SENATE RURAL & REGIONAL AFFAIRS & TRANSPORT REFERENCES COMMITTEE

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Inquiry into the management of the Murray-Darling Basin

Hay, Monday, 2 April 2012

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THE SENATE

SENATE RURAL AND REGIONAL AFFAIRS AND TRANSPORT

Inquiry into the management of the Murray-Darling Basin

WITNESS NAME : DAVID DAVIES

DATE: MONDAY 2 April 2012

MAIN CONCERNS:

CONCERN A:

The Murray-Darling Basin Plan under the current standing does not take into the consideration of the long term effects it has on the communities involved, and also the overall damage into our current food supply chain to the people of Australia and also export markets.

It is vital that we have a healthy river and environment, however it is also vital that we take care of the future of our communities and also the fundamentals to the Australian economy.

The Murray- Darling is not only a critical source of water, but it also the heart of many communities. It is the heart of productivity and it is the heart of the supply of many food to us all.

It takes years of investment, knowledge & infrastructure to build and develop such productive communities.. Once its gone.. its gone and lost forever !!

So therefore it is critical that we as a nation... make sure that the right decision is being made for the benefit of the nation, of the productive communities involved and also of the river system.

We do not want to be left with a nation that is reliant on food being imported, we do not want to have a river system dead and we do not want the situation of the knowledge and infrastructure being dead due to poor policy.

CONCERN B:

The Murray-Darling Basin Plan under the current standing does allow flexibility to work with the forever changing seasons, rainfalls, and all good things mother nature brings to us.

We all know that you have to work with nature. Not try and over-rule it.

Simply to say, to be flexible, and as the change in the rainfalls and season occur, work with the required challenges and then adopt the strategy, accordingly.

Every year has different challenges which mother nature brings. No two years are the same..

Four years ago, we had little rain, and therefore had to adopt our land strategies around these challenging conditions... ~~two~~ FOUR weeks ago, we had large rainfalls and therefore again have to adopt our management strategies around these new conditions.

You can not work with a drought strategy when you now have excess water..

Under the current plan, its trying to be a one stop shop solution to a forever changing environment, and an environment which is unpredictable.

This will not work and is not the right policy. The solution has to be flexible and allow for the forever changing conditions which the environment is experiencing.

AIMS:
To have a plan that is simple, flexible and effective. We have seen even within the last twelve months, seasons change..... !! We therefore need to ensure that the policies and management of the river systems change with the seasons, and the needs to the communities. That will have minimal effect on communities and jobs; within those communities as well as having a healthy river and environment.

EFFECTS TO DATE:
The Murray –Darling Basin Plan has created uncertainty within all communities. Couple with droughts has resulted in big losses of population between 20 yrs-40yrs age group, who had been employed directly and indirectly by the irrigation Industries & cropping or intensive Vegetable farming and services sections.
Uncertainty has also forced land holders to hold off on investing in further infrastructure.
The loss of this young population is evidenced by the drop in school numbers within the Riverina smaller towns.
As a result, fewer professional services are now available forcing people to travel to regional; centres and sometimes up to 300km away.

POSSIBLE SOLUTIONS:

It's a simple solution....

Most importantly : Be FLEXIBLE, and allow for change when and if change is required.

Use Temp water trade to buy water as needed on annual basis. To satisfy river and environment needed. This method would be quick and efficient.
Permanent buy backs only when they have little effect on communities or on retirement or want out.

Mr Chairman, Members of the Committee,

I appear before you today on behalf of Coleambally Irrigation and on behalf of the community of Coleambally but do so reluctantly. Why am I reluctant – because I and many others have appeared before a range of parliamentary committees/panels/meetings and attended many more seminars, workshops and all manner of meetings but have little to show for it. It is not that I have lost faith in you individually – some of you are able to locate Coleambally on a map and some of you have ventured off the track to see first hand the world class irrigation system that Coleambally Irrigation operates – but you are in the minority and it is hard to maintain faith when you are on the receiving end of a litany of broken promises and breached commitments.

Many promises were made to communities like Coleambally as the Commonwealth Govt went into damage control post the disastrous 'Guide' to the Basin Plan; 18 months later we have a draft Plan that still won't deliver on those promises. We were promised:

Better science – why is then that we still don't have an environmental watering plan and why is it that despite a supposedly vastly different modeling methodology we arrive at a water recovery target from the Sth Basin which is only 10 GL different from that identified in the Guide? Why is is it OK to keep referring to the impact of drought while refusing to take account of the last two years floods – is the natural watering that has occurred over the last two years irrelevant or is it an inconvenient truth?

