NSW GOVERNMENT

NSW RURAL FIRE SERVICE

BUSH FIRE ENVIRONMENTAL ASSESSMENT CODE - SUPPORTING DOCUMENT

RULES AND NOTES FOR THE IMPLEMENTATION OF THE THREATENED SPECIES HAZARD REDUCTION LIST

July 2021

Contents

Please note that for ease of reading this document:

- The 'List' refers to the Threatened Species Hazard Reduction List (Parts 1 - 4);
- The 'Code' refers to the Bush Fire Environmental Assessment Code; and
- The 'Certificate' refers to the Bush Fire Hazard Reduction Certificate.

1. Preamble

The Bush Fire Environmental Assessment Code (Code) provides for a 'one-stop shop' streamlined environmental assessment process for mechanical and burning methods for undertaking bush fire hazard reduction work. Issuing authorities and certifying authorities can use this Code to determine Bush Fire Hazard Reduction Certificates (Certificates) that authorise the carrying out of the identified bush fire hazard reduction works in accordance with section 100C of the *Rural Fires Act 1997*.

The Code identifies potential issues of environmental concern. Works which may impact on these environmental concerns are required to be carried out in accordance with the provided conditions. This Code also identifies those circumstances for which a Certificate may not be issued based on the potential environmental impact. In these cases, a more comprehensive assessment of the potential impact is required under the relevant environmental legislation.

The Code and related documents can be located at www.rfs.nsw.gov.au.

This document has been prepared by the Department of Planning, Industry and Environment (Environment, Energy and Science Group (EES).

This document is for the use of issuing and certifying authorities (those public authorities specified in the Code and the *Rural Fires Act 1997*) when assessing the conditions required for a bush fire hazard reduction certificate. This document has been developed to support the Code. As such, a level of understanding of the Code will assist in comprehending this document.

2. Introduction

This paper and the associated Threatened Species Hazard Reduction List - Part 1 to 4 (List) provides the conditions that are to be adhered to when issuing a Bush Fire Hazard Reduction Certificate for which terrestrial and aquatic threatened species, populations or ecological communities are identified as occurring at a site.

This paper also provides guidance on how the List is derived, which species, populations and ecological community locations are relevant and a general rationale for the conditions within the List.

The List has been developed to support the Code. As such, a level of understanding of the Code will assist in comprehending this paper, particularly in regard to matters such as terminology.

The List consists of the following four parts:

- Threatened Species Hazard Reduction List – Part 1 - Plants (including Endangered Populations) under the *Biodiversity Conservation Act 2016*
- Threatened Species Hazard Reduction List – Part 2 - Animals (including Endangered Populations) under the *Biodiversity Conservation Act 2016*
- Threatened Species Hazard Reduction List – Part 3 – Threatened Ecological Communities under the *Biodiversity Conservation Act 2016*
- Threatened Species Hazard Reduction List – Part 4 – Aquatic Biodiversity (includes Endangered Species, Populations and Ecological Communities under the *Fisheries Management Act 1994*).

3. Contents

Contents of this document are as follows:

***NB**: NB: Reference to the Biodiversity Conservation Act 2016 and the Fisheries Management Act 1994 is inclusive of any replacement legislation that may arise.*

4. Key Points

4.1 Who is this document for?

This document is for the use of issuing and certifying authorities (those public authorities specified in the Code and the *Rural Fires Act 1997*) when assessing the conditions required for a bush fire hazard reduction certificate.

However, this document also serves to inform the broader community as to how threatened species, populations and ecological communities are assessed under the Bush Fire Environmental Assessment Code.

4.2 How do I know which threatened species, populations or ecological communities to address?

Those threatened species, populations and ecological communities required to be addressed are identified on the List (Part 1-4).

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4.3 How will I know their locations?

The issuing and certifying authorities can obtain the applicable localities of threatened species, populations and ecological communities via the Guardian system or other information management system endorsed by the Commissioner of the NSW Rural Fire Service.

