

Misrepresentation of facts used during and after the debate worth clarifying:

“Northern irrigators took 900GL of overland flow/floodplain harvesting this year”.

Claimed by Southern Riverina Irrigators in multiple submissions and evidence to the inquiry, referred to by Independent Justin Fields.

NSW northern irrigators did not take 900GL of overland flow (or 1600GL as it was later increased to) during either the temporary exemption orders or thereafter in February 2020.

These claims are unsupported by the following multiple lines of evidence:

- There is only 1,450GL of on-farm storage on the NSW floodplain as verified and determined using Lidar information, as provided to parliament and to the inquiry¹.
- These dams were not all full at any time this year, some are but many are partially or empty as confirmed by satellite imagery which can be selected for a range of time periods².
- We could not use that volume of water on one or two wheat irrigations, to reduce storage volumes to their level today as evident by recent satellite imagery with empty and partially filled dams see blow.
- Analysis by NSW DPIE using new techniques to integrate Lidar and satellite images estimated 30GL of take, from either overland flow including rainfall, allowable extraction and stock and domestic take³.
- Finalisation of usage volumes for the respective valleys as evidenced in the assessment of take reports and available of the water register collected from metering records⁴.

We support the estimated volumes provided by the NSW Government as being a reasonable estimate, as these volumes aligned with evidence from our own voluntary monitoring of the event.

Since the lifting of temporary restrictions in our valley in late February 2020, irrigators in the Gwydir valley have had access to between 10-20% supplementary allocation (20GL)⁴ which shares any unregulated river flows 50:50 between the environment and have accessed groundwater allocation. All of which is all being stored on-farm.

General security allocation has not been delivered as it will be via bulk delivery which is not yet scheduled for this upcoming season.

“Northern Dams are full” Claimed by Chris Brooks in The Guardian dated 23 September 2020 referred to by NSW Greens in their media release “Pavey must now restore water to Lake Menindee”

It is not northern irrigators who’s dams are full or are holding vast amounts of water.

Satellite imagery dated 14 September 2020 below clearly demonstrates empty and partially filled storages in the Gwydir Valley which is replicated across the majority of the other

¹ Answer to question 14:

<https://www.parliament.nsw.gov.au/lcdocs/other/13458/Answers%20to%20supplementary%20questions%20-%20Hon%20Melinda%20Pavey%20MP%20and%20DPIE.PDF>

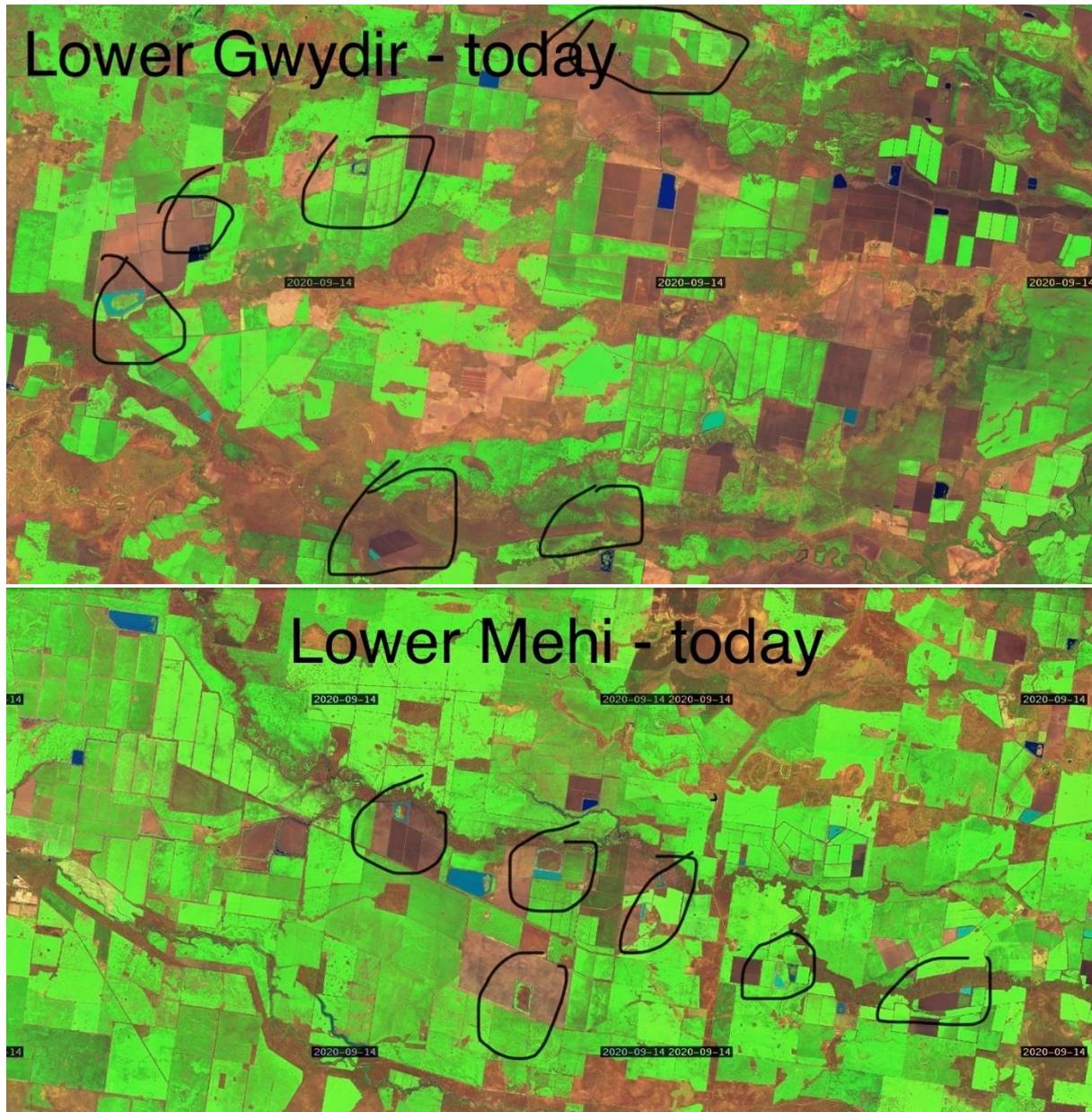
² For example from <https://www.ga.gov.au/dea/products/dea-waterbodies>

