



Submission on Draft Lake Eyre Basin Strategic Plan

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A. Expertise and qualifications

I am the Director of the Centre for Ecosystem Science (CES), UNSW Sydney, established in 2009. I have worked for 40 years as a river scientist in government and university sectors. Much of my work, with my colleagues, has focused on rivers and wetlands of the Murray-Darling Basin and Lake Eyre Basin. My research has been supported by the Australian Research Council, all governments of Australia, including the Australian Government (various environment agencies, Murray-Darling Basin Authority), and non-government organisations (e.g. Birdlife Australia, The Pew Charitable Trusts).

All of my research has supported instruments of government, in implementation of policies and management of Australian Rivers. I also have an established track record in the research and management of river ecosystems and their biodiversity, both within and outside protected areas. My publications predominantly focus on the ecology, management and policy of rivers and wetlands. I have authored or co-authored more than 334 publications, including edited or co-edited books (5), peer reviewed papers (139) scholarly book chapters (26), government scientific reports (95) and opinion pieces in major newspapers or online (20) peer reviewed papers. My h-index is 57 and i10 index 180 (Google Scholar). I have a long history of completing research and technical projects for governments in relation to river and wetland management, particularly focused in the Murray-Darling Basin. I advise State and Australian Governments on matters related to the policy and management of rivers.

I have assisted state and Commonwealth governments through the following advisory bodies in the Lake Eyre Basin: Cooper Creek Catchment Committee, Community Advisory Committee, Scientific Advisory Panel for the Lake Eyre Basin and the Queensland Government Advisory Panel on the management of Wild Rivers.

B. Approach to this submission

This submission focuses on the overall structure of the Draft Lake Eyre Basin Draft Strategic Plan.

C. General comments

There is considerable value in having this overarching Lake Eyre Basin strategic plan.

1. Scale

There is a general absence of specification of scale with this proposed plan. It is primarily focused on the river systems and the floodplains although it purports to cover the whole

of the Lake Eyre Basin. Without this detail, there might be too much expectation that it is attempting to cover too much of the entire Lake Eyre Basin. Or it might be better to be specific in the document that it focuses primarily on the rivers, their floodplains and wetlands within the catchments. This avoids potential criticisms that the focus might be too encompassing. So it may be that some developments that do not affect river flows may lie outside the focus of this plan (see Recommendation 1) and so not part of this plan.

2. Governance

One of the major challenges in developing such a document is adequately capturing some of the important detail related to state legislation and policy relevant to the management of the Lake Eyre Basin. In particular, there is insufficient detail in relation to important areas that are primarily the responsibilities of the States and their agencies. This draft plan will be improved by more detail on how these processes can work more effectively. Currently the draft strategic plan lacks this detail to ensure that it provides sufficient direction for implementation and effective actions to deliver the vision identified.

This component is obviously challenging given that the state and the Northern Territory governments have primary responsibility for land and water management within their environments and the jurisdictional borders. But it is important to have a clearer linking between the key goals espoused in the draft strategic plan and the major drivers of policy and legislation at the state level. Obviously much of what happens in relations to rivers and their floodplains is dictated by state policy and legislation, particularly the importance of upstream states such as Queensland.

There was also no clear direction in relation to a hierarchical framework, providing the overarching architecture for more detailed plans that might be developed for key areas of Lake Eyre Basin (e.g. Coongie Lakes, (Kingsford et al. 2021)). It would be useful if this plan provided direction or at least options for improved linking for other more locally derived and detailed planning and management approaches.

Importantly all these aspects need to be linked to monitoring and reporting on the state of the system. This seems to be currently missing.

3. Values

A key element which is currently included relates to why the basin is important. However, this section should have some more detail in relation to each of the sections. There are some key references that are currently missing. This section is particularly important for framing the vision, goals and objectives. For example, there is little in relation to the importance of the rivers and floodplains for waterbirds, fish or turtles. There are peer reviewed papers covering all of these important groups. It would also be

helpful to provide a map of the significant extent of floodplains and nationally important wetlands (Kingsford and Walburn 2022).

It would also have been useful to have more about the importance of the free-flowing status of the rivers of the Lake Eyre Basin. This needs to be in relation to flow and flooding regimes so it adequately links to the goals and objectives. Currently there is an absence of linking to the scientific evidence in relation to this flow and flooding. The flooding regime is both dependent on the quantity of flowing water as well as the hydraulics of flooding of that water. Both need to be in this section.

