

# Ord surface water allocation plan

Statement of response

*Looking after all our water needs*

Department of Water

October 2013

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# Ord surface water allocation plan – Statement of response

This statement provides the Department of Water's response to the comments, issues and questions raised in submissions made in response to the *Ord surface water allocation plan: for public comment* (DoW 2012).

## The public comment period

The *Ord surface water allocation plan: for public comment* was open for a three month public comment period from 25 May to 14 September 2012.

During the public comment period the Department of Water (department) sent more than 180 letters to stakeholders to notify them that the plan was open for public comment. Also, over 190 copies of the plan and methods report were given to stakeholders.

An invitation to comment and receive copies of the plan was advertised during the comment period in the following publications:

- *The West Australian* (25 May 2012)
- *The Australian* (26 May 2012)
- *Kimberley Echo* (31 May 2012).

The department met with representatives from a number of interested parties, to brief them on the plan, and in some cases, to respond to and clarify points raised in their submission. This included:

- the irrigation service provider (Ord Irrigation Cooperative)
- the bulk water supplier (Water Corporation)
- local private users (self-supply irrigators, commercial businesses, boat operators)
- industry (Pacific Hydro and Rio Tinto)
- native title holders and local Indigenous group (Miriuwung Gajerrong Corporation)
- local government (Shire of Wyndham – East Kimberley)
- other state government agencies (Department of Regional Development and Lands, Department of State Development, Department of Agriculture and Food and Environmental Protection Authority)
- federal government agencies (Department of Sustainability, Environment, Water, Population and Communities and National Water Commission).

## Completing the plan

Following the public comment period, we have worked closely with our stakeholders

to complete the *Ord surface water allocation plan* (DoW 2013). We considered all of the comments, issues and questions raised in the submissions and at subsequent stakeholder meetings to complete the plan.

## Submissions received

During the comment period we received 14 formal submissions from a range of interest groups (Table 1). We considered all of the comments, issues and questions raised in submissions in finalising the *Ord surface water allocation plan*. Our responses to these are provided in this statement.

*Table 1 Interest groupings of respondents to the plan for public comment*

<b>Respondents</b>	<b>Interest group</b>	<b>Number of responses</b>
Ord Irrigation Cooperative Ltd	Agriculture and irrigation	1
Miriuwung Gajerrong Corporation	Community	1
2 individuals	Individual	2
Shire of Wyndham – East Kimberley	Local Government	1
Department of Fisheries Department of Environment and Conservation Department of Regional Development and Lands Department of State Development Environmental Protection Authority Department of Agriculture and Food Western Australia	Other State Government	6
Water Corporation	Public water supply	1
Department of Sustainability, Environment, Water, Population and Communities Northern Territory Government – Department of Resource	Other	2
<b>Total</b>		<b>14</b>

## Comments received and the department's responses

The following tables summarise the issues and questions raised in the public submissions and the department's responses. The comments are grouped according to the water allocation issue they relate to.

Table 2 General comments and questions received on the plan

Comment	Department of Water response
<p><b>Support for the plan</b></p> <p>Ten respondents expressed their support for the plan, with most agreeing the plan is a positive step in water management. In particular, respondents said that the plan:</p> <ul style="list-style-type: none"> <li>· considers realistic futures and areas of irrigation</li> <li>· will assist in providing secure reliable water sources for expanding irrigation industry</li> <li>· promotes economic and social growth in the east Kimberley</li> <li>· supports the health of the lower Ord environment.</li> </ul>	<p>The department values the input and support for the plan provided by stakeholders and the community. We will work to ensure stakeholder and community engagement continues in the Ord River area.</p>
<p><b>Non support for the plan</b></p> <p>One respondent expressed concern that the plan did not reflect key aspects of the National Water Initiative (NWI), especially in not establishing perpetual water entitlements. This was seen as a serious threat to the irrigation community.</p>	<p>In Western Australia, the department grants licences authorising annual water entitlements under Western Australian legislation, not the NWI. The plan therefore reflects the intent of the National Water Initiative using instruments and mechanisms available under the <i>Rights in Water and Irrigation Act 1914</i> (WA). Both the legislation and the NWI underpin the same outcomes of sustainable resource management and secure entitlements with very clear water sharing arrangements, so is not a threat to communities. We have worked with stakeholders and the community to develop the plan. Entitlements and the NWI are discussed further in Table 8 and Table 9 below respectively as well as in Table 5 of the plan.</p>
<p><b>Plan area</b></p> <p>Two respondents had a number of recommendations on further defining the plan boundaries and identifying sites of interest:</p> <ul style="list-style-type: none"> <li>i. Keep River and Knox Creek plain areas are not shown as proclaimed or management areas.</li> <li>ii. Figure 2 of surface water subareas is different to Figure 1 and the orientation of Figure 4 is different to other figures so it should show north at the Ord estuary.</li> <li>iii. It would be useful having a map showing subareas and development areas together for reference.</li> </ul>	<ul style="list-style-type: none"> <li>i. Only the WA portions of the Keep River and Knox Creek plain areas are proclaimed in the Ord River Irrigation District under Part III of the Act. The other areas are within the Northern Territory. The Western Australian legislation does not apply to those portions in the Northern Territory.</li> <li>ii. Figure 1 and 2 now show the same area and scale. Figure 4 now indicates the Northing of the diagram.</li> <li>iii. Both subareas and development areas are now shown in Figure 2.</li> </ul>
<p><b>Questions</b></p> <p>1. How were the subareas defined?</p>	<p>1. The subareas are based on changes in river channel morphology. The same</p>

