



03/08/2020

To the Regulation Committee,

Please find below SRI Responses to Questions on Notice from the 2 July 2020.

INQUIRY INTO IMPACT AND IMPLEMENTATION OF THE WATER MANAGEMENT (GENERAL) AMENDMENT (EXEMPTIONS FOR FLOODPLAIN HARVESTING) REGULATION 2020

Question 1:

The Hon. SAM FARRAWAY: How much water do you think is taken during a typical floodplain harvesting event?

Mr HORNE: What is a typical floodplain harvesting event? Without any proper monitoring and metering it is impossible for anyone to give you a really clear answer.

Mr HARE: I could attempt to answer that. Going back to the 2017 compliance review that I mentioned earlier, it actually gives an average annual take in the northern and southern basin. It looks at an average take from 2012-13 to 2015-16. If you go by the 85 per cent compliance within the southern basin and then you look at the northern basin where you have about a 30 per cent compliance—and this is not part of our supplementary submissions, I just thought I would give your question. It looks as if there is about 3,000 gigalitres in this four-year period on average of unmetered take in the northern basin. That is off the 2017 MDBA compliance review. I can flick that through later on if that suits.

The CHAIR: We will treat that as a question on notice. The secretary will get in touch with you to and you can provide that as a response.

Answer:

For context, the levels of compliance and metering is important in order to quantify the amount of water extracted by way of floodplain harvesting in a typical “event”.

SRI are working on various approaches to validate and verify the amount of unaccounted extraction in the northern basin. One publicly available document which SRI relies upon is the MDBA’s Water Compliance Review (**WCR**) which was published in November 2017, a copy of which is attached herewith.

At page 41 of the WCR it lists average annual takes over the years 2012/13 to 2015/16 (separating metered and unmetered).

It notes that Southern Basin is 98% compliant with metered actual take from watercourses. SRI has no reason to doubt this estimate because it is its members experience that everyone in the southern basin have AS4747 standard meters. Non-compliance is extremely low and it is very closely monitored by NRAR.

The WRC estimates that 34% of average annual take is unmetered (in NSW) and 68% is unmetered in Queensland.

The Queensland average annual take was 1,266GL. As such, the unmetered portion is estimated to be 861GL.

The NSW average annual take was 6,313GL. 34% of this is 2,146GL.

The sum of 861GL and 2,146GL is **3,007GL** (average annual take). This is the number referred to by Mr Hare.

Even if this figure was adjusted for the very low estimates of unmetered take in the southern basin, the change would be relatively small.

The WCR also uses the following case study to compare the standards of metering in northern and southern valleys, which may assist the Committee:

Case study: old versus new meters

On the field trip to the Murrumbidgee and Barwon-Darling within NSW, a number of different metering situations and approaches were observed.

The Murrumbidgee river pumpers have benefited from the installation of modern Magflow meters with telemetry, through a recent Australian Government funding program (in return for an agreed level of water savings). While the roll out of the program could have been improved in some areas (it was rolled out quickly, and there are some examples of poor installation), by and large the valley is now accurately metered in real-time, with irrigators able to access this valuable data. Compliance is much easier as a result.

By contrast, in the Barwon-Darling, metering of offtakes is by so-called 'time and event' meters. This technology dates back to the mid 1990s and is, according to all the people spoken to, quite inaccurate. Anecdotal estimates were that these meters under-measured the volume of water pumped by 15% or more under high flow conditions. Furthermore, they send information to data loggers on site that can only be read manually by one of only two ageing laptop computers available state-wide with the required, now obsolete, software.

There were a range of views on the history of why the meters were there and the implications of replacing them, and clearly stakeholders need to be consulted in any replacement program. However, it is time that metering in the Barwon-Darling is modernised. It is understood that a recently announced NSW program will address this.

Question 2:

The CHAIR: You said you have some information that you want to present. Is that the same information that Darcy is going to provide to us?

Mr BROOKS: No. It is quite separate information that is not quite complete. The volume of water that we would contend was taken in this most recent rainfall event was closer to 900 gegalitres. We would be happy to submit that information when it is finished.

The CHAIR: Yes please. We will take that as a question on notice and the secretary will get in touch with you.

Answer:

900GL is the preliminary view of SRI and its advisors who are finalising a report which, as promised, will be published and provided to the Committee.

It is worthwhile noting that the 900GL number references the estimated take and does not discriminate between the proposed new classes or definitions of take by DPIE, namely:

1. Passive take;
2. Active take;
3. Rainfall runoff take which is above and beyond the legal maximum harvestable (or basic landholder) right;
4. Harvestable right; and
5. Water stored in temporary storages.

