



---

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

**SUBMISSION**  
**NSW updated factors for Water Recovery**  
**Discussion Paper**

**Introduction**

The Inland Rivers Network (IRN) is a coalition of environment groups and individuals that has been advocating for healthy rivers, wetlands and groundwater in the Murray-Darling Basin since 1991.

IRN does not support the conclusion in the *Water reform technical report: Derivation of LTDEL factors in NSW* (the Report) that ‘*The results produced and documented in this report are transparent, robust and reliable, and produce an enhanced estimate of water recovery.*’<sup>1</sup>

The results produced in the Report are not transparent because there is no clear explanation about what the baseline diversion limit (BDL) under the Basin Plan refers to and what version of the BDL that the 2011 long-term diversion limit equivalence (LTDLE) factors were initially developed for.

There is no explanation about the updated BDLs produced in and around 2016. The BDLs as of 2018 as used in the Report appear to be those using the 2018 factors. The Report does not clarify that the term BDL under the Basin Plan refers to the new BDL using the 2018 factors or some other version of the BDL. The Report is highly confusing,

The results produced in the Report are not robust and reliable because they are not based on best available information. The Northern Basin planning assumptions in the LTDLE modelling do not include extraction through floodplain harvesting.

IRN does not support the process or the outcomes in developing the 2018 factors. The result will be a meaningless Sustainable Diversion Limit (SDL) for each Basin catchment in NSW that will not achieve the objectives of the Basin Plan or the *Water Act 2007*.

---

<sup>1</sup> Department of Industry, May 2018. *Water reform technical report: Derivation of LTDEL factors in NSW* p 40

## **Key Issues:**

### **1. BDL**

There is no background information provided about the development of BDLs over time or how changes to the initial BDLs for each SDL resource unit have caused the significance of change between the 2011 factors and the 2018 factors.

This lack of information is a key failing in the Report.

There have been a number of versions of BDLs since the Basin Plan was adopted. We are concerned that the BDL as at 2018, which is the basis of the Report, is the using the implementation of the 2018 factors and the term BDL under the Basin Plan refers to the revised BDL using the new factors.

IRN finds this statement to be very obtuse: *‘The SDLs are a reduction from the BDLs. If the 2011 factors cannot reproduce the BDL for an SDL resource unit, the planning assumptions that produce those factors cannot be used to prepare a WRP that complies with the requirements of the Basin Plan and achieve the SDL. Also, the 2011 factors cannot be used to accurately assess whether the reduction volume needed to move from the BDL to the SDL for a particular SDL resource unit has been achieved. A revised set of LTDLE factors is required that is consistent with the BDL level of use. The 2018 factors are BDL based and fit to assess whether recovery is now complete.’<sup>2</sup>*

There is no explanation of which version of the BDL that the 2011 factors cannot reproduce, causing the need for change to the factors.

The Report gives a comparison of estimated entitlements share in the BDL run and share with 2011 factors using the example of the Peel River.<sup>3</sup> The result is a 48% error.

However, there is no information provided about which version of the Peel BDL was used to arrive at this outcome.

This example is very difficult to understand and contains different information to that provided further in the report on the Peel River.<sup>4</sup>

The ongoing changes to modelling scenarios since the adoption of the Basin Plan has removed any transparency in the process of calculating SDLs.

### **2. Methodology**

IRN does not support the methodology used to calculate the 2018 factors. The omission of floodplain harvesting extraction is a key failing.

The assumption of full value supplementary water use is another key issue. There is no definition of the version of the BDL used for the initial share.

---

<sup>2</sup> Ibid p 9

<sup>3</sup> Ibid Table 1 p 9

<sup>4</sup> Ibid Table 10 p 20

### **3. Floodplain harvesting**

The planning assumptions for the 2018 factors do not include the volume of water extracted through floodplain harvesting in the Northern Basin.

Therefore, the best available information has not been used in regard to water extraction in the Border Rivers, Gwydir, Namoi, Macquarie and Barwon-Darling river systems.

This is a very serious omission in regard to the volume of water available for the environmental health of the rivers and wetlands in the Northern Basin.

This serious omission of water take in the 2018 factor models renders them unfit for use.

### **4. Changes in usage of entitlements**

The Report describes how the 2018 factors were derived (Table 2, incorrectly referred to as Table 3.1 in the explanation.<sup>5</sup>)

However, there is no comparison of how the 2011 factors were derived.

The tables for most river catchments (eg Table 6 Border Rivers<sup>6</sup>) has average reliability and utilisation factors for the 2018 factors but do not supply this information for the 2011 factors.

