'Fire regimes that cause biodiversity decline' as a key threatening process – comment on the listing assessment

Submission by the
Invasive Species Council & Bush Heritage Australia

January 2022

Document details

Threats to Nature project / Invasive Species Council and Bush Heritage Australia. 2021. *'Fire regimes that cause biodiversity decline' as a key threatening process – comment on the listing assessment. Submission by the Invasive Species Council and Bush Heritage Australia*. January 2022.

About the Invasive Species Council

The Invasive Species Council was formed in 2002 to advocate for stronger laws, policies and programs to keep biodiversity safe from invasive species. Fire-prone invasive pasture grasses are a major hazard in many landscapes, and cats, foxes, deer and other invasive animals often cause great harm after fire. Through the *Threats to Nature* project, we are working to reform Australia's threat abatement system.

About Bush Heritage Australia

With a vision of *Healthy Country, Protected Forever*, Bush Heritage Australia (partner) helps protect 11.3 million hectares of ecologically important land – on reserves it owns and in partnership with Aboriginal organisations and other landowners. One of Bush Heritage's priorities is to work with Traditional Owners and innovators to develop proactive ways to facilitate adaptation by species and ecosystems to inevitable change driven by climate warming, including extreme fire.

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1. Introduction

The Invasive Species Council and Bush Heritage Australia welcome the advice by the Threatened Species Scientific Committee (TSSC) to finally list 'Fire regimes that cause biodiversity decline' (adverse fire regimes) as a key threatening process (KTP). We commend the TSSC on the quality and comprehensiveness of the KTP assessment.

We strongly endorse the listing of this KTP – not only because it clearly meets the criteria under the EPBC Act and is one of Australia's major environmental threats, but because it interacts strongly with other threats, including invasive species such as invasive pasture grasses, predators and ungulates and climate change. Our organisations also have a strong interest in strengthening the threat abatement system, including through comprehensive listing of KTPs. As the first potential listing of a KTP for many years, the adverse fire regimes KTP provides an opportunity to implement an exemplary planning process, and to potentially link with regional planning processes proposed in the Samuel review of the EPBC Act.

In this submission we address the question of whether there should be a national threat abatement plan (TAP) to address the threat of adverse fire regimes. Given the national significance and complexities of this threat, there can surely be no doubt that some national plan or strategy to abate this KTP is warranted, noting:

- The scale of the threat is vast, impacting most terrestrial ecosystems.
- The intensity of the threat is extremely high, impacting hundreds of threatened species and ecological communities.
- The needs and opportunities for national coordination and leadership are also very high given the evident gaps in current abatement efforts and the shared challenges across jurisdictions.

The Bushfires Royal Commission report emphasised the importance of a leadership role for the Australian Government in preparing for bushfire disasters:[1]

> *The Australian Government should lead in the development and coordination of long-term, national strategic policy directed at making Australia resilient to natural disasters. It is uniquely placed to see the national picture, the national risks, and the impacts on all Australians. However, like all governments, it should also increase its capacity to address the complex and long-term strategic problems in disaster risk management and resilience.*

As well as responding to consultation questions 7, 8 and 9, we address the requirement under the EPBC Act that a TAP be 'a feasible, effective and efficient' way to abate the KTP by applying the criteria specified in the TSSC *Guidelines for assessing key threatening process nominations*. A subsidiary aim for us in doing this is to road test the guidelines, for this is the first KTP listing advice since they were developed.

Although we focus here only on whether a TAP is warranted, the adverse fire regimes KTP highlights the need for a more comprehensive and flexible conservation planning regime, as recommended in the Samuel review of the EPBC Act. In particular, implementing the proposed TAP and managing cumulative threats such as flammable weeds would be (and needs to be) facilitated by regional planning.

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[1] https://naturaldisaster.royalcommission.gov.au/publications/html-report/overview

2. Current planning and management actions

Addressing consultation question 8:

What planning and management actions are currently being implemented to abate the threat of fire regimes that cause biodiversity decline and to support the recovery of those species and ecological communities most impacted?

