Policy P6.1.3
Environmental Assessment for Bush Fire Hazard Reduction Works

Date of Issue	4 September 2007
Version Number	2.0

1. Purpose

1.1 This policy outlines the NSW Rural Fire Service's **("RFS")** requirements for environmental assessment of bush fire hazard reduction works, including:

(a) assessing and determining whether Bushfire Hazard Reduction Certificates **("HRCs")** may be issued for bush fire hazard reduction works; and

(b) preparing Reviews of Environmental Factors **("REFs")** for the purpose of assessing and determining bush fire hazard reduction proposals under Part 5 of the *Environmental Planning and Assessment Act 1979* **("EP&A Act")**.

2. Policy

2.1 The RFS shall:

(a) in cases where the relevant function(s) has/have been conferred by the council to the RFS under the Rural Fire District Service Agreement, assess and determine in accordance with *SOP P6.1.3-1* whether HRCs may be issued for bush fire hazard reduction works proposed for private land, or other land not covered by a certifying authority, when:

(i) an application is received from the owner or occupier of the land. This type of HRC is issued under *s100F of the Rural Fires Act 1997* **("RF Act")**;

(ii) the RFS issues a notice (under *s66 of the RF Act*) in accordance with *SS 4.2.6 Bush Fire Hazard Complaints*. This type of HRC is issued under s100G of the RF Act;

(iii) the RFS carries out works (under *s70 of the RF Act*). This type of HRC is issued under *s100G of the RF Act*;

(b) assess and determine in accordance with *SOP P6.1.3-1* whether HRCs may be issued for bush fire hazard reduction works proposed for private land, or a public authority, when:

(i) the RFS carries out works (under *s73 of the RF Act*). This type of HRC is issued under *s100G of the RF Act*;

(c) undertake an REF in accordance with the EP&A Act and *SOP P6.1.3-2* where a HRC cannot be issued but an environmental approval is required:

(i) for the purpose of the RFS serving a notice or carrying out works under *s66, 70 or 73 of the RF Act*; or

(ii) as a result of the RFS seeking to undertake a prescribed burn on privately owned land for the purpose of bush fire hazard reduction (in accordance with *SS 3.1.6 Fireground Procedures*).

(d) register details of all environmental assessments that the RFS undertakes (including HRCs and REFs) for hazard reduction proposals on BRIMS;

(e) maintain a sufficient number of suitably qualified and trained Certificate Issuing Officers (CIO) in accordance with the *Requirements for Attainment of NSW RFS Certificate Issuing Officer Competency and Authorities*; and

(f) monitor and review the effectiveness of the HRC and REF process and CIO conduct to identify opportunities for improvement.

3. Links

- SOP P6.1.3-1 Hazard Reduction Certificates, including:
  - Hazard Reduction Certificate Assessment Guidelines
  - Bush Fire Hazard Reduction Certificate Application Form
  - Hazard Reduction Certificate Assessment Form
  - Requirements for Attainment of NSW RFS Certificate Issuing Officer Competency and Authorities
- SOP P6.1.3-2 Review of Environmental Factors (REF):
  - REF Application Form
  - REF Template
  - REF Assessment Guidelines
  - REF Approval Letter Template
  - REF Approval Form Template
- *Rural Fires Act, 1997,*
- The Bush Fire Environmental Assessment Code including:
  - Threatened Species Hazard Reduction List
  - Conditions for Hazard Reduction and Aboriginal Heritage
  - Guidelines for Bush Fire Hazard Reduction Works Affecting Heritage Items (under preparation)
- The following RFS Community Education documents:
  - Application Instructions for a Bush Fire Hazard Reduction Certificate
  - Before You Light that Fire
  - Standards for Asset Protection Zones
  - Standards for Low Intensity Hazard Reduction Burning,
  - Standards for Pile Burning
  - Standards for Windrow Burning
- SS 4.2.2 Permits to Burn
- SS 4.2.3 Bush Fire Hazard Reduction Notices,
- SS 4.2.6 Bush Fire Hazard Complaints,

- SS 1.3.4 Application of Delegations and Rural Fire District Service Agreements to Service Standards
- SS 1.1.7 Code of Conduct and Ethics
- SS 1.1.4 Health and Safety
- Department of Environment and Conservation (DEC) 'Threatened Biodiversity Survey and Assessment Guidelines for Developments and Activities'
- DEC 'Assessment of Significance (Seven Part Test) Guidelines'

4. Who is responsible for implementing the Policy?

Executive Director Community Safety

5. Amendments

- Clause 2.1(c) September 2007
- SOP P6.1.3-1 (reformatted – no content change) September 2007
  - New clause 2.1
- SOP P6.1.3-2 (new SOP) September 2007

SOP P6.1.3-1
Hazard Reduction Certificates

These SOPs form part of	Policy P6.1.3 Environmental Assessment for Bush Fire Hazard Reduction Works
Attached forms:	▪ Bush Fire Hazard Reduction Certificate Application Form ▪ Hazard Reduction Certificate Assessment Form
Supporting documents:	▪ Hazard Reduction Certificate Assessment Guidelines

1. Purpose

1.1 This SOP details the responsibilities, process and minimum standards for assessment of Bush Fire Hazard Reduction Certificates by RFS Certificate Issuing Officers.

2. Procedures

2.1 This SOP must be followed in conjunction with the attached Hazard Reduction Certificate Assessment Guidelines.

Requirements for Attainment of NSW RFS Certificate Issuing Officer Competency and Authorities

2.2 Steps for accreditation of Certificate Issuing Officers

2.2.1 Undertake local supervision and mentoring as a CIO trainee.
The Regional CSO must assign an accredited CIO to supervise a CIO trainee.

2.2.2 Undertake the Bush Fire Environmental Assessment Code Certificate Issuing Officer course
After recommendation by the regional CSO an exception to the attendance of the course can be made if the Manager NES determines that an officer:

(a) has extensive previous experience at conducting environmental assessments (such as Part 5 REFs for Council or another Government body); or

(b) has been successfully undertaking Certificate assessments under the supervision of a CIO mentor to the level of competency determined in the CIO Assessment Guide.