Improved engagement and greater transparency – why is then that Minister Burke can't get pass relying on the mantras of only wanting to deal with willing sellers when he knows full well that most are distressed sellers and why is it that his Dept after promising no more

buyback in the Sth Basin until 2013 recently launched a so-called targeted buyback scheme in the Sth Basin without any consultation. Why is that it that the MDBA has opted for a 'shared component' of 971GL rather than telling the people of the Murrumbidgee exactly how much water it or the Govt wants to recover from our communities?

A greater commitment to engineering solutions and investment in irrigation efficiencies – how can that be when the modernization budget remains unchanged and continues to be used to subsidize additional MDBA studies and the operations of the Commonwealth Environmental Water Account Holder?

Better social and economic analysis – why is it then that the MDBA's senior economic gurus are unable to speak plainly about what that analysis says about the impacts in our catchment and our communities? Is it they don't know or is it that they do know but are not permitted to speak plainly?

Mr Chairman, member of the committee, I could go on this them of broken promises because there are more of them, but in the interests of time I won't. The draft Plan is an improvement on the Guide but it's still a Clayton's Plan – i.e. it's the Plan you have when you don't actually have a Plan. I give Mr Knowles full marks for realizing the limitations of the Plan that his team presented him with and the adaptive approach he is advocating is an intelligent response to his predicament. The problem is that inherent in the solution he advocates, learning by doing, is the notion of a partnership and partnerships depend on trust – why should our communities place their faith in a plan where key information is missing or buried somewhere in the MDBA's knowledge database rather than being referenced in the core documents – and why should we have to

stomach such spin as and I quote from pg 25 the "Delivering a Healthy Basin" publication which says "the information and knowledge base used has drawn heavily on the work of state and territory governments" – the committee might like to run that proposition past the NSW Commissioner for Water.

Mr Chairman, Coleambally Irrigation acknowledges that the work being undertaken by the MDBA is complex and it would be wrong to construe our criticisms today as criticisms of the Authority itself – in football parlance it got a hospital pass from Government but at some point some commonsense has to come into the equation. Our communities as much as any, want to see a Basin Plan in place – but it has to be a workable plan which provides not just for the environment but also for the ongoing sustainability of our businesses, our communities and for the nation's food security. There are elements in the draft plan around which a meaningful plan might evolve – but the glue that is needed to bind those elements i.e. a proper environmental watering plan, a genuine commitment to work with basin communities, proper resourcing , proper monitoring and evaluation and realistic timeframes is missing and while that remains the case we and, as yet, none of those things are in place.

HAVING ALREADY A LIST
WRONG WITH THE DRAFT
PLAN I LOOK FORWARD
TO BEING ABLE TO POINT
OUT WHAT MIGHT BE
DONE TO FIX THE DRAFT
PLAN.

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are distressed sellers and why is it that his Dept, after promising no more buyback in the Sth Basin until 2013, recently launched a so-called targeted buyback scheme in the Sth Basin without any consultation? Why is that it that the MDBA has opted for a 'shared component' of 971GL rather than telling the people of the Murrumbidgee exactly how much water it wants to recover from our communities?

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Murray Irrigation Limited

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Senate Rural and Regional Affairs and Transport Committee
Inquiry into the Management of the Murray Darling Basin Plan
Public hearings, 2 April 2012, Hay

Opening statement from Murray Irrigation:
Murray Irrigation is an unlisted public company servicing an area of 748,000 hectares. Our shareholders are the irrigation customers we serve. Our water supply comes from the regulated River Murray and is almost exclusively NSW Murray General Security Water. We operate a highly efficient[1] gravity fed earthen channel system, we are close to major storages and use no electricity for water delivery.

Farm businesses in our area are predominantly annual irrigation cropping enterprises that can accommodate significant short term variations in water availability. Irrigated agriculture is the foundation of the social and economic wellbeing of our towns and businesses with the focus of production being for both domestic and international markets.

We understand it is not the job of this committee to review the proposed Basin Plan – **which we do not support in its present form** – but to look at the management of the resources of the Murray Darling Basin.

We do support the need for streamlined management of the Murray Darling Basin's resources.

However, we do not believe the top-down approach adopted by the Murray Darling Basin Authority is the best approach. We support consensus management with the States and Commonwealth working together to ensure all states and communities' interests are considered. This model is in the best interests of the nation.

The current proposal offers nothing but to remove water from productive use for environmental holdings without providing a plan for what they plan to do with that water. The environmental issues identified as reasons to justify the need for a Basin Plan cannot be addressed by increased flows alone and this has been recognised by a number of scientific reviews including the Sustainable Rivers Audit and the River Murray Scientific Panel. The best management needs to include ALL natural resources.

