

Responses to recent media claims regarding Floodplain Harvesting and the Healthy Floodplains Project.

Claims reported in “The floodplain dilemma” (The Land, 28 March 2019).

1. *“Conservatively as much as 3,000GL of water each overland flow event is being diverted off floodplains”*

This statement speculates on a volume of water take for “each overland flow event” without any basis and appears to be another suggested number, in a series of numbers being provided by various groups, including the Australia Institute. Interestingly, these suggestions have only occurred throughout the NSW Government’s caretaker period when the key body, the Department of Industry - Water could not respond or engage in the debate.

The fact is, the NSW Healthy Floodplains project being implemented by the Department of Industry - Water is updating processes and assumptions within the valley-wide models to ensure these reflect historical and current conditions and take more accurately. As a result of these improvements, the long-term average estimates for all forms of take included floodplain harvesting will be updated. The Basin Plan was written in such a way to allow new information to ensure it was using the best available science. To suggest a volume without this project being finalised is speculative and may prejudice the Independent Peer Review currently underway.

Furthermore, the volume of take during a floodplain event is often very small in comparison to the total volume of floodplain flows at the time. For example, the last significant basin wide floodplain harvesting event in the northern 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 then.

During this event in 2011 and 2012, upstream catchments in the northern basin like the Macquarie, Namoi, Gwydir and Border Rivers had gauged out of system flows of 4.3 million megalitres (likely to be greater due to the current granularity of the gauging network) making up 50% of the flows at Bourke for the same period. Another 1.2 million megalitres were measured flowing to the terminal wetlands of the Macquarie and Gwydir, water that historically always went to these systems and is required by the Water Sharing Plans to be delivered there rather than downstream. These flows delivered to downstream and to environmental assets, such as the Macquarie, marshes and the Gwydir wetlands occurred, despite there being multi-valley floodplain harvesting opportunity, restricted by infrastructure capacity like dam storages. To our knowledge, in NSW there is not 3,000GL of on-farm storage capacity to store such flows.

Notwithstanding the above, total flows of approximately 8.5 million megalitres were recorded at Bourke and during this time Menindee Lakes storages received peak inflows of 60,000 megalitres a day and the Lakes were surcharged, as the volume peaked well above full supply level, stopping at 115% or 2 million megalitres of storage, having released an estimated 4 million megalitres (measured from weir releases and downstream gauging).

Hence, when water is available to floodplain harvest, there is often high availability of water that through existing water sharing plan rules, physical infrastructure and limits on take, upstream catchments make their contribution to downstream catchment flows. How water managers and users then decided to use that water stored within the Menindee Lakes for example, is subsequently guided by the rules in the local water sharing plan, any other agreements and the users of that system.

2. *“Spotlight on big irrigators that capture the water due to the Menindee Fish kill”*

To suggest that floodplain harvesting has contributed to the Menindee Fish Kill and the town water crises is wrong. There has been no floodplain harvesting opportunity for nearly 2 years, prior to the lead up to the environmental event at Menindee. The last large scale floodplain opportunity was during flooding in 2011 and 2012, when parts of the north-west of NSW were in extreme flood. Coincidentally following this period, Menindee Lakes were over maximum capacity and surcharged.

The requirement for flood protection works does not discriminate between the size of the farm or the business structure. To suggest that big irrigators are the only irrigators that floodplain harvest ignores that there are flood development structures on irrigation, broadacre and grazing land across floodplains throughout NSW and that there are irrigators of all sizes. It must also be noted that there are four culminating factors that restrict the volume that can be harvested at any time, being the capability of on-farm infrastructure to intercept and store and the inherent opportunity, that is frequency and duration of flooding not just the size of the farm.

4. *“floodplain structures must be removed, and surface waters allowed to flow again”*

This statement ignores the fact that floodplain harvesting is controlled through work approvals process under Part 2 and Part 8 of the *NSW Water Act 1912* and this process provides regulation of floodplain protection structures.

To suggest removing legal structures that have a fundamental purpose to protect infrastructure, including roads, houses etc highlights a lack of knowledge of why they exist. Removal of those structures now would not return flows to the river, as there has not been any floods or opportunity for floodplain harvesting this year. What would happen when it does rain and a flood returns to these floodplain communities that would be without fundamental protections of their property?