It appears that in most instances the 2018 factors include decreased usage of stock & domestic (S&D), town water supply and high security entitlements and increased usage of general security and supplementary water entitlements.

The issue of linking supplementary water use to general security use is identified for feedback in the consultation paper.

IRN does not agree that supplementary water use can be considered as a substitute for general security use. There needs to be further explanation about how this assumption has affected change to the factors.

The use of water entitlements for the environment can be quite different to extractive use. The use of supplementary water can be an add-on to general security orders or can trigger a piggy-back event.

The assumptions that cause supplementary water use and general security water use to become significantly higher under the 2018 factors need further explanation than that provided in the Consultation Paper and the Report.

The Report outlines that the full value of supplementary water use from the long-term model is assumed for each valley.<sup>7</sup> However, there is up to date information about

---

<sup>5</sup> Ibid p 12

<sup>6</sup> Ibid p 16

<sup>7</sup> Ibid p 12

supplementary water use since the implementation of the WSPs. This should be used in the assumptions for each SDL unit.

Some valleys, such as the Macquarie, are questioning the current WSP rules as limitations preventing the full use of supplementary water entitlement.

The method uses long-run modelling estimates for supplementary entitlement access with the remaining water available for general security.<sup>8</sup> By assuming the full value use of supplementary water, this method then allows for an increase in general security access.

IRN has concerns about this methodology in terms of the version of the BDL used, the lack of information about the 2011 factors and how the assumptions appear to have caused a major increase in supplementary and general security use in most valleys and a drop in S&D, town water and high security usage. The change in reliability for human use has not been clearly explained.

This outcome appears to be using basic human needs ie S&D and town water supply to bridge the gap in environmental water recovery.

## **5. Allocation Reliability**

It is noted that the methods used for determining reliability of general security and supplementary entitlements for extractive users are not used by the LTDLE factor calculation.<sup>9</sup> There is no explanation provided for this difference.

Having a different set of reliability factors for extractive licences than those used to calculate environmental recovery for general security and supplementary allocations will make the SDL in WRPs meaningless.

## **6. Individual river catchments**

### **6.1 Intersecting Streams**

There is no explanation provided for why the BDL for the Intersecting Streams is expected to substantially increase.

The purchase of 9,720 ML of special additional high flow entitlement in this catchment was not conducted through a transparent process and will only provide environmental flows in exceptional circumstances. The reliability of this entitlement is very low.

### **6.2 Barwon-Darling**

The water use reporting for the Barwon-Darling does not include extraction through floodplain harvesting.

The WSP estimated that an annual average of 16.5 GL is harvested in this manner from the Barwon-Darling. This is a significant extraction of valuable environmental water that has not been factored into the calculations of the SDL for this resource unit.

---

<sup>8</sup> Department of Industry, May 2018. *Consultation paper: NSW updated factors for water recovery* p12

<sup>9</sup> Technical Report p 52

### **6.3 Border Rivers**

There appears to be some inaccuracy in determining and reporting the changes to the Border Rivers water recovery.

The report appears to use the BDL share with 2018 factors determining the Basin Plan BDL for the regulated Border Rivers. However, there is no reference to the various versions of the BDL prior to the development of the new factors.

The report does not explain the changes in the BDL used in Table 6, in relation to the original BDL for the Basin Plan or the various versions since that time.

The difference between the 2018 and 2011 factors (ie -38,485 ML) is described as an error in the BDL shares of -20%.

However, there is no explanation about what has caused the significant changes in planning assumptions for each entitlement type between the 2011 factors and the 2018 factors.

Table 7 has an incorrect calculation for the General security B class entitlements.

The difference between the two factors should be reported as a – 237.

The new LTDLE volume of recovery for the Border Rivers is calculated as a net increase of 944 ML.

The 2018 factors have caused a decrease in use of S&D, town water, high security and Class B general security, an increase in Class A general security use and a significant increase in supplementary water use. There is no clear explanation about what has caused these changes.

The Border Rivers WSP estimated the annual average volume of floodplain harvesting to be 3 GL in the regulated river and 12.2 GL across the valley.

Recent information gained through the Healthy Floodplain Program has estimated a more accurate volume of floodplain harvesting and also included rainfall runoff.

The consultation paper on floodplain harvesting released under the Water Reform Action Plan identifies growth in use of extraction in the Border Rivers above the Plan Limit.

This more up to date information does not appear to have been used in the calculations of the 2018 factors for the Border Rivers.

The Border Rivers SDL resource unit has been identified as being still under recovered by 2,753 ML<sup>10</sup>, even with the new 2018 factors.

