

Landscape Change – is it worth the pain?

W.J. O’Kane

ABSTRACT

The Goulburn Broken Catchment Management Authority’s regional catchment introduced the concept of Landscape Change in 2003.

To quote from the regional Catchment Strategy:

“We need to supplement our existing efforts, the best management approach alone, will not deliver the outcomes we seek. We have identified landscape change as the new direction for the next five years. Our existing programs remain very important and will be continued; and if funds are available – accelerated. We must look to new ways of addressing some of the most intractable issues facing the region such as salinity, biodiversity decline and floodplain management.”

This paper looks at the three landscape change projects that have been resolved since 2003:

- The Lower Goulburn Floodplain
- Decommissioning of Lake Mokoan
- Foodbowl Modernisation project

The paper will describe the magnitude of the projects and the community anxiety generated by changes of this magnitude.

The key issue to be explored are: can change of this magnitude be achieved without high levels of anxiety and can these anxieties be managed to acceptable levels?

1.0 INTRODUCTION

The Goulburn Broken Catchment Management Authority (GBCMA) was established in 1997 as the peak natural resource management body in the catchment to develop and oversee the implementation of the Regional Catchment Strategy.

The GBCMA is working to ensure land and water resources are protected and enhanced as well as improving the region's social wellbeing, environmental quality and productive capacity in a sustainable manner

The Goulburn Broken Catchment Management Authority’s Regional Catchment Strategy introduced the concept of Landscape Change in 2003.

To quote from the Regional Catchment Strategy:

“We need to supplement our existing efforts, the best management approach alone, will not deliver the outcomes we seek. We have identified landscape change as the new direction for the next five years. Our existing programs remain very important and will be continued; and if funds are available – accelerated. We must look to new ways of addressing some of the most intractable issues facing the region such as salinity, biodiversity decline and floodplain management.”



Figure 1 – Landscape scale projects within the Goulburn Broken catchment

1. Lower Goulburn
2. Lake Mokoan
3. Foodbowl

2.0 THE PROJECTS

Three Landscape Change Projects were selected and described in Table 1.

Table 1 – Landscape projects

Lower Goulburn Floodplain Rehabilitation	In the early 20 th Century, the Loch Gary flood protection scheme was constructed to provide flood protection in the Lower Goulburn. The scheme failed regularly (on average once a decade and was repaired using natural disaster funds. When G-MW was formed it became the successor body to RWC and “inherited” the scheme
--	--

After the 1993 floods, the State Minister for Water took the decision to set up the lower Goulburn Waterway Management Authority to resolve flooding in the area. Flooding had been a perennial issue and the Minister advised that the Government would not be investing in flood relief without a viable plan to address flooding. In 1997, the CMA was created by amalgamating Waterway Management Authorities and the Catchment and Land Protection Board (CaLP) Board.

The GBCMA inherited the project (and the resources) and looked at a range of options. After considerable investigation and consultation, the Authority chose an option which would reinstate a 10,000Ha floodplain and would achieve this by compulsory acquiring the land and managing it for ecological outcomes and floodplain management benefits. About half the land in the floodplain was considered valuable from a biodiversity perspective, the remainder would be leased back to landholders

Decommissioning of Lake Mokoan	Lake Mokoan was built in the late 1960s over the site of the Winton and Green swamps. Together with Lake Eildon, Mokoan was intended to supply diverters along the Broken and lower Goulburn Rivers and to supply part of the Shepparton irrigation district. Diversion works for the Shepparton district supply were not constructed due primarily to concerns about the quality of Lake Mokoan water. A review of water saving / loss found that Lake Mokoan was the least efficient storage within the State of Victoria. Over 44,000ML of water could be saved through changes to the system. As part of the Our Water Our Future action plan, Lake Mokoan will be returned to its natural state as an important wetland system.
--------------------------------	--

The Tungamah pipeline replaced the old gravity system which required over 5000ML to deliver 600ML of D&S water. It is in place and has been an outstanding success. The improvement in water quality and peoples quality of life has been fantastic.

The irrigators who pump out of the lake are asking us to fast track the pipeline because some of them have been forced to pump water 3 times to get it to their farms.

The rehabilitated of Greens and Winton swamp will return almost 3000Ha of former lake bed to a managed wetland system.

Foodbowl Modernisation

The Foodbowl project is a \$2B water savings project which will see efficiencies rise from around 70% to around 85% halving the losses by at least 50%. This will free up around 425gigalitres (GL) of water of which 175 GL will go to the environment, 175 to irrigators and 75GL to Melbourne. The Authority worked with the Foodbowl group and formally supported the proposal on the condition savings were made before water was transferred.