We believe the best management options for the Murray-Darling Basin must include:

- **The construction of environmental works and measures to effectively deliver environmental flows to target assets within current operational constraints;**
- **A review of the management of, and where required upgrades to, public infrastructure including the Menindee Lakes and Coorong Lower Lakes and Murray Mouth;**
- **An efficient and effective environmental watering plan to deliver the large volumes of presently held environmental water (over 2,000GL in Commonwealth and State holdings) within existing system capacity constraints.**
- **No further water recovery unless it is through infrastructure or efficiency measures that will maintain the productivity of our region.**

It is our belief that this will provide real benefits for the health of the entire Murray-Darling Basin while maintaining the productive capacity of its communities.

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[1] National Water Commission the Industry Murray Irrigation consistently reports above average network delivery efficiency for gravity irrigation supply.

River Murray Scientific Panel

The River Murray Scientific Panel (Thoms *et al* 2000) identified 22 activities which threatened river-floodplain ecosystem health. Seven of those related to flow and only 2 related to reduced volumes of water (underlined below). This clearly shows the significant number of non-flow and non-volumetric impacting issues. The activities were:

- Constant flow for sustained periods
- Unseasonal flow
- Increased minimum flow
- Decreased frequency of flood periods
- Reduced duration of individual floods
- Rapid rates of rise and fall (erosion and sedimentation)
- Weir pools
- Grazing of riverbanks
- Clearing of riverbanks
- Promotion of exotic riparian vegetation
- Removal of snags
- Recreational boating
- Aggregate extraction (that is, sand and gravel)
- Floodplain development
- Various land use practices
- Culverts and regulators
- On-stream storage structures
- Increase in diffuse nutrient sources
- Diffuse toxicant sources
- Catchment-based erosion and sediment input
- Temperature of releases
- Hypolimnetic releases (water quality)

Some impacts noted as significant in other documents (eg Margules & Partners 1990) are not noted above, they include:

- Salinisation (though it is mentioned in "various land use practices" as a barrier to fish movement:)
- Feral animals (eg rabbits and linked to grazing and erosion pressures)
- Logging
- Point source pollutants.

The following points represent the key conclusions from the review of the report of the River Murray Scientific Panel:

1. The in-stream structures and the in-river flow level they are required to maintain are possibly the most significant causes of ecological problems in the system.
2. An open-minded review of alternative and innovative means of water delivery is necessary.
3. Physical obstructions in anabranches, wetlands and on the floodplain are significant impediments to realising full ecological value from these environments.
4. In order for management to clearly address solutions, impacts need to be assessed separately for the river and near-river wetlands, and for the intermediate floodplain, while maintaining a holistic view.
5. In-river, the key impacts relate to habitat change resulting from unnaturally high water levels (in weirs or in transit), physical barriers to movement, snag removal, drowning or erosion of benches, erosion and sedimentation and lack of diversity of flow.
6. Increases in flow will not aid, or are not the best way to address, many of the recognised in-river problems.
7. Key floodplain impacts relate to physical alteration and alienation, reduced flood frequency and to a lesser extent, reduced flood duration.
8. Land use planning policies and best practice land use *per se* are essential to protection of remaining areas of functional floodplain.
9. The report recommends identification (targeting) of key areas of high ecological significance and rehabilitation of the flood frequency regime, and to an extent the flood duration regime, in those areas as a priority.
10. The type of impact varies so significantly along the system that a regionally based approach to solutions, coupled with site-specific evaluations linked to point 9, is essential.

Howley Pastoral Pty Ltd

BRIEFING NOTE TO
SENATE AND REGIONAL AFFAIRS AND TRANSPORT
REFERENCE COMMITTEE.

Lance Howley A.F.S.M.

Own and operate 6066 ha property in the Wakool / Murray junction with wife Pauline, son Gavin and his wife Rhiannon.
At present purely croppers growing wheat, barley, canola and lupins.
Have run significant numbers of sheep and cattle in past years.
Family owned for 102 years.

Main concern with the whole river system is that it is being run as individual valleys rather than a whole system.

The ecology of this area has developed over 40000 years since the movement of the Cadel Plate resulted in the rivers taking their present course.

Since that time the ecosystem has relied on two or more of the rivers having a merging of high to flood flows, thereby causing an overbank resulting in inundation of the lowlands of this flood plain region.

With the construction of dams in the headwaters of the rivers these opportunities have lessened.

The failure by parochial State interests to recognize the needs of this downstream region has caused catastrophic damage to the delta region of the Murrumbidgee, Edward and Wakool rivers.

One of the biggest problems faced by river managers in delivering high flows to downstream floodplains is getting enough water through urban areas where irresponsible Local and State Governments have permitted development on historical floodplains. By way of example, Part 802 of Victorian Building Regulations states the floor level of any residence must be 300mm above flood level. Why do we see new homes being flooded up to the windows?