5. *“the structures rob county of moisture”.*

Floodplain protection works are designed to exclude floods from specific areas, these being property or irrigation development. Therefore, they excluded land developed for irrigation from floodwater. This excluded water is then intercepted and redistributed into irrigation systems for use at a later time.

6. *“...traditionally 60% of the water for South Australia come from the Murray and 40% from the Darling”*

These statements are inconsistent with information contained within the Guide to the Basin Plan which state:

“the long-term average amount of water that would flow through the Murray Mouth if there was no development is about 12,500 GL/y. Although this is highly variable, on average, 83% of this would come from the Murray system and 17% would come from the Darling system.”

“Average inflows are 13,500 GL/y for the Darling and its tributaries, and 16,000 GL/y for the Murray and its tributaries upstream of Wentworth. However, due to the higher natural losses in the northern Basin, the outflow from the Darling at its junction with the Murray is only 2,400 GL/y (18% of inflows) compared with 11,800 GL/y (74% of inflows) from the Murray upstream of the junction”

The assertion that the Darling contributions to River Murray flows have been reduced due to floodplain harvesting is also incorrect. In the Living Murray Information Paper No. 10, as quoted by the Australia Institute, it is explained that the reduction in flows is due to a combination of factors including increased evaporation in the Lakes, regulating weirs and stock and domestic structure as well as water harvesting (surface and floodwater access) across the upper and lower Darling Rivers.

Furthermore, in northern systems that are episodic and ephemeral it is problematic to compare long-term averages of modelled flows with the recent actuals and assert the reason for the impact. Hydrological systems are more complex than that.

It is best to acknowledge that when water is available to floodplain harvest, there is often high availability of water in northern systems and that through existing water sharing plan rules, physical infrastructure and limits on take, upstream catchments make their contribution to downstream catchment flows. How water managers and users then decided to use that water stored within the Menindee Lakes for example, is subsequently guided by the rules in the local water sharing plan, any other agreements and the users of that system.

7. *“All water should be metered, assessed in relation to the Basin’s sustainability and if profits are made, the water paid for”.*

The NSW Healthy Floodplains project being implemented by the Department of Industry – Water aims to address these aspects by improving on the current system of regulation by implementing a new three-fold compliance approach. This includes monitoring of actual take at an individual and valley-scale rather than using modelled estimates, this will include monitoring of storages to determine volumes of take. Floodplain Harvesting works are not suited to metering, the work structures are difficult to implement flow metering due to the type of work and the inability to calibrate due to long periods of inactivity and access issues.

Water users in NSW pay fees and charges for water entitlements and usage for both the Ministerial Corporation (the Department) and the river operator (in regulated systems), as determined by the NSW Independent Pricing and Regulatory Tribunal (IPART). Components of fees are paid regardless on the yield from that entitlement or the usage and all are exempt from estimates of profit.

Any future floodplain harvesting volumetric licences will incur similar government fees and charges as determined by the NSW Independent Pricing and Regulatory Tribunal (IPART).

Claims reported in the Advertised open letter to the Hon. Niall Blair, Minister for Regional Water (The Land, 07/03/2019)

1. *“Huge amounts of water are being harvested from the floodplain in the North.”*

As the name suggests, floodplain harvesting occurs when water is flowing across a floodplain having broken out of the river or flood runner or towards a river or flood runner and therefore, requires there to be significant rainfall to initiate either scenario. The volume of take during a floodplain event is often very small in comparison to the total volume of floodplain flows at the time, for example, the last significant multi-valley floodplain harvesting event in the northern 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.

During this event, upstream catchments in the northern basin like the Macquarie, Namoi, Gwydir and Border Rivers had gauged out of system flows of 4.3 million megalitres (likely to be greater due to the current granularity of the gauging network) making up 50% of the flows at Bourke for the same period. Another 1.2 million megalitres were measured flowing to the terminal wetlands of the Macquarie and Gwydir, water that historically always went to these systems and is required by the Water Sharing Plans to be delivered there rather than downstream. These flows downstream and to environmental assets, such as the Macquarie, marshes and the Gwydir wetlands occurred, despite there being multi-valley floodplain harvesting opportunity, restricted only by infrastructure capacity as extended opportunity was available.

