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25th February 2022

Manager Water Allocation Planning,
Department of Water and Environmental Regulation (DWER)
Locked Bag 10
Joondalup DC WA 6919

Dear Manager,

Draft Gngangara groundwater allocation plan

The Urban Bushland Council WA Inc. much appreciates the opportunity to comment on this important plan. We are also appreciative of the briefing provided by DWER officers Michael Hammond and Natasha Del Borello.

Without doubt, groundwater decline is of paramount significance as a key threat to native vegetation and wetlands and their flora and fauna. Our endangered Banksia woodlands, critically endangered Tuart Woodlands and iconic endangered species such as Carnaby's Cockatoo and Forest Red-tailed Black Cockatoo are now at risk of further serious decline unless groundwater levels are raised and then maintained.

The draft provides very clear scientific data and information on the Gngangara system and DWER is commended for this.

Comments below are made on specific pages in the draft.

Summary pages vii – xi

Purpose of the plan on page viii:

This describes clearly the dire situation needing to be addressed, and especially how the health of groundwater dependent wetlands and vegetation are suffering with drying wetlands, salt water intrusion, soil acidification and more.

Approach for managing the Gngangara groundwater system on pages ix-x:

Only **maintaining** groundwater levels or **reducing the rate of decline** in some locations is not enough. This still allows for decline, and does not raise groundwater levels at all wetlands where it is needed. It is strongly recommended that the objective should be:

- To reduce annual groundwater abstraction by at least 30% for all users.

Also that reductions should commence much sooner than by 2028.

A 10% reduction by 2028 for most licensed users is not enough.

The domestic garden bore use should be phased out quickly as the alternative of potable scheme supply is available.

The sprinkler roster for domestic garden use should be further reduced from 2 days to 1 day per week in autumn and spring, with 2 days per week remaining for summer only.

Changes to abstraction by sector as on page x:

The following increased changes are recommended.

- The 27% reduction for the Water Corporation is strongly supported, but this change should be much sooner – by 2028 rather than by 2032.
- The 10% reduction for agriculture and horticulture sectors should start immediately, and be increased to 30% reduction. Use of improved irrigation technology could achieve this.
- The 10% reduction for licences for parks and gardens, recreational green space, should start immediately by 2023, with a further at least 10% reduction, but preferably 30%, by 2025.
- For industry and mining uses, there should be at least a 20% reduction in licensed water use.
- **Domestic garden bore water use:** Much greater savings can be achieved from this sector use. It is strongly recommended that the free use of bore water for domestic gardens be phased out quickly for the Perth/Mandurah area.
Immediately in 2022, bore water use should be restricted to 1 day per week for spring and autumn, and 2 days per week for summer.
Landholders should be encouraged to change to scheme supply only – with no bore water use – as soon as possible.
- For schools and hospitals, there should be at least a 10% reduction by 2024. Improved irrigation technology could achieve this.

Support for water users on page xi.

The measures listed are supported.

Plan context and scope on pages 1 - 13

This section is very clear and very well described.

THE ENDANGERED CARNABY'S COCKATOO

On page 13, **The Gnangara, Pinjar and Yanchep pine plantations** section is a matter of great concern. The aim stated to *conserve important food sources for the endangered Carnaby's Cockatoo* must take precedence.

It is strongly recommended that the harvesting of the ~6000 ha of remaining pines is immediately halted and deferred. The pines supply foraging and roosting habitat for ~40% of the remaining Carnaby's population and this must be retained at least until more than the equivalent food resource is planted and grown and supplied. This will take many years. The advice on the importance of this is available from Birdlife WA. If this pine habitat is lost, the Carnaby's will be driven towards extinction and this is totally unacceptable.

The concept of 'balancing' the multiple objectives should mean that the Carnaby's existing food supply is completely retained.

The large grassed area where pines have already been harvested and no revegetation has taken place should be revegetated with Banksia Woodland species as a priority. This is a much needed major restoration process which should have been a government requirement immediately after pine harvesting started many years ago.

Water resource objectives for the Gngangara groundwater system on pages 16 - 18

Water levels

The objective (on page 16) should **only** be to **increase** groundwater levels in the Superficial aquifer.

