

29 January 2009.

The Secretary
Senate Standing Committee on Environment, Communications
And the Arts
PB BOX 6100
Parliament House
Canberra ACT 2600
Australia
Email: eca.sen@aph.gov.au

Dear Sir/Madam

Inquiry into the Water Amendment (Saving the Goulburn and Murray Rivers) Bill 2008

I wish to express my strong support for the Water Amendment (Saving the Goulburn and Murray Rivers) Bill 2008 based on the following reasons:

The environmental needs of the Goulburn and Murray Rivers must be our first priority or else we run the risk of a complete breakdown of related ecosystems. Any breakdown will have long term consequences for the health of our nation and tarnish our global environmental reputation. The long term sustainable management of the Goulburn and Murray Rivers must consider the social, economic and environmental implications in relation to water resources, for all Australians.

To support my submission and provide an indication of knowledge gaps relating to these river systems, I submit the attached report undertaken by Sinclair Knights Mertz (SKM) for the Goulburn Broken Catchment Management Authority in 2006. The report, *Goulburn Campaspe Loddon Environmental Flow Delivery Constraints Study 2006*, provides data, current constraints and future options on the delivery of environmental flow needs associated with the Goulburn, Campaspe and Loddon river systems, all tributaries of the Murray River.

The assessment criteria of the report is to identify a suite of options that will deliver the maximum fulfilment of environmental flow recommendations for the Goulburn River system, a major tributary of the Murray Darling Basin. The use of these criteria in assessing options is described in full within the report but it is important to note that in undertaking the option assessments it has been assumed that:

- *environmental benefits will be delivered by fulfilling the specified environmental flow regimes;*
- *the flow regimes that currently characterise the rivers and reaches of concern will be maintained in future (ie they are not vulnerable to the effects of climate change, variability in water tables, changes in irrigation water demand, or water trading);*
- *the water is available in storage and on demand to deliver the environmental flow components as appropriate to each option or package of options;*
- *options have been designed to maintain the current level of service to existing users unless explicitly stated otherwise;*
- *options have been designed to maintain existing operating rules unless stated otherwise (eg changing flooding operating rules);*
- *the required lead time associated with option implementation is not such that it would annul any potential benefits gained from delivery of environmental flows; and*
- *legal barriers to option implementation are not prohibitive (eg the need to obtain EPBC approvals, the conditions set out in the Murray Darling Basin Agreement).*

- **Clearly, if these assumptions are violated then it would be appropriate to reconfirm the relative merit of the options identified within this report.**

The report includes a number of broader catchment issues that have not been included in the calculations for environmental flows. This is due to inadequate information and incomplete knowledge regarding their likely impacts. The report states *none-the-less it is important to acknowledge that they are likely to have an impact on water availability and therefore the delivery of environmental flows.* (Page100)

These impacts are as follows:

Climate change- *it is now widely accepted that climate change constitutes one of the biggest threats to water availability. It has been estimated that climate change could potentially reduce stream flows by 15% over the next 50 years.*

Afforestation - *plantation forestry is an increasingly significant land use in Australia. Trees have been demonstrated to use more water than non-irrigated pastures or crops. This means that there are fewer run-offs from catchments and therefore reduced stream flows.*

Groundwater extraction - *groundwater extraction has increased over the last twenty years. Studies have indicated that groundwater pumping has the potential to impact on downstream surface water reliability. In connected groundwater-surface water systems there can be a lag time of days to sometimes decades between the commencement of groundwater extraction and the time at which its impact is evident in stream flows. This means that the impacts of historic groundwater pumping could be increasingly impacting on stream flows.*

Changes to irrigation management - *as discussed throughout this report, irrigation is one of the major reasons for river regulation. The need for irrigated agriculture is driven by the demand for food, which is intrinsically linked to population growth, global economic trends and other factors. Significant changes to irrigated agriculture in Australia would have a major impact on in stream flows. In particular, the creation of a water market and the unbundling of water rights have the potential to dramatically change the footprint of the industry. **Similarly, the impact of climate change and possible lower rainfall could mean an increased need to water crops through irrigation.***

