

Draft Floodplain Harvesting Monitoring and Auditing Strategy

Northern Valleys Irrigators Groups

Barwon Darling Water

Border Rivers Food and Fibre

Gwydir Valley Irrigators Association

Namoi Water

Macquarie River Food and Fibre

February 2019

About Northern Valleys Irrigators Groups

Member organisations:

- Barwon Darling Water* | Ian Cole (Executive Officer)
- Border Rivers Food and Fibre* | Tim Napier (Executive Officer)
- Gwydir Valley Irrigators Association* | Zara Lowien (Executive Officer)
- Namoi Water* | Jon-Maree Baker (Executive Officer)
- Macquarie River Food and Fibre* | Grant Tranter (Executive Officer)

The Northern Valleys Irrigators Groups is an informal arrangement of NSW Northern Basin irrigation groups that collaborate on common water related issues. These groups have collectively prepared this submission as the Healthy Floodplains Project is being implemented in each of these valleys.

Submissions provided by this collective group are more general in nature and do not preclude submissions by the individual organisations or their members pertaining to local issues.

Contents

- INTRODUCTION** 3
- GENERAL COMMENTS** 4
- SPECIFIC COMMENTS** 5
 - 1. Measurement approach and devices..... 5
 - 2. Treatment of rainfall 6
 - 3. Frequency of data collection and reporting..... 6
 - 4. Temporary storages 8
 - 5. First flush..... 8
 - 6. Verification 8
 - 7. Compliance..... 9
 - 8. Trade 9
- FURTHER INFORMATION**..... 10

INTRODUCTION

Each of the Northern Valley Irrigation Groups welcomes the opportunity to provide feedback to the Draft Floodplain Harvesting Monitoring and Audit Strategy. We collectively have prepared this submission to present an industry position.

We have prepared this submission based on the information presented as part of the public consultation process in December 2018. We are conscious that the Independent Review of the NSW Floodplain Harvesting Policy Implementation process by Alluvium is also concurrently occurring and is not due to report until April 2019. As there are several related and outstanding issues to be considered as part of the Peer Review, we think it would be prudent for the NSW Government to wait until the completion of that task before finalising the Floodplain Harvesting Monitoring and Audit Strategy. We subsequently, reserve the right to provide additional feedback following the completion of the Peer Review process.

We recognize the need to transition to more contemporary legislative instruments and the requirements of the Basin Plan. We have been working with governments to secure a means to incorporate floodplain harvesting access from a descriptive form of take into the licensing framework by firstly improving the estimate of take volumetric and then better accounting for it in the current frameworks. The process must be implemented in a fair and equitable manner with an aim to license “no more or no less” than what has been legitimately accessed since irrigation began.

Other forms of irrigation take have undertaken a similar reform process albeit 20-30 years earlier; firstly, transitioning descriptive area-based licences to a licenced volume via volumetric conversion that then required measurement and improving accuracy requirements over time. Floodplain harvesting should be no different. It must be recognised that the reason it wasn't incorporated earlier because was because it was the hardest to estimate with confidence.

Floodplain harvesting is a historical and unique form of take; it is site specific in terms of capacity (infrastructure) and opportunity (flood events), highly episodic and therefore variable on temporal and spatial scales. For example, the last significant multi-valley floodplain harvesting event in these valleys was in 2011 and 2012 in the lead up to and during the large-scale flood events, there has been no or very little floodplain events since. Any monitoring and audit strategy must recognise these factors, as well as align licence holder responsibilities with the uncertainties in determining their individual licences. The current draft Floodplain Monitoring and Audit Strategy does not do this, nor does it consider how floodplain take is a component of a range of valley-wide extractions that are required to be metered under the NSW Metering Framework.

We believe that all water take must be measured and that any Floodplain Harvesting Monitoring and Audit Strategy must contribute to re-building the community's and water-users confidence that everyone is receiving their fair share, no more and no less of a precious resource. With that in mind, we support a robust strategy that is achievable for both government and water users and benefits everyone, that is repeatable, auditable and can be verified, cost-effective and fit-for-purpose. We support the implementation of a risk-based strategy, that aligns uncertainty and risk in the context of the entire water management framework to the desired outcome, of measuring floodplain take volumetrically with confidence.

