WILDFLOWER SOCIETY OF WESTERN AUSTRALIA (Inc)

10 January 2022

Department of Agriculture, Water and Environment

By email: firektpconsultation@awe.gov.au

Re: Proposed listing of 'Fire regimes that cause biodiversity decline' as a Key Threatening Process under the *Environmental Protection and Biodiversity Conservation (EPBC) Act.*

The Wildflower Society of Western Australia (WSWA) is pleased to have the opportunity to provide comment on the proposal to describe fire regimes that cause biodiversity decline as a Key Threatening Process (KTP). WSWA has been actively involved in the discussion of the impact of prescribed burning in Western Australia (WA) on threatened species and biological communities. Within the WSWA membership there is considerable knowledge relating to flora conservation and research associated to changes in species and vegetation communities as a result of frequent fire regimes.

During the 1980's evidence began to be collected that demonstrated that the prescribed burning inter-burn frequency favoured the regeneration of shorter-lived, hard-seeded plant species and reduced the regeneration of reseeder species, particularly after repeated periodic fires within 10-year intervals of each other. The observations from this time are very relevant to the safeguarding of the Threatened Ecological Community (TEC) – Banksia Woodlands of the Swan Coastal Plain. They also apply to the Banksia woodlands that exist along the South Coast of WA which, although not listed as a TEC at this time, are threatened by the increased occurrence of fires, deliberate and accidental, in this region. The area is prone to fire from lightning strikes, which appear to be increasing in frequency, as well as prescribed burns set to protect adjacent agricultural lands and production forests.

General Comments

WSWA endorses the Listing of 'Fire regimes that cause biodiversity decline' as a Key Threatening Process (KTP) under the EPBC Act and strongly supports the initiative. Indeed WSWA considers the evidence provided by the Committee overwhelmingly supports the listing and is consistent with the view of its overall membership.

WSWA considers the advice document provides a comprehensive review and analysis of fire regimes that cause biodiversity decline as a KTP that meets all 3 criteria of s.188(4) of the EPBC Act.

The KTP is a critical component for ensuring that the last remaining native ecosystems are carefully and scientifically managed to ensure their protection in perpetuity. Importantly the KTP, for the southwest of Western Australia, highlights the need for the precautionary principle, i.e. in the absence of conservation-critical science to demonstrate no negative impacts, that applied fire must be avoided. In addition, prescribed burning as practised on the remaining native vegetation of this hotspot must be done with full, informed and free consent of Indigenous custodians as outlined in the KTP.

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We strongly support development and introduction of a Threat Abatement Plan (TAP) under the EPBC Act to improve conservation outcomes for species and ecological communities threatened by 'Fire regimes that cause biodiversity decline'. This is a mechanism to control inappropriate fire. Current prescribed burning practices in WA are inappropriate and require complete review and change.

If research is required to construct an initial adequate Fire Threat Abatement Plan, perhaps a set of interim measures permitted that concentrate short term threat abatement efforts into priority areas should be provided .

The review provides a welcome reference from which aspects of a prescribed burning plan for an area and its place in the area as a whole can be evaluated. It comprehensively explains why fire regimes that cause or contribute to biodiversity decline should be listed as a Key Threatening Process under the EPBC Act.

Specific Comments Related to WA

WA's South-West forests look to be under siege from short term prescribed burning. Those agency responsible for implementing this strategy of prescribed burning should be required to show that they are not putting biodiversity at risk as a condition of operating. The current situation here in the south-west of WA is that a target to burn 200,000 ha/year is an inappropriate action, does not prevent wildfire, and causes a decline in MNES and biodiversity, and thus should be abandoned and reviewed. This results in areas being burned every six years, a frequency too short for many reseeders to become established and mature to a stage where they produce enough seed to replace the plant if it were killed. The time to achieve that criteria would be in the order of 30 years for many species. After 12 years of no fire, flammability of undergrowth declines thereby reducing the threat of fire while promoting the longevity of fire sensitive vegetation and fauna species.