Farm Dams - *farm dams reduce stream flow by intercepting runoff, increasing losses to evaporation and enabling the use of stored water. There is strong evidence to suggest that farm dam numbers are increasing following the significant droughts in Australia. Uncontrolled increases in farm dams have the potential to reduce stream flows.*

Bushfires - *although bushfires are a natural phenomena they can have a major impact on stream flow. When a bushfire sweeps through a landscape it destroys vegetation and as the vegetation regenerates the plant water requirements change, potentially affecting the volume of runoff into streams. (Pages 100 – 101)*

A recent article in the Age Newspaper 29 January, 2009, highlights the affects bushfires have on catchment yield. Sydney University professor Mark Adams has studied the affects of bushfires and believes that inflows can be reduced by 10 per cent. He particularly emphasizes the fires in the north east of Victoria and the affects on their catchment yields. This area devastated by severe fires is at the top of the catchment of the Goulburn River. A copy of the article is attached to this report.

Another article published in the Mansfield Newspapers, 28 January, 2009 also raises the issues associated with reduced catchment yields associated with bushfires. The article highlights reduced

inflows from Melbourne Water researcher, Pat O'Shaughnessy. A copy of that article is attached with this submission.

The 2006-7 bushfires ravaged through the catchments above Eildon Weir in Victoria and to date no modeling has been done as to its effect on the Goulburn river catchment. This may not be evident at present. Due to a lack of vegetation cover surface water runoff has increased and so too pollutants into the system. Only when regeneration commences in full swing will we begin to see the affects of the bushfires on the Upper Goulburn catchment yield.

Clause 9.19 of the *Goulburn Campaspe Loddon Environmental Flow Delivery Constraints Study 2006* provides information on stream flow and salinity within each system and also downstream impacts on the River Murray. The report discusses salinity issues associated with altered stream flow in the various reaches of the Goulburn River system. When discussing salinity in the Goulburn system below Goulburn Weir the report states:

Increasing flows during summer in this reach may decrease salinity slightly due to less groundwater discharge. However, the greater impact on salinity in this reach would be dependent on changes to the flow regime upstream of Goulburn Weir. If flows in the Goulburn River upstream of Goulburn Weir were reduced, the salinity would most likely increase and hence the salinity in the reach downstream of Goulburn Weir would also increase.

The salinity impact on the River Murray will depend on the relative salinities of the Goulburn River and the River Murray. This is very difficult to estimate as the source, volume and timing of the changes to the flow regime has not been assessed as it is not within the scope of this study. It will also depend on whether the additional water is consumed in the River Murray (say in a wetland) or flows through to the sea. (Page 105)

Given the above information regarding salinity within the Goulburn and Murray River systems it is difficult to quantify removing 75GL (110GL), below Lake Eildon via the Sugarloaf Pipeline. This removal would reduce the level of flow in the Goulburn River system, upstream of the Goulburn Weir by 5cm. This reduction in river height would also be for more days than the usual irrigation season.

The report discusses losses in the irrigation system as: *"in general, no formal methodologies have been developed for calculating losses under various flow regimes and catchment conditions The current state of knowledge regarding losses is generally inadequate for the operational planning of regulated releases to meet environmental flow recommendations"* (Page 124)

It is unbelievable that the decision to take the 75GL (110GL) was based on so called *new water or water savings* from losses caused by seepage and evaporation. Evaporation has not been reduced due to lining 5% of the channels with black plastic, it has been argued that the black plastic may in fact increase evaporation. The lining will have to be replaced over a period of time and has made the channels dangerous and slippery.

A great deal of the seepage would have entered the groundwater table as both the river and groundwater table are highly interactive in the Goulburn River basin. Groundwater licences have increased significantly due to lower surface water allocations in the Goulburn River basin.

The report also discusses other knowledge gaps and clearly suggests that there is a great deal of information that is not known about the Goulburn River system and the required environmental flows to protect not only its health but also the Murray River. Over the years we have developed a plethora of policy to protect our catchments, water quality and quantity but to date we are not improving.