2.2.3 Undertake Assessment
The regional CSO staff will arrange an assessor for district staff. Assessment is based on the Certificate Issuing Officer Assessment Guide.

CIO assessors must have:

(a) Current CIO competency; and

(b) RFS Assessor; and
(c) Extensive experience at the Certificate issuing process.

2.2.4 Assessment validation

The manager NES will validate and confirm competency for all CIO trainees.

2.2.5 Demonstration of ongoing competency

As with all certification a level of activity is required to maintain competency. If the Regional CSO determines that an insufficient number of certificates have been issued by a CIO, the regional CSO may require that further certificates are referred to them for review prior to approval. This may include locating the CIO within a busy district to issue certificates.

If a competent CIO, trainer or assessor observes a CIO displaying a lack of competency performing tasks, the regional CSO may require them to undergo CIO reassessment and/or remedial training. In extreme cases, the Manager NES may withdraw CIO accreditation.

Definitions

- **Bush Fire Environmental Assessment Code ("the Code")** means the document approved by the Minister for Emergency Services that identifies the environmental matters that must be assessed by the relevant authority when determining whether a HRC may be issued.

- **Bush Fire Hazard Complaint** refers to a complaint that may be made that a bush fire hazard exists on land because of the failure of a public authority or owner or occupier of the land to carry out bush fire hazard reduction work.

- **Bush Fire Hazard Reduction (HR)** means:
  - the establishment or maintenance of fire breaks on land, and
  - the controlled application of appropriate fire regimes or other means for the reduction or modification of available fuels within a predetermined area to mitigate against the spread of a bush fire,

  but does not include construction of a track, trail or road.

- **Bush Fire Hazard Reduction Certificate (HRC)** means a certificate that provides an environmental approval to carry out bush fire hazard reduction works. The HRC must be consistent with the bush fire environmental assessment code and the bush fire risk management plan (BFRMP). The HRC details the conditions that are to be adhered to when implementing the bush fire hazard reduction works.

- **Bush Fire Management Zones** means zones identified within a BFRMP that indicate the management purpose for that zone. They include Asset Protection Zones **("APZs")**, Strategic Fire Advantage Zones **("SFAZs")**, Land Management Zones **("LMZs")** and Fire Exclusion Zones **("FEZs")**.

- **Bush Fire Risk Information Management System (BRIMS)** means an inter-agency database that provides for the collation, storage and reporting of matters relating to bush fire management. The system is administered by the RFS on behalf of the Bush Fire Coordinating Committee **("BFCC")**. All HRCs and REFs are required to be recorded on BRIMS.

- **Bush Fire Risk Management Plan ("BFRMP")** means a plan that sets out schemes for the reduction of bush fire hazards in the rural fire district or other parts of the state.

- **Certificate Issuing Officer ("CIO")** means an employee of the RFS who is authorised to issue HRCs, in accordance with the Requirements for Attainment of NSW RFS Certificate Issuing Officer Competency and Authorities. A CIO trainee may, under the supervision of an accredited CIO, carry out HRC assessments. However, only an accredited CIO may make the determination to issue or deny a HRC.

- **Certifying Authority** means a public authority (as listed within the Code) that has the authority to issue a HRC for bush fire hazard reduction works on their own land.

- **Duty of Care** means the responsibility of RFS employees to ensure that bush fire hazard reduction work is undertaken on land where they observe that there has been a failure by the public authority, owner or occupier of that land to perform a duty imposed upon it by *s63 of the RF Act*. Refer to *SS 4.2.6 Bush Fire Hazard Complaints*.

- **Hazard Reduction Certificate Application Form** means the application form prepared by the RFS that provides the preferred means by which an applicant may comply with the requirements of *s100F of the RF Act*, as detailed in *s47 of the Rural Fires Regulation 2002*.

- **Hazard Reduction Certificate Assessment Form** refers to the check sheet prepared by the RFS that must be completed by RFS CIOs when undertaking the HRC assessment process. It provides a record of the CIO's decision making in relation to whether a HRC may be issued.

- **Hazard Reduction Certificate Assessment Guidelines** is the guideline that must be followed by RFS CIOs when assessing whether a HRC may be issued. The guidelines provide the RFS position on the interpretation of the clauses within the Code.

- **Issued Certificate** means a HRC that has been approved and signed to that effect by an accredited CIO.

- **Issuing Authority** means a public authority (Council, or if conferred under Rural Fire District Service Agreement, the RFS) that has the authority under the RF Act to issue HRCs for bush fire hazard reduction works on private land (and public land not covered by a certifying authority).

- **Notice under s66 of the RF Act** means the notice that the local authority (Council, or if conferred under Rural Fire District Service Agreement, the RFS) may issue to an owner or occupier (not being a public authority) of land requiring bush fire hazard reduction work to be undertaken.