***NB**: In addition, a certifying authority must determine the likely presence or otherwise of any threatened species, populations or ecological communities from any existing records used by the public authority to determine management actions on land managed by that public authority.*

Alternatively, the issuing and certifying authorities can obtain the applicable localities of:

- Terrestrial threatened species, populations and ecological communities by licence from the Department of Planning, Industry and Environment (Environment, Energy and Science Group (EES), or
- Aquatic threatened species, populations and ecological communities by licence from the Department of Primary Industries – Fisheries.

For the purpose of terrestrial species and populations, the location data is a subset of the data on BioNet. Only those BioNet records with an observational accuracy of 100 metres of less are included. This level of accuracy means that the species has been identified as occurring within a 100 metre radius of the identified point.

For the purpose of terrestrial ecological communities, the applicable location is that mapping that has been spatially identified by EES and provided to the NSW Rural Fire Service by EES for the purpose of the Code.

For the purpose of Clause X and Y of the Code, the following survey guidelines are considered valid:

Valid survey guidelines include:

- NSW Office of Environment and Heritage Draft 'Threatened Biodiversity Survey and Assessment Guidelines for Developments and Activities', or
- DPIE (EES) / BCT endorsed survey guidelines (including the Biodiversity Assessment Method), or
- a targeted survey under Protocol 6 of the Coastal Integrated Forestry Operations Approval – Protocols

The localities of aquatic species, populations and ecological communities are as provided by the Department of Primary Industries – Fisheries to the NSW Rural Fire Service for the purpose of the Code.

The NSW Department of Primary Industries freshwater threatened species distribution maps (Riches et al. 2016) are used to identify indicative (or known and expected) distributions for a number of NSW freshwater threatened species. The indicative distribution means there is a high probability that the species will occur in a stream segment, given the species has been recorded there or the environmental conditions are the same as a stream segment where the species is already known to occur. Modelled indicative distribution maps are currently not available for all NSW freshwater threatened species, due to the limited number of records, or the limited number of correlated environmental attributes and/or limitations of the modelling to produce accurate and reliable mapping. Species without an indicative distribution map rely instead on point source records with a buffering applied around the point source record.

For each species the column 'mapping' (in the List Part 4) identifies whether the source of distributional data is an indicative distribution model or a point source location. For point source mapping a point is converted into a polygon based on 100 m up and downstream of the record, inclusive of stream branches. The polygon identifies a potential zone of influence both up and downstream of the hazard reduction works.

Further information on threatened fish species is available in the PrimeFacts series at http://www.dpi.nsw.gov.au/fishing/species-protection/conservation/what-current

4.4 What conditions apply?

4.4.1 Terrestrial plants

4.4.1.1 Overview

Threatened plant species are listed by the NSW Scientific Committee as critically endangered, endangered and vulnerable and as endangered populations..

Conditions for plant species are as described within the List and are to be addressed within a 100 metre radius of the as-held accuracy coordinates identified by the applicable data subset from the BioNet. 'As-held' coordinates are the sighting coordinate details as supplied to BioNet and have not been denatured or rounded to generalise the spatial locality. Conditions relating to fire provide for minimum fire intervals or seasonal and intensity constraints. Conditions relating to mechanical works provide for restrictions in the extent of and type of works.

4.4.1. 2 Mechanical Clearing

Slashing, trittering, tree removal and bulldozing are all methods that can destroy or significantly damage threatened plants. The potential for significant loss is particularly high due to the small numbers of threatened plants. For these reasons these bush fire hazard reduction methods are generally not allowable for known locations of threatened plants. It should be noted however that in some cases certain threatened plant species tolerate or even prefer environments which are regularly mechanically treated (at the appropriate time of year) or will regenerate prolifically along managed fire trail margins and drainage structures.