Notwithstanding total flows of approximately 8.5 million megalitres were recorded at Bourke and during this time Menindee Lakes storages received peak inflows of 60,000 megalitres a day and the Lakes were surcharged, as the volume peaked well above full supply level, stopping at 115% or 2 million megalitres of storage, having released an estimated 4 million megalitres (measured from weir releases and downstream gauging).

Hence, when water is available to floodplain harvest, there is often high availability of water that through existing water sharing plan rules, physical infrastructure and limits on take, upstream catchments make their contribution to downstream catchment flows. How water manages and users then decided to use that water stored within the Menindee Lakes for example, is subsequently guided by the rules in the local water sharing plan, any other agreements and the users of that system.

It must also be noted that there are four culminating factors that restrict the volume that can be harvested at any time, being the capability of on-farm infrastructure to intercept and store and the inherent opportunity, that is frequency and duration of flooding. The Healthy Floodplains project will establish additional restrictions on take via accounting rules to manage overall take. This project is updating processes and assumptions within the valley-wide models to ensure these reflect historical and current conditions more accurately. As a result of these improvements, the long-term average estimates for all forms of take will be updated. The Basin Plan was written in such a way to allow new information to ensure it was using the best available science. To suggest a volume without this project being finalised is speculative and may prejudice the Independent Peer Review currently underway.

2. *“Australia Institute research shows it has contributed to reduced flows in the Barwon Darling contributing to the Menindee fish deaths and town water crises.”*

To suggest that floodplain harvesting has contributed to the Menindee Fish Kill and the town water crises is directly misleading. There has not been any floodplain harvesting opportunity this year, prior to the lead up to the environmental event at Menindee. The last valley-wide

floodplain opportunity was during flooding in 2011 and 2012, when parts of the north-west of NSW were in extreme flood. Coincidentally following this period, Menindee Lakes were over maximum capacity and surcharged.

The development of regional and rural towns on the floodplains and along river-systems throughout all of Australia has changed the way water flows, there's no question of that. We've built roads and railways, towns, changed farming practices and regulated water for critical water needs as well as environmental and economic development. We all impact how river's flow and water flows across floodplains.

Therefore, its important that we balance any impact for whatever purpose within the agreed limits of the relevant frameworks such as the National Water initiative and the limits on take for irrigation established progressively over the last 30-years. NSW must incorporate this take into the current accounting framework so that they can maintain these agreements.

Having safe and secure drinking water is a right we all expect. More planning and preparation for extreme drought periods such as these must occur for regions at risk and all options considered by the responsible parties within the current water sharing frameworks.

Securing town water supplies for the communities along the Barwon-Darling is more complex than alleging floodplain harvesting take by upstream irrigators, particularly in years where there has been no floodplain harvesting opportunity and no new allocations for non-critical water supplies.

The last valley-scale floodplain events in 2011 and 2012, as outlined earlier had no bearing on the storage volumes currently in Menindee Lakes. The reason being, in 2016 and 2017, the Lakes peaked at 1,585 GL or approximately 91% of full capacity, and this was the last time there was significant system flows in any of the upper catchments. Whilst there was isolated opportunity in some valleys during these flows to floodplain harvest, the total volumes are estimated to be low as system flows largely remained within river capacity and were subsequently shared according to supplementary flow rules within each valleys water sharing plans. How water manages then decided to use that water stored that was delivered downstream and flowed into the Menindee Lakes, is guided by the rules in the local water sharing plan, any other agreements and the users of that system, not northern irrigators.

Since, these flows in 2016 and 2017, system flows in northern tributaries and subsequently into Menindee Lakes have been limited due to rain reduced rain and high temperatures. Irrigation and held environmental deliveries have kept most northern rivers flowing since this period.

3. *"Floodplain Harvesting is unregulated and not monitored or measured."*

Currently floodplain harvesting is controlled through work approvals process under Part 2 and Part 8 of the *NSW Water Act 1912*. This process provides regulation of floodplain protection structures. NSW Murray Darling Basin cap reporting requirements estimate valley-wide interception through valley-scale models.

The Healthy Floodplains project aims to improve on this system of regulation by implementing a new three-fold compliance approach. This includes monitoring of actual take at an individual and valley-scale rather than using modelled estimates, this will include monitoring of storages to determine volumes of take. Floodplain Harvesting works are not suited to metering, the work structures are difficult to implement flow metering due to the type of work and the inability to calibrate due to long periods of inactivity and access issues.

