes.
	Vol 1, p. 138	The aggregate reduction proposed is between 99 GL and 227 GL over seven groundwater systems. This equates to a reduction of between 21% and 48% over the seven aquifers. The MDBA has limited this reduction to 126 GL (due to the 40% cut), which is an average of 27%. Of these, two NSW aquifers have already seen substantial reductions, i.e. Lower Lachlan Alluvium and Lower Namoi Alluvium. Additional reductions must be justified and a full explanation given why recent reforms were deemed to have been insufficient – particularly when the Commonwealth Government has put substantial funds into the structural adjustment program. Moreover, the NFF seeks clarification on whether the model currently being used for the Basin Plan included the changes irrigators requested due to errors or lack of recognition of the reforms undertaken already.
Groundwater SDLs – reductions in CDL but not use	Vol 1, p. 137 & 139	The MDBA has identified four groundwater systems in which the CDL will be reduced. However, this has been justified on the basis that this water is not currently being used, which is inappropriate and has no scientific basis. In reality, a 60 GL/year reduction is proposed across four aquifers without any justification. The MDBA ought to provide an explanation as to why three aquifers were reduced for use and one (the ACT) was not, i.e. there would appear to be an inequity in treatment here.
Connectivity between groundwater and	Vol 1 Vol 2, Part	In Vol 1 there is simply no discussion and clarity around the contribution from groundwater to surface water SDLs. Nor is there any discussion on how the connectivity is shared between groundwater and surface water users. Vol 2, Part I provide some further information. However, there is a lack of clarity and the MDBA notes that this is a

Issue	Reference	NFF comments
surface water	I, p. 43-44 Vol 2, Part I, p. 100 Vol 2, Part I, p. 173	major area of uncertainty. For example, what is the measure (called a "fraction") in Table 2.13 on p. 44 and is it relevant to measure this against the Murray Mouth? What does this actually translate to in terms of volume of water that is connected? How has the MDBA considered and included connectivity in its calculations? On p. 100 of Vol 2, Part I the MDBA notes that around 60% of groundwater systems were determined to be highly connected. But there is no information on which ones and how much connectivity. How does this translate to reductions under the SDL scenarios? On p. 173 of Vol 2, Part I the MDBA notes that using 2004-05 data (again higher groundwater use due to drought as irrigators sought alternatives to a lack of surface water) connectivity would reduce streamflow by some 447 GL/y. No information is provided on which streams this applies. The MDBA proposes that short term management is via management rules in water plans. Longer term management will be managed by including this as a loss component in the models. This is already done but not as a specific connectivity component). Apart from specifying this, this is really no change from current management. The MDBA does not indicate how the impact of this connectivity is shared between surface and groundwater. In terms of accounting for groundwater SDLs, the MDBA proposes to set the SDL at recent historical use. It should be noted that this use is likely to have been much higher in the last ten years than perhaps the long-term due to the reliance on groundwater during the drought. This should be factored into the connectivity issue and the amount of water specified in surface water models as a "loss".
		No discussion has been made of impact of SDLs on shallow groundwater extraction.
Sustainable Yield	Vol 1	The MDBA has failed to provide any information on the sustainable yield of groundwater systems, nor the environmental water requirements for each aquifer. The MDBA appears to have just done a cut of current use to some arbitrary SDL figure.
NSW recent reform of groundwater entitlements	Vol 1, Table 9.1, p. 141	Many NSW groundwater aquifers have undergone substantial reductions due to recent reforms. It is unclear how the MDBA has treated supplementary licences issued to assist transition to the new entitlements. These entitlements are the difference between the old 1912 Water Act licence and the new 2000 Water Management Act entitlements and which will be reduced to zero and cancelled on 1 July 2015 (with the exception of the Lower Lachlan aquifer which will be cancelled

Issue	Reference	NFF comments
		on 1 July 2018). As NSW remains in the implementation phase of its Groundwater Plans, NFF seeks clarification on whether the "reductions from current use" and "current use" in Table 9.1 includes the supplementary licence referred to above. Is this the reason for the higher use compared to current diversion limits in the Lower Murray and Lower Murrumbidgee aquifers? Why was only the Lower Murrumbidgee indicated as having a reduction from current use when Lower Murray has the same issue?
Mining interception of groundwater	Vol 1, p. 146	NFF concurs that while mining is a small quantum user of water, mining and for that matter coal seam gas use, can and does have substantial localised impacts. Despite this, mining use is rising. The ABS released it Water Accounts on 29 November 2010 and states that mining use has increased by 23% (or 508 GL) during the period 2004-05 to 2008-09. If an estimate were to be included of coal seam gas water abstraction (which is not currently classed as water use) these figures would be substantially higher. While the NFF welcomes the MDBA's views that mining water use will be subject to SDLs (presumably as part of a groundwater and/or surface water SDL (or as part of the interception SDL), no such assurance is given regarding coal seam gas use.
Critical Human Needs (CHN)	Vol 1, p. 147	NFF notes that the MDBA's role in critical human needs will be largely confined to the southern connected Basin (or the Murray River). To this extent, any arrangements for this system will need the concurrent approval of the MDB Ministerial Council. NFF agrees that Critical Human Needs is the highest priority – however, most if not all State legislation place the environment as the highest priority. The storage (or impoundment losses) must be clarified as this volume relates to volume held in storage and climatic conditions (cool versus hotter climate). With four major storages – two in upper catchments and two in the western end – the storage losses will be quite different. As stated previously, the equity of sharing of low flows in low resource years with the environment is a function of critical human needs. With a proposed more equitable sharing and these critical human needs requirements, the

Issue	Reference	NFF comments
		agricultural industry will be severely affected.
CHN triggers	Vol 1, p. 147	While there is discussion generally of CHN, there is no discussion of the triggers, which will see water set aside for transmission losses (this being the responsibility of the MDBA whereas the States will have responsibility for CHN itself). This is critical as water set aside ahead of a CHN use will negatively affect the amount of water available to agriculture – through foregone use for reserves and through the reserves taking up airspace. This is particularly the case when "*circumstances...are expected to be rare*" (p. 148).
Normal function	Vol 1, p. 148	NFF notes comments regarding "normal function". While NFF concurs, this is difficult to apply in practice, particularly as the States themselves have set aside the CHN reserves. The recent drought showed that there was confusion. For example, was level 3 the same in each State or was this different? Moreover, states introduced exemptions, e.g. it was reported during the drought that pensioners in Adelaide were exempt from water restrictions – was this the case in other towns & states, and if not why was it applied Adelaide?
Desalination plants	Vol 1	No mention has been made of the desalination plants being bought online, particularly for Adelaide. The provision of water from such initiatives (including Melbourne in the future) must be factored into the volumes needed for both CHN and transmission losses.
States CHN requirements	Vol 1, p. 149	The proposed volumes will see a decrease in the NSW component (~19%) and small increases for Victoria and South Australia. Interestingly, there are substantial increases in system losses, which now include a component for storage losses and a significant increase in the South Australian conveyance component. There is no substantiation as to why such increases are required, particularly when the system was run using significantly less water during the recent drought. An analysis of the South Australian figure is possible but not for the large number of towns along the Victorian & NSW Murray. Adelaide's annual average use (based on maximum five-year limit) is 130 GL/annum plus an additional 50 GL/annum for SA towns. This means at full resource availability, 180 GL/annum is required for South Australia. Yet the total amount for CHN is 204 GL/annum (up from 201 GL/annum previously). When the desalination plant is factored in, one must assume that there has been a substantial over estimation. While each State has to set these CHN requirements aside, it is the impact that these reserves have on dam storage and entitlement reliability that is at issue. The MDBA will allow states to carry over 150% of the volume effectively 513 GL. Importantly, the inclusion of a desalination component will reduce this impact and will reduce the losses component to deliver this water down the Murray.