The measurement and accounting of any water take, should also be subsequently supported by a strong and proactive compliance framework. We support the implementation of a three-fold compliance strategy as part of monitoring floodplain take.

It has become apparent since the release of the draft Monitoring and Auditing Strategy that the inclusion of rainfall runoff into the licencing component of floodplain harvesting has not simplified the regulatory process but rather the opposite. The onerous monitoring requirements and inequities in incorporating an inherent farm-scale right into a tradeable entitlement in some areas of the state and not others, supports re-consideration of the treatment on licencing rainfall. As such, this submission recommends an approach for eliminating rainfall run-off from floodplain take.

GENERAL COMMENTS

We support the monitoring, compliance and auditing of floodplain take and note that this is the third submission to NSW Government on such aspects since the inception of the NSW Healthy Floodplains project.

We support a staged approach to monitoring and auditing by the NSW Government that recognises that while FPH is not new water, accounting for it volumetrically is a new process and that advances in technology will improve the accuracy over-time, as evidenced by the advances in measurement of other forms of take. We support any strategy that includes the following principles:

- Delivers shared outcomes: by providing benefits to regulators, industry and the community helping to ensure there is greater transparency for everyone;
- Provides irrigator choice: allowing for innovation and alignment of individual farm circumstances and needs;
- Fit for purpose: by aligning uncertainty, risk and benefits appropriately;
- Cost effective: the cost to implement for both the individual and the government, do not out-way the benefits;
- Achievable: that it is practical enough that it can be implemented;

- Repeatable: simple enough to become standard practice yet results in accurate results; and
- Auditable: regulators can review records and verify these via other data sources.

We support the alignment of the accuracy in determining individual farm-scale volumetric entitlements, with risk of long-term compliance of take with monitoring requirements including frequency, types of measurement and reporting.

SPECIFIC COMMENTS

1. Measurement approach and devices

- 1.1. With the majority of floodplain harvesting licencing recipients having a combination of water licences (regulated, unregulated and groundwater) that are known water sources with metered take, the remaining aspects of the irrigation farm water balance becomes easier to calculate. The more accurate the measurement of the storage and the other forms of take, the more accurate the floodplain harvesting component and recognising this must under-pin any future monitoring and audit strategy.
- 1.2. In floodplain harvesting accounting, a permanent water storage becomes the source of truth which can be supported by other verifiable sources of information. Technology currently is not reliable or cost-effective enough to measure take via any other means at current.
- 1.3. We support that at a minimum a gauge board, calibrated to a storage curve should be used to determine the volume of water within a storage. The option to use electronic devices, data logging and telemetry or other measurement devices should be at the individual's discretion. The adoption of such systems will not negate the need for self-assessment, with a component of self-reporting required to categorise each of the forms of water in a storage. A storage at any point in time could contain:
 - Regulated allocation (metered);
 - Unregulated allocation (metered);
 - Groundwater allocation (metered);
 - Harvestable rights;
 - Tail water;
 - Rainfall runoff including used irrigation water, potentially contaminated water and re-distributed water from within flood protection works; and
 - Intercepted overland flow – floodplain take.
- 1.4. Only the floodplain take component will be the unknown water source. Therefore, by calculating a farm water balance, with all other water sources are known an individual can determine the volume of floodplain take.
- 1.5. This volume and the water balance framework are then susceptible to external verification via other means as part of compliance activities (Section 7).

- 1.6. We recommend that the validation of on-farm storage curves and calibration of gauge boards is undertaken immediately as most permanent storages are dry or will be in coming months.