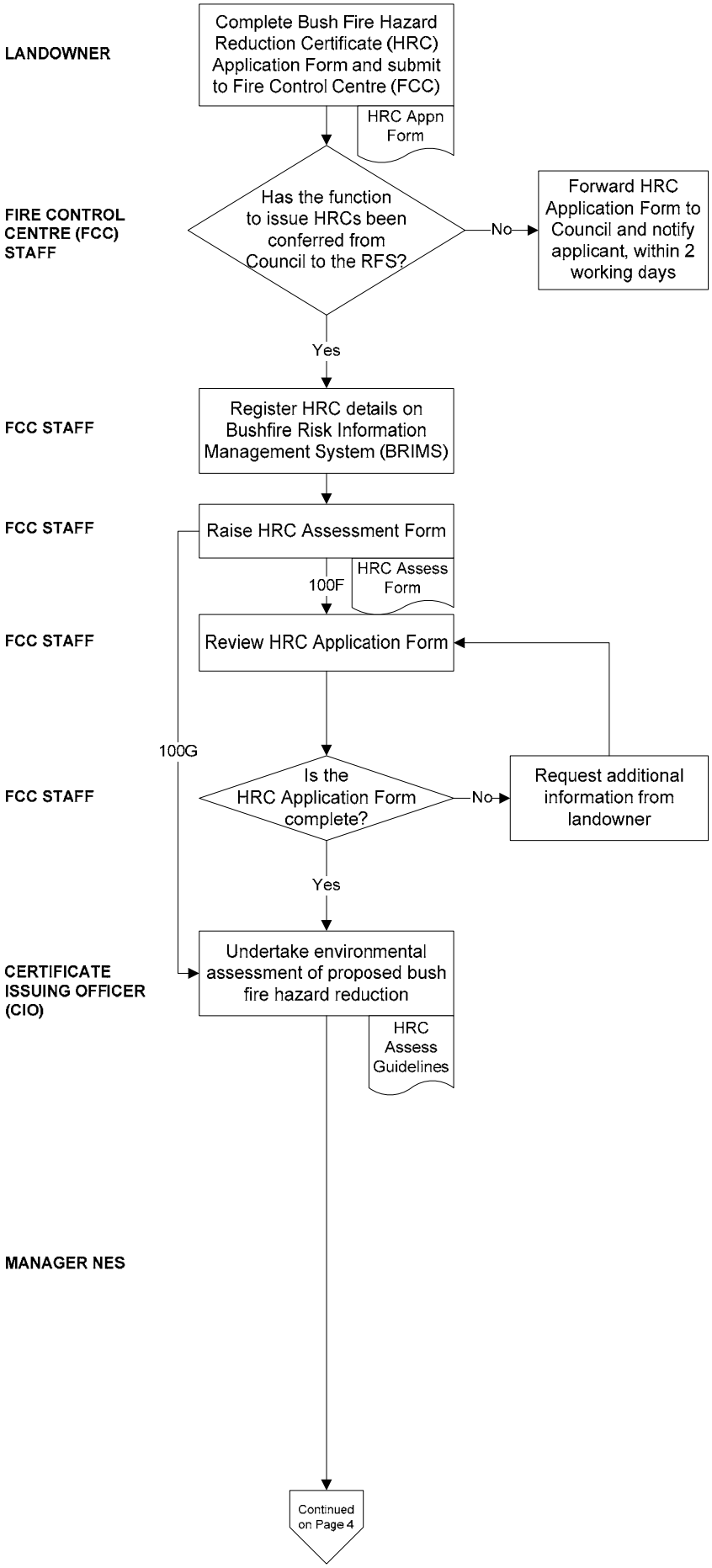
- **Reviews of Environmental Factors (REFs)** means the framework (under *Part 5 of the EP&A Act*) utilised by public authorities to consider whether a proposal (including hazard reduction) is likely to significantly affect the environment. If the proposal is likely to significantly affect the environment then an Environmental Impact Statement **("EIS")** is required. If the proposal is not likely to significantly affect the environment then the determining authority may proceed with the proposal.

- **S74F of the RF Act** refers to the authority that the Commissioner of the RFS has in relation to serving a notice on a public authority requiring that authority to undertake bush fire hazard reduction work. This authority may be exercised if a complaint has been made that the public authority has failed to perform a duty imposed upon it as referred to in *s63 of the RF Act*.

- **S100F of the Rural Fires Act 1997 (RF Act)** provides for a person to apply for a HRC on private land (and public land not covered by a certifying authority) and for the issuing authority (Council, or if conferred under Rural Fire District Service Agreement, the RFS) to assess and approve the application.

- **S100G of the RF Act** provides for a certifying authority (as listed within the Code) to issue a HRC for bush fire hazard reduction work on their land.

RESPONSIBILITY:



NOTES:

Bush Fire Hazard Reduction Certificate Application Form and Application Instructions for a Bush Fire Hazard Reduction Certificate available via RFS Internet and on display at each FCC.

HRC Application Forms shall be submitted to the identified issuing authority where the land is located (Local Authority i.e. Council or FCC) in accordance with the current Rural Fire District Service Agreement).

A HRC Application Form is not required for a 100G HRC resulting from a complaint or duty of care referral (refer to Service Standard 4.2.6 Bush Fire Hazard Complaints).

BRIMS data entry and application review to be done by FCC staff identified by the manager, and appropriately trained, to undertake this task.

Enter details on BRIMS:
100F – Fill in Application Details page
100G – Fill in Proposal Details page and link the HR to the Complaint

Refer to User Guides and Release Notes contained within the General Information section of BRIMS.

Following entry of HRC details on BRIMS the generated reference number shall be recorded on HRC Assessment Form.

Review HRC Application Form (as per HRC Assessment Guidelines) to ensure sufficient detail is provided, particularly:

- that the application is received from the verified owner(s) of the land
- contains their signatory
- is complete in detail
- provides an adequate description to identify the land parcel

Record the request for additional information on BRIMS and the HRC Assessment form.

Assessments shall be conducted in accordance with HRC Assessment Guidelines. All assessment information shall be recorded on HRC Assessment Form and BRIMS.

Accredited CIO, or Trainee under supervision, (as per Requirements for Attainment of NSW RFS CIO Competency and Authorities) shall undertake HRC Assessments. CIO's shall declare any conflict of interest prior to undertaking any HRC Assessment, as required (refer to Service Standard 1.1.7 Code of Conduct and Ethics).