This is an important but challenging question, for it requires compiling information from across much of the continent, from governments and non-government land managers. To properly address this question requires an audit, as an essential part of the TAP planning process. Such an audit could include existing plans and actions to:

- recover threatened species and ecological communities, on private and public lands
- protect sites of biodiversity significance such as world heritage areas, national heritage places, national parks, Indigenous protected areas and private protected areas
- manage fire regimes on commonwealth lands for conservation outcomes
- manage fire regimes on other public lands
- manage fire regimes on private lands
- manage interacting threats such as flammable invasive grasses.

This audit could then inform a gap analysis to identify where and how a TAP can best add value to existing planning and management actions.

For a TAP to be adopted, the EPBC Act requires that it be an 'effective' means to abate a KTP. Likewise, in making that decision, it should also be required that an assessment be made of whether existing measures are effective in threat abatement rather than merely whether they exist – for ministerial decisions to reject the making of a TAP have frequently cited duplication as the rationale for not having a TAP.

The current TSSC advice does not mention existing Commonwealth programs relevant to abating the KTP. The recently established Australian Government National Recovery and Resilience Agency could and should play an important role in threat abatement – focused as it is on:

driving a coordinated effort to build disaster resilience and embed consideration for disaster risk across and within many sectors including … the environment.

Thus far, the agency's focus on and investment in environmental priorities appears limited, encompassing only existing government programs. A potentially important role for a TAP will be to drive a stronger focus on environmental priorities in the agency and embed these priorities in work across other sectors.

3. The potential contributions of a national TAP

Addressing consultation questions 7 and 9:

- *How might a threat abatement plan improve conservation outcomes for those species and ecological communities threatened by it?*
- *If a threat abatement plan is developed, what further planning and management actions should be included in the plan to effectively abate the threat?*

Reflecting the large number of species and ecological communities threatened by adverse fire regimes, the variety of fire regimes, and the ecological and social complexities of managing fire, there is much that needs doing to abate this threat. The need for a TAP is particularly acute because, it is safe to say, the majority of impacted threatened species (particularly plants) and ecological communities do not have recovery plans. There would also be substantial numbers of species (particularly plants and invertebrates) threatened by adverse fire regimes that are not listed as threatened. A TAP provides the opportunity to identify such species and spur recovery action (ideally through regional plans).

The challenge is not so much to identify potential actions and plans for a TAP, but to determine the priorities among the multitude of options. Priorities should be determined transparently by applying best practice decision-making tools.

Following are some of the ways that a TAP could improve conservation outcomes for threatened and at-risk species and ecological communities. These have been compiled in consultation with fire experts and practitioners.

Gap analysis of current plans and management actions

- Conduct an audit of current federal, state and territory policies, programs and plans (including recovery plans) relevant to fire management for conservation (as recommended in the previous section).
- Undertake a gap analysis to identify opportunities and priorities for a TAP.

Identification of biodiversity at risk; investigation and implementation of appropriate fire regimes

- Identify, map and prioritise biodiversity assets at risk from adverse fire regimes, including in landscapes at increasing risk due to climate change.
- Identify appropriate (and adverse) fire regimes for threatened and at-risk species and ecological communities where this is known or can be inferred.
- Prioritise the threatened and at-risk species and ecological communities for which appropriate fire regimes are not known and commission research to fill these fundamental knowledge gaps.
- Identify and support the most effective means to implement appropriate fire regimes for threatened and at-risk species and ecological communities (whether through existing state and territory processes, regional plans, Indigenous ranger programs, conservation NGOs, farm stewardship programs, carbon and biodiversity markets).
- Monitor and report on the extent to which appropriate fire regimes are being implemented for threatened and at-risk species and ecological communities.

Fire management plans for high-priority sites

- Support the development of best practice, site-specific fire management plans, including for world heritage areas and national heritage places.
- Identify national biodiversity priorities (including ecological fire refuges) that should be incorporated into existing national and state/territory fire management plans.

Information management, monitoring, mapping & reporting

- Establish a national supply chain of environmental information, as recommended by the Samuel review of the EPBC Act and consistent with Royal Commission recommendation 16.1.
- Establish a national monitoring and reporting regime to track the effectiveness of abatement actions, including the trajectories of threatened and at-risk species and ecological communities.
- Develop national performance targets against which to measure the effectiveness of threat abatement and national guidelines for monitoring and reporting on the status of the KTP, at risk and threatened biodiversity and the outcomes of fire management and severe fire events.
- Improve, and better coordinate across jurisdictions, national mapping of fire (including fire severity), and reporting on the gap between current and appropriate fire regimes.