Issue	Reference	NFF comments
		What is interesting is why the MDBA have chosen to change a recent arrangement which worked and which the states had agreed to.
	Vol 2, Part I, p. 240	Are the proposed CHN a minimum requirement or can the States effectively set aside larger volumes?
Transmission losses	Vol 1, p. 149	NFF questions the figures for losses. Five percent has been the normal loss factor previously applied to storage losses (at least for NSW, which was the only state to apply this). On what basis has the MDBA decided to factor in 150 GL/annum and what are the components for each of the four storages? No such figure was included in the recent drought and a previous attempt by NSW to apply a storage loss component to carry over water has been withdrawn (with no explanation as to why). This questions the inclusion of this component without a justifiable explanation. The 750 GL/annum component from upper catchments to SA border is reasonable, and a similar figure to those used during the drought[18]. NFF rejects the 696 GL/annum component. During the recent drought, this component was 363 GL/annum[19]. The MDBA has referred to clause 88(b) of the Murray-Darling Basin Agreement[20]. However, this volume is related to normal sharing arrangements not critical human needs arrangements. NFF suggests that an appropriate figure that is largely similar to the contingency arrangements would be more realistic – with adequate justification for any deviation.
Conveyance Reserve Provision	Vol 1, p. 149, 239-245	NFF notes the proposal to introduce a conveyance reserve. While this is not business is usual, the very introduction of this will impact on agriculture as water must be set aside either during the previous irrigation season or the start of the next one for this purpose. This will obviously mean water that could have been allocated to irrigators will not be. NFF rejects this requirement for a worst-case scenario as these provisions are already included in Tier 2 & 3 Critical Human Needs in the Water Act. The MDBA proposes to have at least two years of such a reserve. The MDBA notes that the likely shortfall is 620 GL (which means that 1240 GL is to be stored). When combined with the CHN reserves for the States, a total of 1753 GL is required which is equivalent to 59% of the full supply level of Hume Dam (less dead storage) or the around full supply

[18] 2007 Murray Darling Basin, Dry Inflow Contingency Planning, Overview Report to First Ministers
[19] Ibid, p. 3, Figure 2.
[20] Water Act, Schedule 1, p. 338

Issue	Reference	NFF comments
		level of Menindee Lakes! Moreover, the inclusion of this for a worst-case scenario is needlessly conservative and as stated before, managing the system for a 1: 300 year event must be avoided. Setting aside a reserve for at least two years consecutive low inflow sequences will also have flow on impacts to water users – in the initial year this reserve is set aside (due to foregone allocation) and thereafter to account for the reserve. This will affect entitlement reliability. Has the MDBA actually determined how all this water is going to be stored – conveyance reserves, State mandatory reserves, CHN reserves, carry over, environmental water etc. It begs the question of whether in fact there will be any airspace in dams! What impact will these all have on one of the important functions of these dams – as flood mitigation tools?
Water Quality	Vol 1, p. 150	NFF notes the MDBA comments that the Water Quality & Salinity Management Plan ought to be sufficient to deal with any water quality issues. NFF seeks clarification as to whether the 840 mg/L of total dissolved solids bears any relationship to the salinity levels at Morgan. Where is this measured? What are the "any other" water quality characteristic that might be measured outside is "typical range"? Where have these been measured previously? What are that causes? Is it better not to manage the cause rather than just provide a "dilution flow"? NFF notes that the MDBA has stated that Australia's Drinking Water Guidelines may not be in line with world standards and that this may lead to less water for dilution purposes. How is this different? Why has this not been considered previously?
MDB Water Sharing	Vol 1, p. 150	Where is the consultation process for this new agreement? This would seem to be a critical schedule to the Agreement, particularly as it included the provisions and key mechanisms to set aside, deliver and account for CHN and conveyance reserves. Due to NFF's previous observations, surely the Guide should have included a discussion on at least the high-level proposals.
Implementation	Vol 2, Part I, p. 246	NFF notes that the MDBA proposes to set aside the CHN and conveyance reserves provisions from the first day of the first water year following adoption of the Basin Plan, i.e. from July 2012. NFF rejects this as the triggers required to be developed in accordance with the Water Act determines the triggers in conditions that will require when to set aside these provisions. Doing this from July 2012 (unless a return of drought

Issue	Reference	NFF comments
		conditions) is needlessly conservative and moreover will impact on the drought recovery of businesses from the period 2012 to 2014 when most entitlements will begin wearing the impacts of the new arrangements. In other words, there will be no drought recovery period and the effects of the Basin Plan will be felt immediately. This is most egregious.
Bridging the Gap	Vol 1, p. 152	NFF notes that there has been much confusion over what water already recovered for the environment has been included and what water has been excluded. At an irrigation Roundtable Meeting held on 24 November 2010, Minister Burke advised that the 746 GL of water was included (including The Living Murray, Water for Rivers, Lake Mokoan and the Wimmera Mallee Pipeline). Yet Table 11.1 only includes 705 GL so this begs the question of where the remaining 41 GL is contained within the Guide. Has this been included since the Guide was released, i.e. in work underway on the Proposed Basin Plan? Moreover, NFF would recommend that Table 11.1 be amended to clearly show the Commonwealth recovery from the State based recovery and that the latter is clearly shown what program water recovery is included/excluded (e.g. NSW RiverBank, Victorian Food Bowl Stage 1 etc). Until this information is known, it remains very unclear how much water is included and counts towards closing the Gap.
Water Excluded from Bridging the Gap	Vol 1, p. 152-153	NFF notes that some water recovery programs have been nominated as being excluded. NFF is of the very strong view that all these, and others, must be counted towards closing the gap. Examples include the NSW Narran Lakes 10 GL, South Australian water purchase program and NSW RiverReach program. Once this is known, stakeholders have little understanding of how big the existing gap is and how much additional water recovery is needed. NFF is aware that the Commonwealth estimates future water acquisition to be in the realm of 750 GL LTCE and water investment recovery in the order of 600 GL LTCE[21], which appears to be quite conservative.
Impact on remaining consumptive users	Vol 1, p. 153	NFF rejects this statement as elsewhere in the document the MDBA has stated that water users will bear 3% for climate change, which has been included in a reduction to the current diversion limit (apparently).

[21] SEWPC advises that this 600 GL includes 200 GL for Lake Menindee. NFF is aware that Victorian Food Bowl Stage 2 includes around 113 GL of water for the environment, which will be included in this 600 GL figure. This leaves 287 GL for all other programs, which appears quite conservative.

Issue	Reference	NFF comments
will be nil		
Risk Allocation	Vol 1, p. 154 Vol 2, Part I, p. 252-255	NFF welcomes the MDBA decision to have all the risk allocation for the Basin Plan assigned as 100% to the Commonwealth, except the climate change impact. As previously noted by NFF, this is not about new knowledge and the MDBA has admitted that there is no new science as it has only collated existing knowledge – some of which is poor but most only medium confidence levels. NFF acknowledges that the Commonwealth Government has indicated in budget papers that it has a contingent liability for risk allocation and that any water recovered via expenditure on water recovery and investment programs, will count towards offsetting this liability. Moreover, the Mid Year Fiscal Outlook provides $310 M from 2014-15 for continued acquisition of entitlements to recover any cap. It is noted that this is directed towards primarily regulated surface water initiatives. However, NFF has noted elsewhere that the Government also ought to have a responsibility for risk allocation for groundwater. Moreover, there is no reason why the Commonwealth ought not to have a risk allocation responsibility for unregulated surface water and interception activities as well. NFF is of the view that the Commonwealth's closure of the gap will assist meet it's risk allocation responsibilities and that this will undoubtedly mean that individual regulated surface water entitlement holders are unlikely to receive any payments. However, it is not clear how impacts to reliability from other aspects of the Basin Plan will be resolved or how the Commonwealth will make payments for reductions. This issue must be resolved in the proposed Basin Plan.
Double counting of Commonwealth Government's share of reductions	Vol 1, p. 156	NFF seeks clarification as to whether the MDBA has "double dipped" in counting the 3% climate change reduction. If the Guide is understood correctly, the CDL in the Guide has already been adjusted for climate change. This means that the figures quoted for the Commonwealth Government's share of the reduction being either 2590 GL to 3590 GL for a 3000 GL to 4000 GL scenario means that climate change has been counted twice – once in the CDL and a second time to offset the gap from each scenario! The assessment of 2590 GL or 2590 GL means that the 3% is a static figure of 410 GL (you would expect this to change for the scenario gap). A straight 3% calculation of the CDL of 10942 GL gives a climate change figure of 328.3 GL. Therefore, the CDL must already include a reduction for climate change. Therefore, the gap should simply be 100% of the scenario less water recovered, i.e. no additional measure for climate