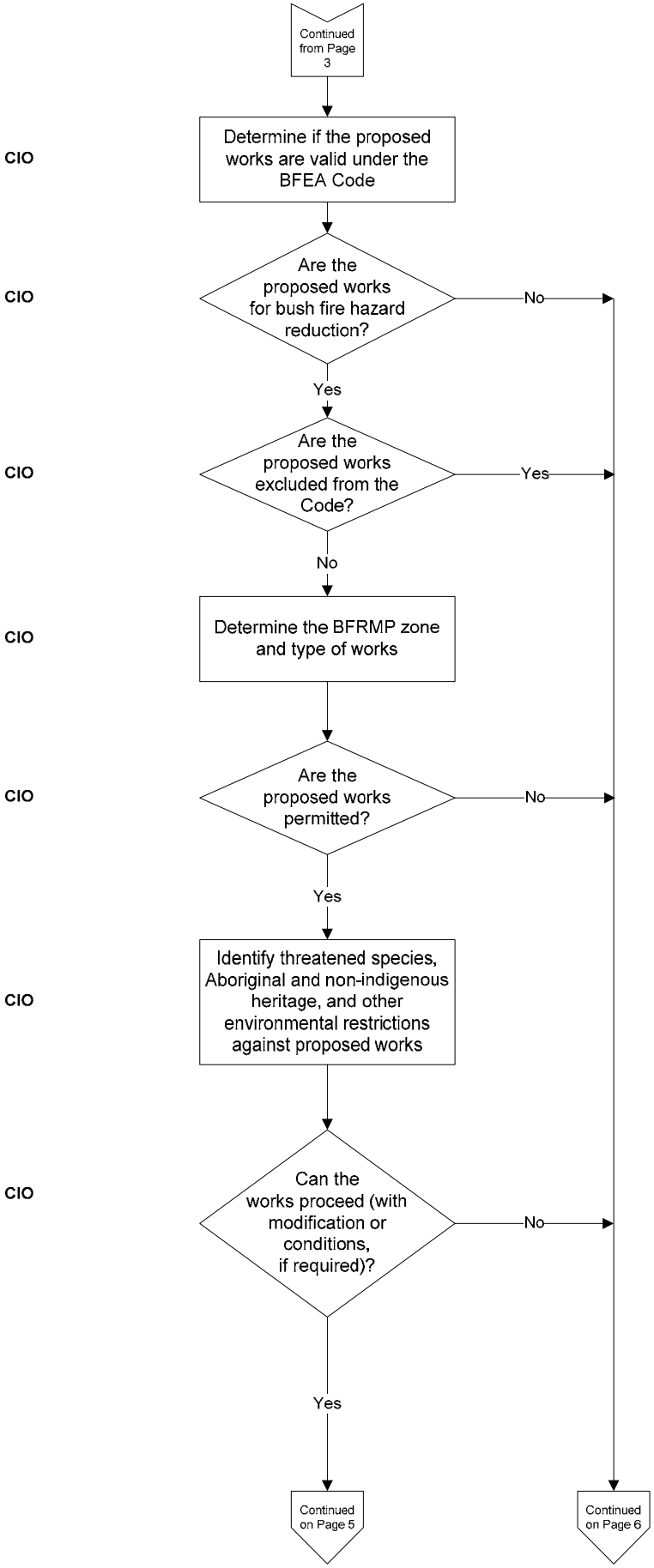
Natural Environmental Services (NES) shall maintain a register of CIOs (accredited and trainee) and shall monitor and review activity including, but not limited to:

- number of available CIOs
- CIO training and ongoing competency
- HRC assessments undertaken

Note: NES may undertake monitoring and review in conjunction with each Regional Office.

NES shall raise recommendations or issues identified as a result of monitoring and review activities to the relevant Executive Director, and/or District/Team/Zone, and Regional Managers, as required.

RESPONSIBILITY:



NOTES:

HRCs shall only be considered where a legitimate bush fire hazard exists.

Proposed works shall be assessed as per HRC Assessment Guidelines to ensure that the Bush Fire Environmental Assessment Code (Code) can be applied, considering:

- Bush Fire Risk Management Plan (BFRMP) applying to the area
- excluded lands
- sensitive areas
- excluded activities
- land management agreements
- development consent
- *Rivers and Foreshores Improvement Act* permit
- *Plantations and Reafforestation Act* authorisation
- owners consent

Review the BFRMP management zone (as per HRC Assessment Guidelines) to verify that the proposed works are permissible within that zone:

- Asset Protection Zone (APZ) works must be for assets listed and within distances specified in the Code
- Strategic Fire Advantage Zone (SFAZ) and Land Management Zone (LMZ) areas must be mapped or described in the BFRMP

Determine (as per HRC Assessment Guidelines) if the following restriction on works apply:

- Mechanical works are not permitted within areas of isolated vegetation
- Burning is not permitted in areas identified within the BFRMP as Fire Exclusion Zone (FEZ), on peat soils, or in vegetation types excluded from burning

CIO shall determine (as per HRC Assessment Guidelines) if the works can proceed (including works modifications or additional works conditions) based on identified:

- Aboriginal heritage
- non-indigenous heritage sites
- threatened species, populations and ecological communities
- land zoning as per the Local Environmental Plan (LEP)
- Tree Preservation Orders
- Plans of Management

RESPONSIBILITY:

NOTES:

CIO

Undertake site inspection (as required)

A site inspection must be performed for all proposals unless:
- the proposal is denied prior to inspection
- the CIO holds recent detailed knowledge of the site

Where no inspection takes place, the CIO shall provide a a note of action and cross-reference to the source of site details.

Site inspection shall:
- confirm details provided via the HRC Application Form
- confirm details provided by other data sources
- validate existing or develop new maps to reflect key features of the site
- obtain photos of site
- validate compliance or ability to comply with HRC Assessment Guidelines requirements as per the type of works proposed

CIO

Update HRC Assessment Form with site inspection details

HRC Assessment Form shall record site inspection notes including:

For mechanical works:
- distance of works from assets
- slope
- riparian areas
- presence of weeds
- if tree works are proposed, then:
- tree type and distance to asset and/or canopy separation

For prescribed burning:
- vegetation type
- fire history
- presence of, or need for, control lines
- riparian areas
- presence of weeds
- smoke management issues

