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SUBMISSION

Floodplain harvesting licence rules in the water sharing plans for the Macquarie Valley

Introduction

Healthy Rivers Dubbo (HRD) is a grass roots community network dedicated to providing a strong voice for our local rivers, aquifers and wetlands in the Murray-Darling Basin for the benefit of wildlife, plants and people. We pay our respects to Elders past and present, and acknowledge that this land was never ceded.

HRD are pleased to have the opportunity to comment on the establishment of rules in the water sharing plan (WSP) for floodplain harvesting (FPH) in the Macquarie-Wambool Valley. HRD accepts that FPH in NSW must be licenced.

Before we detail our comments on the proposed rules, there are some critical issues with FPH in general that, as environmental stakeholders and First Nations allies, HRD is obliged to comment on.

Plan Limit and Cap

There is not enough evidence for the public to accept DPIE Water's claim that total extractions in the Macquarie-Wambool are below the cap and the sustainable diversion limit (SDL).

In recent years, and coinciding with the latest round of FPH policy implementation, environmental stakeholder have started hearing water departments and agencies claiming that Cap limits and SDLs are definitions, not volumes as they were previously understood by the community as being.

We now are witnessing the volumes of FPH being added to the Cap limits, when previously FPH diversions have been considered as going to the environment.

Decisions made about reducing the volume of water to be recovered from irrigation for the environment in the Northern Basin in 2017 were made assuming the large volumes of water that have been taken by FPH were going to the environment.

The Macquarie-Wambool is an over allocated Valley. When Burrendong dam was completed in 1966/67 the yield of the Macquarie River was assessed as 406,000 ML. Too many licences have been

issued, and now the total allocation of regulated and supplementary flow water for the system is around 899,000 ML[1].

There is simply too much demand on the Valley for the volume of licences, which is why reliability is around 30% on average and dropping. This low reliability goes a long way towards explaining why irrigators can't access as much water as their entitlement.

HRD points to a recent report by consultants Slattery and Johnson that shows on farm capacity has increased by a factor of 2.4 times since 1994. This finding fits with our observations and local knowledge. We can see the increased levees as we drive west from Narromine. We know people who were flat out working during the 2017-2020 drought deepening on farm storages and increasing levees saying the land owner wants to hold 2 years water on farm when the drought breaks.

If on farm capacity has increased by 2.4 times since 1994:

- those earthworks weren't done for nothing
- there's been no increase in licences since then
- the capacity must be mostly for storing water from FPH diversion, or from water theft

This increase of on farm storage has helped the industry leave a lot of water in their general security and supplementary accounts, as they preference filling up on free, unmeasured water from the floodplain. Not having to access the general security and supplementary accounts is a major reason why irrigators don't access their full allocation - they don't need to.

There is no evidence to substantiate the new Cap limit in the Macquarie, and no access to the accredited Cap model reports.

ICAC found that DPIE Water has a practice of favouring irrigation in *"a misguided effort to redress a perceived imbalance caused by the Basin Plan's prioritisation of the environment's needs*"[2].

HRD considers that DPIE Water continues to treat First Nations rights to water and the environment like opponents to their endeavours by working out ways to increase Cap limits to suit extraction.

Environmental Outcomes

Macquarie Marshes:

NSW has a legal and moral responsibility to protect the integrity of the internationally significant Macquarie Marshes under the Ramsar Convention, Migratory Bird agreements, the Water Management Act 2000, the Water Act 2007 and the Murray Darling Basin Plan.

"The unregulated floods, particularly the significant large floods, are critical for sustaining this ecosystem of national and international importance[3]"

The Macquarie Marshes have reduced in size considerably since growth in FPH diversions.

[1] Johnson W J (2005) Adaptive management of a complex social-ecological system: the regulated Macquarie River in south-eastern Australia. Master of Resource Science Thesis, University of New England.
[2] ICAC Investigation into complaints of corruption in the management of water in NSW and systematic non-compliance with the Water Management Act 2000 – November 2020.
[3] (Kingsford and Thomas, 1995; Thomas et al., 2011; Bino et al., 2015b; Thomas et al., 2015

The Australian Government notified the Ramsar Secretariat in 2010 of a "likely change in ecological character of the Macquarie Marshes Ramsar site", stating a range of reasons based on scientific evidence, including changes in the flow regime; change in the extent and condition of the wetland vegetation communities in the southern part of the Macquarie Marshes Nature Reserve; change in extent and condition of wetland vegetation communities in the northern section of the Macquarie Marshes Nature Reserve; changes in the ecological character of the Wilgara wetland and; changes in colonial waterbird breeding. [4]

Connectivity:

The Macquarie-Wambool River has provided 21% of flows to the Barwon Darling-Baaka Rivers over the long term. Unique in the Northern Basin, The Macquarie-Wambool, Castlereagh and Bogan Rivers are winter and spring fed systems, and provide flows to the Barwon Darling-Baaka when other monsoon fed systems don't.

