



MACQUARIE MARSHES ENVIRONMENTAL LANDHOLDERS ASSOCIATION

MACQUARIE MARSHES ENVIRONMENTAL LANDHOLDERS ASSOCIATION

Introduction :

The Macquarie Marshes Environmental Landholders Association (MMELA) was formed in 1995 when there was increasing pressure to further reduce water flows to the Macquarie Marshes. Its members are local landholders, many of whom are third and fourth generation landholders in the area, and all are dedicated to ensuring a healthy and productive marsh for future generations.

The aim of MMELA is:

The Macquarie Marshes Environmental Landholders Association (MMELA) aims to ensure the social, economic and environmental sustainability of the internationally recognised Macquarie Marshes.

The Macquarie Marshes is a large semi-permanent, **flow through** wetland on the lower end of the Macquarie River in central western NSW. It covers an area of approximately 200,000ha of which 12% is a Nature Reserve managed by the NSW National Parks & Wildlife Service (NPWS). The remaining 88% is privately owned freehold land which supports an extensive agricultural industry. Much of the land has been held in families for generations and the property owners have an extraordinary knowledge and understanding of all aspects of the Marshes and its management.

The Macquarie Marshes Nature Reserve, “Wilgara” Wetland and U Block are listed on the Ramsar Convention of Wetlands of International Importance. The Nature Reserve is also listed on the Japan - Australia Migratory Bird Agreement (JAMBA) and the China - Australia Migratory Bird Agreement (CAMBA) along with several other agreements. It is the responsibility of the whole community, including State and Federal Governments, to ensure management of the wetland does not compromise values and/or obligations set out in the above mentioned agreements.

The Macquarie Marshes is unique both environmentally and economically. Research indicates it is the most important colonial nesting waterbird breeding site in Australia for species diversity and nesting density (*Kingsford and Thomas 1995*). The majority of the breeding colonies are situated on privately owned land where landholders have managed and protected them since settlement. The Marshes also support an extensive cattle grazing industry which is its main economic focus. Sustainable grazing is encouraged by MMELA and the majority of landholders are acutely aware of the environmental needs of the wetland and undertake congruent management practices.

Government policy and decision making relating to natural resource management has in the past had devastating impacts on the Marshes, particularly water management, which has severely reduced water flows through river regulation and other such legislation.

When Burrendong Dam was completed and irrigation was established throughout the Macquarie Valley scientific research showed flows to the internationally recognised Macquarie Marshes were greatly decreased. MMELA brought this to the attention of many governments and fought for water to be recovered for this diverse and unique wetland and its associated floodplain. As a result both the NSW and Federal Governments introduced 'buy back' programs and improved efficiency schemes in an effort to halt the ongoing destruction of the Macquarie Marshes. It must be remembered that these programs only returned a small portion of the water originally taken from the Macquarie Marshes and the landholders who depend on its health and vitality to make their living.

MMELA would like to make this submission to the Royal Commission investigating the Murray Darling basin plan. While we have been involved in the management and development of water sharing plans in the Macquarie for over 23 years the Basin plan development process has brought a whole lot of new challenges for our organisation. As we are a small group of landholders with a long history in involvement in water sharing we have been aware of the NSW governments agenda to continually favour the irrigation industry when water sharing decisions are being made. For many years we have tried to draw attention to this fact and are glad that through the airing of the ABC 4 corners that these concerns can now be investigated.

- As the Macquarie is a winter /spring fed catchment in the northern basin it provides a critical flow to the Barwon /Darling during a period when the Northern Rivers are likely to be experiencing low flow periods. For this reason alone we believe it is critical that the Macquarie be included in the investigation by the Royal Commission.

The following points are a summary of issues that have gone unrecognised by other investigations.

- Protection of environmental flows in the unregulated section of the Macquarie.
- Study into the dramatic reduction of flows reaching the Barwon/Darling from the Macquarie.
- Water resource plan development. Much of the structure that underpinned the previous Water sharing plan is being removed.
- Water resource plan, stake holder advisory panel is heavily bias towards the irrigation industry.
- Water resource plan development is rushed and the NSW government is only concerned about third party impacts to irrigators.
- MDBA failed to fund reporting and data collection in the Macquarie even though the Marshes have a Ramsar listed wetland that has had a 3.2 notification of change in ecological character.

Northern basin review was planning to remove water from the environment in the Macquarie without any research into the possible impact to the Ramsar listing of the Marshes

- Water reliability ,cap factor ,conversion factor and modelling assumption ,all term used to explain the available water .The MDBA have used these models to make assumptions while all river dependant community's know they are false and continue to decline.
- MDBA have not understood that there are other industry's are reliant on a healthy river system and ignored the production values of grazing sustainably on the floodplains or grazing after beneficial flooding as a result of environmental flows.
- The irrigation lobby groups given preferable treatment and water sharing plans being changed after community consultation has been the norm in the Macquarie Valley.
- It is particularly concerning to us that the past CEO of Macquarie River Food and Fibre (irrigation lobby group) was appointed to the board of the Basin Authority. Soon after, the Basin Authority claimed that the Macquarie was over recovered.
- The scientific evidence that the MDBA used to justify their claim of over recovery has all been based on models. The observed data (actual flows) during the life of the current water sharing plan has failed to meet the basin authority's own targets!! Our community has highlighted this fact for over 12 months and nothing has been done. The Royal Commission should investigate this fact.
- The allocating of flood plain harvesting entitlements to irrigators should also be investigated as it is likely that in some valleys the total extraction of water has increased due to the Basin Plan and this was not the intent.

- It is critical for the success of the Basin Plan that the Basin Authority have the respect of the whole community. The royal commission is an opportunity for the basin authority to regain some support from sections of the community other than the irrigation sector.
- The Macquarie Marshes are characterised by the intermittent and seasonal (ie inter-annual) transition between wet and terrestrial plant communities in response to variable flooding regimes. These plant communities exist as a complex mosaic in the landscape providing important refuge and breeding habitat for many different waterbirds, fish and frogs at any one time. We know that if the flooding regime is disturbed the change from wet to terrestrial plant communities becomes more permanent. Studies have found that plants that typically characterise wetlands on floodplains (e.g. perennial grasses and sedges) are vulnerable to dry periods because they lose resilience (i.e. the seedbank is depleted and/or vegetative propagules become inviable). With re-wetting these plant communities are therefore more likely to be replaced by terrestrial opportunistic annual species rather than wetland plant species (rolly polly and Bathurst burr). We know that droughts (multi-year dry periods) will become more common and protracted therefore increasing the time between floods and reducing flood frequency. We also know that river regulation has exacerbated the cumulative impacts of droughts. These facts will inevitably change the character of floodplain wetlands.
- Water NSW becoming more efficient has seen a dramatic reduction in surplus flows reaching the Marshes.
- DPI water restructure has seen the loss of local staff and compliance has suffered.
- Combine this with extremely dry periods with reduced inflows into the major storage dams has resulted in the environmental water management decisions being extremely cautious. With this caution comes some negative outcomes.

The basin plan was all about attempting to return to an environmentally sustainable level of extraction, the plan has failed to achieve this and in the Macquarie has resulted in the flows connecting with the Barwon /Darling continuing to reduce during the time of the Basin plan. The Northern basin review suggested that the Macquarie was in fact over recovered. This is totally incorrect as the decision to return water to the irrigation industry was made by the Authority with no thought of the environmental impacts this would have to the Ramsar listed Macquarie Marshes as well as the water that the Macquarie provides to the Barwon/Darling.

Thank you for the opportunity to present this submission.

Any further queries please contact.

Garry Hall

President MMELA



**MACQUARIE MARSHES ENVIRONMENTAL
LANDHOLDERS ASSOCIATION**

**MACQUARIE MARSHES ENVIRONMENTAL
LANDHOLDERS ASSOCIATION**

SUBMISSION

TO THE

**MURRAY DARLING BASIN
AUTHORITY**

NORTHERN BASIN REVIEW

Position:

The Macquarie Marshes Environmental Landholders Association cannot and does not support the Murray Darling Basin Authority's proposed amendments to the Northern Basin Plan.

Introduction :

The Macquarie Marshes Environmental Landholders Association (MMELA) was formed in 1995 when there was increasing pressure to further reduce water flows to the Macquarie Marshes. Its members are local landholders, many of whom are third and fourth generation landholders in the area, and all are dedicated to ensuring a healthy and productive marsh for future generations.

The aim of MMELA is:

The Macquarie Marshes Environmental Landholders Association (MMELA) aims to ensure the social, economic and environmental sustainability of the internationally recognised Macquarie Marshes.

The Macquarie Marshes is a large semi permanent, **flow through** wetland on the lower end of the Macquarie River in central western NSW. It covers an area of approximately 200,000ha of which 12% is a Nature Reserve managed by the NSW National Parks & Wildlife Service (NPWS). The remaining 88% is privately owned freehold land which supports an extensive agricultural industry. Much of the land has been held in families for generations and the property owners have an extraordinary knowledge and understanding of all aspects of the Marshes and its management.

The Macquarie Marshes Nature Reserve, “Wilgara” Wetland and U Block are listed on the Ramsar Convention of Wetlands of International Importance. The Nature Reserve is also listed on the Japan - Australia Migratory Bird Agreement (JAMBA) and the China - Australia Migratory Bird Agreement (CAMBA) along with several other agreements. It is the responsibility of the whole community, including State and Federal Governments, to ensure management of the wetland does not compromise values and/or obligations set out in the above mentioned agreements.

The Macquarie Marshes is unique both environmentally and economically. Research indicates it is the most important colonial nesting waterbird breeding site in Australia for species diversity and nesting density (*Kingsford and Thomas 1995*). The majority of the breeding colonies are situated on privately owned land where landholders have managed and protected them since settlement. The Marshes also support an extensive cattle grazing industry which is its main economic focus. Sustainable grazing is encouraged by MMELA and the majority of landholders are acutely aware of the environmental needs of the wetland and undertake congruent management practices.

Government policy and decision making relating to natural resource management has in the past had devastating impacts on the Marshes, particularly water management, which has severely reduced water flows through river regulation and other such legislation. The proposed amendments contained in the Murray Darling Basin Authority’s (MDBA) Northern Basin Review is another example of a proposal that will have devastating impacts on the internationally recognised Macquarie Marshes and its community.

When Burrendong Dam was completed and irrigation was established throughout the Macquarie Valley scientific research showed flows to the internationally recognised Macquarie Marshes were greatly decreased. MMELA brought this to the attention of many governments and fought for water to be recovered for this diverse and unique wetland and its associated floodplain. As a result both the NSW and Federal Governments introduced ‘buy back’ programs and improved efficiency schemes in an effort to halt the ongoing destruction of the Macquarie Marshes. It must be remembered that these programs only returned a small portion of the water originally taken from the Macquarie Marshes and the landholders who depend on its health and vitality to make their living. Now for the MDBA to propose taking water from the Marshes and its community again, with no evidence, merely assumptions, to prove allegations of over recovery, is extremely irresponsible and indefensible. It is obvious to MMELA that floodplain graziers and other sectors of the community are expected to

continue subsidising the irrigation industry as they have in the past, and it seems, will do so for the foreseeable future.

MMELA objects strongly to the MDBA's proposed amendments to the Northern Basin plan and any reduction in any of the environmental water accounts (Planned Environmental Water, NSW Government Water Account and the Commonwealth Environmental Water Account) for the Macquarie Castlereagh system.

Consultation Process:

MMELA does not believe the consultation process regarding the proposed amendments has been adequate, equitable or fair. The time taken for the Hydrological Modelling Report to be made available to all relevant parties was unacceptable. No one could be expected to prepare a detailed submission when they do not have all the pertinent information. Admittedly the report was finally made public, however it is so convoluted you would need a degree in hydrology to decipher it. The MDBA should have made this report public prior to its community engagement meetings held throughout the Northern Basin so it could be explained and those present could have any questions answered. As it is, there is no time to properly analyse and question the Hydrological Modelling Report.

It has also come to MMELA's attention, through reviewing information gained under the Freedom of Information (FOI) Act and passed on to MMELA, that the irrigation industry had access to this crucial report in July 2016. This information also states that the MDBA has consulted and negotiated almost exclusively with the irrigation industry, or 'super users' as they refer to them. This emphasises the MDBA's backing of one group of stakeholders (this also being the smallest stakeholder group) at the expenses of all others. MMELA cannot understand why the MDBA would operate this way when the environment is the largest licence holder on the Macquarie. At no time did senior staff of the MDBA make an official visit to the Macquarie Marshes to speak with graziers and again this is very disappointing considering it is an internationally recognised wetland for which the Government has specific obligations and responsibilities. The Marshes are also one of the key environmental assets within the Basin. The entire consultation process has been inequitable, inadequate and insulting to many involved in this process.

Floodplain Graziers:

It is extremely concerning to MMELA that throughout this entire process there has been no recognition of the dependence floodplain graziers have on healthy and functioning wetlands and floodplains. They are not acknowledged as legitimate water users regardless of the fact that they are not extractive users, and do not remove water from the system. They are however totally reliant on flows through the system which promote pasture growth and supply stock and domestic water for use on their properties. There has been no assessment (social or economic) of the impacts of taking water from floodplain graziers in the Macquarie Marshes area. It must be assumed the MDBA does not believe or understand the dependence of floodplain graziers on healthy functioning wetlands and floodplains for their livelihoods. They are dependent on all size of flows from the smallest in channel flows to the large and uncontrolled floods. All flows play a different but essential role in the ecology of the Macquarie Marshes. To reduce any of these in size or frequency will have negative impacts to production and the environment. MMELA has seen the report compiled by the MDBA on floodplain graziers on the Lower Balonne Floodplain. This report cannot simply be overlaid on the Macquarie as a means of assessing grazing outcomes. The land and water flows in the Macquarie system are vastly different to those on the Lower Balonne and as such a separate study needs to be conducted for Macquarie floodplain graziers. Please see Appendix 1 for grazing information related to the Macquarie Marshes.

When water was taken in the past (Burrendong Dam was completed) and irrigation licences were sold there was no compensation for the loss of that water for floodplain graziers. Again it seems they are to have water 'taken' from them and again, with no compensation. They

have been expected, and made to, absorb the resultant losses of production. They have all paid a premium for their land as it historically had regular flooding to ensure pasture growth, particularly at times when the local area was experiencing dry times. Floodplain graziers are one of the only groups in agriculture who are treated in such a discriminatory manner when government decisions and policies directly reduce their earning capacity.

When research indicated the Macquarie was over allocated and the recovery programs began water was only recovered from irrigators **willing** to sell and at full market value. There was no 'taking' water from them. In fact at one point when the irrigation industry did not want the Government in the water market and an embargo was placed on the NSW Government buying licences, a group of irrigators in the Macquarie took up a class action against the embargo as they wanted to sell their licences and were happy to sell to any buyer including the Government. Now it seems some have decided they want the water back but do not want to pay for it. As the old saying goes "you cannot have your cake and eat it to".

There has been no social or economic study completed by any government or government agency to properly assess the impact of these proposed amendments on the landholders in the Macquarie Marshes. There seem to be a number of 'assumptions' made throughout all of the documents detailing the amendments and this is totally unacceptable to MMELA and its members. These are real people and real livelihoods and 'assumptions' are just not acceptable. We need real and robust data so we can have some trust in any predicted impacts and so we can confidently assess if they are economically and environmentally justified. Assumptions are simply unacceptable. Floodplain graziers are tired of being treated as second class citizens and being expected to continually prop up the irrigation industry.

