



I N L A N D
R I V E R S
N E T W O R K

*Submission to the
New South Wales Office of Water
in response to the Draft Water Sharing Plans for the:*

- . **Castlereagh River Unregulated and Alluvial Water Sources**
 - . **Lower Murray-Darling Unregulated and Alluvial Water Sources**
 - . **Murray Unregulated and Alluvial Water Sources**
 - . **NSW Murray-Darling Basin Fractured Rock Groundwater Sources**
 - . **NSW Murray-Darling Basin Porous Rock Groundwater Sources**
 - . **North-Western Unregulated Water Sources and the North-Western Fractured Rock Groundwater Sources**
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January 2011

Inland Rivers Network Incorporated

Level 2, 5 Wilson Street, Newtown NSW 2042

PO Box 1132, Newtown NSW 2042

Ph: 02 8580 6609 Fax: 02 9290 2525

Email: admin@irnsw.org.au

Web: www.irnsw.org.au

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About Inland Rivers Network

The Inland Rivers Network (IRN)¹ is a coalition of environment groups and individuals concerned about the degradation of the rivers, wetlands and groundwaters of the Murray-Darling Basin. Member groups of IRN include the Australian Conservation Foundation; the Nature Conservation Council of NSW; the National Parks Association of NSW; the Central West Environment Council; Friends of the Earth; The Wilderness Society, Sydney Branch and the Coast and Wetlands Society.

IRN has been advocating for the conservation of rivers, wetlands and groundwater within the Murray-Darling Basin since 1991.

PART 1

1.1 Introduction

The Inland Rivers Network welcomes the opportunity to provide comment on the draft Water Sharing Plans (“WSPs”) for the Castlereagh River Unregulated and Alluvial Water Sources, the Lower Murray-Darling Unregulated and Alluvial Water Sources, the Murray Unregulated and Alluvial Water Sources, the NSW Murray-Darling Basin Fractured Rock Groundwater Sources, the NSW Murray-Darling Basin Porous Rock Groundwater Sources and the North-Western Unregulated Water Sources and the North-Western Fractured Rock Groundwater Sources.

IRN strongly supports the development of this next round of Water Sharing Plans covering the use and management of many of the remaining water sources across the state. IRN believes that much remains to be done in order to better manage and restore water to the river systems of NSW after decades of increasing use and overallocation.

IRN appreciates that this next round of water sharing plans are being developed in the context of the imminent Commonwealth Murray-Darling Basin Plan. While the Basin Plan is to be an overarching plan for the way in which water resources are managed across the whole of the Basin, IRN believes that whatever the final outcomes of the Basin Plan process are, it will be important that these NSW Water Sharing Plans are robust enough to exist as stand-alone elements for the ecologically sustainable sharing of water resources into the future. This is critically important for the state of NSW, and for Australia as a whole.

As discussed briefly in IRN’s previous general submission letter, IRN has focussed on some key areas of comment regarding these draft plans. Many of them are matters of concern that have previously been raised by IRN in submissions to the earlier round of Water Sharing Plans.

This submission will firstly elaborate on these key areas of concern and then discuss in detail some of the points that are specific to the draft Water Sharing Plans for each of the water sources

¹ For more information see website at www.irnsw.org.au

1.2 General comments

As has been communicated in previous submissions to NOW, IRN believes that there are several key steps that need to be followed in order to ensure that Water Sharing Plans in NSW are consistent with National Water Initiative commitments and the spirit of the original NSW water reform agenda. These are, that:

1. *over-allocated and/or overdrawn surface and groundwater systems must be returned to ecologically sustainable levels of extraction, in volume and timing;*
2. *surface and groundwater systems with high conservation value must be identified, acknowledged and their values protected;*
3. *connectivity between surface and groundwater resources must be recognised and connected systems be managed as a single resource;*
4. *a robust metering and monitoring program must be implemented and adequately resourced to ensure on-ground implementation of the plan and ensure secure environmental water allocations;*
5. *independent rigorous river health assessments need to be conducted to ensure the plans are maintaining or improving river health;*
6. *plans must include appropriate adaptive management provisions to utilise new knowledge and avoid costly remediation;*
7. *objective, transparent and accountable processes must occur to ensure adequate community input and confidence in the NSW water reform; and*
8. *water sharing plans should be consistent with existing environmental policy, statements of intent, bilateral, national and international water agreements, including the National Water Initiative and State Water Management Outcomes.*

As the Water Sharing Plans will need to be accredited under the Murray-Darling Basin Plan, these WSPs will be required to be consistent with the *Water Act 2007 (Cth)*, which acknowledges the history of overallocation and overuse of water resources and aims to return desperately needed water to the environment.

Due to the absence of records, flow data and other scientific analysis on many of the water sources in these draft WSPs, there is a vast amount that is unknown and unquantifiable in these systems. IRN also notes that, even in instances where data and records are available, there is a vast range of different interpretations of such data. IRN therefore refers to the need of the precautionary approach. That is, that where there are threats of serious damage to these freshwater systems, as is acknowledged in many of the draft WSP report cards, lack of full scientific certainty should not be used as a reason to postpone measures to prevent such environmental harm.

1.3 Floodplain harvesting

The development of a NSW floodplain harvesting policy is a crucial step for water reform in NSW and once developed is something that all Water Sharing Plans will need to be integrated with, especially in terms of environmental flows and extraction levels. While IRN notes that creation of such a policy is underway, IRN stresses that this needs to be brought forward as a matter of some urgency.