Further, there is a need to refer to its free-flowing status on the world stage. This could include the winning of the National River Prize in 2014 and the International River Prize in 2015 for the work of the community and its free-flowing status. There are references to these in Kingsford (Kingsford 2017a). To allow for this to potentially be included in a final version, I have provided some of this description. There is widespread evidence that the ecological health of the Lake Eyre Basin rivers is in good condition, reflected in the recent assessment of basin condition (Lake Eyre Basin Ministerial Forum 2017) and other assessments (Pisanu et al. 2015). In addition, long-term surveys of more than 50 waterbird species over three decades indicate that the waterbird community is highly variable but with few trends (Kingsford et al. 2017a), apart from migratory shorebirds (Lake Eyre Basin Ministerial Forum 2017). Fish communities are also in good condition (Arthington and Balcombe 2017, Kerecsy 2017, Lake Eyre Basin Ministerial Forum 2017). This contrasts other river systems in Australia. In addition, there are relatively few major development pressures (Crothers 2017, Kingsford 2017b) although increasing particularly in relation to mining (Mudd 2017).

4. Threats

There is a useful section currently in relation to threats in the basin but this could be expanded with more detail. For hydrologic alteration, it is important to link in the substantial floodplain structures currently developed by the oil and gas industry on the floodplain and their associated structures, affecting flow and flooding regimes (Kingsford and Walburn 2022) (see Appendices 1 & 2). There is currently no section on potential pollution effects that may occur, including fugitive emissions and local impacts of co-produced water from oil and gas exploration and development (see Kingsford and Walburn 2022). There has been some land clearing in the catchments in Queensland. A more specific reference should be provided into the potential effects of this on run-off.

The section on social change needs to more carefully link the potential impact of this threat on the river and its values. For example, absence of people in the landscape may reduce engagement and ability to deal with local threats (e.g. invasive species). The climate change section could be improved with some more up to date referencing of the latest understanding in this area, particularly in relation to extreme events. There is

currently limited referencing, a general concern in relation to the document. It should be taking an evidence based approach, supported by the scientific evidence, including peer reviewed information.

5. Resourcing

There is currently no reference to any human or financial resources in relation to implementation of this plan. This may not yet be clear yet but there are a number of objectives in this Strategic Plan which will require resourcing for implementation. Often the pathway is not clear. Referencing the current human and financial resources already in place would be useful for implementation.

Recommendation 1: There should be more clarity for the focus of this Lake Eyre Basin Strategic Plan. It should be called the Lake Eyre Basin Strategic Plan but then adding a description: Lake Eyre Basin Strategic Plan – the rivers and their catchments

Recommendation 2. In the context or description section, there should be at least a paragraph or more on governance, legislation and policy. This would explain in more detail the role of this plan but most importantly that the States and territory have primary responsibility for legislation and policy. This requires a section in the plan as one of the goals because at the moment there are no adequate mechanisms for dealing with current and future challenges in relation to the roles and responsibilities of governance in relation to the management of the Lake Eyre Basin and its rivers. There is also a need for explicit reference to monitoring and reporting which is currently absent although referenced in a figure. See suggestions below in relation to objectives.

Recommendation 3: There should be a focus on the governance and detailing how this plan can support other local scale planning and management approaches. This would be a useful addition to the goals. Goal – Development of effective governance arrangements, improving collaboration among governments

Recommendation 4. There is a need for more detail on the context in relation to the free-flowing status of the rivers and their biota. This should cover the importance of variability, extent and complexity of flow and flooding regimes. It is also important to link this to the values of First Nations peoples in relation to these aspects. An obvious way of doing this is to reference the Aboriginal resolutions from Tibooburra (see Gorringer 2017).

Recommendation 5: Ensure that this strategic plan provides for local scale management plans (e.g. lakes). This would require development of another goal which relates to governance of the lake air basin.

Recommendation 6: Reference somewhere in the document the need for human and financial resources required for implementation.

D. Specific comments

My specific comments relate to each of the Vision and its goals and objectives.

Vision- Healthy and valued river systems sustaining unique, resilient and diverse communities and landscapes

This vision is reasonable but does not provide sufficient aspirational direction. Also, it does not adequately represent the values of the river and its communities. Currently, this vision could apply to any river and its communities. It also does not provide direction in relation to protection of values from threats. It is also not clear what is meant by landscapes. It would be better to refer to the key attributes relevant to this strategic plan not the entire land area.

