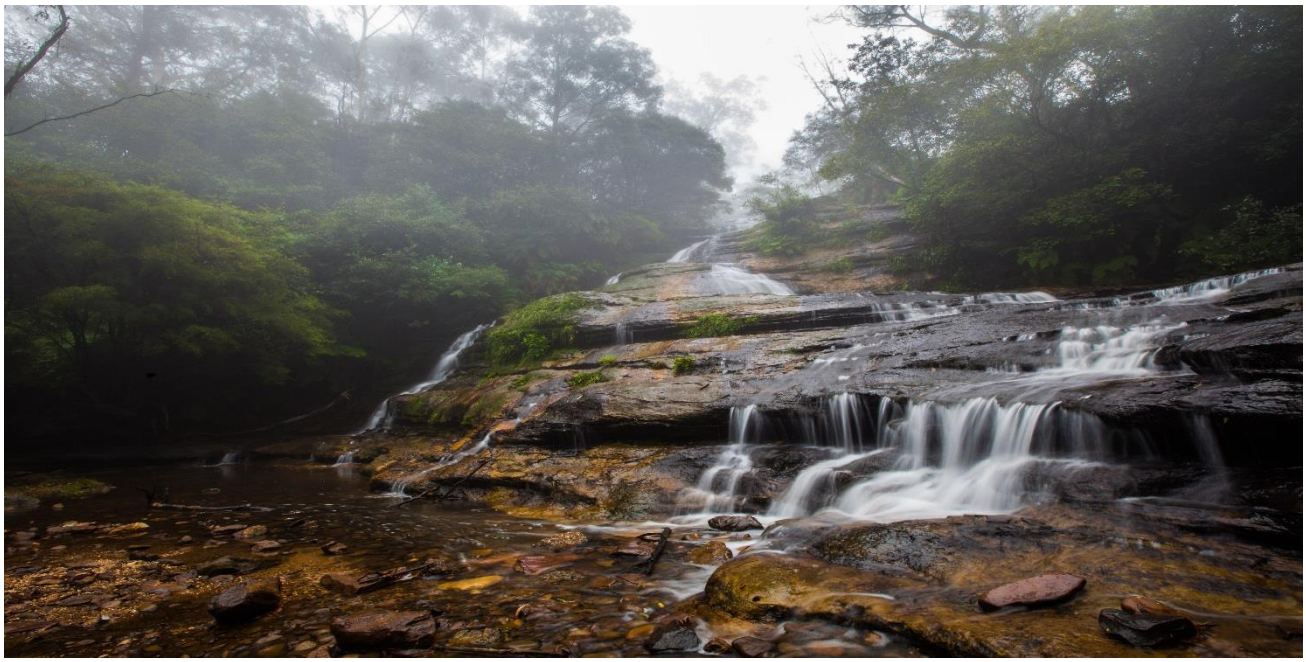
NSW GOVERNMENT Natural Resources Commission



Review of the water sharing plan for the Bellinger River Area Unregulated and Alluvial Water Sources 2008

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Enquiries

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List of acronyms

AWI	Aboriginal Water Initiative
DOI	Department of Industry
WRAP	Water Reform Action Plan
WSP	Water Sharing Plan

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1 Executive summary

Water Sharing Plans provide the framework for balancing water use within the system, allocating water for community, industry and the environment. Introduced through the *Water Management Act 2000*, the plans provide for the sustainable and integrated management of waters sources for present and future generations in NSW. In particular the plans should apply the principles of ecologically sustainable development, protect, enhance and restore water sources, recognise social and economic benefits of water sources and encourage best practice management and use of water. Plans also act as a legal framework for water users with perpetual access licences and ensure equitable conditions and increased opportunities for trade through the separation of land and water as property rights.

The Natural Resources Commission has a statutory responsibility to review Water Sharing Plans due to expire and provide advice to the Minister for Regional Water as to whether the plan should be replaced with a new plan or extended. The Commission has reviewed the *Bellinger River Area Unregulated and Alluvial Water Sources 2008* (hereafter referred to as the Plan) consistent with this responsibility.

The Commission found that, if implemented consistently and in full, many of the current provisions of the Plan have the potential to allow for sustainable water management that supports economic, social, cultural and environmental outcomes. The Plan currently provides sharing of water for a wide range of uses including local councils, water utilities, livestock grazing (dairy, beef, pork), and some irrigated crops, including cereals and horticultural products[1]. A considerable portion of water is conserved for environmental flows. Much of the area covered by the Plan is notable for its natural beauty and conservation value.

This review found that not all provisions are implemented in full or consistently. Given the high level nature of the Plan there is a heavy reliance on supporting processes and documentation to enable the effective implementation of the plan. The Commission also found that sufficient publicly available monitoring, evaluation and reporting information to properly assess the outcomes achieved by the Water Sharing Plan for the Bellinger River Area is not available. Further, there is a lack of coordination across monitoring programs that do exist, limitations to gauging and metering infrastructure, and anecdotal issues raised around compliance. All of these issues make it difficult to assess how effectively the Plan has been implemented or the degree to which outcomes have been achieved.