Comment	Department of Water response
<p>2. Why can't the Carlton-Mantina and Tarrara-Carlton areas be combined?</p>	<p>boundaries were used to define different environmental flow regimes and allocation limits. For further information, see section 2.5 of the methods report (DoW 2012).</p> <p>2. The Carlton-Mantina subarea is determined by a point where the main channel changes shape, and below which a lower environmental flow is acceptable. This allows additional water to be allocated for diversion in the lower river. The boundary was based on hydrological work done for the 2006 plan. The environmental flow regimes are different for the two subareas, so they cannot be combined. For further information please see Section 2.5 of the methods report (DoW 2012). (See also response iii in Table 3 below)</p>

*Table 3 Comments and questions on the water allocation approach*

Comment	Department of Water response
<p><b>Allocation limits</b></p> <p>Five respondents submitted comments on water availability and future developments. Three respondents supported the water availability and reliability we set out for current and future expansion. Other comments were:</p> <p>i. High allocation has to be made to encourage development of soils with agriculture potential.</p> <p>ii. The permeable nature of the soils compromises the allocation of water.</p> <p>iii. Tarrara-Carlton subarea is without an allocation.</p>	<p>i. The allocation limit is as high as it can be to maintain the required high reliability of supply with current dam infrastructure. There is over 515 GL/year of new, very high reliability water available to support irrigation expansion projects with current dam infrastructure.</p> <p>ii. The plan makes a total volume of highly reliable water available. Individual licence assessments consider factors such as soil and crops types and water use efficiency, to determine site specific water needs.</p> <p>iii. The allocation limit for the Tarrara-Carlton subarea is 0 GL because development potential in this area is limited, the environmental flow regime needs to be maintained throughout the reach, and land from this subarea was not cleared of native title under the Ord Final Agreement. The Department of Agriculture WA is investigating whether 2000–3000 ha of Cockatoo Sands in this subarea could be developed in the medium term, but development is unlikely to proceed during the life of this plan. If water was to be abstracted from the Tarrara-Carlton river</p>



<p>iv. consider potentially splitting the lower Ord water allocation into a North and South to ensure there is potential to develop Mantinea and Carlton soil resources</p> <p>v. the planned allocation for lower Ord is insufficient and will prevent future development of Mantinea area</p> <p>vi. would like to see a more detailed analysis of hectares to entitlements.</p>	<p>reach, the water entitlement would need to be granted from the Main Ord subarea allocation limit, and extra water released from Lake Kununurra (See Appendix B and Section 2.1 of the methods report).</p> <p>iv. We determined water availability at the subarea scale, with boundaries based on changes in river channel morphology. This made 115 GL available in the Carlton-Mantinea area. As there were no prior arrangements to split this allocation, access to this water will be granted on a case by case basis as land is developed. See i above and Chapter 3 of the plan.</p> <p>v. As above (ii).</p> <p>vi. Information on crop water needs and efficiencies in supplying water to crops is included in Table 9 of the methods report and Appendix 5 of the 2006 plan. We assess water use and consider distribution losses when assessing and reviewing licence applications.</p>
<p><b>Public water supply and non potable supply for rural residential purposes</b></p> <p>One respondent wanted consideration of water supply for urban expansion and rural residential.</p>	<p>Kununurra's source of potable water is an unconfined groundwater aquifer just north of Lake Kununurra and recharged (in part) from the lake. Management is through a water licence and drinking water source protection plan.</p> <p>While irrigation is the dominant water demand in the Ord area, minor demands for other non-potable supplies (commercial, rural residential, etc) also arise. Section 5.5 and Section 5.7 of the plan notes licensing for such purposes.</p>
<p><b>Questions</b></p> <p>1. Is the 104 GL entitlement request at the Carlton Plain subarea included in the 865 GL total water availability?</p> <p>2. How will increased allocations be provided for in the Main Ord subarea if higher demands are correct?</p>	<p>1. Yes. The Carlton Plain application, if granted, will come from the 115 GL/yr allocation for the Carlton-Mantinea subarea. This is included in the 865 GL/yr total water availability.</p> <p>2. The plan provides a highly reliable supply based on the current dam's infrastructure and the long-term climate record. Complimentary to the plan, we are investigating water supply options to meet higher demands in future. Options include increasing the storage capacity of Lake Argyle or lowering reliability of supply. This water supply planning work will be reported separately. If there are major changes to the current dam infrastructure or supply system, changes to licences and a new plan will be needed.</p>

