Submission No 140

INQUIRY INTO RATIONALE FOR, AND IMPACTS OF, NEW DAMS AND OTHER WATER INFRASTRUCTURE IN NSW

Organisation: Nature Conservation Council of NSW

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Nature Conservation Council
The voice for nature in NSW

22 September 2020

Ms Cate Faerhmann MLC
Chair
Portfolio Committee No 7
Parliament House
Macquarie St Sydney NSW 2000

Dear Ms Faerhmann MLC,

Inquiry into the rationale for, and impacts of, new dams and other water infrastructure in NSW

The Nature Conservation Council of New South Wales (NCC) is the state's peak environment organisation. We represent over 150 environment groups and 60 000 supporters across NSW that are dedicated to protecting and conserving the wildlife, landscapes and natural resources of NSW. We welcome the opportunity to provide a submission to this inquiry into the rationale for, and impacts of, new dams and other water infrastructure in NSW.

The public expects that holders of public office at all tiers of Government be accountable. it Is a vital function of our democracy that whenever policy or legislation is debated or new planning and infrastructure decisions are made, they are made transparently, and in the best interests of the community. In NSW water management, this has never been more important. The most recent drought is still impacting large parts of NSW. Scathing reports from the Natural Resources Commissioner and the Interim Inspector-General have highlighted failings in water management and the impacts of reduced inflows from the northern basin. Trust is low.

Yet, in October 2019 the NSW Premier and Australian prime Minister announced their intention to "fast-track" an expansion of Wyangala Dam, new Dungowan and Mole River Dams, and re-regulation of storage on the Macquarie River. In the face of widespread community opposition, the Wyangala and Dungowan dams will begin construction before community consultation and Environmental Impact Statements (EIS) are finalised. These projects lack business cases and cost estimates. The true monetary and environmental costs of the projects are unknown.

Decisions are being made about water management in NSW using out-of-date data, and without consultation nor transparency.

This submission summarises issues presented by the proposed water infrastructure projects according to the Inquiry's terms of reference. It has been composed with the expertise of the NCC Water Working Group, in consultation with the Inland Rivers Network. Contributors to this submission have on-the-ground experiences of the landscapes that will be impacted by decisions made. Our concerns point to the need for thorough due process, particularly as these projects risk further undermining the goals of the Murray Darling Basin Plan.

There are very good reasons why no new dams have been built in NSW since 1987. Dams and over extraction of water from natural systems have caused environmental disasters for the rivers of the Murray-Darling Basin. Digging new holes or making existing holes bigger will not secure more water.

Recommendations

- Until the issues and questions raised by this Inquiry are fully answered, and until the communities impacted by these projects are meaningfully consulted, approvals should be rescinded and work ceased. There is no reason to by-pass these critical processes.

- Up-to-date data and scientific assessment of the likely impacts of climate change on river systems is lacking for the proposed projects. Current knowledge must be incorporated into transparent decision-making about the future of our rivers.

- The State Infrastructure Strategy 2018-2038 recommended the preparation of a NSW Water Statement and Regional Water Strategies. This overarching work should be done to provide a strategic framework for decision-making, before the proposed projects are fully assessed.

We welcome further discussion on the matters raised in this submission. Your key contact point for further correspondence is Strategy and Operations Director, Jacquelyn Johnson available via .

Yours sincerely,

Chris Gambian

Chief Executive

Overall comments

New dams and weirs that augment the size of existing large storages of water in NSW do not align with international best practice.[i] Dams cause ongoing degradation of river health and increase the cost burden on the community. Dams reallocate the benefit of access to the natural resource (water) from local riparian users and the dependent environment, to new groups of beneficiaries at a regional or national level. The cost of this reallocation is borne by taxpayers and by the natural environment

The current level of water storage and extraction in NSW has already caused significant environmental damage to almost all inland rivers in NSW. Proposals which increase the impacts of water storage are an unacceptable option that does not ensure security of water supply for social, economic or environmental outcomes. Dams do not increase rainfall or inflows; they capture natural flows that service downstream communities and support ecological processes.