In 2010 DECCW released 50 gigs of environmental water from Burrinjuck Dam on top of a flush going down that river with the specific target of downstream of Balranald to the Murray junction. State Water in their infinite wisdom gave all the water away from under this flow in the form of Supplementary Diversion water which resulted in the attempted environmental watering failing.

In my opinion if NSW stopped Supplementary Diversions the problems of the environment would be diminished greatly. If the water managers could get it into their thinking to only allow these diversions off the back of a flush it would be of immense benefit.

It would also benefit the riverine environment locally if the practice of "siphoning off" surplus and environmental water for personal gain were to cease. Many thousands of megaliters of water have gone missing because of lack of proper metering and other practices.

It has been claimed by some that the recent floods have cured all the woes of the Murray Darling Basin, nothing could be further from the truth. The native fish population has been decimated to the point where the anecdotal evidence concerning the Murray Cod population has it at it's worst in the 45 years I have lived in the region.

The damage being wrought on the whole system by European Carp is horrendous, with bank erosion increasing rapidly with trees being undermined and falling into the river and indeed pump stations in danger of suffering the same fate.

Food security is being put forward as a reason to stop the Federal Government from buying back water. A rough average of ABARE figures show about 15% of Australia's food comes from irrigated agriculture in the MD Basin. Indeed if you look at just the Basin, two thirds of the food that comes out of the region comes from dryland agriculture.

The demise of some small towns and communities has far more to do with terms of trade rather than water buy back. Since the irrigators themselves put the property right value on water, it has been freely traded and it doesn't matter to a town whether the water is bought by the Federal Government or another irrigator to move to another valley, the result for the selling community is the same.

I strongly urge the Parliamentarians of all persuasions to continue with MDBC Plan and it's proposed reforms, sure it is not perfect but let's all show a bit goodwill and use it as a platform to get the best outcome for Australia.

Senate Committee Notes

2/13/12

Jock Robertson

Chowilla Station

Who am I?

My wife (Lis) and I together with son James and his family live at, and run Chowilla Station via Renmark. Our southern boundary is the River Murray and the eastern boundary is the NSW/SA border.

The Robertson family have been custodians of Chowilla for over 148 years. My grandfather and father were born and brought up at Chowilla. I was born and raised on a property near Naracoorte.

I was born into a family with a real love and appreciation of the land and the natural environment. I didn't have much chance to be anything different.

When the opportunity arose in 1997 to buy some of the family out, Lis and I jumped at the opportunity. We sold the Naracoorte property and together with Lis's inheritance and the support of our friendly bank, we moved back to Chowilla.

What is Chowilla Station?

Chowilla Station is a sheep property comprising 94,000 Ha. of a mix of flood-plain, open spear grass and bluebush plains, and mallee scrub. It boasts 46 km. of frontage to the river Murray.

The average rainfall is only 213mm per annum

The flood-plain is probably the greatest environmental asset the property has. It is about 16,000 Ha. in size with numerous anabranches forming Islands and lagoons.

In it's hey-day Chowilla was rated as an 18000 sheep property. The flood-plain pre regulation would flood to some degree 2 out of every 3 years. Now

it is less than once in every 10years. Our sheep rating dropped to 12,800 and then in 1995 we agreed to relinquish grazing from the majority of the flood-plain, and our sheep rating dropped to 8000. We did receive compensation and were fortunate to purchase land adjoining us on the NSW side of the border, thus maintaining our 12,800 rating

The Chowilla area is quite well known from the 1960's when the SA Government proposed to build a dam on the property.

Chowilla is:-

- An Icon site under the Living Murray initiative
- A Ramsar site for wetlands of international importance and wise use
- A Regional Reserve and Game Reserve for multiple land use
- A partner in the Riverland Biosphere.
- A pastoral property with a lease issued under the National Parks and Wildlife Act 1972

My comments on the management of the Murray Darling Basin

I'll keep my comments brief as I have been told you lot want to ask questions

In thinking as someone who has been intimately involved over the last 20 years, I offer you these points:-

- There has to be one management authority. The states have to relinquish their rights, but retain their interest as a partner.
- There has to be one set of licences and one set of rules.
- High security and stock and domestic have to be on tap at all times. The Basin has to be managed to this end.
- As an ideal, there should be full transferability within licence classes within the Basin
- The Cap has to be adhered to.
- Riparian rights of downstream users need to be taken into consideration. I am surprised there haven't been more challenges in this regard
- There should be recognition of prior development, and not penalise those for their initiative.