The relationship between the environmental benefits of high flows in unregulated systems (for example aquifer recharge and wetland replenishment) and the impacts of floodplain harvesting needs to be identified.

1.4 Impacts of the water sharing plans on the water sources

While IRN is pleased to see that the Water Sharing Plans that are being developed do contain provisions for the sharing of water between the environment and extractive users in a more equitable manner, nevertheless, there are many ways in which IRN believes the current draft plans could be strengthened.

IRN emphasises the important point that healthy and ecologically sustainable river systems are necessary for a flourishing and sustainable community and a thriving economy across New South Wales.

1.5 Objectives of the plans

IRN believes that the WSPs should be consistent with objectives for inland river flows as per the NSW Interim River Flow Objectives.² That is, the plans for managing water sharing should:

- . protect pools in dry times;
- . protect natural low flows;
- . protect important rises in water levels;
- . maintain wetland and floodplain inundation;
- . mimic natural drying in temporary waterways;
- . maintain natural flow variability;
- . maintain natural rates of change in water levels;
- . manage groundwater for ecosystems;
- . minimise effects of weirs and other structures;
- . minimise effects of dams on water quality; and
- . make water available for unforeseen events.

1.6 Performance indicators

Part 2 of the draft WSP Orders also contains the performance indicators against which the success of the strategies, in reaching the objectives, is to be measured.

As stated above in the General Comments section (at dot-point five), IRN believes that rigorous assessments will need to be undertaken in order to establish whether the plans are achieving the necessary outcomes. IRN considers that in order for this to be done, the performance indicators must be specific, measurable, achievable, relevant and time-bound. IRN notes that the performance indicators contained within Part 2 of the draft plans do not have these characteristics.

IRN is also concerned that these performance indicators contain little of the detail necessarily required in order to ensure that the plans are maintaining or improving river health.

In order for any performance indicators of the plans to be assessed, there must be an investment strategy to monitor the impacts of the plans. IRN believes that this monitoring program should involve rigorous independent assessments and that plan reviews should ensure adequate and genuine community consultation.

²NSW Water Quality and River Flow Objectives, <http://www.environment.nsw.gov.au/ieo/>

1.7 Identification of environmental values

IRN notes the classification of some of the water sources, in their report cards, for their 'relative instream value'. IRN believes that such instream values should be investigated and classified for all of the water sources. Furthermore, the overall environmental value of the water sources must recognise also recognise terrestrial and floodplain environmental values, cultural and aesthetic values and the essential ecosystem health functions.

According to the *Guidelines for surface water sharing plan report cards*,³ the assessment of relative instream value involves 'the various instream attributes [being] given a numerical score (and weighting if required) and then combined to determine an instream value. The values are then ranked by comparing them with all the other water sources in the plan area to yield a range of high, medium or low rating'. IRN has concerns that the 'instream value' classification (that has been done only for water sources in some of the draft water sharing plans), is only a relative one which compares and ranks these values against the other water sources in the plan area. This could mean that in a water sharing plan area which contains many water sources with 'high' instream values, some of those areas might subsequently be ranked as having 'low' value when compared to sites of higher value. As the 'relative instream value' classification is a factor used to justify the access and trading provisions, this is particularly concerning.

IRN believes that any water source which has high environmental values should have the potential for a 'high' classification, and to be accordingly protected in access and trading provisions, even if that means that all water sources within a management plan fall into that category.

IRN also believes that important areas for endemic species as well as bird and fish breeding must be identified and provided with specific rules that protect natural flow variability.

1.8 Cease to Pump Rules

IRN supports the development of *Cease to Pump* rules for all of the water sources in these plans. IRN also supports *Cease to Pump* rules being activated at the beginning of the plan period. IRN believes that *Cease to Pump* rules are critical in order to secure natural low flows and to protect pools.

However, IRN is concerned that the *Cease to Pump* rules proposed in the majority of these water sources, namely the 'no visible flow' rule, will not adequately protect natural low flows and very low flows in these water sources.

By adopting the 'no visible flow' *Cease to Pump* rule in the majority of the water sources, whilst it may be preferential as compared to the existing situation, these plans will essentially allow for the continuation of increased 'drought' periods for these river systems as well as limiting the natural period of connectivity between stream pools.

Protecting low to very low flows and pools has been an objective endorsed by NSW since 1999,⁴ and as such should be seen as more of a priority some eleven years later in the development of these water sharing plans. IRN sees that such 'no visible flow' *Cease to Pump* rules, especially when

³NSW Office of Water, *Guidelines for surface water sharing plan report cards*.

⁴NSW Water Quality and River Flow Objectives, <http://www.environment.nsw.gov.au/ieo/>

combined with the difficulties associated with monitoring and enforcement, will not protect low and very low flows. They will only protect pools to a certain extent, and only on paper.

IRN appreciates that the lack of gauging devices and reference points creates limitations for the creation of *Cease to Pump* rules that are based on flow height or volume. IRN notes that a common theme in the draft plans was for the Interagency Regional Panel (“IRP”) to recommend a *Cease to Pump* rule based on ‘no visible flow’ due to there being ‘no suitable reference points in the various water sources’ (for example in the Castlereagh River below Coonamble Water Source).⁵ This highlights the desperate need for the installation and monitoring of a system of adequate and reliable reference points throughout these water sources across the state. This will be discussed in more detail later on in this submission. Amendment provisions in each of the draft water sharing plans should include the creation of new *Cease to Pump* rules if and when new, desperately needed reference points are installed.