**Table 4** *Comments and questions on environmental water provisions and the Dunham River*

<b>Comment</b>	<b>Department of Water response</b>
<p><b>Environmental water provisions</b></p> <p>Nine respondents commented on the comprehensive environmental water provisions developed in the plan, including strong support for ensuring that downstream freshwater fish and fish habitat are preserved. Other comments are below.</p> <p>i. The Office of the Environmental Protection Authority would not support reductions in environmental water provisions for the lower Ord. The plan clearly shows the department has responded very positively to EPA’s advice in 1999.</p> <p>ii. Environmental flow for many years has been well above the minimum requirements and these may be viewed as normal.</p> <p>iii. The plan needs further explanation of the need for environmental water requirements.</p> <p>iv. Table 4 of the plan and Table 16 of methods report differ in content and we seek clarification.</p> <p>v. Suggest that the plan says that Class 1 and Class 2 restrictions will occur in critical drought periods and that in over 90 per cent of years the environmental water provision will be unrestricted.</p>	<p>i. The environmental flow regime (provision) achieves the objective specified by the EPA’s advice, and we will monitor to test that the flows are being met and are maintaining the ecology of the lower Ord over time. Any future adjustments to the flow regime will be based on results of the monitoring program.</p> <p>ii. As new demand comes online and water is diverted for irrigation, flow will reduce to the minimum environmental flow requirements. We are communicating this to stakeholders to ensure that they understand and expect these changes.</p> <p>iii. We have clarified the explanation in the plan. Environmental flows are required to maintain the ecological values of the lower Ord that have been established since the Ord River Dam was built, as advised by the EPA . The flows also support tourism and other social values.</p> <p>iv. Although these tables both show baseflow, the data were presented slightly differently. We have amended Table 4 of the plan to make it clearer and will be using this table to assess and evaluate performance.</p> <p>v. We have clarified these points in the summary and Section 4.3 of the plan.</p>
<p><b>Questions</b></p> <p>1. Why is there a change in environmental water provision from 94% to 93%?</p> <p>2. Please provide advice for why tail water from Ord Stage 1 is included in the</p>	<p>1. The slight reduction in the environmental water provision is a result of the enhanced rules approach set out in the plan. The rules were set to optimise water available for irrigation with minimal change to hydropower generation and environmental water. The difference to environmental water is very small.</p> <p>2. Tail water from the D8 drain of the Stage 1 area can affect whether Ord Stage 2</p>

<p>environmental flow?</p> <p>3. What are the long term goals the department have with monitoring, tail water management and related indicators for the Ord Irrigation Area?</p>	<p>meets EPBC Act and EPA requirements of no irrigation return flows at the Weaber (Goomig) outlet area in the dry season. Tail water from Ord Stage 1 is not included in the lower Ord environmental flow.</p> <p>Monitoring in the lower Ord indicates tail water carries large volumes of nutrients, causes turbidity and impacts negatively on the lower Ord ecology.</p> <p>3. We have designed monitoring to check that management is effective and appropriate in meeting the plan's objectives. Monitoring in the Stage 1 irrigation area has been established to improve water use efficiency and tail water management. The water quality monitoring program in the irrigation area and in the lower Ord River includes triggers for water quality parameters consistent with ANZECC/ARMCANZ guidelines.</p>
<p><b>Dunham River</b></p> <p>Two respondents commented on the Dunham River, seeking clarity on how the plan manages the Dunham River subarea:</p> <p>i. The final plan should state the policy position that additional regulation or allocation could lead to the lower Ord environmental water provision not being met. The 2006 Ord plan indicated no further regulation.</p> <p>ii. Table 3 shows more water available for Dunham River than is available within the allocation limit and should be revised so that the allocation limit is not exceeded.</p>	<p>i. The allocation limit for Dunham River was set in consideration of its contributions to environmental flows. Environmental water provisions will still be met when the 25 GL/yr Dunham allocation limit is diverted/used.</p> <p>ii. The water available for Dunham River has been corrected in Table 3 and the allocation limit will not be exceeded.</p>

Table 5 Comments and questions on water licensing

Comment	Department of Water response
<p><b>Legislation</b></p> <p>One respondent wanted further explanation in the plan of Clause 7 of the <i>Rights in Water and Irrigation Act 1914</i>.</p>	<p>Clause 7 <i>Rights in Water and Irrigation Act 1914</i> (the Act) sets out what the Minister must consider in granting or refusing an application for a licence. Considerations include public interest, ecological sustainability and intergovernmental agreements and are also essential considerations for allocation planning. For further explanation, see the licensing page on the department's web site.</p>
<p><b>Entitlements</b></p> <p>Several respondents raised issues relating to licence entitlements:</p> <p>i. Request the department only refer to number of individual properties and area, rather than the number of OIC members.</p>	<p>i. We have amended the plan to match the information provided.</p>

<p>ii. The comment on the average GL/yr of OIC take is inappropriate and fails to reflect ongoing redevelopment of OIC irrigation land in line with new industries.</p> <p>iii. It would assist if Argyle Diamond mine's surface water take was explained.</p> <p>iv. One respondent noted its intent to obtain a bulk water allocation from Lake Argyle and a potential distribution licence to operate a water supply service to the Ord expansion areas.</p>	<p>ii. An explanation has been added to the text.</p> <p>iii. We have included this in the plan (Section 5).</p> <p>iv. Options for water service provision in the Ord expansion area are currently being explored. Information on obtaining a water supply service provider licence can be found at the Economic Regulation Authority (ERA) website: &lt;<a href="http://www.erawa.com.au/licensing/water-licensing">www.erawa.com.au/licensing/water-licensing</a>&gt;</p>
<p><b>Recouping of entitlements</b></p> <p>Two respondents commented on the department's management of unused entitlements, including support for the approach to match water entitlements with water use to maximise water available for irrigation and hydropower production. Other comments were:</p> <p>i. that the department cannot legally recoup an entitlement as it is a fundamental breach of its obligations under the NWI</p> <p>ii. that the OIC water entitlement is owned legally by OIC.</p>	<p>i. Under the <i>Rights in Water and Irrigation Act 1914</i> (the Act) and in accordance with our state-wide policy, the department may recoup unused water entitlements. In this case recouping of unused entitlements would be to allow the entitlements to be reissued to enable further development.</p> <p>ii. In Western Australia, water is vested in the Crown and, under the Act, the department is responsible for its management. The annual water entitlement specified on a licence is granted to the licensee for the term of the licence.</p>
<p><b>Questions</b></p> <p>When do local licensing rules have precedence over state-wide policies?</p>	<p>The local licensing rules specified in a plan take precedence over state-wide policies. The local policies apply either because the local issues are not addressed in state-wide policy, or because an alternative approach is needed to better manage the local issue.</p>