The Commission found that due to a lack of metering of licensed water take on the system, increased water demand and possible increased variability in river inflows, there is a need to reassess the current assumptions that underpin the settings in the Plan. This should include review of, future urban water demand of the town of Bellingen and surrounding areas, appropriateness of current extraction limits and implementing the revised methodology for estimating basic landholder rights when completed.

One of the primary objectives of the Plan is to maintain or enhance the Aboriginal, cultural and heritage values of the water sources. The Plan gives recognition of the Aboriginal cultural values of water by providing for water licences for Aboriginal cultural purposes and Aboriginal community development in those water sources with low to medium instream value. The

[1] https://www.water.nsw.gov.au/water-management/basins-and-catchments/bellinger-catchment

Commission has found that regular engagement with the Aboriginal community would be beneficial and allow for a more targeted and meaningful outcomes for the local community. The Commission recommends that the Plan be replaced with a new management plan in order to:

- improve clarity of strategies, objectives and performance indicators
- improve monitoring of outcomes
- improve outcomes from environmental flows
- improve outcomes for the Aboriginal community
- improve clarity of language for stakeholders and make it consistent with terminology in other plans

Full recommendations are outlined in Table 1 below.

Table 1. Recommendations and actions

The Commission recommends that the Plan be replaced with a new management plan in order to address the following recommendations:
1. DOI-Water should clarify objectives and revise the monitoring, evaluation and reporting requirements in the new plan to help improve future planning and assessment of outcomes.
2. In developing the new plan, DOI-Water should ensure consistency, with the NSW Government's new framework for measurement and metering of water take, including any metering requirements.
3. In developing the new plan, DOI-Water should: ▪ Develop monitoring requirements and indicators that will allow assessment of environmental sustainability of the long-term average annual extraction limit. ▪ Include provisions requiring assessment of the long-term average annual extraction limit against sustainability indicators and that allow for adjustment if necessary.
4. In developing the new plan, DOI-Water should ▪ Apply the best available methodology to estimate stock and domestic take under basic landholder rights. At a minimum this should incorporate climate data to improve reliability of stock and domestic extraction estimates. ▪ Ensure the above methodology incorporates any finalised requirements in the Reasonable Use Guideline for stock and domestic usage.
5. In developing the new plan, DOI-Water should investigate barriers to the utilisation of Aboriginal Community Development access licences, and adjust the provisions of the Plan as appropriate to address barriers.
6. DOI-Water should review the flow reference point and access rules to determine if other gauging sites may improve outcomes, and revise the provisions related to gauging in the new plan if appropriate.

7. DOI-Water should conduct an assessment, including public consultation, to determine whether to merge the Water Sharing Plans for the Bellinger River Area and Coffs Harbour Area.

The Commission has identified several opportunities to improve implementation of the Plan. Taking these suggested actions would better ensure that the Plan is achieving the intended outcomes:

- DOI-Water should ensure that the Implementation Program[2] and any new monitoring and evaluation program requirements are implemented.
- DOI-Water should take actions to formally engage with the Aboriginal community to identify and support cultural water requirements consistent with Plan requirements. Engagement could be achieved via numerous bodies including the Dorrigo Plateau Local Aboriginal Land Council, the North Coast Local Land Services Aboriginal Community Advisory Group (or other existing local representative forums such as the Jaliigirr Biodiversity Alliance).
- DOI-Water should engage water users in the planning process and provide information relating to carryover and trade provisions to support economically efficient water use.
- DOI-Water should update the overarching 'Guide Document' for the Plan and Plain-English 'Rules Summary Sheets' for each individual water source within the Plan for ease of reference by water users.

2 Role of the Natural Resources Commission and recommendations

Water sharing plans are statutory instruments under the *Water Management Act 2000* that typically have a ten year term. They prescribe how water is managed to achieve sustainable water management that supports economic, social, cultural and environmental outcomes. They are designed to provide certainty for water users over the life of the plan – typically a period of ten years, unless they are extended.

The Natural Resources Commission (the Commission) has a role under Section 43A of the *Water Management Act 2000* to review water sharing plans that are approaching expiry and provide a report to the Minister on:

- the extent that water sharing provisions of the plan have materially contributed towards achievement of the State priorities for Local Land Services that relate to natural resource management
- whether changes to plan provisions are warranted.

In conducting this review, the Commission is to call for and consider public submissions, and have regard to any other relevant State-wide and regional government policies or agreements

[2] In accordance with section 51 of the Act, the Minister may establish an Implementation Program that sets out the means by which the provisions of this Plan are to be achieved. It is proposed that the Minister establish an Implementation Program for this Plan. Pursuant to section 51 (5) of the Act, the Implementation Program is to be reviewed annually by the Minister to determine whether it is effective in implementing this Plan.

that apply to the catchment management area. Depending on its review findings, the Commission may recommend extension or remake of a water sharing plan.

2.1 Review approach

2.1.1 Scope

The Commission sought to understand how the provisions of the water sharing plan have contributed to State priorities for Local Land Services that relate to natural resource management, specifically the following goals from the Local Land Services State Strategic Plan:

- Biosecure, profitable, productive and sustainable primary industries
- Resilient, self-reliant and prepared local communities
- Healthy, diverse and connected environments.

The Commission identified and examined water sharing provisions of particular relevance to these goals. For example, the Commission considered the role of planned environmental water provisions in providing healthy, diverse and connected environments, and trade provisions in supporting productive and sustainable primary industries.