2. Treatment of rainfall

- 2.1. The inclusion of rainfall runoff into the licencing component of floodplain harvesting has created regulatory burden rather than removed it as proposed. The onerous reporting requirements are largely driven by the need to capture data around rainfall, not floodplain take.
- 2.2. The inclusion of rainfall runoff requires detailed review and should be considered as part of the Independent Peer Review.
- 2.3. This approach requires consideration of the significant state-wide implications which remain unresolved and ensures equity between water users regardless of whether they are on a designated floodplain or not.

3. Frequency of data collection and reporting

- 3.1. The draft monitoring strategy presented onerous data requirements and reporting frequencies which overstated the potential impact of floodplain take on a valley wide scale extraction, created unacceptable safety risks to landholders and attempted to over regulated on-farm operations which inadvertently would expose licence holders to non-compliance.
- 3.2. The overall objective of the draft Floodplain Monitoring and Audit strategy should be to confidently measure floodplain take volumetrically. Not to regulate individual behaviours and on-farm management procedures. As a result, we recommend re-aligning the strategy with its core objective.
- 3.3. This approach will result in a simpler strategy to implement for regulators and the licence holders and to verify whilst still meeting the requirement for licence holders to determine the volume of water intercepted from flowing across the floodplain.
- 3.4. This approach utilises the traditional floodplain harvesting take component being:

“Floodplain harvesting is a historical form of water take, whereby water flowing across a floodplain is impounded by floodplain works and collected and transferred into on-farm storage for irrigation use¹. This water is often referred to as overland flow as the water has broken the banks of a water source and is intercepted as it meanders back towards a water

¹ Hamstead Consulting Pty Ltd, *Evaluation of Alternative methodologies to measure/monitor floodplain diversions*, May 2013

source and is graphically presented on the following page in Figure 1 **Error! Reference source not found.**²”.

- 3.5. We recommend requiring a higher monitoring requirement over a short and defined period when floodplain harvesting events occur, rather than the need to repeatedly monitor when no opportunity presents itself (for example throughout the current irrigation season where there has not been any river inflows or rainfall). Monitoring more regularly during an event will aim to improve the reliability of calculation and minimise any data loss issues earlier rather than at the end of the season. We recommend that event calculations of floodplain take are reported shortly thereafter (within 6-weeks).
- 3.6. To assist this process, we recommend that NSW Government establish reporting periods for potential floodplain harvesting events that can be linked to known floodplain triggers or break-out points already represented within the flood inundation models, such as:
 - Stream gauge heights; or
 - Road closures; or
 - Water flowing in designated water ways.
- 3.7. We recommend that at the completion of the reporting period, all licence holders are responsible to prepare an on-farm water balance to calculate any floodplain harvesting take and report it via online portal (currently iWAS).
- 3.8. The reporting period will provide a specific time period for which reporting is needed when a floodplain event is likely to occur. This approach will negate the need for specified frequencies of storage information that appears tedious, may expose individuals to unintended non-compliance and is likely to create large volumes of data with no value to regulators.
- 3.9. Having said that, it is accepted that regular monitoring of storages throughout the irrigation season is best practice irrigation to assist an individual farm operation and should not be discouraged. We recommend storage monitoring and procedures to calculate farm water balances remains as a guideline for best practice rather than a licence condition.
- 3.10. Due to localised storm event creating small floodplain opportunity, in some instances that may not be currently known triggers, we recommend that licence holders are required to inform the Department of such events and provide evidence of localised floodplain event. This will trigger a self-notification reporting period, consistent with the requirements of a reporting period. For the licence holder to calculate their floodplain take.
- 3.11. The Department can then use these self-notification events to build a more thorough floodplain event notification system.
- 3.12. Following the completion of the water year, a licence holder is to report the total cumulative floodplain take volume, as part of their annual Farm Water Balance Declaration.
- 3.13. All reporting should be undertaken via an on-line portal (iWAS) that is security protected and time stamped. Supporting documentation can be uploaded and any on-farm records

²Bewsher Consulting, *Land surface diversions status report Final Report*, a report to the Murray Darling Basin Commission, July 2006

should be maintained for at least 5-years as with record requirements for the Australian Taxation Office.