Disaster preparation, responses and recovery

- Strongly focus on actions to prevent and prepare for extreme fire events.
- Identify national biodiversity priorities that should be incorporated into existing national, state and territory disaster arrangements.
- Develop pre-agreed contingency and disaster recovery plans (as per Royal Commission recommendation 22.5) for priority species and sites (e.g., world heritage areas and national heritage places). The review of the EPBC Act recommends adopting a biosecurity model for responding to acute threats. Precautionary pre-disaster actions should include the establishment of insurance populations of at-risk species, translocations for risk spreading and baseline surveys and monitoring. Disaster recovery plans should include a strong focus on minimising the impacts of invasive plants and animals and preventing their spread.
- Develop environmental information systems that can be integrated with other fire management information systems to enable decision-makers during disasters to quickly identify biodiversity assets at risk and the actions needed to protect them (in combination with decision-making protocols that recognise the triple bottom-line benefits of protecting life, property and biodiversity).
- Identify and address environmental risks arising from fire disaster preparation, response and recovery actions directed towards protecting life and property (e.g., hazard reduction and fire-fighting methods that could impact threatened species), with the aim of averting or minimising environmental risks.
- Develop a recommended process (e.g. by applying decision theory) for addressing apparent conflicts between human safety, property protection and biodiversity protection (e.g., relevant to Royal Commission recommendations 12.1, 17.1, 17.2 regarding roadside vegetation management and fuel load management) to help ensure there is appropriate consideration of conservation values in decision-making that involves trade-offs.

Interacting threats

- Develop strategies and policies to manage interacting threats -- for example, to:
  - (a) limit the spread of flammable invasive pasture grasses
  - (b) limit biodiversity impacts from fire-related activities such as land clearing for hazard reduction
  - (c) foster recovery of species impacted by fire by controlling feral predators and herbivores and limiting post-fire salvage in forests.

Standards & guidelines

- Develop national environmental standards and guidelines to shape and inform national, state/territory and regional plans and programs relevant to this KTP.
- Develop scientific statements and policy guidelines about issues on which there is contention (such as hazard reduction) or poor understanding (such as the notion of ecological resilience) and on the role of Indigenous burning (relevant to Royal Commission recommendations 18.1 and 18.2).
- Develop protocols for knowledge-sharing and overcoming barriers to collaboration by Indigenous and non-indigenous fire experts.

Capacity building & public engagement

- Undertake an audit of ecological fire management capacity, including by Traditional Owners and private land managers with significant conservation assets and support capacity building where this is needed.
- Support biodiversity-focused fire management training and the provision of expert fire management advice at regional levels and for different land management sectors.
- Undertake community engagement to educate and motivate land managers. Communicate widely the biodiversity consequences and needs for appropriate fire regimes.

Taskforce

- Establish a national taskforce, with government, expert and non-government stakeholders, with a national coordinator, to drive implementation of the TAP.

4. Assessing feasibility, effectiveness and efficiency

Under the EPBC Act (s270A(2)), a TAP must be developed if it is 'a feasible, effective and efficient' way to abate the KTP. These 3 critical terms are not defined in the act, but the criteria for each are implied in the assessments specified in the *Guidance to ensure the key threatening process could inform a feasible, effective and efficient threat abatement plan* (see Appendix 1).[2] There are no examples of KTPs to which this guidance has been applied (presumably because there haven't been any KTP assessments since the guidance was issued), so our attempt to apply it here is in part to 'road test' the guidance. The 'guidance' document is only as its name implies, so can be ignored, but criteria are clearly needed to guide the important decision about whether to have a TAP and ensure that the reasons for such decisions are transparent and justified.

4.1 Assessment of feasibility

Definition of 'feasible' (*Macquarie Dictionary*): 'Capable of being done'.

The guidance document recommends an analysis of the 'possible success of interventions'. A brief response to each of the recommended assessments is provided in Table 1. None of the issues considered in the assessments represent significant impediments to achieving successful interventions (although the relevance of some of the recommended assessments is not clear).