2.1.2 Available evidence

The Commission's review was informed by:

- **Submissions** – the Commission called for submissions. Stakeholders were asked to respond to eight questions to assess the contribution of the Plan to State priorities for Local Land Services (see Appendix A). One confidential submission was received.
- **Targeted consultation** – with government agencies, community and industry organisations.
- **Document review** – the Commission obtained both publically available information and unpublished modelling and reports from water management agencies including DOI – Water.
- **Technical advice –** from consultants to provide expert analysis on Plan provisions and opportunities for improvement.

2.2 Recommendation to the Minister

The Commission recommends that the water sharing plan for the *Bellinger River Area Unregulated and Alluvial Water Sources 2008* be replaced with a new management plan in order to:

- improve clarity of strategies, objectives and performance indicators
- improve monitoring of outcomes
- improve outcomes from environmental flows
- improve outcomes for the Aboriginal community
- improve clarity of language for stakeholders and make it consistent with terminology in other plans

3 The Bellinger River Plan area

3.1 The Bellinger River Catchment[3]

The Bellinger catchment is situated on the mid north coast of NSW. The catchment is approximately 70 km long and 20 km wide covering an area of approximately 1,000 km. The two main rivers in the catchment are the Kalang River to the south and the Bellinger River to the north.

The Bellinger River rises in the Great Dividing Range and flows south-east through an extensive coastal floodplain to Urunga. The main tributaries of the Bellinger River are the Never Never River, Rosewood Creek, Hydes Creek and Boggy Creek, and Spicketts Creek in the Kalang River.

The Kalang River flows into the Bellinger River just upstream of the river mouth at Urunga, with the rivers sharing a common entrance to the ocean. The tidal influence extends approximately 25 km upstream in the Kalang River, and upstream for approximately 20 km of the township of Bellingen in the Bellinger River.

Valued for its natural beauty, the Bellinger catchment contains areas of regionally significant rainforest and is rich in biodiversity with abundant aquatic and terrestrial ecosystems. The catchment is predominantly mountainous with small areas of river and creek flats, and the coastal floodplain.

The Bellinger catchment climate is sub-tropical with warm, wet humid summers and dry winters. It is a relatively high rainfall area compared to the rest of the state, with an overall average for the catchment of over 1,500 mm per year, the majority of which occurs in the summer and autumn months.

3.2 The Water Sharing Plan for the Bellinger River Area[4]

The *Water Sharing Plan for the Bellinger River Area Unregulated and Alluvial Water Sources 2008* (the Plan) commenced on 1 July 2008 and is due for extension or replacement in July 2018.

The area to which the Plan applies is defined as being part of the Upper North Coast Water Management Area, known as the Bellinger River Area Unregulated and Alluvial Water Sources. These water sources exclude the area of land below the mangrove limit.

The Plan covers 11 individual water sources, including:

- Bellinger River Water Source
- Boggy Creek Water Source
- Coastal Bellinger Water Source
- Coastal Kalang Water Source
- Dalhousie Creek Water Source
- Hydes Creek Water Source
- Kalang River Water Source
- Never Never Creek Water Source

[3] Department of Water and Energy (DWE) 2008, *Water Sharing Plan: Bellinger River Area unregulated and alluvial water sources – Background Document*. DWE 08_192, Department of Water and Energy, Sydney, July 2008.
[4] *Water Sharing Plan for the Bellinger River Area Unregulated and Alluvial Water Sources 2008*

- Rosewood Creek Water Source
- Spicketts Creek Water Source
- Thora-North Arm Bellinger Water Source