- 1 a. Only ‘**maintaining**’ groundwater levels does not address the unacceptable impacts of over-abstraction. Drastic action is **now** required.
- 1 b. The need is to ‘**improve**’ the health of groundwater dependent ecosystems, not just ‘**maintain**’ their existing degraded health. Thus the word ‘maintain’ should be deleted.
The abstraction volumes need to be reduced more than that proposed to increase groundwater levels more.
2. Under ‘**Manage declines...**’. ‘**Reducing**’ the rate of decline means that groundwater levels will still be declining. It does not stop the decline. This needs to be changed with much less abstraction allowed.
3. **Increased pressure heads** - 3a and 3b actions are supported.

Water quality

4. The objective to stop **salt water intrusion** resulting from groundwater drawdown near the coast and along the Swan and Canning Rivers is strongly supported. This should mean that **all bores** adjacent to the coast and the rivers should be shut down and not permitted. It is recommended that this apply immediately to existing household bore users, and also to local government grassed areas (eg to the grassed area adjacent to the beach at Scarborough in City of Stirling).
5. **Changes in acidity in Areas of Acid Sulfate Soils (ASS) and Potential ASS (PASS):** Dewatering of ASS and PASS areas must not be permitted. Once these areas are dewatered, soil and downstream wetlands and groundwater under native vegetation areas are irreversibly acidified. The risk of groundwater being acidified must therefore be reduced to zero. Areas of Bassendean Sands are an example. So-called ‘temporary’ groundwater drawdown for construction purposes must never be permitted and must not take place.
More specific information with identification of ASS and PASS areas is needed. Household bores and dewatering during development activities must not be permitted. Dr. Steve Appleyard in DWER is the expert on ASS.

3 Water allocation changes across the system pages 19- 31

Very good data and information, well described.

Page 22: While the reduced abstraction of 54 GL/year is supported, it is not enough reduction.

Non-compliance with the water level criteria set under Part IV of the *Environmental Protection Act* is not acceptable. Much higher reductions are needed to better protect groundwater dependent ecosystems and to stop further declines in groundwater levels.

The reductions to licensed users should begin much sooner than 2028. As stated above, many reductions can and should begin immediately, and others by 2025. Over abstraction and reduced rainfall impacts are now key threats to our ecosystems. They now require urgent ‘drastic’ action. Thus it is strongly

recommended that drastic action is taken now in 2022 – *ie* well before the proposed date of 2028 for reductions to licensed users to begin.

4 Water licensing pages 32 – 41

The ‘reasonable timeframe’ over the next decade is too generous with respect to time and should be started much sooner.

In 4.1, the stated reduction of 30GL/year by the Water Corporation should begin much sooner than 1 July 2028.

4.2 Self supply users: The adjusted (reduced) entitlement volume of at least 20% (not just 10%) should begin much sooner and be in place by 2025.

Metering: as described is supported.

New water licences: No new licences is supported.

Temporary groundwater licences must **never** be granted for ASS and PASS soil types as.

4.4 Compliance and enforcement approach: All licensed users should require a meter and meters should be inspected for compliance. Enforcement is needed and more DWER staff need to be employed to inspect and read meters. Over-use should result in a prosecution and significant fine.

5. CHANGES to groundwater abstraction for different water uses pages 42 – 59.

5.1 The changes to **public water supply** are supported but should be much sooner as stated above.

5.2 Agricultural water supply pages 44-49: Being the second largest amount abstracted (~61.9 GL/year), reductions should be **much greater** than 10% and start immediately.

Reduction of **30%** by 2028 is recommended.

Water efficiency measures should be mandatory.

New horticultural developments should not be permitted.

5.3 Irrigating parks, gardens and recreational areas: pages 49-51

Being the third largest amount abstracted, (~45GL/year), **major reductions** are needed.

Improved water efficiency measures are needed, for example sprinklers producing large droplet sizes rather than the commonly used sprinkler heads producing fine droplets with significant misting loss.

Primary and secondary schools should not be exempt from reductions, where 10% reductions should apply.

