

**Submission
No 102**

INQUIRY INTO FLOODPLAIN HARVESTING

Organisation: Nature Conservation Council of NSW

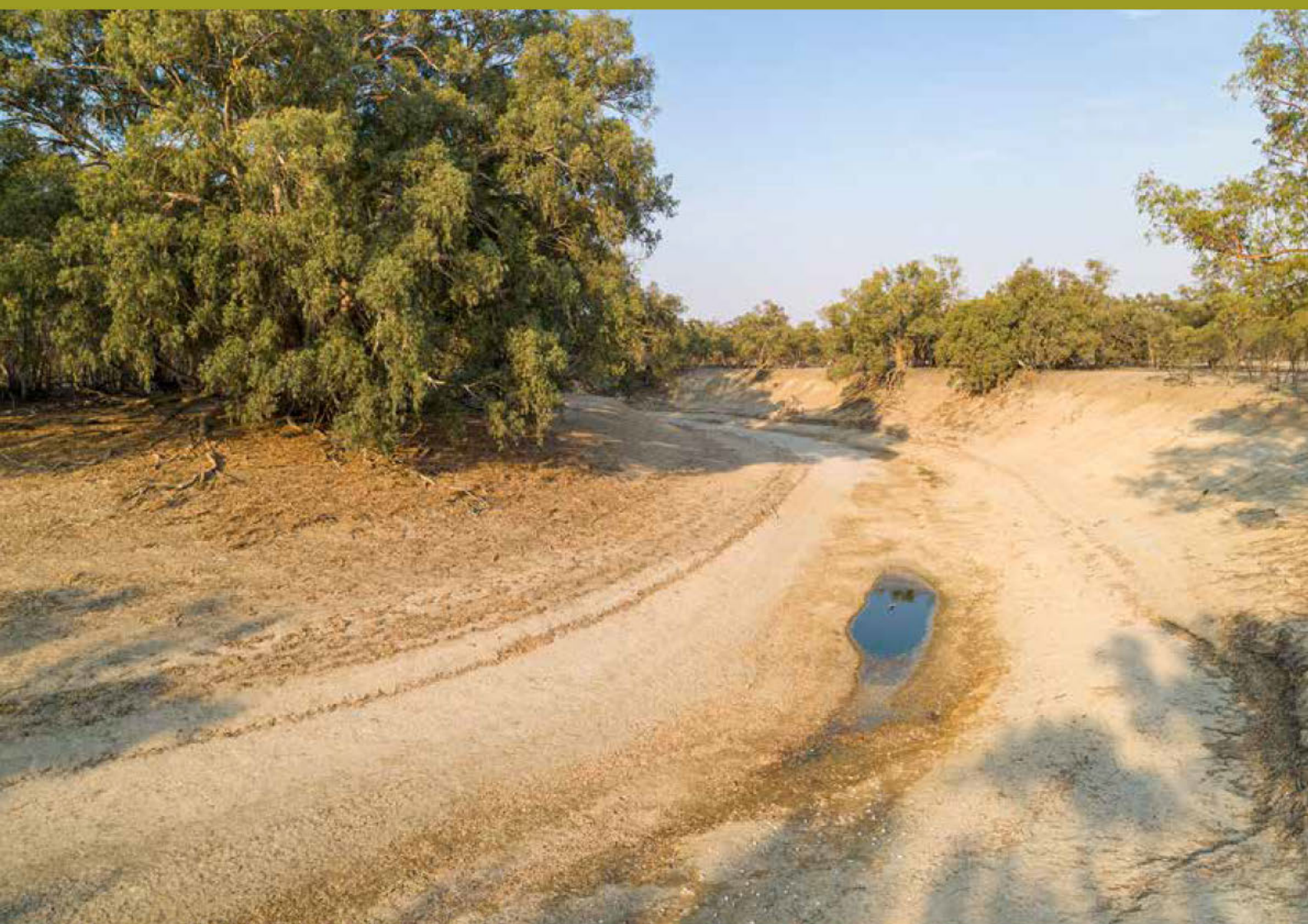
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Submission to the Inquiry into Floodplain Harvesting