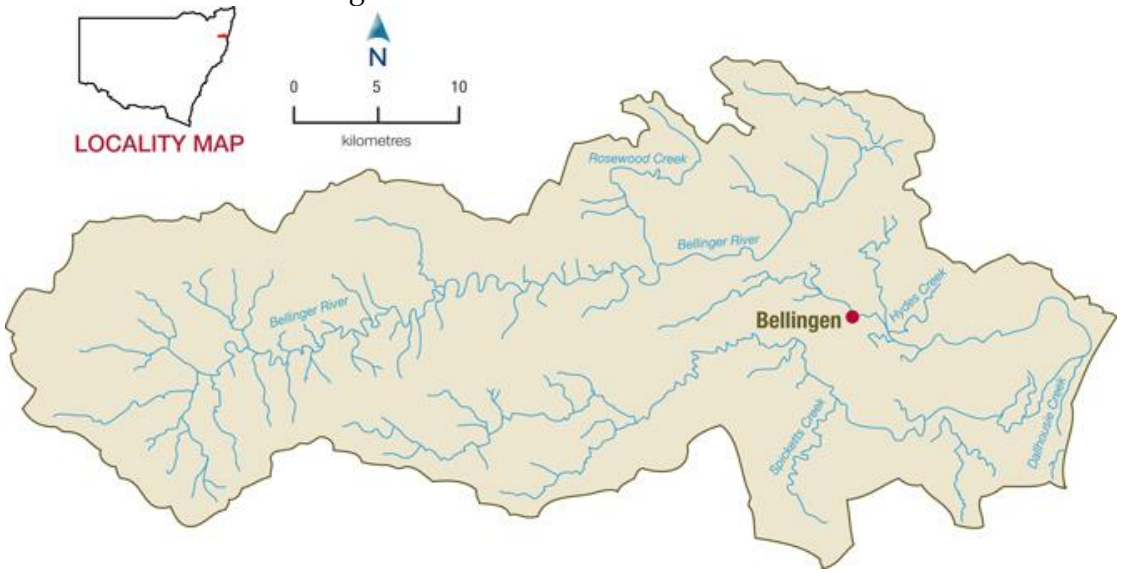

Figure 1 The Bellinger River Area Unregulated and Alluvial Water Sources

The availability of water for extraction from these water sources is managed under two extraction units, being the Bellinger River Catchment Extraction Management Unit and the Dalhousie Creek Catchment Extraction Management Unit.

At the commencement of the Plan, the average annual flow in the Bellinger River Extraction Management Unit was 612,704 ML, of which 4,643 ML (<1%) is licensed for extraction on a long term average annual basis. The average annual flow in the Dalhousie Creek Extraction Management Unit was 1,630 ML, of which 191 ML (approx. 12%) is licensed for extraction on a long term average annual basis.

3.3 Overview of economic conditions, land and water use

The Bellinger River catchment is predominantly mountainous and forested. Topography has been a dominant factor in its development with the steep areas remaining under forest cover, while the narrow flood plain and associated foothills have been cleared for grazing, cropping and other uses. Most of the forest is contained in either national parks or state forest areas.

The major towns are Bellingen and Urunga, with a number of smaller settlements throughout the catchment. The Bellinger River catchment is also home to the Gumbaynggir Aboriginal people, whose land extends from Grafton in the north to the Nambucca River in the south and westward from the coast to the headwaters of the Nymboida River.

The Bellingen Shire describes itself as "an economy in transition"[5]. The Council notes that its traditional industry base of timber, dairying, potato and meat processing remain important contributors to the local economy. However, emerging and developing industries include tourism, aquaculture, arts and culture, organics and regional cuisine, and aged care. In addition to the historical land use of dairying and beef production, there are a number of small land parcels used for hobby farming and rural residential uses.

[5] https://www.bellingen.nsw.gov.au/recreation/about-shire

Water users in the catchment include local councils, water utilities, forestry, livestock grazing (dairy, beef, pork), and some irrigated crops, including cereals and horticultural products[6]. Blueberry plantations are an emerging crop on the mid-north coast; however, most plantations are currently concentrated to the north of the Bellinger River catchment.

4 Healthy, diverse and connected environments

4.1 Monitoring and compliance

The ability of the Commission to assess whether the plan has achieved its objectives and made a material contribution towards State priorities has been limited by the lack of monitoring, evaluation and reporting information available during the assessment period. This situation is consistent with previous water sharing plan review rounds undertaken by the Commission. It is also consistent with previous National Water Commission reports that indicated that a lack of information about outcomes would be an issue when assessing older plans in most jurisdictions.

Many of the reasons for this lack of information as cited in earlier review reports by the Commission are relevant to this review, in particular:

- Plan objectives are unspecific and hard to measure
- limited understanding of the environmental water requirements of the system at the time of developing the Plan
- lack of comprehensive river flow data for the whole system
- lack of metering and compliance activities
- changes to institutional arrangements, including agency changes and changes to some elements of the overarching State policy and planning framework
- factors external to the Plan, such as climate, catchment and land use, may hinder the measurement of plan-related outcomes.

The lack of data collection may be attributed to the fact that this system has relatively high inflows and has minimal licensed extraction. Therefore, it is generally regarded as a low risk system.

In areas with unregulated river and alluvial systems, it is important to balance the cost of implementation of measures such as metering and monitoring to Government and existing users with the risk to the resource of over extraction. While extraction in the system represents a very low percentage of annual average water in the system, this low risk needs to be balanced against the relatively high ecosystem values in the Plan area. The Bellinger River is currently one of the healthiest river systems in NSW[7][8] and there is an opportunity to refine the Plan and ensure these high ecosystem values are maintained.

Given the 10 year nature of plans, medium to long term stressors on the Plan area should be taken into account. Increasing water demand from population growth and other water users over time, and increased variability of stream inflows due to a changing climate are likely to challenge the Plan area. These challenges also increase the probability of high nutrient concentrations during low flow and flood events which have caused a decline in water quality

[6] https://www.water.nsw.gov.au/water-management/basins-and-catchments/bellinger-catchment
[7] NSW Environment Protection Authority, *NSW State of Environment* 2015.
[8] NSW Department of Primary Industries, Office of Water, *NSW River Condition Index*, 2012.

in the past.[9] The town of Bellingen, which draws water from the river for household consumption has been on high water restrictions on a number of occasions in recent years, highlighting the variability and vulnerability of the system to changing weather patterns. In December 2017, the NSW Government released the Water Reform Action Plan (WRAP) in response to a series of independent investigations into NSW water management and compliance. The WRAP outlines reforms to achieve the following goals:

- introduce best practice for water management
- ensure transparency in sharing, allocating and managing water
- build a compliance and enforcement regime that ensures strong and certain regulation
- build capability to support implementation of water reforms.