Working within the limitations of the lack of gauges, the draft WSP for the Murray Unregulated and Alluvial Water Sources contains a draft access rule which has a better definition for a *Cease to Pump* rule. For the Albury water source, the draft access rule for the very low flow class is to ‘*maintain a visible flow (equivalent to full flow through a 200mm pipe)*’. IRN considers this rule to be more quantitative and thus a better definition and description of the rule when compared to ‘no visible flow’ rule. IRN believes that this provides an example which could be used, and improve, all unregulated river WSPs.

1.9 Protection of low and very low flows

IRN believes that *Cease to Pump* rules should ensure stream connectivity on at least 95% of the days that the water source is flowing, and that such rules should include clauses that allow very low flow levels to be altered following field verification.

Due to the critical nature of very low flows for many dependent organisms, under no circumstances should water users be able to extract water from the very low flow range. It is noted that such a position does not include the exceptional circumstances in which emergency response activities would require extraction.

1.10 Town water supply

IRN is concerned that low flows are not protected from town water supply pumping within the draft rules for the water sharing plans. For instance, in the draft WSP for the *Castlereagh River Unregulated Water Source*, town water supply access licences, when being used to take surface water, are exempt from the *Cease to Pump* rules.⁶

With regard to town water supply access rules and the protection of low flows, IRN is also concerned by an example relating to the Tumbarumba Water Source in the Murray Unregulated draft WSP. In the report card, it is detailed that the 14ML/day *Cease to Pump* rule for the rest of the management

⁵NSW Office of Water, *Draft Water Sharing Plan for the Castlereagh Rivers Unregulated and Alluvial Water Sources: Castlereagh Alluvial Groundwater Source – Report card 2 of 7*, at pp.2.

⁶NSW Office of Water, *Draft Water Sharing Plan for the Castlereagh Rivers Unregulated and Alluvial Water Sources: Castlereagh Alluvial Groundwater Source, Order, Schedule 2(2)*.

zone will not apply to Tumbarumba Shire Council “until they augment their supply”.⁷ IRN finds this point a matter of concern and believes that a time period should be specified during which the council must ‘augment their supply’. IRN firmly believes that any such ‘augmentation’ should be subject to the strictest of environmental impact assessments.

IRN believes that low flows should be fully protected from town water pumping within two to four years of the WSP’s implementation.

1.11 Commence to Pump Rules

IRN believes that *Commence to Pump* rules, such as first flush rules, are critical for protecting the integrity of small, medium and large freshes and floods. For example, a fresh flow occurring after a period of low flow (below the 80th percentile), should be protected from extraction for the first forty-eight hours. Such rules should recognise and meet the requirements of downstream wetlands and high conservation value sites.

IRN is concerned that *Commence to Pump* rules are not presented as a component of these draft WSPs. Furthermore, IRN is concerned about the instances whereby it is stated that report ‘*the panel did not adopt environmental rules (such as a mid-system Commence to Pump or daily flow sharing rules)*’.⁸ While infrastructure limitations, for example lack of gauges, may also affect the logistics of *Commence to Pump* rules, once again IRN would see this as an issue that should be addressed as a matter of some urgency.

1.12 Environmental Water Provisions

IRN emphasises that there should be no increase in water extractions from any source unless evidence can be provided that ongoing management will be ecologically sustainable and that the source will not be compromised by the proposed change.

As per the *Water Management Act 2000*,⁹ in each case the protection of the water source should take precedence over water extraction. In order for WSPs to be suitable for accreditation under the Murray-Darling Basin Plan (*Water Act 2007* Commonwealth), they will need to be in line with the objects of the Basin Plan which recognises that water desperately needs to be returned to the ailing river systems of the Basin.

IRN believes that the extractive share or daily extraction limit of licences should be altered where inactive licences become activated in order to ensure that there is no additional water extraction.

1.13 Groundwater sources

IRN believes that 30% of the average annual recharge into groundwater sources must be reserved for the environment and thus be protected from extractive use. IRN also believes that, due to lack

⁷NSW Office of Water, *Draft Water Sharing Plan for the Murray Unregulated and Alluvial Water Source, Tumbarumba Water Source, Report card 14 of 16 at pp.4.*

⁸For example in the report cards for the *Lower Wangamong Water Source and the Majors Water Source in the Murray Unregulated and Alluvial Water Sources.*

⁹*Water Management Act 2000* (NSW)

of information about accurate sustainable yield figures for groundwater, WSPs should include clauses limiting extraction in low yield years. In addition, plans should include a clause that allows for a reduction in extraction where GDEs are stressed or it becomes understood that current extraction levels might cause degradation.

Groundwater recharge needs to be protected and upstream flows are important in order for this to occur. Therefore, in addition to WSPs, robust floodplain management and floodplain harvesting policies are also needed to be put into place and effectively implemented.

IRN is concerned about the number of groundwater sources that have been identified as having unassigned water with the potential for future extraction. As stated previously, IRN does not support the increase in any water extraction unless it can be proven that it can be managed in an ecologically sustainable manner. At this point in time, all of the scientific knowledge on groundwater systems supports the use of the precautionary approach.

The level and complexity of connectivity between surface water flows and groundwater remains largely unknown for many systems. IRN reiterates that the purposes of the Murray-Darling Basin Plan (as contained in the Federal Water Act 2007) are not to increase extraction levels, but to return water to the highly stressed environment of the Basin.