Issue	Reference	NFF comments
		change.
Over allocation and overuse	Vol 2, Part I, p. 253	NFF notes comments by the MDBA regarding over allocation/over use and the liability for the Commonwealth for risk allocation, i.e. that this ought to be disregarded in relation to the calculation. NFF agrees with the MDBA that, aside from climate change, the Water Act is a reflection of the Commonwealth's international obligations and therefore impacts from change of Government policy are 100% assigned to the Commonwealth. However, in terms of over allocation and over use it should be noted that this is a decision of Governments, not irrigators. Over use in particular is irrelevant. The MDBA Cap Audit Monitoring Reports show that water diverted under rules amounted to only 70% of total water allocated and available for use. In other words, of the water able to be diverted, only approximately 70% is actually taken[22]. On a State basis, Queensland has the highest percentage (81%) likely due to the significant rainfall events over the Qld MDB in that year. This was followed by Victoria & South Australia at 70% and NSW at 68%. In terms of specific valleys, Adelaide & South Australian towns had 100% of use, with Wimmera-Mallee recording the lowest use (followed by NSW Lower Darling). When one considers that town water supplies, industry, recreation, stock & domestic and environment are likely to have used all the water available and allocated, the actual amount used by the irrigation sector is somewhat less than 70%. If pre-drought use is analysed, total Basin use of allocated water is 83% so still significantly below the amount of water allocated and able to be used. In terms of States, NSW recorded the lowest use at 79% with South Australia on 81%, Queensland at 91% and Victoria 93%[23]. In summary, over use is not at issue. Is over allocation an issue? Over allocation generally suggests that Governments have allocated more entitlement (not water as discussed in over use above) for the available resources (but this is not defined). The key point here is that the "available" resources have been redefined over time and yet it is really only lately that Governments have recognised that the past allocation of entitlements (or licences historically) may now be seen to have been above the redefined level of

[22] 2010 MDBA Water Audit Monitoring Report 2008-09, Table 11, p. 58
[23] 2003 MDBC Water Audit Monitoring Report 2001-02, Table 11, p. 44

Issue	Reference	NFF comments
		resources, i.e. one has not kept pace with the other. It is probably not the over allocation of entitlements that is the issue but how Governments have managed the available water within that entitlement framework. The above discussion on over use suggests that Governments have managed this issue well, i.e. they have not allocated out 100% of the water to match 100% of entitlements. Planning over recent decades has ensured that water taken from rivers has been capped through various policy mechanisms. These have changed as increased competition (again a policy objective of Governments) occurred. Simple policy mechanisms were replaced by more comprehensive water plans as required by the COAG framework. It would appear that some journalists are now recognising the above discussion: "*This seems to prove that the current, much-maligned allocation system – whereby state water authorities decide how much of the licencee's entitlement can be used – is an effective mechanism. This, however, is not the public perception, nor does it hold water with the authority, environmentalists, scientists and former water minister, Wong, all of whom have been determined to slash irrigation entitlements.*"[24] Therefore, it is perhaps unjust should the MDBA and Governments seek to withhold risk assignment payments to individual entitlement holders due to this perceived issue.
Future reviews	Vol 1, p. 156	NFF would suggest that with the magnitude of change being prescribed by the Basin Plan that there would be very little support for any future negative adjustments between agriculture and the environment, i.e. there is a need for future certainty and NFF will not condone subsequent additional asks. Any new knowledge is catered from the environmental water requirements being set in this Basin Plan. Therefore, NFF rejects the statement "*This point is made not on the basis that further change is envisaged, but to establish certainty for the future*" on the basis that this is actually supporting uncertainty not certainty.
Risks from other changes under ss. 80-86	Vol 1, p. 157 Vol 2, Part I, p. 83, 255	NFF notes the MDBA's comments in regard to these sections, in particular comments regarding "*not be possible to specify the magnitude of any changes to reliability caused by the Basin Plan*" and that the MDBA believes it impossible to determine the Commonwealth's share of impacts until the States have developed new water plans. NFF's analysis shows that there are many aspects proposed in the Guide that will see negative impacts through change in reliability. NFF reserves the right to make comment on this in the proposed Basin Plan. It is simply not good enough to say that the MDBA will make recommendations on this issue when the States are accrediting water plans. To do this will

[24] Sydney Morning Herald 2010, *War over water will produce no winners*, article written by Paul Myers, 4 December 2010, p. 19

Issue	Reference	NFF comments
		mean the MDBA is not being transparent with the full range of effects (other than simple State implementation of the SDL) when the MDBA is using the State owned models albeit with modifications. The MDBA notes (Vol 2, Part I, p. 83) that the models received from the States are the "baseline" conditions from which changes to water management strategies can be assessed. Yet have failed to do this and clearly the MDBA keeps reiterating that they cannot undertake this work until the State develops the new water plans. This is clearly not supported. A key question here is what modifications (inputs, assumptions etc) has the MDBA made to the models owned and used by the States and particularly benchmarked to 2004 water plans (or equivalent dates). Importantly, the States should be provided access to the models to make this determination. The result should be made available to stakeholders.
Temporary Diversion Provisions	Vol 1, p. 157-159 Vol 2, Part I, p. 255-256	NFF welcomes the inclusion of the TDP. However, the NFF rejects that part of the framework for the determination of the TDP, which reduces the CDL by 3% for climate change – as it is the understanding of the NFF that this is already included in the CDL. The framework proposed simply seeks to reduce the effect of the TDP away from irrigation to the environment. There is nothing in s.24 of the Water Act that requires the MDBA to adjust the TDP for climate change and nor is the TDP subject to or must consider environmental impacts. Importantly, the Water Act specifically states that the TDP is intended to apply to assist with the social and economic impacts – it is the only specific provision in this regard. NFF agrees that it is reasonable to adjust the TDP for any gap recovery and for an even reduction down to zero over five years.
Policy Implications of Transitional Arrangements	Vol 1, p. 159	NFF notes that the MDBA claims that Basin economy would recover from the Basin Plan impacts with a "solid" breaking of the drought. This has occurred but recovery is a long way from being completed – many crops cannot be harvested or quality/quantity has been downgraded due to the significant and continuing rainfall. However, just as importantly, farm debt across Australia has more than doubled during the drought. It will take more than just a couple of good years to recover and pay back debt. Farmers will still be in drought recovery mode when the Basin Plan becomes operational. Therefore, it is disingenuous to state that a good drought breaking rain will fix the problem. The drought is temporary but farmers will be faced with a long-term policy drought!
Supporting water	Vol 1, p.	NFF welcomes the Commonwealth's investment and water purchase programs. However, these should not be promoted

Issue	Reference	NFF comments
entitlement holders	159	as supporting entitlement holders. While water recovered, will assist minimise the impact on remaining entitlement holders, their communities will continue to suffer. A supporting and supplementary structural adjustment program is needed to ensure that businesses can re-focus or change to continue into the future. However, in terms of irrigators, the NFF is on public record as stating there are two ongoing issues with the water recovery programs: 1. Lack of transparency at the time of water tenders of the price being paid for water products acquired. Releasing information months after the event does little to inform the market and market participants. 2. Infrastructure investment programs are far too slow at being implemented. States blame the Commonwealth who blames the States and even where the Commonwealth take control of programs, farmers are caught with an extremely slow and bureaucratic process. For example, the on farm program was announced in the 2009 Federal Budget, project partners announced in October 2009 and in December 2010, not all contracts have been agreed and signed. Resolution to the above two issues should occur as soon as practicable. As an alternative, the NFF would support relocation of these functions to reputable independent third parties with demonstrated success, e.g. Water for Rivers.
Environmental Watering Plan	Vol 1, p. 162-164	NFF simply seeks access to the Environmental Water Plan in the first instance. Following analysis, the NFF will make comment on this important aspect of the Basin Plan. If this document is not yet written, then the MDBA has failed to provide a key aspect of the Basin Plan for comment. Secondly, NFF questions why this document should have a focus on "*planning for the additional recovery of environmental water*"? Surely the focus on the environmental watering plan ought to be how the MDBA will coordinate and manage water for environmental assets and how water will contribute to achieving key ecosystem functions and outcomes as well as to deliver against the productive base of the water. Additional water recovery is clearly not part of this task. Thirdly, how have the MDBA catered for the legacy effect in delivering environmental outcomes? Fourth, how are the MDBA factoring in deliverability of environmental water and management of flood risks to landholders? The last point is of particular interest to the NFF. Farmers who have invested in establishing crops and or pasture may be adversely affected if spring flood events inundate crops & pasture and lead to loss.