4.4.1. 3 Prescribed Burning

All plants are susceptible to the impacts of fire, albeit to varying degrees. The most serious impact is understood to be the adverse impact of high frequency fire.

The List therefore provides minimum fire intervals for all plant species. This is based on a known fire response or based on vital attributes such as the age at which there is sufficient seed production for the plant population to persist. In some cases a season for prescribed burning is identified, this usually aims to identify the season after seed set or vegetative growth. For each species a minimum fire interval is provided drawing on expert opinion, an extensive plant fire response database of species vital attributes and by aligning the species with the Vegetation Formation or Class minimum fire interval.

There are also a range of species for which the condition is 'no fire'. This may be based on the species known habitat (e.g. rainforest species) and its inability to cope with fire. Alternatively the species may be able to cope with some fire but only a small number of individuals remain in existence. In these cases any loss of individuals is likely to be particularly significant and a more detailed assessment of the significance of the expected impacts will be required through the existing planning mechanisms, such as a biodiversity conservation licence under the *Biodiversity Conservation Act 2016*.

An example of a condition for fire is 'no fire more than once every 10 years'. This means that fire can only be used to reduce hazards at the site if there has been no fire (wildfire or prescribed burn) at the particular site within the previous ten years.

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4.4.2 Terrestrial animals

4.4.2.1 Overview

Threatened animal species are listed by the NSW Scientific Committee as critically endangered, endangered and vulnerable and as endangered populations.

Conditions for animal species are as described in the List and are to be addressed within a 100 metre radius (unless the List states otherwise) of the as-held accuracy coordinates identified by the applicable data subset from the BioNet. 'As-held' coordinates are the sighting coordinate details as supplied to BioNet and have not been denatured or rounded to generalise the spatial locality.

Animals are mobile and locational records tend to reflect habitat use rather than an exact location of the animal. Therefore conditions are more descriptive and distances surrounding a known location will vary depending on the species. Conditions relating to fire aim to manage the habitat, food, seasonal and nesting resources of terrestrial animals. Conditions relating to mechanical works provide for restrictions in the extent of and type of works.

4.4.2.2 Mechanical Clearing and Prescribed Burning

Some animal species are so wide ranging that no practical conditions can be developed for hazard reduction e.g. tree roosting micro-bats.

Other species, such as some owls, are wide ranging but are likely to be disturbed by burning at particular times of the year and specific locations, such as around active nest sites.

For other species, which are not so wide ranging, such as critical weight range mammals, the specific habitat components are less clear, although factors such as sufficient ground and shrub cover are known to be important.

Those species which have relatively small ranges with specific habitat requirements are better dealt with by the Code. For example, many frog species have a close relationship with vegetation surrounding water bodies, and thus this habitat can be identified and managed.

Therefore the List does not address all threatened animal species and those that are addressed have differing requirements often varying with season, nesting preferences or distances from water bodies.

In all cases it is important to consider the concept of mosaics. In essence, long unburnt (and uncleared) areas of each threatened animal habitat should be maintained in those areas not critical for the protection of life and property. In addition, a range of vegetation age classes would be managed in proximity to these unburnt areas. The important point is that adequate dispersal corridors should be considered between various age classes of suitable habitat, and that mosaics are of suitable size to support the species.

4.4.3 Terrestrial ecological communities

4.4.3.1 Overview

Threatened ecological communities (TECs) are listed by the NSW Scientific Committee as critically endangered and vulnerable.

Conditions for ecological communities are as described in the List. Conditions relating to fire provide for minimum fire intervals.

TECs are listed under the *Biodiversity Conservation Act 2016* by the NSW Scientific Committee on the basis of a suite of unique environmental and compositional attributes rather than through the provision of a map. For example, Lowland Rainforest on Floodplain in the NSW North Coast Bioregion.