- 2,700gigs or 2,800gigs is a good starting point, but should remain flexible. The environment is too important to ignore A healthy environment is the base for a happy healthy life-style for our communities.

Some strategies that could be employed by the authority may include:-

- In Government buying back water, why not pull out a small percentage every time there is a trade of water?
- Taking a serious look at finding more water.
  e.g.- Another Snowy type scheme
  -Increasing run-off as we do in our farm dams.

I'd like to thank you for the opportunity to share my thoughts with you, and I'm happy to answer questions and discuss further the points I have raised. The Plan seems to be on much the same track, but I don't believe it goes all the way and will ultimately fail unless it can achieve the above.

Jock Robertson

Chowilla Station

30/12/99

Mr. Martin Cameron
Chairman Inland FMC

Dear Martin,

I would like to make a few comments in relation to the fish stocks and to the general health of the Murray Valley in our area which is north of Renmark.

Fish Stocks;
It is generally thought that fish stocks are very low because few fish are being caught. I don't believe this is so, and that stocks are as low as many would like to believe. However because of the general health of the river and the lack of flows, I believe the fish go into a kind of hibernation, and consequently are not caught.

Never the less, I suggest an effort should be made to assess the level of fish stocks as a starting point.

Health of River and Valley;
The Murray river and it's floodplain are governed and affected by a combination of factors which directly affect it's health.
In summary, these factors are:-

- Regulation of the river providing an even slow flow with few peaks and no troughs.
- Structures in the river (locks) holding water at an artificially high level.
- Natural rainfall. (We have a semi-arid environment with a reasonably high likelihood of experiencing prolonged periods of very dry weather). It is difficult to see how we can change this in any way.
- Natural inflow of highly saline groundwater into the river system.
- Lake Victoria and it's associated management. (Lake Victoria has a 5m. head over Lock 6 when the lake is full)
- The "carp" affect. (Denuding the floor of the river of vegetation)

All of these factors have an influence on the health of the river/floodplain system.

What has changed is:-

- **Flows.** Instead of 4 or 5 flows of over 80000 megalitres a day, in every 10 years, (my father suggests it was even more often) we now only receive this amount approximately 1 in 10 years.

When the Chowilla Dam was shelved, it was decided to build a dam at Dartmouth to ensure an allocation of water would be available for S.A.. The other state governments agreed and the water was to be managed by the Murray Darling Basin Commission in which the 4 states affected have an interest.

It now appears that S.A. is receiving most of it's water from either L. Victoria or the Menindee lakes. This water is turbid and generally has been stored in shallow lakes in a high evaporation climate. The water has been described by many as being stale. It is quite possible that the only fish able to survive in this situation are carp and yabbies, both of which require very small amounts of oxygen. I do wonder if this "stale"water **is** low in oxygen? We do know that when there is a rise in the river of fresh water from the Murray system that the fish come on the bite. Conversely when there is a release from L.Victoria the fish go and hide! In discussions I have had with Prof. John Lovering, he has suggested that there is a problem delivering water through the Barmah forest (known as the Barmah choke), and consequently it is impossible to supply our (S.A.) needs from this source (the Murray). **I believe this problem needs to be overcome.**

Further evidence of the change in flow is demonstrated by the forced abandonment of old Coombool outstation on the shores of Coombool Lake. Lock 6 was completed around 1930. By the end of the 30's, it was decided to shift our outstation from Coombool Lake to the now permanent water on Chowilla creek. The dam at the old Coombool outstation provided permanent water prior to locking and regulation. It takes close to a 70000 megalitre flow to fill Coombool Lake.

- **Groundwater Regime.** Prior to locking of the river, the natural inflows of highly saline groundwater had an opportunity to draw down when the river levels dropped. The creeks and annabranches dried back to waterholes, most of which ended up being too salty to drink as many early surveyors discovered (Todd). Now the locks hold the water at an artificially high level thus stopping this draw down process. This has caused the water table to rise and coupled with the hydraulic pressure emanating from L.Victoria, I am sure has led to a significant die-back of areas of box trees and a general salinisation of low lying areas. On the other hand, locking has provided low lying areas adjacent to the river to flourish in the fresh water lens (flushed zone) it provides. The red gum bends have done very well!

It is interesting to note that the water tables have dropped quite significantly over the last 2 years or so. The trees in some areas are showing signs of recovery. Other areas are continuing to die back. Why?

The probable answer is lack of fresh water coupled with a salting affect from previous or ongoing capillary action from the saline groundwater now mostly over 3m. below the surface.

