SUBMISSION TO THE MURRAY DARLING BASIN COMMISSION

INTRODUCTION

I thank the Murray –Darling Basin Commission for allowing me to present this submission.

My name is Bill Bagley representing Angas Partners and along with my fore -bears have been farming for over 150 years on the Northern shores of Lake Alexandrina and environs. As a farmer experiencing the disastrous 1956 Murray flood and the Millennium drought, the importance of good governance of water management is paramount for the 21st century. The Murray Darling Basin (MDB) regarded as the food bowl of Australia, requires management strategies for the survival of the environment, economic and social issues **for all communities**. These particular management strategies require more investigation for the survival of the Murray Darling Basin Plan (MDBP).

There seems to be an anomaly between Federal Government and Basin State Governments in the management of our finite resource of water within the Murray Darling Basin when States do not have a bipartisan approach to water management. Maybe it's time to revert back to our Federal Constitution or rewrite our Water Act.

It may be prudent to suggest that the Murray Darling Basin Authority (MDBA) in formulating the Plan largely ignored the antiquated infrastructure and management issues of the Lake(s) Alexandrina, Albert and Coorong, whilst introducing protocols for the MDB environmental watering to the sea. As Lake(s) Alexandrina, Albert are often regarded as the heart and lungs of the entire MDB.

WHY I MAKE THIS SUBMISSION

For many years as far back as I can remember, I observed the waters of Lake Alexandrina rising and lowering on this vast reservoir of water on days of calm to gale force winds and in between. I would witness land /soil being sucked back into the waters and foreshores vanishing without a whisper from the general public, (out of sight out of mind).It was then noticeable that, high water levels were being maintained for longer durations. Often you would ask the bureaucrats for reasons and responses varied from, upper reaches required higher level of water to Lock 1, tides an issue, weather conditions, barrage management / maintenance, or it's normal for the season. The provided reason(s) did not satisfy the person who live and witness salt and salinity, erosion which affects the environment. Perhaps the Lakes and Coorong require a major injection of monies and expertise to manage this vast waterway, now, that irrigation practices and water distribution from the Murray throughout South Australia has changed dramatically from the 20st century.

In desperation I made contact with the Federal Minister of Environment 13th January 2015 regarding antiquated barrage system and water management of Lake Alexandrina, Lake Albert and the Coorong. From my concerns, I received a response from the Parliamentary Secretary for Federal Minister of Environment, the Honourable Bob Baldwin MP. See letter MC15-006660(attach1). Whilst I respect the points of view from Honourable Bob Baldwin MP, it does not suggest anything forthcoming that is required to develop 21st century water management for Lakes Alexandrina, Albert and the Coorong.

ISSUES

There are issues, conducting a farming enterprise at the lower end of the Murray system and is continually being eroded by antiquated mechanical systems, hydrological management that is causing land erosion, rising water tables, increasing soil salinity. Further; Federal and State overarching management bodies /systems that do not respond to legitimate claims of poor hydrological management of Lake(s) Alexandrina, Albert and Coorong.

The antiquated mechanical system of 5 barrages built in the 1935/40s that artificially raised Lakes and river levels over a distance of 246 Kilometres from the sea to Lock 1 at Blanchetown. That alone, combined with the Lake (s) area of approximately 648 square kilometres creates untold damage, raising water tables, causing land salinization, denigration of pastures, lakeshore erosion and bank slumping which the general public often never see- out of sight out of mind, that ultimately conflicts with **Ramsar protocols** and water management.

One of the major constraints at the lower end of the River Murray is the antiquated barrage system. The importance to automation of the barrages that enable remote operation is derived by the need for rapid responses to changes in the flow regimes by minimising time lost in deliberation and manual operation. Automation of the barrages will address two primary concerns. First, to provide rapid closure of the barrages during high salt water tidal events to prevent contamination of the fresh water Lakes and lower reaches. Second, it allows fresh water to be released into the Coorong during high flow events to contribute to environmental watering and 'freshening' of the Coorong. In addition to allowing a freshwater flush of the Coorong, automation of the barrages will also allow salts, saline water, accumulated nutrients and sediments to be flushed from the barrages upon opening, removing high concentrations from the fresh water lakes.

The mobilisation of 2million tonnes of salt currently flows down from the MDB per year through Lake Alexandrina, to lesser extent, Lake Albert, pending on wind direction to the Murray Mouth to sea. From within the MDB, it is estimated that "3.3 million tonnes will reach the rivers by 2050 " Hodson, Alin. (2002)*Water and Salt in the Murray Darling Basin: A national environmental problem.* Hyde Park Press, p 24.

Environmental watering of flood plains increases mobilisation of salt in the River Murray to the Lake(s) whilst the current salt interception program (s) in the upper Murray only delays salt mobilisation.

Embodied with the salt /salinity issue is hydrological management, within the two Lakes, both have competing agendas whilst trying to remove salt /salinity from Lake Albert, both Lakes are surcharged (lake cycling) from pool level at 0.75 Australian Height Datum (AHD) < > 0.85AHD. These Lakes are simultaneously lowered to remove salt / salinity from Lake Albert returning through Lake Alexandrina to the sea which creates wet and dry soil, lake shore erosion, slumping river banks, raising water tables, that increase soil salinity and saline pastures that ultimately affects the environment and biodiversity. The ongoing raising and lowering of the Lakes to achieve a minimal dilution of salt and saline water from Lake Albert is causing environmental damage throughout the Lakes and environs.