**Table 6** *Comments and questions on dam release rules, restrictions and power generation*

<b>Comment</b>	<b>Department of Water response</b>
<p><b>Enhanced rules</b></p> <p>Two respondents supported the development of the enhanced rules, saying they are beneficial to the agriculture sector and in reducing the severity of restrictions. One respondent questioned the capacity of current infrastructure to generate power under the proposed rules.</p>	<p>The Ord River Dam Power Station turbines have not yet operated at low lake levels and some refinement of the station performance characteristics may be needed in the future. We used the best information available to develop the enhanced rules approach in the plan. Any updates in station performance will be used in subsequent studies to adjust restriction rules and the department will be guided by advice from the Water Corporation and Pacific Hydro.</p>

<p><b>Question</b></p> <p>Enhanced rules allow for 865 GL to be available at 95 per cent reliability, so what is the difference from the current rules?</p>	<p>The enhanced rules approach enables more electricity to be generated on average, once more water is diverted for irrigation. The enhanced approach varies from the current rules in two ways, by:</p> <ol style="list-style-type: none"> <li>1) lowering the trigger level at which Class 1 restrictions commence so that the station can run unrestricted more frequently when storage levels are moderate to high</li> <li>2) increasing the trigger level at which Class 2 restrictions commence so that less water is released, independent of Water Corporation needs, when lake levels are low and restrictions on irrigation are imminent.</li> </ol> <p>For further information please see Section 5.3 of the plan.</p>
<p><b>Restrictions</b></p> <p>Four respondents commented on restrictions and the frequency at which they may apply:</p> <ol style="list-style-type: none"> <li>i. We are cautious about the operational impacts of managing Class 2 restrictions, particularly given they will occur on a much greater frequency than under the current rules.</li> <li>ii. Page 35 needs to mention the frequency of the evaluation of environmental monitoring that provides the feedback for Class 1 and Class 2 restrictions.</li> </ol>	<ol style="list-style-type: none"> <li>i. Class 2 restrictions on power will be more frequent under the enhanced rules, but periods of unrestricted operations will increase. Taken as a whole, the additional operational effort required to implement the enhanced rules is small and justified given the additional electricity that can be generated. The department has provided software to assist operations.</li> <li>ii. Flow monitoring is continuous and is assessed annually. Ecological monitoring will be completed and reviewed every three years to check that the flow regime put in place is maintaining ecological values. Details of the environmental monitoring program are outlined in Chapter 6 and in <i>Lower Ord River environmental water provisions monitoring program and management framework</i> (DoW 2011).</li> </ol>
<p><b>Question</b></p> <p>How will restrictions apply in drought periods?</p>	<p>Restrictions will be determined by the Department of Water. Restrictions will be applied by the Water Corporation through changes to the releases from the Ord River Dam and changes to irrigation diversions as required. The approach to restrictions on hydropower, irrigation, and the environment is explained in Section 5 and Appendix A of the plan.</p>
<p><b>Power generation</b></p> <p>One respondent supported the proposal to explore power generation at Kununurra Diversion Dam and said that flows with a high level of certainty would be critical in making an investment.</p>	<p>The department supports the potential generation of hydro-electric power at the Kununurra Diversion Dam if it is developed without affecting water for irrigation and the environment.</p> <p>The lower Ord River environmental flow regime</p>

	<p>indicates the minimum flows available. This minimum will be maintained through the Water Corporation licence and any reduction would not be supported by the Environmental Protection Authority.</p> <p>Minimum flows expected through the Kununurra Diversion Dam are therefore highly secure.</p> <p>Appendix D of the plan shows the average electricity that could be generated if two hydropower stations (at the both Ord River and Kununurra Diversion dams) supplied to the East Kimberley electricity grid.</p>
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*Table 7 Comments on boat navigation and cultural values associated with the dry season*

<b>Comment</b>	<b>Department of Water response</b>
<p><b>Navigation</b></p> <p>Two respondents had differing views on water being released for tourism and navigational purposes:</p> <p>i. These businesses make no financial contribution to water storage and transfer and it would be unacceptable to release water for these purposes as it would impact irrigation allocation.</p> <p>ii. The enhanced rules will have a substantial impact on navigational passage in Lake Kununurra. Further consideration is required on how this industry can operate during periods of low flow.</p> <p>iii. The new release rules and the potential impacts on tour boat operators should be reviewed to ensure water is available for tourism operations, particularly during dry season months.</p>	<p>i. In the past, the Water Corporation has made additional releases for navigation via the Ord River Dam irrigation valves when the power station is releasing less than 50 m<sup>3</sup>/s. We support these releases given the benefits for tourism, but only consider it acceptable when water storage in Lake Argyle is high. At times of low storage, especially when other restrictions apply, releases specifically for navigation would compromise other demands and are not supported (Section 3.4 of the plan).</p> <p>ii. The enhanced rules will not have a substantial impact on navigational passage for tour boat operators. Under the current operating strategy for the Ord River and Kununurra Diversion dams, navigation releases are not permitted when power generation restrictions apply. Under the enhanced rules, navigation restrictions will apply when Lake Argyle levels fall below the Class 2 power generation restriction triggers, which occur at lower lake levels. This means that under the enhanced rules, navigation releases will be permitted more frequently (at lower levels in Lake Argyle, Section 5.6 of the plan).</p> <p>iii. Even very large releases during the dry season would not maintain navigable flow for the full extent of the lower Ord River. Releasing water during the dry season specifically for navigation was not supported by the broader community</p>