It is intended that the Government will establish a new framework for measurement and metering of water take as a key outcome of this reform. In developing the new Bellinger plan, guidance from the metering and transparency initiatives in the Water Reform should be incorporated.

Recommendations:

1. DOI-Water should clarify objectives and strengthen the monitoring, evaluation and reporting requirements in the new plan to help improve future planning and assessment of outcomes.
2. DOI-Water should include metering provisions in the new plan consistent with the NSW Government's planned new framework for measurement and metering of water take.

4.2 Achievement of environmental objectives

Consistent with the Act, the Plan was established to allocate water for the fundamental health of the water sources and associated dependent ecosystems as a first priority. The Plan does this by establishing a long-term average annual extraction limit and setting aside all water above this limit for environmental purposes. The Plan specifies access rules (in the form of Cease to Pump and Commence to Pump triggers) for the protection of low flows, and provides for licensed water to be committed for adaptive environmental water purposes.

At the commencement of the Plan, the average annual flow in the Bellinger River Extraction Management Unit was 612,704 ML, of which 4,643 ML (<1%) is licensed for extraction on a long-term average annual basis. The average annual flow in the Dalhousie Creek Extraction Management Unit was 1,630 ML, of which 191 ML (approx. 12%) is licensed for extraction on a long-term average annual basis. This means that nearly all flows in both Extraction Management Units are set aside for environmental purposes.

Most unregulated water sources on the North Coast have extraction limits in the range of 1-5% of average annual flow[10]. The extraction limit is relatively low for the Bellinger River, on a percentage basis compared to many other water sources in NSW, whereas the extraction limit for Dalhousie Creek is comparatively somewhat high.

[9] Mika, S., Burns, A. and Ryder, D.S (2016). Water Quality Monitoring of the Bellinger and Kalang Rivers 2015-16. Technical Report for Bellingen Shire Council. University of New England, Armidale.
[10] Department of Water and Energy (DWE) 2008, *Water Sharing Plan: Bellinger River Area unregulated and alluvial water sources – Background Document*. DWE 08_192, Department of Water and Energy, Sydney, July 2008.

Currently the long-term average annual extraction limit is comprised of the sum of use through basic land holder rights, utilities and entitlement specified in the Plan. There is insufficient knowledge of the system to assess whether the amount taken annually is environmentally sustainable. The new plan should establish clear environmental objectives and performance indicators against which to assess whether the extraction limit is appropriate. The new plan should include a provision allowing for the adjustment of the long-term average annual extraction limit should evidence indicate that the extraction is not sustainable. Assessment of the appropriateness of the extraction limit should reflect the most up to date information about future water inflow and demand.

The inclusion of flow management rules is a typical feature of unregulated river and alluvial water sharing plans. These rules effectively place a ban on pumping (commonly referred to as cease to pump rules) when the river flow falls below a specified level at either the pump site or a flow reference point. The rules are intended to provide protection for fish and other aquatic species during dry times. The rules recognise that even though average extractions in the water source may be low, demand for water in unregulated systems typically occur at times of low flow.

Despite containing provisions to achieve the Plan's environmental objectives, the ability to review whether the Plan has achieved these objectives is constrained by the lack of a consistent and coordinated approach to monitoring and metering and lack of compliance activities over the term of the Plan. This was raised as an issue in one submission and confirmed with Water NSW. Due to the lack of metering in the Plan area and the limited compliance monitoring conducted, it is not possible to confirm the level of compliance with the extraction limit and cease to pump rules. This lack of a compliance assessment framework creates a risk that users may not be complying with the plan. Therefore, the extent to which the environmental objectives have been achieved is not clear.

4.2.1 Improve performance monitoring

As with many other water sharing plans, there was limited information available, regarding the specific environmental water requirements of the system at the time of developing the Plan. As a consequence, cease to pump rules were established based on a statewide framework under the *Macro water sharing plans - the approach for unregulated rivers*. In addition to this lack of valley specific data limiting the ability of the panels at the time to set evidence-based plan rules, there are also no clear benchmarks established against which to assess the performance of the Plan.

The Background Document to the Plan identified that in five of the eleven water sources, there was a lack of adequate information or infrastructure to provide certainty that the water sharing rules would be successful in managing the risk to instream values. As a result, it was recommended that further analysis or data collection be undertaken during the life of the Plan. The Background Document lists a number of research priorities, including surface water flows and tidal pool behaviours, salinity levels and estuarine water requirements. The Plan also includes provisions allowing for amendment of the plan rules as a result of further studies providing improved information.

The most comprehensive publicly available assessments of ecosystem health in the Bellinger Catchment were completed in 2010 and 2011. These included assessments of the condition of

freshwater fish assemblages[11], and river and estuarine condition in the Bellinger Catchment[12]. The studies were commissioned by the then Northern Rivers Catchment Management Authority and the Bellinger Shire Council in recognition of the need to monitor natural resource condition, and water quality and quantity in the Bellinger River catchment.

The study findings serve to highlight that there are a number of factors outside the Plan influencing ecosystem health, including climate, invasive species, and land and recreational uses. Effective landscape management in the Bellinger River catchment is essential to river health and requires a coordinated and consistent approach to planning, implementation and monitoring.