To take this further, we note that in an exchange with Justin Field MP, Mr Connor, the Director of Healthy Floodplains Project Delivery at the New South Wales Department of Planning, Industry and Environment acknowledged that there are “interception activities” occurring which they are not being counted as a form of take.

Mr JUSTIN FIELD: Twice in the last five minutes you have made a distinction between big storages or big storage dams so that seems to be significant. What portion of water used for, I guess, productive uses is captured and stored in a big storage dam versus captured in some other way or held back behind embankment or a burn, but otherwise used for productive purposes on the flood plain?

Mr CONNOR: Again, it goes back to what is take and what are we trying to regulate under our legal limits that have been set up under New South Wales law and under the Commonwealth law, under the basin plan. It is not water that is held back behind an embankment. Those broader landscape changes are things that are more loosely termed "interception activities" under the basin plan. As we develop water resource plans we need to look at those interception activities, assess the risk of growth in that interception activity and how that might affect both the environment and allocation reliability for other licensed users. If that risk is large enough then we need to have mitigation strategies in place to deal with those things. They are what the basin plans calls an interception activity. They are not a form of take that we are recognising and trying to licence under our legislation in New South Wales.

The figures of SRI and the department will always vary in circumstances where NSW provides a “loop-hole” for people to detain water (for free) using interception activities, and then pump it, or funnel it, into their storages later. This type of conduct is still a “take” of water.

In summary, (prior to the Regulation) any water that is taken which is not:

- a. Via a water access licence;
- b. Via a basic landholder right (which is, in most cases, capped at 10% of the deemed average annual rainfall runoff),

is water that is rainfall runoff harvested or floodplain harvested.

Therefore, in order to comply with the objects of the Basin Plan, this take requires either:

1. An appropriate licence to detain and use; and
2. An appropriate penalty for being detained and/or used without a licence.

Question 3:

The Hon. SAM FARRAWAY: I will quickly try to get through—I have a couple of questions but hopefully they are quick ones. Firstly, to Mr Brooks: How have you been able to validate that water storage facilities on farms in the north are actually full?

Mr BROOKS: Well, I fly a light plane and see it regularly. We also have a lot of satellite work being done that identifies clearly the size of the dams. Depths at this stage are still being calculated but known depths would indicate the types of volumes we are talking about. Mr Hare has another document that would indicate a volume of 4,200 gigalitres of storage in the north, if you would like to add that?

Mr HARE: Yes, so that was the figure I had earlier, which was 4,039 gigalitres in turkey nests and then a further—I cannot remember the number exactly, but a further 239 gigalitres in other storages.

The Hon. SAM FARRAWAY: Because we are running out of time, could I ask on notice that you supply that information that your organisation has been able to validate that these storage facilities are full, because from virtual site visits, department briefings and some on-farm visits that I have been involved with over the past six months, I cannot validate that. I would be very interested to see what data you have and if that can be a question on notice to come back to us.

Answer:

Chairman of SRI, Mr Christopher Brooks has been flying over the northern basin region on a regular basis since 1984. In 2018 he observed some dams with small volumes of water and in 2019 his observations were that was no storages with any water – in his view there did not appear to be much water, if any, for stock and domestic.

In or around April 2020 Mr Brooks flew over the region west of the Newell Highway from the Queensland border (Mungindi) down to Dubbo. In this site visit he observed substantial volumes in every on-farm dam in the valleys of Namoi, Gwydir, Macquarie, Barwon-Darling and Border Rivers. His observations were that all dams were holding water, and some were at, or near, capacity.

In determining the amount of storages in the northern basin, SRI notes that these figures do not include the volumes of water that can also be “intercepted” and encourages NSW to urgently present its figures with respect to this. However, please find attached herewith the Natural Resource Commission’s *Review of the Water Sharing Plan for the Barwon-Darling Unregulated and Alluvial Water Sources 2012* (the **Review**) which provides some data with respect to estimated storage capacity in the northern basin.

The Review references the *State of the Darling Interim Hydrology Report 2007* by Webb, McKeown & Associates Pty Ltd (**Hydrology Report**) for the Murray Darling Basin Council which amongst other things, states that:

1. As at 2007, the following valleys had the following estimated storage capacity:

Table 4 – Volumes of major dams and weirs and farm storages

All volumes in Gigalitres

Valley	Major Dams	Town water supply dams	Weirs	Ring Tanks	Hillside Dams
Border Rivers	641	<i>d</i>	15	459	119 ^c
Moonie	0	<i>d</i>	<i>d</i>	<i>e</i>	125 ^c
Gwydir	1362	<i>d</i>	16	351	84 ^c
Namoi	882	6	23	190	402 ^c
Macquarie	2056	79	21	110	264 ^c
Condamine Balonne	188	29	51	1582	334 ^c
Nebine	0	0	<i>d</i>	<i>d</i>	<i>d</i>
Warrego	0	<i>d</i>	10	<i>d</i>	19 ^c
Paroo	0	0	<i>d</i>	<i>d</i>	<i>d</i>
Barwon Darling	0	<i>d</i>	35 ^a	298	<i>d</i>
Total above Menindee Lakes	5129	114 ^f	171 ^f	2990 ^f	1347 ^c
Lower Darling	2050	24	<i>e</i>	160 ^b	<i>d</i>
Total Darling Basin	7179	138 ^f	171 ^f	3150 ^f	1347 ^c

Notes

^a Estimate only, but believed to be within 10 Gigalitres of actual.

^b The estimated volume of on farm storages in the Lower Darling is only for Tandou Limited's farm. Other on farm storages are believed to exist, however it is understood that their volume is relatively small.

^c There is some doubt about the reliability of hillside storage data.

^d No estimate available but believed to be a relatively small volume.

^e No estimate available.

^f See notes for individual valleys in this column

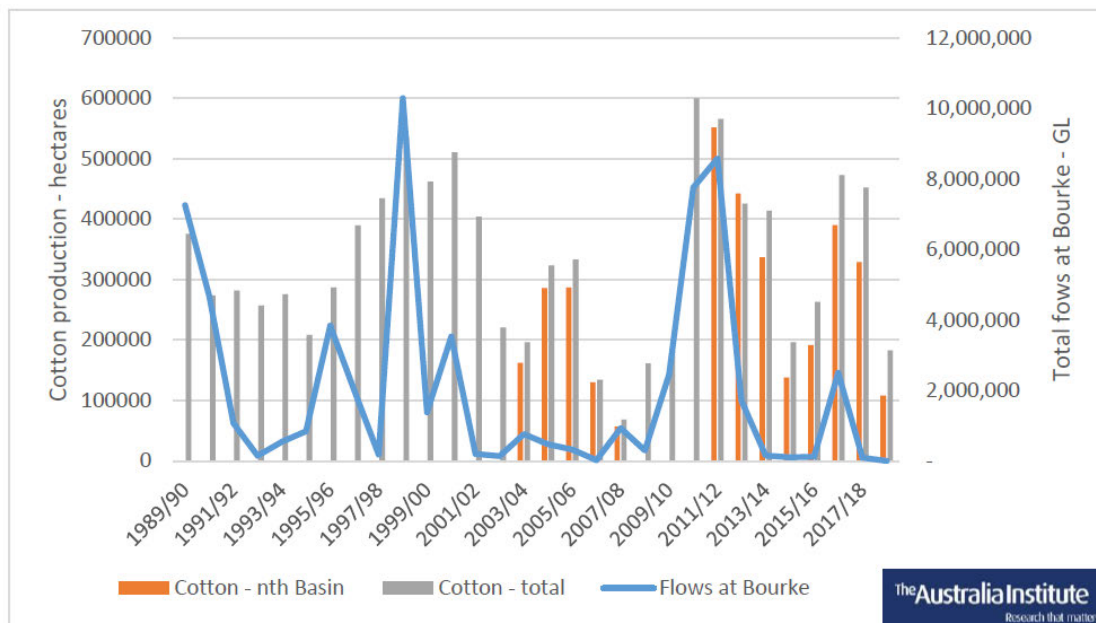
2. Whilst the above figures are from 2007 (and there has been further storages built since that time), the estimated volume of storage in ring tanks (2,990GL) and hillside dams (1,47GL) in the northern basin is **4,337GL**.
3. In the 5 valleys of the northern basin under NSW control (ie. Border Rivers, Gwydir, Naomi, Macquarie and Barwon Darling) the volume of storage in ring tanks and hillside dams was estimated at: 2,277GL. However, these figures are from 2007 when even at that time there was “doubt” about their veracity, and they do not include the volumes of water which is “intercepted” (ie. held behind an embankment or in some other “non-formal” storage method).
4. The Hydrology Report notes “*There is doubt about the validity of the assessment of hillside storage sizes, and therefore doubt about the evaporation calculations included in the table. However, even with these provisos, it is apparent that*

evaporation losses add significantly to the impact water use development has had on river flows in the Darling. Other conclusions that can be drawn are: ¾ evaporation is a much more significant contributor to water use “inefficiencies” and loss of river flows in the Darling than in the Murray system, because of the much greater use of ring tanks to store water, and losses from Menindee, ¾ evaporation losses from major headwaters dams in the Upper Darling are small relative to evaporation losses from on farm water storages (i.e. ring tanks and hillside dams), and ¾ evaporation losses from Menindee Lakes (393 Gegalitres/annum) are much less than total evaporations from on farm water storages upstream of Menindee.”

