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Ecological Communities Section
Department of the Environment
GPO Box 787
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Attention Mark Bourne, John Vranjik

Dear Mark

Banksia Woodlands of the Swan Coastal Plain – Draft description and threats

The Urban Bushland Council WA strongly supports and commends the proposed listing of the Banksia Woodlands of the Swan Coastal Plain as a Threatened Ecological Community (TEC) at the level of **endangered**.

We commend the 'draft description and threats' as being thorough, accurate and clearly worded. The following comments are made in the specified sections and some minor changes suggested.

1.2 Location and physical environment (p3)

It is recommended that the Dandaragan plateau (SWA1) be excluded from the area to be listed as it is a completely different landform with different floristics - as discussed at the workshop. Further confirmation and scientific advice is available from Greg Keighery.

Revision of the first sentence and deletion of the last sentence on page 3 of 1.2 would reflect this.

First sentence page 4: Quindalup sands are generally white - cream colour, Bassendean sands are grey.

1.3 Vegetation (p4-7)

This is a clear, well worded description which is supported.

We recommend that the following phrase near the end of page 4 be deleted: '*... with B. Burdettii (Burdett's banksia), more common on the Dandaragan plateau.*'

1.3.2 Fungi (p7)

Minor typographical error: delete 'a' at beginning of second last line on page 7.

Table 1: Floristic Community Types (FCT) (p8-9)

The Banksia woodlands are species rich and truly unique. As noted, the lack of current mapping of the FCTs to provide baseline data is a key issue which needs to be addressed as a matter of urgency by the State government. It is essential to have data on the identity and distribution of the complex and highly variable FCTs to ensure that they are properly protected and conserved, and can then be monitored and audited annually.

Field survey and mapping of the state listed TECs and PECs is essential and should be carried out by teams of locally experienced botanists and data entry specialists in DPAW.

1.4 Fauna

Well worded, supported.

As stated in first paragraph, page 10, the impact of frequent fire results in the loss of most mammal

species.

We agree that the study of invertebrates is incomplete and needs to be done as a priority. There is a need for survey and research on pollinators and host specificity.

The list of key species needs to be checked by Ric How, and Ron Johnstone, Curator Ornithology WA Museum and other specialists.

1.5 Key Diagnostic characteristics and condition thresholds

Condition thresholds for consideration as MNES are vitally important to enable the ongoing survival of the rich biodiversity values and ecological functioning of Banksia woodlands in what is now a highly fragmented landscape. The high degree of floristic variability moving both north-south and east-west requires consideration for small patches as well as large.

We recommend that small patches and linear patches which function as linkages even if in poor condition, all be included in the minimum threshold to be considered MNES. These small patches and linkages must be considered in the category of the ‘most valuable elements of the ecological community’.

A statement should be added: ‘Some of the sub-communities are listed by the WA State as TECs and PECs and all of these (and future revisions based on scientific survey and assessment) are to be included in the minimum threshold to be considered MNES.’

1.5.1 Key diagnostic characteristics

Again this section needs to specifically include all the FCTs listed by the WA State as TECs and PECs as MNES.

Location and physical environment:

The words ‘the Dandaragan Plateau (SWA1) and’ needs to be deleted from this section, as the Dandaragan plateau area should not be included as described in 1.2 above for the area to be listed.

The remainder of this section, and the *Structure*, and *Composition* sections are supported.

1.5.2 Condition thresholds

Because of the now highly fragmented landscape of Banksia woodlands, Condition thresholds should include:

- Patches regardless of size where less than 10% Banksia woodlands remains within a 5km radius.
- Patches functioning as regionally and/or locally significant ecological linkages
- Patches functioning as ‘critical habitat’ (under Recovery Plans) for endangered species., *eg:* all patches within a 6km radius of Carnaby’s cockatoo major roost sites.
- All WA State listed TECs and PECs for the Swan Coastal Plain.

The current situation is that Banksia woodlands are being cleared patch by patch, some small, some large, many are linkages, and now less than 30% remains in SWA2. But many sub-areas especially on the eastern side of the Swan Coastal Plain, and south of the Swan River have less than 10% remaining, and are increasingly lacking linkages which are essential for ecological functioning, (*eg:* for seasonal migration of large and small resident bird species; as refugia; and for re-colonisation after catastrophic events such as fire or severe local storms).

Because of these reasons and as stated above in 1.5, we strongly recommend that ‘a minimum patch size’ be excluded from the condition threshold.

Two examples of small patches which should qualify for inclusion as MNES are Lot 1 Gay Street Dianella and the Inglewood Triangle at Eighth Avenue/Walter Road Inglewood. Lot 1 Gay St is a species rich area (>70 species/10m x 10m quadrat) surrounding the channel 9 helipad and it is in excellent condition because of its history of being fenced off and undisturbed and unburnt for at least 50 years. It is now under threat of being cleared for housing, despite its location in the middle of the extended Bush Forever Area 43 and hence linkage values, and also despite comprising WA State

listed TEC SCP 20a.

The Inglewood Triangle, despite edge effects due to its elongated shape, is in mostly good condition, provides a linkage and black cockatoo feeding habitat and is in an area where very little native vegetation remains in an older suburb. (As an A class reserve it is not under threat.)

There is a significant annual net loss by clearing of Banksia woodlands, and it is not being monitored, audited or reported. This must change for protection of our unique rich and rare Banksia woodlands which dominate the Swan Coastal Plain of the southwest biodiversity hotspot of global significance.