The southwest of WA is divided into three Land Management Zones (LMZs) by the State Government's Department of Biodiversity, Conservation and Attractions (DBCA, formerly CALM, DEC and DPaW), which has a remit to burn the targeted 200,000 ha per annum. A notional target of 30,000 ha is set for LMZ1, 5 km from townsites, 60,000 ha for LMZ2 that is 20 km from townsites, and the remaining 110,000 ha to be prescribe- burned is in LMZ3, representing the major forested bushland areas of the southwest.

The target of 200,000 ha to be burnt annually in the forests of southwest of Western Australia (with considerably more burnt in non-forested landscapes) was not arrived at scientifically, but equated roughly to …"the average program achieved in the mid 1950s of about 250,000 hectares, and the current actual achievement (in 1992-3) of 150,000 hectare as reported by the then Department of Conservation and Land Management in 1994. It was subsequently justified in Parliament in 2015, in response to a question to the Minister for Environment, who pointed to the results of a long-term study by the then Department of Environment and Conservation in which …"burning of about eight percent of the landscape each year significantly reduced the incidence and extent of unplanned fire…" As this equated to approximately 2.6 million hectares of forested estate under Departmental management in the south-west, eight percent of this equates to treating approximately 208,000 hectares per annum. Achieving this degree of treatment each year will facilitate approximately 45 percent of the forested estate to carry fuel loads that are less than six years old."

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After the large fire at Waroona/Yarloop in Western Australia's southwest in January 2016, which partially destroyed the southwest town of Yarloop, the Ferguson Review recommended that: ". … the strategic objective will be that a fuel age of less than six (6) years will be maintained across 45% of the landscape on State Forest, National Parks and other Parks and Wildlife managed lands in the South West and Perth Hills", despite evidence of much of the landscape burnt being farmland with highly discontinguous bushland. There has been a long-held view within the volunteer bushfire brigades (who have decades of local experience in their area of management) that such objectives are not consistent with their experience and the timing of fuel reduction burns results in a much greater impact than required for fire management.

Only 10.8% of native vegetation in this area is uncleared and much of it is highly fragmented, particularly on the Swan Coastal Plain and in the Wheatbelt. Fragmentation has resulted in fire being the enabling mechanism for weed invasion, spread of plant pathogens and inappropriate land use in the remnant patches, leading to further decline in vegetation condition and biodiversity.

In the KTP consultation publication, the role of flammability of living shrubs and grasses, other than litter, is recognised. However, WSWA would emphasise the variation of flammability with time as the relatively short-lived flammable oily-leaved shrubs become fewer with a consequent reduction in flammability with time. WSWA would also emphasise that introduced grasses produce a similar level of flammability on an annual basis and often replace oily-leaved shrubs in areas most prone to edge effects.

Arguments likely to be put up by those wanting to continue the status quo are:

1. Cheapness – Cost per ha is a Key Performance Indicator for the DBCA in WA. However, cheapness can still be achieved if less area is burnt. The current system in WA appears to be far too general and an approved Threat Abatement Plan could take account of all the variables that are identified in the consultation documents. Some benefit could be gained by focussing effort into controlling fuel loads in the areas of greatest risk and avoiding the blanket periodic coverage currently applied. Escapes from "controlled burns" have been an issue in many places, such as the Stirling Range National Park, and may not have done so much damage had adequate resources been available to prevent escapes and the extent of burning was commensurate with the resources available to control escapes.
2. Ease of implementation – The use of aerial ignition involves lighting up large areas all at once which must have adverse effects on wildlife with few chances of escape. Ease of implementation should only be a main factor in areas where protection of protectable property is the priority.
3. Likely catastrophic fires if areas are left unburnt – avoiding catastrophic fires
    a. Given the nature of some prescribed burn escapes there may not be much difference in those cases. Certainly, we need good-sized areas of areas burnt to different prescriptions, including long unburnt areas, so that if they get burnt then hopefully other areas can be available to take their place within the strategy. It is interesting to consider the issue of putting out fires, especially where roads have to be constructed. Perhaps, some initial suppression effort could be put in place but otherwise it could be left to burn up to existing roads. A better system of fire detection might be required and, given current technology could be readily

available. There again, if the fire is remote then, even if detected early, it may not be possible to extinguish it in time.
In WA it is unclear as to what, if any, areas are allowed to be long unburnt.
The key is to account for the likelihood of catastrophic fire and its extent.