4. Temporary storages

- 4.1. The requirements for operation and utilisation of temporary storages within the draft monitoring strategy were unnecessary and had the potential to undermine on-farm efficiencies and result in valley-wide non-compliance during the peak of a flood. The risk of encouraging changed behaviour is over-stated.
- 4.2. The total volume associated with temporary storage use is low. Most irrigators avoid the practice and have progressively improved their permanent storage efficiency to reduce their need to utilise such storages. Governments have also invested through on-farm efficiency works has helped industry to achieve these transitions of which the draft Monitoring Strategy appears to penalise people for participating.
- 4.3. With that in mind, each flood results in different challenges in managing water distribution on-farm and temporary storage use, is a tool that provided much needed breathing space during a flood.
- 4.4. We continue to support the monitoring of permanent storages as the source of truth for floodplain take.
- 4.5. Any licence holders that do not directly put water from a temporary storage into a permanent, should be required to provide alternate methods for calculating that volume of floodplain take i.e. the volume that they directly applied from a temporary storage onto an irrigation field.

5. First flush

- 5.1. We support the establishment of an accounting mechanism that recognises that licence holders have multi-jurisdictional responsibilities to prevent agricultural contaminants entering our river systems. However, we require further information on how the Ministerial order outlined in draft Water Sharing Plans in the Gwydir and Macquarie (and are assumed to be rolled out state-wide) will apply.

6. Verification

- 6.1. We support the continued development of technology to verify on-farm water usage. We recognise that due to the unique nature of floodplain harvesting, the range of potential water sources within a permanent storage and multi-purpose structures, there will always be a

requirement for self-reporting but that a variety of methods and tools can be used to verify these reports.

- 6.2. We note the Natural Resource Regulator (NRAR) will verify reported floodplain take using “other sources of data including remote sensing and aerial imagery”. We support this approach to ensure verification, although, the process should be seen to support water users to identify accurate data, rather than to target water users.
- 6.3. New advances in technology may be able to increase the accuracy and certainty of monitoring, whilst reducing the burden on licence holders and regulators. Further investment in new technology for monitoring is supported.

7. Compliance

- 7.1. We support a three-fold compliance strategy that includes volumetric assessment on the farm-scale, valley and the active compliance of floodplain infrastructure, noting that if an individual’s infrastructure capacity is not materially altered their ability to intercept and store floodplain water than how can they breach their account limits.
- 7.2. We recommend the adoption of an annual Farm Water Balance Declaration as a holistic compliance tool. The Water Balance Declaration would require individuals to declare volumetric take from their various water entitlements (General Security, Floodplain Harvesting etc) against consumptive use (e.g. planted area) and losses (evaporation, seepage). Declarations are to be defensible and are subject to Government audit where anomalies are identified. Water Registers, satellite imagery and meteorological records provide independent verification for all declarations.
- 7.3. We believe the combination of event specific floodplain harvesting reporting and annual Farm Water Balance provides community with the assurance that all water take is secured and accounted for without undue monitoring and reporting responsibilities for licence holders.

8. Trade

- 8.1. We do not support the trade the inherent rights such as rainfall and recommend that this should be excluded from the trading framework.
- 8.2. Furthermore, we maintain that if an individual breach their floodplain harvesting licence accounting limits and is actively seeking to trade in additional floodplain allocation but has not altered their floodplain works materially, then the licencing determination process has been inaccurate and should be revisited.

FURTHER INFORMATION

Contacts:

Barwon Darling Water	Ian Cole	0429722857	ian@darlingfarms.com.au
Border Rivers Food and Fibre	Tim Napier	0448713886	tim.napier@brff.com.au
Gwydir Valley Irrigators Association	Zara Lowien	0427521399	zara.lowien@gvia.org.au
Macquarie River Food and Fibre	Grant Tranter	0400849577	mrff@bigpond.com
Namoi Water	Jon-Maree Baker	0488925222	eo@namoiwater.com.au