Issue	Reference	NFF comments
		Much is being left to the States and the MDBA would appear to be "shifting the blame" to the States for the failures in the draft. In terms of the key elements, if the MDBA has undertaken its job, key environmental assets and ecosystem functions have already been identified. Why then are the States being required to identify these again (p. 163)? This would appear to be a significant duplication of effort. What is meant by "refinement to assets or functions over time"? Isn't this whole process about getting it right in the first place? The requirement for the States to deliver environmental watering plans (isn't this the MDBA's role) no later than 12 months after the Basin Plan is adopted is ludicrous. Shouldn't these be delivered as part of the water resource plans? The MDBA is yet to clearly explain the role of the MDBA versus the role of the States in the environmental watering program, i.e. what is the responsibility of the MDBA and what is the responsibility of the States? How will the role of the Environmental Watering Advisory Committee inform this process? Who are the (proposed) members of the Committee? How will they be selected?
	Vol 2, Part I, p. 259	NFF notes the proposed role of the MDBA in terms of coordinating larger scale events. However, NFF seeks clarification of the "*downstream trade-offs or competing environmental water requirements*". Surely, if the Environmental Watering Plan is constructed correctly, the only coordination required is perhaps along the Murray where MDBA via River Murray Water has primary responsibility.
	Vol 2, Part I, p. 290	It is the view of NFF that the role of the Environmental Watering Plan should not be about seeking <u>additional</u> water for the environment through manipulation of the models. The role of this is to manage the environment's water requirements is a way that delivers ecosystem improvements over time.
Implementation of Environmental Management Framework	Vol 1, p. 164	The MDBA proposes that implementation will commence immediately the Basin Plan is adopted. While the coordination of environmental watering priorities is welcome, surely this is already occurring as an interim measure under the Commonwealth Environmental Water Holder (CEWH). Is the MDBA proposing to usurp and/or replace this process? Alternatively, is the MDBA putting in place a second similar process and if so, how is the MDBA proposing to coordinate with the States and the CEWH?
Water Quality & Salinity	Vol 1, p. 165-167	NFF rejects comments by the MDBA that "insufficient work has been done to mitigate the significant risk that water quality will deteriorate in the Basin". On what basis is the statement made – where is the evidence, despite significant

Issue	Reference	NFF comments
Management Plan		State, MDBC and Commonwealth investment in Integrated Catchment Management? Comments regarding NRM plans also are rejected. To be fair Regional NRM organisations were tasked with drafting NRM plans (which in reality are funding plans) which were approved by the Commonwealth. With the ALP Government overturning previous arrangements and adopting a new NRM funding program, Caring for Our Country, the Commonwealth has walked away from these plans. It has been left to the States. Moreover, NRM organisations now compete for limited investment funds on a competitive basis and where their priorities do not match the Caring for Our Country program, it is unlikely that local, regional, or catchment specific issues will be addressed. NFF notes that the MDBA proposes that water quality issues are dealt with via flow management and infrastructure construction and operation. NFF welcomes these views as a practical measure, which identifies that the causes of water quality & salinity are largely not related to flow quantity but a range of landscape management issues. In saying this, the MDBA notes that the State water resource plans will be required to address a range of water quality & salinity issues and that this is detailed in the accreditation requirements. However, for the purposes of this Guide, this information is not available for comment. This is obviously a shortcoming.
Matching water quality issues with the right solutions	Vol 2, Part I, p. 293-298	Care must be taken to ensure that the right solution to water quality issues is established. For example, the Guide appears to rely on water quantity as the appropriate solution. In most situations, the quality issue is not assisted, and may in fact become worse, by the simple addition of water. For example, when water is added to blue green algal blooms, this washes the bloom downstream. Cold water pollution is resolved by multi-level offtakes, blackwater events is about water management not volumes and suspended matter (turbidity) may be resolved by land management. There may have been occasional studies, but there is a lack of widespread monitoring of pesticides & metals – it is mainly salinity that is regularly tested. For example, comments on p. 297 relating to molinate are incorrect in terms of the last 10 years as there has simply been very little rice grown. Moreover, the molinate detections are in irrigation scheme drainage systems not watercourses. In fact all three major rice growing irrigation schemes now do not have return flows back into natural watercourses that cannot be regulated, i.e. any event can be held in the drainage system until it dissipates. Similar comments could be made about cotton and the significant reduction in pesticide use due to GMO cotton. It is time to look at whether the issue continues to be an issue or whether the concern has been already adequately managed.
	Vol 2, Part	NFF seeks clarification on the timeframe for the targets and the data on which this is based. What is the water quality

Issue	Reference	NFF comments
	I, p. 300 and 303	"reference condition" – is this under natural/pre-development conditions? What are the current trends over time – are these static, good, poor, increasing or declining and if declining is it appropriate for a water quality trigger? Similar comments can be made about drinking water – which is mostly monitored at Adelaide's offtake. It is now well established that salinity has been declining due to interventions over recent decades.
	Vol 2, Part I, p. 304	In terms of irrigation water quality, has the MDBA considered that in the light of the Basin Plan, there will be a change to crops produced which may not align with water quality levels required for today's crops.
Salinity	Vol 2, Part I, p. 305	It is well established that the cause of salinity within the Basin's rivers is the result of land clearing. Salt targets and resolution via specific water reserves will not solve this one (at least not in the medium to longer term). Land management has been used over the past decades to assist resolving this issue. For this reason, NFF rejects the approach proposed, i.e. upstream targets should be lower. While the export of salt is needed, other management solutions must form part of the whole story (e.g. the salt interception schemes). Interestingly, during low flows there is usually less salinity (due to hydrologic pressure interaction between surface and groundwater). It is also well known that there are usually salinity spikes during subsequent high flows following dry periods, i.e. it appears that nature knows that the right time to export this salt out of the system is when there is a good return of water resources. Moreover, salt is a part of the landscape with much of the southwestern extent having been part of the sea at one stage many eons ago. As this is part of the natural feature of the landscape, the landscapes' management of this perhaps needs to be separated from the anthropological impacts that have increased salinity levels.
Principles of water quality management	Vol 2, Part I, p. 308	NFF notes the principles however, managing symptoms by use of dilution flows is perhaps not the optimal outcome and perhaps this is due to the Water Act prohibition of the MDBA from dealing with any land management issues. Consequently, NFF suggests that the MDBA has a dialogue with the States on the most appropriate management and who is responsible. This will avoid additional water simply being used as the solution rather than treating the cause.
Alignment with land use planning & catchment management plans	Vol 1, p. 167	NFF appreciates that the MDBA recognises that water and salinity are significantly affected by catchment activities generally but that the Water Act prevents regulation of land use or land use planning, management of natural resources other than water and the control of pollution. NFF welcomes the MDBA's view that there is a need to align water quality and salinity management plans to land use

Issue	Reference	NFF comments
& action		planning and catchment management plans/actions. However, the MDBA does not propose how this might occur. Further clarification on this issue would be welcome.
Pictures incorrectly labelled	Vol 1, p. 170	The Riverina is actually in NSW not Victoria.
	Vol 2, Part I, p. 286	The River Murray is not located at Wangaratta.
Trade Rules	Vol 1, p. 170	NFF notes the following comment: "*Environmental requirements for water will also limit the capacity for increased volumes of trade in some catchments*." If the implementation of the Basin Plan has adverse consequences for other entitlement holders, including irrigators, then the MDBA needs to ensure that this does not occur. This is one such example. The NFF rejects any aspect of the Basin Plan that will impinge on the rights of entitlements to enter the market and trade water. If any such aspect is implemented, the MDBA has effectively just introduced another trade impediment when in fact its role is to reduce these! It should be noted that physical constraints and barriers such as the Barmah Choke are well understood and appreciated by market participants.
	Vol 2, Part I, p. 268	NFF supports the principle that trade should not negatively affect the rights of any other water holders. Yet there are many aspects of the proposed Basin Plan that will negatively affect water entitlement holders. As an overall principle, this must be applied widely.
	Vol 2, Part I, p. 325	NFF seeks clarification of the following statement: "*A water trading rule giving effect to the advice of the Australian Competition and Consumer Commission on tagged entitlements may change delivery conditions of a tagged entitlement. A transition path will be included in the proposed Basin Plan, giving owners of established tagged entitlements time to adjust to possible changes in delivery conditions upon implementation of the Basin Plan*." Tagged entitlements were supported by the irrigation sector because it stopped entitlement characteristics being changed. However, delivery entitlements are another part of the former water licence and are yet to be fully defined and codified. NFF seeks an explanation of how delivery entitlements may be changed by the trade rules and any negative