High conservation value ecosystems such as wetlands, hanging swamps and limestone cave systems that are dependent on surface and groundwater systems must be identified and their values protected.

IRN supports the identification and listing (in Schedules) of groundwater dependent ecosystems (GDEs) in the plans as well as the potential for the listing of further additional sites when information about them becomes available.¹⁰ IRN believes that such clauses should exist for the listing of surface water dependent ecosystems and the recognition of their water requirements. However, IRN does believe that the rules for groundwater bore distances from these sites are inadequate to ensure that GDEs will not be impacted upon.

Water Sharing Plans should include rules, excluding extraction within a distance of at least 400 metres from GDEs, for all access licences. IRN does not support the much smaller distances proposed within the draft plans. The plans only exclude bores within 100 metres from areas described as 'sensitive environmental areas'. Such short distances provide greater risk of negative impacts on these sensitive environmental areas. IRN believes that the level of uncertainty around impacts to groundwater sources and their dependent ecosystems requires the precautionary approach and thus a greater distance from these sites for bores.

IRN also notes two other points of concern regarding how groundwater components are dealt with in the plans. Whilst the draft orders detail that the dictionary (Schedule 1) will explain the terms referred to in the document, neither 'groundwater dependent culturally significant sites' nor 'sensitive environmental areas' are included in the dictionary.¹² IRN asserts that this level of detail should be included in both the plans and supporting documents.

¹⁰For example: NSW Office of Water, *Draft Water Sharing Plan for the Castlereagh Rivers Unregulated and Alluvial Water Sources: Castlereagh Alluvial Groundwater Source, Order, Schedule 4.*

¹²For example: NSW Office of Water, *Draft Water Sharing Plan for the Castlereagh Rivers Unregulated and Alluvial Water Sources: Castlereagh Alluvial Groundwater Source, Order, Section 56 and Schedule 1.*

Due to a current lack of groundwater data, all bores should be mapped, metered and monitored and all unlicensed extractions halted. IRN also believes that bores identified within 1km of a GDE should be targeted for reductions in extraction at least until clear, documented and peer reviewed evidence that a particular bore is totally unconnected with the hydrology sustaining the associated GDE.

1.14 Trading Rules

IRN supports the indicative trading rule that trading into a water source with high hydrologic stress or high instream value is not permitted. However, IRN is concerned about the instances whereby the Interagency Regional Panels have not adopted such a rule. An example is in the Hume Water Source which is covered in the draft WSP for the Murray Unregulated system.

As it is extremely difficult to regulate trading into high flows in unregulated systems, and there is an extremely limited capacity to do so, IRN does not support trading into high flows. High flows are also an essential part of the natural flow regime and as such should also warrant protection.

Past experiences in some river systems have illustrated the difficulties involved with and the impacts that can be had on the environment and other water users downstream. IRN therefore believes that instream trading should only be allowed in a downstream direction and that the details of assessments of trade within water sources should be transparent and publicly available.

1.15 Carryover Provisions

IRN considers carry over in unregulated streams and groundwater systems as impossible to regulate and highly inappropriate, especially as such 'accounting' can result in loss of flows to the environment when it is most needed. Carryover accounting can negatively impact on levels of groundwater recharge.

IRN calls for the maintenance of no carryover rule for the sake of groundwater recharge and the need to apply the precautionary principle.

1.16 Infrastructure, monitoring and compliance

IRN strongly emphasises the need for both monitoring infrastructure and compliance and enforcement components to be well resourced. The lack of gauging points and lack of flow data is a point of uncertainty for such a large number of water sources across the state, in that water is a critical and limiting component for many dependent ecosystems as well as farms. Extension of the reference point network should therefore be a priority action that accompanies these water sharing plans. Without resources for infrastructure, monitoring, compliance and enforcement, any water sharing plan that is developed will be less than optimal and provide much less than is required to achieve ecologically sustainable management of these complex systems.

Gauges and meters should be installed for all high environmental value, high economic value, and high-risk water sources within three years of the WSP's gazettal. Restoration of flow volume, flow variability and ecological values must be prioritised.

The report cards for these water sources illustrate how much remains unquantified and merely inferred with regard to extraction amounts. IRN considers that all water extractions, including for stock and domestic use, should be mapped, gauged and monitored within five years of the WSP's implementation in order that all water extraction is quantified. Of critical importance, to the future health of many systems, will be the prevention of illegal extraction activities and the implementation of a rigorous compliance program.

1.17 Determination of Long-term Average Annual Extraction Limits (LTAAEL)

IRN calls for the use of a stringent precautionary approach to calculating LTAAEL. IRN assumes that these plans are being developed on the basis of the best available peer-reviewed science and advice.

IRN notes that there seems to be an inconsistency in the approach to determination of LTAAEL in the different draft WSPs and this is of concern to IRN.

1.18 Basic Landholder Rights

IRN would also like to make the general comment that, particularly in some of the water sources under high hydrological stress, unfettered growth of Basic Landholder rights, for example through subdivisions, will have a negative impact on the shares of all other water users.

Water Sharing Plans should send a strong message to local government about the implications for Local Environment Plan development. Water Sharing Plans should be a mechanism to inform development in relation to water management through local government.