	(advice from community forums in 2000) because it reduces water stored for irrigation and power supply.
<p><b>Cultural significance</b></p> <p>One respondent commented on the cultural importance of seasonality, in particular the drying out of the river towards the late dry season:</p> <p>i. The department could reduce water flows at certain times of the year, simulating the natural state of the river during dry periods.</p> <p>ii. Should the department reduce environmental flows, MG people would be well placed to play a part in this opportunity and welcomes the chance to discuss opportunities with the department and other interested stakeholders.</p>	<p>i. Stakeholders, including the Miriuwung Gajerrong (MG) Corporation, will be notified of any planned periods of low water flow on the lower Ord, caused by any maintenance on the dams or foreshore areas. In addition, the department will invite the MG to the end-of-wet-season stakeholder meeting where likely river flows over the next 12-18 months are discussed.</p> <p>ii. Noted. As above.</p>

**Table 8** *Comments on agricultural expansion and demands*

<b>Comment</b>	<b>Department of Water response</b>
<p><b>Future agriculture expansion</b></p> <p>A number of respondents commented on potential agriculture expansion areas in the Ord River area:</p> <p>i. The plan may require future amendments to accommodate future requirements. Ongoing work is required for adequate water availability and appropriate reliability to support land supplied from Lake Argyle.</p> <p>ii. If sugar cane becomes more prevalent in Stage 1, water use would increase significantly. There needs to be a transparent approach for re-allocation.</p> <p>iii. The plan should say there is little growth in self-supply demand, and a total of 15 GL has been accounted for.</p> <p>iv. Suggest that Victoria Highway and Carlton Hill North in the Cockatoo Sands area be in the Main Ord subarea as, subject to approvals, they could be developed within the plan timeframe.</p> <p>v. The plan needs to further accommodate for future development of the Northern Territory and Cockatoo Sands.</p>	<p>i. This plan deals with the maximum reliable water supply for irrigation expansion with the current dam infrastructure, while meeting demands for irrigation and environmental flow as far as possible. We have commenced a separate piece of work on options for future additional supply.</p> <p>ii. Noted. See Section 5 and local licensing policy of the plan.</p> <p>iii. Noted, text amended.</p> <p>iv. Water to supply Victoria Highway would be supplied via the Main Ord subarea. See Table 2 above for explanation of why Carlton-Matinea is a separate subarea.</p> <p>v. The plan makes an initial provision for potential use in the Northern Territory. We will review the Northern Territory provision</p>

	<p>in 2017 or sooner if it is preventing the development of viable irrigation areas in Western Australia, there are no new entitlements available through water supply options and/or there is no progress in developing irrigation areas in the Northern Territory.</p> <p>Cockatoo Sands investigations are not yet complete and the areas are yet to have native title clearance. The allocation limits in the plan more than meet realistic irrigation demand projections during the life of the plan.</p>
<p><b>Maximising water from Lake Argyle</b></p> <p>Six respondents commented on adjusting release rules and the feasibility of storing more water in Lake Argyle for further development:</p> <ul style="list-style-type: none"> <li>i. Amending the operation strategy will require further consultation to mitigate operation impacts before agreement is reached.</li> <li>ii. Major adjustment will result in further disruption to flora and fauna.</li> <li>iii. Under the heading ‘New Release Rules’ it explains that the rules reduce the percentage of environmental water that is allocated; it should have a linking statement to environmental monitoring.</li> <li>iv. There is interest in commercial opportunities should storage increase through upgrading infrastructure.</li> <li>v. Proposed new infrastructure will require heritage clearances.</li> </ul>	<ul style="list-style-type: none"> <li>i. The department is working with Water Corporation to manage and communicate operational impacts.</li> <li>ii. The environmental flow regime (provision) is consistent with the EPA objective to maintain the post dam environment. The environmental flow regime needed is lower than the current flows in the lower Ord. We are implementing a monitoring program that will identify any significant impacts on flora and fauna.</li> <li>iii. When restrictions are in place, the enhanced rules may have a slightly greater impact on environmental flows than the current rules. The environmental monitoring section explains how monitoring will check to ensure that flows are meeting environmental requirements.</li> <li>iv. If more water can be made available through changes to dam infrastructure, a process to select a service provider would be made public.</li> <li>v. Any proposals to develop new infrastructure where Native Title has been determined and not covered by the Ord Final Agreement, would need to follow normal Heritage and Native Title processes.</li> </ul>
<p><b>Non-consumptive water demands</b></p> <p>One respondent requested that aquaculture be acknowledged as an existing and potential growth industry in Lake Argyle, and to a lesser extent Lake Kununurra.</p>	<p>We agree. The plan acknowledges aquaculture in Section 3.</p>