Nature Conservation Council

The voice for nature in New South Wales



13 August 2021

Select Committee on Floodplain Harvesting
NSW Parliament House
Macquarie Street
Sydney NSW 2000

Via email: floodplainharvesting@parliament.nsw.gov.au

To the Committee Chair,

Submission to the inquiry on the Government's management of floodplain harvesting

The Nature Conservation Council of New South Wales (NCC) is the state's peak environment organisation. We represent over 160 environment groups across NSW. Together we are dedicated to protecting and conserving the wildlife, landscapes and natural resources of NSW.

NCC welcomes the opportunity to provide input to this inquiry. Water is a scarce resource in Australia and climate modelling indicates water resources will diminish further. Effective and sustainable management of our water resources is therefore a critical responsibility of the NSW Government.

Floodplain harvesting is not a legitimate form of water take. Floodplain harvesting is an unregulated and unlicensed activity and has led to total water take exceeding legal and ecologically sustainable limits. The conservation movement opposes the licensing of floodplain harvesting, but if it continues, it must be strictly regulated.

There has been significant growth in floodplain harvesting since the 1990s, despite the introduction of the 1995 Murray–Darling Basin Cap on extractions. Floodplain harvesting during flood events contributes to the over-extraction of water that is happening at other times. The practice reduces replenishing flows that provide connectivity along rivers and across floodplains

and has contributed substantially to steep declines in ecosystems health and the volume of water available to downstream communities.

Failure of the NSW Government to properly regulate floodplain harvesting, and the significant uncertainties around policy imperatives, have undermined the trust and confidence of river communities in the government's management of water. This inquiry is an opportunity to expose past failures and recommend actions that will restore faith in water management and revive river ecosystems. Any licensing of floodplain water take must guarantee ecologically sustainable water flows right through to the end of the system. The connection between rivers and their floodplains must be restored to keep critical ecosystems healthy. Anything less will have a devastating impact on river health and downstream farmers and communities.

NCC welcomes further discussion. Your key contact point for correspondence is Strategy and Operations Director Jacquelyn Johnson, available at _____ and on _____

Sincerely,

Chris Gambian
Chief Executive
Nature Conservation Council of NSW



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Summary of recommendations

- All floodplain harvesting rules must give effect to legislated priorities for water sharing; to deliver on the environmental health of water sources and the principles of ecologically sustainable development.
- All proposed reforms must address the ongoing denial of First Nations' rights to water, and be led by meaningful consultation with, and response to, the needs of Indigenous communities.
- Effective and enforceable safeguards that result in strict limit on take must be implemented in the regulation of floodplain harvesting.

Measurement

Recommendation 1. Conduct a comprehensive review of flood works and infrastructure to inform models used to determine levels of take under the following scenarios: including Cap, Plan Limits, Sustainable Diversion Limits and current conditions.

Recommendation 2. Establish a public register of aggregate information about the status of flood works and floodplain management plan implementation for every valley.

Recommendation 3. Put in place metering and telemetering of all forms of floodplain diversions *before* issuing licences to give confidence the licence volumes issued are accurate and the long-term extraction limits will be achieved. Licenced volumes should be updated based on actual measurements. There should be no exemptions to this rule at Ministerial discretion.

Recommendation 4. Develop a robust method of accounting for water impeded, diverted or spread by structures on floodplains that are outside of 'designated floodways' or do not fall under the proposed measurement policies into extraction limits.

Modelling

Recommendation 5. Develop models that are robust, independently validated and fit for purpose, based on best available evidence. Such models must:

- a. Use updated, real data from measurement that incorporates the flow of water from floodplains back to rivers.