It should be noted that that the die-back problem arose firstly on our eastern border and has progressively moved west. The water tables in this eastern sector have consistently been closer to the surface than further to the west. The present draw down of the water table is probably consistent with the dryer than normal years we have been experiencing, and the lack of floods; but one does wonder if the changed management at L.Victoria over the last few years might also have something to do with it? I believe it is imperative that the groundwater tables are monitored on a regular basis particularly now that L.Victoria is being filled again. (currently 83% of capacity)

The current problems appear to be to the north and to the west of the previous problems. The northern end of L.Limbra and strips through Monomon Island, Chowilla Island, Drafting Yards and Letterbox appear to be affected. Another area showing stress is an area known as the "Garden of Eden". (There are a number of oasis' of better vegetation dotted over the floodplain. It is most probable these are areas that are able to stock up on fresh water during floods or heavy rainfall.) It now appears that these fresh water lens's are running out of fresh water.

One way of overcoming the saline groundwater problem is to physically pump the groundwater with a series of tubewells as is being currently proposed. This of course presents a problem of disposal, with an associated cost and a finite time it can be done for before it becomes a problem in itself. Whilst I am not against the proposed scheme, I am cautious to the extent that:-

1. Management of L.Victoria in relation to water tables be explored fully.
2. Flow management complement the draw down by recharging the floodplain with fresh water.
3. Alternative strategies involving dilution flows and environmental flows be explored.
4. Something be done with the pumped water to provide an economic return.
5. Ensure that any proposed evaporation basin is sound and won't leak.

It should be understood that the floodplain has evolved with plant associations that can withstand periodic flooding and indeed requires periodic flooding to survive. The natural rainfall being only 215 mm per annum, is not enough to sustain the present vegetation without these periodic floods.

- **Lake Victoria** is a natural lake on an annabranch of the Murray R. just 20 k's east of the S.A./N.S.W. border. The lake is fed by Frenchman's creek and it overflows through the Rufus river. This has allowed control structures to be placed at both the inlet and the outlet so that the level in the lake can be controlled artificially. The lake initially was used as a regulator and short term storage, but later it has been used to a much greater degree to supply S.A.'s water requirements. When full, the lake has a 5m head over the upper pool level at lock 6.

I believe that all the factors that were to affect the Chowilla dam (and why it could never be built) are pertinent with L.Victoria today.
The professional fisherman all agree that when water is released from L.Victoria, the fish go and hide. Why? They also describe the water as being "stale".
I suspect that:-

1. The water is slightly saltier from evaporation and/or more likely
2. The water in the lake is shallow and warm, and the only fish to survive in this environment are carp and yabbies. They both require little oxygen and quite likely L.Victoria is at times low in oxygen. I also suspect that water sourced from the Menindee lakes is similar.

- **The Carp affect** The carp have certainly had an affect on the aquatic vegetation, but at the same time they have provided an abundance of feed for the growing native fish, particularly the cod and the callop.

I reckon that the balance of nature will take care of the carp to very much a greater degree. However there are some very interesting characteristics of the carp which I am sure could be capitalized on for the benefit of the whole system:-

- When water is rising, the carp are at the very forefront. (i.e. the first fish going up the creeks, and consequently could be quite easily trapped).
- When Bryan Pearce did some research at L. Littra, he found that on release of the held back water, the Carp left the lake at a different time of the day to the Native fish. Hence they presumably could be selectively harvested. Incidentally the fish catch was at the rate of a tonne per hour! Also the callop grew at a fantastic rate possibly because of the abundance of small carp present.

- **Structures** There have been a number of structures built on the entrances to various lakes for the purpose of screening the larger carp from entering, and with a controlled wetting and drying procedure with these areas, it is hoped to get better value from the flooded vegetation and thus providing significant supplies of aquatic food for various birds and presumably fish. However the screens, of course, screen the native fish as well. There is no doubt of the benefit of the wetting and drying; the diversity and quantity of bird life on these areas has been dramatic. But the system hasn't been long lived and the fish haven't as yet benefited.

Pilby Creek. At Pilby Creek the committee is hoping to trap fish at the inlet; take out the carp and sell, then hormone treat selected native fish to spawn in the lagoon. The idea is then to release the small fry in stages back to the creek system. If this works it has implications for aquaculture in the larger lake areas, particularly L. Littra. The question still remains whether in fact it is necessary or desirable to eliminate the carp?

<u>Other issues of concern are:-</u>

1. Having proper inlet structures. Some structures are pipes which may affect native fish entering and leaving the area, and
2. Lack of provision to bypass (fish ladders) at some (most) of the weirs.

3. In relation to the above; at Boat Creek, a series of rock fall rapids were proposed to be built. At this stage nothing has been done, but it is a project worthy of pursuing, as this would provide access for canoeists, provide fish passage and would maintain a wetland environment in this area.