Table 9 Comments and questions on the National Water Initiative and the plan

Comment	Department of Water response
<p><b>National Water Initiative (NWI)</b></p> <p>Three respondents commented on the department implementing NWI principles and its interactions with state legislation:</p> <ul style="list-style-type: none"> <li>i. The department is encouraged to mitigate water shortages through trading, creating efficiency and innovation. It is important that water trading is available for higher value irrigation to be sustainable.</li> <li>ii. If implemented, the plan would stifle future trade and amount to a direct failure to comply with NWI.</li> <li>iii. Interchangeable use of ‘entitlements’ and ‘allocation’ is not in line with NWI.</li> <li>iv. We understand that our entitlement is permanent in line with NWI.</li> </ul>	<ul style="list-style-type: none"> <li>i. The allocation limit is one mechanism to encourage water use efficiency and best practices. Future entitlements granted through licences will require efficient water use. Water shortages are managed through the restrictions approach described in the plan. Trading between licensees is also available at any time, and is more likely to occur when we reach full allocation. See Chapter 5 of the plan for more information.</li> <li>ii. The plan enables sustainable resource management and security for licensees, and as such is consistent with the general intent of National Water Initiative (NWI). The plan relies on instruments available under the WA legislation, which do enable trade.</li> <li>iii. Terminology in the text has been revised to be more consistent with WA water management and legislation terminology. The plan is written in the context of the <i>Rights in Water and Irrigation Act 1914</i>, and terms may not have the same meaning as those used for the NWI. The definition of these terms under the Act is in the plan glossary. We have checked through the plan to ensure we have used the proper entitlements term where appropriate.</li> <li>iv. A licence entitlement granted under the Act defines the legal right of the licensee, specifying the purposes for which the water may be taken and the period the licence is valid for.</li> </ul>
<p><b>Question</b></p> <p>Is the department’s intention to breach the NWI as signed by the Western Australian Government?</p>	<p>No. The plan is consistent with the National Water Initiative (NWI) as far as possible under the <i>Rights in Water and Irrigation Act 1914</i> (the Act).</p>

Table 10 Comments and questions on monitoring and reporting

Comment	Department of Water response
<p><b>Plan outcomes</b></p> <p>One respondent suggested that ‘<i>wetlands and habitat for migratory bird species listed under international agreements</i>’ should be included as part of the third outcome.</p>	<p>The department recognises the importance of the international agreements but does not consider that this is a direct outcome of the water allocation plan. The environmental flow provision acts as a mechanism to achieve the</p>

	outcome 'healthy lower Ord' and ensure increased diversion will not have an impact on EPBC Act listed values.
<p><b>Biological monitoring</b></p> <p>Four respondents supported the biological monitoring as part of the annual reporting process and suggested improvements:</p> <ul style="list-style-type: none"> <li>i. Trigger levels should be revised once sufficient baseline data are collected.</li> <li>ii. Funding for ecological monitoring program needs to be confirmed.</li> <li>iii. Targets should be expanded beyond flow targets at Tarrara Bar trigger.</li> <li>iv. There should be further explanation of how ecological condition is to be measured (including various morphological components).</li> <li>v. The plan should include key condition indicators in riverine and estuarine wetlands.</li> </ul>	<ul style="list-style-type: none"> <li>i. Baseline data has been collected and trigger levels will be revised and applied through the Water Corporation's licence operating strategy before additional diversions occur.</li> <li>ii. We are finalising the terms of monitoring with Water Corporation. The requirement for ecological monitoring is supported by the EPA and other state government agencies.</li> <li>iii. While the Tarrara Bar target is our primary measure, we have a detailed set of both flow and ecological targets for the Ord River which will be sufficient to monitor and assess the health of the Ord River environment.</li> <li>iv. The ecological monitoring program in Section 6.3 of the plan details the approaches that will be used to assess the ecological components of the lower Ord River, which are water quality, fish, macroinvertebrates and vegetation (riparian and in-stream). There were 51 river cross section assessments done to inform the flow requirement, and further geomorphology work is not needed in the monitoring program as impacts of increased diversion would be small compared to impacts of major flood flows.</li> <li>v. The Ramsar estuarine and peripheral riparian wetlands will not be measurably affected by the increased diversion or the environmental water provisions, so we are not required to monitor their ecological condition. Section 8.4 of the methods report explains that water quality and biological productivity in the estuarine wetlands are driven by tidal movement and runoff from the unregulated portion of the Ord catchments. Peripheral riverine wetlands of the Parry Creek Lagoon system are predominantly supported by local rainfall and flows from Parry Creek. We don't expect the alteration of the flow regime from implementing the environmental flow regime and increased allocation limit to affect the flood frequency of the Parry Creek Lagoon system.</li> </ul>