- b. Be independently reviewed by an expert panel coordinated by the NSW Natural Resources Commission to ensure licence determinations keep extractions within legal limits. Transparency requires public reporting of all findings.
- c. Be accredited by the MDBA for compliance with extraction limits and other legislative requirements.

Recommendation 6. Evaluate the impacts of a revised floodplain harvesting policy on floodplain and river flows based on new, robust modelling (including within-valley and in downstream valleys). The evaluation must include implications for environmental, cultural, stock, and domestic requirements.

Recommendation 7. Use the best available projections to evaluate the impact of climate change on entitlement reliability, downstream outcomes and environmental impacts.

Recommendation 8. Revise Baseline Diversion Limits (BDL) provided by the MDBA that include floodplain harvesting data, and re-evaluate the Sustainable Diversion Limits (SDL) to ensure an Environmentally Sustainable Level of Take (ESLT).

Management

Recommendation 9. Implement within-valley and downstream flow targets, based on environmental, cultural, and basic landholder requirements, to ensure the 'priority of use' requirements under the Water Management Act 2000 are upheld before floodplain harvesting take can occur.

Recommendation 10. Incorporate active management to protect overbank environmental watering events through measures such as adjustable IDELS/TDELS and available water determinations for floodplain harvesting access.

Recommendation 11. Ensure any changes to floodplain harvesting licence determinations based on growth in use or updated information are not compensable.

Recommendation 12. Apply the following conditions to floodplain structures:

- a. Unlawful structures must not be granted licences and must be removed/modified within 12 months.
- b. Environmental impacts of lawful structures that significantly impact floodplain flows should be evaluated and major impacts mitigated.

- c. The legal status of all flood works and progress toward removing unlawful works should be published quarterly in an aggregate form for each zone within a valley.
- d. Licences should not be tradeable. They should remain with the structure and property for which floodplain harvesting has been approved. If the licence is no longer required, the structure should be removed and the licence cancelled.

Recommendation 13. Apply a clearly defined enforcement regime to all floodplain harvesting take and floodplain works. The Natural Resources Access Regulator must be sufficiently funded to develop the capacity to undertake this enforcement regime. Penalties for non-compliance of water laws must be increased as a deterrent.

Recommendation 14. Review floodplain harvesting policy regarding eligible works and the assessment of unregulated and groundwater property entitlements.

Water Sharing Plan rules

Recommendation 15. Year 1 allocation of 500 percent of entitlements should not be considered, nor should 500 percent 'carry over' rules.

Recommendation 16. Water sharing should proceed with annual accounting with less than 1ML unit share and no carryover.

Recommendation 17. If permanent trading is allowed, all trades must trigger a review to identify any environmental impacts.

Recommendation 18. Floodplain harvesting cannot be restricted only by Ministerial order tied to supplementary access.

1. Introduction

1.1 Australia is facing a water crisis

Safe and sufficient water is one of the substantive components of the right to a healthy and sustainable environment. Water pollution, water scarcity and water-related disasters impinge on the access of communities to many human rights. Vulnerable and marginalised groups experience a disproportionate denial of these rights.

Current settings do not treat life sustaining and indispensable water with care and respect. The UN has reported that across the globe far too much water is being polluted and used, destroying wetlands, inflicting catastrophic damage on freshwater ecosystems, and undermining human health, wellbeing and prosperity.¹

This is most certainly the case in Australia and in NSW. Chronic overallocation of water is threatening livelihoods, communities, and all life that depends upon healthy rivers. Global warming, which is making the climate drier and hotter, is exacerbating the problem and fundamentally changing landscapes and industries.



The Lower Darling River stopped flowing for months on end.

1.2 Environmental health as a priority

To conserve the biodiversity, ecosystems, and ecological processes dependent on the water resources in NSW, environmental water needs must be met before water is allocated to other uses. When water extraction is permitted, adequate water must remain in the environment to maintain biodiversity and ecological processes. Water resource planning and management must be firmly grounded in the best available science.

The Barwon-Darling River system is a case study in the impacts of over extraction. There has been a quantifiable drop in flows and a change from a connected to a fragmented river system.² The freshwater systems of the Darling-Baaka River are listed as endangered and include multiple threatened species. Insufficient flows that are a direct result of over-irrigation threaten the viability of the system, its wildlife and the communities that depend on the water for their livelihoods and wellbeing.³

1.3 Respecting and enacting Indigenous water-use rights in all reform

The UN recognises that in Australia the cultural rights of Indigenous peoples are being devastated by water infrastructure, such as dams and levees. Many such structures have destroyed or are threatening to destroy sacred sites.⁴

Australia's current system of water governance has excluded Indigenous people from accessing water, protecting sites of cultural significance and from participating in the water economy. This is unacceptable.

It is encouraging that discussions with First Nations communities and peak groups are taking place. All proposed reforms must address the ongoing denial of rights that has been typical of water management in NSW and include meaningful consultation with Indigenous communities and address their legitimate needs. First Nations communities, who are disproportionately disadvantaged under the current policy settings, must have appropriate water rights assured.



Mary Waits at the Brewarrina Weir. Ms Waits wants to see the better flows in the Barwon River.



Floodplain Harvesting near Trangie.

2. Inquiry terms of reference

2.1 The legality of floodplain harvesting practices

2.1.1 The objective of the legal framework for water management in NSW is environmental health

Water is a community-owned resource that must be distributed and used in compliance with the law.⁵

The NSW Water Management Act (2000) recognises that repairing the ecological health of NSW rivers is of first-order importance. The Act prioritises the health of water sources and the principles of ecologically sustainable development above all else. The core purpose of this law is to address the threats posed by overallocation and overuse of water resources to ecosystems and biodiversity.⁶

Water management practice in NSW is being found not to comply with this law. Various inquiries and media reports have over several years revealed repeated, systemic failures to uphold elements of the Water Management Act 2000 and the Water Act 2007 relating to protecting ecosystems and priority of use.

The NSW Independent Commission Against Corruption (ICAC) report published in November 2020 found that over the last decade the NSW Government had failed to uphold elements of the Water Management Act 2000, notably the Act's objects and Sections 5 and 9, which relate to, among other things, the protection of ecosystems, cultural values and 'priority of use'.

ICAC found, contrary to the Act, "the rights of productive water users were given priority over the rights of other stakeholders" and that "there was a clear alignment between the department's strategies and goals and those of the irrigation industry".⁷

2.1.2 Floodplain harvesting in NSW is, at best, an unlicensed and unregulated activity, and very probably illegal

Advice obtained by the NSW Government has identified that it is likely unlawful to take water via floodplain harvesting without an access licence:

“On balance, and while not without doubt, we think the better view is that generally, the taking of water in the course of flood-plain harvesting, without an access licence, from an unregulated river water source that is covered by a water sharing plan would constitute an offence.”⁸

This advice was a critical piece of information withheld from members of parliament when casting their votes on the Floodplain Harvesting Regulation disallowance in May 2021. The regulation gifted billions of dollars of water to irrigators who were otherwise not entitled to it. The failure of the government to disclose this advice was a failure of transparency and undermined stakeholder trust in the government's handling of floodplain harvesting.

The volume of water harvested on floodplains has grown significantly over recent decades. The management of floodplain harvesting events is complex. This complexity is compounded by the lack of:

- public information about the location and legal status of floodplain structures,
- reliable water diversion data because of a lack of metering,
- reliability or accreditation of the model, and
- different floodplain harvesting take estimates in various reports.

While it is well within the rights of the NSW Parliament to change the legal status of this practice, the history of floodplain harvesting in NSW and the precarious health of our river systems calls first for a deep review and thorough regulation. To legalise floodplain harvesting is to accept significant uncertainty and risk to water management outcomes.

2.1.3 Compliance with cap, and therefore the legality of any floodplain licence framework, is difficult to prove or disprove

Despite being more than 20 years into the reform process, there has been inadequate metering, monitoring and measurement of floodplain harvesting or floodplain structures. Specifically:

- There is no measured floodplain harvesting take data to feed into models or confirm modelled take.
- Data collected on water take through an irrigator behaviour questionnaire had major gaps.

- Existing modelling does not include return flows.
- No evaluation of the impacts of climate change or trade have been published.

These uncertainties mean any model for floodplain harvesting take cannot reliably identify environmental outcomes or downstream effects.

Reform of floodplain harvesting requires a guarantee that the licences issued will not impact expected outcomes under the Water Management Act 2000, the Commonwealth Water Act 2007, and the Basin Plan for affected, downstream communities and the environment.⁹ Given the unreliability of existing data, effective and enforceable safeguards such as flow targets are required to ensure outcomes are achieved on the river.

2.2 The water regulations published on 30 April 2021

The NSW Government proposed a legal framework for licencing the take of floodplain flow in five valleys of the northern Murray–Darling Basin of NSW in April 2021. This was the third attempt to have the NSW Parliament adopt unsatisfactory regulations.

Despite the two previous attempts and substantial community feedback, the new regulations did not address the key concerns expressed to the government by the community and stakeholders.

Had these regulations not been disallowed by the NSW Parliament on 6 May 2021, they would have constituted one of the greatest transfers of natural resources into private hands in Australia’s history. The disallowed floodplain harvesting regulations would also have denied water-dependent wildlife, ecosystems and downstream communities vital water just as the impacts of climate change started to be deeply felt in NSW, especially in the Far West.

The proposed licensing framework had serious flaws. The disallowed regulations provided for an increase in legal limits of take. Thousands of kilometres of illegal and high-risk structures would have continued to impede flows on floodplains. Under the proposed regulations, floodplain harvesting would have continued to threaten the health of the northern Murray–Darling Basin and its communities, including disproportionately disadvantaged Aboriginal Nations.

2.2.1 Weaknesses in the regulations published on 30 April 2021



Future regulation of floodplain harvesting must address the following shortcomings of the disallowed framework:

- **Licensed volumes would not have reduced extractions to within the legal limits** (the Cap, Sustainable Diversion Limit and Environmentally Sustainable Level of Take). The approach allowed irrigators to use their maximum cropping area between the years 1993-1999 to determine their licence share, rather than using the Cap baseline year. Very little evidence was available to ascertain this information. In most instances 1998 was the year with highest cropping rates. This was a very wet year in most regions. Looking at history of use in this way is unacceptable. The regulation also allowed for creating new floodplain harvesting licences based on historic take from groundwater sources. There is little scrutiny and clarity over the Commonwealth's proposed approach for revising BDLs and SDLs.
- **The hydrological modelling used to underpin the licence determination process was not fit for purpose.** The models relied on data from an irrigator-behaviour questionnaire (which received limited responses), Natural Resources Access Regulator surveys, irrigation industry consultant reports and statutory declarations by landholders. Satellite imagery was the key tool available to calculate the area of cropping. The models have not been transparently peer reviewed or accredited by the Murray-Darling Basin Authority.
- **The framework prioritised irrigation take over water for the environment,** river connectivity, Aboriginal needs, towns and stock, thus contravening the objects of the Commonwealth Water Act. There were no appropriate rules to:
 - protect downstream river flows,
 - manage overbank environmental flows on an event-basis, and
 - limit floodplain harvesting when those needs have not been met.
- **The licensing framework may have failed to satisfy the priority-of-use requirements of the Water Management Act (2000).** Water sharing must protect the water source and its dependent ecosystems and protect basic landholder rights. The

priority-of-use obligation is central to the management of water resources and must be given effect by all persons involved in the administration of the Act.¹⁰

- **Thousands of kilometres of structures on floodplains that intercept floodwaters were not addressed under the proposed reform.** This included roads and railway lines built on levees as well as other structures outside of ‘designated floodways,’ and structures which do not fall under the proposed measurement policies. Only a subset of all floodplain structures would have been regulated under the regulations. Floodplain harvesting structures should not be exempt from requiring a works approval.
- **The framework provided no transparency regarding the timing of removal of non-compliant floodplain structures.**
- **The disallowed regulations exempted rainfall runoff from licencing.** All rainfall runoff over the 10 percent harvestable right must be licenced.