We are fast approach the realisation of a new *national water market* caused by the unbundling of water licenses and the ability to trade irrigation water out of an area. This will have grave consequences for the affordability of water in Australia, food production from local producers, local communities and more so the health of our river environments. It appears that to date our environment still has no worth whilst the grab for vast volumes of water by corporations and managed investment schemes can only be described as hideous. It is also a nonsense to be able to trade water from one area to another when the resource is not available from its source.

The use of public private partnerships to construct large scale water infrastructure projects, like the Sugarloaf Pipeline Project will also ensure that the cost of water will rise significantly throughout Victoria and Australia. The increased carbon emissions due to the enormous power supplies needed to pump water over the Great Divide to Melbourne is in direct contrast to the Federal Governments carbon emissions trading scheme.

In Victoria we have had a closed catchment policy that, until now with the Sugarloaf Pipeline Project, has been vigorously enforced and protected for the past 150 years. To maintain the integrity of our river system this must be continued and the water grid proposed by the Victorian Government scrapped. The Goulburn River cannot sustain being drained south to Melbourne and beyond whilst other options for urban water supplies are being shunned by Government. This is also exacerbated while other factors that affect catchment yield and environmental flows, as discussed above, are not being examined.

As from today Eildon Weir is at 19.5% capacity. Irrigators are receiving only 29% of their water entitlements and the irrigation season has been shortened. Ballarat and Bendigo storages that are now supplied from the Goulburn River are at 16.9 and 16.2% respectively. These cities are being supplied partly from the Water Quality Reserve held in Lake Eildon for flushing blue green algae from the system.

Broadford, Kilmore, Wandong and Heathcote Junction have recently been connected to the Goulburn River. Further expansions of the water grid to other townships via the super pipe to Bendigo and Ballarat are currently under construction.

Inflows into Lake Eildon are currently 200mg per day and up until yesterday 5,000mg per day was being released to meet the demands along the full length of the Goulburn River. Today the volume released from Lake Eildon has increased to 10,000mg due to an AGL entitlement. This entitlement is for increased electricity supplies due to the extreme hot weather conditions. The water in Lake Eildon at present is fully committed.

When the Victorian Government starts pumping 360mg per day from the Goulburn River to Melbourne via the sugarloaf pipeline, over a longer period than the irrigation season, it will be catastrophic. The State Government appears hell bent on diverting a great deal of the Goulburn River system south to quench its thirst whilst at the same time ignoring other options available to them and at less expense to the whole community.

Yours faithfully
Ellen Hogan

ATTACHMENT 1 -

Goulburn Campaspe Loddon Environmental Flow Delivery Constraints Study 2006,

ATTACHMENT 3**Fires to cut Murray-Darling flows**

<http://www.theage.com.au/environment/fires-to-cut-murraydarling-flows-20090128-7s12.html>.

Peter Ker

Age Newspaper, January 29, 2009

Flows into the Murray-Darling river system from major Victorian tributaries are likely to deteriorate this year as the impact of major bushfires begins to translate into reduced water yields.

The prediction by Sydney University professor Mark Adams comes as the stricken mouth of the Murray faces new lows, with popular South Australian tourist town Goolwa warned that its stretch of the river could be dry for the first time.

Bushfires have a big impact on the amount of water drawn from forests, as the regrowth that replaces old trees typically requires much more water to grow. North-eastern Victoria was hit by significant fires in 2003 and the summer of 2006-07.

Professor Adams said regrowth from those fires would soak up increasing amounts of water.

"The regrowth is already using as much water as the mature forests, and its trajectory is that it will use a lot more in the next few years," he said.

"Dartmouth Weir, the Ovens River, the Kiewa, the Murray, are all going to see reduced water in them as a result of that regrowth unless we start a program of active forest management."

Professor Adams, who has studied Victoria's alpine forests, said the inflows could be reduced by 10 per cent.

Water authorities for those regions agreed the fires would inevitably lead to regrowth and increased water consumption but said it would be difficult to quantify Professor Adams' predictions.