---

<sup>10</sup> Consultation Paper Table 1 p 6

However, the lack of consideration of floodplain harvesting take and growth in use is a significant issue for this SDL resource unit. This raises doubts about the achievement of a satisfactory SDL in the Border Rivers WRP.

#### **6.4 Gwydir**

The report appears to use the BDL share with 2018 factors determining the Basin Plan BDL for the regulated Gwydir River. However, there is no reference to the various versions of the BDL prior to the development of the new factors.

The report does not explain the changes in the BDL used in Table 8, in relation to the original BDL for the Basin Plan or the various versions since that time.

The difference between the 2018 and 2011 factors (ie - 58,916 ML) is described as an error in the BDL shares of -20%.

However, there is no explanation about what has caused the significant changes in planning assumptions for each entitlement type between the 2011 factors and the 2018 factors.

The new LTDLE volume of recovery for the Gwydir River is calculated as a net increase of 7,796 ML.

The 2018 factors have caused a decrease in use of S&D, town water, high security and an increase in general security use with a significant increase in supplementary water use. There is no clear explanation about what has caused these changes.

The Gwydir River Regulated WSP estimated an annual average volume of floodplain harvesting to be 79 GL with an additional 14.7 GL of on farm harvesting in the model that was not recorded as take.

Recent information gained through the Healthy Floodplain Program has estimated a more accurate volume of floodplain harvesting and also included rainfall runoff.

The consultation paper on floodplain harvesting released under the Water Reform Action Plan identifies growth in use of extraction in the Gwydir River above the Plan Limit.

This more up to date information does not appear to have been used in the calculations of the 2018 factors for the Gwydir River.

The Gwydir River SDL unit has been calculated with the new 2018 factors to be over recovered. However, this calculation has not included the new, updated information on floodplain harvesting with rainfall runoff in the Gwydir catchment.

The impact of floodplain harvesting on the health of the Ramsar listed Gwydir Wetlands has not been assessed.

IRN considers the outcome of the 2018 factor process in the Gwydir to be incorrect and highly contentious, based on lack of transparency and lack of robust and reliable information.

### **6.5 Peel**

There is no explanation provided for the separation of the Peel River from the Namoi SDL resource unit.

There is no explanation provided for the change in factors for all entitlements between the 2011 and 2018 factors.

The decrease in the local water utility share is very significant. The lack of information about average reliability for all entitlement shares under the 2011 factors compared with 2018 factors is a concern.

The Peel is estimated to be 63 ML under recovered.

It is unclear whether this volume has been included in the calculations for the recovery of water in the Namoi SDL resource unit as reported in Table 25.

### **6.6 Namoi**

The changes to the Namoi LTDLE through the new 2018 factors are based on a significant modelled reduction for access to S&D and town water supply with reductions also for high security and general security.

The access to supplementary water has greatly increased.

IRN is concerned that this increase in supplementary water access is related to a proposed change to WSP rules from the 90:10 access rule to a 50:50 access rule.

This change in the WSP rules will cause a net reduction in planned environmental water and will not be acceptable under the Basin Plan.

The changes to water access under the 2018 factors have caused a shortfall of 271 ML of environmental water recovery in the Namoi.

The Namoi River Regulated WSP estimated an annual average volume of floodplain harvesting to be 21 GL with an additional 56 GL of on farm harvesting in the model that was not recorded as take.

The volume of floodplain harvesting in the Namoi is currently being assessed under the Healthy Floodplains Program. The volume of extraction from the Namoi through capture of overland flows is significant.

The Namoi SDL resource unit has been identified as being under recovered by 8,795 ML<sup>11</sup>. This is without the consideration of the environmental impacts of floodplain harvesting extraction.

This raises serious doubts about the achievement of a satisfactory SDL in the Namoi River WRP.

---

<sup>11</sup> Ibid

### **6.7 Macquarie-Castlereagh**

The Report appears to use the BDL share with 2018 factors determining the Basin Plan BDL for the regulated Macquarie River. However, there is no reference to the various versions of the BDL prior to the development of the new factors.

The Report does not explain the changes in the BDL used in Table 14, in relation to the original BDL for the Basin Plan or the various versions since that time.

The difference between the 2018 and 2011 factors (ie – 69,558 ML) is described as an error in the BDL shares of -18%.

However, there is no explanation about what has caused the significant changes in planning assumptions for each entitlement type between the 2011 factors and the 2018 factors.

The new LTDLE volume of recovery for the Macquarie River is calculated as a net increase of 19,947 ML.

The 2018 factors have caused a significant decrease in use of S&D and also a decrease in town water and high security use with a significant increase in general security use and an entirely unrealistic increase in supplementary water use. There is no clear explanation about what has caused these major changes in reliability in the Macquarie system.