Under the normal environmental assessment framework vegetation surveys are undertaken to ascertain whether a TEC occurs at a site for which works are proposed. However, in order to streamline the process for bush fire hazard reduction the Code does not require such vegetation surveys. The mapping of vegetation across NSW is currently limited at the scale required to readily identify the majority of TECs. Therefore, it is currently only possible to rely on a limited extent of maps provided by the EES for TEC's.

4.4.3.2 Mechanical Clearing

Slashing, trittering and bulldozing are all methods that can destroy or significantly damage TECs. The potential for significant loss is particularly high due to the small areas of each TEC that remains in the landscape. For these reasons these bush fire hazard reduction methods are generally not allowable for known locations of TECs.

If such works are required in areas where TECs are known to occur then a more detailed assessment of the significance of the expected impacts may be required through the existing planning mechanisms or the application for a Biodiversity Conservation Licence of the *Biodiversity Conservation Act 2016*.

4.4.3.3 Prescribed Fire

All plants are susceptible to the impacts of fire, albeit to varying degrees. The most serious impact is understood to be the adverse impact of high frequency fire.

Most TECs are identified on the basis of their constituent plant species and are therefore potentially sensitive to the impacts of fire frequency.

To ensure that all TECs are addressed by the Code the List provides minimum fire intervals for all TECs. There are also a number of TECs for which the condition is 'no fire'. This does not necessarily mean that the TEC cannot tolerate fire; it may be that the TEC can tolerate fire but requires further consideration of the potential impacts.

The minimum fire interval for TECs was derived with reference to the minimum fire interval for the relevant Keith Vegetation Formation and Class. Work is on-going to refine the intervals both for the relevant Vegetation Formation and Class and individual TECs.

The reason for having a minimum fire interval is that there is a probability of a decline or shift in the species composition of a TEC when the intervals between successive fires are less than the specified desirable minimum. Therefore, conditions for TECs are as follows: no fire, or no part of a TEC is to be subjected to successive fires more frequently than the identified minimum fire interval.

Strategic rotational burning of portions of a TEC should be considered to maintain varying age classes. In addition, old growth patches of each TEC should be maintained in those areas not critical for the protection of life and property.

4.4.4 Aquatic Biodiversity

4.4.4.1 Overview

Threatened aquatic biodiversity (including species, populations, and ecological communities) are listed by the Fisheries Scientific Committee as critically endangered, endangered and vulnerable.

Conditions for aquatic biodiversity are as described in the List. Species specific conditions relating to the use of fire and mechanical forms of hazard reduction are based on the protection of the riparian habitats of each species, population or ecological community. As such, the conditions are only applied where hazard reduction burning or mechanical works are proposed within the riparian buffer zone widths for the relevant stream order (as per the relevant clauses of the Code).

Further information on managing fish habitat is available in Faithfull, S. (2013) *Fisheries NSW Policy and Guidelines for Fish Habitat Conservation and Management* (2013 update) Fisheries NSW and managing threatened fish species in *Threatened species assessment guidelines: The assessment of significance*. State of New South Wales through NSW Department of Primary Industries 2006.

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4.5 How is the Threatened Species Hazard Reduction List compiled?

4.5.1 Biodiversity Conservation Act 2016

The Threatened Species Hazard Reduction List (Parts 1 – 3) is hosted by EES within the Threatened Species Profiles Attribute database of BioNet. The List is updated by EES with the input and agreement of the NSW RFS and input from the Forestry Corporation of NSW. Each update includes consideration of what should be on the List, and if so, the conditions that should apply.

The List is periodically updated:

- as new threatened species, populations and ecological communities are added to the Schedules of the *Biodiversity Conservation Act 2016*, or
- as new knowledge becomes available on individual prescriptions.

4.5.2 Fisheries Management Act 1994

The Threatened Species Hazard Reduction List (Part 4) is hosted by the NSW Department of Primary Industries - Fisheries. The List is updated by Fisheries with the input and agreement of the NSW RFS. Each update includes consideration of what should be on the List, and if so, the conditions that should apply.