A spokesman for the Murray-Darling Basin Authority said planning was based on flows in a worst-case scenario, "which currently includes inflows lower than those experienced in 2006-07.

"Effects of the 2006-07 bushfires would be covered by this planning."

ATTACHMENT 4

ARTICLE IN MANSFIELD COURIER – AT THE TOP OF THE GOULBURN CATCHMENT

PAGE 6 — MANSFIELD COURIER — Wednesday, January 28, 2009

COURIER Opinion

Letters to the Editor



THE RONDELLS: Dennis Collins (drums) Denis Tucker (bass) Bernie O'Brien (lead guitar) and John Sullivan (rhythm guitar); (front, left) Bobby Bright and Laurie Allen.

Denis Tucker was and still is a star

CONGRATULATIONS to Denis Tucker on his recent 'Citizen Of The Year Award'.

A 'true-blue Aussie' who has been making marvellous music since way back in the 1960s when he was the bass guitarist for 'The Rondells'... backing band 'extraordinaire' to Melbourne's chart topping Bobby Bright and Laurie Allen.

Remember 'I Belong With You'/'Hitch Hiker'/'Carroll County Accident'?

I have known Denis for ever and he has always put 110 per cent into his performances, song-writ-

ing and personal appearances.

Never one to shun his fans and with his bubbly personality and cheeky ways...he was (and still is) a consummate entertainer.

I doubt if there is a rock 'n' roll song or a guitar riff that Denis cannot play.

He has become a very familiar face around these parts and long may his music continue to entertain us.

Good onya Denis - Laurie Allen would be proud (and envious).

Susie Gamble,
Mansfield

Thumbs up to local business

OVER the years I have made frequent visits to Mansfield and on these visits I have found the local businesses to be very helpful, cheerful and attentive in their service to customers.

Prior to Christmas I made a few purchases and with one item I inadvertently had a problem with it.

On notifying the said shop I was advised to bring it in and she would see what could be done, whether it could be repaired or alternatively replaced, which in itself I was pleased about.

Within a couple of days there was a replacement in hand.

Gayle of Mulberry Hill obviously contacted the wholesaler as soon as she became aware of the problem to have been able to have one delivered to her so quickly.

For this attentiveness to happen within one week prior to Christmas is highly commendable.

I would like to say thank you very much for the wonderful service I received which to me was far beyond what I expected and to have the article posted to me without asking, and at their expense, was very much appreciated.

A "big thumbs up" to Gayle of Mulberry Hill Giftware and your local traders.

Isobel Calvert,
Eltham North

Forests impact on water

Melbourne Water researcher, Pat O'Shaughnessy, has concluded after the

2003 bushfire season, regeneration and regrowth in alpine ash locations with an annual average rainfall of 1800mm involves a total loss of 188ML of stream-flow per hectare over 64 years.

This is an average of three megalitres per hectare per year, with the majority of the loss occurring within the first twenty years.

Given that most eucalyptus forests achieve maturity after 240 years, it can be concluded that the current method of suppressing summer fires is damaging future water supplies.

We must also recognise that all fires since the Anglo Saxon occupation of Australia are still combining to reduce the water available for our consumption.

The Bureau of Meteorology advises that Shepparton has an average annual rainfall of 505mm.

On this basis, the destruction of 1,560,000 hectares of forest from 2003 to 2007 in the Murray Darling catchment bushfires indicates there will be a loss of approximately 0.08ML per hectare per year over the next 64 years.

This equals 124,800ML of stream flow lost every year for 64 years, used in plant regrowth.

The Victorian Government "agrees in principle" with the recommendations of the Environment and Natural Resources Committee on planned burning 385,000 ha of public land each year but refuses to provide the funds to carry out the work.

Thus, water users in the Murray Darling Catchment can look forward to an ever diminishing resource.

This is not a global warming issue - there is no escape from the problems that arise when forests are poorly managed.

John Cribbes,
Sale

CROSSWORD PUZZLE

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