Recommendation 7. Review this vision in relation to the values of the Lake Eyre Basin and its threats and develop a vision which more adequately reflects these. But this would need to be done with the community. If there is insufficient time, then it would be useful to consider reviewing this vision as it is currently inadequate.

1. Goal 1-Healthy river systems supporting resilient landscapes

Recommendation 8. This goal needs more specificity in relation to ‘landscapes’ see above. Suggested change – Healthy free-flowing river systems maintaining the resilience of dependent freshwater ecosystems

- i. **Objective 1** - The integrity of the unregulated river systems, their variable flow regimes and boom-bust ecology are maintained by managing threatening processes through cross jurisdictional and community effort

This objective needs more specific wording, with less chance of misinterpretation. It should also refer to flow and flooding regimes. It also refers to unregulated rivers which is divorced from the context which refers to free-flowing rivers. This should be changed to free-flowing rivers here. Further, it needs to be clearer about the roles of governments. Not all communities understand what jurisdictions refer to. Also, industry is missing.

Recommendation 9. A suggested change for this objective would be-The integrity of the free-flowing river systems, their variable flow and flooding regimes are maintained by mitigating threatening processes through collaborative government legislation, policy and management, working with the community and industry.

- ii. **Objective 2** - Knowledge and awareness of the basin’s unique rivers and threatening processes open brackets such as invasive species, development and climate change) is improved and promoted

This objective needs more specific wording. It needs to identify the key threatening

processes and also the need to understand the ecology better. It also does not adequately reference the need for knowledge needs, monitoring and reporting even though the MERI framework was presented.

Recommendation 10. A suggested change for this objective would be- Knowledge and state of the basin's unique free-flowing rivers and effects of threatening processes (such as invasive species, floodplain and water resource development, pollution and climate change) and dependence of plants, animals and their relationships needs to be monitored and reported

- iii. **Objective 3** - Available water is managed to meet community needs and support resilient landscapes and river systems

This objective is ambiguous and organised so that it does not adequately represent some of the key intentions for managing the Lake Eyre Basin Rivers. It does not currently link well to the background information. For example, there has been no discussion above about 'available water'. Assuming this refers to accessing water and so should be clear.

Recommendation 11: A suggested rephrasing could be – Water from the rivers will be used for community needs, governed under current State and Territory legislation, to avoid major impacts on the free-flowing flow and flooding regimes

2. Goal 2-Celebrated aboriginal culture and knowledge

This section is clearest of all the sections in the Draft Lake Eyre Basin Strategic Plan. The objectives are generally unambiguous although there is a need for more collaboration and ownership opportunities in relation to water. Reference to the importance of water for First Nations peoples is lacking. The background and objectives may benefit from reviewing the Tibooburra resolutions (Gorringe 2017). The goal also reflects some tokenism and insufficient integration into core business, which are better incorporated in the objectives.

Recommendation 12: A suggested rephrasing which is more inclusive and participatory and clearer– Goal 1 Integration of aboriginal culture and knowledge into all decisions relevant to the rivers and their ecosystems

- i. **Objective 1** - Aboriginal knowledge, cultural and spiritual connections to land and water are integrated into planning, management and decision making

This objective reads well.

- ii. **Objective 2** - Aboriginal peoples access for fishing, hunting, gathering and cultural purposes is ensured

This objective reads well.

- iii. **Objective 3** - Aboriginal people maintain their languages, songs, storylines and

dreaming for future generations

There could be a measure of support added.

Recommendation 13: A suggested rephrasing might be – Aboriginal people are supported in maintaining their languages, songs, storylines and dreaming for future generations

- iv. **Objective 4** - Aboriginal peoples cultural sites are protected and maintained and connections to sites are enhanced

This objective reads well.

- v. **Objective 5** - Improved two-way understanding of the cultural impacts of climate change

This objective appears idiosyncratic and restrictive. It could be better phrased to adequately represent improved interactions.

Recommendation 14: A suggested rephrasing – Improved two-way learning and understanding between traditional knowledge and science for the protection and management of the free-flowing rivers.

3. Goal 3-An informed, engaged and resilient

The Lake Eyre Basin Agreement has also been very successful in connecting community, government and scientific communities. There is now a strong network established across the basin, particularly strengthened increased Aboriginal involvement. This community has been integral to protecting the river and ensuring that major deleterious developments are identified and adequately discussed and resisted if necessary (Kingsford et al. 2017b). A critical aspect of this goal will be to ensure access to scientific evidence.