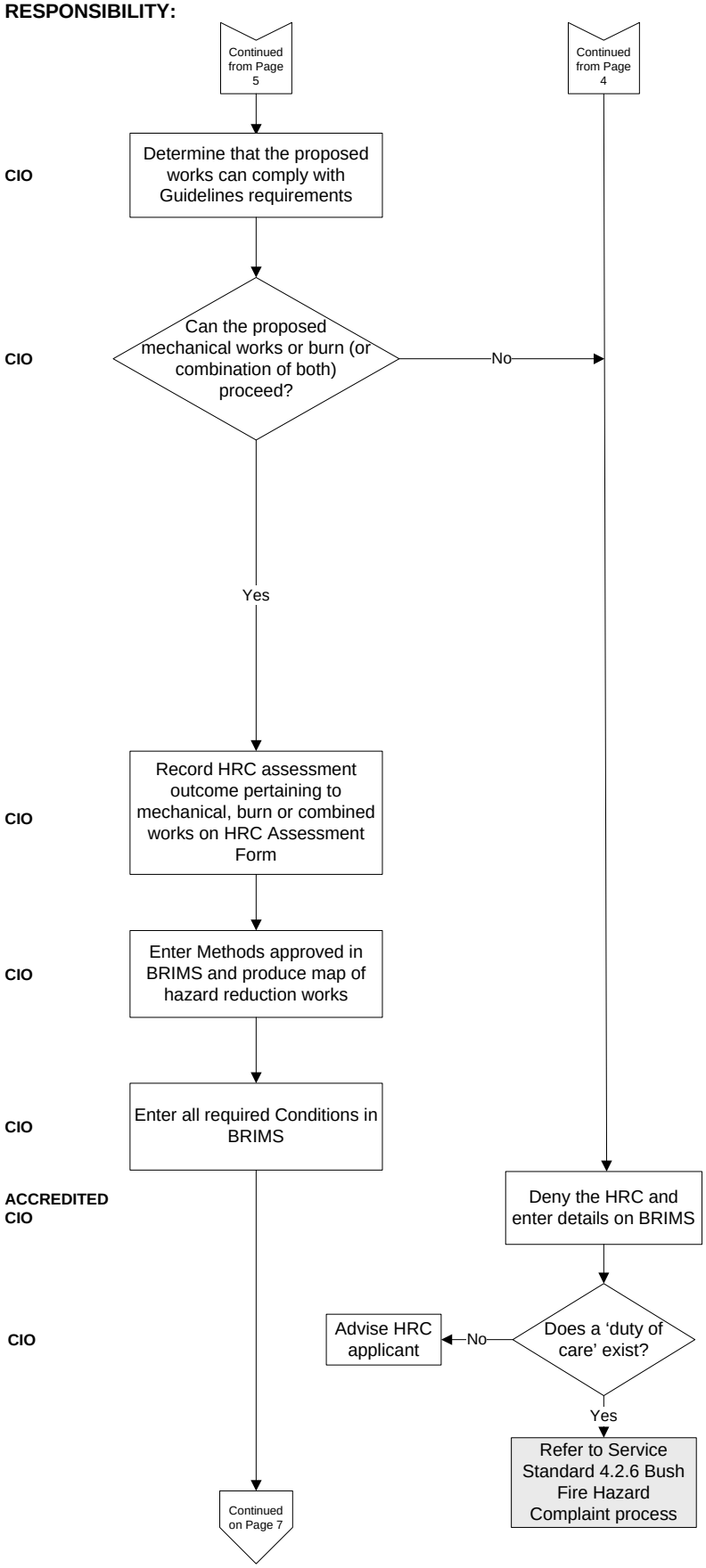
For pile/windrow burning:
- the material cannot be disposed of by other means
- the material to be burned is appropriate
- the pile/windrow has been constructed in a manner that provides for safe burning
- smoke management issues
- compliance with the associated RFS Standards documents

CIO

Update details on BRIMS

Complete details in BRIMS Assessment page

RESPONSIBILITY:



NOTES:

Where proposals request combined methods of hazard reduction the HRC may approve both or only one of the methods proposed. All works must comply with the HRC Assessment Guidelines requirements (as verified via the site inspection) for:

Mechanical vegetation clearing and/or tree works:
- maximum allowable APZ/SFAZ distances
- isolated vegetation restrictions
- soil erosion
- riparian buffer zone
- tree removal
- threatened species
- aboriginal heritage
- other heritage
- environmental protection areas
- weeds

Prescribed or windrow burning:
- burning exclusions (FEZ and peat soils)
- burn type and intensity
- control lines
- threatened species
- fire frequency
- smoke management
- soil erosion
- riparian buffer zone
- aboriginal heritage
- other heritage
- environmental protection areas
- weeds

Pile burning
- burning exclusions (FEZ and peat soils)
- burn type and intensity
- buffer zones
- threatened species
- smoke management

If the works proposal is inconsistent with HRC Assessment Guidelines, either:
- add conditions to the HRC
- modify the proposal to meet HRC Guideline requirements
- deny the HRC application (in full or part)

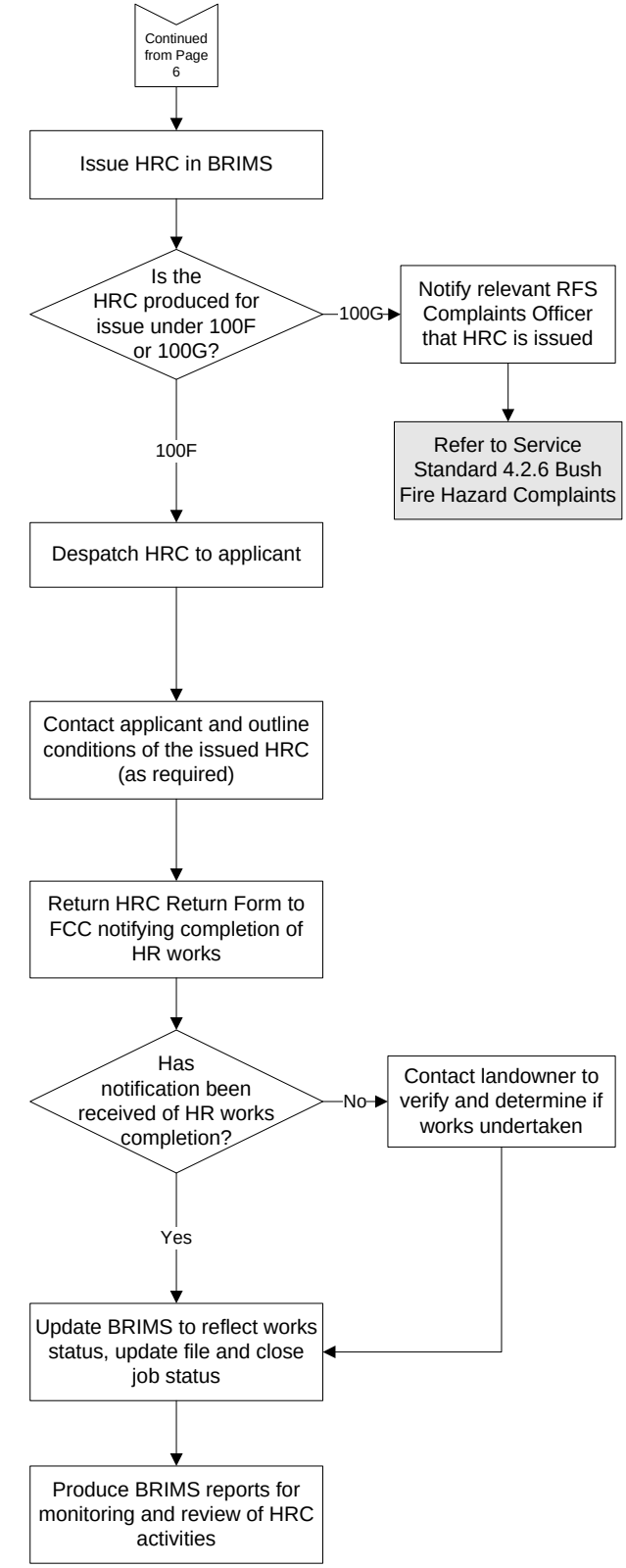
A map shall be produced in BRIMS HR Methods page identifying the extent of works permitted. A map may be produced in a suitable GIS tool provided that it shows at least as much detail as the BRIMS generated map.