1.18 Other comments

As one of probably few organisations commenting on all of the draft plans currently on public exhibition, IRN would firstly like to raise the issue of inconsistency in the language and layout used to by the Office of Water in the supporting documents, namely the report cards, for each water source. Whilst this may be a relatively minor point of concern, IRN believes that consistency in language and the information presented (or not presented) is essential in order for comparative assessment of each of the draft plans to be undertaken.

For example, not all of the report cards include details about the environmental values (or 'instream values') of the water sources. If this information is unknown, or unassessed, than this should be acknowledged and presented in the report cards.

Another example of language inconsistency in the draft WSPs is the difference in how the *Cease to Pump* rules are described. Draft access rules for the Murray Unregulated system define the *Cease to Pump* rule as 'maintain a visible' flow, while most other draft WSPs use the phrase 'no visible flow'. Such differences make translation and comparison between various plans more complicated.

PART 2

2.1 DRAFT WATER SHARING PLAN for the CASTLEREAGH RIVER UNREGULATED and ALLUVIAL WATER SOURCES

2.1.1 Draft Access Rules - Cease to Pump

IRN welcomes the development of Cease to Pump rules for each of the management zones and surface water sources in this draft water sharing plan. However, as outlined above, IRN has concerns that Cease to Pump rules based on ‘no visible flow’¹³ does not adequately protect important natural low and very low flow events. IRN reiterates the need for resources in order to establish and maintain an adequate network of gauges and reference points so that more quantifiable Cease to Pump levels can be implemented.

IRN comprehends the difficulty of assessing flows below the ground surface in the sand beds in the Castlereagh River Binnaway to Gilgandra Management Zone and the Castlereagh River Gilgandra to Coonamble Water Source.¹⁴ IRN supports the approach of the IRP in assuming high hydrological stress in this system and that an alternative Cease to Pump rule is required. While IRN sees that the ‘even number calendar day alternation’ is essentially a ‘blind’ method which does not stop pumping when water is not flowing, IRN welcomes the installation of the trial camera with the aim of better assessing flows. IRN supports the amendment provision for adjustment to the Cease to Pump rule as a result of this camera trial.

As discussed earlier in the submission IRN believes that critical low and very low flows through the systems should also be protected from extraction for town water supply¹⁵ and believes that Cease to Pump rules should enshrine this within 2-4years of the plan implementation.

IRN reaffirms the need to establish Commence to Pump rules in order to protect the integrity of small, medium and large freshes and floods in the system.

2.1.2 Draft Trading Rules

IRN supports the precautionary approach used in determining the level of hydrological stress the system is under and believes that due to the limited flow and usage data available the default ‘highly stressed’ condition is appropriate. As such IRN also supports the proposal for not permitting trading into the management zone.

¹³NSW Office of Water, *Draft Water Sharing Plan for the Castlereagh Rivers Unregulated and Alluvial Water Sources, Order*, Section 46 ss(2).

¹⁴NSW Office of Water, *Draft Water Sharing Plan for the Castlereagh Rivers Unregulated and Alluvial Water Sources: Castlereagh Binnaway to Gilgandra Water Source – Report card 1 of 7*, at pp.3; NSW Office of Water, *Draft Water Sharing Plan for the Castlereagh Rivers Unregulated and Alluvial Water Sources: Castlereagh Gilgandra to Coonamble Water Source – Report card 2 of 7*, at pp.2.

¹⁵NSW Office of Water, *Draft Water Sharing Plan for the Castlereagh Rivers Unregulated and Alluvial Water Sources, Order*, Schedule 2(2).

2.1.3 Extractions

Once again, IRN states that there should be no increase in water extractions and that the purpose of these plans should be to try and address overallocation and overextraction in all of these watersources. IRN notes in the Report Card that the Basic Landholder Rights ‘volume may increase during the term of the plan if there is a growth in access to BLR’.¹⁶ As such, all of the other plan provisions should be considered within this context.

IRN is supportive of licences being reduced if extractions have been demonstrated as exceeding the long-term average annual extraction limit for that water source.¹⁷ However, IRN believes that assessment of this should take place earlier than the fourth water year after the WSP is gazetted, as is proposed in the draft order.

2.1.4 Carryover

Due to the potential negative impacts on groundwater recharge and the need for a precautionary approach (as discussed earlier in this submission), IRN supports the proposal for no carryover of account water from one water year into the next.

2.1.5 Groundwater Dependent Ecosystems and Sites

In relation to the rules for water supply works, IRN firstly notes that, while referred to in the draft order,¹⁸ ‘groundwater dependent culturally significant sites’ are not defined in Schedule 1. As allowable distances for works approvals from these sites are prescribed, IRN believes a definition of this term is required. IRN is concerned about how the Office of Water will identify such sites prior to each works approval when no specific sites are currently defined or listed.

The draft order contains rules for bores located near ‘sensitive environmental areas’,¹⁹ however, this term is also not defined in Schedule 1. Rather the draft order then goes on to describe rules for distances from ‘groundwater dependent ecosystems’ (a term which is defined in Schedule 1). IRN believes that any differences between the terms should be clarified and both included in Schedule 1.

As outlined earlier in the submission, IRN does not support the allowable distance proposals for bores in relation to groundwater dependent ecosystems. IRN does not believe that bores should be allowed within 100 metres (as proposed for Basic Landholder Rights access licences) or 200 metres (as proposed for non-Basin Landholder Rights access licences) of a high priority GDE.²⁰ IRN believes a larger and more precautionary buffer zone should be prescribed, excluding bores from within at least 400 metres of a GDE. These rules should be more in keeping with the distance of 500 metres which is proposed for high priority Karst systems.