- i. **Objective 1**- Communities with a strong sense of wellbeing throughout the basin

This objective does not include any direction or aspiration. If more directional, it would allow for clear programs which identify what needs to be done.

Recommendation 15: A suggested rephrasing – Improve wellbeing of communities throughout the basin

- ii. **Objective 2** - Informed, engaged and empowered communities that understand, and are active stewards of, the basin's unique natural and cultural assets

This objective implies that this does not actually occur currently. It would be better to provide an aspect of improvement or enhancement that clearly recognizes that this is already well established in some parts.

Recommendation 16: A suggested rephrasing – Improve current dialogue among governments and communities, driving informed, engaged and empowered communities actively stewarding the basin’s unique natural and cultural assets

- iii. **Objective 3** - Aboriginal cultural and spiritual connections to water and land are recognised and respected

This objective seems somewhat tokenistic, as it is currently written, without actually involving these communities in the decision-making.

Recommendation 17: A suggested rephrasing – Ensure Aboriginal communities are part of the decision-making related to land and water, reflecting their cultural and spiritual connections

4. *Goal 4-A diverse and adaptable economy*

Currently this objective is extremely broad and probably beyond the capacity of this Strategic Plan as it currently stands. It is important to link this goal more to the values of the system, such as its free-flowing status which support significant environmental and cultural values. A key aspect which is missing is the importance of sustainability and avoiding threats to the values. There is also little discussion of the current economy and its trajectories, particularly in relation to mining (see Mudd 2017, Kingsford and Walburn 2022), pastoralism (Brook 2017, Emmott 2017) and tourism (Wright 2017). These need more coverage in the brief description so there is more context.

Recommendation 18: A suggested rephrasing – A diverse and adaptable economy which is environmentally sustainable

- i. **Objective 1**- A basin economy that is adaptable to the effects of climate variability and change

Again this objective could be in any Strategic Plan, anywhere in the world. It lacks specificity or a link to the need for sustainability and protection of the values of the Lake Eyre Basin. This objective could easily be combined with the one below.

Recommendation 19: A suggested rephrasing – Increased development of an environmentally sustainable basin economy, adaptable to the effects of climate variability and change

- ii. **Objective 2** - Sustainable and inclusive development for a diversified economy

Again this objective could be in any Strategic Plan, anywhere in the world. It lacks specificity and does not seem to reflect the challenges of diversification. It is also not clear what this objective actually means or how it would be translated into effective actions.

Recommendation 20: A suggested rephrasing – A sustainable economy, promoting

diversification and inclusivity development of an environmentally sustainable basin economy, adaptable to the effects of climate variability and change

- iii. **Objective 3** - The basin is promoted as a unique accessible and culturally rich tourism destination

This objective seems much more relevant and understandable than others above. But it still lacks the essential links to sustainability and values.

Recommendation 21: A suggested rephrasing – The basin becomes a premier tourism destination based on its free-flowing river status and the high environmental and cultural values

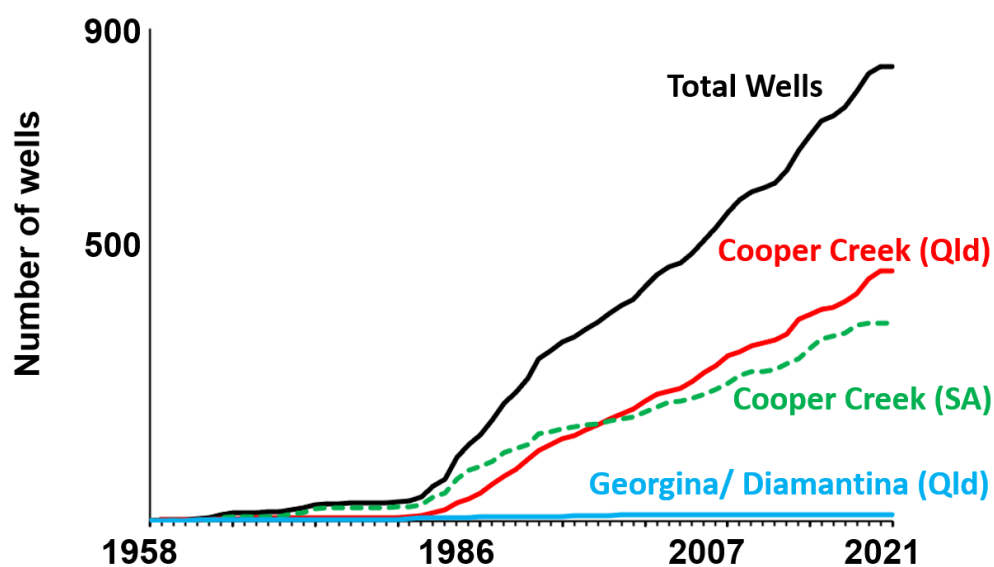
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Appendix 1 – Increases in number of oil and gas wells on the floodplains of the Lake Eyre Basin floodplains