The increase in supplementary entitlement reliability is difficult to understand in the context that local users believe that rules in the WSP have constrained access to supplementary water entitlements.

This report does not discuss rule changes in WSP. The methodology used to calculate the 2018 factors has created an unexplained anomaly in the Macquarie system.

The Macquarie Regulated WSP failed to estimate volumes of floodplain harvesting in this catchment. This water is currently included in planned environmental calculations.

The volume of floodplain harvesting extraction in the Macquarie is still being assessed. However, the storage capacity and scale of structures designed to capture overland flows indicates that a far greater volume than 20 GL may be harvested on an annual average in the Macquarie, including rainfall runoff.

This would cancel out the proposed over recovery volume and will also cause a net reduction in planned environmental water.

The impact of floodplain harvesting on the health of the Ramsar listed Macquarie Marshes has not been assessed.

IRN considers the outcome of the 2018 factor process in the Macquarie to be incorrect and highly contentious, based on lack of transparency and lack of robust and reliable information.

## **6.8 Lachlan**

The calculation of 2018 factors for the Lachlan SDL resource unit excludes the Belubula River entitlements. There is no explanation provided for this.

The Belubula River is not included at all in the Report.

The changes to the Lachlan LTDLE through the new 2018 factors are based on a significant modelled reduction for access to S&D and town water supply with reductions also for high security, general security and supplementary entitlement access.

The changes to water access under the 2018 factors have caused a shortfall of 2,856 ML of environmental water recovery in the Lachlan.

The Lachlan SDL resource unit has been identified as being under recovered by 1,301 ML<sup>12</sup>. However, this is without consideration of the extraction from the Belubula River system.

The achievement of a satisfactory SDL in the Lachlan system requires more attention.

## **6.9 Murrumbidgee**

The explanation of the changes to the BDL, SDL and water recovery through the purchase of 40,300 ML Nimmie-Caira licences makes no sense.<sup>13</sup>

These entitlements would have been included in the original Basin Plan BDL as extractive entitlements. Their purchase has changed ownership of the entitlements, it has not changed the volume of water in the system.

If this methodology was used in all the SDL resource units, then all BDLs and SDLs would have been changed to account for water recovery. There appears to be no consistency in the methodology used to calculate meaningful LTDLE across the Basin in NSW.

The new 2018 factors have caused a decrease in S&D use, a significant decrease in town water supply and a decrease in conveyance water and general security use.

It is interesting that in all other valleys high security reliability has decreased, while in the Murrumbidgee it has slightly increased, while supplementary use has significantly increased.

The outcome of the calculation is a net decrease in LTDLE of 11,296 ML. However, it is reported that there is neither excess nor shortfall of the local recovery requirements.<sup>14</sup>

The level of transparency, and demonstration of robust and reliable information used to reach this conclusion is highly questionable.

---

<sup>12</sup> Ibid

<sup>13</sup> Technical Report p 28

<sup>14</sup> Consultation Paper Table 1 p 6

### **6.10 Murray**

There is very little information supplied about water recovery in the Murray system. There is no modelling information supplied in the report.

The new 2018 factors have caused a decrease in all entitlements except conveyance.

This has caused a net decrease in the LTDLE of 41,533 ML. However, it is reported that there is neither excess nor shortfall of the local recovery requirements.<sup>15</sup>

The level of transparency, and demonstration of robust and reliable information used to reach this conclusion is highly questionable.

### **6.11 Lower Darling**

It is of interest that all information pertaining to the Lower Darling has been modelled and supplied by the MDBA and is not included in the report.<sup>16</sup>

The new 2018 factors have caused a massive decrease in S&D and town water supply use. This is a very perverse outcome. There is also a decrease in high security use.

This has resulted in a loss in value of the water recovered under high security licences and a significant increase in the value of the recovered general security licences.

The outcome of the changed factors is a net increase in the LTDLE of 2,290 ML. However, this is reported as neither excess nor shortfall of the local recovery requirements.

IRN cannot accept that the results through using the new 2018 factors will deliver a meaningful SDL for the Lower Darling.

## **Conclusion**

The ongoing changes to modelling scenarios to reach a pre-conceived outcome for Basin Plan environmental water recovery is a serious problem.

The information supplied in the Consultation Paper and Technical Report in regard to factors influencing the LTDLE is very obtuse.

This exercise has done little to improve public trust in the water reform process or the NSW Government management of water resources for sustainable outcomes.

---

<sup>15</sup> Ibid

<sup>16</sup> Technical Report p 44