5.6 Garden bores and stock and domestic bores pages 57 – 59.

It is remarkable that an estimated 65,000 garden bores abstract ~36 GL/year in the Gnamagara area and are exempt from licensing. Also remarkable is that on average, householders with a garden bore use 3 to 4 times more water on lawns and gardens than households using scheme water, a consequence at least partly because of the extra watering day allowed for sprinklers. This must be changed, but with much bigger changes than that proposed in the draft plan.

It is strongly recommended that this free of charge bore use be reduced, to reverse declining groundwater levels as follows:

- There be *immediate* changes in 2022 to only 2 days bore use in summer, and only 1 day of use in spring and autumn.
- Then further, that household bore water use be **phased out** as soon as possible and by 2026, with

householders switching to scheme use. Gardens including lawns need to be maintained and not replaced by hard surfaces which contribute to increasing the heat-island effect, reducing biodiversity and interrupting ecological linkages.

With ongoing climate change these bigger changes are necessary.

To support the changes as on page 58, assistance to householders to make their gardens more waterwise is needed, but this must avoid increasing hard surfaces. Garden wilding with local native species should be promoted.

6. The benefits of taking less from the Gngangara groundwater system pages 60 – 69.

Pages 60-64 describes very well the situation and how the proposed changes will stabilise or improve the ecological condition across 41% of the area covered by significant groundwater dependent ecosystems.

BUT, as stated on page 63, it is not acceptable that in other areas, water levels are still **expected to decline**. The past lack of control of groundwater drawdown is not justification for changing the water level thresholds to allow this unacceptable excessive drawdown.

Thus, DWER advice to seek to lower the critical groundwater level conditions set by the EPA (Ministerial Statement no. 819) is not supported. Rather it is strongly recommended to provide a scenario in which **all 30 representative sites are returned to minimum water levels.**

Our endangered Banksia Woodlands and wetlands are already suffering from groundwater drawdown and this must be corrected by much more reduction in abstraction of groundwater by bores.

6.2 Water quality on pages 63 and 65.

Increased acidity: Areas of Acid Sulfate Soils (ASS) and Potential ASS (PASS) are not suitable for bore water use as the natural water table is close to the land surface. Indeed DWER advice for many years has been 'do not dewater ASS and PASS'. Once a wetland is acidified, it is irreversible and cannot be restored.

The wording on page 63 concerning this matter requires review.

On page 65, the acid sulphate soils issue is well explained.

Pine plantation harvesting on page 63: The contribution to increased recharge from pine plantation harvesting is questionable and may be negligible. Because the existing pines are **critical habitat for an estimated 40% of the endangered Carnaby's Cockatoo population, it is strongly recommended that the pine plantation be retained for at least 20 - 30 years or until the equivalent quantity of productive habitat is grown.** This provision should over-ride ideals of pine harvesting to increase groundwater levels.

It is therefore strongly recommended that the State Government legally intervene to defer harvesting of the Gngangara pine plantation. Further that the former pine plantation area on the Gngangara Mound be revegetated with Banksia woodlands species immediately.

Seawater intrusion on page 65: Bores should not be permitted for any uses close to the coast as groundwater drawdown causes salt water intrusion by seawater. The same applies adjacent to the tidal regions of the Swan and Canning Rivers.

Saline groundwater can destroy coastal, riverine and estuarine vegetation and its habitat. This should be prevented.

6.3 Community and cultural values on page 68 – 69.

This is very well described and is supported. We humans value our wetlands and nature and they are essential for our health and well-being.

7. Monitoring program for the Gngangara groundwater system on pages 70 – 75.

On pages 70 – 72 and 74 – 75, monitoring is well described. This extent and standard of monitoring must be maintained at the 14 wetland sites and 16 bushland sites.

As stated above, **the requested amendments** to some of the water level criteria under s 46 of the *Environmental Protection Act* are not supported. These are termed proposed water level thresholds. Instead, groundwater abstraction volumes should be reduced much more to restore groundwater levels where they are currently non-compliant with the EPA criteria. Our recommended changes are shown above.

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