Procedure for Lake cycling at 0.75AHD pool level with a theoretical 100 mm drop in both lake levels requires approximately 220 Gigilitres (GI) over the barrages. This would remove approximately 35(GI) from Lake Albert and return both Lakes to pool level involves > 220 GI from the River Murray. The **wastage of water** to remove salt /salinity from Lake Albert that affects environmental watering protocols is unsustainable especially during summer months and low river levels and the advent of impending climate variability and climate change.

For many years to minimise the wastage of water and environmental damage of Lake cycling, a channel or connector pipe from Southern end of Lake Albert to the Coorong has been on agenda items for State Government (s) and various Committees.

The Honourable PB Arnold, (Chaffey) suggests," fluctuating the levels in Lake Alexandrina and Lake Albert is only a half measure for two reasons. One is that it will not do the job as well as the channel from the bottom of Lake Albert into the Coorong and secondly, it means that vast quantities of water will have to be taken out of the lakes to remove a portion of the salt." South Australian, House of Assembly, Hansard,(Working Party) 17th August 1983.

A Scoping Committee study had been initiated in 2012, released a report in 2014 investigating various procedures to reduce salinity in Lake Albert. The study undertaken is not conclusive in its findings, other than to continue raising and lowering water levels in both Lakes. This particular operational procedure increases the ingress of salt and salinity returning to the Lakes owing to unstable water levels which is attributed to hydrological management.

SUMMARY

Maintain the importance Sustainable Diversion Limits as required for environmental watering to the sea as the Lakes are described as the heart and lungs of the entire Murray Darling Basin.

Federal Coalition Government to conduct an Environmental Impact Statement (EIS) for the reconfiguration, automation and management of the five barrages that divide seawater from Murray River water

The importance of a connector pipeline from the Southern end of Lake Albert to the Coorong may be **the most important alternative to stop Lake cycling**, that affects, rising water tables, land salinization, lake shore erosion, bank slumping and reduce salinity.

Introduce a new paradigm of management protocols from the barrages to Lock 1 at Blanchetown for sustainable pool levels set at 0.55AHD- 0.60AHD to maintain environmental sustainability for the 21st century.

With the advent of climate change in the foreseeable future an alternative weir or lock system must be factored in for the Lakes and Coorong's future management to safeguard South Australia's water distribution.

The operational Lakes 0.75AHD pool level should be set at 0 55 AHD to 0.60 AHD and constant, this may save up to 400Gls whilst reducing rising water tables, land salinization, lakeshore erosion, bank slumping, reduce salinity, whilst ensuring the appropriate environmental water as required by the MDBA P.

Yours sincerely

Bill Bagley

26th April 2018

ATTACHMENT 1

The Hon Bob Baldwin MP

Parliamentary Secretary to the Minister for the Environment

Mr Bill Bagley

Dear Mr Bagley Bill

I refer to your letter of 17 November 2014 and email of 13 January 2015 to the Prime Minister, the Hon Tony Abbott MP, concerning water management of Lake Alexandrina, Lake Albert and the Coorong. Your letter was forwarded to me as the matters you raised fall within my portfolio responsibilities. I sincerely apologise for the delay in responding.

As you are aware, the Murray Mouth Barrages were constructed in the 1930s and included, at the time, contemporary operating systems. In the intervening 75 years, the operating systems have been updated a number of times to take advantage of improvements in technology. At Tauwitchere and Ewe Island Barrages there are 36 gates fitted with an automatic close function in the event that downstream levels approach upstream levels. Further enhancements can be expected in the future, however investment in major re-configuration cannot be justified at this time as the barrages currently meet all required functions.

In regards to your concerns surrounding the adoption of forecasting information in the decision making process surrounding the management of the Lower Lakes, please be advised that the operators have access to best available forecasts of weather and sea level conditions.

As increasing volumes of water become available through implementation of the Basin Plan, it will be important to ensure that management of the Lower Lakes optimises the increased flows. As such, it is likely to become more common for Lower Lake levels to fluctuate, particularly towards the limits you propose. In the last few decades, this has not been possible as flows to the sea were very low and the lakes needed to be surcharged in spring to avoid falling to unacceptable low levels by autumn, even with all barrages closed.

As you note in your letter, the Australian and South Australian governments have co-funded an investigation into the future management of water quality in Lake Albert and the Narrung Narrows through the Lake Albert Scoping Study. Progression of any management actions to improve Lake Albert water quality is a matter for the South Australian government. If the

South Australian government wish to seek Australian Government support for any action, then a business case would need to be developed and this may require an environmental impact study. It is my expectation that any advice put forward by the South Australia Government includes adequate consultation with stakeholders. I will provide a copy of your letter to the South Australian Minister responsible for Water, Ian Hunter, to ensure that you received notice of relevant community information sessions.

Additionally, I am advised that the South Australian Government is currently investigating a "Lower Lakes Operating Strategy", which would likely take into account forecast impacts of climate variability and climate change.

Thank you again for bringing your concerns to the Government's attention.

Yours sincerely

Bob Baldwin

16 APR 2015