Records show that the Macquarie-Wambool connected to the Barwon (at a depth in the Lower Macquarie of at least 50cm) 9 years in 11 before Burrendong dam was built. Development of the valley means connection occurs 5 years in 11 now (as of 2017). Connections between major rivers represent important links for the movement of fish, transfer of energy, riverine biodiversity and providing a diverse aquatic habitat. [5]

HRD considers that DPIE is acting against its own laws by not applying the priority of use and cultural requirements in the Water Management Act 2000 to the application of FPH licencing and rules in the Macquarie-Wambool Valley by reducing allowable FPH diversions to secure environmental improvement for the Ramsar Macquarie Marshes, and increased connectivity with the Barwon Darling-Baaka Rivers.

Modelling

HRD strongly believes that the modelling used to determine FPH shares in the Macquarie-Wambool is not fit for purpose.

FPH licenced volume determinations will have a permanent detrimental impact on the environment, First Nations rights to water and basic landholder rights. The volume will also determine how large the wealth shift from the public purse to private and corporate hands will be when mortgageable, tradable, compensable licences are issued.

Climate change has not been factored in into the modelling, despite new robust climate/hydrologic datasets developed by DPIE last year for inclusion in the Regional Water Strategies (RWS). With these new datasets, DPIE has been able to come up with a 'base case' river system model.

The RWS states: *"just relying on our historical data to make water management decisions no longer represents the best course of action and that we have an opportunity to put plans in place to make sure we are prepared and resilient if there are future changes in the climate*."

[4] http://www.environment.gov.au/water/topics/wetlands/database/pubs/28-statement-of-reasons-3-2-notification-20100204.pdf
[5] Making the Connection: Designing, delivering and monitoring flows between catchments - making-connection.pdf

Against its own advice, DPIE Water have omitted climate change from FPH models. HRD will discuss the impact of neglecting climate change on FPH rule applications under "Discussion of Proposed Rules 1. Account Management" further down in the submission.

There is only a summary *Review of NSW Macquarie River Valley Model Build, Scenarios and Environmental Outcomes* report publicly available. The independent peer reviewers Alluvium only had access to reports, not the models themselves.

The Model Build Report identifies a lot of highly significant inaccuracies around the meters used to measure river diversions. There's a lack of real data on floodplain harvesting volumes, despite the FPH policy being in some form of development since 2008. In the Macquarie there's a +51% error rate/bias upstream of Narromine, which is extremely significant.[6]

In the Macquarie Cudgegong there is 10,254 ML of water being considered for tailwater/rainfall runoff exemption. HRD does not trust the modelling used to come up with that volume. If this significant volume of water is not brought into the FPH licencing framework, it won't be counted towards the SDL. This form of take would not need to be measured, just 'monitored' for assessment under the risk assessment in the Water Resource Plan. Any volume of rainfall runoff harvested above the 10% harvestable right must be licenced.

Return flows aren't assessed by the models used. Their only function is to attempt to calculate floodwaters captured, not those that return to the river or floodplain environment. There's a strong chance water that returns to the river or stays on the floodplain is being assessed as FPH diverted volumes.

As stated by Alluvium: "*We note the statements in the report that the uncertainty in individual FPH take estimates (leading to entitlements) is still significant and measurement data is needed to improve on that.*"[7] This statement confirms that the inaccuracy of the volumes determined as eligible for FPH diversion are significantly incorrect.

For such a critical determination that will seal the fate of many people and much wildlife to be dependent on the use of models that are not up to the job HRD considers to be a negligent act.

Discussion of Proposed Rules

1. Account Management

HRD strongly supports annual accounting for FPH with no "carryover"*

HRD has heard DPIE Water trying to explain that the environment would be better off under 5 year accounting and 500% carryover and we strongly disagree.

DPIE Water is only looking backwards at flood behaviour up to 2009, when they know floods will change their patterns due to climate change.

From the Macquarie Castlereagh RWS, the Valley can expect *"reduced frequency of floods, but when they do occur, significantly higher flood flows throughout the entire region, particularly during the summer-autumn period."*

[6] Model Build Report Table 3.7

[7] Alluvium Review of NSW Macquarie River Valley Model Build, Scenarios and Environmental Outcomes reports relevant to Floodplain Harvesting Policy implementation

And also from the same RWS:

"just relying on our historical data to make water management decisions no longer represents the best course of action and that we have an opportunity to put plans in place to make sure we are prepared and resilient if there are future changes in the climate."

HRD considers that under future conditions, 5 year with 500% "carryover"* will lead to greater FPH diversions than 1 year accounting. We find it consistent with ICAC findings (that DPIE Water favours irrigators over First Nations rights to water and the environment) that DPIE Water are trying to tell us that the environment will be better off under 5 year accounting, when they are knowingly not using climate change predictions in their models.

**N.B.* HRD rejects DPIE Water's use of the term "carryover" to describe entitlements for water that does not exist. HRD asks that DPIE Water come up with another term, such as credit accounting.

2. Initial Available Water Determination

HRD strongly supports an initial AWD of 1ML per unit share or less

Alluvium state in their letter reviewing the modelling reports that: "*We note the statements in the report that the uncertainty in individual FPH take estimates (leading to entitlements) is still significant and measurement data is needed to improve on that.*"

DPIE Water know that the volumes licenced are significantly wrong, therefore the precautionary principle must be applied and an initial AWD of no more than 1 ML per unit share be allowed.

FPH diversions have been denying First Nations rights to water and the environment benefit from first flush flows (particularly sharply felt at the end of a drought) for decades. By granting irrigators a generous 500% hot start, DPIE Water are neglecting their legal obligations under the WMA 2000.

3. Permanent Trade

HRD fully supports that permanent trade be restricted to management zones as proposed

While we would prefer FPH access licences not be tradable, we accept that it is a requirement under the Basin Plan that licences are tradable.

It is very important that trade be restricted as proposed:

- No new works located in management zones A or D as specified in the (as yet un-gazetted) Floodplain Management Plan for the Macquarie Valley Floodplain 2021.
- No modifications to works located in management zones A or D if the modification would result in an increase in capacity for that work.
- No new or modified works outside management zones A and D if the construction or modification would result in an increased rate of take for works located in management zone A or D.

4. Granting or amending water supply works nominated by a floodplain harvesting (regulated river) access licence

No new approvals or modifications that increase diversions

HRD would prefer that DPIE Water were very clear that there can be no growth in FPH diversions, as we feel that is not the case through this consultation process.

HRD considers that:

- no new works approvals should be issued for FPH in the Macquarie Valley
- no modifications of existing FPH works should be allowed if the capacity of diversions would be increased
- only maintenance of existing FPH works should be allowed if the maintenance means there would be no increased diversion of water
- all licences works must allow floodwaters to pass without diversion or significantly slowing the flow for times when diversions are not permitted

5. Access Rules

HRD supports option 2 - prohibiting access until downstream flow targets are met.

There are no clear, measurable protocols that DPIE Water can enact to ensure the priority of use provisions in the WMA 2000 are applied.

HRD recommends end of system flow targets be introduced in the Macquarie Cudgegong regulated WSP. Access rules for FPH in the WSP should specify that FPH diversion may occur only after modelling of a flow event shows that relevant flow targets will be achieved.

Flow targets must aim to achieve:

- Water sharing priorities under the WMA (ss. 5(3) and 9(1)), which include water for ecosystem health and basic landholder rights (stock and domestic; native title rights);
- Environmental needs based on NSW Long Term Watering Plans (LTWP) Environmental Water Requirements (EWR);
- Critical human water needs; and
- Cultural rights and objectives in addition to Native Title rights.

6. Active Management

HRD supports the use of active management rules to protect 100% of HEW

HRD supports the proposed use of active management rules to protect HEW from FPH diversion when Held Environmental Water (HEW) being used to create an overbank flow in the management zone where active management applies.

However, the rules do not go far enough. HRD considers rules that protect 100% of HEW from diversion even when active management conditions are below 100% must be implemented.

HEW can be present in the system not just from planned releases from storages, but also under supplementary access. It is reasonable to expect supplementary HEW flows would be vulnerable to FPH diversion if the rules aren't there to protect it.

7. Environmental Flow Rules

Active management rules must be extended to protect 100% of Active EWA

Just as HEW can be used to create overbank flows in the Gum Cowal, Lower Macquarie Upstream and Lower Macquarie Downstream management zones, so too can environmental water allowance sub account 1 (active EWA).

Active EWA and HEW are managed together in the Macquarie Valley, therefore rules that protect HEW must also protect active EWA.

HRD recommends extending the active management application that protects HEW so that active EWA is also protected.

8. Amendment provisions

HRD supports the proposed amendment provisions for the Macquarie Cudgegong regulated WSP.

Conclusion

DPIE Water have consulted with the irrigation industry regularly, and with environmental stakeholders rarely. HRD is concerned that the bias DPIE Water shows irrigation in the management of water in NSW, as reported by ICAC last November, is informing the granting of FPH licences and implementation of WSP rules.

The definition of Cap is being used as an elastic definition that provides the answer that suits the outcome desired.

By not reducing FPH diversions in the Macquarie, DPIE Water has sealed the fate of the declining Wambool River, Macquarie Marshes and Lower Darling-Baaka Rivers and the cultures, wildlife and communities they support.

Yours Sincerely,

Melissa Gray

Convenor

Healthy Rivers Dubbo