Clearly it is an enormous infrastructure project – the NS pipeline is on top of this. The project Foodbowl involves a major upgrade and reconfiguration.

It is forcing our region to design a gravity irrigation system for the future. Taking into account climate change and water trading, the system will only be required to deliver half to 2/3rds of the water that was traditionally delivered.

3.0 LOWER GOULBURN FLOODPLAIN REHABILITATION

3.1 Process

After the decision was made the Board of the Goulburn Broken CMA to adopt the rehabilitation of the Floodplain option, Price Waterhouse Coopers was commissioned to develop a Business Plan. This was accompanied by a major community engagement plan.

The Business Plan was submitted to the State Government who endorsed the proposal subject to Federal Government approval. The community reaction was generally favourable. The landholders south of the river were generally in supportive of the scheme. The people north of the river not in the floodplain area were also generally in favour. However the view amongst the 100 landholders in the area to be compulsory acquired varied. Those who wanted to sell were quite pleased to have a willing buyer. Others were happy to sell if the price was right while others were totally opposed.

Those who were totally opposed were supported by the Local Federal member. The State Upper House member was strongly for the scheme because he had seen the

damage the 1970s floods had done to the community when he was the local Shire President.

It is a long story, but the Authority failed to get the support of the Commonwealth, and the State Government withdrew their support in 2006.

Since then, the levy banks upon which the scheme relies have fallen further into disrepair and the next flood will see the network collapse. The hydrological balance of the Lower Goulburn will be restored without compensation and this was the primary objective of our proposal. The opportunity to generate significant environmental gains while providing improved flood protection has been lost.

3.2 Lessons

It is not possible to deliver large scale complex schemes, particularly if they involve compulsory land acquisition, without the support of both jurisdictions.

Resolution of issues can only occur in an environment of knowledge. There is now an understanding that repairing a flawed system after every modest flood is not the way forward. Living with floods is the option that has been accepted as the default position.

In a climate change environment, floods may have a net positive impact on agricultural systems and will have a very positive ecological benefit. More work needs to be done on the agricultural impacts of flooding in a climate change environment.

3.3 Outcomes

The issue of flooding has been resolved at a very low cost. An effective well considered scheme which solved the problem has been rejected and the living with floods has been adopted. However, the outcome is sub optimal from an environmental perspective and a real opportunity for landscape change has been missed.

3.4 Postscript.

Madowla Park, a large property at the bottom of the Deep Creek, may have been purchased by an unspecified buyer at an estimated price in excess of \$25M. The property has an enormous water entitlement of 7000ML of high reliability and 3000ML of low reliability. The Authority understands that the property has been purchased for its water and it is likely to be reconfigured and resold.

The Authority looked at purchasing this property 7 years ago at a purchase price of \$7-8M. Madowla Park contains the Madowla Lagoon, one of the three access points for Goulburn Water to enter the Murray. The Authority believes with some modest investment, it can achieve significant gains in floodplain management, river health and biodiversity if we work closely with the new owners.

With the assistance of a third party investor, there may be other opportunities to purchase properties on the Deep Creek from willing sellers and reconfigure them into more sustainable units.

4.0 LAKE MOKOAN

4.1 Process

The State Government commissioned a state wide review of storage efficiency. The study identified Lake Mokoan as the least efficient storage in the state. Average water use from the Broken system is around 22,000ML per year and evaporation from Lake Mokoan alone was 50,000ML. It is a very inefficient storage.

The Goulburn Broken CMA was requested to conduct a study into the options for water savings and a multi agency steering committee was formed. Because evaporation in this context is largely a function of surface area, the options focussed on reducing the size of the lake and finding water savings to offset the reduction in storage on reliability.

There were a number of permutations and combinations examined including full decommissioning.

There was also extensive consultation with the irrigators and the broader community. The draft report was released for comment and after submissions were considered, the revised report was presented to Government. The report did not have a preferred option. It was the Authority's view a decision of this magnitude was rightly the province of the elected government and it was our role to inform the decision.

Minister Thwaites announced the decision to decommission Lake Mokoan as part of the Brack's Government's "Our Water Our Future" policy statement in 2003.

Since the announcement, there has been a host of well attended public meetings, demonstrations, negative newspaper items, letters to the editor, delegations to Ministers

There were four major issues which compounded the complexity of the proposal.

Water Pricing:

The price of bulk water in the Broken Basin is cross subsidised by Goulburn irrigators. The real cost is \$60/ML and the cost charged was around \$7/ML. As a result of this policy, the additional cost of operating maintaining and replacing additional infrastructure would also be subsidised. The price of water in the Broken Valley was largely divorced from the cost of providing the service and this led to some perverse behaviour.