It is not clear at this time if there is any commitment to ongoing evaluation and monitoring as recommended in the 2010 and 2011 reports. Nonetheless Section 81 of the Plan does highlight that in accordance with section 51 of the Act, the Minister may establish an Implementation Program that sets out the means by which the provisions of this Plan are to be achieved. It also notes that it is proposed that the Minister establish an Implementation Program for this Plan and that pursuant to section 51 (5) of the Act, the Implementation Program is to be reviewed annually by the Minister to determine whether it is effective in implementing this Plan. Because a decision was made to not implement this part of the Plan, it is difficult to assess environmental outcomes and plan performance. As such, the Commission suggests that the Implementation Plan along with any additional monitoring and reporting requirements be prepared and effectively implemented.

Recommendations:

3. In developing the new plan:

- Develop monitoring requirements and indicators that will allow assessment of the environmental sustainability of the long-term average annual extraction limit.
- Include a provision requiring assessment of the long-term average annual extraction limit against sustainability indicators and allowance to adjust if necessary.

Suggested action:

- DOI-Water should ensure that the Implementation Program[13] and any new monitoring and evaluation program requirements are implemented.

5 Resilient, self-reliant and prepared local communities

5.1 Provide for Basic Landholder Rights

Under the *Water Management Act 2000*, extraction of water to supply basic domestic and stock requirements from a water source fronting a landholder's property or from any aquifer

[11] Gilligan, D. 2010, *The condition of freshwater fish assemblages in the Bellinger Catchment, NSW*. A report to the Northern Rivers Catchment Management Authority, NSW Department of Industry & Investment, November 2010.
[12] Ryder, D., Veal, R., Sbrocchi, C. and Schmidt, J. 2011, *Bellinger-Kalang Rivers Ecohealth Project: Assessment of River and Estuarine Condition 2009-10*. Final technical report to the Bellinger Shire Council, March 2011.
[13] In accordance with section 51 of the Act, the Minister may establish an Implementation Program that sets out the means by which the provisions of this Plan are to be achieved. It is proposed that the Minister establish an Implementation Program for this Plan. Pursuant to section 51 (5) of the Act, the Implementation Program is to be reviewed annually by the Minister to determine whether it is effective in implementing this Plan.

underlying the land, and for native title rights (known collectively as basic landholder rights) does not require a water access licence.

Basic landholder rights[14] may be accessed subject to water availability. Consistent with the *Water Management Act 2000*, the Plan gives priority of access for basic landholder rights. At the commencement of the Plan, potential use of domestic and stock rights within these water sources was estimated to total 3.6 mega litres per day. No native title rights for water were established at the commencement of the Plan.

An important consideration in areas that may be subject to increasing urbanisation and rural subdivision pressure, such as the NSW North Coast, is whether increasing population will place additional pressure on water resources[15]. With no requirement for a licence or metering equipment for basic landholder rights, it is difficult to quantify what impact these extractions are having on a water source, or may have with changes in land use.

The Department of Industry – Water and its predecessors have previously stated their intention to establish *Reasonable Use Guidelines* to better manage and estimate use that may occur under basic landholder rights. The Commission understands that it is the intention of the NSW Water Reform Taskforce to introduce a reasonable use guideline for stock and domestic usage. The guideline document will proceed through a stakeholder consultation process in 2019.
This guideline should be considered in the development and design of surface and alluvial water management approaches to stock and domestic take under basic landholder rights within the new Bellinger River Plan.

Recommendations:

4. In developing the new plan, DOI-Water should
   - Apply the best available methodology to estimate stock and domestic take under basic landholder rights. At a minimum this should incorporate climate data to improve reliability of stock and domestic extraction estimates.
   - Ensure the above methodology incorporates any finalised policy positions in the Reasonable Use Guideline for stock and domestic usage.

5.2 Improve cultural outcomes achieved through the Plan

One of the primary objectives of the Plan is to protect, preserve, maintain or enhance the Aboriginal, cultural and heritage values of the water sources. The Plan gives recognition of the Aboriginal cultural values of water by providing for the granting of water licences for Aboriginal cultural purposes and Aboriginal community development in those water sources with low to medium instream value, subject to certain ecological conditions.

[14] There are three types of basic landholder rights in NSW under the *Water Management Act 2000*. These rights include: domestic and stock rights - owners or occupiers of land which is overlaying an aquifer or has river, estuary or lake frontage can take water without a licence for domestic (household) purposes or to water stock; native title rights - Anyone who holds native title with respect to water, as determined under the *Commonwealth Native Title Act 1993*, can take and use water for a range of personal, domestic and non-commercial purpose, and harvestable rights – dams - Harvestable right water allows landholders in most rural areas to collect a proportion of the runoff on their property and store it in one or more farm dams up to a certain size.
[15] The town of Bellingen has experienced a number of water restrictions during the term of the Plan.

Local Aboriginal communities were engaged during the initial development of the Plan to determine whether the proposed water sharing rules would adequately protect Aboriginal cultural values[16]. Specific water-dependent Aboriginal cultural values were not identified. However, based on feedback that was received, an approach was taken to protecting cultural values through the general environmental protection provided by the Plan rules.
The Aboriginal Water Initiative (AWI) was established by the then NSW Office of Water in 2012 to engage Aboriginal communities in water planning and identifying cultural values; however, funding for the program ceased in the 2015/16.

