

**Submission
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INQUIRY INTO FLOODPLAIN HARVESTING

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Recollections of the NSW 'Flood Plain Harvesting' Issue.

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In general terms, 'flood plain harvesting' has only become a major issue since the development of the MDB Plan when limits on the total volume of water that could be diverted from major rivers within the Basin were introduced – called the 'sustainable diversion limits'. The constraints introduced by both the Water Act (2007) and the Basin Plan are very different as to how most regulated rivers (those with major dams controlling water releases) were managed before the Plan so it is useful to look separately at these two periods and to also separate the 'pre Plan period' into two – loosely 1980 to say 1993, 1993 to about 2007 and post 2007 (the MDB Plan period)..

The 1980 – 1993 pre Plan Period.

Irrigation started in the southern part of the NSW MDB during the 1915/25 period mostly through large government developed/controlled irrigation areas. The Lachlan Valley was a bit later, about 1940.

In the northern part of the NSW MDB (from the Macquarie Valley north) irrigation development was much later as the large dams on the Macquarie, Namoi, Gwydir and Border Rivers – necessary to provide a consistent seasonal flow - were not constructed until the 1960's and later.

Each year in about August the then Department of Water Resources (DWR) would determine the volumes held within each major dam, the probabilities of receiving further inflows during the irrigation season, and then make a determination as to the percentage of each irrigator's licensed allocation that could be taken that season. If river flows and storage levels increased during the year then an increase in the announced allocation would occur.

There were occasions when the river flows were more than needed to supply users. This could be from the major dams overflowing causing high river levels or overbank/flood plain flows, or from water from small creeks and rivers entering the mainstream from unpredicted rain and tributary flows. These 'unregulated' river flows were assessed by DWR to see if they should be reserved for environmental or essential uses further downstream and if not, irrigators were given an opportunity to take some of the water under strict conditions, in addition to their announced allocation. For example, in the Murray River within NSW, the unregulated or surplus flows only became available to irrigators if the MDB Commission did not require the water for diversion into downstream storages, or for supply to South Australia.

During this pre plan period, water flowing across a property from either general rainfall or from overflow from small tributary streams was not controlled or allocated in any way at all – this was just 'free water' as it was believed that taking this water (quite small really) had no significant impact on other users or the environment.

The NSW rivers of the northern part of the MDB were a bit different than those of the south – mainly the Namoi, Gwydir and Border Rivers. When unregulated or surplus flows occurred the DWR had to make assessments as to whether the surplus water was needed by the environment in the valley or how much should enter the Barwon-Darling system at the end of the valley for uses in that system. Whilst these assessments placed constraints on when irrigators within a particular valley could take some of this surplus water, it is true that the knowledge of

downstream environmental flow needs say, within the Barwon-Darling, was not 'strong' and nor were the policies for allowing water to pass further downstream either for use by irrigators and graziers around Bourke, or for storage in Menindee Lakes. So, in short, whilst controls on irrigators along these rivers on the use of unregulated/surplus flows was quite specific, the rules that determined just when a surplus flow event could be accessed (compared with allowing flows to pass downstream) were 'rough' at best! It is also fair to say that DWR encouraged irrigators to take surplus water when it was available as the Namoi and Gwydir systems were far less reliable than the southern valleys, in terms of providing a secure allocation each year to irrigators so it made sense to allow, and encourage, surplus flow use to offset the less reliable annual supply.

The 1993 – 2007 Pre-Plan Period.

The whole approach to sharing unregulated/surplus water from the major northern rivers with the needs of the overall Barwon-Darling system, received a big 'kick' when the Barwon-Darling Rivers received what was called the 'largest (world-wide) blue-green algal bloom' in any major river system (I even received a phone/interview call from BBC World Service during a late-night dinner party event!!). The toxic bloom extended from the Qld border almost down to Menindee Lakes. Heavy nutrient inputs from the major tributary rivers, plus low flow levels allowing plenty of sunlight and heat, were seen as the main factors.

Immediate in-house scientific investigations made it clear to DWR that to 'clear the arteries and avoid another heart attack' for the river, we needed to address the nutrient issue and reduce these loads within the system (that story is for another day), and to better understand what flow regimes should be aimed for within the overall system, not just the tributary rivers such as the Namoi, but right along the Barwon-Darling to Menindee Lakes.

DWR asked a panel of external water ecologists/scientists for advice on likely responses to environmental health within the system for varying flow patterns and varying levels of surplus flow extraction on the tributaries – in effect, how can we manage the surplus flow events in a way that better balances the needs of all uses and users. Unfortunately the scientists were reluctant to offer views or options on the basis that 'much more research was needed to be done on freshwater ecology generally before expert opinion would be able to be offered'.

This didn't help at all! So based on a study of overseas practice on environmental flow management (even though this was clearly 'not Australian climate conditions') a change in approach was made. For a 3 year trial all the major rivers within the NSW MDB had a specific volume set aside within the major dams for environmental use both within each valley and for along the Barwon-Darling. As well, for each surplus flow event, the environmental and downstream user needs were first assessed and only when these were given a reasonable share was water allowed for irrigation. There was a lot of local community input to how these downstream needs should be met – particularly for the expanding irrigation development around Bourke which was critical for social/economic stability of Bourke - and how much water should be allowed to pass down river into Menindee Lakes – in effect, not much help from the scientists but a lot of help from local communities.