Under utilisation:

Although the water resources of the Broken Valley are allocated, they are largely underutilized. The valley was also immune from water trading. People in the Broken valley could only trade with people in the Broken Valley for both temporary and permanent. This substantially reduced the demand and the price of water both on a permanent and temporary basis. This lack of demand, which was largely an intended consequence of some institutional arrangement, resulted in some farmers having access to large volumes of water relative to their water allocation (i.e. high reliability). Once water trading is opened up, this access will diminish substantially and their reliability will reduce to the system capacity. Landholders believed they should be entitled to the reliability they have experienced individually in the past (driven largely by under utilisation by other irrigators and trade limitations) and not be confined by the system reliability.

Blue green algae:

After the 1982-83 drought, the lake tipped from a ribbon weed dominated low turbidity lake to a Blue Green Algae ridden very turbid lake. Lake Mokoan has had a BGA outbreak every year since the 1982 – 83 drought. Because it is an off stream storage, water is not released back into the Broken River when cell counts exceeded critical limits. In response to this, operating rules were developed to maximise the use of the lake for irrigation while trying to stabilise the water quality. These operating rules were written into the Bulk Entitlement. Since the decision to decommission the lake, critical BGA blooms have been less frequent and irrigators believe that the Bulk Entitlement should be rewritten.

Other issues like flooding, loss of recreation, fire etc have been raised as reasons why Lake Mokoan shouldn't be decommissioned.

Once Victorian Government made the decision to decommission the Lake, a Project Control Board was established. The Board consists of the Director of the Water Branch, DSE, the Managing Director of Goulburn Murray Water, the CEO of Goulburn Broken CMA and the Regional Manager of DSE.

Additional work was commissioned on water savings projects which could be funded as part of the project.

The Tungamah Stock and Domestic scheme was so inefficient it was fast tracked. Goulburn Murray Water replaced the gravity "state of the ark" system with a pressurised "state of the art" scheme consisting of 370km of pipe servicing 400 customers with 700 connections, was completed in /10 months at a cost of \$20.4M generating 4800ML of water savings. It was a very successful project.

Because of the drought, the pipeline to deliver water to irrigators supplied directly from the lake was also fast tracked. Levels in Mokoan had dropped to the stage where some farmers were having to pump water three times. Design has been completed, contracts let and construction will commence in August 2008.

Work was also commissioned to optimise the balance between water savings projects and water purchase.

In response to the public angst, the State Government reviewed all the submissions from stakeholders in the Broken Valley and reiterated its decision to decommission the storage November 2007.

In parallel to all this, the Department of Sustainability and Environment commissioned a Future Land Use Study and a steering committee of stakeholders was established.

The Government then considered the recommendations from the Future Land use Study and announced \$22M funding for the rehabilitation of the wetland in July 2008 finalising the package of works required to decommission the storage.

4.2 Lessons

Stakeholders must have the appropriate price signals when making long term decisions on infrastructure. It is very easy to spend other peoples' money. While Goulburn Murray Water has changed its policy to Basin pricing, they haven't implemented it and the irrigators in the Broken Basin don't believe they will.

Security of a water entitlement is a difficult concept and individual stakeholders can only go on their past experiences. It would have been better to open up trading in the Broken Valley when it was done in the Murray, Goulburn, Campaspe and Loddon valleys. Long term reliability would have been established instantly and there would have been a mature market from which to purchase permanent entitlements. The debate on reliability and the absence of a mature market has been a major distraction.

It is much easier to decommission structures when they are at the end of their life cycle.

4.3 Outcome

The project is well underway and the storage will be decommissioned when the offsets and water purchase have been completed. Rehabilitation of the wetlands will begin this financial year at a modest level and activity will escalate once the storage has been fully decommissioned.

4.4 Postscript

On the 14th August 2008, the Goulburn Broken Catchment Management Authority and its partners were awarded the prestigious National Banksia Award – “Vision for the Broken Basin” program, including the decommissioning of Lake Mokoan and the construction of the Tungamah D&S Scheme

5.0 FOODBOWL MODERNISATION

5.1 Process

The millennium drought has had a profound impact on our understanding of long term water availability in Northern Victoria. The Central Sustainable Water Strategy was completed in the first stage of this drought and reasoned that better connectivity and demand management would be sufficient to meet the demands of a growing Melbourne, Geelong and neighbouring communities. Unprecedented reduction in catchment yields called into question the reliability of the Urban Water Storages of the South and a supplement was required. Reusing treated sewerage directly was not considered an option nor was additional dams in the north (because of the MDB Cap).