Consultation by the Commission with the Dorrigo Plateau Local Aboriginal Lands Council indicated that the Land Council participated in the AWI. They also indicated that they have both Aboriginal cultural (10 ML specific purpose access licence) and Aboriginal Community Development licences but have had limited opportunity to utilise these licences. The group were unsure of the original process for granting and receiving these licences and were not involved at the time of plan development.

Specific concerns raised through consultation with the Lands Council included:

- the minimal engagement with the Aboriginal community on water sharing plans
- the inability to trade cultural licenses
- opportunities for Aboriginal employment in water monitoring and compliance
- concerns relating to water quality due to run-off and a general concern for the health of the riparian zone.

The local Aboriginal group has been working closely with the North Coast Local Land Services on some land management projects and is very eager to contribute to the water sharing plan review progress. Despite this interest, they report that there has been minimal engagement from DOI-Water or Water NSW to date.

Recommendation:

5. In developing the new plan, DOI-Water should investigate barriers to the utilisation of Aboriginal Community Development access licences, and adjust the provisions of the Plan as appropriate to address barriers.

Suggested action:

- DOI-Water should take actions to formally engage with the Aboriginal community to identify and support cultural water requirements consistent with Plan requirements. Engagement could be achieved via numerous bodies including the Dorrigo Plateau Local Aboriginal Land Council, the North Coast Local Land Services Aboriginal Community Advisory Group (or other existing local representative forums such as the Jaliigirr Biodiversity Alliance).

5.3 Town water supply

The Plan includes provisions for town water supply via local water utility access licences. Growth in use provisions, pursuant to section 66 (3) and 66 (4) of the Act allow for review of a local water utility's share component should growth in population occur.

[16] Department of Water and Energy (DWE) 2008, *Water Sharing Plan: Bellinger River Area unregulated and alluvial water sources – Background Document*. DWE 08_192, Department of Water and Energy, Sydney, July 2008.

The Bellingen Council is the major water user within the Plan area. Consultation with the Bellingen Council suggests that their average annual use is within the licensed entitlement with some room for growth. The Council noted that despite a number of new developments on the horizon, alternate supply options, including plumbing into treated sewerage from the Urunga sewerage treatment plant, will assist the Council to meet future water requirements.

Despite current licensed volumes being adequate for average annual town water use, low river flows have led to the need for town water restrictions to be in place at certain times during the term of the Plan.

The flow reference point for the Bellinger River Water Source was established as the Thora gauge at the commencement of the Plan. The Minister may amend the flow reference point if a gauge is installed downstream of the junction of the Bellinger and Roses Creek, and the site is found suitable as a flow reference point. A separate newer gauge exists upstream to the town of Bellingen known as the Fosters gauge. Consultation suggests that the Fosters gauge, while operational, is not currently used as a flow reference point, despite annual fees paid by council to ensure the operation of the gauge. The Council is of the view that the new gauge may provide a more accurate indication of water availability at their pumping location and should be used for determining if water restrictions are in place. The gauge may also provide a useful addition for environmental monitoring along the system and as such its purpose should be reviewed accordingly.

Recommendation:

6. DOI-Water should review the flow reference point and access rules to determine if other gauging sites may improve outcomes, and revise the provisions related to gauging in the new plan if appropriate.

6 Biosecure, profitable, productive and sustainable primary industries

Water use for primary production in the Plan area typically includes forestry, livestock grazing (dairy, beef, pork), and some irrigated crops, including cereals and horticultural products[17]. A recent socio-economic study prepared for the North Coast Local Land Service[18] identifies blueberries as a key emerging agricultural industry in the Mid-North Coast region, and notes that more traditional industries such as beef and dairy remain relatively stable.

The reliance on water for irrigation across the Plan area is relatively low when compared to many other regions across NSW, in part due to the high average annual rainfall across the catchment. At the commencement of the Plan, the Bellinger River Water Source and Hydes Creek Water Sources were identified as having the highest level of economic dependence on production from irrigation or industrial uses within the Plan area.

The Plan provisions of most relevance to supporting profitable, productive and sustainable primary industries include the cease and commence to pump rules, the long-term average annual extraction limit, carryover provisions and trade provisions.

[17] https://www.water.nsw.gov.au/water-management/basins-and-catchments/bellinger-catchment
[18] Eco Logical Australia 2015, *Characterisation of the Socio-Economic Landscape of the North Coast Region of NSW*. Prepared for North Coast Local Land Services.

The long-term average annual extraction limit was set for each Extraction Management Unit based on the level of licensed entitlements that existed at the time of the Plan. This method of allowance is likely to have ensured that there were minimal social and economic impacts on implementing the Plan, as water users retained their existing level of access. For the duration of the Plan's operation, there have been full annual allocations (i.e. 100% or 1 ML per share, depending on licence type) for all licence categories. However, there has been times when the cease to pump rules have been implemented due to low flows caused by seasonality.

As noted in the discussion of environmental outcomes, the long-term average annual extraction limit is not currently assessed against any specific sustainability criteria. The Commission recommends this be addressed, and that those criteria are transparent for users.