³ https://www.industry.nsw.gov.au/__data/assets/pdf_file/0014/316310/assessment-of-take-and-protection-during-first-flush-flows-in-the-northern-basin.pdf

⁴ <https://waterregister.watnsw.com.au/>

northern valleys. This evidences together with previous comments above around water take and capacity, that the northern basin is not holding vast amounts of water.

Figure 1: Sentinel photos – Lower Gwydir and Lower Mehi, dated 14 September 2020



The only valley nearing full is the Barwon Darling who had prolonged river flows following the temporary restriction orders being removed in March 2020. They have accessed 234GL of unregulated water within their licence conditions which was metered, and is being held on farm (they do not have public dams as they are unregulated). They have an estimated 239GL on farm capacity and are therefore, the Barwon Darling are nearly full but the NSW northern basin consists of five valleys.

For context, the remaining northern basin valleys of; Border Rivers, Gwydir, Namoi and Macquarie all have public headwater storages. Currently their capacity vary between 5-

46%⁵ with a total collective volume of 983GL, half of which is held in Burrendong Dam in the Macquarie Valley which services the town of Dubbo and below.

Allocations in these valleys tell a similar story with limited announcements and limited carryover, some valleys are still on 0% (see table below).

This is in contrast to the Menindee Lakes, which is at 27% capacity holding 470GL – which is the combined volume being held in the NSW Border Rivers, Gwydir and Namoi valley headwater storage.

General security irrigators in the Lower Darling have the third highest in the state with a 30% allocation, attributed to water restricted from the northern catchments in February and March 2020.

The Menindee Lakes is also just one of four public headwater storages that service the Southern Basin, which is holding a total volume of 4,528GL (we note some of this is shared between other states). Menindee is also rising due to localised flooding and on the increase.

The NSW northern basin public storage volumes together with the Barwon Darling on farm storage represents just 27% of the combined storage in public storages in the Southern Basin. This is in stark contrast to the statement the northern basin is full or is holding up all the water.

	River valley	Allocations 2020-21	Licence category	Date of last allocation increase
SOUTHERN NSW	Murray	15%	General security	15 September 2020
		97%	High security	1 July 2020
		100%	Domestic and stock	1 July 2020
		100%	Local water utilities	1 July 2020
	Lower Darling	30%	General security	1 July 2020
		100%	High security	1 July 2020
		100%	Domestic and stock	1 July 2020
		100%	Local water utilities	1 July 2020
	Murrumbidgee	46%	General security	15 September 2020
		95%	High security	1 July 2020
		100%	Domestic and stock	1 July 2020
		100%	Local water utilities	1 July 2020
NORTHERN NSW	Macquarie and Cudgegong	12%	General security	8 September 2020
		100%	High security	1 July 2020
		100%	High security (sub categories)	1 July 2020
		100%	Domestic and stock	1 July 2020
		100%	Local water utilities	1 July 2020
	Lower Namoi	4.2%	General security	8 September 2020
		100%	High security	8 September 2020

⁵ <https://realtimedata.waternsw.com.au/>

River valley	Allocations 2020-21	Licence category	Date of last allocation increase
	100%	High security (sub categories)	8 September 2020
	100%	Domestic and stock	1 July 2020
	100%	Local water utilities	1 July 2020
Upper Namoi	50%	General security	8 September 2020
	100%	High security	8 September 2020
	100%	Domestic and stock	1 July 2020
	100%	Local water utilities	1 July 2020
Peel	0%	General security	4 October 2018
	50%	High security	1 July 2020
	70%	Domestic and stock	1 July 2020
	70%	Local water utilities	1 July 2020
Gwydir	4.77%	General security	7 September 2020
	100%	High security	1 July 2020
	100%	Domestic and stock	1 July 2020
	100%	Local water utilities	1 July 2020
NSW Border Rivers	14.2%	General security A Class	21 August 2020
	0%	General security B Class	31 January 2018
	100%	High security	1 July 2020
	100%	Domestic and stock	1 July 2020
	100%	Local water utilities	1 July 2020