The combined capture of water through the proposed dam projects will be 770 GL. This is a third of the water recovered under the Basin Plan at great cost to the Australian taxpayer. Yet, because the projects have been approved individually, the cumulative consequences of the proposed projects have not been assessed.

We know that dams and other in-river structures cause adverse changes to the ecological function and health of rivers and floodplain environments by:

1. Changing the timing, frequency and magnitude of flooding events, particularly medium and small flood events
2. Loss of the critical natural flow regime through the rivers by capture of local rainfall events, including causing and prolonging drought for significant ecosystems such as downstream wetlands
3. Disrupting upstream and downstream connectivity, particularly the ecological connectivity necessary for the movement of nutrients, and the passage of animals along the river
4. Disrupting of connectivity between rivers and their floodplains, preventing the uptake of food and nutrients and disturbing vital breeding processes
5. Altering the connectivity between surface water and groundwater
6. Impacts on water quality through cold water pollution, deoxygenation and creating conditions which exacerbate increased blue-green algal blooms
7. Changes to riverine geomorphology causing erosion, and increased sedimentation and turbidity
8. Loss of breeding and feeding grounds and habitat for water-dependent native species

We simply cannot afford to have continued mismanagement of water in NSW further deplete our biodiversity.

If more efficient use of water resources is needed, more appropriate strategies to improve long-term water security are available. These demand management, reducing consumption, recycling, and end-use efficiency measures. All of these strategies have significant potential to reduce pressure on water resources, and do not entail the public and environmental costs of new and enlarged dams. Investment in improved water-use efficiency will have regional economic benefits.

The Wyangala Project

The proposal to raise Wyangala Dam wall by 10m will capture an additional 650 Gigalitres of natural flows to the Lachlan River and inundate a further 1,947 ha of upstream land.

The Infrastructure Statement 2019 - 2020, Budget Paper 2, identifies that $32m has been allocated from the Snowy Hydro Legacy Fund over 3 years to investigate the Wyangala Dam project.[ii]

NCC objects to the proposed Wyangala Project. The use of public money for this project needs closer scrutiny. There has been no cost/benefit analysis made available to the public, and incentives for the work are unclear.

Water in the Lachlan is allocated using out of date data. The drought of record used in the Lachlan Regulated water sharing plan is the July 1979 to June 1981 drought. The allocation of water is not based on the most recent droughts of record, the Millennium Drought or the 2017 – 2020 drought.

(a) the need for the project

The raising of the dam wall will not improve water security in the Lachlan under the current water allocation rules. The main outcome of the project would be more water for WaterNSW to sell to general security customers in the Lachlan Valley by an estimated 21.5 GL per year. This will increase water extraction by one set of users while impacting water availability to the end of the system.

(b) the economic rationale and business case

There has been no consultation or public information regarding responsibility for the upkeep of the dam or impacts on water charges and pricing for license holders. There has been no community consultation on the use of $650m of public money and there has been no publicly-available business case or cost-benefit analysis for the proposal.

(c) the environmental, cultural, social and economic impacts

Wyangala Dam holds 1,217 Gigalitres. The proposed project will increase the dam by 53 percent. It will impact the health of the Lachlan River by increased capture of natural flows,

denying the end of the system access to those flows where riparian ecosystems and domestic license holders will be highly impacted:

- The proposed action is likely to have a significant impact on at least 19 threatened plant species and 21 threatened animals.

- The Lachlan River is part of the Southern Murray-Darling Basin and contains significant wetland areas and migratory bird habitat

- The Lachlan River supports a number of wetlands listed under the Directory of Important Wetlands in Australia. These areas are significant for international migratory bird agreements signed with Japan, China and Korea. The proposed action could seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species

- Booligal Wetlands, Great Cumbung Swamp and Lachlan Swamp have been listed amongst the 18 key environmental assets in the Murray-Darling Basin for meeting Basin Plan targets. The impact of the proposed action will capture important natural flows that currently support the health and resilience of these wetland areas

- The project will have a significant impact on 1,391ha of the critically endangered Box Gum Woodland ecological community and possibly another two endangered ecological communities. Any loss of these ecological communities would be impossible to offset