It is recommended that a workshop with scientists be held one year after the TEC listing comes into effect under the EPBC Act to review the process, progress and success in protecting areas and in stopping the net loss.

Further, we recommend that under the EPBC Act, a mandatory provision be included for an annual audit by suitably experienced scientists and specialists in DPAW, of all clearing and restoration of Banksia woodlands and that it be made publicly available.

1.5.3 Further information to assist in determining the presence of the ecological community and significant impacts.

We strongly support all the descriptions in this section and their importance. (pages 13-16 incl.)

Sampling protocols: Strongly supported. These standards and protocols are not always being used in current state and local government level decision making leading to erroneous advice about significance and needs for retention. Thus specification of the protocols as described will be a welcome improvement to current flawed processes of assessment.

The only suggested change is for surveys post fire (see p15) where surveys more than one year post fire may be required to properly assess a site against thresholds.

1.6 National context and other existing protection

Supported. All the state listed TECs and PECs are 'related to' and included in the national ecological community.

As there is no detailed mapping of the extent and scientific description of each of these state listed communities, especially the PECs, it is strongly recommended that the Commonwealth require the state to conduct a detailed on ground flora and vegetation survey to map and determine the extent of each of these communities, and then to revise their state listing status on the basis of the data collected. This work must be directed and conducted by the State Government's suitably experienced botanists and specialists in DPAW.

There is also a priority need to survey and provide detailed mapping of the extent of the Banksia woodlands as baseline data for this national listing. This should also be conducted by DPAW as above.

2. SUMMARY OF THREATS

Supported - with the modification that Dieback diseases be the number 3 threat on the list. Groundwater drawdown is a key threat. (Hydrological degradation).

3. SUMMARY OF ELIGIBILITY AGAINST LISTING CRITERIA (p18)

We strongly support listing as endangered.

The last two paragraphs are strongly supported.

The figures given for % decline need to be checked and revised. Our understanding is that the extent of decline on the Swan Coastal Plain south of the Moore river is now >70%, and that the decline on the Swan Coastal Plain south of the Swan River is >90%.

This listing is required to protect and prevent Banksia woodlands from continued loss from clearing and the other threats resulting in rapid progression towards being 'critically endangered'.

APPENDICES

Appendix A

Table 3: We understand this list has been updated and provided to DOE by DPAW (Greg Keighery, Val English).

Tables 4 & 6: It is recommended that Geoff Barrett (DPAW), Ric How, and Ron Johnstone (Curator Ornithology WA Museum) review these lists and update if necessary.

?**Table 5:** Note there is no Table 5 included.

Appendix B- Detailed description of threats (p26-31)

This Appendix is well written and is supported. It is the combination of all these threats to Banksia woodlands that are so overwhelming.

Land clearing and impacts associated with fragmentation: First three paragraphs well stated and supported, especially the importance of connectivity.

We recommend that the last paragraph on page 26 be deleted as the generalisations given are not necessarily true and could lead to dismissal of the significance of small, relatively isolated patches.

Loss of species and condition in small isolated patches is dependent on the site history much more than patch size. Banksia woodlands are highly sensitive to soil disturbance and the history of disturbance can be highly variable. Indeed it is the initial disturbance of the top 10cm of soil which stimulates weed invasion and decline in vegetation condition. We have seen this at the small patch of Inglewood Triangle bushland where fire trucks drove through the bushland and weeds selectively invaded the tracks that were made by the trucks.

In contrast, the small patch of species rich Banksia woodland at Lot 1 Gay Street Dianella remains in outstanding condition (with >70 species/10m x10m quadrat) in suburbia with no visible weed invasion (except at the edge fenceline) due to absence of human soil and fire disturbance for some 50 years, and with kangaroos still present.

Climate change: Supported. This is a major threat. The south west is expected to experience more climate change than the rest of Australia. We recommend the addition of:

'With higher temperatures, dry winds and the spread of dry grassy weeds in summer, there is a risk of increased spread and intensity of "wildfires". The impacts of such fires will be greater.'

Groundwater drawdown

Supported. This is a major threat. Acidification of soils and wetlands on the Bassendean landform is a severely threatening process to Banksia woodlands as described.

We recommend that under the EPBC Act, mandatory measures be included to significantly reduce groundwater drawdown caused by groundwater abstraction by introduction of limits and enforced controls on abstraction. Groundwater monitoring and annual reporting thereof by the WA State Government (DOW) should also be required under the EPBC Act.

Altered fire regimes: Supported, well described. Prescribed burning should not be carried out in the Banksia woodlands of the Swan Coastal Plain as it aggravates grassy weed invasion which then increases summer fire risk.

Plant pathogens: Supported. Invasion by *Phytophthora cinnamomi* is a very serious threat as it kills Proteaceae species, including Banksias, and Xanthorrhoea species.

Invasive flora and fauna: Some modifications on p30 for flora are suggested as follows.

Retain first and last paragraphs. Delete the fourth paragraph. Reword the remainder to a more concise form. Perennial veldt grass is now widely spread and has the most impact on community composition. The last paragraph is well written.

Page 31 for fauna: In first paragraph add the Corella which is now a serious and destructive invader. We suggest that the Kookaburra could be deleted as it is not very common.

Mining, exploration and extraction: In first paragraph, edit the first sentence to read: ‘The extraction of raw materials **results** in the loss of vegetation, **hydrological impacts** and the introduction and spread of dieback and weeds.’

In last sentence, change to: ‘Extraction of mineral sands involves the total clearing of Banksia woodlands.’

Other disturbance to patches: Supported.

Key threatening processes

Supported.