4. Another issue of importance is that of grazing. There seems to be a school of thought that grazing is detrimental to the general well-being of the environment, and increases the likelihood of scalding and other salt and erosion related problems. Can I say that **over-**grazing can cause degradation in any situation. At the level of stocking on Chowilla it is hard to pick any difference between the grazed and ungrazed areas.. Also Chowilla is still principally a grazing lease with sustainable conservation measures implanted in the lease. It should also be noted that grazing on Chowilla has been on-going for 135 years. Surely that is sustainable!

In looking at the broad picture, it is important to identify the problems, the real causes of the problems, and then provide the appropriate remedies to the situation.

Up to date what has been done is a program of destocking with revegetation work in these areas. This includes contour ripping, disc pitting, rabbit ripping and control, and a major planting of the salt tolerant "green" box variant. Native pine has also been planted in selected areas. To achieve some level of success, a fairly major fencing program has taken place. Fencing has also been erected to separate grazing and non grazed areas chiefly to protect those areas rich in gypsum which are prone to erosion and are of little grazing value, and also the areas identified as being of major conservation significance. The bulk of the funding for these programs has been provided by the Murray Darling Basin Commission.
These measures on their own will have little impact, and are really only providing "Band-Aid" solutions.

In my view **what needs to be done** is:-

- **Manage the flow levels** to provide 70,000 plus (preferably 80,000) megalitres/ day, at least 3 times in a decade on average. At present I am told it has dropped to one in a decade.
    - To achieve this:-
    1. We need to construct a bypass either through or around the Barmah forest(Barmah choke)
    2. We need to lower the cap on irrigation or
    3. We need to divert more water from the eastern slopes of the Great Divide Range to the west side.
    4. We need to manage the system to <u>enhance</u> flooding rather than mitigating flows as has been happening!

- **Consider tube wells**. But not before a proper evaluation of L.Victoria and it's management are considered. It may not be necessary to put in tube wells. Therefore a monitoring program needs to be put in place which includes groundwater levels.
  My preference is to use L.Victoria as a regulator to help manage the flows and source S.A.'s water from the upper Murray.

Tube wells would have the affect of lowering the water table thus helping the vegetation by allowing a greater depth of soil for the plants to find sustenance. It would also markedly reduce the natural input of salt into the river through seepage into the creeks. The pumped water would then be delivered to an evaporation basin, where it could be concentrated or could even be harvested for the salt. In my view, unless the salt can be harvested, evaporation basins are only putting off the evil hour and have a limited life span. I'd have to suggest that other than harvesting salt, all the rest of the salt has to make it's way to the sea. There are only 2 ways this can be done. One way is to transport it in a diluted form down the main river with sufficient flow. The other way is to pipe or channel it down separately. An interesting statistic is that Chowilla creek can deliver up to 2,000 tonnes per day into the river following a flood. Normal inflows are around 50 tonnes per day.

- When **revegetation** work is carried out, that plants such as salt bush (old man & bladder) and nitre goosefoot (prickly lignum or native boxthorn) be considered in the plant mix.
- Provide **S.A..'s water entitlement** from the Upper Murray storage's as much as possible so as to provide better quality water to S.A..

In Summary, the most important factors relating to floodplain health and fish health are:-

1. Managed environmental flows,
2. A better understanding and management of the water table,
3. Managed use of some of the lakes in a wetting and drying cycle coupled with an economic benefit(aquaculture) N.B. I believe holding water in L.Limbra could be disastrous and could quickly lead to a salinisation problem as at L.Woolpoolool.
4. Implementation of fish bypasses,
5. Assessment of fish stocks. **If adequate, there should be no need to phase out professional fisherman.** They continue to act as guardians and monitors of not only the resource, but of the whole area.
6. Seriously work out if carp should be screened or not; screened at inlets or be harvested at the inlets allowing the native fish to pass through.
7. Revegetation work to include chenopods in future.
8. Monitor groundwater levels more frequently, and relate them to levels in L.Victoria.
9. Source S.A.'s water from the upper Murray as much as possible.

I hope these comments have been helpful, and I am quite happy to show you at first hand what I have written about.

Yours Sincerely

Jock Robertson

Hay Services Club

From: Mues, Colin
Sent: Monday, 22 November 2010 4:08 PM
To:
Subject: Purchase issues [SEC=UNCLASSIFIED]
Follow Up Flag: Follow up
Flag Status: Red

Tony,

As discussed, the Commonwealth has so far purchased 85.7 GL of general security entitlements and 20.8 GL of supplementary entitlements from the Murrumbidgee valley.

More than half of the general security purchases and all of the supplementary entitlements were from the Twynam purchase in 2009.