5. The above statement, when viewed together with the findings of the Australia Institute in its report from March 2019 “Owing down the River” (a copy of which is attached herewith for the convenience of the Committee), indicate that large volumes of water are being stored, suffering large losses from evaporation and still able to produce large quantities of cotton (which is water intensive) even when the annual river flow levels at Wilcannia are two thirds (or less) below the 1980 – 2000 average. SRI’s investigations, some of which are still ongoing, indicate that a large volume of water to support this practice is acquired via FPH and/or rainfall runoff (if they are deemed to be separate forms of take).

An example graph from the enclosed “Owing down the River” report by the Australia Institute in March 2019 emphasises this point:

Figure 6: Cotton production and annual flows at Bourke by year



Sources: Cotton Australia annual reports, <https://cottonaustralia.com.au/cotton-library/statistics> and <https://realtimedata.watersw.com.au/>.

6. It must also be noted that the authors of the Hydrology Report go further and state (at page 37):

“All new hillside dams in NSW that fall outside of the harvestable rights policy require unregulated river access licences, and water cannot be taken from them without a works approval. Embargoes apply to the issue of new access licences for most purposes in the NSW portion of the Basin, so in most cases a runoff harvesting entitlement could only be obtained by purchase of an existing access entitlement.”

In other words, NSW was aware (at least since the Hydrology Report in 2007) that the use of infrastructure for runoff harvesting without an access entitlement was illegal. In such circumstances, the reliance upon a two page factsheet produced in April 2019 appears quite reckless.

Supplementary items for the Committee

In response to the question on notice (#5) of Justin Field MP, Minister Pavey stated:

*This will ensure that growth in floodplain harvesting does not **continue to** adversely impact the environment or the water reliability of downstream towns and industries.*

Minister Pavey acknowledges that:

1. There has been growth in FPH; and
2. It has adversely impacted the environment and water reliability of downstream town and industries.

Legality of FPH

Minister Pavey indicated in her responses to the Committee that the Regulation will remain in place until “licences are created or it is repealed”, and that if the licensing regime is not in place by 1 July 2021 then all growth in FPH would be offset by reducing allocations to supplementary water access licences to prevent the growth in FPH adversely impacting the environment.

SRI have difficulty following this logic because within the regime, FPH licences are not required by operation of the proclamations which do not apply Part 2 of the Chapter 3 of the WMA to such practices. It also appears to stand in contradiction to Minister Pavey’s belief that FPH is legal – if such practices were legal, then there would be no need for the Regulation.

In her response to Questions on Notice 1, Minister Pavey stated that there was no legal advice as to the legality of floodplain harvesting exists and in answer to this question, she stated that she was “*happy to provide advice that I have received over time from my agency that says that floodplain harvesting is a legal activity since the 1912 Act*”.

However, the document that she has provided to this Committee, which supposedly records this legal advice, is a publicly-available (two page) floodplain harvesting fact sheet, which contains no legal analysis or even reference to any piece of legislation or instrument. If this truly is the source of comfort for the Minister, what was she relying upon before it was published in April 2019.

As a stakeholder eager to find clarity and transparency around the implementation of the Exemption, the status of FPH before the Exemption and the process going forward, the responses of the Minister seemed vague, opaque and evasive. It is quite telling that there were many internal inconsistencies in her responses to the questions and that she fell back to relying upon policy documents (rather than any form of legal advice) to legitimise her declaration that FPH is generally legal.

Classification of the water take

SRI contend that in circumstances where the Minister for Water is unclear about what is legal or illegal take, how to monitor it and measure it appropriately, it is difficult to have any confidence in the numbers presented by the Minister for Water as to what is being taken.

SRI is concerned by the statement by Minister Pavey (at response to question 35) that:

In response to peer reviews and stakeholder consultation, it is proposed that rainfall runoff harvested from irrigation areas when there is no other overland flow being taken will not be part of floodplain harvesting.

This form of take, which is (in most cases) beyond maximum harvestable rights (and what is licenced as per FPH) is a form of extraction that has obvious impacts upon the rest of the MDB if it is allowed to be harvested without restriction or oversight. It is repugnant to the principles of the Basin Plan and the current laws and regulations around this issue. It is a free gift to a select few, at the expense of the environment and thousands of other stakeholders in the MDB.