Floodplain harvesting under the regulations gazetted on 30 April 2021 would have locked in declining river health, poor water quality and fish deaths. The proposed regulations risked depriving communities of clean water for drinking, domestic, stock, and cultural use.

2.3 How floodplain harvesting can be licenced, regulated, metered and monitored to meet the objectives of the Water Management Act 2000 and the Murray Darling Basin Plan

The conservation movement opposes the licensing of floodplain harvesting because it will place the health of the river system at serious risk and will not win broad community support.



The volume of water diverted into private storage is unsustainable.

However, if the government is committed to allowing this form of water take, it must be strictly regulated to minimise negative ecological, cultural and social impacts. An effective floodplain harvesting regulatory system must be based on the following:

- **Extraction volumes must be within legal limits** (including Cap, Plan Limits and Sustainable Diversion Limits). The volume of floodplain harvesting take must be included in the MDBA's Base Line Diversion Limit.
- **Harvesting should occur only when high priority needs are met**, including water for the river and its dependent ecosystems, stock, domestic, and cultural requirements, within each valley and in downstream connected valleys.

- **Harvesting should not compromise overbank environmental watering events or water quality.** Planned and held environmental water must be protected from diversion.
- **Harvesting must be metered and measured.** No licences should be issued until metering is in place. There should be no instances of exemption to metering by Ministerial discretion.
- **Models must be updated based on actual data and licence volumes should be re-evaluated.** Adjustments to licenced volumes due to improved data collection must not be compensable.
- **All unlawful and high-risk flood works must be decommissioned, and floodplain connectivity remediated.** Existing works must be assessed under the requirements of the Water Management Act 2000.
- **All overland flows impeded or intercepted by flood works must be accounted for within the compliance framework.**
- **Floodplain harvesting licences must not be tradeable.** The trading of other types of water licences within and between catchments has had perverse negative ecological and economic effects and must not be repeated.
- **Models used to determine licence volumes and account settings must be fit for purpose, fully transparent, independently reviewed and based on best available evidence.**
- **Regulations must be based on best available science and knowledge, and account for climate change risk and surface-groundwater connectivity.**
- **A fully funded compliance regime must be in place with regular public reporting against milestones.**

2.4 Recommendations for the regulation of floodplain harvesting

The regulation of floodplain harvesting in NSW must address in policy and practice the need for robust measurement, metering and monitoring.



Measurement

Recommendation 1. Conduct a comprehensive review of flood works and infrastructure to inform models used to determine levels of take under the following scenarios: including Cap, Plan Limits, Sustainable Diversion Limits and current conditions.

Recommendation 2. Establish a public register of aggregate information about the status of flood works and floodplain management plan implementation for every valley.

Recommendation 3. Put in place metering and telemetering of all forms of floodplain diversions *before* issuing licences to give confidence the licence volumes issued are accurate and the long-term extraction limits will be achieved. Licenced volumes should be updated based on actual measurements. There should be no exemptions to this rule at Ministerial discretion.

Recommendation 4. Develop a robust method of accounting for water impeded, diverted or spread by structures on floodplains that are outside of 'designated floodways' or do not fall under the proposed measurement policies into extraction limits.

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Recommendation 5. Develop models that are robust, independently validated and fit for purpose, based on best available evidence. Such models must:

- d. Use updated, real data from measurement that incorporates the flow of water from floodplains back to rivers.
- e. Be independently reviewed by an expert panel coordinated by the NSW Natural Resources Commission to ensure licence determinations keep extractions within legal limits. Transparency requires public reporting of all findings.
- f. Be accredited by the MDBA for compliance with extraction limits and other legislative requirements.