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[2] See https://www.awe.gov.au/sites/default/files/env/pages/d72dfd1a-f0d8-4699-8d43-5d95bbb02428/files/ktp-guidelines.pdf

TABLE 1. ASSESSMENTS OF FEASIBILITY AS SPECIFIED IN THE *GUIDANCE TO ENSURE THE KEY THREATENING PROCESS COULD INFORM A FEASIBLE, EFFECTIVE AND EFFICIENT THREAT ABATEMENT PLAN*

Assessment	Assessment response	Indicative rating	Feedback on recommended assessments
The effectiveness of each intervention in contributing to abatement	Most of the recommended options in section 3 are foundational for effective threat abatement, including identifying priorities, acquiring information about appropriate fire regimes, supporting people's capacity to apply appropriate fire regimes, and monitoring and reporting. They are mostly measures that have been effective when applied in parts of Australia or have been recommended by experts. In combination, they will contribute substantially to abatement.	Very high	Why is effectiveness assessed in the feasibility section when there is an entire section on effectiveness? The more appropriate assessment would be whether the proposed interventions are achievable.
The urgency of the options	Given the growing severity of this KTP and the hundreds of species and ecological communities at risk, it is urgent to strengthen abatement to prevent an already dire conservation threat from worsening.	High	It is not clear how urgency is relevant to feasibility. It is also not clear what timeframe counts as urgent – 1 year, 5 years?
Level of confidence that each option will contribute to threat reduction	Given that the proposed options are foundational to abatement of this KTP, there should be a high level of confidence that they will contribute to threat abatement, assuming they are part of a suite of interacting measures. As with most TAPs, effective abatement will depend on the willingness of all governments and other land managers to implement them. Although there can be only moderate confidence that this will occur comprehensively, partial implementation would still achieve threat reduction.	High	As per comment 1, feasibility should be distinguished from effectiveness. This assessment should be included as part of the effectiveness question (row 1).
Public acceptability	Most options are likely to be broadly supported. One indication is the high levels of public concern about the wildlife impacted by the Black Summer bushfires. The main options likely to generate some opposition are those focused on interacting threats such as invasive species, forestry and clearing for hazard reduction. Public acceptability will be optimised if there is a focus on achieving the alignment of biodiversity priorities with measures for protecting human life and property. There is also a great need for public education, including about effective measures for risk reduction that do not compromise biodiversity outcomes.	High	

Assessment	Assessment response	Indicative rating	Feedback on recommended assessments
Legislative impediments to undertaking each option	We do not know of any significant legislative impediments to undertaking the proposed interventions, but there are likely to be legal impediments to achieving some biodiversity outcomes (effectiveness) – for example, the recent amendments to NSW's Rural Fires Act 1997 allowing substantial clearing along boundaries. Law and policy enabling or mandating prescribed burning targets and practices may also conflict with appropriate fire regimes.	Moderate	
Resources required	A requirement for this assessment is premature. It should be addressed as part of the planning process and a budget prepared for the TAP. Although substantial abatement of this KTP will require much more funding, there is much that can be achieved through planning and other processes that are not resource intensive.	Not assessed	
Monitoring required to determine effectiveness	It is not feasible to address this in any detail at this stage. As a general comment, it should be feasible to monitor the outcomes of fire regimes on priority biodiversity, as this is already done for some species and sites. The development of the TAP is an opportunity to develop national guidelines for monitoring and reporting.	High	As per comment 1, 'feasibility' should be distinguished from 'effectiveness'. Shouldn't this be considered as part of rather than prior to the planning process? Feasibility will necessarily be considered in the development of monitoring guidelines.
Roles and responsibilities for implementation	Implementation will depend on all levels of government and a wide range of landholders. It seems premature to determine this prior to planning, particularly for interventions that will need to be negotiated with other governments. The necessity to obtain the agreement of state/territory governments is standard to most TAPs.	Not assessed	The relevance of roles and responsibilities to feasibility is not clear. Shouldn't these be considered as part of rather than prior to the planning process? It will require negotiations with state and territory governments and potentially with other bodies.

4.2 Assessment of efficiency

Definition of 'effective' (*Macquarie Dictionary*): 'Producing the intended or expected result'.

The guidance document requires an analysis of 'whether an intervention/option undertaken by the Australian Government is a useful contribution to the abatement of a threat'. A brief response to each of the recommended assessments is provided in Table 2.