Again, water flowing across the flood plain from local rainfall or overflow from small tributary streams was not considered in any detail – it was just used by a landholder if he/she could access it. In retrospect, it must be said that whilst these processes for a 3 year trial were a big improvement, and came from a lot of community input, they still required 'give and take'

judgements from DWR engineers and scientists as to how water for the environment was assessed and used. The missing advice from external scientists would have at least added another dimension to this issue which, quite obviously, did not have ‘one right answer’ – no silver bullet solution!

So by about 1994, a 3 year trial underway to assess the effectiveness of the new approaches, aimed at making further improvements at the end of the trial. But no control of what can be called ‘local flood plain water’.

In 1994 MDB Commission suggested to the Ministerial Council (MC) that a temporary cap be placed on any further irrigation development within the basin whilst these 3 year trials were completed and while more studies were done on environmental needs and possible flow rules for each valley. This was to include some studies on the impact of use of ‘local flood plain water’ on downstream uses and users. However the MC decided to immediately make the cap permanent so the focus changed from the 3 year trial and more studies on flow rules, to the broader work within what was the ‘Living Murray Initiative’. So whilst there was no new irrigation licenses issued under the permanent cap rules, the reduced focus on the trial of the use of surplus flows meant that flood plain harvesting continued as a legitimate, if not regulated, use of surplus flows in the river or from overbank flows, subject to DWR assessments.

A change of NSW government in 1995 and subsequent changes in attitudes to water management meant that the 3 year trials were basically abandoned and new ‘water sharing plans’ for each valley were introduced with a priority for environmental needs and no ‘balanced’ thought as to how surplus flows and flood plain harvesting should be considered. And as these new plans reduced the water available for irrigation from major dams (as more water was reserved for environmental use) irrigators/farmers sought to divert whatever they could from flood plain water – irrespective whether its source was main river overflows or local runoff – and so ‘flood plain harvesting’ intensified and the then water agency (the expert NSW agency – DWR- had long been extinguished) did little about it, largely because of staff downsizing and loss of both skills and long term experience.

The Post 2007 MDB Plan Period

The Water Act 2007 and the MDB Plan that flowed from it changed the whole approach to basin water management. Previously there had been a gradual recognition that in terms of overall basin health, further increases in irrigation could not be contemplated until proper and sustainable environmental flow rules were developed. Hence the idea of a temporary cap on irrigation whilst such rules were developed. Implicit in this thinking was that once effective flow rules were developed then maybe the cap could be removed as the rules themselves would control how water was used. For example, if the environmental needs in a valley were satisfied by a ‘first flood’ in a year, then a ‘second flood’ could be used to enhance irrigation diversions.

Making the cap ‘permanent’ as the Ministerial Council did in 1994 started a change and this was intensified by the MDB Plan when it introduced ‘sustainable diversion limits’ which said that there was a permanent ceiling on the volume of water that could be taken each year from each major valley (it made no difference if there were 2 or 3 floods in a year and the environment was ‘awash’) and this covered both water allocated each season based on an irrigators license and any water diverted off the flood plain. So now ‘flood plain harvesting’ became a real issue – how was this to be regulated and how much ‘weight’ should be given to past/historical usage when flood plain diversions were actually encouraged? And what emphasis should be given to environmental

and water user needs further downstream on the Barwon-Darling and what level of flows should be allowed to pass into Menindee Lakes (which make a major contribution to satisfying lower Murray River requirements).

The basic questions now are ‘did the water agency consider all these issues when developing the current flood plain harvesting policy for the northern rivers’ and ‘did it consult widely outside the particular valley being considered eg., the Namoi, to obtain community input’ – and this means consulting with communities not just along the Barwon-Darling and also within the NSW part of the Murray River as the water allocations for these communities/irrigators can be reduced if floodwaters from the northern basin do not reach Menindee and lead to reduced outflows from the Lakes.

The communities along the lower Darling below Menindee and along the Murray River say emphatically ***‘no, there was no consultation’*** and strongly believe that excessively large volumes of floodwater will be allowed to be diverted off the flood plain at the expense of downstream users and particularly at the expense of reasonable inflows to Menindee Lakes.

I am not close to these issues now-days and cannot specifically comment on just how the water agency has developed its flood plain policy. But I have heard first-hand the strong, adverse community feelings from the lower Darling/Murray which does suggest that a broader and more consultative approach should have been followed by the NSW water agency. What should have happened, or happen now ?

- NSW water agency should assess the hydrology and flood behaviour of the northern rivers component of the MDB. This should include assessments of what flows would normally reach Menindee Lakes, and what was the operating policy for the Lakes after construction,
- The agency should assess the environmental needs for the tributary rivers as well as the Barwon-Darling, plus the expectations of licensed irrigators, towns and domestic users along these rivers,
- There must be a clear statement developed as to the role of Menindee Lakes in supplying water to downstream users including into South Australia,
- A range of options for controlling flood plain harvesting in the northern valleys should then be developed that seek to achieve a balance between all users and uses of these flood plain flows.
- ***All the above 4 steps should be taken to communities for discussion/debate – a number of times if necessary - and this should occur at all locations that may be impacted by the new harvesting policy.***

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4.8.21.