<p>vi. Trigger levels for fish are too conservative.</p> <p>vii. There is an over reliance on unpublished reports.</p>	<p>vi. The current trigger is a 30 per cent change in the total number and abundance of all species. For larger species such as barramundi, mullet and saw fish (listed under the EPBC Act) the trigger is ‘a detectable change’ in frequency and size of individuals. We defined the trigger levels based on the detectable effect size calculated from available baseline data. Triggers will be revised using recently completed additional sampling, and applied through the Water Corporation’s licence operating strategy before additional diversions occur.</p> <p>vii. The department developed the monitoring program with a member of the scientific panel who has extensive experience in ecological monitoring of the lower Ord and other rivers across WA. Further detail on the consultation and involvement of the scientific panel can found in Section 2.6 of the <i>Ecological water requirements for the lower Ord River</i> (Brambridge &amp; Malseed 2007). The reports are available on request. Please contact the Water Allocation Planning Branch (see further information section).</p>
<p><b>Questions</b></p> <ol style="list-style-type: none"> <li>1. Please explain why the macroinvertebrate community composition criteria for decline is being used, and how such criteria could be used for species composition?</li> <li>2. Why should Water Corporation have the responsibility for undertaking the biological monitoring component of the lower Ord environmental water provision monitoring program?</li> <li>3. Why does the reporting not include annual reporting to the Department of Environment and Conservation and the Commonwealth?</li> </ol>	<ol style="list-style-type: none"> <li>1. The trigger level of a 10 per cent change in macroinvertebrate community composition has been removed from the ecological monitoring program.</li> <li>2. Water Corporation is the major provider of commercial water supply services and operator of the major infrastructure that most affects river flows. The Act makes provision for licence conditions to relate to monitoring of ecosystems.</li> <li>3. The department is not required to report to the Department of Environment and Conservation and the Commonwealth.</li> </ol>
<p><b>Ramsar wetlands</b></p> <p>One respondent supported the plan in that the allocation does not affect Ramsar wetlands. Other comments were that:</p> <ol style="list-style-type: none"> <li>i. The allocation limits set in the plan should be tested and reported against ecological character descriptions for the Lower Ord Ramsar sites.</li> </ol>	<ol style="list-style-type: none"> <li>i. The ecological monitoring program has been designed to check that the environmental flow regime is achieving the objectives for the parts of the lower Ord River that will be affected by increased diversion. Water quality and biological productivity in the estuarine wetlands are driven by tidal movement and runoff from the unregulated portion of the Ord</li> </ol>

<p>ii. If there are changes to water allocations that may have a significant impact on matters protected under the EPBC Act, that the department considers referral of action for decisions under the EPBC Act.</p>	<p>catchments (See Section 8.4 of the methods report).</p> <p>ii. Noted. The plan allows a further 400 GL/yr to be diverted from the Main Ord, and 115 GL/yr further downstream without having impact on matters protected under the EBC Act. It establishes an environmental flow provision which acts as a mechanism to make sure increased allocation will not have an impact on EPBC Act listed values. The department will consider the need to refer any future changes to the federal government as necessary.</p>
<p><b>Questions</b></p> <p>1. Why are Ramsar wetlands mentioned but not discussed?</p> <p>2. Who is responsible for the <i>Lower Ord River environmental water provision monitoring program and management framework</i>?</p>	<p>1. Ramsar wetlands are discussed in Section 8.3 of the methods report.</p> <p>2. The department is responsible for implementing the monitoring program and management framework. However, OIC and Water Corporation have responsibilities under their licence conditions for undertaking and reporting on specific components of the monitoring program, with OIC responsible for water quality monitoring within the Stage I irrigation area and Water Corporation responsible for the ecological monitoring in the lower Ord River.</p>
<p><b>Acquiring monitoring data</b></p> <p>Three respondents requested they receive copies of the monitoring data and to be informed if monitoring indicates a significant change in the freshwater ecosystem.</p>	<p>Ecological monitoring will be undertaken every three years and the results will be publicly available.</p>
<p><b>Evaluation</b></p> <p>One respondent encouraged the department to add a section detailing the results of the evaluation, to whom and how often.</p>	<p>See Chapter 7 of the plan for details on evaluation.</p>

*Table 11 Comments and questions on consultation and communication*

<b>Comment</b>	<b>Department of Water response</b>
<p><b>Consultation</b></p> <p>Five respondents noted the department should undertake further community consultation and develop effective communication tools. Other comments are below:</p> <p>i. It is unclear if general community consultation was undertaken to build the capacity of the community in water management.</p> <p>ii. Further engagement will assist the</p>	<p>i. How we developed the plan and the main stakeholder interests raised during the planning process are presented in sections 1.5 and 1.6 respectively.</p> <p>ii. Noted. The annual stakeholder meeting is a</p>

<p>community to understand the complexity of the issues associated with water management, in this case supply of electricity to their community.</p> <p>iii. Include DEC in the main stakeholder interests section.</p>	<p>key part of engaging and communicating with the community over our management arrangements in the Ord surface water area.</p> <p>iii. We have updated the stakeholder section.</p>
<p><b>Indigenous engagement</b></p> <p>Two respondents noted the department's engagement with indigenous groups. One noted the department support for traditional indigenous laws and customs. Another showed interest in continuing a working relationship for heritage protection and safe guarding native title rights of future developments.</p>	<p>We recognise that all water resources, rivers and their tributaries; wetlands and springs have cultural and traditional significance to Miriung Gajerrong people. We will continue our strong working relationship with the Miriung Gajerrong as the Ord area is developed and water is allocated.</p>
<p><b>Annual Ord River Stakeholder meeting</b></p> <p>Two respondents commented on the annual operation meeting (now called the Annual Ord River Stakeholder meeting):</p> <p>i. DEC should be included as an attendee.</p> <p>ii. Water Corporation is discussing with the department the information required to be presented at the meeting.</p>	<p>i. We have updated the list in the plan.</p> <p>ii. Noted, and clarified in Section 3.5 of the plan.</p>

## Where to next?

Where indicated, responses have been incorporated in the final *Ord surface water allocation plan*. The plan is available from the department's website <[www.water.wa.gov.au/allocationplanning](http://www.water.wa.gov.au/allocationplanning)>. It outlines how the department will allocate and manage surface water resources in the Ord River area through licensing, assessment, policy and reporting.

The department is currently investigating future water supply options for expanding agriculture in the Ord area. This includes the potential supply if the base of the spillway were increased.