Our recommended TAP options could be effective in all the potential ways implied by the assessments -- to improve abatement on properties for which the Australian Government has sole or joint management responsibility, enable Australian Government leadership, fill national gaps and harmonise approaches to issues. The proposed options would avoid duplication of existing work for we recommend they be explicitly focussed on filling gaps and adding value. For many of the proposed options there are no alternative agencies to undertake the work or alternative measures. Although not part of any required assessment, we note that a threat abatement advice would not be an effective substitute for the proposed options, which will rely on national leadership and resources for implementation.

Regarding the required assessments, we question why effectiveness should be limited to the interventions of the Australian Government, when it is clear that abatement will also require action by other governments and people and when there is a requirement under the EPBC Act (s269) for the government to seek joint implementation in state/territory areas.

TABLE 2. ASSESSMENTS OF EFFECTIVENESS AS SPECIFIED IN THE *GUIDANCE TO ENSURE THE KEY THREATENING PROCESS COULD INFORM A FEASIBLE, EFFECTIVE AND EFFICIENT THREAT ABATEMENT PLAN*

Assessment	Assessment response	Indicative rating	Feedback on recommended assessments
Whether the threat is affecting or likely to affect assets for which the Australian Government has sole or joint responsibility.	Adverse fire regimes would impact most Australian Government properties, including protected areas such as Kakadu, and properties such as the Wet Tropics World Heritage Area for which it shares management responsibility.	Very high	Why is effectiveness limited to the interventions of the Australian Government, when it is clear that abatement will also require action by other governments and people
Whether any option will duplicate work by another agency or level of government.	Some work on some of the proposed options is being done by other agencies or governments, but the options proposed in section 3 would be focused mainly on adding value to existing work and filling gaps. We recommend this is the explicit focus, informed by a gap analysis. Duplication may be justified in some cases where the existing work is not effective enough to achieve abatement.	Very high	This assessment should specify that duplication may be justified where work by another agency or level of government is not effective for achieving threat abatement.
Whether the Australian Government needs to provide a 'lead' on the issue.	There is a great need for federal leadership on several aspects of abating this threat -- for example, to coordinate the research and other work needed to inform abatement, to develop national standards and guidelines, to monitor and report on abatement effectiveness, and to set an example (e.g., with exemplary management of lands for which it has responsibility). The Australian Government has already recognised the importance of national leadership in the recovery of biodiversity after the Black Summer bushfires. One of the themes of the independent review of the EPBC Act was the need for strong national leadership.	Very high	

Assessment	Assessment response	Indicative rating	Feedback on recommended assessments
Whether there are national gaps to be filled	We propose that most of the TAP be explicitly focused on filling gaps informed by an initial gap analysis. The role being played by the Australian Government in biodiversity recovery after the Black Summer fires exemplifies the gaps. The lack of knowledge of appropriate fire regimes for many threatened species or at-risk species exemplifies another major gap. The Bushfires Royal Commission and the independent review of the EPBC Act identified national gaps in monitoring and data management.	Very high	This assessment overlaps with the duplication assessment. We recommend they be combined.
Whether there is a need for harmonising approaches to issues	The need for greater harmonisation has been recognised -- for example, both the Bushfires Royal Commission and the EPBC Act review have emphasised the need for a national supply chain of information. We have also recommended the development of national standards, guidelines and statements for several issues, including monitoring and reporting, knowledge sharing, hazard reduction, and the notion of ecological resilience.	Very high	

4.3 Assessment of efficiency

Definition of 'efficient' (*Macquarie Dictionary*): 'Effective in the use of … resources'.

The guidance document requires an analysis 'to determine whether the costs of undertaking options would be outweighed by the benefits and if so to what degree and who would benefit' A brief response to each of the recommended assessments is provided in Table 3.

This is a difficult assessment given the lack of a specified method for comparing economic costs and conservation benefits. It's also not clear how beneficiaries is relevant to efficiency. We do not think it is feasible to undertake most of the assessments prior to abatement planning. However, given the enormous costs to biodiversity and people of many prevailing adverse fire regimes, and the potential to incorporate national priorities into existing programs, we think it is safe to conclude that the proposed options would be an efficient use of resources.