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Recommendation 7. Use the best available projections to evaluate the impact of climate change on entitlement reliability, downstream outcomes and environmental impacts.



Recommendation 8. Revise Baseline Diversion Limits (BDL) provided by the MDBA that include floodplain harvesting data, and re-evaluate the Sustainable Diversion Limits (SDL) to ensure an Environmentally Sustainable Level of Take (ESLT).

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- f. Environmental impacts of lawful structures that significantly impact floodplain flows should be evaluated and major impacts mitigated.
- g. The legal status of all flood works and progress toward removing unlawful works should be published quarterly in an aggregate form for each zone within a valley.
- h. Licences should not be tradeable. They should remain with the structure and property for which floodplain harvesting has been approved. If the licence is no longer required, the structure should be removed and the licence cancelled.

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Recommendation 15. Year 1 allocation of 500 percent of entitlements should not be considered, nor should 500 percent 'carry over' rules.

Recommendation 16. Water sharing should proceed with annual accounting with less than 1ML unit share and no carryover.

Recommendation 17. If permanent trading is allowed, all trades must trigger a review to identify any environmental impacts.

Recommendation 18. Floodplain harvesting cannot be restricted only by Ministerial order tied to supplementary access.

2.5 Any other related matter: the Healthy Floodplains Review Committee

The Healthy Floodplains Review Committee (HFPRC) was formed in 2015 with a three-year term to analyse and provide advice to DPIE-Water on issues raised by landholders regarding preliminary determinations of their floodplain volumetric entitlements.

The HFPRC was rolled over in 2018 and again in August 2021. NCC has had the same representative, Bev Smiles, through the life of the committee. NCC's experience of the HFPRC has been problematic.

2.5.1 Healthy Floodplain Review Committee issues

Transparency: A Deed of Confidentiality has prevented representatives engaging with their stakeholders. NCC representatives have not been required to sign such a document in any other government committee, to our knowledge.

The Healthy Floodplains Team in DPIE-Water committed to providing stakeholder group summaries of HFPRC meetings. No summaries have eventuated. Relevant stakeholders in determining entitlements and appeals did not have a genuine say or were left out altogether.

NCC would welcome an opportunity of a genuine public forum for everyone who has a stake in the issue to work together, and for the government to facilitate that process. The HFRC has not been a forum that achieved this.

Timing: HFPRC proceedings have been sporadic and often rushed. Intermittent meetings were held until 2020, when 17 meetings were held. The committee undertook an intensive series of 'out-of-session' decision-making activities in late 2020 due to a significant increase in submissions requiring review.¹¹

In 2021 at least 15 meetings were held up to 30 June. The NCC representative experienced immense pressure to complete assessments and make decisions regarding all five valleys for floodplain harvesting entitlements and rules in Water Sharing Plans by 30 June 2021. The HFPRC was informed that there was a large turnover of NRAR staff under-taking property inspections because of the time pressure. On-ground property data collection was reportedly

rushed, resulting in a swathe of submissions seeking the correction of information. The HFPRC is not a forum that has achieved meaningful and timely review and analysis.

2.5.1 Healthy Floodplain Review Committee assessment issues

There are several concerns held about the process of floodplain entitlement assessments.

The precautionary principle does not feature in the assessment process for floodplain harvesting on unregulated and groundwater only properties. NCC submitted three reports to the Deputy Secretary of DPIE-Water outlining reasons for not supporting consensus. The lack of a precautionary approach to assessing floodplain harvesting entitlements was of key concern in all cases.

The committee's decision-making process changed under pressure. Initially, the unregulated licence holders' volumetric conversion process included water taken under floodplain harvesting. The approach was contested by the irrigation industry and the policy changed to allow for additional water take to be assessed. Landholders also contested NRAR standard pump rates and the approach to assessment of temporary storages.