b. Deliberately lit - arson or escapes. These are usually in less remote areas where fire fighting equipment might be more readily available for use in time. What applies to these areas does not apply to remote areas. Remote areas should be kept as remote and prescribe burned at a lesser rate. If camping is to be allowed in remote places, then special controlled burns might be required around camp sites or picnic areas and the cost of doing so recognised.
c. Lightning - as for deliberately lit. Suppression is difficult in remote areas and WSWA is unaware if records of the yearly average number of such burns are retained. A study might need to be done as part of the construction of a Fire Abatement Plan to identify the most common points of ignition by lightning.

4. Safety of people comes before considerations of biodiversity – This should be a policy only around protectable places. It should not apply to the bulk of the natural areas. If people want to live in such places, they should create structures that won't burn and pay for their insurance cover. Perhaps they could build underground in open areas? Where fire encourages weeds, it should be understood that frequent fires only make the areas more flammable and therefore should be accompanied by weed control. However, as noted in the paper, new growth can have high leaf oil content and therefore also be more flammable than less-frequently burnt areas.

Two affected Matters of National Environmental Significance (MNES) in the south west of WA are:

(i) EPBC Banksia Woodlands TEC:

In the south west of WA, altered and higher frequency fire regimes has affected EPBC Act listed TECs including the endangered Banksia Woodlands of the Swan Coastal Plain. Its Approved Conservation Advice (26 August 2016) on page 92 lists 5 changes from increased fire:

"- Structural change, eg reduction in canopy cover, loss of native resprouting shrub cover;
- A shift from native species to introduced species, notably increased weed abundance and diversity;
- Decrease in native plant cover, richness and diversity;
- Changes in the ecological function of Banksia Woodlands; and,
- Feedback loops that promote weed species at the expense of native plants e.g. Perennial Veldt Grass Ehrharta calycina is highly flammable and infestations promote further fires. Higher fire frequencies, in turn, reduce the cover and regeneration capacity of many native plants.".

Small isolated areas of Banksia Woodlands are especially sensitive to fire. After fire they suffer a greatly increased invasion of grassy weeds, especially Veldt Grass, which in turn increases flammability and fire risk, and causes biodiversity decline.

Also spring and early summer burns are inappropriate, causing flora seedling loss, and reduced regeneration.

Invertebrates and other fauna lack linkage to refugia because of the fragmentation. Spring burns kill the microfauna as they cannot escape (David Knowles pers. comm. 2021).

Thus fire is certainly a Key Threatening Process in the endangered Banksia Woodlands.

(ii) EPBC Critically Endangered Tuart Forests and Woodlands of the Swan Coastal Plain:
In the Approved Conservation Advice for this TEC (page 37, 2019), primary threats to this ecological community include 'Altered fire regimes' and also 'Climate change', Clearing and fragmentation of vegetation'.

Frequent fire has resulted in the loss of the extent of Tuart. This is another important example showing that fire is certainly a Key Threatening Process causing decline in this critically endangered ecological community and deserves to be listed as a KTP under the EPBC Act.

Frequent fire enhances the ability of perennial grasses, particularly those more common species such as Lovegrass *Eragrostis curvula* and Veldt grass *Ehrharta calycina*, to replace the natural vegetation after fire. They also have the ability to generate a fuel load in one year that can only be generated in eight years by natural vegetation. As a result, road and rail corridors that are burnt, or otherwise disturbed, suffer from a loss of natural biodiversity and frequently harbour high fuel loads. However, they also frequently represent contain patches of TEC in various states of degradation (such as the TEC – Wheatbelt Eucalypt Woodlands), or provide habitat for Matters of National Environmental Significance (MNES).

The review document has not recognised the role played by marsupials in reducing leaf litter. It is well understood that marsupials, such as bandicoots and echidna, turn over soil and reduce leaf litter. However these animals are also prone to predation by cats and foxes which tend to threaten species more often after fire due to the loss of food at arises following fire.