4. *"Licences are being issued that are free."*

The application for and maintenance of works approvals that current control floodplain harvesting activities incur fees and charges. The Healthy Floodplains project has provided Commonwealth funding which is covering the costs associated with the planning and assessment process for licencing.

Any future floodplain harvesting volumetric licences will incur government fees and charges as determined by the NSW Independent Pricing and Regulatory Tribunal (IPART).

5. *“Floodplain harvesting will be returned to historic level, but NSW will not provide evidence of what historic level is.”*

Floodplain harvesting licence is the last form of take to be brought into the accounting framework and it is essential for NSW to implement to ensure compliance with National Water Initiative principles, so they can better account for and manage take into the future.

The NSW Government is currently undertaking an Independent Peer review of the modelling approached utilised in the Healthy Floodplains project to update processes and assumptions within the valley-wide models to ensure these reflect historical and current conditions more accurately.

6. *“The MDBA proposes to increase the legal limit of water diversions by the new FPH licence volumes.”*

The requirement to establish volumetric licences for floodplain harvesting is not new water, it is referenced in every northern water sharing plan and must be implemented to align NSW requirements with key frameworks and legislation, being.

- The *NSW Water Act 1912* provided powers to license floodplain harvesting.
- The Murray-Darling Basin cap applies to all water diverted from inland NSW catchments and rivers and this includes floodplain harvesting works and extractions.
- The *NSW Water Management Act 2000* requires any water taken to be way of a volumetric licence in addition, the Act also requires such licensing to consider the functioning of floodplains (for example s.29, s30 or s.34).
- Floodplain Harvesting is acknowledged in Schedule E of the Murray Darling Basin Commission agreement attached the *Murray Darling Basin Plan 2012*.
- Schedule 3 of the *Murray Darling Basin Plan 2012* outlines estimates for floodplain harvesting.

The Healthy Floodplains project is updating processes and assumptions within the valley-wide models to ensure these reflect historical and current conditions more accurately. As a result of these improvements, the long-term average estimates for all forms of take will be updated. The Basin Plan was written in such away to allow new information to ensure it was using the best available science.

While the issuing of licences for historical forms of take is not without its challenges, as irrigators will be subjected to further regulation and costs, it will include the following benefits:

- Licensing will protect the environment and users from further growth, providing certainty to communities who rely on floodplain flows
- Restricting future growth will maintain and improve floodplain flows downstream, including any environmental assets.

- Regulation of access will be via a new three-fold compliance approach rather than the two options available today.
- Communities should have confidence that not only water volumes, but floodplain works will be monitored, with all farms on the floodplain (not only irrigation farms) will have their works inspected to ensure they are compliant to current regulations.

The Northern Valleys have supported implementation and are seeking finalisation as part of water resource planning because of these outcomes but also to better align the security of this water right with other entitlements already within the current regulatory framework to maintain the future of the industry and economic activity in our region.

7. *“The FPH licences will be compensable.”*

Compensation may be payable in certain circumstances and is detailed within the NSW Water Management Act 2000 (s.86-87). As outlined in the Act, there are no water access licences that do not qualify for compensation, with exception of those excluded supplementary licences (previously supplementary aquifer licences now expired) and a selection of specific purposes access licences.

We are not aware of any compensation claims or payments aligned to this section of the Act.

8. *“The FPH policy is inconsistent with Federal and State legislation.”*

The response that FPH is inconsistent with Federal and State legislation is a broad statement without factual basis. As stated above the licencing process is being undertaken consistently with five separate pieces of legislation or regulation and consistent with the MDBA CAP agreement. The volumetric conversion and modelling process are currently under peer review to ensure consistency with these requirements as well as, the methodologies used to determine floodplain harvesting licence volumes are robust. This comment suggests an attempt to prejudice the Independent Peer Review process currently underway.

9. *“The regulation and monitoring of FPH will make the problem worse.”*

The process of converting descriptive take into a volumetric licence that can then be managed at an individual and valley-scale when fully implemented will result in a more credible, modern, evidence-based system than currently in operation. Further delays in our opinion, contradicts the desired outcome to bring this historical form of take into the current accounting framework and will result in perverse outcomes for all stakeholders; industry, communities both within the project areas and further downstream.