HRCs approved for mechanical and/or burn works (in full or part) shall outline all required modifications or conditions relating to the hazard reduction.
Enter all required conditions in BRIMS via the Conditions List page.

HRC application denials must be confirmed by an accredited CIO. Enter details in BRIMS Denied page, and generate letter to applicant providing explanation of the assessment outcome. Advice is to be provided to the applicant regarding alternate approval process available under other legislation.

If it is determined that an unacceptable bush fire risk exists refer to Service Standard 4.2.6 Bush Fire Hazard Complaint process to initiate 'duty of care' processes and a Review of Environmental Factors (REF).

RESPONSIBILITY:



NOTES:

HRC must be issued under the name and signatory of an accredited CIO. Within BRIMS a trainee CIO may only "Print Draft HRC" to be verified by an accredited CIO. A trainee CIO must not "Print HRC".

HRCs produced under 100F, shall be issued within 7 days unless a longer timeframe is agreed to with the applicant during the application submission

In the case of HRCs issued under 100G ensure that there is consistency between the works approved on the HRC and those required by the notice.
Note: Components of the work required as outlined within the notice may require assessment and approval under the REF process.

Before sending the HRC to the applicant:

- attach the standard cover letter to applicant from BRIMS (or prepare more detailed letter if required)
- attach the map showing approved works
- enclose all relevant Standards documents
- contact the applicant (as required), to ensure the applicant understands all conditions on the HRC (e.g. Fire Permit requirements, notification process prior to burns) along with the requirement to notify the FCC upon completion of works (via the HRC Return Form contained within the HRC).

HRC are valid for 12 months (from date of issue). Where a landowner has not advised of HR works completion, FCC staff shall contact the landowner within 2 months of HRC expiration to ascertain HR works completion.

Obtain HR works completion details via HRC Return Form, from other advice of completion (eg, landowner notification of burning, verbal advise on follow-up queries), or follow-up site inspections.

Record Activity information in BRIMS.

HRC documentation shall be retained on file, including:

- HRC Application Form (with signatures)
- HRC Assessment Form, including site inspection notes, with name of CIO and date
- Aboriginal heritage report from DEC
- detail of consents and approvals
- Detail of land management agreements
- evidence from Council regarding land ownership
- photos of the site
- information used including topographic maps, aerial photos, spatial data
- any additional correspondence
- signed copy of HRC
- HRC Return Form or note regarding advice of works completion

BUSH FIRE HAZARD REDUCTION CERTIFICATE
ENVIRONMENTAL APPROVAL - APPLICATION FORM

For more information on how to fill in this form see *Application Instructions for a Bush Fire Hazard Reduction Certificate*
Return completed form to your local RFS Fire Control Centre

1. APPLICANT'S DETAILS - Please note that all property owners must sign this form

Title: ❑ **Mr** ❑ **Mrs** ❑ **Ms** ❑ **Miss** ❑ **Dr**

Last name: ..... **First name:** .....

Postal address: .....

..... **Postcode:** .....

Telephone: **Home:** ..... **Work:** .....

Mobile: ..... **Fax:** .....

Email: .....

2. Location of Works. Give details of the property where the Hazard Reduction works are to be conducted.

Suburb: ..... **Street:** .....

House Number: ..... **Lot Number:** ..... **DP Number:** .....

Additional information: .....

Attach a map of the property indicating the area of proposed works (see application instructions for details)

3. What existing assets will the proposed activity be protecting?

❑ House / dwelling ❑ Boundary fences

❑ School / hospital / nursing home etc ..... ❑ Plantation

❑ Other buildings ..... ❑ Other .....

4. Method of reducing fuel - tick all those applicable, and provide details on size of works

❑ Burning of vegetation	Area (hectares)	.....	Are containment lines in place?	YES / NO
❑ Hand clearing	Length (metres)	.....	Width (metres)	.....
❑ Brushcutting	Length (metres)	.....	Width (metres)	.....
❑ Slashing / Trittering	Length (metres)	.....	Width (metres)	.....
❑ Ploughing / Grading	Length (metres)	.....	Width (metres)	.....
❑ Tree removal / pruning	Number of trees	.....		
❑ Pile burning	Number of piles	.....	Size of pile/s	.....
only permitted for disposal of vegetation cleared for hazard reduction			(metres by metres)	
❑ Windrow burning	Number of windrows	.....	Size of windrow/s	.....
only permitted for disposal of plantation windrows that are a fire hazard			(metres by metres)	

BUSH FIRE HAZARD REDUCTION CERTIFICATE APPLICATION FORM (Page 2)

5. When do you propose to do the work? Start date: ..... Finish date: .....

6. When was the last time that fuel was reduced? (number of years)

circle nearest year 1 2 3 4 5 6 7 8 9 10 15 20+ unknown

7. How was the fuel reduced last time?

❑ Hand clearing ❑ Slashing / Trittering ❑ Ploughing / Grading ❑ Tree removal / pruning

❑ Hazard reduction burn ❑ Wildfire ❑ Pile / Windrow burning ❑ Unknown

8. Has an application for removal of vegetation/trees on this land been refused within the last three years?

❑ No ❑ Yes - provide details

9. Is there any <u>known</u> threatened species, populations or ecological community?

❑ No ❑ Yes - provide details (species present and location) and attach map or report if available.