Issue	Reference	NFF comments
		consequences, which might arise for entitlement owners.
	Vol 2, Part I, p. 330	In terms of approval authority disclosures, this must occur before or at the time of trade to those related parties to the trade.
Regulation of brokers	Vol 1, p. 171	The NFF has made several public comments about the regulation of water market intermediaries such as brokers and others. NFF restates its views that this is not a question of "if" but "when" a major issue will occur, which will affect market participants. Water intermediaries must be regulated, and at a minimum be required to have in place the same requirements as real estate agents, accountants and solicitors, i.e. appropriate insurance, risk management, market disclosure, audited trust accounts and so on.
Accreditation of water plan	Vol 1, p. 173	In terms of the process, NFF would recommend that if the Minister does not accredit the plan, then in the first instance, it is referred back to the State rather than the Minister tabling reasons and the Minister requesting the MDBA develop the water resource plan.
	Vol 2, Part I, p. 261	NFF notes that finalisation of the Basin Plan may not occur until early 2012. Three transitional water plans will be renewed prior to 2014, which means the Basin Plan will not apply to these – all are South Australian Groundwater Plans. A significant number of plans, covering a large amount of water, are due from June 2014. In accordance with the Act, the Basin Plan must be completed and in place two years beforehand – meaning Basin Plan must be completed before June 2012 for it to apply to these plans. Of concern is that two years to complete water plans and get them accredited is a significant ask. The process and requirements being asked by the MDBA in these water plans is significant. NFF doubts that the States have the capacity and resources to do this. Therefore, NFF seeks clarification on what process might be put in place to either assist the States or defer accreditation over say five years. NFF would be interested in both the Commonwealth and the States responses to this issue. Premier Keneally in NSW has already made some illuminating public comments in this regard.
	Vol 2, Part I, p. 273	Given the importance of the Basin Plan, and the new substantive arrangements being contemplated, it is perplexing why the MDBA would require a State to consult with an adjacent Basin State over an internal water plan.

Issue	Reference	NFF comments
Transitional & interim plans	Vol 1, p. 174; Vol 2, Part I, p. 62	NFF notes that no Victorian water plan is listed on either Table 2.15 or 2.16 on p. 62-63 in Vol 2, Part I. When does the MDBA expect the Victorian plans to be listed and is this likely to be as an interim plan or a transitional plan?
Basin Plan Outcomes	Vol 1, p. 175	NFF notes that one of the objectives of the Basin Plan is to export salt "*so that agricultural production can continue into the long-term*". NFF notes that this is a welcome objective but can only be delivered for direct river/creek pumpers. Moreover, those within gravity irrigation regions are effectively salt sinks, i.e. they import more salt than is exported. How will the MDBA deliver on its stated objectives for these areas?
	Vol 1, p. 175	NFF seeks clarification of the last dot point on p. 175 "long-term average sustainable diversion limits and temporary diversion limits trading in water access rights". While the first part relating to the establishment of SDLs is accepted, it is the last part that needs explanation. If the proposal of the MDBA is to limit water trading, then this could also be seen as a constraint on trade and if this is the case, it is rejected by the NFF.
Strategic objectives	Vol 1, p. 176	NFF does not believe that any plan is fail safe, despite all the best intentions. In the future, there is likely to be an event that is not included in the Basin Plan. NFF has already made comments about planning being based on 1: 300 year events and the costs of doing this. It would seem that the Basin Plan must be realistic achievable and take into account the reasonable risks.
Outcome 1: Ecological Health	Vol 1, p. 177	NFF has previously made comment on the Sustainable River Audit. To assess the Basin's health solely based on the SRA is perhaps misguided at best. What NFF would like to know is what is the latest SRA, what is the change from the previous report (trend) and is there an intention to redo the audit during the current improved period of water?
Outcome 2: Water Quality	Vol 1, p. 178	NFF has already made comments on gravity irrigation regions being salt sinks. Moreover, NFF is interested in who will pay for: • NRM managers developing strategic water quality related operating rules;

Issue	Reference	NFF comments
		• Infrastructural change; and • Integration of operational decision making with catchment management and pollution control considerations?
Water security	Vol 1, p. 178	One of the stated objectives is improved water security. NFF supports this. However, there are many aspects within the Guide, which will lead to less certainty and lower water security. NFF also rejects that the new arrangements will lead to "*reduce*[d] *procedural uncertainty*" as the new process is extremely bureaucratic and red tape heavy. This leads to less certainty over the procedure. The statement of p. 179 does not assist, i.e. "*it is not possible to provide any specific guarantees about the volume and timing of water availability over the life of the Basin Plan*". The first part regarding volume is status quo, i.e. how much water entitlement holders receive is a function of rainfall. However, the timing statement causes concern and goes to the heart of the above statement of concern. If water is not made available to irrigators in a timely way, then this could actually limit production in any one year (e.g. if irrigation allocations commence in December, this is too late for planting). Security is one aspect but NFF is also concerned by the myriad of factors that will continue to affect entitlement reliability – and all of these are outside of the actual SDL.
	Vol 1, p. 179	NFF is confused by the statement that the new plans will be accredited for 10 years and that this will apply throughout the Basin and that furthermore, this will "*replace the State-based variation in the lifetimes of existing plans*". NFF is not convinced that this will assist and it will certainly not align any plans with similar start and ending dates. For example, many plans will be due every 10 years from 2014, while Victoria's will be due every ten years from 2019.
Current statutory requirements	Vol 1, . 179	NFF notes concerns from the Commonwealth, mainly in relation to suspended water plans. However, it should be noted that while plans have been suspended, State Governments have tended to operate and allocate water in accordance with the integrity of the plans. It should also be noted that it is highly unlikely that any water plan could be developed that can and will deal with all scenarios.
Reliability	Vol 1, p. 179	NFF rejects the MDBA's assertions that it is difficult to specify the impact on entitlement reliability. The MDBA is operating the State models, which will have embedded the existing water rules. While the MDBA may not be able to pre-empt State Government decisions on allocations, the MDBA can determine under the current rules, what the reliability

Issue	Reference	NFF comments
		for each water product will be. This work should have been done and be available. Alternatively, the MDBA could have worked with the States to provide this information in the Guide. There are many proposals in the Guide that will change reliability – the SDL is just one. For example, the more "equitable" sharing of dry inflows sequences between the environment and use, SA storage reserve, critical human needs, conveyance delivery for critical human needs, triggers for CHN reserves, carry over; any possible changes to environmental water carry over, operational changes etc. However, this should be isolated from changes purely due to the SDL, i.e. entitlement holders should be informed on reliability changes due to the SDL and then the additional impact of all these other measures.
Outcome 4: Basin entitlement holders and communities – R, D & E	Vol 1, p. 181	NFF notes MDBA comments that reductions in water use will drive improvements. However, the NFF advises that unless a complementary R, D & E program is instituted, this is unlikely to occur. At this point in time, the CRC for Irrigation Futures has ended, the National Program for Sustainable Irrigation has six months funding left, Land & Water Australia has been disbanded, and PISC is developing a cross sectoral Water Use in Australia R, D & E framework. Improvements in efficiency and productivity simply do not arise out of thin air – continued investment and particularly the conversion of research into practical applied outcomes is needed.
Delivering Outcomes	Vol 1, p. 184	NFF notes that much of the Guide is about reducing water available to irrigated agriculture. However, the guide is silent on the options for future increases in water availability (e.g. if there is a significant improvement in conditions as a result of a wetter sequence of years).
Compliance	Vol 1, p. 186	Apart from a section on compliance and how this might be managed, the Guide is silent on water theft and how this might be addressed. This could be as much about theft of water for environmental outcomes as much as irrigation.
Long-term versus annual compliance assessment	Vol 2, Part I, p. 347	NFF rejects the notion that the SDL compliance will be measured against environmental water needs. Surely if take is determined by rules that comply with the SDL and adjusted for climate (i.e. through variability each year), then the only two components are the total water available for extraction less allocations made to water rights holders. The EWR is a separate bucket provided for outside the SDL.
Model Credits & Debits	Vol 2, Part I, p. 349	The proposal regarding use of cumulative debit is consistent with the current Cap management arrangements. However, NFF does not support the proposed arrangements for Cap credits, i.e. maximum of 30% of the SDL of which only 10% can be used in any one year to offset use. These stringent conditions will only serve to reduce consumptive use