¹⁶ NSW Office of Water, *Draft Water Sharing Plan for the Castlereagh Rivers Unregulated and Alluvial Water Sources: Castlereagh Alluvial Groundwater Source – Report card 7 of 7*, at pp.2.

¹⁷ NSW Office of Water, *Draft Water Sharing Plan for the Castlereagh Rivers Unregulated and Alluvial Water Sources, Order*, Section 33 ss(2).

¹⁸ NSW Office of Water, *Draft Water Sharing Plan for the Castlereagh Rivers Unregulated and Alluvial Water Sources, Order*, Section 56.

¹⁹ NSW Office of Water, *Draft Water Sharing Plan for the Castlereagh Rivers Unregulated and Alluvial Water Sources, Order*, Section 55.

²⁰ NSW Office of Water, *Draft Water Sharing Plan for the Castlereagh Rivers Unregulated and Alluvial Water Sources, Order*, Section 55.

The draft refers to excluding non-Basic Landholder Rights within a distance more than 200 metres from a high priority GDE *'if likely to cause drawdown'*. No details of this 'likelihood' determination is included in the draft WSP. IRN believes it appropriate that greater distance rules should be adopted in accordance with the precautionary approach.

IRN is very concerned about the statement that *'distance restrictions do not apply if the Minister is satisfied that; no drawdown of water will occur at the perimeter of any GDE listed in the plan'*. IRN believes that such an inclusion needs qualification, and that the levels of uncertainty around GDEs at the current time are too high to warrant such a provision.

IRN believes that existing bores located within one kilometre from a GDE should be targeted for reductions in extraction and as such is concerned about this not being prioritised in the plan or addressed via changes to the restriction distances.²¹

IRN welcomes the listing of 17 high priority GDE sites within this water source,²² however IRN is not convinced that the distance rules for bores provide adequate protection of such important assets.

IRN supports the potential for addition of further GDE sites based on further studies, and believes that further research into the identification and understanding of GDEs should be priority.

2.2 DRAFT WATER SHARING PLAN for the LOWER MURRAY-DARLING UNREGULATED and ALLUVIAL WATER SOURCES

2.2.1 Long-term average annual extraction limit

Despite the reasoning provided by the IRP, including the small volume of total entitlement relative to rainfall recharge, aquifer characteristics and historical licence operation, IRN is very concerned and cautious about the proposal to set the LTAAEL at the sum of entitlement.

This concern is based particularly on the acknowledgment within the draft plan documents that *'any significant extractions from the alluvium may encourage the intrusion of saline groundwater into the freshwater lens, thus decreasing the water quality in the freshwater lens and potentially the Darling River'*.²³

IRN is also cautious about using the standard method to determine LTAAEL as in this instance it would result in *'a substantial volume of unassigned water'* which could then potentially be made available for industry, at the Ministers discretion, in the future.²⁴

²¹NSW Office of Water, *Draft Water Sharing Plan for the Castlereagh Rivers Unregulated and Alluvial Water Sources, Order*, Section 57.

²²NSW Office of Water, *Draft Water Sharing Plan for the Castlereagh Rivers Unregulated and Alluvial Water Sources, Order*, Schedule 4.

²³NSW Office of Water, *Draft water sharing plans – Inland NSW unregulated and alluvial water sources – Overview*, at pp.12.

²⁴NSW Office of Water, *Draft water sharing plans – Inland NSW unregulated and alluvial water sources – Overview*, at pp.12.

At this point IRN reiterates that the WSPs, under both the Water Management Act 2000 (NSW) and the Water Act 2007 (Cwth), should be prioritising the protection and restoration of water sources over water extraction. In this instance, the most precautionary approach is required.

2.2.2 Drawdown rules for lagoons

Lagoons can be highly important components of freshwater systems. They have a potential value for groundwater recharge in some areas as well as supporting a suite of macro-invertebrates through dry times.

While quantitative rules (such as those proposed as an allowable drawdown provision by percentage of depth) for limiting extraction from lagoons is preferable to their being no-limits on extraction from these water sources, IRN does not support pumping from lagoons.

2.2.3 Management of environmental water in Thegoa Lagoon

IRN supports the inclusion of clauses that allow Additional Environmental Allowances and Adaptive Environmental Water to be diverted from the Murray Regulated System into Thegoa Lagoon for the purposes of delivering the required water to protecting the values of the Lagoon.

However, as stated above, IRN does not endorse water extraction from lagoons, especially when considering that such a lagoon has been identified as having important values that would justify the provision of additional environmental water.

2.3 DRAFT WATER SHARING PLAN for the MURRAY UNREGULATED and ALLUVIAL WATER SOURCES

First and foremost, IRN would like to note that there are many water sources in this plan area which have high instream values identified,²⁵ including numerous threatened fish and frog species. While it is positive to have so many frog and fish species identified, it is important to highlight that these are already threatened species.

Below the *Cease to Pump* rules are discussed in detail, followed by some specific points for each of the water sources in the draft WSP area.

2.3.1 Cease to Pump Rules

As previously discussed in the submission, while IRN believes that Cease to Pump levels are critical, the 'no visible flow' rule fails to protect natural low flows. However, IRN believes the Cease to Pump rule 'the maintenance of a visible flow (equivalent to full flow through a 200mm pipe)', as included in this draft WSP,²⁶ provides a more quantitative and suitable definition than simply 'no visible flow'.