As Minister Pavey has previously acknowledged publicly, the majority of floodplain harvesting occurs via “gravity fed” systems which results from rainfall runoff and/or flooding from waterways. This falls within the new interpretation of “passive take” in that it is water, that due to the configuration of properties, can no longer be excluded.

The recent Independent Panel Assessment of the Management of the 2020 Northern Basin First Flush Event draft report, emphasised the importance of the s324 embargos on protecting critical inflows into the system. Unfortunately, due to the Regulation and new classification of takes (passive or rainfall runoff) future embargos on FPH will be largely impotent. Embargos have little utility when water is prevented (by interception activities or other means) from reaching the estuaries.

Licencing of works

In her responses to this Committee, the Minister has indicated the unlicensed flood works, including levees, storages, roads, etc will not be licensed as part of floodplain harvesting.

If the Minister is talking about licensing in the sense used in s 56 of the WMA, then this would make sense. However, her response to this question appears to be treating these as being types of works which would not require approval under Part 3 of Chapter 3 of the WMA (given that she otherwise says that pumps, pipes and regulators are the types of works which will require approval as water supply works).

It is not clear to SRI why such works would fall outside of the approval regime when “water supply work” as defined in the WMA captures works for the purpose of capturing or storing water (which would include storages) and works which divert water flowing to or from a water source (including levees). If the Minister is considering such works to fall outside the regime altogether, then this would constitute a legal error. Having regard to the Minister’s answers to question 29, this may not be the intention – however – more information is needed. Especially in circumstances where one of the key criticisms of this Regulation was a lack of communication and transparency by the Government, the Minister’s evasive responses to the Committee. Responses such as a subject matter being outside the Committee’s terms of reference – are deeply troublesome for SRI and do little to build trust and/or confidence in the process.

Department’s estimates

Set amongst the backdrop of what has been openly acknowledged growth in FPH, newly conceived definitions for types of water take and lengthy delays in FPH licencing, the Regulation does little to accelerate the process towards FPH licencing. On the contrary, it removes all urgency for it to be implemented. As such, the most appropriate measure for the environment is to ban the practice of FPH until the licencing regime is completed. If there is another FPH event, this will only assist the department to measure volumes.

An estimate of the storages on floodplains was provided to the Committee by Minister Pavey (see below).

14. The total storage capacity of private storages by valley in the NSW northern basin.

ANSWER:

Floodplain / Valley	Number of storages	Estimated capacity (GL)
Border Rivers	132	179
Gwydir	403	553
Namoi	554	312
Macquarie	213	167
Barwon-Darling	117	239

Notes:

- Current as at 19/2/20
- Reflects storages on designated floodplains in the above valleys
- Excludes stock and domestic only dams
- In addition to floodplain harvesting, these on-farm storages are also commonly used to store:
 - water taken under unregulated river licences, regulated river licences and ground water licences
 - used irrigation water

The above figures are misleading on the following basis:

- a. They are only “estimates” – there is no explanation why they would be unknown to the Department;
- b. They do not include “interception activities”.

Conclusion

It is otherwise quite telling many of the Minister’s responses are effectively a refusal to provide an answer on the basis questions falls outside the terms of reference.

This doesn't appear to be the most transparent approach given the scrutiny the committee applied to the regulation within the framework of the government’s broader FPH policies and the legislative regime.

The terms of reference for this review, require the committee to investigate two matters:

1. The impact of the Regulation; and
2. The implementation of the Regulation.

As a consequence of the absence of important and conclusive material of the Department’s belief (and justification) FPH practices were legal prior to the introduction of the regulation, the committee has been denied an opportunity to properly assess both these matters.

The committee has not been enlightened as to why the regulation was urgent and implemented without public consultation or prior notice.

The committee is unable to assess how much water is being taken via “eligible works” and while estimates vary wildly, the reality is very little water is making its way to the end of the system.

The committee received information about new definitions of take (made public on the same day as the regulation) and promises of a flood plain harvesting licencing regime which appears to ignore the large amount of water captured from rainfall runoff.

Despite the large amount of ambiguity and complexity, the committee has been assured the regulation does not need a sunset clause.

There has been little explanation as to how the department will conclude the FPH licencing process within 12 months when it has just introduced a new concept of take.

It also remains unclear if removing rainfall runoff from FPH take is compliant with the Basin Plan.

The committee has been asked to trust the Department a sunset clause is not necessary and yet this the same Department which has continually failed to provide complete and transparent responses to the committee’s questions.

The most appropriate course of action is to disallow the regulation - if left in place, there will be no reason for those benefitting from their access to 'free water' to accept any proposed changes or compromise on their current regime.

We await your reply.

Kind Regards,

Darcy Hare

Vice-chair Southern Riverina Irrigators