Issue	Reference	NFF comments
		over the long-term. Moreover, if irrigators are choosing to be more conservative with their risk management approach in reserving water for possible drought, they will be adversely affected. Such an approach will undoubtedly result in perverse outcomes. The reason given, i.e. "*to prevent adverse environmental outcomes*" simply does not stack up. This is because the SDL is set supposedly to provide for environmental water requirements. The use of debits and credits is about managing the extractive use within the long-term sustainable diversion limit and should have no bearing or consequence for the environment. NFF also rejects the proposal not to import existing debits and credits from the MDBC Cap for similar reasons to the above. This will have significant impact on consumptive use and may result in perverse outcomes, i.e. States may choose to fully utilise any Cap credits during the transition period.
Accounting for held and adaptive water	Vol 2, Part I, p. 351	NFF agrees that it is important to account for both held and planned water entitlements and use each year. Moreover, if is appears that the total volume of water held for the environment as either planned or formal entitlement increases beyond the final Basin Plan levels, there must be a corresponding change to the level of the SDL in favour of irrigators.
Impacts on Diversion Limit compliance and water security	Vol 2, Part I, p. 352-353	NFF rejects the proposal that: "*Where the purpose of the water right changes from take limited by the diversion limit to purposes consistent with the Environmental Watering Plan, it is important that the overall allocations do not change, in order to diminish the benefit of the new held environmental water.*" If the above is about the annual use of allocations, this is rejected. The SDL is set at the level for consumptive use. If this use changes from consumption to environment, then the SDL for that year should not be changed to reflect the changed use outside the SDL. This is another example of the myriad of items that may negatively affect the long-term consumptive use of water. This should have no effect on the use to diversion limits and will still have a beneficial effect on the environment. In terms of allocations, providing the State comply with the climatically adjusted SDL, the allocations set for consumptive use should reflect full use of the SDL.
Diversion Limit Compliance	Vol 1, p. 187	The MDBA has stated that SDLs are "*maximum volumes of water that can be taken over the long-term*". However, the MDBA has also stated that the SDL's are the average long-term limit. So which is it?

Issue	Reference	NFF comments
Framework		
Non-compliance with permitted take only	Vol 2, Part I, p. 356	The MDBA's comments regarding this section are perplexing at best. Non-compliance is likely to be due to theft not due to farmer behaviour changing from conservative to risky (this is managed by individuals through policy instruments such as carry over which were ultimate designed to reduce use in the first place). Use could also be increased by the range of uses that will not attract a strong compliance regime or are not metered (e.g. expansion of peri-urban farm dams or increased use of water by plantation forestry due to seasonal conditions). It could even arise from errors in models or the range of tools used to ascertain the relevant component SDL use. NFF suggests that care should be taken if proposing simply to "fiddle" with model assumptions just to get a different (lower) SDL. It is especially important that assumptions about irrigator behaviour are ground truthed and checked with relevant stakeholders for accuracy (i.e. in setting the SDL) in the first instance. Moreover, the model must be benchmarked against 2004 water plans and any Plans must be benchmarked against the final Basin Plan model run. To do otherwise is to risk attenuating on a never-ending basis, water property rights.
Monitoring and Evaluation Program (MERI)	Vol 1, p. 188-189	NFF would hope that the MDBA has this program funded, unlike other Commonwealth initiatives. NFF seeks that the MERI program is able to isolate the changes that arise from the Basin Plan from the negative changes from ongoing legacy effects. Moreover, can the MERI program isolate the improvements arising from better climatic conditions from implementation of the Basin Plan?
Program logic	Vol 1, p. 188	The Guide is a document that is intended for use by the MDBA to inform the community. It is written in a manner that seeks to confound readers by scientific and other terminology. Program logic is just one of these. A layperson would have no idea what this refers to, what it is, what its intended purpose is and what it will deliver. Perhaps the proposed Basin Plan ought to be written in plain English and readable to that everyone who picks up the document knows what it means. It has been said "tongue in cheek", that a science undergraduate wrote Volume 1 and science masters student wrote Volume 2. NFF would hope that this is certainly not the case, but the point being made is the language and terms used in these documents does not make for easy interpretation.
Recognition of contribution already made by	Vol 1, p. 192	This is the last paragraph on page 192, i.e. it is hidden at the back of the document where few people would read it. This statement should have been up front and documented, i.e. volume and impact to entitlement reliabilities. Also note that much of this effort was made without any compensation or structural adjustment payments (the exemption being NSW

Issue	Reference	NFF comments
irrigators		Groundwater Structural Adjustment). This is about respecting irrigators and farmers and communities who have already done much to change the state of the Basin. It is disrespectful that this statement is located where it is.
River Operators	Vol 2, Part I, p. 282	Any improvements in river operations that deliver environmental outcomes must be offset against the gap. Alternatively, it should be taken into consideration when setting the EWR and therefore, SDL. Moreover, the requirement to prioritise environmental water over other users is unjust. This will have major consequences for irrigation, particularly timing of irrigation allocations for timely planting and other agronomic decisions. To treat consumptive use in this manner will have major flow on financial implications. As a high level principle there should be no third party impacts!
Issues beyond the scope of the Basin Plan	Vol 1, p. 193-200	NFF do not accept that it is beyond the scope of the MDBA to consider and include a range of non-flow initiatives that will assist delivering good environmental outcomes. While the Water Act is prescriptive in its nature, there is nothing in the Act that prohibits the MDBA from including these. The Basin Plan is a Commonwealth Government Plan and surely, a good outcome would include consideration of the range of solutions required. The exception is those specific exemptions around land use. However, again, there is nothing stopping the Commonwealth from negotiating a bilateral agreement with the States, which identifies the issues and how the various levels of Government, might work together to resolve this. NFF will make comment on these issues in the substantive submission.
CHN delivery system losses	Vol 1, p. 195	NFF rejects the statement that more than two-thirds the volume required for CHN is in losses through open channels to end use. This has clearly not happened during the drought. The MDBA's responsibility is the Murray River and some tributary conveyance losses. It is up to the States to provide the actual CHN needs, including any water that might be required to get water through channels to town with no other water option (e.g. Finley). If this is the reason for the adjustment to CHN volumes for each State, then surely this is a responsibility of the State to manage not the MDBA.
Water sharing and South Australia	Vol 1, p. 195-196	NFF notes the recollection of history regarding South Australia's entitlement. It should also be noted that prior to the drought, the average flow to South Australia including its entitlement was 4000 GL/annum over the long term. For the 1990's, the volume was around 8000 GL/annum. Yet in spite of this, the Mouth closed mainly due to the unprecedented

Issue	Reference	NFF comments
		drought conditions. However, NFF concurs that now is an opportune time to look at these arrangements, particularly in the light of the Basin Plan and Water Act where improvements to South Australia's water supply have been underwritten through new reserves policies. Moreover, it is not just the entitlement dilution & additional dilution flows (quantum) that should be analysed but also the triggers for these flows from Menindee Lakes & Lake Victoria (harmony rules) as well as the distribution of costs between the States. The latter is based on historical flows taken by the States for use. In the brave new world, this will be dramatically changed and now is the time to analyse this situation for future State payments to the MDBA.
Aboriginal cultural water	Vol 1, p. 196	NFF notes concerns about the provision of cultural flows to Indigenous people. While not the same thing as environmental flows, cultural water is likely to also deliver at least in part, on environmental outcomes. Moreover, the volumes are likely to be small in nature. For this reason, NFF supports a volume of cultural water is provided to Indigenous people specifically from the environmental water pool, i.e. not for commercial use and not sourced from additional entitlements issued within the consumptive pool. NFF does not support, at this time, the provision of water for Indigenous people for commercial outcomes. If Governments seek to implement such a strategy, then Governments must enter the market to acquire this water on behalf of Indigenous people.
The evidence base	Vol 1, p. 197 Vol 2, Part I, p. 80-88	NFF notes comments by the MDBA that it has bought together the "best available science base". While this may be the "best available", the MDBA has also noted that most is of medium confidence and that the highest risk is the environmental data/knowledge base. Some is even unpublished literature. A key question is what was the original intended purpose of this data and is it appropriate that it is just "applied" to the Basin Plan? To all intents and purposes, there may be alignment but also incompatibility as well. To this end, the MDBA is of the view that a whole of Basin knowledge and science framework is required (p. 199). This is supported by the NFF and in fact, the NFF believes this framework will likely take a number of decades to get a better understanding. In particular, NFF supports work around the likely environmental tipping points. As an example, much was said about the impact of red gums during the drought – yet with a substantial improvement in weather, the red gums are bouncing back. What is an acceptable mortality rate during drought and link to drought severity, e.g. is 1% in a 1: 300