Via <https://www.industry.nsw.gov.au/water/allocations-availability/allocations/summary>

Northern tributaries account for 39% of Murray flows, growth in floodplain harvesting is impacting southern reliability. Claimed repeatedly Southern Riverina Irrigators members as in The Land, March 2019, most recently in evidence before the Regulation Committee's inquiry into the Impact and implementation of the Water Management (General) Amendment (Exemptions for Floodplain Harvesting) Regulation 2020.

This percentage of contribution was calculated in reference to the volume of flow in South Australia measured using data up to 2000. Such references may have been true at a point in time but are now superseded by the additional years of inflow and climatic data, since their calculation and any improvements in modelling assumptions.

Given the date of reference, this percentage is no longer relevant in the debate about how much the northern basin may contribute to the southern basin or South Australia.

Since, 2000 there have been two key updates of information to replace these figures.

Firstly, in 2010 the MDBA undertook their first update of such assessment for the modelling to inform the Guide to the Basin Plan. Those results at that time indicated:

“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”

Secondly, earlier in 2020, as part of the Interim inspector General’s report into the Impact of lower inflows on state shared under the Murray-Darling Basin Agreement⁶ which has used the most up to date modelling and inflow and climatic sequence information indicated:

“Over the historical record, inflows from the lower Darling have only contributed an average of about 8% of water available in the River Murray system each year.”

The report continued to explain:

“Inflows both into the Menindee Lakes and from the Lakes to the River Murray have dramatically reduced in the last 20years. There may be numerous factors contributing to this, including record low inflows in northern NSW, lower rainfall, higher temperatures, catchment modification (including farm dams), increasing development, floodplain harvesting, changes in extraction rules in water-sharing plans, and non-compliance. The Inquiry heard that understanding the relative influence of each of these factors is highly complex and has not been established.”

Even the Wentworth Group of Concerned Scientists in recent (and rather flawed) assessment of the Murray Darling Basin observed versus planned flows⁷, identified reduced inflows and indicated several reasons.

Inflows right around the Murray Darling Basin, upstream of irrigation communities and downstream of them have all declined.

To assert that declined inflows, measured at a point in time, have occurred only because of floodplain harvesting is intentionally misleading and ignore the naturally complex nature of northern, ephemeral river systems and any changes in climate.

“Northern irrigators (QLD/NSW) now have to share 210GL of floodplain harvesting take as per the 1993/94 Cap transition into the SDL” Claimed on social media by Southern Riverina Irrigators

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.

⁶ https://www.igmdb.gov.au/sites/default/files/documents/iig_final_report.pdf

⁷ <https://wentworthgroup.org/2020/09/mdb-flows-2020/2020/>

- 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.

Throughout this implementation period there have been estimates of the long-term historical volume of floodplain harvesting by NSW and the MDBA.

Until licencing is implemented and monitoring and compliance begins, any discussion on volumes is modelled.

The 210GL forms part of the Baseline Diversion Limit for the Basin Plan for the northern NSW valleys using the water sharing plan models of 2004. It is just one such estimate which is likely to be superseded with new information from the Healthy Floodplain Project as the valley-wide models are being upgraded and peer reviewed. This does not mean there is “new water” being used, rather a better representation of the water historically taken in the first place.

As a result of these improvements, the long-term average estimates for all forms of take will be updated and that includes overland flow. The Baseline Diversion Limits may change as a result.

The Basin Plan was written in such away to allow new information to ensure it was using the best available science and as such any previous estimated are likely to be adjusted. The MDBA explain this is their most recent transitional water take report here:

“The introduction of floodplain harvesting into the entitlement system there may also be an improved estimate of the BDL for this form of take. If the BDL estimate is improved, there is a subsequent change to the SDL (as the SDL is a formula). It is too early to say what the changes will be, however it is important to note that this is not new water becoming available. Water taken by authorised floodplain harvesting works was already legally available for use, and is not presently measured. It is expected, in some instances that there may have been growth in the use of floodplain harvesting and decreases will be needed to ensure the levels agreed in 2000 are met.”⁸

The Floodplain Harvesting Action plan outlines the timelines for the release of these new estimates.

“Floodplain works are unlicensed” The Guardian, 23 September 2020

A key outcome of the Healthy Floodplain Program is to scrutinise farms for specified eligibility criteria – which is a relevant approval, as well as to map and identify all works and identify any non-compliance. Given this work has been completed now there is a very low likelihood that an irrigation farm would be unlicensed or not on a pathway to compliance.

This statement ignores that fact and is ill-informed.

⁸ Page 99

<https://www.mdba.gov.au/sites/default/files/pubs/Transition%20Period%20Water%20Take%20Report%2017-18.PDF>