Cumulative number of oil and gas wells in each catchment on the floodplains

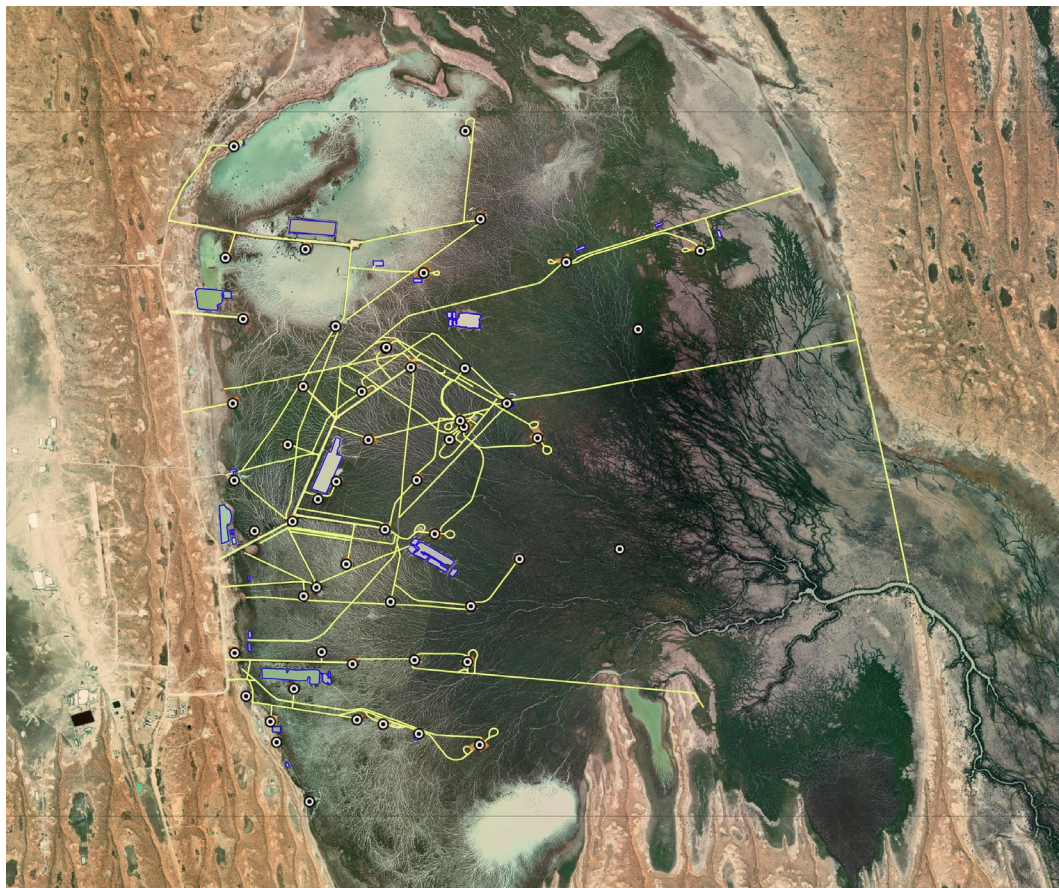


See Kingsford and Walburn (2022) for details.

Appendix 2 – Photographs and other images of floodplain development by the Oil and Gas Industry in the Lake Eyre Basin



Oil and gas infrastructure on the inundated floodplain (Photo – D. Gimsey, July 2022)



Google Earth Image showing wells (circles), roads (yellow) and storages or borrow pits (see

Kingsford and Walburn 2022)



Oil and gas well pads and roads under water in July 2022 (Photo D. Gimsey)



Oil and gas well pad and roads – newly developed (Photo D. Gimsey, July 2022)



Oil and gas well pad and roads – newly developed (Photo D. Gimsey, July 2022)