The town of Bellingen has been placed on water restrictions at various times over the life of the plan due to seasonal low river flows. A lack of metering, and therefore water use information, since Plan commencement limits the ability to assess changes in use patterns, or indeed compliance with the extraction limit, during the term of the Plan. This is of particular concern during cease to pump periods.

The Plan establishes carry over rules, which can assist in meeting the objective of providing sufficient flexibility in water account management and encouraging responsible use of available water. These rules appear consistent with those in other unregulated river and alluvial groundwater sources in NSW. However, again due to the lack of water use information, it is not clear if these rules have in fact helped to maximise the economic benefits derived from extraction and use of the water source.

The Plan also includes water trading rules, providing opportunities for market based trading of access licences and water allocations within the system, taking into account any restrictions required for hydrological constraints or to manage third party impacts.

Relatively high rainfall and the full availability of licensed water (i.e. 100% allocations) throughout the Plan period, is likely to have contributed to reduced (or the absence of) water scarcity in the region, which in turn influences the extent of water trade.

Trade data was provided by the Department of Industry – Water. The data reveals minimal water trade in the Bellinger River Area during the period of the Plan. There have been six water licence transfers recorded over the period, with all of them occurring since the 2012/13 water year. Of these trades, four were trades between unregulated river licences and two were trades between stock and domestic users. There is no record of allocation trade for the Plan area.

Three of the water licence transfers had values (prices) reported as zero (both stock and domestic and one unregulated transfer). The other reported prices were $1 per ML for two of the unregulated transfers and one reported as $935,000 per ML. It is highly likely neither of these prices is a true reflection of the value of water entitlements in the region, with prices often recorded incorrectly due to data entry, confusion about the form requirements, reluctance to reveal actual price paid, and/or the price included other assets such as land.

While conditions for an active water market, in particular water scarcity, are largely not present in the Plan area, major changes in future water supply and demand conditions could alter the extent to which trade may occur. For example, the potential for expansion of higher value forms of production, such as blueberries and vegetables, may drive future demand.

There could also be a lack of awareness of the opportunities for, and benefits of, trade among water users in the region. This has been common in formative and developing water markets.

Suggested action:

- Engage water users in the planning process and provide information relating to carryover and trade provisions to encourage economically efficient water use.

7 Governance and planning

7.1 Merger of plans

A macro planning approach was used to develop the Plan, which covers 11 individual water sources. The macro planning approach was used across NSW to merge plans covering small, less intensively used water sources, such as the Bellinger Plan, with the majority of the state's unregulated river and groundwater systems completed in this way.

It has been proposed that this Plan may be merged with the Coffs Harbour Area Water Sharing Plan at the time of extension or replacement, to create a single water sharing plan covering the unregulated water sources which neighbour each other. While there are some minor differences in overall layout and specific rules contained within the two plans, it is anticipated that layout could be updated and streamlined, and specific rules accommodated in the same way each plan already deals with different rules for individual water sources.

It is noted that while merging the plans would result in a single plan for the water sources in the catchment, that single plan would cover 24 (11 in the Bellinger and 13 in the Coffs Harbour) water sources. This will effectively help streamline the total number of WSPs in NSW; however, it may affect overall layout and readability of a document, particularly for those stakeholders seeking information relating to a particular water source. To overcome this issue, WSPs are typically accompanied by an overarching 'Guide Document', supported by Plain-English 'Rules Summary Sheets' prepared for each individual water source for ease of reference by water users. Updating of these guides for individual sources could assist in avoiding any confusion if the plans are merged.

Feedback from some stakeholders suggested that merging the two plans could have practical as well as administrative implications. It is understood that the Department's intent would be to merge the plans without affecting the rules within individual plans. For instance, this would mean there is no intent to allow trade between the water sources currently in separate plans. Stakeholder feedback indicates there may be some confusion about the potential implication of merging the plans. A final decision to merge the two plans should give consideration to any impacts that such a merge may have and incorporate public consultations to ensure that the implications are properly communicated. Consideration should also be given to the timing for extension or replacement of each plan, noting the Coffs Harbour Area Water Sharing Plan is not due for replacement until July 2020.

Recommendation

7. DOI-Water should conduct an assessment, including public consultation, to determine whether to merge the Water Sharing Plans for the Bellinger River Area and Coffs Harbour Area based on economic, environmental and social impacts.

Suggested Action:

- DOI-Water should update the overarching 'Guide Document' for the Plan and Plain-English 'Rules Summary Sheets' for each individual water source within the Plan for ease of reference by water users.

Appendix A

The Commission developed eight questions to determine the contribution of the Plan to State Priorities to Local Land Services. Submissions to the review were asked to focus on these questions. Those submissions received which were not classified as confidential were made public on the Commission's website.

1. In what ways have the plan provisions materially contributed to these goals?
2. What changes to plan provisions are warranted to better achieve these goals?
3. How could plan provisions be improved to reduce complexity and cost of implementation?
4. How could plan provisions be improved so that regulatory obligations on businesses are reduced or made easier to understand and implement?
5. How could plan objectives, performance indicators, monitoring and reporting be improved?
6. How could plan provisions better address risks, commensurate with benefits and costs?
7. Is the knowledge on which the plan provisions are based commensurate with the potential level of risk, scale and local importance?
8. Is there significant new information on the underpinning science and assumptions?