TABLE 3. ASSESSMENTS OF EFFICIENCY AS SPECIFIED IN THE *GUIDANCE TO ENSURE THE KEY THREATENING PROCESS COULD INFORM A FEASIBLE, EFFECTIVE AND EFFICIENT THREAT ABATEMENT PLAN*

Assessment	Assessment response	Indicative rating	Feedback on recommended assessments
Direct and indirect costs of options	It is not feasible to determine costs at this stage.	Not assessed	It is premature to assess costs in any detail, prior to TAP planning. There is no guidance about how this assessment can feasibly be undertaken and what it should include.
Outcomes of options and the value these contribute to abating the threat	It is not feasible to calculate these in a way that is comparable to the costs from the first assessment. But given the great damage to biodiversity caused by adverse fire regimes as well as the massive economic and social costs of fire events such as the Black Summer fires, it is safe to predict that the value of effective abatement will far exceed the costs of a TAP. There is considerable alignment (and some tensions) between abating the threats of severe fires for humans and for biodiversity. It has been predicted that bushfires from 2020 to 2049 will cost the Australian economy up to $1.1 billion/year.	Very high	There is no method specified in the guidance to calculate the value of outcomes and enable a comparison with the financial costs of options.
Stakeholders that benefit	The most obvious beneficiaries of an effective TAP would be those with responsibility for managing sites with conservation values or species susceptible to the KTP, including all levels of government, Traditional Owners, managers of private conservation reserves and many other landowners. Beneficiaries would also include the tourism sector and the many users of protected areas suffering from adverse fire regimes. Because of the pervasiveness of adverse fire regimes as a threat to biodiversity, human lives and property, any contribution of the TAP to also reducing the risk of extreme fires could benefit whole communities. Addressing the threats such as invasive species that exacerbate the impacts of adverse fire regimes would also bring many benefits to a wide range of stakeholders.	Very high	The relevance of this assessment to efficiency is not clear in the guidance.
Capacity to leverage other stakeholders to contribute	There is great leverage capacity because of the strong alignments mentioned above and because of the numerous existing programs and emerging initiatives that can incorporate threat abatement actions.	High	

Box 1. Comments on the guidance regarding feasible, effective and efficient

One positive aspect of the guidance document is it makes clear that a TAP is meant to be much more than a 'guide' to threat abatement, contrary to its portrayal in some instances.[3] However, we found overall that the specified assessments are overly complex and demanding. Some do not seem relevant based on a plain English meaning of 'feasible', 'effective' or 'efficient'; some cannot be done due to lack of information; and others would be better done as part of abatement planning.

We suggest that only the assessments corresponding to the plain English meaning of the terms be applied for determining whether there should be a TAP for the adverse fire regimes KTP. Nonetheless, even if an assessment is based on the guidance document, it should lead to the same conclusion that a TAP is warranted. We also recommend that the guidance be reviewed and simplified.

Here is a summary of comments about each assessment category.

Comments on feasibility assessments:

- The link to the question of feasibility is not clear with some assessments – e.g., those on the effectiveness of interventions, their urgency, the monitoring required and roles and responsibilities for implementation. Shouldn't assessments on the effectiveness of proposed interventions be covered instead under that topic?
- Some assessments seem premature and more appropriate for the TAP planning process – e.g. questions of resources, monitoring and roles and responsibilities for implementation. For example, implementation by state and territory governments will need to be negotiated during the planning process.

Comments on effectiveness assessments:

- The introduction to this section implies that effectiveness depends only on whether an intervention/option 'undertaken by the Australian Government is a useful contribution to the abatement of a threat'. But this is too limited given that the effectiveness of most TAPs depends also on action by other governments and other people and that one of the specified roles of the Australian Government under the EPBC Act is to seek joint implementation in state/territory areas.
- These assessments are mostly useful for identifying potential features of a TAP that contribute to effectiveness.
- Previous KTP listing advices that recommended against having a TAP and ministerial reasons have mainly focused on duplication as a reason for not having a TAP. But this alone should not be sufficient reason to reject a TAP under the 'effectiveness' criteria. Only if existing work is effectively abating a threat should it be accepted as sufficient. We strongly recommend the guidance be amended to indicate this.

Comments on efficiency assessments:

- There is no specified methodology to undertake the comparison of the threat abatement costs ($) and the benefits (biodiversity).
- It is mostly not feasible to determine costs prior to detailed planning and research.
- The relevance of the assessment about stakeholders benefiting from interventions is not clear.

4. Conclusion

The TSSC assessment of 'Fire regimes that cause biodiversity decline' provides overwhelming evidence that it qualifies as a KTP. We strongly endorse it being listed.