Unfortunately I don't have a break up of the remaining purchases for you.

When we purchase entitlements, the Government is only acquiring the water access entitlements. The works approvals and so forth stay with the property. This means that the seller has the opportunity to return to irrigation sometime in the future, by either buying water access entitlements, or by purchasing allocations on the temporary market.

I'll certainly keep an eye out for an opportunity to discuss community impacts in your region. As I said, there are several inquiries underway and some additional work is being commissioned by the MDBA to better understand local impacts.

Finally, I want to try and give some reassurance to local irrigators about the potential impact of the Basin Plan. By committing to bridge the gap, the Government will reduce water use to the sustainable diversion limits (sdl's) through water efficiency savings or by water purchases. This means that it will not be necessary to reduce the rights of entitlement holders in order to bring use within the sdl's – it will already have been done.

This means irrigators rights to access water will not be affected by the introduction of the Basin Plan.

I would be happy to discuss any of these issues further if you need – just give me a bell.

Cheers,

CM

Colin Mues
Assistant Secretary
Water Recovery Branch
Department of Sustainability, Environment, Water, Population and Communities

Hay Services Club

From: Mues, Colin
Sent: Wednesday, 28 March 2012 11:02 AM
To: 'Hay Services Club'
Subject: RE: Hay - MDBA [SEC=UNCLASSIFIED]

Tony,
I'm not able to provide purchase information broken down to sub-catchment level (ie. from districts and river pumpers).

However, the data at the catchment level is at:
http://www.environment.gov.au/water/policy-programs/entitlement-purchasing/progress.html

I understand your concerns about the impact of the proposed reduction in diversions, but not everything is being recovered through the buybacks. Recovery of the nominated reduction is also being done through investment in water savings (on and off farm). It's important to recognise the positive impacts of the government's investments in water efficiency (a portion of the savings usually stays with the proponent) in order to understand the overall impact of water recovery on communities. For example, the on-farm program has been very well received in southern NSW. I expect MDBA will have someone there who can talk to the social and economic analysis of the impacts of the Basin Plan. I guess the meeting next week will be your chance to discuss these issues.

Investment in more efficient environmental watering (through environmental works and measures) and a review of river operations may mean the reduction in diversions needed to deliver the outcomes sought by the MDBA are less that currently proposed. This is another useful topic for discussion with the MDBA.

All the best,
CM

From: Hay Services Club
Sent: Wednesday, 28 March 2012 9:36 AM
To: Mues, Colin
Subject: Hay - MDBA

Colin, I refer to previous emails regarding the purchase of water entitlements from the Hay area. I would appreciate it if you could provide me with a break down of the total purchases for the Murray, Darling & Murrumbidgee Rivers.
It may be easier to provide the total purchases from the irrigation districts and from the river "pumpers'.
Hay has our first meeting with the MDBA next Wednesday 4th April and this information would be invaluable to explain the financial effect that such purchases have had on the Hay community.

Thanking you in anticipation,

Tony McNamara
Hay Business Chamber
Hay Services Club
Murray St
Hay, NSW, 2711

	Macquarie-Bogan	General security	57,631	24,205		1,268
		Supplementary	1,888	397		161
	QLD Border Rivers	Medium Priority	6,832	2,255		2,276
	Barwon-Darling[a]	Unregulated	22,273	22,273		836
	Ovens	High reliability	50	48		N/A
	Goulburn-Broken	High reliability	178,210	169,300	43,188	2,091
		Low reliability	10,286	3,600	7,783	196
	Loddon	High reliability	2,796	2,656		1,802
		Low reliability	644	174		200
	Campaspe	High reliability	6,366	6,047		2,174
		Low reliability	395	194		173
	Murrumbidgee	High security	103	98		2,400
		General security	147,230	94,227		960
		Supplementary	20,821	2,915		218
Southern Basin	NSW Murray	NSW General security - above choke	175,439	142,105		1,217
		NSW General security - below choke	40,546	32,842		1,151
		NSW High security - below choke	2,636	2,504		2,140
	VIC Murray	VIC above Choke - High reliability	54,151	51,444	15,790	1,948
		VIC below Choke - High reliability	150,792	143,253	28,936	2,094
		VIC above Choke - Low reliability	5,406	1,297	2,354	193
		VIC below Choke - Low reliability	5,762	1,383	3,947	199
	SA Murray	SA High security	88,226	79,404		2,132
	Lower Darling	General security	492	399		949
		High security	733	733		N/A
Disconnected Tributaries	Lachlan	General security	81,671	34,302		683
	TOTAL		**1,205,045**	**888,165**	**101,998**	
	TOTAL LONG TERM AVERAGE ANNUAL YIELD			**990,163**		

Notes: