

Murray Darling Association Inc. Ordinary Meeting Region 6

Agenda

Date:11 August 2023Time:9.30am - 12noonLocation:Alexandrina Council

1. WELCOME

1.1 Acknowledgement

We acknowledge the Ngarrindjeri people as the traditional owners of this land on which we meet and work. We respect and acknowledge their spiritual connection as the custodians of this land and that their cultural heritage beliefs are still important to the living people today.

We recognise the living culture and combined energies of the Ngarrindjeri People, our global Pioneers and Community Members today for their unique contribution to the life of our Region.

2. ATTENDANCE

- 2.1 Membership (Attachment 1)
- 2.2 RSVP
- 2.3 Guests
- 2.4 Apologies
 - Nigel Morris
 - Mark Lamb
- 2.5 Declarations

3. **PREVIOUS MINUTES**

3.1 Minutes from Ordinary Meeting 23 June 2023 (Attachment 2)

RECOMMENDATION:

That the Minutes of the Ordinary Meeting 23 June 2023 be recorded as read and a true record of the meeting

4. **REPORTS**

- 4.1. Chair's Report Cr Airlie Keen
- 4.2. Member's Updates (written or verbal)
- 4.3. 2023 Conference and AGM Planning

RECOMMENDATION:

That all Reports be received.

5. **CORRESPONDENCE**

5.1 Correspondence Out

Submission outlining the MDA Region 6's feedback and recommendations to the Department of Climate Change, Energy, the Environment and Water, and the Federal Minister for the Environment and Water, the Hon Tanya Plibersek MP (Attachment 3)



5.2 Correspondence In

RECOMMENDATION:

That all correspondence be recorded as received and read

6. **BUSINESS ARISING**

6.1 Actions from previous Ordinary meetings (Attachment 4)

7. CALENDAR OF EVENTS

7.1 Updated Calendar of Events (Attachment 5)

8. 2023 MDA AGM Motions

8.1 Finalising Motions for AGM (Attachment 6)

9. **OTHER BUSINESS**

10. NEXT MEETING

10.1 Agenda Items

- Alex Zimmerman State Recovery Coordinator
- Dean Brown

10.2 Guest Speakers

11. **CLOSE**

The Murray Darling Association acknowledges and thanks Alexandrina Council for its support in hosting this meeting of Region 6.

ATTACHMENT 1

	2023 REC	GION 6 MEMBERSHIP		
	Α	s of June 2023		
Position	Name	Council	Executive Member	Voting Member
Chair	Cr Airlle Keen	Rural City of Murray Bridge		
Outgoing Chair	Melissa Rebbeck	Alexandrina Council		
Coordinator	Carol Muzyk	Region 6		
Council Representatives	GM Heather Barclay	Rural City of Murray Bridge		
	Mayor Wayne Thorley	Rural City of Murray Bridge		
	Cr Airlle Keen	Rural City of Murray Bridge		
	Stephen Packer (Proxy)	Rural City of Murray Bridge		
	CEO Bridget Mather (Proxy)	Coorong District Council		
	Cr Jonathon Pietzsch	Coorong District Council		
	Cr Brenton Qualmann	Coorong District Council		
	CEO Nigel Morris	Alexandrina Council		
	Cr Michael Scott	Alexandrina Council		
	Cr Milli Livingston	Alexandrina Council		
	Cr Stewart Burns	City of Victor Harbor		
	Cr Carlos Quaremba	City of Victor Harbor		
	Kathy Hayter (proxy)	City of Victor Harbor		
	ТВА	Tatiara District Council		
	ТВА	Tatiara District Council		
	Cr Luke Kennedy	Southern Mallee District Council		
Individual Member	Adrian Pederick, MP JP			
	Colin Grundy			
	Warren Jacobs			
Life Members	Graham Camac			
	Phillip Moore			
	Barry Featherstone			
	Frank Tuckwell (TBA)			



Murray Darling Association Inc.

Ordinary Meeting of Region 6 23 June 2023 9:30 am – 1 pm

MINUTES – June 2023

1. WELCOME & ACKNOWLEDGEMENT OF COUNTRY

2. ATTENDANCE

- 2.1. Membership as tabled in attachment 1
- 2.2. RSVP (no less than 1/3 of Member Councils for a quorum (16.6(d) MDA Constitution 2019)

Cr Airlie Keen (Chair)	Rural City of Murray Bridge	
Cr Melissa Rebbeck (Outgoing Chair)		
GM Heather Barclay	Rural City of Murray Bridge	
Mayor Wayne Thorley	Rural City of Murray Bridge	
Cr Milli Livingstone	Alexandrina Council	
Cr Michael Scott	Alexandrina Council	
CEO Bridget Mather	Coorong District Council (Proxy)	
Cr Brenton Qualmann	Coorong District Council	
Cr Stewart Burns	City of Victor Harbour	

2.3. Guests

0.000		
Mark Lamb	CEO MDA	
Cr Andrew Tilley	Region 7 Chair	
Carol Muzyk	Coordinator MDA Region 6	
Kate Bartlett (Virtual attendance)	Murray Darling Authority	
Greg Burns	OIGWC	
Ms Kerry Swan	Guest Speaker	
Mr Bob Simcock	Guest Speaker	

2.4. Apologies

CEO Nigel Morris	Alexandrina Council	
Richard Mintern (Virtual attendance)	CEWO	
Cr Jonathon Pietzsch	Coorong District Council	
Cr Carlos Quaremba	City of Victor Harbor	
Cr Luke Kennedy	Southern Mallee Council	
Warren Jacobs	Individual Member	
Colin Grundy	Individual Member	
Adrian Pederick	Individual Member	
Graham Camac	Individual Member	
Phillip Moore	Life Member	
Barry Featherstone	Life Member	
Frank Tuckwell	Life Member (TBC)	

2.5. Declarations

NIL

3. PREVIOUS MINUTES

That the minutes of the Murray Darling Association (MDA) Region 6 - Ordinary Meeting held 24 February be approved as an accurate record of that meeting.

CR QUALMANN/ MAYOR THORLEY - CARRIED

4. **REPORTS**

- 4.1 Chair' Report Cr Keen
 - Attended the MDA Board Meeting in April.
 - Was an apology for the June MDA Board Meeting in June
- 4.2 MDA CEO Report Mark Lamb
 - Has been focussing on increasing membership with a focus on SA. Has met with various SA Councils and presented at City of Tea Tree Gully and City of Mitcham. Membership has dropped in some areas due to the removal of the non-riparian membership fee.
 - Tamworth Council is hosting the Norther Basin Forum
 - 13/15 Motions received were passed at the AGM last year. Update on motions progression can be viewed on the MDA website.
 - Partnerships and collaborations are continuing e.g CRC and CSIRO
 - Planning for the 2023 AGM and Conference is progressing. Welcome Reception will be held at the Murray Bridge Rowing Club, study tour of the barrages and lower lakes, Gala Dinner at the Bridgeport, Conference Proper at the Murray Bridge Town Hall. Conversations with Ministers has continued. Minister Plibersek will be attending. Minister Close cannot attend. Other Ministers are showing interest in attending. Guest speakers continue to be organised – include academics, politicians, farmers and irrigators. Two Platinum Sponsors and one Gala Dinner Sponsor have been secured to date.
 - The Basin Plan is currently under review. Mark is happy to receive comments from members regarding the review.

QUESTION:

Cr Keen asked for clarification on non-riparian vs riparian council membership fee. Bridget asked if the Board has a position on the MDA Plan review.

ANSWER

Mark provided the non-riparian membership fee was cancelled by the Board. As a result many non-riparian council members have not renewed their membership.

Mark provided the MDA Board does not have a unified view on the Basin Plan review.

DISCUSSION

Cr Qualmann thanked Mark for his report and for his efforts.

Cr Tilley provided the MDA Board removed the non-riparian council membership with no consultation. As a result a number of Councils have not renewed their membership. Region 7 now has only 2 Council Members, the balance of the membership if individual members.

Melissa Rebbeck suggested the non-riparian rate should be placed on the Agenda for discussion and potential submission to the MDA Board to re-instate the rate.

Mark Lamb provided a paper has been prepared for consideration of the MDA Board to discuss re-implementing the non-riparian council membership fee.

QUESTION

Melissa Rebbeck asked if Bio Char and Circular economy were on the Agenda for the conference.

ANSWER:

Mark provided the items are on the Agenda.

ACTION

Mark to provide report on non-riparian council rate to Coordinator for distribution.

4.3 Murray Darling Basin Authority – Kate Bartlett

- Amended presentation tabled
- Review of the Basin Plan is underway. All information can be found on the MDBA website.

QUESTIONS

Cr Keen – is the \$179 million to help deliver the plan? Are there 3 bodies of work to be undertaken – day to day delivery of the Plan, 5 week consultation and Productivity Commissions work?

ANSWER

Yes.

Yes. Productivity Commission is putting resources to ascertain what the barriers have been in the implementation of the Plan in the past.

DISCUSSION

Melissa Rebbeck – does Region 6 want to put together a submission on the Productivity Commissions report. Mark Lamb re-iterated he is happy to receive input on the MDA report.

Cr Burns asked to see the previous Motions submitted by Region 6 and the final endorsed National AGM Motions.

ACTIONS

Mark Lamb to provide a copy of MDA Report to Productivity Commission to Coordinator for distribution. Region 6 to acknowledge the MDA report and send with Cover Letter in support of the submission Send Cr Burns Region 6 submitted Motions and web link to National AGM Motions

4.4 Office of Inspector General Water Compliance – Greg Burns

Presentation as attached to the Agenda

QUESTIONS

Cr Keen asked if representatives from the Office of the Inspector General water Compliance be attending the National. Melissa Rebbeck provided she had heard there are allegations that illegal dams have been installed in the Northern Basin. Is this being investigated?

ANSWER

Greg Burns and possibly Troy Grant (TBC) will be attending the National Conference Greg was unaware of any allegations of illegal dams

ACTIONS

Melissa Rebbeck to send follow up email to Greg Burns regarding alleged illegal dams.

4.5 Members Updates

Warren Jacobs - Cr Keen presented email with Warrens report on his behalf.

- Attended MDBA SA Community forum meeting 10th May 2023. This was about the 'Basin Plan Review timeline.
- Attended MDBA Basin Community Committee meeting in Narrabri on the Tuesday 14th June and the MDBA Reflections Conference the following Wednesday & Thursday. We toured the region and viewed local agri-businesses developments and concerns.
- Has attended numerous NFF water committee, Australian Dairy Farmers water taskforce and Primary Producers SA industry meetings. Focus was on
 - o WATER buy backs and their community effects
 - SDLAM projects that are unlikely to get up,

Melissa Rebbeck

- Attended a Circular Economy Conference in Canberra. Many Councils are getting involved in circular economy since the drought
- Department of Environment and Water have run a number of forums on the Healthy Basin Program have been convened. The Lower Coorong has been noted as being in good health in

terms of animal recovery numbers however wading birds numbers are down as they were unable to reach the banks to breed, however the numbers are now rising.

QUESTION

Melissa Rebbeck asked about the progress of the Water Position Paper

ANSWER

Bridget Mather provided it has been put on HOLD because of the flood.

Remaining Members Reports deferred until after break and Guest Speaker presentation brought forward.

BREAK 11AM -11:15AM

MEETING RESUMED 11:15AM

1. MURRAY RIVER FLOODING

Guest Speakers Kerry Swan and Bob Simcock presented on the flooding of their property December 28 2022.

QUESTIONS

Heather Barclay asked are part of the NMRA sub committee Chaired by Department of Premier and Cabinet and are you working with the sub committee on solutions?

Mayor Thorley commented he is concerned how the recovery process is going and not setting a high enough standard or strategies to maintain and repair levees. Funding for emergencies through State funding is inadequate. Federal funding is required.

Melissa Rebbeck provided government grants are available. Are you finding the forums useful? Are the grants accessible and adequate?

Melissa asked if Councils are pushing for funding?

ANSWER

Yes, part of the group. The group needs to be broadened.

Mr Simcock responded to Mayor Thorley comments providing that the government focussed on homes/people. Not enough funding is made available to rural land holders.

Kerry and Bob have been supported by PIRSA with a \$25k grant and a \$50K grant. Federal funding is not accessible if you have off-farm assets.

Bridget Mather and Heather Barclay responded to Melissa Rebbeck's question on Councils pushing for funding – Bridget provide grants are provided through PIRSA. Heather Barclay suggested contact with Deb Richardson from Department of Premier and Cabinet who has been appointed as a Support Officer and would be aware of funding available.

DISCUSSION

Cr Burns provided government allows land to be developed without consideration of flood risk. Carol Muzyk provided former member Vern Leng provided suggestions for Guests Speakers. He has also expressed an interest in being considered for Life Membership.

The Chair thanked the Guest Speakers for their attendance and presentation

Return to Ordered Agenda

4.6 MEMBERS UPDATES (CONTINUED)

That all reports be received

5. CORRESPONDENCE

- 5.1 Correspondence In
 - Dr Nadine Kelly Program Leader. Healthy Coorong. Healthy Basin. Department of Environment and Water sent an email to the Chair. Made an offer to come to National Conference as a Speaker. Mark Lamb has spoken with Nadine and invited her to speak at the Conference to speak on the state of the Coorong.
 - Letter from Minister Plibersek received regarding Basin and funding from the Government.

ACTION

Coordinator to circulate letter from Minister Plibersek to all Members

5.2 Correspondence Out

- Nomination for Lifetime Membership (Frank Tuckwell) has been sent to the MDA Board

MOTION

All correspondence to be recorded as received and read with the exception of the letter from Minister Plibersek.

Mayor Thorley/Melissa Rebbeck - CARRIED

6. BUSINESS ARISING

6.1 Actions from previous Ordinary Meetings

- Action for Heather Barclay to bring a report regarding Flood Recovery. This will be amended to the Flood Recovery Coordinator to present to Region 6. Mark Lamb provided the Flood Recovery coordinator has been invited to present at the National Conference.

6.2 Actions from previous Executive Meeting

DISCUSSION

Confirmation that a letter regarding Motions and extended invitation to Basin Mayors, LGA Presidents and various Minister has been sent with recognition of RCMB Administration staff who assisted with the large volume mail out.

Melissa Rebbeck asked if new members have been contacted. Coordinator responded that New Members Packs have been sent to all new members at City of Victor Harbor and Southern Mallee Council who have elected members appointed to Region 6. Cr Keen advised she has spoken with the Mayor and an Elected Member from Tatiara District Council. They are keen to be involved.

7. CALENDAR OF EVENTS

7.1 Executive Meeting 7 July – Bridget Mather all Mayors and CEO's will not be available on the 7 July.

7.2 Ordinary Meeting 11 August – no changes proposed

ACTION

Coordinator to converse with Executive Members to arrange an amended date for the next Executive Meeting as the 7 July is not viable.

2. 2023 MDA AGM MOTIONS

9.1 Formation of Working Party

DISCUSSION

The Coordinator provided that emails have been sent to all Region 6 Members and Mayors regarding Motions. No response with suggested Motions.

Melissa Rebbeck provided a background as to how Motions have been formulated in the past. Last year a Working Party met regularly view to develop Motions and then presented back to the Ordinary Membership for discussion ahead of finalisation and submission.

Cr Keen suggested an online meeting with Executive to discuss Motions, the submission on the amended Basin Plan and a response to Minister Plibersek's letter.

Heather Barclay confirmed previous practice for Motion development and suggested Members to nominate to be on a Working Party to develop Motions that can presented at the Ordinary Meeting on the 11 August.

ACTION

Email sent to all Ordinary Members to nominate to be on the Working Party for Motions. Once formed the Working Party will agree on a time to meet Online to discuss the formation of Motions to present back to the Ordinary Members.

MOTION

An email be sent to all Members inviting them to join the Working Party and agree on a meeting program to develop Motions and present the Motions back to the Ordinary Meeting.

Mayor Thorley/Heather Barclay - CARRIED

10. OTHER BUSINESS

Heather Barclay suggested the Recovery Coordinator Alex Zimmerman be invited to speak at a future Region 6 meeting.

ACTION

Coordinator to send an email to Alex Zimmerman to invite him to speak at the 11 August Region 6 Meeting.

MOTION

That a letter be sent to Recovery Coordinator Alex Zimmerman inviting him to speak at the Region 6 Ordinary Meeting on 11 August.

Heather Barclay/Mayor Thorley- CARRED

Cr Keen thanked Carol Muzyk for her service to Region 6 as Coordinator.

Melissa Rebbeck (as Outgoing Chair) thanked Carol for her service to Region 6 as Coordinator and for her support as the former Chair.

Cr Andrew Tilley thanked Carol for her assistance in the preparation of the Inter-Region Forum. He also acknowledged the work of MDA CEO Mark Lamb for the support he has provided to SA Councils.

Cr Keen formally introduced Kelly Jaensch to Members. Kelly will take over the role of Region 6 Coordinator post Friday 30th June.

CLOSE 12.58pm

The Murray Darling Association acknowledges and thanks to the Coorong District Council for its support in hosting this Ordinary meeting and video conference of Region 6.

Murray Darling Association Inc.

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> 553 Kiewa Street P.O. Box 323 Albury NSW 2640

P.O. Box 1268 Echuca VIC 3564



3 July 2023

The Hon Tanya Plibersek MP Minister for the Environment and Water PO Box 2676 Strawberry Hills, NSW, 2012

Dear Minister

Re: Response to your letter to Mayors dated 9 June 2023.

Thank you for your correspondence received on 9 June 2023.

As the Chair of Region 6 of the Murray Darling Association, I write to you to advise that Region 6 supports the report provided to you by MDA CEO Mark Lamb on behalf of the National MDA Board.

Specifically, in relation to your request to Local Government to submit ideas on how to recover water, deliver environmental outcomes and make a difference to basin communities, I provide the following:

In Region 6 (Lower Murray, Lakes and Coorong), and Region 7 (Adelaide), a local Government focus is being placed on programs that reduce reliance on River Murray Water.

Examples are;

- The Rural City of Murray Bridge (the Council that I represent as a Councillor) is implementing a significant **Stormwater Harvesting and Reuse Scheme** (SWHR), which is impactful in terms of greening our city without reliance on River Murray Water. Currently the scheme harvests in the order of 110 MI per annum, which provides irrigation to open spaces not previously irrigated.
- **Recycled Waste Water** is another example of reducing reliance on River Murray Water. Recently, the Rural City of Murray Bridge negotiated an outcome with SA Water for access to recycled wastewater for irrigation purposes Council was able to secure up to 35 MI per annum, from the recently upgraded Murray Bridge Waste Water Treatment Plant at Brinkley. Council has since expended \$1.08mil in pipelines for distribution of the recycled water (funded via co-contribution with the Local Government Infrastructure Partnership Program).
- In addition, **Water Sensitive Urban Design** (WSUD) takes advantage of rainfall in urban environments and uses it directly where it is captured for tree watering.

• While the capture of stormwater and **aquifer storage** is not an option for the Lower Murray, many of our counterparts in metropolitan Adelaide are utilising this method to also reduce reliance on River Murray Water.

I look forward to meeting you at the Murray Darling Association Annual Conference and AGM, to be held in Murray Bridge, South Australia, 25-28 September 2023, where we would be pleased to continue discussions on opportunities to reduce reliance on our precious resource.

Yours sincerely

Sidifeen

Cr Airlie Keen Chairperson, Region 6 Murray Darling Association Tel: 0411 72 8683 Email: a.keen@murraybridge.sa.gov.au



Attachment 4



Murray Darling Association Region 6. Ordinary Meeting Matters in progress arising from previous meeting

Description			Persons Responsible	Status / Conclusion
2022	ACTION	Bridget to report back on MRLGA Water Position Paper Workshop to be held 24 th May 2022.	Bridget Mather	ONGOING
Feb 2023 4.1	ACTION	Circulate Previous Chair Report to all members. (Will be included in Minutes from this meeting)	Coordinator	COMPLETED
Feb 2023 4.4	ACTION	Circulate MDA CEO Performance Review Report to all members (Will be included in Minutes from this meeting)	Coordinator	COMPLETED
Feb 2023 4.6	ACTION	Heather to bring Report back to next Ordinary meeting regarding flood recovery	Heather Barclay	ONGOING
June 2023 4.2	ACTION	Mark to provide report on non-riparian council rate to Coordinator for distribution.	Mark Lamb	ONGOING
June 2023 4.3	ACTION	Mark Lamb to provide a copy of MDA Report to Productivity Commission to Coordinator for distribution. Region 6 to acknowledge the MDA report and send with Cover Letter in support of the submission Send Cr Burns Region 6 submitted Motions and web link to National AGM Motions	Mark Lamb	ONGOING
June 2023 4.4	ACTION	Melissa Rebbeck to send follow up email to Greg Burns regarding alleged illegal dams.	Melissa Rebbeck	ONGOING
June 2023 5.1	ACTION	Coordinator to circulate letter from Minister Plibersek to all Members	Coordinator	COMPLETED
June 2023 7.2	ACTION	Coordinator to converse with Executive Members to arrange an amended date for the next Executive Meeting as the 7 July is not viable.	Coordinator	COMPLETED
June 2023 9.1	ACTION	Email sent to all Ordinary Members to nominate to be on the Working Party for Motions. Once formed the Working Party will agree on a time to meet Online to discuss the formation of Motions to present back to the Ordinary Members.	Coordinator	COMPLETED

June	ACTION	Coordinator to send an email to Alex Zimmerman to invite him to speak at the 11	Coordinator	ONGOING
2023		August Region 6 Meeting.		
10				

Attachment 5

Murray Darling Association Region 6 - Calendar of Meetings and Events 2023/2024.

Date	Event	Notes
13 January 2023	Ordinary Meeting	Rural City of Murray Bridge and Virtual
10 February 2023	Executive Meeting	CANCELLED
24 February 2023	Region 6 AGM	Rural City of Murray Bridge
24 February 2023	Ordinary Meeting 1	Rural City of Murray Bridge and Virtual
14 April 2023	Executive Meeting 1	Virtual
23 June 2023	Ordinary Meeting 2	Coorong District Council and Virtual
7 July 2023	Executive Meeting 2	Virtual
11 August 2023	Ordinary Meeting 3	Alexandrina Council and Virtual
26-28 September 2023	MDA AGM and National Conference	Murray Bridge SA
13 October 2023	Executive Meeting 3	Virtual
10 November 2023	Ordinary Meeting 4	TBA and Virtual
12 January 2024	Executive Meeting 4	Virtual
23 February 2024	Region 6 AGM	ТВА

R6 Executive Meeting
R6 Ordinary Meeting
R6 Events
Events

We recommend that this Motion is removed for 2023

Recommend that a Hydrogen Power Expert be invited to speak to Region 6 about the general process, likely water consumption, and proposed water sources.

Also, request an update on relevant legislation in the Hydrogen space.

Potential speaker:

Peter Natrass – Manager, Future Industries – Department for Energy and Mining

Motion, Region 6 -

[Draft] Motion: South Australia's hydrogen power plant – impacts on SA allocation - Proposed joint motion with Region 7

Further information is being sought from the Hydrogen and Renewable Energy Act - Draft Bill team.

Objective:

Who benefits? Basin Communities and the Environment

Background

All available information from the YourSAy site refers to land and seawater locations for the plants, not the water resources needed to produce hydrogen.

Key Arguments:

What is the Current Context/issue?

What is the Risk if the Motion Does not get up?

What is the broader benefit to Basin communities if this motion is successful?

Background and supporting information:

[Draft] Motion: New Motion: To consider the impacts of Climate Change and the predicted reduction in rainfall and therefore flows and volumes across the Basin in the development of the Basin Plan 2.0 and meeting water obligations such as the 450 GL allocation to be returned to the Basin for environmental purposes.

Objective: Consolidate and reinforce previous motions, and seek support from other SA entities, via Regional Development Australia, Murraylands and Riverland LGA, and Southern & Hills LGA, including the reinforcement of the importance of climate change in the review of the basin plan.

To ensure that previous MDA motions relating to the MDBA Basin Plan 2.0 are an ongoing priority for river health and continue to reflect the concerns of Basin communities.

Support a study for Basin Plan 2.0 under future climate change scenarios regarding the current allocations of 450 GL down water and 650 GL up water and a case to increase the allocation amount for environmental water.

Who benefits? Basin Communities and the Environment

Background: Motions from 2022 relating to the Basin Plan review -

Motion 6.6: Effects of sea-level rise. To encompass the effects of sea-level rise on the Lower Murray River, Lakes, and Coorong in their Climate Change research for inclusion in the Murray-Darling Basin Plan Review and the updated Murray-Darling Basin Plan.

Motion 6.8: Recovery of the 450 Gl. With an objective to commend the MDBA and the DCCEEW for publishing clear, simple, timely, and accurate reporting to show progress on the delivery of the 45 OGL Recovery Program.

2021 Motion 5.8

2. Identify options for climate change preparedness to help councils adapt to and mitigate the impacts of climate change.

3. Prepare for the development and implementation of Basin Plan 2.0.

Key Arguments: The multiple impacts of predicted sea-level rise and reduced rainfall due to climate change will make meeting the 450 GI target more complex, and these need to be built into the current Basin Plan, extended to 2027, and Basin Plan 2.0 review.

What is the Risk if the Motion Does not get up? The reviewed Basin plan needs to compensate for less rainfall and guarantee flows through the barrages to push seawater out and provide the promised 450 Gl. Suppose the review does not consider these three issues properly. In that case, the downstream Basin communities will be harshly impacted by seawater incursion or not meeting water for environmental, cultural and human needs.

What is the broader benefit to Basin communities if this motion is successful?

That the correct water allocation to downstream communities provides surety for future uses.

Background and supporting information:

Refer to Motions 6.6 and 6.8, 2022 MDA AGM Motions.

[Draft] Motion: MDA to build on the policy and position materials to establish the value proposition of MDA membership, particularly to non-riparian Councils

Objective: To increase membership of communities and Regions that source their industrial, agricultural, and human needs water from the River Murray (in SA), such as the Adelaide, Eyre Peninsula and South East of South Australia.

Who benefits? The MDB communities with full membership of areas outside the MDB provide a better reflection of the water demands on the Murray – Darling. The MDA receives more credibility from the wider catchment and politically.

Background: Many communities, including those outside the Murray Darling Basin, benefit from the waters of the River Murray; however, they are not members of the MDA, possibly because they do not see themselves as "river communities" and are outside the MDB.

Key Arguments:

Communities, Councils and MDA Regions (7 & 8) outside the MDB and source their water from the River Murray are as dependent on the River Murray as any community inside the MDB. Their uses include mining, industrial, agriculture and human needs. Mining, for example, is the biggest user of River Murray water in South Australia, yet maintains no presence, from SA, in the MDA and offers no support to the efforts of the MDA and other Councils to sustain the flows in the River. This supply can be taken for granted due to their distance from the River.

Membership from these multiple groups would help the political efforts to maintain the water supply.

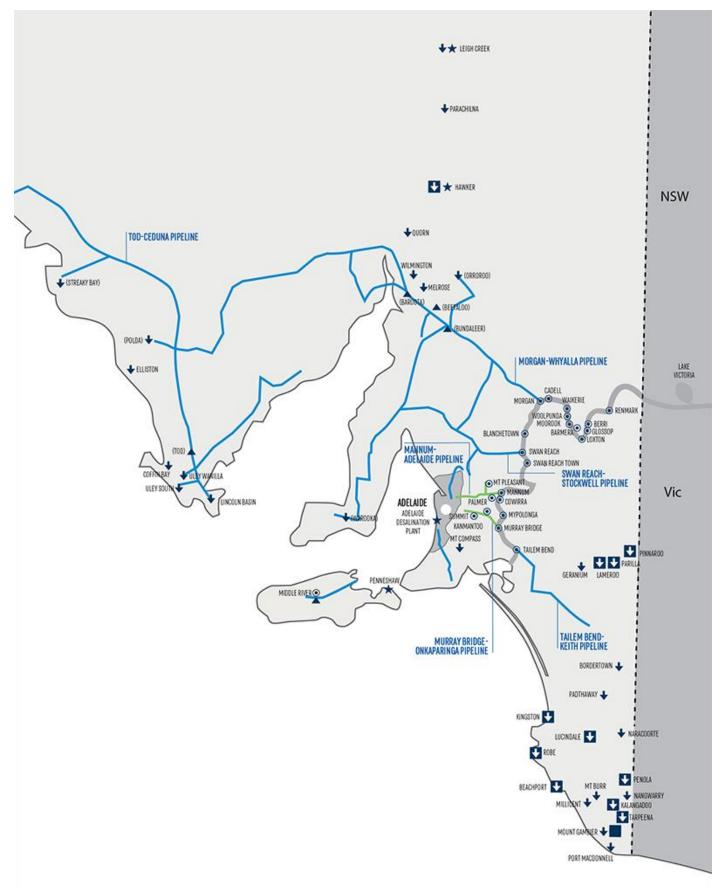
What is the Risk if the Motion Does not get up?

The total number of people who rely on River Murray water is much greater than those inside the MDB who contribute most of the political effort to deliver a sustained and working River.

What is the broader benefit to Basin communities if this motion is successful?

Greater understanding throughout the MDB of the water demands of users and uses than what is limited to within the MDB.

Background and supporting information:



SAWater - Our services

[Draft] Motion: Funding Local Government engineering solutions to reduce river water reliance.

Objective: To improve Local Government's ability to reduce reliance on piped, potable and River Murray water for township use, such as watering reserves and parks and managing stormwater to expand vegetation and biodiversity through Water Sensitive Urban Design and Stormwater capture and reuse schemes.

Who benefits? Basin Communities and the Environment

Background. Water Sensitive Urban Design (WSUD): Stormwater is rainwater that falls onto roads or roofs and often contains chemicals, sediment, or pollutants. Water sensitive urban design (WSUD) is an approach to planning and designing urban areas to use this valuable resource and reduce the harm it causes to our rivers and creeks.

WSUD is expanding significantly in City councils through education, resources, knowledge, and awareness of the impacts of stormwater on rivers and the sea from sediment, chemicals, and nutrients.

Key Arguments: WSUD is not widely adopted in regional Councils due to the need to understand the gains that can be made through its implementation. These include reducing pollution to receiving waters, reducing stress on stormwater infrastructure, allowing more vegetation, trees, and biodiversity, and using water where it falls rather than pumping and watering and managing stormwater where no drainage infrastructure exists. The other impediment is knowledge by civil infrastructure staff, engineers, and planners to look for opportunities and what works best for a particular situation.

Regional Local Governments need opportunities to learn about WSUD, costs, benefits, applications, and outcomes to use this technology in their townships. Funded training through WaterSensitiveSA and similar groups and on-the-job uses would go a long way to progressing its use. This is the experience of the Rural City of Murray Bridge which now uses WSUD to increase vegetation, solve troublesome stormwater problems and reduce the draw on the River Murray.

Background. Stormwater Harvesting and Reuse: Harvesting stormwater for reuse through an existing reticulated network is a way of drought-proofing a township during dry periods and expanding the park and reserve network by making more water available throughout the year. These are much larger infrastructure projects requiring significant engineering, treatment and distribution works and therefore need State and Australian government funding to be possible. On this scale, townships can significantly improve aesthetics, cool their urban locations, green areas not supported via existing networks, withstand predicted lower rainfall due to climate change, and directly contribute to achieving the outcomes of the MDB Plan.

What is the Current Context/issue?

That regional Councils are in an excellent position to improve the quality and quantity of water in the River and their environment. However, they need more resources and knowledge to implement the best options. Both are in much greater abundance in the City Councils.

What is the Risk if the Motion Does not get up?

The situation remains normal and unchanged, and funding bodies do not appreciate opportunities. Regional Councils should be seen in a different light than City Councils, with a greater ratepayer base, smaller area and little public land to manage.

What is the broader benefit to Basin communities if this motion is successful?

Background and supporting information:

[Draft] Motion: Advocate for support and investment to extend the Tailem Bend - Keith to SA Water Mains Pipeline to Bordertown to meet domestic water use requirements.

Objective:

To guarantee water for domestic, business, and industry use to the Bordertown township serving a population of 3000.

Who benefits?

Background:

The existing Bordertown water supply from six groundwater bores needs to be improved due to ongoing climate variability and reduced rainfall, reducing recharge and replenishing the freshwater lens that supplies the town. The most reliable alternative water supply solution is an extension of the River Murray Tailem Bend to Keith pipeline, which currently terminates in the Brimbago and Cannawigara localities.

Key Arguments:

Ongoing water security for Bordertown is at risk due to declining recharge to the freshwater groundwater lens, which is the current town water supply. Providing this water security solution for Bordertown will match high-value River Murray water to essential human requirements.

What is the Current Context/issue?

Based on modelling, more than future reliable and good quality water will be required to supply this community's domestic, business and industrial use and will restrict ongoing growth.

Long-term reduced rainfall and flow in Tatiara Creek since the mid-1990s has reduced the extent of recharge to the freshwater lens and increased salinity levels. The aquifer supplying Bordertown water supply is not replenishing at a rate sufficient to respond to current and future demand levels.

What is the Risk if the Motion Does not get up?

The Bordertown township's domestic, business, and industrial water supply may soon decline below the Word Health Organisation (WHO) standards for human consumption.

Alternate water supply solutions will not be explored.

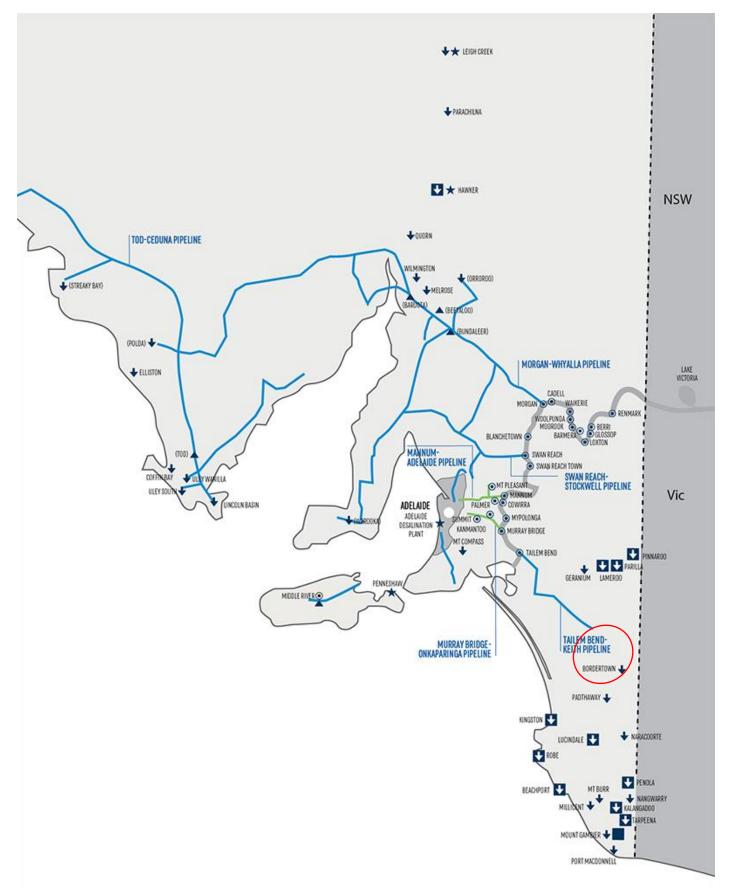
What is the broader benefit to Basin communities if this motion is successful?

Ongoing water security for Bordertown is ensured and will match high-value River Murray water to essential human requirements.

Background and supporting information:

- Tatiara District Council Community Investment Plan, Page 4 Bordertown Water Supply
- Limestone Coast Landscape Board Tatiara Water Allocation Plan Review

- To secure future water security for Bordertown's domestic, agricultural, and business use.
- Matching high-value River Murray water to essential human requirements.



SAWater - Our services

Location of proposed pipeline extension

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Motion, Region 6

[Draft] Motion:

- a) That the MDA requests the National Water Infrastructure Grid and the Australian Government to fund opportunities for water efficiency using Off-farm Efficiency Funds.
- *b)* Opportunities to reduce demand on SA Water supplied water derived from the River Murray for South East South Australia Stock and Domestic water use.

Objective: a) Motion 17, 1999: That the MDA request from the Minister for Agriculture and Water Resources and the MDBA a complete accounting of all water storages, including open channels, diversions and on-farm storages holding un-metered water in temporary storages, for public release.

2023:

a To fund further piping, covering and lining of open water irrigation channels, which will prevent water losses through seepage and evaporation.

b To use the funds available for On-farm and Off-farm Efficiency projects for users who do not access River Murray directly (using a water licence) but use SA Water potable water derived from the River Murray. As these communities and properties do not own a water licence, they are not eligible for these funds as they do not hold a water licence to trade back to the MDBA.

Who benefits? All Basin communities and the River

Background

There is concern that water is being held outside of the river channel, which would better contribute to connectivity, river health and recharge of groundwater.

This motion follows the 1999 motion (above), which sought to account for water losses through open channels. The outcome of this motion is unknown.

Key Arguments:

Significant unaccounted water losses through open and unlined water irrigation channels in Victoria and New South Wales could contribute to water efficiencies and the target of 450 Gl whilst not reducing water availability to Vic and NSW water users.

No open channels exist in SA, following projects and funding during the 1990s-2000s to pipe all water carriage.

What is the Current Context/issue?

Significant unspent funds are available for water efficiency measures limited to those with water licences. However, many users access River Murray water via SA Water infrastructure, which could add water-saving infrastructure and reduce their demand on SA Water and the River Murray.

What is the Risk if the Motion Does not get up? That water loss continues unabated.

What is the broader benefit to Basin communities if this motion is successful?

Background and supporting information:

[Draft] Motion: Opportunities for increased protection and funding of Murray Darling Ramsar Wetlands in SA.

Objective: To continue to improve the health of the Coorong and capitalise on the increased flows over the last 12 months, allowing improvements to the Southern Lagoon and the Murray Mouth

Who benefits? The Environment.

Background

Coorong Restoration Roadmap | YourSAy

The SA Government completed a community engagement program in June 2023 on the draft Coorong Restoration Roadmap, which will guide how we implement a strategic restoration of the Coorong.

The Coorong is a wetland of international importance and one of the most significant waterbird habitats in the Murray-Darling system. Despite its significance, however, the Coorong is suffering a long-term decline which the Millennium Drought exacerbated.

To aid the Coorong's return to a desired healthy state, the <u>Healthy Coorong, Healthy Basin</u> (HCHB) program was developed to improve the Coorong's ecology, knowledge and management and get the region back on track for a healthy future. *HCHB* is a \$77 million commitment to restore a healthy Coorong, announced by the Australian and South Australian governments in December 2018

Since HCHB was announced in 2018, the program has completed the unprecedented Scientific Trials and Investigations (T&I) project, which identified knowledge gaps and has informed the development of targeted and effective management actions for the Coorong.

Guided by the <u>International Principles and Standards for the Practice of Ecological Restoration</u>, the Coorong Restoration Roadmap presents how we will use our key findings and partner with scientists, communities and First Nations to implement a strategic restoration program for the Coorong.

Key Arguments: Coorong and Lakes Alexandrina and Albert Ramsar Wetland - Fact sheet (dcceew.gov.au)

The Murray River, Lower Lakes and Coorong are central to our region's way of life, and we know all too well from lived experience about the direct link between river health and our people's economic, social, and cultural well-being.

The Coorong and Lakes Alexandrina and Albert Ramsar wetland is one of Australia's most important wetland areas. Australia designated the site, covering approximately 140,500 ha in South Australia, as a Wetland of International Importance under the Ramsar Convention on Wetlands in 1985. Parts of the Coorong also form the Coorong National Park and Game Reserve.

The site is a unique mosaic of 23 wetland types and provides habitat for nationally threatened species such as the Murray Cod. It contains the threatened *Gahnia* sedge land ecosystem and part of the endangered Swamps of the Fleurieu Peninsula. The area is used for professional and recreational fishing, camping, boating, walking, wildlife observation and research. There are extensive Aboriginal, historical, and geological sites. The Ngarrindjeri people maintain a close association with the area, and some of the northern islands within the Coorong lagoon are reserved for their use. Most of the edges of Lakes Alexandrina and Albert are used for farming.

Before adopting the Basin Plan, the unsustainable use and management of Basin water resources (combined with severe drought) devastated our community and local environment. The impacts of the Millennium Drought on our region are well documented elsewhere but included low water levels, elevated salinity, vast exposure of acid sulphate soils and localised acidification of surface waters, a problem that continues to have long-standing environmental impacts on our environment, especially the Ramsar wetlands, has needed significant investment from State and Federal Governments to continue to work toward resolving. In addition, what lake water there was became inaccessible or unusable for irrigation, whilst low water levels significantly impacted related industries and tourism.

Utilise wetlands as a climate change adaptation and mitigation strategy since global wetlands sequester one-third of global carbon. They act as a buffer for nutrient filtration and also are the key to the food web and ecology of the MDB.

What is the Current Context/issue?

To ensure funding continues to be suitable to implement the Coorong Restoration Roadmap.

Water flows into the River Murray over the past 20 years are nearly half their 20th-century average of 9407 GL per year, down to an average of just 4820 GL per year. In a changing climate, communities throughout the Basin will need continued assistance to adjust to a future with less water. This is especially true for the Ramsar wetlands at the end of the Murray Darling Basin, which rely on the water delivered through the Murray Darling Basin Plan.

Like many other South Australian stakeholders, our concern for the Basin Plan is 'death by a thousand cuts'. Bestavailable science tells us the benchmark 2750 GL recovery target will be insufficient to return the Ramsar wetlands of the Lakes & Coorong region to a sustainable level of health. Yet, we are facing several decisions in the coming months which are likely to reduce that figure even further – these include the Northern Basin Review, the SDL adjustment process and political pressure not to deliver the 450 GL of special account water.

Climate change will likely result in lower average rainfall patterns and more frequent and extreme droughts. CSIRO predicts that median river flows in the southern Murray Darling Basin will decline 13% by 2030.

Two measurement issues affecting the recovery of water for the environment of particular concern to our region are:

(1) the impact of irrigation efficiency projects on return flows and hence net stream flows and whether these impacts are being adequately accounted for in determining how much water is being recovered for the environment;

(2) the way that evaporation losses are accounted for across the Basin. South Australia's water allocation is determined and measured by river flows at the state border such that evaporative losses within South Australia are already accounted for within that allocation. We understand this is not the case in upstream states, where metering often occurs at the farm gate rather than at the initial off-take point from the river itself. A question for the Commission is how to meter the system to ensure that all diversions and associated evaporative losses are equitably and adequately accounted for.

What is the Risk if the Motion Does not get up?

Concerning environmental changes to date, our region is showing positive signs of ecological recovery due to improved environmental flows and the Coorong Lower Lakes Murray Mouth (CLLMM) Recovery Project outputs. The process of ecological recovery is, however, variable and continuing. Water quality quickly returned to pre-drought levels in Lake Alexandrina and the Goolwa Channel, especially after the recent floods. However, this differs for Lake Albert and the Southern Lagoon of the Coorong, where salinity levels remained significantly higher than the pre-drought average. Since the 2023 flood, salinity levels are only now returning to their average state and allowing some recovery to the Southern Lagoon.

Key species (frogs, fish, water birds and *Ruppia tuberosa*) are only now recovering in abundance and distribution recorded before the Millennium Drought. Monitoring results indicate that continued recovery depends on future freshwater flows and a management approach that allows for seasonal water level changes in the lakes and additional barrage flows into the Coorong over spring and summer.

Ongoing advocacy of the Murray Darling Association for the end of systems recovery and improvement positively impacts upstream communities. For example, this region is a significant fish habitat and nursery. A healthy system means that upstream fisheries benefit from the fish that generally hatch in the ocean or in the Ramsar wetlands and migrate upstream (and vice versa). Hence, impacts on the Ramsar wetlands directly affect the economy of upstream communities.

Other risks are that the reduced flushing from salt accumulated across the Murray Darling Basin will directly impact the economy and health of all upstream communities.

What is the broader benefit to Basin communities if this motion is successful?

The water being returned to the River is achieving significant benefits to the river's health and not being wasted.

As identified above, the Ramsar wetlands of the Coorong, Lower Lakes and Murray Mouth provide direct economic and health benefits across the Murray Darling Basin. Collectively our four council districts cover an area of over

18,900 km² and are home to over 60,000 people, with a combined Gross Regional Product of \$2.77bn (as of the year ending June 2016). Agriculture is the region's largest industry, with livestock, cereal crops, vegetables, and grapes generating the greatest output in value terms. Wool, dairy and broad-acre crops also significantly contribute to our agricultural productivity. Despite upstream misconceptions, water reaching the Ramsar wetlands of the Lower Lakes is productive water, with irrigated agricultural production accounting for approximately 10% of land use across the region. Tourism is another key driver of our regional economy, with food, wine and river-based experiences linking Adelaide with Melbourne via the Southern Ocean Drive and linking the Murray Mouth & Fleurieu Peninsula with upstream states via the Mighty Murray Way.

[Draft] Motion: The MDA calls on State and Australian Governments to review Levy Bank management generally and during flood events to be fit for purpose.

Objective: To ensure Government and Private Levees that protect towns and manage agricultural land for irrigation are assessed periodically (annually/biannually/five years?)

Who benefits? Lower Murray and Riverland Communities and the Environment

Background

The 2022/2023 floods highlighted the need for all private and government levees to be assessed as fit for purpose to prevent breaches, as occurred to numerous levees along the Lower Murray. This may mean all private levies are transferred/sold to government control. However, this is a costly option.

Key Arguments:

Private levees along the River Murray were not fit for purpose as flood barriers and suffered breaches during the recent floods due to a lack of assessment and maintenance. During the Millennium drought, many levies lost their integrity. They may have yet to be repaired since then, so they are very susceptible to failure during the high flows and extra water pressure.

As of July 2023, all storages are full, and SA is under a High Flow Advice (>40 Gl/day). Whilst lower flows than before the recent floods, the high river was caused by one significant event in November that caused flooding of several Victorian Rivers simultaneously.

What is the Current Context/issue?

Failure of the levees caused unnecessary flooding of land that took many months to dry out and then repair the levees for the future.

Private and public levees should be maintained to an acceptable standard when no risk exists.

What is the Risk if the Motion Does not get up?

That river communities, relying on levees, will again be disadvantaged and threatened if high river levels arrive.

What is the broader benefit to Basin communities if this motion is successful?

Background and supporting information:

[Draft] Motion: The MDA calls on the State and Commonwealth Governments to assist with quantifying the impact, management planning and amelioration fund to address river bank slumping and river bank undercutting in impacted regions.

Objective:

Murray Darling Basin communities require a Government Agency to take responsibility for the issues of river bank slumping and river bank undercutting.

To ensure riverine Local Governments and land managers adjacent to Rivers impacted by river bank slumping and river bank undercutting receive adequate support to; quantify the impact, can access quality technical information to inform management actions, and can access an amelioration fund to implement these actions.

A predictive tool to understand the likelihood of future river bank failure and conjunction with the development of a management process to work through the best practice assessment, monitoring and management of these areas.

Who benefits?

Riverine Communities and Land Managers

Background

Numerous mapped areas along the River Murray are vulnerable to Riverbank Slumping, which had devastating consequences during and since the Millennium Drought. The recent floods and predicted high flows are expected to increase river bank slumping and undercutting. This damage may only become more apparent when river levels drop. River bank slumping into rivers can occur with no warning.

River bank slumping and undercutting impact public and private land and public facilities, private infrastructure, farmland, businesses, riverine management, habitat, the environment, and water quality.

In the Lower Murray region of South Australia, the riverbank as we know it is not the natural bank. The banks of the river are only 100 years old and were created when the lock/weir/barrage system was constructed. As such, some banks are not benefiting from thousands of years of consolidation. Some slumping occurs on human-constructed levies used to reclaim flood plains. These levees are constructed with the right intentions; however, geotechnical testing and correct compaction techniques cannot be verified.

In this case, slumping is simply the natural environment trying to reach an equilibrium.

Key Arguments:

Due to the recent events of the Millennium Drought and the 2022 – 2023 floods, river bank slumping and undercutting are becoming increasingly common. The full impact and prevalence are not yet quantified.

Murray Darling Basin communities require a Government Agency to take responsibility for the issues of river bank slumping and undercutting to ensure a consistent and coordinated approach.

A risk management and predictive tool to understand the likelihood of future river bank failure and conjunction with the development of a management process to work through the best practice assessment, monitoring and management of these areas.

From a long-term view, riverine communities require support, technical advice, and funding assistance to adequately prepare these vulnerable riverine zones for future flood and drought events to be resilient to future damage.

What is the Current Context/issue?

River bank slumping and undercutting often occur in rural local government areas with low populations and ratesbased income. This damage is not being anticipated and is yet to be factored into long-term financial planning or insurance requirements of public or private land managers. Damage impacts roads and public and private infrastructure, requiring technical engineering advice and solutions to ameliorate and repair this damage.

What is the Risk if the Motion Does not get up?

Without assistance with damage quantification, management actions and funding support, river communities, economies and businesses will continue to be impacted by future drought/flood cycles leading to river bank slumping and undercutting.

What is the broader benefit to Basin communities if this motion is successful?

River communities, economies, and businesses will be informed with a resilient position to protect river banks and adjacent infrastructure with the technical expertise to anticipate, assess and manage future river bank slumping and undercutting occurrences.

Background and supporting information:

Lower Reaches River Murray Stability Risk Management Coorong District Council – Sinclair Knight Merz

Riverbank Collapse Hazard, Lower Reaches River Murray Stability Risk Management – Jacobs SKM

Objectives

Identification of:

• A Government Agency to take responsibility for the issues of river bank slumping and river bank undercutting.

Development of:

- A predictive tool to understand the likelihood of future river bank failure.
- A management process to work through best practice assessment, monitoring and managing these areas.
- An amelioration fund to address river bank slumping and river bank undercutting and protect areas identified at risk of these forms of river bank failure.

[Draft] Motion: The MDA calls on the Federal Government to implement all other European Carp Control measures and develop a second plan to manage Carp if the virus cannot be released.

Could more work be done around community-level carp removal, education, disposal, and water-side fishing infrastructure and explore any viable commercial-level carp harvesting and disposal methods?

Objective: That the Australian Government takes an active approach to Carp management and implements alternative plans and control measures for managing Carp numbers, likely to increase post-flood, rather than waiting for the National Carp Control Plan to be ratified or rejected.

2021 Motion: The Murray Darling Association call on Basin Governments to initiate, fund and implement further research and development, adoption, and commercialisations into alternative carp mitigation/controls to the proposed Cyprinid Herpesvirus 3.

Who benefits? Basin Communities and the Environment

Background: From 2021 AGM: Carp's bulk harvest could support many market potentials, including but not limited to fertiliser, protein, human consumption, and international export. There is untapped export demand for our virus-free fish, with Carp considered a normal part of the diet in many countries across Europe and Asia.

By contrast, Carp as a table fish has established an unwarranted stigma in Australia. However, the Australian pallet is changing and targeted marketing and promoting Carp for human consumption, supported by appropriate preparation methods (e.g. catch and cooking techniques, pate', sausage rolls, fish patties, Mornay etc.), would support a burgeoning domestic demand. Recreational fishers do not typically target carp but can be a fantastic sport fish, a sector that could help support regional economies.

Key Arguments:

2021

The impact of the European Carp on Australia's river systems, including the Murray Darling Basin, is well documented, with the Federal Government implementing the National Carp Control Program in 2016. However, the Terms of Reference restricted the mitigation measures to the *Cyprinid* Herpes virus 3 with a follow-up of Daughterless Carp (genetic mitigation).

The Federal Government has spent millions of dollars researching its Carp Control Program, with little practical impact on the rivers and waterways. Whilst the government consternates its decision to release the Virus, hundreds of tonnes of Carp could be removed from the rivers and bred through proven practical measures. Such as the introduction of "Daughterless Carp" to reduce the reproduction rate and increase the number of Carp Separation Cages at all river barriers, such as weirs and regulators.

The Williams' Carp Separation Cage (CSC Separation Cage) exploits the Carp's natural behaviour to migrate upstream and its willingness to jump small waterfalls, unlike our native fish. It is in use at the Blanchetown weir with great success following a trial period when it removed 300 tonnes of Carp and now averaging 80-100 t per year, allowing our native fish to continue upstream through Fishways. NSW DPI followed, using the CSC in several key locations, which supports a niche fertiliser industry with the potential to be replicated and scaled.

What is the Current Context/issue?

2023

After completing the remaining research studies in 2022, Fisheries Research and Development Corporation submitted the National Carp Control Plan (NCCP) – an extensive and comprehensive body of work including 19 peer-reviewed research papers, nine technical papers and five further investigation studies.

The delivery of the NCCP is the initial stage of the process to consider the feasibility of any future release of the virus as a biocontrol agent for carp. All governments are considering the NCCP as part of an initial decision on whether to proceed with the biological release program. This is expected to take some time.

https://www.agriculture.gov.au/biosecurity-trade/pests-diseases-weeds/pest-animals-and-weeds/national-carpcontrol-plan

What is the Risk if the Motion Does not get up?

This motion seeks to implement other Carp control measures until the (hopefully) introduction of the virus.

There is considerable research on the National Carp Control Plan website, including biomass, commercial exploitation, clean-up and disposal, virus impacts, and water quality impacts. However, the NCCP does not include the use of cages, traps, or daughterless carp, so these options are available and should be exploited.

What is the broader benefit to Basin communities if this motion is successful?

The NCCP and associated research includes economic and environmental analysis on the outcomes of removing carp *en-masse*. Sudden removal (via the virus) could result in some loss of a food supply in the short term until local species recover.

Technical Paper 5 and NCCP research project 13 address potential socio-economic impacts on the native fish aquaculture industry, commercial carp fishers, recreational fishers, tourism, koi hobbyists and businesses, and possible mitigation measures in detail.