We strongly recommend that a TAP be developed on the basis that it is a feasible, effective and efficient way of abating the threat. This is based both on a plain English understanding of these terms and on assessments specified in the *Guidance to ensure the key threatening process could inform a feasible, effective and efficient threat abatement plan.* Although not relevant to this consultation, we also recommend that this guidance be reviewed and simplified.

We recommend several focus areas for the recommended TAP, including:

- gap analysis of current plans and management actions
- identification of biodiversity at risk, and investigation and implementation of appropriate fire regimes
- fire management plans for high-priority sites
- information management, monitoring, mapping & reporting
- disaster preparation, responses and recovery
- interacting threats
- national standards & guidelines
- capacity building & public engagement

We recommend the establishment of a national taskforce with a national coordinator to drive implementation of the TAP.

The decision about whether to have a TAP is a very important one – for the obvious reason that adverse fire regimes are a major threat to biodiversity, but also because this would be the first KTP listing for many years and comes at a time of renewed focus on the importance of planning for responding to Australia's biodiversity crisis. It is an opportunity to energise conservation planning and apply best practice planning principles. A TAP would serve as an essential overarching document for the regional planning recommended by the Samuel review. It would serve as a major mechanism for recovering relevant threatened species that lack a recovery plan or that are not listed.

In contrast, a decision to not have a TAP for such a major threat would seriously undermine confidence in Australia's threat abatement system and in the commitment of the Australian Government to biodiversity conservation.

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[3] For example,
https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/Marine_plastics/Report

https://www.aph.gov.au/Parliamentary_Business/Committees/House/Environment_and_Energy/Canetoads/Government_Response

Appendix 1. *Guidance to ensure the Key Threatening Process could inform a feasible, effective and efficient Threat Abatement Plan*

Under the EPBC Act, a threat abatement plan must be a feasible, effective and efficient way to abate the threatening process.

Feasibility

In order to determine the technical feasibility of an intervention an analysis needs to be undertaken using scientific (including social dimensions) information to evaluate the possible success of interventions. This requires:

- the development of one or more options for intervention
- an assessment of the effectiveness of each option in providing a contribution to abatement
- an assessment of the urgency of implementing the option
- a designation of the level of confidence that each option will contribute to a reduction in the threat that is faster than either 'business as normal' or the rate of increase in the threat
- an assessment of the public acceptability of the proposed options, taking into consideration cultural and social values, humaneness, public health impacts, non-target impacts and environmental externalities
- determination of any community consultation/permissions that would be undertaken in regard to each option
- any legislative impediments to undertaking each option
- resources required for each option
- determination of surveillance and/or monitoring that would be required to determine whether an option has been successful
- determination of roles and responsibilities for implementation.

Effectiveness

Effectiveness is a measure of whether an intervention/option undertaken by the Australian Government is a useful contribution to the abatement of a threat. Determining effectiveness requires:

- an assessment as to whether the threat is affecting or likely to affect Australian Government assets, or assets for which the Australian Government has joint responsibility (in order to see if there is a prima facie case for Australian Government action)
- an assessment as to whether any option is currently being undertaken by another agency or level of government (in order to eliminate duplication of effort)
- an assessment of the need for the Australian Government to provide a 'lead' on the issue (e.g. a need to provide an example, resolve an intractable conflict, influence or integrate activities, influence perceptions [such as those associated with risks, panic management or health issues] or to set outcomes)
- an assessment of the need for a national 'gap' to be filled (e.g. a gap in research or the development of a tool that could be applied across all jurisdictions)
- an assessment of the need for harmonising approaches to issues (e.g. harmonisation of legislation, development of codes of practice or standard operating procedures, harmonisation of political will or community messages)

Efficiency

Efficiency is a measure of the return gained for the investment made in undertaking an action. The objective of assessing the efficiency of undertaking each option is to determine whether the costs of undertaking options would be outweighed by the benefits and if so to what degree and who would benefit. Determining efficiency requires:

- an assessment of the direct and indirect costs of options
- an assessment of the outcomes of the options and the value that these contribute to abating the threat
- an assessment of which stakeholders benefit from the contributions of each option towards abatement
- an assessment of the capacity to leverage other stakeholders including other jurisdictions to contribute to the option.