²⁵For example the *Albury, Dora Dora and Hume Water Sources*.

²⁶For example for the *Albury Water Source*.

IRN welcomes the recommendation of the IRP to raise the Cease to Pump levels in the Indi, Tooma and Tumbarumba Water Sources in an acknowledgment of the high hydrological stress of these systems.

As stated earlier, IRN is concerned about Tumbarumba Shire Council still being allowed to take water under their local water utility access licence with the CtP set at the current 5ML/day, and not the proposed raised level.

IRN is concerned about the lowering of the Cease to Pump level at Tumbarumba Water Source to 32ML/day from 50ML/day.

As it has been known for some time that Water Sharing Plans, as well as many other elements of water reform, were going to be implemented, IRN does not believe that such a conciliatory approach (involving issuing of supplementary water access licences at 90% and falling each) is warranted.

2.3.2 Albury water source

As discussed earlier in the submission, IRN believes that the 'maintain a visible flow (equivalent to full flow through a 200mm pipe)' draft access rule is preferable to a 'no visible flow' *Cease to Pump* rule.

IRN is concerned about the fact that despite non-perennial streams usually assumed as being under high hydrological stress, the 'panel used local knowledge to revise this down to low given levels of usage and competition'. Whilst IRN is supportive of the use of local knowledge, IRN does not believe that revising a water source down to a Low stress classification is in keeping with a precautionary approach, especially when considering that this water source has High relative instream value with six threatened fish species, two threatened frog species and high rarity.

2.3.3 Dora Dora Water Source

IRN again highlights the rule of 'maintain a visible flow (equivalent to full flow through a 200mm pipe)' as a preferable definition of the draft access rule 'no visible flow'.

The report card for this data source also illustrates how important it is to improve monitoring so that flow data can be recorded and then used as a reference point.

2.3.4 Hume Water Source

IRN has concerns about the panel not adopting the indicative trading rule (no trading permitted into a high stress or high value water source) and allowing limited trade into very high flows, in order to 'provide flexibility for economic development'. As a water source with high instream values, including 5 known threatened fish species, 2 threatened frog species and high rarity, IRN sees that high flows should also be protected as they are an important part of the natural flow regime. IRN does not support this move away from the indicative trading rule.

Again, IRN sees that further information about how trading within water sources would be assessed is required.

2.3.5 Indi Water Source

As discussed earlier in the submission, this water source provides an example of the problematic approach of ranking 'instream value' relative to other water sources in the WSP area. The Indi water source, just based on the information provided in the report cards (two known threatened fish species, four known threatened frog species and high naturalness), arguably has high 'instream value'. IRN does not support that such environmental values could be downgraded in their protection because of how they compare to other sites within the WSP area. When so many features of our freshwater systems, including the species and communities dependent on them, have already been lost, protection should be a priority for water sources which still exhibit values lost at so many other sites. IRN questions the draft trading rule of trading into the water source.

IRN believes that further justification is required for the values classification of this water source especially as such a rating goes on to influence the draft trading rules.

IRN is very concerned about the key consideration about the previously adopted Cease to Pump rule. That is, that 'the rule would also have meant that NSW irrigators would have been at a significant disadvantage compared to Victorian irrigators, who would continue to access water under current access arrangements'. IRN believes that such a consideration is taking the lowest common denominator approach. NSW should strive to be innovative and move towards more ecologically sustainable use and management of its water resources and, in doing so, show leadership that could encourage other states to follow suit.

IRN believes more information should be presented on the amendment provision, as stating that such a provision is allowed 'following consultation with Victoria' does not provide adequate details.

2.3.6 Jingellic Water Source

Particularly in a water source that has such high instream value, including four known threatened fish species, four known threatened frog species and high naturalness, and relatively low economic significance of irrigation, IRN believes that further low flows should be protected.

2.3.7 Lower Wangamong Water Source and Majors Water Source

IRN believes that further information is required about the 'refined method' used to determine indicative access and dealing rules, which is stated as the reason for not presenting a rating of risk to instream values.

As discussed earlier in the submission, IRN supports the use of environmental rules such as Commence to Pump, and would welcome further inclusion of such rules. IRN is therefore disappointed by the instances, such as this one, where the panel discussed, but did not adopt, such rules.

IRN welcomes the panel not proposing trading into the water source on the basis that as there was a lack of a gauge or reference point for determining the level of impact of additional trade into the water source.

2.3.8 Mannus Water Source

The acknowledgement that it is not known what percentile of flows is represented by the draft access rule of 'pumping not permitted when flows are at or below 0.2 metres' highlights how is not known for these systems, even when there is a gauging or reference point. Such an acknowledgement highlights the need for a precautionary approach. IRN welcomes the installation of a telemetred gauge so that soon the corresponding daily flow based on the levels at Glenroy gauge can be quantified.

As stated already in this submission, high flows are a critical part of the natural flow regime and as such IRN remains cautious about trading into very high flows.

2.3.9 Maragle Water Source

Once again, IRN remains cautious about trading into very high flows.

2.3.10 Mulwala Water Source

IRN supports the adoption of the indicative trade rule of not permitting trade into a high stress or high value water source.

IRN is concerned that the IRP 'did not consider adopting indicative environmental rules (such as a mid-system *Commence to Pump* or daily flow sharing rules)', especially for a water source with high instream values (with 8 threatened fish species, 1 threatened frog species, high naturalness, high diversity and high rarity).