- The proposed action is also likely to have a significant impact on migratory bird species including the Glossy ibis, Latham's snipe, sharp-tailed sandpiper and Eastern great egret due to changes in hydrology and capture of floods that replenish downstream wetlands

- The increased storage and subsequent increase of river regulation will have a significant impact on the critically endangered Silver Perch, endangered Macquarie Perch and vulnerable Murray Cod through loss of peak flows to maintain stream structure and habitats. Lower average flows will be an additional barrier to fish passage. There is no evidence that this impact will be mitigated, and environmental offset would be able to compensate the loss of natural flows

- The proposed action is within the NSW South Western Slopes Bioregion, one of the most heavily cleared bioregions in Australia. Further degradation of the area would be a travesty

- The proposal fails to identify the high conservation value wetlands associated with the Lachlan River system and connectivity to the Southern basin in times of high flows

- The proposal fails to describe the condition of the Mount Davies Nature Reserve within the inundation zone

(d) the impacts of climate change

Allocation of water in the Lachlan under water sharing plan rules does not take climate change into account. The drought of record before 2004 is the basis used – not the Millennium Drought or the current drought. Without proper assessment, impacts cannot be known.

(e) water infrastructure technologies that may promote enhanced environmental outcomes

No alternative water security options or more beneficial regional investment projects have been considered. $325 m from NSW Treasury could be better spent on improved regional services and permanent job creation.

(f) any other related matter

NCC is opposed to the proposed fast-tracking of this proposal, without an EIS and without planning approval. There has been no on-ground assessment undertaken for the proposed action. There has been no consultation with environment groups or people with environmental interests. It is inappropriate for the proposed project to have been referred to the EPBC assessment process at such an early stage of development.

The Mole River Project

- The proposed dam on Mole River is a 60m high rock wall at 'Rivertree' which would hold back 100 GL (billion litres) of water, inundating approx. 829 ha of farmland and bushland. The dam will convert Mole River from an unregulated river with a specific set of water sharing rules into a regulated river managed under a different water sharing plan.

The Mole River is an important tributary of the Border Rivers system that has a direct connection to the Barwon-Darling River. Any additional capture of natural flows will impact downstream river health, water users and the outcomes of the Murray-Darling Basin Plan.

The Nature Conservation Council of NSW does not support the proposed dam on the Mole River.

(a) the need for the project

The Border Rivers Regulated WSP uses out of date data and does not take climate change impacts into account. Water allocations are based on drought of record before 2009.

(b) the economic rationale and business case

The investment of public money into a business case and environmental impact assessment of the proposed Mole River Dam was made with no community consultation.

No alternative water security options or more beneficial regional investment projects have been considered.

There has been no consultation about who will own the dam and pay for its upkeep. The impacts of the project on water charges and pricing for license holders have not been publicly considered.

The feasibility study conducted for WaterNSW in 2017 shows that the project is not financially viable.[iii]

(c) the environmental, cultural, social and economic impacts

There is no justification for the project's designation as Critical State Significant Development under the NSW Water Supply (Critical Needs) Act 2019. The Mole River Dam will not supply water to Tenterfield or other towns or supply critical human needs.

The proposed rationale that the dam will improve water security for downstream general security licenses is not defendable. The proposed project will benefit a few at the expense of many. The proposed dam will flood out productive farmland, river flats and tourism

enterprises in the inundation area. Downstream areas of important bushland and significant cultural heritage sites will be impacted by the capturing of natural flows that support downstream river health.

The Regulated Border Rivers WSP ignores the impacts of climate change by allocating water based on the drought of record before 2009.

Environmental impacts: The Mole River has high biological diversity and is recognised for its ecological values as an aquatic ecosystem under the Murray-Darling Basin Plan. The regulation of the river through construction of an instream dam will degrade the environmental values of the river.

The proposal will disturb 829 hectares through inundation and construction activities, 778 ha with native vegetation, including critically endangered Box Gum Woodland and endangered Semi-evergreen vine thicket.

15 threatened plant species and 17 threatened animals will be impacted by the proposed project. Threatened fish species found in the Mole River include Purple Spotted Gudgeon, Western Olive Perchlet and Eel Tailed Catfish and Murray Cod. The disruption to fish movements up and downstream, dividing and isolating populations above and below the dam wall by a 60m dam wall cannot be mitigated or offset.