Future regulation of access under a fully implemented Healthy Floodplains project will be via a new three-fold compliance approach rather than the two options available today.

Regulation will protect the environment and users from further growth by restricting it, providing certainty to communities who rely on floodplain flows and to maintain floodplain flows downstream, including any environmental assets.

10. *“The NSW Government is proposing self-reporting of monitoring.”*

The consultation period for the measurement and auditing strategy has only recently closed and we are not aware of the final position of government towards monitoring.

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.

We recommend:

- The installation of calibrated monitoring devices on storages to be used as the source of truth for FPH take;
- The calculation of farm water balances to determine FPH take from other known water sources;
- The establishment of reporting periods to collect data and report take shortly after an event; and
- The continued investigation into new technologies to assist monitoring and compliance activities.

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.

Claims reported in “Irrigator Blasts northern counterparts” (Barrier Truth, 8 March 2019)

1. *“They [northern irrigators] make no contribution to the Darling”.*

Upstream catchments of the Darling, cannot make flow contributions when their own systems are not flowing. The Namoi River has been on cease to flow since December 2018, the Gwydir has ceased in parts in March 2019.

WaterNSW outlined during drought presentations that northern rivers would have ceased to flow shortly after 2016 - 2017 water year, when rivers naturally flowed. Coincidentally, this was also the same period with Menindee Lakes peaked at 1,585 GL or approximately 91% of full capacity. Gwydir water users that year were on 78% general security allocation, whereas Lower Darling general security water users had 100%.

Since, 2016 - 2017 there has been very little dam inflows or natural system flows and it is carryover water being delivered that has kept rivers flowing to this point. For example, the Gwydir valleys system inflows in 2017-2018 were only 18% of the long-term average flows and currently, flows are on our drought of record and 2% of the long-term average.

When water is available during natural flow events, northern systems have rules within their water sharing plans to provide water to connected downstream systems. Flow analysis of 2011 and 2012 highlight how these rules provide significant flows to downstream catchment, whilst allowing for floodplain harvesting to occur. Unfortunately, there has not been any flood or unregulated events in northern systems this year to contribute to downstream catchments or communities.

2. *“Water siphoned from the floodplain was used to grow cotton, while his members had no allocations, despite their adherence to the rules”.*

As the name suggests, floodplain harvesting occurs when water is flowing across a floodplain having broken out of the river or flood runner or towards a river or flood runner and

therefore, requires there to be significant rainfall to initiate either scenario. 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.

Northern irrigators are also on zero general security allocations, with exception of small allocation for Border Rivers Class A water users which align to high security entitlements.

3. *“The majority of that water must have been captured off the floodplain, with no regulation, monitoring or control”.*

As outlined, there has not been any floodplain harvesting opportunity this year due to low rainfall.

Floodplain harvesting is a legal form of take controlled through work approvals process under Part 2 and Part 8 of the *NSW Water Act 1912*. The process of converting descriptive take into a volumetric licence so that it can be consistent with the *NSW Water Management Act 2000* and can be better managed.

Floodplain harvesting is not new water, its access is historical and is not theft.

4. *“The growers in the north can’t afford any meters even when the government is paying for them”.*

Northern NSW irrigators support having accurate, reliable and cost-effective measurement of water take whether it is off the floodplain or from direct river or groundwater sources. Most irrigators already adopt the most accurate commercial systems available today.

The NSW Metering Framework will ensure that 95% of all direct river and groundwater take will be metered across the state, this process is not government subsidised.

Measurement of floodplain water is more complex than direct river or groundwater take and traditional measurement devices may not be reliable or cost effective. Adapting new technologies such as satellite analysis supported through local data, provide an excellent opportunity to seek accurate, reliable and cost-effective floodplain monitoring and trials are underway to explore these options but may not be available immediately.

5. *“Murray irrigators are paying for the increase extractions in the north”.*

Northern water sharing plans provide the basis for sharing water within valley and providing connectivity to any downstream catchments. Under the Murray Darling Basin Plan 2012, northern catchments are to contribute additional water for the environment to meet shared environmental outcomes, as far as Wilcannia.