2.3.11 Ournie Welaregang Water Source

As outlined earlier, IRN believes that further details of the assessment criteria for trading within the management zone need to be presented.

2.3.12 Swampy Plain Water Source

IRN is supportive of the amendment provision for the *Cease to Pump* rule for if the Bureau of Meteorology began publishing real time data for the Khancoban 2 gauge. This support is based on the need to further quantify *Cease to Pump* levels in order to protect low and very low flows and move away from simplistic 'no visible flow' rules. However, in this instance IRN believes that such data should already be publicly available as the gauge is already in place. Commonly these WSP have had *Cease to Pump* rules limited by a lack of gauge infrastructure, but in this instance Snowy Hydro Ltd has at Swampy Plain a suitable gauge.

IRN does not find it acceptable that such data is not already publicly available, especially when the Office of Water has acknowledged that such information would allow for a better means by which to more appropriately manage flows for environmental, and thus therefore, public benefit.

2.3.13 Tooma Water Source

IRN has issue to the reference to 'the critical month of February' as this is a reference mainly to irrigated agriculture and no similar reference to requirements that are critical to ecosystem health, particularly in a water sources such as this that has been classified as having high instream values.

2.3.14 Tumbarumba Water Source

As discussed previously in the submission, IRN believes that *Cease to Pump* provisions should also apply to town water supply and that a time period for Tumbarumba Shire Council to augment its water supply should be specified so that town water supply exemption from the *Cease to Pump* rule does not go on indefinitely.

IRN remains cautious about the proposal to remove the additional access rule of no pumping in February and March and to increase the volume of entitlement which may be traded into the water source, particularly as the water source is classified as being under high hydrological stress and it also has significant instream values.

2.3.15 Upper Murray River Water Source

IRN welcomes a volumetric *Cease to Pump* rule, due to the acknowledgement that one based on the maintenance of a visible flow 'would equate to full access in all but exceptional circumstances and could lead to virtually all flow at the top end of the very low flow index being extracted'.

2.3.16 Upper Murray Groundwater Source

IRN does not support growth in extractions and would like to see further details about how the 10% tolerance of growth in extraction will be calculated (ie. will it be a cumulative 10% each year).

IRN does not support the granting of further access licences in this water source as IRN believes that the purposes of these WSPs and the Basin Plan should be to wind back extraction in a highly overallocated and overextracted system.²⁷

As stated previously in this submission, IRN does not support the proposed distances in which bores are allowed relative to GDEs and believes that distances should be greater in order to provide an adequate buffer zone.

Once again, IRN calls for the maintenance of no carryover provisions for the purposes of groundwater recharge and the need for a precautionary approach.

IRN is supportive of the year 1 commencement date for all of the flow classes.

²⁷NSW Office of Water, *Draft Water Sharing Plan for the Murray Unregulated and Alluvial Water Sources, Order, Section 59.*

2.4 DRAFT WATER SHARING PLAN for the NSW MURRAY-DARLING BASIN FRACTURED ROCK GROUNDWATER SOURCES

2.4.1 Carryover rules

IRN considers carry over in unregulated streams and groundwater systems as impossible to regulate and highly inappropriate, especially as such 'accounting' can result in loss of flows to the environment when it is most needed. Carryover accounting can negatively impact on levels of groundwater recharge.

IRN calls for the maintenance of no carryover rule for the sake of groundwater recharge and the need to apply the precautionary principle.

2.4.2 Inverell Basalt Groundwater Source

As stated previously in this submission, IRN does not support the identification of unassigned water for potential future extraction as these WSPs should be addressing vast overallocation of water resources across the state.

IRN does not support the proposed distances from GDEs in which bores are allowed, despite their being no currently identified high-priority GDEs in this particular groundwater source.

2.4.3 Kanmantoo Fold Belt Murray-Darling Basin Groundwater Source

IRN does not support the identification of 113,145 ML/yr for potential future extraction.

Once again, due to the potential negative impacts on groundwater recharge and the need for a precautionary approach IRN does not support the proposal for carryover of account water from one water year into the next.

2.4.4 Lachlan Fold Belt Murray-Darling Basin Groundwater Source

IRN does not support the identification of unassigned water for potential future extraction, particularly as there are some significant GDEs identified within this groundwater source, and IRN does not believe the allowable distances proposed for bores will provide adequate protection for these GDEs.

IRN is very concerned about the identified high overall risk to the aquifer from groundwater extraction, the high risk to GDEs from declining groundwater levels, and the high risk to GDEs from altered patterns of groundwater level fluctuations.

2.4.5 Liverpool Ranges Basalt Murray-Darling Basin Groundwater Source

IRN does not support the identification of unassigned water for potential future extraction.

2.5 DRAFT WATER SHARING PLAN for the NSW MURRAY-DARLING BASIN POROUS ROCK GROUNDWATER SOURCES

For reasons stated previously in this submission, IRN does not support the proposal for carryover of account water from one water year to the next.

2.6 DRAFT WATER SHARING PLAN for the NORTH-WESTERN UNREGULATED WATER SOURCES and the NORTH-WESTERN FRACTURED ROCK GROUNDWATER SOURCES

IRN remains cautious about the establishment of a non-zero LTAAEL. IRN believes that setting a level that would allow for some small scale development must only be done based on the best available peer reviewed science. IRN calls for the application of a precautionary approach.