## Further information

For licensing information, please contact our:

Kununurra Regional office  
 27 Victoria Highway Kununurra WA 6743  
 Phone 08 9166 4116

For planning information, please contact our:

Water Allocation planning branch  
 Phone 08 6364 7600  
 Email [allocationplanning@water.wa.gov.au](mailto:allocationplanning@water.wa.gov.au)



## Shortened forms

AHD	Australian Height Datum
DoW	Department of Water
EPA	Environmental Protection Authority
EWP	Environmental water provision
EWR	Environmental water requirement
NWI	National Water Initiative
KDD	Kununurra Diversion Dam
OIC	Ord Irrigation Cooperative
PH	Pacific Hydro

## Volumes of water

One litre	1 litre	1 litre	(L)
One thousand litres	1000 litres	1 kilolitre	(kL)
One million litres	1 000 000 litres	1 megalitre	(ML)
One thousand million litres	1 000 000 000 litres	1 gigalitre	(GL)

# Glossary

<b>Abstraction</b>	Withdrawal of water from any surface water or groundwater source of supply.
<b>Allocation limit</b>	The annual volume of water set aside for use from a water resource. In the Ord area it is the total amount of water that can be licensed from a resource or subarea.
<b>Annual announced allocation</b>	The proportion of an annual water entitlement that is available in a given year.
<b>Annual water entitlement</b>	The amount of water specified on a licence issued under Section 5C of the <i>Rights in Water and Irrigation Act 1914</i> that can be taken each year (dates specified on the licence).
<b>Argyle Diamonds</b>	Argyle Diamonds Ltd, operators of the Argyle Diamonds Mine; a wholly owned subsidiary of Rio Tinto Ltd.
<b>Consumptive use</b>	Water used for consumptive purposes considered as a private benefit including irrigation, industry, urban and stock and domestic use.
<b>Diversion (of water)</b>	Taking water from a watercourse, usually by gravity.
<b>Ecological water requirement</b>	The water regime needed to maintain the current ecological values (including assets, functions and processes) of water-dependent ecosystems consistent with the objectives of an environmental flow study.
<b>Environmental water provision</b>	The water regime resulting from the water allocation decision-making process taking into account ecological, social, cultural and economic impacts. They may meet in part, or in full, the ecological water requirements.
<b>Fit-for-purpose water</b>	Water of a quality suitable for the intended end purpose. It implies that the quality is not higher than needed.
<b>Goomig farmlands</b>	New farmland being established by the Western Australian Government under the Ord Irrigation Expansion Project. The area is located on the Weaber Plain to the north east of Stage 1 areas.
<b>In-situ water</b>	Represents water that needs to be left in the system, including the water needed to maintain the integrity of the resource and ecological, social and cultural values.



<b>Licence (or licensed entitlement)</b>	A formal authorisation that entitles the licence holder to take water from a watercourse, wetland or underground source under the <i>Rights in Water and Irrigation Act 1914</i> .
<b>Management area</b>	A defined surface water area or groundwater area proclaimed under the <i>Rights in Water and Irrigation Act 1914</i> .
<b>Ord Final Agreement</b>	A deed for the Compulsory Acquisition of Native Title Rights and Interests (Ord) between the State of Western Australia, the Miriuwung and Gajerrong People (MG), and private interests (Grantee Parties).
<b>Over-allocation</b>	Where the total volume of water allocated out of the resource (that could be abstracted at any time) is over the set allocation limit.
<b>Over-use</b>	Where the actual volume of water abstracted from the resource is over the set allocation limit.
<b>Pacific Hydro</b>	Pacific Hydro Limited, owners and operators of the Ord River Dam hydropower station.
<b>Reliability</b>	The frequency with which a water licence holder can access their full annual water entitlement.
<b>Self-supply</b>	Water users (individuals or organisations) who abstract water from a source for their own individual requirements.
<b>Social value</b>	An in-situ quality, attribute or use that is important for public benefit, welfare, state or health.
<b>Social water requirement</b>	The water regime needed to maintain social and cultural values.
<b>Subarea</b>	A subdivision, within a surface or groundwater area, defined to better manage water allocation. Subarea boundaries are not proclaimed and can therefore be amended without being gazetted.

## References

- Braimbridge, MJ & Malseed, BE 2007, *Ecological water requirements for the lower Ord River*, Environmental water report series, report no. 4, Department of Water, Perth.
- Department of Water 2006, *Environmental values, flow related issues and objectives for the lower Ord River*, Environmental water report series, report no. 1, Department of Water, Perth.
- 2011, *Lower Ord River environmental water provision monitoring program and management framework*, Environmental water report series, report no. 19, Department of Water, Perth.
- 2011, *Water allocation planning in Western Australia: a guide to our process*, Department of Water, Perth.
- 2013a, *Ord surface water allocation plan: for public comment*, Department of Water, Perth.
- 2013b, *Ord surface water allocation plan methods report*, Department of Water, Perth.
- Water and Rivers Commission 1999, *Draft interim water allocation plan, Ord River*, Waters and Rivers Commission, Perth.

## Legislation

- Australian Government, *Environmental Protection and Biodiversity Conservation Act 1999*, Canberra.
- Government of Western Australia 1914, *Rights in Water and Irrigation Act*, Perth.

## Policy

- National Water Commission 2004, *Intergovernmental Agreement on a Nation Water Initiative*, Canberra, Australian Capital Territory.