Changes in river flow and hydrology will impact on river health. There is a high likelihood of blue-green algal blooms within the storage, and cold-water pollution.

Cultural impacts: The Mole River region is country of the Ngarabal and Jukambal First Nations people.[iv] Limited archaeological survey work has been conducted in the impact area. The area is highly likely to contain significant cultural heritage values such as scar trees and other indications of First Nations economic activity near the water source.

There is also a strong European cultural heritage and connection to early settler history in the region.

(e) water infrastructure technologies that may promote enhanced environmental outcomes

There are no water infrastructure technologies available which could promote enhanced environmental outcomes, nor ameliorate the adverse environmental impacts which would be caused by the proposed dam

Investment in improved fish passage on existing instream structures would promote enhanced environmental outcomes while creating local and regional construction jobs.

(f) any other related matter

Mole River Dam is not Critical State Significant Infrastructure. The Mole River Dam should be removed from the NSW Water Supply (Critical Needs) Act 2019. There are no towns or localities, including Tenterfield, listed with a critical water supply in the vicinity of the Mole River Dam Project under the Act.

Towns and localities on the Barwon-Darling listed under NSW Water Supply (Critical Needs) Act 2019, such as Walgett, Bourke and the Darling River between Bourke and its junction with the Murray River will be further impacted if the Mole River Dam Project goes ahead and captures more flows from the highly connected NSW Border Rivers.

The Dungowan Dam project

The proposed Dungowan Dam will capture 22.5 gigalitres - an additional 10GL of natural flows to the Peel River. The project would impact 207 ha of land. There has been no community consultation on the investment of $484m public money on the project. There is no certainty that Tamworth's town water supply will be more secure.

Capture of more water in the Murray-Darling Basin will work against the objectives of the Basin Plan.

NCC objects to the proposed replacement and enlarging of the Dungowan Dam.

(a) the need for the project

The recent enlargement of Chaffey Dam, completed in 2016, provided an additional 38.5 gigalitres of water. This did not improve Tamworth's water security during the most recent drought because water allocation policy in the Peel is out of date, based on the drought of record before 2010. Water allocations from the full dam were too high and didn't account for below average rainfall in 2018. The need for and likely efficacy of this project have not been reliably established.

(b) the economic rationale and business case

There has been no business case or cost-benefit analysis produced for the proposed dam enlargement. It is being fast-tracked with no EIS or planning approval.

There has been no information or consultation about who will pay for the upkeep of the dam or impacts on water charges and pricing for license holders.

The Dungowan Dam is unlikely to benefit Tamworth because there is uncertainty around the retention of the 6 GL in the existing dam and 5 GL has been promised to irrigators. This leaves 11 GL at a cost of $44,000 per ML for construction.

No alternative water security options or more beneficial regional investment projects have been considered.

There has been no consultation about who will own the dam and pay for its upkeep.

(c) the environmental, cultural, social and economic impacts

Additional water capture in the Peel River will impact water security in the Namoi and connectivity with the Barwon-Darling and work against the objectives of the Basin Plan.

Further loss of natural flows will impact on the health of the Peel River, endangered fish species, such as Murray Cod and other river creatures such as platypus and turtles.

The enlarged inundation area will impact important Aboriginal cultural heritage sites, threatened bushland and threatened plants and animals.

(d) the impacts of climate change

There has been no demonstrated need for the enlargement of Dungowan Dam. This project will not provide long-term water security for Tamworth under climate change predictions.

(e) water infrastructure technologies that may promote enhanced environmental outcomes

Water security for Tamworth City would be better served through better long-term solutions such as water recycling, rainwater tanks for all households, and a demand management program.

f) any other related matter

There is no clear or evidence-based justification for the project to be designated as Critical State Significant Development under the NSW Water Supply (Critical Needs) Act 2019.