Issue	Reference	NFF comments
		year event acceptable or should this be 1% in a 1:100 year event? Therefore, it is more accurate to describe the Basin Plan as being about a new process rather than the best available science as this is a more accurate reflection of what is proposed.
Flow through impacts	Vol 1, p. 197	NFF notes that the MDBA agrees that it has been difficult to quantify the flow through impacts beyond the farm gate. NFF notes that additional research has been commissioned following the release of the Guide. NFF would hope that the MDBA has commissioned this research in a manner that will assist in providing answers here, particularly regarding agricultural processing sector.
Overbank flows	Vol 1, p. 199	NFF notes comments regarding overbank flows. However, the NFF notes that little was said about the impacts to agriculture – particularly loss of crops and/or pasture. This is surely a short-sighted view of overbank flooding. The MDBA is particularly vulnerable and this is a significant risk where there is a precedent for the MDBA, i.e. in 1997 when Hume Dam wall moved and deliberate flooding downstream occurred resulting in compensation being paid.
New economic base	Vol 2, Part I, p. 140	NFF concurs with the MDBA that other industries (new and existing) such as "green jobs" & tourism, will not replace the existing economic contribution of irrigated agriculture. These will have some offsetting effect but cannot function as a total replacement. At best, these should be treated as "cottage" industries and will require many years to establish as any contribution as an offsetting measure.
Socio-economic modelling assumptions	Vol 2, Part I, p. 142	A key question is whether the model and assumptions used for the socio economic analysis (particularly irrigator behaviour, how water will be used and which crops will be grown) are different from those assumptions used in the hydrologic models. If there is a variation, if so why and what difference arises as a result. NFF notes "*ABARE has assumed that percentage changes in diversions estimated by the MDBA are expected to result in equivalent changes in water use (ABARE 2010*)". NFF notes that in reality this is unlikely to occur.
Effect of trade on socio-economic impacts	Vol 2, Part I, p. 145	The NFF notes that trade only marginally assisted in reducing the effect of the SDLs – by between 1-2%. Therefore, trade is hardly the panacea for the proposed SDLs.
Community Vulnerability	Vol 2, Part I, p. 148-	NFF notes the map (Figure 4.22 on p. 149) however; it would also be of assistance if this vulnerability map was updated to show what vulnerability is with each of the SDL scenarios.

Issue	Reference	NFF comments
	149	
Water Plans to CDL	Vol 2, Part I, p. 161	NFF observes that there is no transparency showing how the CDL compares to diversions contained in the various transitional water plans. The MDBA is clearly asking stakeholders to accept the CDL amount. Stakeholders clearly won't do this. The MDBA must show how the modelled water use in the transitional plans were manipulated to get to the CDL, this includes: • What are the changes purely due to additional climate statistics to 2009? • What are the changes for climate change 3%? • What are the changes that relate to changed assumptions on irrigator behaviour, water use decisions (e.g. crop area, crop type) and trade? • What changes arise from the inclusion of existing environmental water provisions e.g. planned environmental water, The Living Murray etc? • Any other changes? All these must be transparently shown to enable a clear understanding of how the CDL is derived and to provide confidence in the starting point for determining the SDL.
Effects on dryland agriculture	Vol 2, Part I, p. 215	NFF does not agree with some of the comments made in this section. While irrigated production will fall, dryland production may increase as farmers swap to dryland agriculture. However, this may not be all positive. The increased production will result in falling prices due to over supply. Moreover, irrigated agriculture largely occurs in semi-arid areas. Not all of this is suited to dryland cropping, or in some cases, only suited as opportunistic crops say one year out of ten (e.g. like 2010) due to the abundant rainfall occurring at the time of planting. In particular, soil type will also limit the opportunities do undertake dryland farming activities. In summary, the NFF disagrees with the assumption (presumably from MDBA) that "*assuming that all land withdrawn from*

Issue	Reference	NFF comments
		irrigated agriculture reverts to dryland agriculture, the modelling suggests there would be an offsetting increase..between $55 million/y and $81 million/y across the Basin". As stated above, not all irrigated land is suitable and even where this may occur, it is likely that over supply will limit the economic benefits to the Basin.
OTHER OBSERVATIONS		
Reliance on the Sustainable Rivers Audit for determining river health – and justification for the proposed changes		NFF notes the use of and dependence on the Sustainable Rivers Audit (SRA) as justification for the proposed changes. The NFF notes that the report is based on only one round of sampling (during the drought, i.e. 2004-07) and as such is only a snapshot in time. Report 2 (due 2010-11) will be more comprehensive and will include trends. This report will be received during the consultation period for the Basin Plan. The MDBA must make it clear how this second report will be used for the draft and then final Basin Plan. Particularly, how this information may be used to change the consultation draft to the final Basin Plan. The sampling is not evenly spread across the catchments (sometimes concentrated in upper catchment and very few in lower catchments – notably for fish and thus probably is not an accurate indication of lower catchment fish samples). In this report, hydrology rated quite well for all but four catchments but fish & macro invertebrates poorly. The good hydrology results do not explain the poor result for fish & macro invertebrates – in some catchments it was the montane reaches that rated poorly. Again, this is not explained by hydrology. The SRA notes that "*Many upland and montane zones were rated poor or very poor, and these can contribute significantly to the overall valley score. These low ratings were often related to the dominance of alien fish species in upper catchments*." Solving alien fish species is a pest issue not a water volume issue. Report 1 sampling occurred during significant drought periods. This is also acknowledged in the report: "A severe drought has prevailed over the Basin during the Audit period. It is too soon to say how much this has affected fish and macroinvertebrate communities. It has also limited the availability of sampling sites in some Valleys." Moreover, when the "reference condition" is designed to include wet and dry cycles, it makes sampling during a drought much more likely to have poor outcomes. Importantly, the SRA should be redone over the next few month during a period of significant improved water resources – generally Basin wide. This would provide a contrast to the previous sampling rounds and should show the resilience of the Basin's natural resources to recover from what was a significant period of drought. From an ecological perspective, NFF understands that it is the trend that is important, i.e. are the management actions

Issue	Reference	NFF comments
		over time resulting in improved outcomes and are therefore appropriate. The SRA also acknowledges this in the report "[t]*his is the first step toward analysis of trends*". Of concern is that this report appears to be the focus of many Government decisions. As an example, the DEWHA refers to this report in the table on water purchases on the website (http://www.environment.gov.au/water/policy-programs/entitlement-purchasing/2008-09.html) as well as on the catchment profiles. NFF is concerned that the SRA appears to be used – and perhaps inappropriately relied upon – as a "health rating" for the Basin. The NFF recommends that the SRA ought not to be an input into the Basin Plan – it is not the purpose of the report and the report has significant inaccuracies and errors. Moreover, the construct of the SRA means that there is a high chance of getting a poor or lower rating. There are 12 good ecosystem health ratings and 24 moderate ecosystem health ratings meaning a 28.8% chance of being rated here. By contrast there are 39 poor ecosystem health ratings, 35 very poor ecosystem health ratings and 15 extremely poor ecosystem health ratings. This means there is a 71.2.% chance of getting a "bad" rating.
Legacy effect		One issue that has not been dealt with anywhere in the Guide is the legacy effect on the environment from past actions and activities. It is well known that there will continue to be long term decline and efforts being made today (and in the past few years) are unlikely to deliver an improvement during the short and medium timeframes. The question is how is the MDBA and Government/Parliament going to deal with this issue honestly and without future impacts on farmers and their communities?
Cost to Benefit		At no stage in the tomes provided to stakeholders is there a discussion on the margin benefits to the environment outcomes to the cost of doing so, i.e. by reducing the SDL (i.e. a 4000 in lieu of 3000 GL/year) what is the additional benefit for the cost. What are the additional environmental outcomes and the additional social & economic costs?
State Implementation		A key theme throughout the document is the role of the States in developing water plans that will underpin the Basin Plan. The MDBA has delivered a Guide that is bureaucratic and red-tape heavy. The Guide was not an easy read, even for those who have dealt in this area for many years. The nature of the requirements for the States is significant. It is the view of the NFF – and Premier Keneally from NSW has also indicated publicly – that the States are being tasked with some overly bureaucratic processes & frameworks. Nor will they have the resources and capacity to undertake the work and deliver within the required timeframe. This is a significant risk to the Basin Plan.