Environment:

As you are aware the internationally recognised Macquarie Marshes is situated between Warren and Carinda. The Macquarie Marshes is unique both environmentally and economically. Research indicates it is the most important colonial nesting waterbird breeding site in Australia for species diversity and nesting density (*Kingsford and Thomas 1995*). The majority of the breeding colonies are situated on privately owned land where landholders have looked after and protected them since settlement. The Macquarie Marshes Nature Reserve, "Wilgara" Wetland and U Block are listed on the Ramsar Convention of Wetlands of International Importance. The Nature Reserve is also listed on the Japan - Australia Migratory Bird Agreement (JAMBA) and the China - Australia Migratory Bird Agreement (CAMBA) along with several other agreements. It is the responsibility of the whole community, including State and Federal Governments to ensure management of the wetland does not compromise values set out in the above mentioned agreements.

Continued water flows are the lifeblood of this unique wetland and its associated floodplain and any decrease in these flows without proper research and assessment could compromise the integrity of this vibrant area.

In the supporting documents the MDBA states that all four (4) environmental outcomes or specific flow indicators were met when modelling environmental outcomes, in fact in reality none of the indicators were met in the observed data. Again, this highlights the dangers of working with 'assumptions'.

The NSW Government states in its Northern Basin Review Synopsis (November 2016) that it considers assumptions underpinning the Tool Kit as being 'not fit for purpose' and 'both unrealistic and unachievable'. MMELA supports this view. Given that the NSW Government will be responsible for implementing these measures, this position destroys the Tool Kit's credibility and usefulness.

Stakeholders in the Macquarie valley have been at the forefront of environmental flow management as there has been an Environmental Water Account of some sort managed in the Macquarie since 1967 when 15,000 acre feet (18,500ML) was set aside to be used for the health of the Macquarie Marshes. This was put in place when Burrendong Dam was completed and the government of the day accepted there would be reduced water flows the Macquarie Marshes. MMELA cannot understand why the MDBA did not seek advice and

information from the environmental managers in the Macquarie instead of taking advice from other groups, in particular Macquarie River Food and Fibre, resulting in incorrect assumptions being made about the success or otherwise of environmental management water in this valley. One of the biggest threats to the ecology of the Macquarie Marshes is the reduced frequency of large floods as it is only on these large floods that the colonial nesting waterbirds breed. These key species such as egrets and ibis are not long lived birds, 7 to 8 years. Where they previously nested in the marshes in hundreds of thousands every two to three years, we are lucky to see them breed every 6 to 8 years, numbers are declining and will continue to do so until we have no birds left to breed. One breeding event in a bird's lifetime is not enough to ensure these species' survival. Even worse, if we accept the MDBA's 114 year model it predicts periods of "NON BREEDING" greater than bird life expectancies. This is government sanctioned extinction of many fauna species.

Reduced water availability will place constraints on flows for habitat maintenance at crucial times such as extended dry periods as experienced in the 2002/2009 drought. The ability to provide even small in channel flows in times of drought are vital for vegetation health and wildlife survival.

Cap Factors:

The MDBA's proposed amendments suggest a reduction in recovered water of 12GL on the Macquarie, however depending on what Cap Factor or Conversion Factor is used, this will be anywhere from 29GL to 60GL. This is totally unacceptable to MMELA.

How conversions are determined has been a concern for stakeholders on the Macquarie since 1980, when licences were converted from area based licences to volumetric based licences. At this time all valleys in NSW were converted at a factor 6ML/ha, however the Macquarie irrigators convinced the government of the day to allow them to convert at 8ML/ha (*WJ Johnson 2005*). As a consequence the NSW Water Resources Commission in 1981 admitted that the regulated flow in the Macquarie was 'overcommitted.' Since 1981 commitments in the Macquarie River have doubled casting doubt on Macquarie River Food and Fibre's claim that the conversion factor in the Macquarie is 53%. This allocation of water has been over generous and has never been properly addressed. It is particularly galling to hear the recent demands from Macquarie irrigators for water to be 'returned.'

Conversions have a long and murky history in the Macquarie. The current debate about Conversion Factors is confusing and secretive, excluding many stakeholders who are materially affected by such decisions. MMELA remains fearful that allocations can be manipulated to favour any one group of water users over others. The entire process needs to be simplified and made clearer so all water users can have confidence in the numbers.

MMELA presumes the approach to calculations of Cap Factors used for determining licence volumes in the Northern Basin will also be used in the same way in the Southern Basin. If not then this again becomes an equity issue.

Another concern of MMELA's is who will have responsibility for calculating and negotiating Cap Factors, particularly should the proposed amendments not be approved. It is the opinion of this organisation that the role of setting Cap Factors should rest with the MDBA to ensure fairness across state boundaries and throughout the Basin.

Flow Assessment:

Using averages to assess, model or guess river flows in the Northern Basin (NB) has always been fraught with dangers. Because the NB, including the Macquarie, historically experiences such variation in flows from large floods to prolonged low flows to no flow, it is impossible to rely on averages to model flows with any degree of accuracy.

The Macquarie also has a responsibility to supply flows to the Barwon Darling system. Including supplementing the town water supplies for Brewarrina, Bourke and Wilcannia. Bourke Shire Council has acknowledged that when water from the Macquarie arrives at Bourke the cost of filtration of the town water supply is greatly reduced. This is a result of the natural filtration as water flows through the Macquarie Marshes' vast phragmites reed beds

and other aquatic vegetation. Historically the Macquarie was the largest contributor to the Barwon Darling however flows reaching Brewarrina and Bourke have significantly reduced since the advent of river regulation. This is according to the MDBA's Hydrological Modelling Report. Any additional reduction to Environmental Water Accounts will further compromise the Macquarie's ability to achieve its obligations to downstream systems. Documents received by MMELA question the concept of Specific Flow Indicators (SFIs) and their usefulness in assessing environmental outcomes, particularly in the unregulated north. They also suggest that SFIs are not fit for purpose in the NB and given much of the lower Macquarie is unregulated the use and effectiveness of SFIs here must be questioned. It is also unclear how the hydrological modelling is linked to SFIs.

Inaccuracies in the Review:

The inaccuracies in both the *Environmental Outcomes of the Northern Basin Review* and *The Northern Basin Review* are shocking and indefensible for an organisation such as the MDBA.

1. When talking about flows in the Macquarie and the amount of environmental water flowing to the Macquarie Marshes and downstream the documents state water is measured at Marebone Break. This is not where environmental water is measured. It is measured at the gauge upstream of Marebone Weir not the gauge on Marebone Break. They are two completely different and separate gauges.
2. When modelling environmental outcomes (or SFIs) for the Macquarie the model assumes all four (4) outcomes are met under all flow scenarios. In fact none have been observed to be met in the field. They all failed under actual observations. This should mean that all the modelled data is corrupted.
3. Page 63, Table 12 states 100GL volume "over 5 successive months", June to April was reached 80 -85 per cent of years. This should read "over 3 successive months". This error was pointed out to MDBA staff when draft documents were released but the figures were not rectified in the final report. This is just another example of how inaccurate and misleading data has been used to justify taking water from other users and the community.
4. Connectivity for native fish was also modelled as being met and again fails real observations. There are a number factors impacting on fish connectivity including flow release times, temperature pollution and flow rates. To think these issues can be addressed using the proposed Tool Box strategies is extremely naive.
5. When comparing the impacts of water recovery on local communities the documents state Coonabarabran is not affected as much as Warren because it is closer to Dubbo than Warren. Coonabarabran is 160KM from Dubbo and Warren is 125KM from Dubbo. How can anyone have any degree of confidence in the data supplied by the MDBA when it contains such rudimentary mistakes?
6. Coonamble which is on the Castlereagh and has approximately one quarter of the Macquarie Marshes within its shire boundary was completely left out of the assessment process. Again this shows ignorance by the MDBA as the proposed amendments will have a direct impact on the Coonamble Shire Council and its rate payers through reduced productivity and reduced water flows for tourism.

Warren Employment Figures:

Information provided to MMELA relating to employment figures for the Warren Shire (Please see Appendix 2 employment data) indicates the NSW and Federal Governments' recovery programs have had little, if any, impact on irrigation farm employment for this area. The figures show that while there was a small decrease from the date of the announcement of the Federal Government Recovery Program, 18th August 2006, numbers have now increased. There were 57 employed in 2006, this has increased to 63 employed in 2012. There are no figures available to MMELA from 2012 on. Ginning jobs went from 7 in 2006 to 34 in 2012. At the same time non irrigation farm jobs fell from 293 in 2006 to 254 in 2012.

This information was given to the MDBA and irrigation groups throughout the Northern Basin, including Macquarie River Food and Fibre (MRFF) on 4th September 2016.

Is MMELA therefore to assume the media blitz blaming water recovery for jobs losses is nothing more than a propaganda campaign and an easy out for councils who do not want to work to address the issue of job losses in their shires.

Other Influencing Factors:

Supplementary Access and Floodplain Harvesting are two factors that greatly impact downstream water users and until these are looked at in more depth MMELA cannot even entertain any reduction in current environmental water accounts.

FLOODPLAIN HARVESTING -

The whole concept of Floodplain Harvesting beggars belief. How can a Government allow one group of water users to take water (even under licence) when it has absolutely no capacity to measure or even assess the amount of water being taken. It does not know the impact on downstream users and communities. It does not know the impact on the ecology of the rivers, wetlands floodplains, and it does not know the impact on the internationally recognised Macquarie Marshes. One could even go a step further and assume it does not care. Until there is accurate metering of floodplain harvesting licences and meticulous monitoring when water is being taken, there can be no consideration of reducing environmental water accounts.

SUPPLEMENTARY ACCESS -

Supplementary Access licenses also impact the wetlands, floodplains and effluent creeks of the Macquarie. The original intent of providing Supplementary Water Access Licences was to grant opportunistic access to water in times of 'plenty' and when there would be no adverse impact on the environment or downstream users and communities. However access to water under these licences is now being granted every time the trigger point is reached regardless of the environmental health of the river, creeks and in particular the Macquarie Marshes.

Tributary flows and Dam spills are the life blood of the effluent creeks and the lower Macquarie system. By allowing access every time the 5,000ML per day at Warren trigger occurs you severely impact these areas, as this is the height most effluent creeks begin to flow. The creeks just start to flow then supplementary access is announced and the flow in the river retracts thus dropping levels and stopping flows to these creeks and the lower river.

One measure the MDBA should be looking at is lifting the Supplementary Access trigger for the health of the effluent creeks and the lower Macquarie River.

IMPROVEMENTS TO TECHNOLOGY -

During the years since water recovery programs were introduced there have been enormous advances in technology for farmers. These include, self steer technology for tractors, automatic weed sprayers such as 'Weed Seeker', cotton pickers that bale as they go and computerised irrigation systems. All of these innovations have resulted in less jobs on irrigation farms. How has the use of this new technology been considered in the process of determining the so called impacts of water recovery on farms and communities or in the socio economic assessments?

LAND REMAINS IN PRODUCTION -

Another issue that has not been mentioned during all the debate around water recovery is the fact that when willing irrigators sold their water licences, at full market value, (whether it be to the government or another buyer in the market) they still retained the land. This land is still being used for primary production. It was not removed in any way. The respective landholders continue to use it for either livestock production or dry land farming so there is still a monetary return from that piece of land. Selling the irrigation licences did not remove the land's ability to produce.

In many cases irrigators who sold licences remain on their properties and the very large sums they received from those licences came back to the local area. Whether or not these people choose to spend that money in their local community is another matter, but cannot be considered a negative against the concept of water recovery.

EFFICIENCY PROGRAMS -

An anomaly that needs addressing is the so called Water Efficiency Programs for irrigators. These are 100% taxpayer subsidised. It appears irrigators have become totally reliant on government subsidies every time they experience a hardship, big or small. The protection afforded this group astounds all other agricultural industries. Rarely have other farmers experienced such generosity and this includes programs such as the Great Artesian Basin Cap and Pipe Scheme. This scheme while generous never covered 100% of all costs.

Other Key Points:

- ◆ The MDBA has been negligent in pursuing such a discriminatory proposal. To consider taking water from highly dependent users where impacts will be extremely detrimental and giving it to another group of users who will gain very little is incomprehensible. Also the consultation has been biased and inequitable favouring the irrigation industry to the detriment of other agricultural and non agricultural stakeholders. This has incited splits within communities and is pitting various agricultural industries against each other. For the MDBA to be party to such community unrest is unacceptable. If all stakeholders had been treated equally and fairly communities would not be so fractured.
- ◆ There has been no recognition or acknowledgement of floodplain graziers as affected water users and no attempt to gauge the impact of reduced flows on floodplain graziers. Therefore no hint of compensation for the decline in production should these amendments be accepted.
- ◆ The MDBA has proposed these amendments without any scientific justification. This includes both environmental research and/or rigorous social and economic studies that include all dependent water users.
- ◆ The MDBA must remember that water is the key ecological driver in all wetlands and floodplains. It is foolish and reckless to think you can reduce water availability and not have negative impacts.
- ◆ MMELA can, under no circumstances, support a reduction of recovered water to 320GL. The only number this organisation would support is a recovery target of 415GL or greater!
- ◆ ***The Macquarie Marshes Environmental Landholders Association cannot and does not support the Murray Darling Basin Authority's proposed amendments to the Northern Basin Plan.***

Prepared by
Macquarie Marshes Environmental Landholders Association

For further information contact:

Garry Hall
Chairman MMELA

Year	Hydstra Data	Year	Hydstra Data
1939	62,000	1978	355,593
1940	6,536	1979	103,722
1941	29,956	1980	53,012
1942	88,203	1981	39,877
1943	86,641	1982	31,560
1944	3,430	1983	45,471
1945	61,910	1984	134,160
1946	0	1985	48,307
1947	34,432	1986	84,191
1948	276,394	1987	44,451
1949	32,872	1988	56,644
1950	1,157,211	1989	308,768
1951	161,657	1990	725,142
1952	319,408	1991	44,347
1953	73,128	1992	22,662
1954	65,744	1993	86,964
1955	379,757	1994	11,827
1956	141,901	1995	11,996
1957	32,346	1996	37,953
1958	92,291	1997	7,050
1959	250,269	1998	331,729
1960	187,867	1999	56,535
1961	53,397	2000	297,855
1962	136,653	2001	61,441
1963	303,163	2002	8,970
1964	275,159	2003	5,657
1965	1,690	2004	1,736
1966	2,782	2005	2,663
1967	12,279	2006	2,891
1968	7,880	2007	804
1969	125,176	2008	1,651
1970	64,304	2009	1,072
1971	266,640	2010	185,413
1972	76,030	2011	212,403
1973	497,386	2012	209,226
1974	593,296	2013	8,185
1975	145,512	2014	3,949
1976	269,237	2015	2,366
1977	152,964	2016	288,577



MACQUARIE MARSHES ENVIRONMENTAL LANDHOLDERS ASSOCIATION

Introduction:

The Macquarie Marshes Environmental Landholders Association (MMELA) was formed in 1995 when there was increasing pressure to further reduce water flows to the Macquarie Marshes. Its members are local landholders, many of whom are third and fourth generation landholders in the area, and all are dedicated to ensuring a healthy and productive marsh for future generations.

The aim of MMELA is:

The Macquarie Marshes Environmental Landholders Association (MMELA) aims to ensure the social, economic and environmental sustainability of the internationally recognised Macquarie Marshes.

The Macquarie Marshes is a large semi-permanent, **flow through** wetland on the lower end of the Macquarie River in central western NSW. It covers an area of approximately 200,000ha of which 12% is a Nature Reserve managed by the NSW National Parks & Wildlife Service (NPWS). The remaining 88% is privately owned freehold land which supports an extensive agricultural industry. Much of the land has been held in families for generations and the property owners have an extraordinary knowledge and understanding of all aspects of the Marshes and its management.

The Macquarie Marshes Nature Reserve, “Wilgara” Wetland and U Block are listed on the Ramsar Convention of Wetlands of International Importance. The Nature Reserve is also listed on the Japan - Australia Migratory Bird Agreement (JAMBA) and the China - Australia Migratory Bird Agreement (CAMBA) along with several other agreements. It is the responsibility of the whole community, including State and Federal Governments, to ensure management of the wetland does not compromise values and/or obligations set out in the above mentioned agreements.

The Macquarie Marshes is unique both environmentally and economically. Research indicates it is the most important colonial nesting waterbird breeding site in Australia for species diversity and nesting density (*Kingsford and Thomas 1995*). The majority of the breeding colonies are situated on privately owned land where landholders have managed and protected them since settlement. The Marshes also support an extensive cattle grazing industry which is its main economic focus. Sustainable grazing is encouraged by MMELA and the majority of landholders are acutely aware of the environmental needs of the wetland and undertake congruent management practices.

Government policy and decision making relating to natural resource management has in the past had devastating impacts on the Marshes, particularly water management, which has severely reduced water flows through river regulation and other such legislation.

When Burrendong Dam was completed and irrigation was established throughout the Macquarie Valley scientific research showed flows to the internationally recognised Macquarie Marshes were greatly decreased. MMELA brought this to the attention of many governments and fought for water to be recovered for this diverse and unique wetland and its associated floodplain. As a result both the NSW and Federal Governments introduced 'buy back' programs and improved efficiency schemes in an effort to halt the ongoing destruction of the Macquarie Marshes. It must be remembered that these programs only returned a small portion of the water originally taken from the Macquarie Marshes and the landholders who depend on its health and vitality to make their living.

MMELA was pleased to be able to meet with the productivity commission in Warren on the 21st of March and then delighted to have a visit to the marshes on Friday the 23rd of March. We must thank both Jane and John for the opportunity to present our case first hand and see the Marshes even though it was dry. The question are the Marshes in a better state as a result of the Basin plan is a complex one and during our submission we will attempt to give you our thoughts.

- Firstly the management of environmental water (EWA, river bank and CHEW) is working well in the Macquarie with the limited water that is available.
- The environmental watering advisory group (known locally as EFRG) that was established under the 2004 water sharing plan has worked very well and while there has been changes to the membership and the responsibility of the chairs role, we believe the group is working well. With the new membership came some new challenges, firstly the Commonwealth objective to provide connectivity with the Barwon, a renewed focus on environmental assets such as fish and an expectation to coordinate flows with other systems. The EFRG with the support of the Office of Environment and Heritage (OEH) has adapted well to the challenge and continue to agree on decisions while not ever satisfied that there is enough water.

Why is there not enough water in the environments accounts?

It must be noted that not long before the development of the basin plan, water trade became available to irrigators in the Macquarie valley. The combination of CHEW purchasing general security licences that may /may not have been used and smaller irrigators being offered an attractive price for their water on the temporary market has seen the reliability of general security water in the Macquarie dramatically fall. This has seen an increase of water usage as many small licence holders that traditionally only used some (undeveloped licences) of their entitlement now could sell or trade their water. This fall in reliability has seen the benefits from environmental water reaching the Marshes reduced. Also while this was going on there has also been other changes to river management that has also reduced the effectiveness of environmental flows.

- Water NSW becoming more efficient has seen a dramatic reduction in surplus flows reaching the Marshes.
- DPI water restructure has seen the loss of local staff and compliance has suffered.
- Combine this with extremely dry periods with reduced inflows into the major storage dams has resulted in the environmental water management decisions being extremely cautious. With this caution comes some negative outcomes.

During the development of the Northern Basin Review, MMELA had some major concerns about the appointment of the ex CEO of Macquarie River Food and Fibre (irrigation lobby group in the Macquarie) to the Basin authority. With the appointment of this position on the MDBA we felt that the MDBA lost its independence. With the new member (former Macquarie River Food and Fibre) now firmly at the table came a new term for the Macquarie (over recovery). This term was then justified by the MDBA ignoring the advice given to them by the Northern Basin Advisory Group and going about proving that the Macquarie was in fact over recovered. This was done by the development of model runs to convince interested parties that the environmental outcomes were in fact being met.

The EFRG had to then come to terms with the possibility of water in the environments account being sold back to irrigators. Fortunately for the disallowance motion being successful in federal parliament on the 14th of February 2018 the environments accounts have not been sold. This would only make the job of managing environmental water in the Macquarie more difficult. The toolkit measures that were suggested to compensate for the loss of water were doomed to fail. The wetland vegetation in the Marshes requires water to maintain its ecosystem function.

- Removal of any water would see a continued decline in the Marshes ability to withstand shocks. One such shock is the occurrence of empty dams that has been exacerbated by water trade and the lowering of reliability. During the period of the MDBA manipulating the outcome of the northern basin review, MMELA worked hard to convince authority's that damage will be done to the health of the wetland. Our local government soon became involved and chose to support the amendments to the plan.
- As a result of the basin plan the conflict in our local community is as hostile as it's ever been. While the objectives of the plan were Economic, Social and Environmental, in the Macquarie it's been a fail at a social level (increased conflict between water dependant community's) and environmental, as water trade has lowered reliability. Combine this with now a complete lack of trust within many river communities of the MDBA as a result of the ABC airing of 4 corners, you could say that things are now in a worse state than before the basin plan was established.

Like the NSW government the MDBA has given into the continued lobbying from the irrigation industry who have been relentless. The irrigation industry employs professional lobbyist to target policy developers so as to favour the irrigation industry. In extreme cases they have been so successful that the MDBA have gone on to employ these staff.

On the other side are a mixed bag of green groups and some landholder groups (MMELA and the Australian floodplain association) that are mostly small business operators who often live in isolated communities with little or no access to help to lobby policy makers. The people who live and run business around the Macquarie Marshes have watched as the flow regimes have altered due to river regulation and now with the change of water use and the lowering of the reliability have tried their best to adapt.

The Macquarie Marshes are characterised by the intermittent and seasonal (ie inter-annual) transition between wet and terrestrial plant communities in response to variable flooding regimes. These plant communities exist as a complex mosaic in the landscape providing important refuge and breeding habitat for many different waterbirds, fish and frogs at any one time. We know that if the flooding regime is disturbed the change from wet to terrestrial plant communities becomes more permanent. Studies have found that plants that typically

characterise wetlands on floodplains (e.g. perennial grasses and sedges) are vulnerable to dry periods because they lose resilience (i.e. the seedbank is depleted and/or vegetative propagules become inviable). With re-wetting these plant communities are therefore more likely to be replaced by terrestrial opportunistic annual species rather than wetland plant species (rolly polly and Bathurst burr). We know that droughts (multi-year dry periods) will become more common and protracted therefore increasing the time between floods and reducing flood frequency. We also know that river regulation has exacerbated the cumulative impacts of droughts. These facts will inevitably change the character of floodplain wetlands.

The development of the Basin plan was all about attempting to repair the damage that had been caused by various state governments encouraging water extraction within their State. The NSW government has shown a lack of willingness to assist in the process. During the development of the water resource plans we have noticed that NSW policy planners are restrictive in what is able to be changed even if it's an improvement, so a lack of flexibility within the department to improve rules. They seem to be solely focused on no third party impacts (to the irrigation community). This is typical of the problem with the Basin plan that the states can still corrupt the outcomes. We thought that the MDBA may be the final hurdle to get past but now that we have lost all trust in the Basin Authority we expect that whatever the states put up will be signed off by the MDBA.

FLOODPLAIN HARVESTING - The whole concept of Floodplain Harvesting beggars belief. How can a Government allow one group of water users to take water (even under licence) when it has absolutely no capacity to measure or even assess the amount of water being taken. It does not know the impact on downstream users and communities. It does not know the impact on the ecology of the rivers, wetlands floodplains, and it does not know the impact on the internationally recognised Macquarie Marshes. One could even go a step further and assume it does not care. Until there is accurate metering of floodplain harvesting licences and meticulous monitoring when water is being taken, there can be no consideration that environmental objectives could be met. Flood plain harvesting has been required to be licenced as a result of the basin plan but now we are fearful that through the process (as a result of the basin plan) there is more water being harvested from the flood plain than before the plan was developed.

We are aware that the commonwealth has invested millions of dollars into the Murray Darling Basin plan and it's difficult to explain that even with the purchased water the environment has not seen a dramatic improvement. We hope this submission goes some way to explaining what we are seeing on the ground to back up our opinion.

Please find attached the Macquarie's contribution to the Barwon / Darling measured at Bells Bridge in the lower Macquarie before the river joins the Barwon. It is worth noting that there has continued to be years with very low flows even during the Basin plan.

The lack of protection of environmental flows in this section of the river plays a part in the reduced volumes measured at Bells Bridge but also the drying of the Marshes has meant that it now takes much more water to just wet the Marshes without even having some water flow through the system.

Thank you for the opportunity to have our say to the productivity Commission.

Regards Garry Hall
President MMELA

NB: Please find included scientific papers on link

<https://www.dropbox.com/s/fsb5oowe2t2qxxq/Macquarie%20Marshes%20Scientific%20Pubs%20for%20Garry.pdf?dl=0>

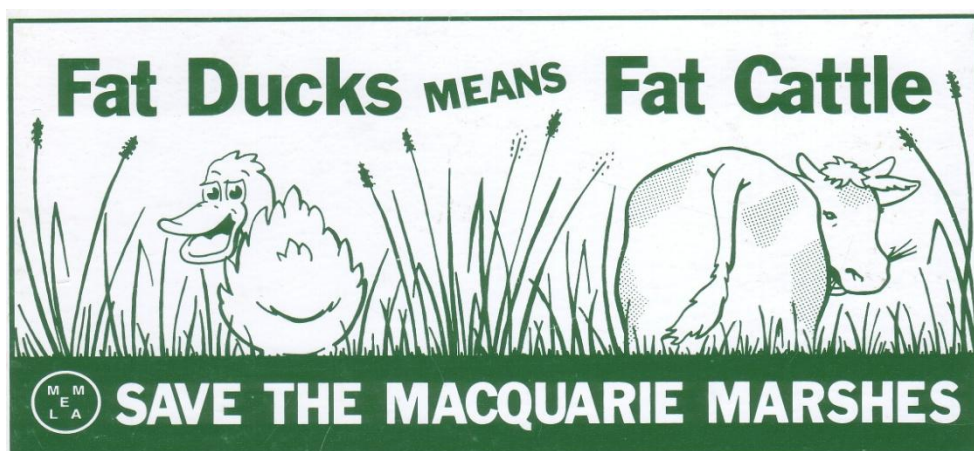


MACQUARIE MARSHES ENVIRONMENTAL LANDHOLDERS ASSOCIATION

Beef Productivity of the Macquarie Marshes



Photo courtesy of Donna Veech

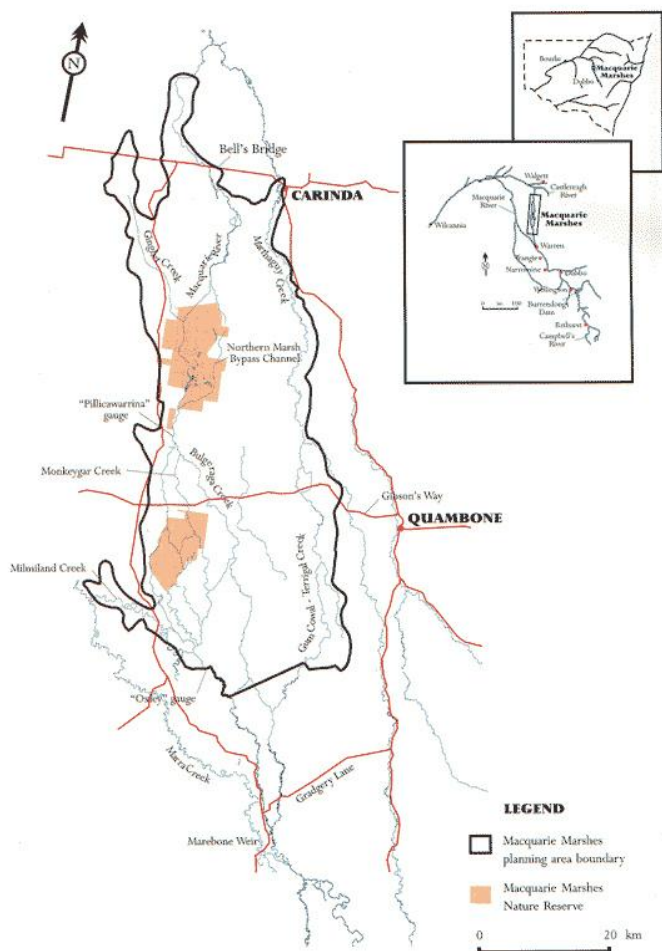


INTRODUCTION

The Macquarie Marshes is a large semi permanent, flow through wetland on the lower end of the Macquarie River in central west NSW. It covers an area of approximately 200,000ha of which 12% is a Nature Reserve managed by the NSW National Parks & Wildlife Service (NPWS). The remaining 88% is privately owned freehold land that supports an extensive agricultural industry, predominantly beef cattle production. Much of this land has been held in families for several generations and the property owners have an extraordinary knowledge and understanding of all aspects of the Macquarie Marshes.

The Macquarie Marshes were first settled in the 1830s and have reliably and sustainably supported beef cattle production from then until the Macquarie River was heavily regulated in the 1970s. Following regulation the beef cattle industry continues to be part of the Macquarie Marshes but landholders no longer have the security of reliability that they had prior to regulation of the river.

The Macquarie Marshes is unique both environmentally and economically. Research indicates it is the most important colonial nesting waterbird breeding site in Australia for species diversity and nesting density (Kingford & Auld 2000). The majority of the colonies are situated on privately owned land where landholders have looked after and protected them since settlement. The Marshes also support an extensive cattle grazing industry which is its main economic focus. Sustainable grazing is encouraged by the Macquarie Marshes Environmental Landholders Association (MMELA) and the majority of landholders are acutely aware of the environmental needs of the wetland and undertake appropriate management to ensure environmental assets are not compromised while undertaking sustainable beef production.



The Macquarie Marshes Nature Reserve, U Block and "Wilgara" Wetland are listed on the Ramsar Convention of Wetlands of International Importance. The Nature Reserve is also listed on the Japan - Australia Migratory Bird Agreement (JAMBA) and the China - Australia Migratory Bird Agreement (CAMBA). It is the responsibility of the whole community, including State and Federal Governments and the local community to ensure management of the wetland does not compromise values set out in the above mentioned agreements.

It is an accepted fact that the wetland and floodplain areas of the Macquarie Marshes do not respond as well to rain as the land outside the Marsh area. The majority of the vegetation species of the Macquarie Marshes are reliant on periodic flooding to thrive and provide both fodder for cattle and feed, shelter and habitat for native flora and fauna. If you take away vital flood water you vastly reduce plants' vigour and resilience and average or below average rainfall does not provide the nutrients or the inundation duration needed by these plants to flourish.

FLOODING

Extract from *Jenkins, K.M., Asmus, M., Ryder, D., and Wolfenden, B.J. 2004. Fish and macroinvertebrate communities in the Macquarie Marshes in the winter and spring of 2003*

“Under natural flow conditions the Macquarie Marshes was a renowned waterbird habitat and considered one of the most important drought refuges for waterbirds in NSW (papers referred to in Kingsford and Thomas 1995 from 1954, 1957, etc). During floods the floodplain and creeks were thick with aquatic macrophytes, such that it was impossible to use an outboard motor (Landholder anecdotal records and photographs). The Macquarie Marshes contained 42,448 ha of river red gum woodland and forest in 1949, one of the most extensive stands in Australia (Kidson *et al.* 2000a, b). The extremely high productivity of the Macquarie Marshes, as expressed by waterbirds, macrophytes and river red gum, is likely linked to the high frequency of flooding. For example, floods were predicted to occur naturally every 1.07 years in floodplain habitats with river red gum forests (ie. green zone), every 1.44 years in floodplain habitats with river red gum woodland (ie. yellow zone) and every 1.8 years in coolibah floodplain (ie. red zone) (Table 1, Brereton *et al.* 2000). The main channels that dissected the floodplain, (Macquarie River, Monkeygar Creek and Bulgeraga Creek) received small floods at least once a year and were seldom dry (MMMC landholder records 2004).

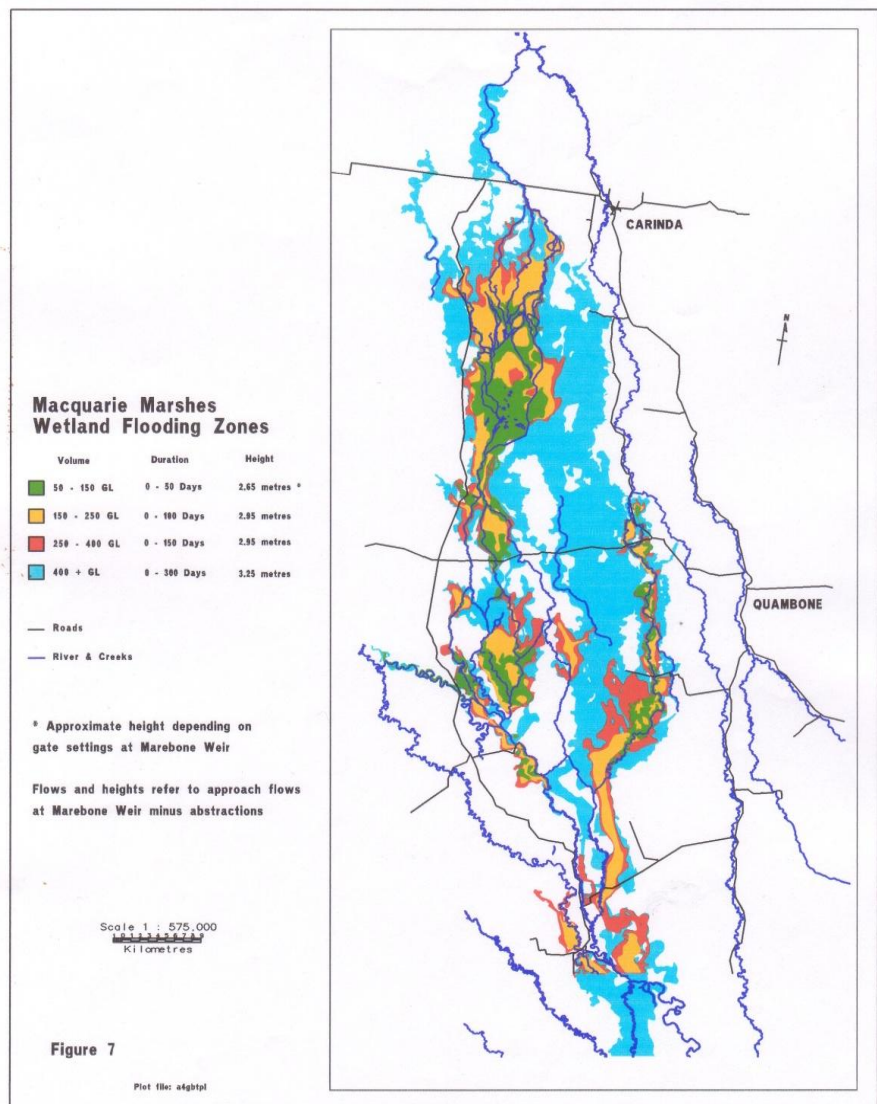


Table 1. Vegetation type and flood frequency in 5 flood zones described for the Macquarie Marshes under modelled natural flow conditions (Brereton *et al.* 2000).

Flood zones	Vegetation type in flood zones	Natural flood frequency
Purple	phragmites, cumbungi, water couch, mixed marsh	Every 1.00 years
Green	phragmites, cumbungi, water couch, mixed marsh and river red gum forests	Every 1.07 years
Yellow	The above plus river red gum woodlands, river red gum associations and ephemeral grasslands	Every 1.43 years
Red	The above plus river red gum association, lignum, coolibah, ephemeral grasslands and some black box	Every 1.80 years
Blue	The above plus drier coolibah and black box areas, myall, belah and ephemeral grassland areas	Every 2.50 years

Knowledge of the impacts of regulation on the natural water regime of the Macquarie Marshes relies on links between river flow (modelled or actual) and flood extent mapped from Landsat imagery (Kingsford and Thomas 1995). This is similar to most floodplain wetlands in Australia, due to the lack of water gauging stations (flow or height) located within wetlands. In contrast, in the Macquarie River there are a number of gauges dating back to 1944 and changes in water regime are well documented. Two studies on the impacts of river regulation on the Macquarie Marshes, provided insight into different aspects of water regime. Brereton *et al.* (2000) used modelled IQQM data and Landsat imagery of flood extent to compare flood frequencies in 5 flood zones under natural (Table 1) versus regulated flows (1986 and 1996 Water Management Plans). The modelling approach highlighted that the Marshes is composed of a mosaic of floodplain with differing water regimes. It identified two critical changes to water regime in the Macquarie Marshes due to regulation, firstly the reduction in flood frequency particularly of smaller floods, and the shift in the timing of flooding primarily from winter-spring to spring-summer (Brereton *et al.* 2000).

Kingsford and others (1995, 1998) examined actual annual flows, rainfall and flood extent over a 50 year period (1944-1993). The first 24 years preceded the major regulation impacts in the system and included major flooding in the 1950s. The latter included the commissioning of Burrendong Dam (1968), major flooding in the 1970s, flooding in the early 1980s and the 1990s, and the increase in irrigation in the Macquarie Valley in the 1980s. Kingsford and Thomas (1995) found that annual flows at Oxley decreased significantly for high and medium rainfall events and the areas flooded by large floods contracted by at least 40-50%. Fifty-one per cent of water passing Dubbo each year reached the Macquarie Marshes between 1944-1953, but this declined to 21% by 1984-1993 (Kingsford and Thomas 1995). Analysis of actual flows at Oxley (1996-2003) found an average **reduction in flows to the Marshes of around 207,000 ML / year** compared to flows in the period 1943-1965 (MMMC unpublished analysis of Oxley gauge records)".

This reduction in flows to the Macquarie Marshes, and throughout the Murray Darling Basin (as this situation has been replicated in other river systems throughout the Murray Darling Basin) resulted in the establishment of both the NSW and Federal 'buy back' programs. The 'buy back' was recognised as being the quickest and most cost effective means of returning water to stressed rivers.

It must also be recognised that by keeping the Marshes wet, or at least damp, it uses far less water than if it is allowed to dry out and become ‘parched’. The deep heavy black mulching soil takes a considerable amount of water to its profile. Once the Marsh is wet or even damp, it takes very little water to maintain this state and to ensure water continues to flow to the end of the system and meet its obligation to provide base flows to the Barwon Darling. Rainfall events have a much great beneficial impact on this area if the soil has some moisture already on the profile.

The Macquarie contributes approximately 20% flows to the Barwon River system. The water the Barwon receives from the Macquarie is of high quality as it has been filtered by the aquatic vegetation as it flowed through the Macquarie Marshes. These flows are also some of the most valuable flows in both the Macquarie and Barwon rivers as they have multiple uses eg. they provide environmental benefits such as supporting colonial nesting waterbird breeding events, enhancing vegetation growth and enhance fish breeding. They also have economic benefits such as supporting the floodplain grazing of beef cattle, provide soil moisture for grain cropping and irrigation water further downstream.

This is one of the reasons MMELA has so strongly supported the ‘buy back’ program as it has a huge “bang for its buck” when you consider the vast number of benefits that come from each megalitre of water purchased.

BEEF PRODUCTION

Beef Production was established in the Macquarie Marshes in the 1840s and continues to be the major economic industry in this area. It is seen to be sustainable and hence the phrase “**Fat Ducks Means Fat Cattle**” that has been associated with the Macquarie Marshes for many years.

The vast majority of the colonial nesting waterbird breeding colony sites being on private Marsh land that has been grazed by cattle for over 150 years. Only one major colony remains on the Macquarie Marshes Nature Reserve.

Up until 1989 the Macquarie Marshes Nature Reserve was leased out to graziers for beef cattle production. The recommended stocking rate by the National Parks & Wildlife Service (NPWS) in the 1985 Management Plan was 1 cow & calf to 10 acres (4.05ha). This was considered to be sustainable both economically and environmentally and was monitored regularly by the NPWS. The surrounding marsh land was grazed using the same stocking rate however as flooding size and frequency has reduced so has the ability to maintain this stocking rate. In the drier times during the 2000s some graziers have reported stocking rates as low as 1 cow to 150 acres (60ha)

The recommended stocking rate by the Central West Local Land Services (2013 Land & Stock Returns) for land to the immediate east of the Macquarie Marshes under average seasonal conditions is 1cow to 19 acres (7.7ha), approximately half that of the Marsh area in average seasonal conditions, much less the Marsh area. This is why the Macquarie Marshes have been so valued for beef cattle production and prior to river regulation were seen as very safe (almost drought proof) grazing land.

The majority of beef producers in the Macquarie Marshes run self replacing beef cattle herds (cows having calves each year with the steer portion being sold annually along with cull heifers and cast for age cows) which means the number of breeding cows on the property remains static as older cows are

sold off and young heifers are kept to replace them go on into the breeding program. Under these regimes stock sent for sale average 400kg live weight.

The beef yield of cattle after slaughter is between 52% & 54.7% (*NSW Department of Primary Industries Primefacts January 2007*). Working on 52% yield for this report equates to 20.8kg of beef per acre or 51.37kg per hectare (One 400kg (live weight) beast sold yielding 52% beef = 208kg off 10 acres (24.7ha) = 20.8kg per acre (51.37 per ha).

Table 2. Annual Beef Production under current water regime (*This is in conjunction with environmental benefits*)

Flow past Marebone (ML)	Area Flooded ha	Cattle Produced	Kilograms of beef	Australians Fed	Frequency in Years
700,000	145,000	35,802	7,446,816	225,661	10
400,000	81,000	20,000	4,160,000	126,060	6
250,000	50,000	12,345	2,567,901	77,815	3-4
100,000	19,000	4,691	975,802	29,569	1-2
58,000	9,000	2,222	462,221	14,006	1
30,000	4,000	987	205,431	6,225	0.5-1

❖ Information on flow rates and area flooded supplied by the Office of Environment and Heritage NSW and the Marebone gauge.

❖ Australians eat on average 33kg of beef per year (*National Farmers Federation – Farm Facts 2012*)

As you can see as flows reduce so do the number of cattle being produced thus putting strain on supply and so the price of beef in our supermarkets rises. As a result of this much less beef is produced and the smaller amount that is becomes cost prohibitive to many in the community.

The reduction in flooding under natural conditions compared to today (207,000ML on average per year) equates to a loss of beef production of 10,122 cattle = 2,105,376kg beef that would have feed 63,799 Australian people.

While a 400kg beast yields 52% of beef the remaining 48% of the beast is not discarded it also has a considerable value. Co products or By products such as: (*Meat and Livestock Australia reports*)

🐄 The hide – leather goods, floor rugs etc

🐄 Bones, blood and Offal – blood and bone products for gardens

🐄 Tongue and cheek – sold for human consumption

🐄 Other offal – some sold for human consumption (tripe and heart) and some for pet food.

are important to the national economy as well as some being part of the export market.

Local businesses and services benefit from having a healthy and sustainable grazing industry in the Macquarie Marshes as graziers purchase the majority of their inputs such as drenches, lice control etc locally and use local contract labour. This has a positive flow on effect to the socio economic well being of the local communities.

There are also positive impacts for wider regional communities with the larger livestock selling centres often used to sell stock from the Marsh area. Feedlots and abattoirs also receive cattle from this area so their workers and supplies also benefit. The flow on effects are considerable and not to be underestimated.

OVER VIEW

MMELA was, and continues to be, very supportive of the 'buy back' approach to return water to our still stressed and over allocated river systems. This organisation has always seen 'buy back' as the quickest, most cost effective and equitable means to increase water availability for rivers, floodplains and wetlands.

Beef cattle production on floodplains and in wetlands flourishes as a result of flooding however it does this without extracting or taking water from the system. Therefore this water can continue on through the river system and benefit many graziers as well as any identified environmental assets downstream. It is extraction of water from the system that has the biggest detrimental impact, to both ecological communities as well as graziers on the downstream side of the extraction.

There has been criticism from other sectors of the community that water returned to river systems for environmental purposes has no real value. As you can see water purchased by governments can help to feed a rapidly growing population while still achieving the environmental benefits for which the water was targeted.

MMELA also acknowledges that the 12% of the Macquarie Marshes now managed by the National Parks and Wildlife Service (NPWS) is no longer used for grazing. However it must be accepted that the value and contribution of this area of the Marshes to the Australian population must be equal to, or greater than that of beef production or it would not have been retired from grazing.

It must also be understood that if a greater area of the Macquarie Marshes was to be taken out of production, as suggested by another section of the community, this then poses a cost burden on the Australian public as it is the tax payers who must fund the ongoing staffing and management of the land and ensure such management tasks as weed and feral animal control, infrastructure maintenance and bush fire management etc.

CONCLUSION

MMELA trusts this paper helps to clarify the importance of maintaining programs such as the 'buy back' for both environmental and economic purposes. The current and future value of the beef cattle industry in the Macquarie Marshes is vital to the survival Marsh landholders and our local communities as well as having an important role in wider regional economies.

To imply or say water purchased by governments in 'buy back' programs as no real value to communities is not only incorrect but it is irresponsible as the benefits are great and far reaching.

We thank you for taking the time to read this paper and should you have any questions or comments, please do not hesitate to contact this organisation.

REFERENCES

Kingsford and Thomas 1995

Kingford & Auld 2000

Jenkins, K.M., Asmus, M., Ryder, D., and Wolfenden, B.J. 2004. Fish and macroinvertebrate communities in the Macquarie Marshes in the winter and spring of 2003

1985 Macquarie Marshes Management Plan

Central West Livestock Health and Pest Authority

NSW Department of Primary industries Primefacts January 2007.

National Farmers Federation – Farm Facts 2012

NSW Office of Environment and Heritage

This paper prepared by:

The Macquarie Marshes Environmental Landholders Association

For Further information please contact:

Mr Garry Hall
Chairman, MMELA