These arrangements provide mechanisms for flows to reach Menindee Lakes, as evidence by inflows in 2011-2012, 2016-2017 and the recent northern connectivity event in 2018, which was created using held environmental allocations. How water managers decide to use the water which flows downstream and then stored within the Menindee Lakes, is subsequently guided by the rules in the local water sharing plan, any other agreements and the users of that system and are not in the remit of northern irrigators or their water sharing plans, not northern irrigators.

6. *“Two million bales of cotton harvested from the north this year, during a drought, and that would have taken three-million megalitres. 95% of that water was stolen, if they didn’t take that water it would be in Menindee”.*

The final yield of this year’s cotton crop will not be known until it is picked, which is not until April or May this year. Previous benchmarks or predictions are not appropriate given the seasonal conditions and the fact many irrigators have not been able to fully water their crops.

This statement infers that 2.85 million megalitres has been stolen by northern irrigators, which is untrue.

Water usage by cotton growers in the northern valleys has been from carryover water from previous allocations, largely from 2016-2017 when the river systems were flowing (and Menindee Lakes almost filled) or from groundwater allocations. Calculations from the NSW Water register for Barwon, Gwydir, Border Rivers, Lower Namoi and Macquarie highlight that 151,000ML of water has been delivered from storages and 249,000 ML pumped from groundwater for use by irrigators this season on a range of crops including, citrus, pecans, Lucerne, wheat, hemp and cotton.

While some irrigators had water on-farm left over from the previous water year. On average, most cotton growers have been one or three water’s short of the plants total water requirement this season.

As outlined earlier, there has not been any floodplain harvesting opportunity this year due to low rainfall. Floodplain harvesting is a legal form of take controlled through work approvals process under Part 2 and Part 8 of the *NSW Water Act 1912*. The process of converting descriptive take into a volumetric licence so that it can be consistent with the *NSW Water Management Act 2000* and can be better managed.

Floodplain harvesting is not new water, its access is historical and is not theft.

Furthermore, the Natural Resources Access Regulator has undertaken a series of visits around the state regarding compliance issues and their most recent report activities report is available [here](#), which reveals the location of compliance activity by water sharing plan region.

Industry supports a strong compliance regime and if someone suspects illegal take they should report it to the regulator, so they can investigate it.

8. *“They have taken 7.5 billion dollars from our economy, so they can grow one billion dollars’ worth of cotton”.*

As outlined earlier, water use figures and crop production are not correctly calculated or estimated and hence, this claim is also incorrect. Notwithstanding, water sharing plans effectively provided water to Menindee Lakes during the last northern system inflows in 2016 – 2017, how water manages decide to use the water which flows downstream and then stored within the Menindee Lakes, is subsequently guided by the rules in the local water sharing plan, any other agreements and the users of that system and are not in the remit of northern irrigators or their water sharing plans, not northern irrigators.

9. *“MIA are paying \$500/ML for water and wold go broke trying to grow a fraction of the cotton being produced in the north”*

Northern water prices for temporary allocation of general security water have also peaked this season \$500/ML, the price per megalitre of water paid for cotton production often fluctuates throughout the season and peaks as growers attempt to secure higher yields and can mimic the international cotton price.

Historically the northern cotton crop was the core growing region for the national production. In recent years, we've seen the area planted to cotton expanded into other parts of NSW and other states, for example this year, northern NSW will grow approximately 72,000 of irrigated ha this year while southern areas will grow about 60,000ha.

10. *“50-kilometre-long channels to put water in their dams with \$13 Billion of tax payers' funds”.*

This statement infers that irrigators have constructed 50 kilometre long channels with the \$13 billion of tax payers funds, set aside to implement the Murray Darling Basin Plan 2012 and is fundamentally incorrect. In fact, most northern NSW valleys have not had access to on-farm infrastructure funds as part of the water recovery programs.

Furthermore, this comment potentially refers to current legal action regarding infrastructure work in Queensland and therefore, it is inappropriate to comment while these proceedings are underway.

Claims reported in “River debt means Barwon-Darling recovery likely to lag rain’s return” (Sydney Morning Herald 15 March 2019)

1. *“2000 billion litres last year, or almost 200 times the flow in Wilcannia on the Darling River in the far-west”.*

Calculations from the NSW Water register for Barwon, Gwydir, Border Rivers, Lower Namoi and Macquarie highlight that 151,000ML of water has been delivered from storages and 249,000 ML pumped from groundwater for use by irrigators this season on a range of crops including, citrus, pecans, Lucerne, wheat, hemp and cotton.