Changes to assessment processes led to major increases in entitlements. Two examples demonstrate a significant difference between the regulated and unregulated property assessment for floodplain harvesting and the difference in entitlement achieved through appeal.

- A property had been assessed as regulated floodplain harvesting. The property owner requested a change to the groundwater only assessment process based on the fact that the property did not hold a regulated licence prior to 2008. The reassessment resulted in a change of entitlement from 312 ML to 2,094 ML. The property had storage capacity for 1150 ML.
- Two properties had been assessed together as eligible for regulated floodplain harvesting. The property owner requested the properties be split off and one assessed as a groundwater only property. This change in assessment caused a rise in entitlement from 155 ML for the combined properties to 602.5 ML for the groundwater only property.

Other matters: An addendum report has been lodged by the NCC Representative to the HFPRC outlining other key concerns:



- The proposed level of floodplain harvesting entitlement is likely to capture a far greater volume of average annual flows than current modelling indicates. New climate modelling developed for Regional Water Strategies, including predicted changes to rainfall runoff and water availability over time, are not being adequately considered.
- The relationship between floodplain harvesting assessment and FPMs under the Healthy Floodplains Project is not clear. All works that need modification or decommissioning must be identified and removed from assessment of floodplain harvesting entitlement. This is a key issue for the outcomes of the Healthy Floodplains Project.
- The changes to water access in hydraulic models for floodplain harvesting assessment must be fed back to the floodplain management process in each catchment for the cumulative impact of the changes on flood flows, and any influence on floodplain scenarios, to be meaningfully understood.
- Significant issues were raised by the NCC representative on the HFPRC regarding modelling for the Macquarie and Barwon-Darling assessments relating to rainfall runoff data and changes. NCC has not supported the approach taken to assess floodplain harvesting entitlements in the NSW Northern Basin, including the changes to rainfall runoff input to the Border Rivers, Gwydir, Macquarie and Barwon-Darling models. These changes increased floodplain harvesting entitlements. The Namoi modelling is yet to be completed.

3. References

- ¹ United Nations, 2021, Report of the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, March 2021, <https://undocs.org/A/HRC/46/28>
- ² Mallen-Cooper, M & Zampatti, B, 2020 "Restoring the ecological integrity of a dryland river: Why low flows in the Barwon-Darling River must *flow*"
- ³ Mallen-Cooper, M & Zampatti, B, Ibid
- ⁴ United Nations, 2021, Report of the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, March 2021, <https://undocs.org/A/HRC/46/28>
- ⁵ Matthews K, 2017, Independent investigation into NSW water management and compliance, Interim report, NSW Government
- ⁶ Walker, B SC, 1999, "Murray-Darling Basin Royal Commission Report", Ch3 ESLT Interpretation, p131
- ⁷ ICAC, 2020, Investigation into complaints of corruption in the management of water in nsw and systemic non-compliance with the Water Management Act 2000
- ⁸ Alexander, H. 2021, NSW labels flood-plain harvesting 'legal' but internal advice suggests opposite, Sydney Morning Herald, May 26 2021
- ⁹ Wentworth Group of Concerned Scientists & Environmental Defenders Office, 2020, Submission to the NSW Government on the draft rules for floodplain harvesting licences to be included in water sharing plans within the Border Rivers Valley, <https://www.edo.org.au/wp-content/uploads/2020/12/Submission-to-the-NSW-Government-on-the-draft-rules-for-floodplain-harvesting-licences-to-be-included-in-water-sharing-plans-within-the-Border-Rivers-Valley.pdf>
- ¹⁰ ICAC, 2020, Investigation into complaints of corruption in the management of water in nsw and systemic non-compliance with the Water Management Act 2000
- ¹¹ One additional meeting was held between NCC staff and members and the Healthy Floodplains project manager, plus two meetings with modelers.