Threat Abatement Plans as They Apply to WA

A condition to approve a Threat Abatement Plan should require adequate monitoring by an independent audit group appointed by the Commonwealth but paid for by the proponent. In Western Australia, the Department of Biodiversity, Conservation and Attractions (DBCA) undertakes much of the prescribed burning. In recent years, it has reduced its budget allocation for research associated with biodiversity and conservation and monitoring of the impacts of prescribed burning to the extent that WSWA considers its ability to conduct monitoring has been reduced and compromised by Government policies regarding prescribed burning. The Government has recently revised the Biodiversity Conservation Act to allow management of bushfires and potential for bushfires to override the requirements for biological conservation of MNES and TECs, as well as state-listed threatened species and communities.

Fire is the second most threatening process in the south-west of WA after land clearing.
On page 41 of the consultation document, the discussion on "*Degree of Threat"* provides overwhelming evidence that that "*inappropriate fire regimes are one of the most pervasive threats to Australia's biodiversity.* The target for the area subject to prescribed burning annually should be abandoned and future prescribed burning conducted consistent with an approved Threat Action

Plan approved by the Commonwealth and monitored independently of the State agency implementing the TAP.

Any fire abatement plan for the south west of WA must also consider and include the following recommendations and conclusions from the many experts who have reviewed current prescribed burning practices:

- Abandon the DBCA target of prescribed burning of 200,000 ha per year to manage southwest forests and bushlands. This target has no scientific evidence basis, is contrary to indigenous practices, and destroys biodiversity.
- Focus slow, cool, patchy prescribed burns only in winter in understorey only in areas around infrastructure consistent with indigenous burning practices.
- Never burn in spring, early summer or autumn.
- Abandon aerial ignition of prescribed burns.
- Retain long unburnt areas, as they are best for biodiversity protection and wildfire mitigation, and are critical for many plant and animal species.
- Abandon the target of prescribed burning areas every 6 - 10 years. This frequency impacts on the known breeding cycles of forest dependent animals and plants.
- Provide much increased capacity for rapid detection and at source suppression of ignitions before they become wildfires.
- Ensure critical habitats are protected from fire. For example peat lands, wetlands, and granite outcrops must never be burnt.
- Protect long unburnt habitats with no prescribed burning, for example, for Numbats and Honey Possums, and allow aging of the forest to encourage the turning over of the leaf litter by animals like the Echidna and Bandicoots.

The threat abatement plans and the process that accompanies their formulation, review and monitoring should provide for the following:

- Public land managers should clearly convey and make available to the public their fuel load management strategies, including the rationale behind them, as well as report annually on the implementation and outcomes of those strategies.
- Australian, state and territory governments should review the assessment and approval processes relating to vegetation management, bushfire mitigation and hazard reduction to:
    - ensure that there is clarity about the requirements and scope for landholders and land managers to undertake bushfire hazard reduction activities, and
    - minimise the time taken to undertake assessments and obtain approvals.
- Australian, state and territory governments should develop consistent processes for the classification, recording and sharing of fuel load data.
- Australian, state, territory and local governments should engage further with Traditional Owners to explore the relationship between Indigenous land and fire management and natural disaster resilience.
- Australian, state, territory and local governments should explore further opportunities to leverage Indigenous land and fire management insights in the development, planning and execution of public land management activities.

These statements were found in the findings of the Royal Commission into National Natural Disaster Arrangement and are equally as relevant to the protection of MNES from fire.

Conclusion

Listing of 'Fire regimes that cause biodiversity decline' as a Key Threatening Process under the *EPBC Act* is strongly supported.

Development of a Threat Abatement Plan under the EPBC Act is strongly supported but should be expanded to include the use of prescribed burning as it is a threatening process for all vegetation communities and the flora and fauna they support.

Evidence suggests there are parts of the landscape that do not recover from fire and should not be risked by prescribed large-scale fuel reduction burning.

The practice of wide-scale prescribed burning in the southwest of Western Australia should be declared a "threatening process" and must replaced with a more refined process specifically focussed on in-vicinity protection of people, assets and infrastructure as we are at extreme risk of 'burning up', ie losing the biodiversity that we are trying to save.

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