There were a number of options to supplement existing water resources considered including:

The Water Factory:

Piping treated water to the power generation industry in the Latrobe Valley from Melbourne and piping the water saved back to Melbourne.

Desalinisation:

Supplementing surface water with desalinated water

Foodbowl Modernisation:

The Goulburn Murray Irrigation District is currently around 70% efficient. With an expenditure of less than \$5000/ML water saved, losses can be halved and efficiency increased to 85%. The proposal was to split the first lot of savings equally between the environment, urban, and irrigators and the second lot equally between Irrigators and the Environment.

It is now history that the government chose a combination of desalinisation and the Foodbowl modernisation. For an investment of \$2B, modernisation will free up 185,000ML of water for the environment without impacting on the economy of our catchment. A real win win.

Given the level of investment in the region and the flow on to all sectors of the economy, the strong negative reaction that followed was a surprise to many including the Author. The Plug the Pipe campaign was launched including sustained negative press, letters to the editors, demonstrations and more recently civil disobedience¹. The very thought of Melbourne receiving any water from our catchment appeared to be an anathema to some parts of the community.

It is Ironic that:

¹ An analysis of the campaign published by the age is attached as an appendix

- the sale of “Goulburn” entitlements to Adelaide for urban use appears to be tolerated despite there being a negative economic benefits for the region and no up side for the environment;
- many of the most strident opponents live outside the Goulburn catchment and receive water via cross catchment Channels; and
- the Snowy Mountain Scheme, which is heralded as an iconic Australian engineering scheme, is all about taking water from one side of the Great Divide to the other.

It is not possible to comment on the process because it was largely conducted inside government although the GBCMA supported the proposal and the chair and the CEO were pro-active in negotiations with Government.

The Goulburn Broken CMA’s major concern is that the improvement in system efficiencies is accompanied by a similar efficiency on the farm. Improvement in farm water use efficiency will deliver salinity, water quality and productivity improvements which again is a win win outcome.

5.2 Lessons

The Great Dividing Range is a much more important social boundary than state or catchment boundaries.

A drought gives Governments the need to consider projects of this scale but makes it harder to implement them.

5.3 Outcome

The Foodbowl modernization has almost completed year one of its work program which has focused on modernizing the backbone of the network, the trunk carriers. The Goulburn Broken Catchment Management Authority is negotiating with the Northern Victoria Irrigation Rehabilitation Project to incorporate our farm program to deliver farm water use efficiencies.

6.0 Conclusions

The original premise that the adoption of best practice alone will deliver the outcomes we seek as a community. The extract from our RCS is as true now as when it was when it was released in 2003.

We need to supplement our existing efforts, the best management approach alone, will not deliver the outcomes we seek. We have identified landscape change as the new direction for the next five years. Our existing programs remain very important and will be continued; and if funds are available – accelerated. We must look to new ways of addressing some of the most intractable issues facing the region such as salinity, biodiversity decline and floodplain management.”

However, the scale of change set out in the table below is such that it must inevitably cause anxiety.

Table 2

Summary of Benefits of Landscape Change

<p>Decommissioning Lake Mokoan</p> <ul style="list-style-type: none">• 44,000ML of water savings• Rehabilitation of a 3000Ha wetland• Vast improvement in customer service and efficiency with the Tungamah D&S and the Lake Mokoan irrigation pipeline
<p>Lower Goulburn Floodplain Rehabilitation</p> <ul style="list-style-type: none">• Inevitable reconnection of a 10,000Ha Deep Creek Floodplain to the Goulburn River
<p>Foodbowl Modernisation</p> <ul style="list-style-type: none">• Improvement in system efficiencies from 75-85% generating 450,000ML of water savings• 185,000ML of water to the environmental reserve.• Significant improvement in customer service and farm water use efficiencies

The question in the title of this paper “is it worth the pain?” is an interesting question. Peoples’ responses often reflect where they are at in life. If they are in a building phase, they are looking for opportunities and are generally prepared to look at anything. If they are in a consolidating phase, they just want to be left alone to get on with their lives. If they are looking to move on, they are usually concerned with property values and timing – there are no second chances in this phase. Clearly the pain individuals feel is dependent on a lot of factors, not just what is proposed.

Fundamentally, we are trying to balance community good and individual rights. The more radical the reform and the greater the number of people involved, the more difficult it is to achieve an acceptable balance with all stakeholders.

Professionally, change at this scale is compelling – you can actually achieve big gains in a relatively short time at a reasonable cost.

The corollary to the question “is it worth the pain” is “can it be achieved without high levels of anxiety?” The short answer to this question is “no” and the long answer is “no way”! On a more serious note, it is difficult to achieve significant change without conflict, but patience, skill and good processes can reduce the levels of anxiety.