The only allocations made available this year have been to critical water users, including high security, stock and domestic users and town water supplies in these valleys.

Environmental water managers have also delivered 215,000 megalitres of environmental water to targeted sites as well.

2. *“Irrigators are owed 635 billion litres [in the Barwon-Darling]”.*

This statement refers to cap credits, occurred when actual extraction is below the agreed limit Murray Darling cap on extraction. NSW Water Management under the *NSW Water Management Act 2000* set water sharing plan limits, below each valleys cap and therefore the difference between plan limit and cap has resulted in all NSW valleys being in credit under this process.

It's important to note that cap credit accounting is about to become obsolete, with the move by the Authority to shift the management/compliance to accounting against the Sustainable Diversion Limits later this year and all existing Cap credits will be extinguished.

**Claims within article “The Economic Black hole of Floodplain Harvesting”
(Coonamble Times, letter to the editor 14 March 2019) also seen in The Land, letter to the editor**

1. *“The Nationals and Water NSW has selected the winners”.*

The implementation of Floodplain Harvesting licences was initially a commitment of the NSW Labor Government as part of the first round of water sharing plans in NSW in the early 2000's to be implemented by the Department of Land and Water Conservation. Today, the coalition government of Liberal and Nationals oversees the Department of Industry – Water with the Murray Darling Basin Authority having dependant over-seeing role (accreditation).

Water NSW are not involved in either the determination, management or operation of floodplain harvesting, except for assessing any future floodplain development applications.

2. *“the Gwydir River is going to receive 1,000,000ML of floodplain water, the Macquarie, 400,000 – 600,000ML....indicatively it could exceed 4,000,000ML”*

As the name suggests, floodplain harvesting occurs when water is flowing across a floodplain having broken out of the river or flood runner or towards a river or flood runner and therefore, requires there to be significant rainfall to initiate either scenario. The volume of take during a floodplain event is often very small in comparison to the total volume of floodplain flows at the time.

Floodplain harvesting licence is the last form of take to be brought into the accounting framework and it is essential for NSW to implement to ensure compliance with National Water Initiative principles, so they can better account for and manage take into the future. All other licences have been converted from descriptive forms of take into the current accounting framework, this process is similar.

The NSW Government is currently undertaking an Independent Peer review of the modelling approached utilised in the Healthy Floodplains project to update processes and assumptions within the valley-wide models to ensure these reflect historical and current conditions more accurately.

To speculate on the volume to be licenced and/or possibly allocated as referenced here, appears to be prejudice the outcome of the independent peer review.

3. *“Floodplain flows...all of which would originally head to downstream communities or environments”.*

The development of regional and rural towns on the floodplains and along river-systems throughout all of Australia has changed the way water flows, there's no question of that. We've built roads and railways, towns, changed farming practices and regulated water for critical water needs as well as environmental and economic development. We all impact how river's flow and water flows across floodplains.

Therefore, its important that we balance any impact for whatever purpose within the agreed limits of the relevant frameworks such as the National Water initiative and the limits on take

for irrigation established progressively over the last 30-years. NSW must incorporate this take into the current accounting framework so that they can maintain these agreements.

The requirement to establish volumetric licences for floodplain harvesting is not new water, it is referenced in every northern Water Sharing Plan and must be implemented to align NSW requirements with key frameworks and legislation, being.

- The *NSW Water Act 1912* provided powers to license floodplain harvesting.
- The Murray-Darling Basin cap applies to all water diverted from inland NSW catchments and rivers and this includes floodplain harvesting works and extractions.
- The *NSW Water Management Act 2000* requires any water taken to be way of a volumetric licence in addition, the Act also requires such licensing to consider the functioning of floodplains (for example s.29, s30 or s.34).
- Floodplain Harvesting is acknowledged in Schedule E of the Murray Darling Basin Commission agreement attached the *Murray Darling Basin Plan 2012*.
- Schedule 3 of the *Murray Darling Basin Plan 2012* outlines estimates for floodplain harvesting.

The Healthy Floodplains project is updating processes and assumptions within the valley-wide models to ensure these reflect historical and current conditions more accurately. As a result of these improvements, the long-term average estimates for all forms of take will be updated. The Basin Plan was written in such away to allow new information to ensure it was using the best available science.