The List is periodically updated:

- as new threatened species, populations and ecological communities are added to the Schedules of the *Fisheries Management Act 1994*, or
- as new knowledge becomes available on individual prescriptions.

The List data is informed by the DPI Fisheries Freshwater Fish Research database.

4.6 What do the Columns in the Threatened Species Hazard Reduction List (Part 1 - 4) refer to?

4.6.1 List (Part 1-3)

4.6.1.1 Class (or broad species type)

The column titled class refers to the broad taxa group to which a species belongs. This column has only been provided for animals as it is a commonly known category for animal species, e.g. mammals, birds, reptiles, amphibians, and invertebrates.

4.6.1.2 Scientific Name

This is the name of the species as described on the Schedules of the *Biodiversity Conservation Act 2016*.

4.6.1.3 Common Name

This is the common name as described on the Schedules of the *Biodiversity Conservation Act 2016*.

4.6.1.4 Threatened ecological community

This column is only used for Threatened Ecological Communities, and indicates the name of the community as described on the Schedules of the *Biodiversity Conservation Act 2016*.

4.6.1.5 Listed on TSC Act

Identifies the risk status (see *Biodiversity Conservation Act 2016*) of the listing by the NSW Scientific Committee; critically endangered, endangered, or vulnerable.

4.6.1.6 Listed on EPBC Act

This column identifies whether a species or ecological community is listed on the Commonwealth's *Environment Protection and Biodiversity Conservation Act, 1999* (EPBC Act) and if so, it's risk status. Advice on the EPBC Act can be located at https://www.environment.gov.au/epbc. Risk status categories for species include critically endangered, endangered, vulnerable, and conservation dependent. For ecological communities the categories are critically endangered, endangered and vulnerable.

4.6.1.7 Specific Conditions relating to the use of Prescribed Burning

This column provides the conditions that must be met if the species or ecological community is 'known' from a site and fire is used as a means of hazard reduction.

4.6.1.8 Specific Conditions relating to Mechanical Forms of Hazard Reduction

This column provides the conditions that must be met if the species or ecological community is 'known' from a site and mechanical forms of clearing are to be employed as a means of hazard reduction.

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4.6.2 List (Part 4)

4.6.2.1 Scientific Name

This is the name of the species as described on the Schedules of the *Fisheries Management Act 1994*.

4.6.2.2 Common Name

This is the common name as described on the Schedules of the *Fisheries Management Act 1994*.

4.6.2.3 Listed on Fisheries Management Act 1994

Identifies the risk status (see Fisheries Management (General) Regulation 2010) of the listing by the NSW Fisheries Scientific Committee; critically endangered, endangered, vulnerable, and endangered population.

4.6.2.4 Specific Conditions relating to the use of Fire

This column provides the conditions that must be met if the species or ecological community is 'known' from a site and fire is used as a means of hazard reduction.

4.6.2.5 Specific Conditions relating to Mechanical Forms of Hazard Reduction

This column provides the conditions that must be met if the species or ecological community is 'known' from a site and mechanical forms of clearing are to be employed as a means of hazard reduction.

4.6.2.6 Mapping

Identifies the type of data used to inform records.

- Indicative distribution for species refers to the availability of an indicative threatened species distribution model for an individual species. Models incorporate individual point source species records, hydrological conditions and environmental attributes.
- Indicative distribution for ecological communities is described in Riches, M., Gilligan, D., Danaher, K. and Pursey, J. (2016) Fish Communities and Threatened Species Distributions of NSW. NSW Department of Primary Industries. http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0007/669589/fish-communities-and-threatened-species-distributions-of-nsw.pdf.
- Point source refers to where point source records are used as there is no available indicative distribution model for that species. Point source mapping is converted into a polygon based on 100 m up and downstream of the records, inclusive of stream branches.

***NB**: All point source data is informed by the DPI Fisheries Freshwater Fish Research database.*

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