Issue	Reference	NFF comments
MDBC Cap to SDL		The NFF notes that the MDBC Cap applied to regulated surface water only and at the Basin level was set at 11, 224 GL[25]. The proposed new surface water SDL is 7,945 GL for 3000 GL/year scenario (the best outcome for farmers as currently is being proposed by the MDBA). This is a 29% reduction in the long term cap and is a significant cut for regulated surface water uses. However, the cut is even more severe when it is considered that this new SDL will also include a range of other uses not previously included, such as unregulated systems. The range of cuts for the next two scenarios, i.e. 3500 GL/yr and 4000 GL/yr will result in 34% and 38% cuts to regulated systems respectively, but as stated above, the impact will be more so when the "new" other forms of take are included. The inclusion of interception also has resulted in the above cuts.
Lack of knowledge data to determine water requirements of the environment.		This is a common theme throughout the guide (e.g. see Vol 2, Part I, p. 79 in relation to risk management strategies notes that lack of knowledge of environmental assets and ecosystem functions, particularly quantifying watering requirements. This begs the question of the whole approach being taken for the Basin Plan.
There is no view on whether the Basin's river systems should be treated as a healthy working river or an ecological river based on "river health" (see SRA definitions). This is a public decision – and no		There would appear to be a premise in the Basin Plan (probably driven by the Water Act) that returning the system to near pristine is the priority. However, it must be acknowledge that the Basin (and many of its rivers) are largely engineered, with headworks dams, weirs, levees, private water harvesting infrastructure and so on. Undoubtedly, the object ought to be to ensure that the Basin is a healthy working Basin! An unhealthy system (SRA) is not in balance (loss of species, gains new species, salinisation or other impacts or is "intensively" exploited). None of the factors is inherently unhealthy but may become so if they impact the ability to recover (resilience). The difference between healthy and unhealthy is a matter of degree! An unhealthy river is one where its capacity to deliver resources and services is prejudiced. There would appear to be a premise that there is a long term decline, yet there is no data on which this assumption can be made – and particularly a long term decline regardless of the significant drought that has occurred over the last decade. The question is whether the current recovery will continue to lead to a long-term decline or is the environment more resilient than expected?

[25] Water Audit Monitoring Report 2008–09, published by the Murray-Darling Basin Authority, Canberra, as per the requirement of the Murray-Darling Basin Agreement (Schedule E), MDBA Publication Number 59/10, Appendix D & E, p. 89-92.

Issue	Reference	NFF comments
discussion has yet been had and an outcome agreed		Moreover, comments by the Sustainable Rivers Audit supports this view: "*Extreme drought in some Valleys before and during sampling will have affected the sampled communities but it is too soon to judge the magnitude of the effect.*"
Missing information		Appendix A and B are missing from Vol 1 Vol 1 is also not referenced nor is there a reference list. While Vol 1 released 8 October, Vol 2, Part I was some two weeks later. Vol 2, Parts II & III were made available much latter again and as a result were not included in this analysis. Therefore, there is limited capacity to read and make informed comment on many aspects contained in these documents. The delay has also affected our ability to put in a timely submission by 30 November as requested by the MDBA. NFF welcomes the additional time for submissions announced recently.
Submission process		MDBA has not sought a "formal" submission process but indicated that any received by 30 November might be considered in final drafting of proposed Basin Plan. This process would appear disingenuous and every effort should be made to include submissions received prior to the end of December – even if this requires an extension of the final date to complete the Basin Plan by COAG. Late receipt of Vol 2, (Parts I-III) has also made it quite difficult to make an informed comment, particularly as many technical issues are apparent in Vol 2, Part I rather than Vol 1 itself.
Caveats		Both Vol 1 & 2 Part I include a significant number of caveats and riders, including comments like care needs to be exercised by the MDBA (and presumably others) in interpreting the documentation/science/information/data relied upon for environment, social & economic decisions. For example: Vol 1, p. xix "*This judgement is obviously influenced by the bounds of certainty that the data and science allows*.". Vol 1, p.76 "*Models calibrated over periods during which rapid water level decline has occurred need to be applied with caution in developing extraction limits designed to achieve stabilised groundwater levels over the long term.*" Vol 1, p.81 "*The Authority has recognised that due to the inevitable limitations of social and economic data and the complexity of the issues,*

Issue	Reference	NFF comments
		it will need to exercise its judgement in its use and interpretation of the analyses." Vol 1, p.89 "*the interaction between these many different, complex factors means that the Authority has exercised caution in considering and attempting to estimate economic impacts*." Vol 1, p.94 "*The Authority recognises that any conclusions in which values are put to ecosystem health should be treated with caution*." Vol 1, p.159 "*if the long-term objectives of the Basin Plan are to be met…. will require careful consideration of a range of complex but important issues*" Vol 2, Part I, p.77 "*limitations on the state of knowledge used to make estimates about the Basin's water resources*" Vol 2, Part I, p.144 "*The interaction between these different, complex factors means that MDBA has exercised caution in considering and attempting to estimate social and economic impacts*." Vol 2, Part I, p.148 "*Nonetheless, the* [social & economic] *analysis needs to be interpreted carefully*" Vol 2, Part I, p.154 "*... methods are available for estimating the value of ... non-market benefits, they remain somewhat controversial and the results need to be interpreted with care*" and "*there are a number of limitations with the data used and that various assumptions have been required to generate the estimates.*" Vol 2, Part I, p.155 "*there are a number of inherent assumptions and limitations with the data used to generate the estimates*" Vol 2, Part I, p.158 "*...also had limitations due to data accuracy and practical application...*" Vol 2, Part I, p.164 & 165 footnote a "*MDBA is aware of the limitations in the accuracy of the data in this table...*" Vol 2, Part I, p.176 "*The studies used acknowledge the limitations to the accuracy of their results*." Vol 2, Part I, p.201 "*..caution needs to be exercised in interpreting results.*" Vol 2, Part I, p.212 "*Source: ABARE–BRS (2010a). Caution should be used when comparing estimates*." Vol 2, Part I, p.219 "*given the inherent uncertainties and limitations of the models in estimating employment effects, these estimates need to*

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		be treated with a degree of caution (ABARE–BRS 2010a)." and "*In practice, there remains uncertainty over likely effects on employment and the estimated results need to be treated with a degree of caution (ABARE–BRS 2010a).*" Vol 2, Part I, p.221 "*...there are practical analytical limitations to determining impacts at local scale.*" Vol 2, Part I, p. 231 "*..the* [social cost-benefit analysis] *studies will need to be interpreted with a degree of caution and considered alongside other information*" Vol 2, Part I, p.285 "*Variation from the framework is typically in response to data limitations or to maintain a more direct link to the Water Act.*"
Tipping points for environmental assets and the relevant cost/benefits for additional measures		Much has been said about tipping points for social & economic impacts. However, there has been no discussion (perhaps even no research) on what are the tipping points for various environmental assets. If this is/was known, then perhaps there could be more confidence for the MDBA to take a higher risk approach in setting the SDLs, i.e. go below 3000 GL scenario. The MDBA has not provided any analysis of at which point additional water for the environment deliver little additional benefit for a larger cost, i.e. what is the tipping point at which recovery of additional water leads to higher costs but with little additional benefit. As an example, by delivering 20% more water for the environment does this result in 80% of the costs. If so, is this a good outcome economically for the nation?
Less irrigation water impacts on water pricing		The reality of less irrigation water is the flow on impact to water pricing. While the Commonwealth has agreed to continue to pay water charges (this should include both fixed and variable charges), there are two issues: • State water delivery businesses will endure "lumpier" income streams, with less in lower resource years and more in higher resource years. This will have implications for these businesses that will have flow on implications to irrigators, to capital investment and to State Government dividends. • The Commonwealth is transforming its entitlements to river-based entitlements. This means that water originally derived from private irrigation infrastructure operators will reduce the volume of water delivered and affect water pricing for remaining irrigators. Termination fees assist with future infrastructure but may have little influence beyond the initial 10 years. The ultimate result will be increased water prices and an inevitable contraction on the

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		scope of the water delivery system. The Basin Plan will have a similar result to the last dot point, i.e. full effect on the lower reliability water products will result in a contraction of these businesses including the size of the water delivery operation.
Benchmarking of models		The NFF notes that many stakeholders called for benchmarking of the models used to determine water plans from 2004 onwards. The reason being so that any future changes could be clearly understood and risk assignment transparently agreed. The MDBA's Guide to the Basin Plan puts another new process in place. NFF is of the strong view that the Basin Plan must be benchmarked to the first generation water plans (2004 etc) and risk allocation determined from this original benchmark. To do otherwise is taking water without due responsibility.