4. *“The total value of floodplain licences in the northern basin is \$40 billion”*

The NSW Government is currently undertaking an Independent Peer review of the modelling approached utilised in the Healthy Floodplains project to update processes and assumptions within the valley-wide models to ensure these reflect historical and current conditions more accurately.

To speculate on the volume to be licenced and/or possibly allocated as referenced here, appears to be prejudice the outcome of the independent peer review.

As with other removal of other water rights from land rights, the valuation of floodplain harvesting will result in inherent land value being attributed to a separate water right. The value of that will be determined by the market at the time.

5. *“water over and the new floodplain licences allocations would have to be returned to the environment...the cost is going to be greater than \$40 billion”.*

The Basin Plan has set Sustainable Diversion Limits for the Murray Darling Basin, these limits include estimates for floodplain harvesting, it is these estimates that the NSW Healthy Floodplains project aims to update processes and assumptions within the valley-wide models to ensure these reflect historical and current conditions more accurately.

The Murray Darling Basin Authorities website outlines progress towards recovery, stating:

“The Murray–Darling Basin Authority estimates that the contracted water recovery in the Murray–Darling Basin, as at 30 September 2018, is 2,118.4 Gigalitres per year.

- *In addition 0.5 GL/y of efficiency measure entitlements have been registered with Commonwealth Environmental Water Holder (CEWH).*
- *Following the amendments to the Basin Plan, the target for water recovery is 2,075 GL/y plus 450 GL/y of efficiency measures by 2024. The Australian Government is targeting at least 62 GL/y of efficiency measures entitlements by 30 June 2019.*
- *Local water recovery still required is 29.5 GL/y, mostly in the northern Basin, plus 61.5 GL/y of efficiency measure entitlements.”*

Local recovery gaps are known to be in the NSW Border Rivers and Namoi Valleys.

Improving the accuracy, understanding and management of floodplain harvesting does not detract or amend the environmental water requirements for valleys, if new information changes the volume of take that is currently modelled. Primarily this is because:

- It is not new water, it is a long-term historical practice whereby take is known to occur and flow paths have been already altered;
- The model never assumed that the water now being estimated as floodplain harvesting, either reached environmental assets or contributed downstream as it was classified within the model as ‘within valley losses’.

Therefore, to suggest that the implementation of floodplain harvesting licencing will then cost the Australian taxpayer assumes that the Australian Government will want to recover floodplain harvesting licences to bridge the gap between any Sustainable Diversion Limits and Baseline Diversion Limits for the Basin Plan.

Currently there is no market information or value of floodplain harvesting licences, with such uncertainty it is unlikely that the Australian Government will seek these entitlements, as a recovery option when there is more knowledge on other entitlements. To date the Australian Government has been reluctant to seek entitlements that are not managed via regulating structures and largely have recovered regulated entitlements. As floodplain harvesting licences will be more like unregulated entitlements, it would suggest that they are unlikely to be considered at this point.

Useful links:

NSW Water Management Act 2000: <https://www.legislation.nsw.gov.au/#/view/act/2000/92>

Commonwealth legislation

NSW Department of Industry – Water website – floodplain harvesting = <https://www.industry.nsw.gov.au/water/plans-programs/healthy-floodplains-project/harvesting>

WaterNSW management of Menindee Lakes: http://www.water.nsw.gov.au/_data/assets/pdf_file/0018/548010/Communique_Management_Menindee_Lakes_Issue9_4May2012.pdf

Water NSW valley critical valley drought reports:

<https://www.waternsw.com.au/supply/drought-information/regional-nsw/gwydir-valley>

<https://www.waternsw.com.au/supply/drought-information/regional-nsw/namoi-valley>

<https://www.waternsw.com.au/supply/drought-information/regional-nsw/macquarie-valley>

<https://www.watersw.com.au/supply/drought-information/regional-nsw/lower-darling>

NSW Water Allocation reports – <https://www.industry.nsw.gov.au/water/allocations-availability/allocations/statements>

NSW Water Register – to search entitlements, allocations and usage by water sharing plan region <https://waterregister.watersw.com.au/water-register-frame>

Natural Resources Access Regulator <https://www.industry.nsw.gov.au/natural-resources-access-regulator>