The Macquarie River Reregulating Storage Project

NCC objects to the Macquarie River Reregulating Storage Project. The project's objectives are to capture and re-regulate 'operational surpluses' as general security, so the water can be used to meet customers' orders. 'Operational surpluses' are Planned Environmental Water (PEW) as defined in the NSW Water Management Act 2000. This is water that is not committed after the commitments to basic landholder rights and for sharing and extraction under any other rights. This project would effectively turn PEW into consumptive water. Under the objectives of the Murray Darling Basin Plan there can be no net reduction in PEW.

(a) the need for the project

The Macquarie River is a 'credit river', where water allocated to customers is not physically in Burrendong dam, but is forecast for storage.[v] The NSW Government uses drought records pre 2004 for water allocations. In the Macquarie Valley the available water determinations are worked out using rainfall and runoff data up to 2003. The next time an AWD is made, it will not consider the 2017-2020 drought, which is the worst on record by a significant margin.[vi]

This practice carries the risk of inaccuracy, overallocation and the river and towns in the valley running out of water, as happened in Warren in 2019/2020 water year.

With an appropriate management regime, there would be no need for this project to proceed. Only water that is physically in Burrendong Dam should be allocated to customers and water allocations should be based on the best current data.

(b) the economic rationale and business case

The estimated cost of the project has not been revealed to the public. As State Significant Infrastructure, the cost must be at least $30 million. The lack of transparency is problematic because it prevents public conversation about the need for and benefits of the proposal.

(c) the environmental, cultural, social and economic impacts of the project

There is no sound socio-economic case provided for this project and it is unclear whether the full socio-economic impacts of reduced flows downstream of Marebone weir will be considered. Yet, grazing, unregulated irrigation and tourism opportunities will be significantly negatively impacted by the project. In addition:

- A registered Aboriginal heritage site will be destroyed
- Elders and Traditional Owners of the Wiradjuri Nation with cultural authority to speak for Country have not been engaged in the consultation process[vii]

- Towns such as Carinda and Warren will be at an increased risk of the river running dry again. The impact on popular recreational site Gin Gin is not assessed.

Environmental impacts: Unregulated natural flows, including flows entering the river from the Bell, Little and Talbragar Rivers are critically important for aquatic native animals and fish to breed, feed and migrate. Natural flows carry nutrients and are the correct temperature to support ecological processes; regulated flows do not meet these criteria.

A 30km weir pool will result in reduced water quality and increased erosion. The standing water will provide less flowing water habitat and provide conditions more suitable for carp and blue-green algae. The 30km weir pool would mean a loss of riffle zones, snag habitat, the inundation of spawning and recruitment sites, Murray Cod eggs will sink and die. The frequent fluctuations in water level will not provide a suitable hold for vegetation or biofilm. Over time, the weir pool will not support a food web for native fish, reptiles, waterbirds or any other aquatic animals.[viii] Native Fish in the Macquarie River are already listed as an Endangered Ecological Community.[ix]

Macquarie Marshes and migratory birds: The internationally significant Ramsar-listed Macquarie Marshes are one of the most important waterbird breeding sites in Australia. Australia has a legal obligation to protect Ramsar wetlands.

In 2010 the Australian Government issued a formal notification of a likely “change of ecological character of the Macquarie Marshes Ramsar site” to the Ramsar Secretariat because the condition of the Macquarie Marshes had deteriorated so much. The main reason for the notice was a change in flow regimes. The proposed project will exacerbate ongoing decline in habitat for 14 species of migratory birds, 10 colonial-nesting species, and a total of 233 native species of birds including 77 species of waterbird, some of which are listed as critically endangered.

The Macquarie Marshes provide habitat for 60 native reptile species, 11 species of native fish, 29 native mammals, 15 native frogs and 324 native plant species.

Australia has legal obligations under the Commonwealth Water Act 2007, the Ramsar Convention, other international migratory bird agreements and the Murray Darling Basin Plan to ensure the character of this Ramsar listed wetland is protected.

NCC directs the Inquiry to the submission by Professor Richard Kingsford to the EPBC referral on the Macquarie River reregulating storage project for more information about the environmental impact of the proposed project.[x]

The Menindee Lakes Water Savings Project

NCC objects to the proposed project.

(a) the need for the project

The Menindee Lakes is a series of interconnected wetlands which are fed by inflows from the Barwon-Darling river. The river channel itself has been engineered from a natural delta into a channel, now known as Lake Wetherell. Regulators manage the flows between the lakes has and thence into the lower Darling river.

Engineering works have changed the function of the Menindee Lakes. The Lakes are now treated as critical storage, rather than natural ecosystems, wetlands and floodplains. In adhering to rules used to manage upstream storages, WaterNSW does not take ecological requirements of the lakes system into account. The cumulative impacts of management decisions on the wider floodplain ecosystem are ignored.

Multiple reports, including the Vertessey report, the Natural Resources Commissioner's report into the Barwon-Darling Water Sharing Plan and the Keelty report have all found alarming decreases in the amount of water flowing in to the Menindee lakes from the Barwon-Darling. The proposed introduction of Floodplain Harvesting licences upstream will exacerbate this, as will climate change.

Irrigation is permitted in tributaries feeding into the Barwon-Darling before critical water needs are met downstream. There is no fixed target for drought reserve to ensure critical water needs for lower Darling residents, communities, riparian or stock and domestic uses. This is in direct conflict with the statutory priorities of water management.

(b) the economic rationale and business case

The only available information about this project is the original business case. This business case has been refuted; we refer the Inquiry to the Wentworth Group of Concerned Scientists for more information.

(c) the environmental, cultural, social and economic impacts of the project

Cultural: Barkandji Native Title holders have concerns that Native Title, cultural and heritage issues are not being meaningfully considered. These concerns are not acknowledged or addressed by the Department of Primary Industries and Environment.

Environmental: Professor Richard Kingsford has released a series of observations about decline in migratory bird activity around Menindee lakes over many years. NCC directs the Inquiry to this work for more information.

(d) the impacts of climate change

NCC directs the Inquiry to the report by Professor Martin Mallen-Cooper and Brenton Zampatti for an explanation of the consequences of changing conditions and the impacts of flow storage and diversion on the Barwon-Darling.[xi]

The Western Weirs Project

The Western Weirs project has received $4.2m from the Restart NSW Water Security Fund to develop a strategic business case.

NCC regards this project as timely and important. The development of the Western Wiers has been piecemeal and their cumulative impact on the whole river system has not been considered. This project is an opportunity to reassess the Western Weirs and optimise their environmental and social values.

The review of the Western Weir structures should result in:

- A whole-of-system Operational Plan, with clear ownership, management, consultation and operational responsibilities and actions for each weir, to co-ordinate the river flow through the whole system.
- A co-ordination entity for the whole Western Weirs system will be needed
- An identified funding source for the maintenance of each weir
- A continuing program of review of the Western Weirs to optimise their natural river run requirements and to minimise unwanted saline intrusion from aquifers.
- The “Western Weirs” being considered as a single piece of infrastructure, to ensure that the river is understood as a whole, not just as individual weirs, or the consumptive needs of individual towns, agricultural needs or other uses. The entire weir system’s cumulative impact on the natural environmental flow of the river run must be in view
- Minimised barriers to ecological connectivity throughout the river and wetland system that are not deemed essential for stock and domestic supply, and existing authorised economic uses
- Public funds ear-marked for rural improvements beyond infrastructure works, such as measures to boost diversification, improved understanding of sustainable water and land management, and re-appraisal of sustainable levels of water extraction
- A system-wide review of barriers to fish passage and remediation requirements, by expert Fisheries scientists in the Department of Primary Industries
- Assessment and removal of unneeded weirs, a plan to refurbish weirs as needed for town supply or other purposes, with provisions for effective fish passage and a plan for conservation of riverine habitats, including wetland habitats such as the Talywalka region
- Particular assessment of unauthorised blockages to the Talyawalka Anabranch and Eastern Ephemeral Lakes and the removal of remaining blockages

Weir pools and "flowing river" habitat

Flowing habitat is most needed by native fish. The Western Weirs project is an opportunity to restore reaches of the river system and reduce the number of artificial pools. Narrow flowing sections of river can be better for fish, fishing and tourism than broad near-still pools. Still weir pools are ideal for carp and blue-green algae.

NCC hopes that the review will lead to the removal of some structures, the reduction of height of many weirs and the building of off-stream storages for town water.

References

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