10. Is there any <u>known</u> aboriginal relic or place, or any <u>known</u> cultural heritage site?

❑ No ❑ Yes - provide details (type and location) and attach map or report if available.

11. Do you have a land management agreement listed below?

❑ No ❑ Yes – tick relevant box and attach details

❑ Any conservation agreement entered into under Part 4 Division 12 of the *National Parks and Wildlife Act 1974*

❑ Any property agreement entered into under Part 5 of the *Native Vegetation Conservation Act 1997*

❑ Any trust agreement entered into under Part 3 of the *Nature Conservation Trust Act 2001*

❑ Any property management plan approved by the Director-General of National Parks and Wildlife under s91 of the *Threatened Species Conservation Act 1995*

❑ Any property vegetation plan agreement entered into under Part 4 of the *Native Vegetation Act 2003*

❑ A permit issued under the *Rivers and Foreshores Improvement Act 1948*

❑ An authorization under the *Plantations and Reafforestations Act 1999*

12. Does the proposed bush fire hazard reduction work require work on neighbouring land?

❑ No

❑ Yes - attach a written and signed authority from each owner or manager authorising the work on their land.

13. Authorisation: As the owner/occupier of this land I consent to the above proposed bush fire hazard reduction works, and attest that the information on this form is correct to the best of my knowledge.

SIGNATURE/S ..... **Date** .....

.....

Time for determination: I agree that this application will be assessed in 7 / 14 / 21 / 28 Days.

OFFICE USE ONLY Date received: ..... Received by: .....

All information provided by the applicant will be used by the RFS solely for the purposes of assessing the application for hazard reduction works. All personal information will be dealt with in accordance with the Privacy and Personal Information Protection Act 1998.

Hazard Reduction Certificate Assessment Form

ASSESSING OFFICER:	**DATE: ____/____/____**
APPLICATION DETAILS	
❍ **100F land owner application**	❍ **100G assessment for s66 notice**
BRIMS Certificate No:	
Property description of all land involved in proposal (as recorded by Council):	
Lot//DP:	
Address:	
Owner's names (as recorded by Council):	
❍ **100F APPLICANT'S DETAILS**	
Name of applicant:	
Date application received:	____/____/____
Sufficient information on application:	❍ **Yes /** ❍ **No**
All required signatures:	❍ **Yes /** ❍ **No**
Detail of additional information required:	
Applicant advised of need for additional information/signatures:	____/____/____
Additional information/signatures received: ❍ **No***	____/____/____
IS THE WORK PROPOSED AND REQUIRED FOR BUSH FIRE HAZARD REDUCTION?	
Is the work genuinely required for hazard reduction:	❍ **Yes /** ❍ **No***
Details (describe hazard, risk, etc including fuel assessment):	
DOES THE CODE APPLY?	
Does the proposal involve excluded lands (Cl 2.3):	❍ **Yes /** ❍ **No**
Can the proposal be modified to exclude area?	❍ **Yes /** ❍ **No***
Details:	
Does it involve environmentally sensitive lands (Cl 2.4):	❍ **Yes /** ❍ **No**
Can the proposal be modified to include only weed removal?	❍ **Yes /** ❍ **No***
Details:	
Is the activity one to which the Code does not apply (Cl 2.5):	❍ **Yes* /** ❍ **No**
Details:	
Does it involve mechanical works in isolated vegetation (Cl 4.1):	❍ **Yes* /** ❍ **No**
Does it involve burning in a FEZ or peat soil (Cl 5.1):	❍ **Yes* /** ❍ **No**

*** Deny Certificate**

BUSH FIRE RISK MANAGEMENT PLAN (BFRMP)

Hazard class on BFRMP:

❍ very high ❍ high ❍ moderate ❍ low ❍ non-hazard

Risk category on BFRMP:

❍ extreme ❍ major ❍ moderate ❍ minor ❍ insignificant

Risk management zone on BFRMP:

❍ APZ ❍ SFAZ ❍ LMZ ❍ FEZ

Are proposed works consistent with BFRMP: ❍ **Yes /** ❍ **No***

Details:

PREVIOUS CONSENTS, APPROVALS, REFUSALS, LAND MANAGEMENT AGREEMENTS

Any existing land management agreement (Cl 2.6): ❍ **Yes /** ❍ **No**

Can conditions be applied to enable the works to be carried out: ❍ **Yes /** ❍ **No***

Details:

Does current consent provide for all of the proposed work (Cl 2.7): ❍ **Yes* /** ❍ **No**

Details:

Does an existing consent or previous refusal restrict works (Cl 2.7): ❍ **Yes /** ❍ **No**

Can conditions be applied to enable the works to be carried out: ❍ **Yes /** ❍ **No***

Details:

Any permit issued under Rivers & Foreshores Improvement Act (Cl ❍ **Yes /** ❍ **No**

Can conditions be applied to enable the works to be carried out: ❍ **Yes /** ❍ **No***

Details:

Any authorisation under Plantations & Reafforestation Act (Cl 2.7): ❍ **Yes /** ❍ **No**

Can conditions be applied to enable the works to be carried out: ❍ **Yes /** ❍ **No***

Details:

ENVIRONMENTAL PLANNING INSTRUMENTS (Clause 4.8/5.14)

Is the land within an environmental protection zone under the LEP: ❍ **Yes /** ❍ **No**

Can conditions be applied to enable the works to be carried out: ❍ **Yes /** ❍ **No***

Details:

Does a Plan of Management/Recovery Plan etc restrict works: ❍ **Yes /** ❍ **No**

Can conditions be applied to enable the works to be carried out: ❍ **Yes /** ❍ **No***

Details:

PROPOSED METHOD OF WORKS

❍ **Mechanical:** ***(complete pages 1-4)***

❍ hand tools ❍ hand machinery ❍ slashing machinery ❍ grader/dozer/plough

❍ tree pruning ❍ tree removal

❍ **Burning:** ***(complete pages 1-5)***

❍ prescribed burning ❍ pile burning ❍ windrow burning

❍ control lines

Details:

Tick and complete all sections that apply

❍ **ASSET PROTECTION ZONE (Clause 3.2)**
Asset/s to be protected: ❍ residential building ❍ school/hospital etc ❍ major building ❍ boundary fence ❍ plantation ❍ other Details:
Slope to asset (as measured): Slope class: ❍ 0-5° ❍ 5-10° ❍ 10-15° ❍ >15° Hazard is: ❍ Upslope ❍ Downslope
Maximum APZ width permitted by Code (Cl 3.2.1): ❍ 6 metres ❍ 20 metres ❍ 30 metres ❍ 40 metres **APZ width proposed by applicant:**
Is proposed work permissible within an APZ (Cl 3.2.2): ❍ **Yes /** ❍ **No***
Can proposal be conditioned to comply with Clause 3.2: ❍ **Yes /** ❍ **No*** Details:
❍ **Tree Removal**
Trees within 5 m of building (Cl 4.4): ❍ **Yes /** ❍ **No*** **Tree canopy in APZ requires thinning:** ❍ **Yes /** ❍ **No*** **Can proposal be conditioned to comply with Clause 4.4:** ❍ **Yes /** ❍ **No*** Number of trees to be removed (attach details – tree type, photos, etc):
❍ **STRATEGIC FIRE ADVANTAGE ZONE (Clause 3.3)**
Asset/s to be protected and/or rationale for proposed work:
Is the proposed area mapped or described as a SFAZ in the BFRMP: ❍ **Yes /** ❍ **No*** Details:
Is proposed work permissible within a SFAZ (Cl 3.3.1): ❍ **Yes /** ❍ **No***
Can the proposal be conditioned to comply with Clause 3.3: ❍ **Yes /** ❍ **No***
Details:
❍ **LAND MANAGEMENT ZONE (Clause 3.4)**
Asset/s to be protected and/or rationale for proposed work:
Is the proposed area mapped or described as a LMZ in the BFRMP: ❍ **Yes /** ❍ **No*** Details:
Is proposed work permissible within a LMZ (Cl 3.4.1): ❍ **Yes /** ❍ **No***
Can the proposal be conditioned to comply with Clause 3.4: ❍ **Yes /** ❍ **No***
Details:

SOIL EROSION RISK / SLOPE (Clause 4.2/5.10)

Soil Erosion Risk map available: ❍ **Yes /** ❍ **No**

SER: ❍ 0-40 ❍ 40-80 ❍ 80-150 ❍ 150-220 ❍ >220

Slope: (If SER map not available) ❍ <10 ❍ 10-18 ❍ >18

Land mapped as susceptible to mass movement: ❍ **Not available** ❍ **Yes /** ❍ **No**

Can proposal be conditioned to comply: ❍ **Yes /** ❍ **No***

Details:

WATERCOURSES AND WATERBODIES (Clause 4.3/5.11)

Stream, river, wetland or lake on the site: ❍ **Yes /** ❍ **No**

Stream order: ❍ 1st/unmapped ❍ 2nd ❍ 3rd ❍ 4th or greater

Waterbody size: ❍ <0.1 ha ❍ 0.1 to 0.5 ha ❍ 0.5 to 2 ha ❍ >2 ha

Can proposal be conditioned to comply: ❍ **Yes /** ❍ **No***

Details:

THREATENED SPECIES, POPULATION & ECOLOGICAL COMMUNITIES (Clause 4.5/5.4)

Any threatened species, population, or endangered ecological community identified by applicant / present on records: ❍ **Yes /** ❍ **No**

Details:

Can proposal be conditioned to comply: ❍ **Yes /** ❍ **No***

Detailed TS site inspection / s91 licence required: (attach details) ❍ **Yes /** ❍ **No**

ABORIGINAL HERITAGE (Clause 4.6/5.12)

Referral to DEC required: ❍ **Yes /** ❍ **No**

Date sent: ____/____/____ Date reply received:____/____/____

Any Aboriginal site/relic/place identified (from DEC / applicant / other): ❍ **Yes /** ❍ **No**

Site Type & Details:

Can proposal be conditioned to comply: ❍ **Yes /** ❍ **No***

OTHER CULTURAL HERITAGE (Clause 4.7/5.13)

Any other cultural heritage site/relic on the site: ❍ **Yes /** ❍ **No**

Can proposal be conditioned to comply: ❍ **Yes /** ❍ **No***

Details:

WEEDS (Clause 4.9/5.15)

Any noxious or environmental weeds present at site: ❍ **Yes /** ❍ **No**

Can proposal be conditioned to comply: ❍ **Yes /** ❍ **No***

Details:

VEGETATION TYPE

Vegetation type/s from vegetation map:

Verified from site inspection: ❍ **Yes /** ❍ **No**

Vegetation type/s (as per Keith 2004): *(restrictions apply to vegetation types in bold)*

❍ **Rainforest**	❍ **Alpine Complex**
❍ Wet Sclerophyll Forest (shrubby)	❍ **Freshwater Wetland****
❍ Wet Sclerophyll Forest (grassy)	❍ **Forested Wetland****
❍ Grassy Woodland	❍ **Saline Wetland**
❍ Grassland	❍ Semi Arid Woodland (grassy)
❍ Dry Sclerophyll Forest (shrub/grass)	❍ Semi Arid Woodland (shrubby)
❍ Dry Sclerophyll Forest (shrubby)	❍ Arid Shrubland (chenopod)
❍ Heathland	❍ Arid Shrubland (acacia)

****** Identify if the following vegetation classes occur:

❍ **montane bog / fen** ❍ **coastal freshwater lagoon** ❍ **montane lake** ❍ **inland riverine forest**

❍ **inland floodplain swamp** ❍ **inland floodplain shrubland** ❍ **eastern riverine forest**

BURN TYPE

Type of burn proposed (Cl 5.2):

❍ pile ❍ windrow

❍ low intensity ❍ moderate intensity ❍ high intensity

Smoke Management (Clause 5.9)

Size of fire: ❍ <1 ha or pile ❍ >1 ha or windrow

Residential premises in vicinity of proposed burn : ❍ **Yes /** ❍ **No**

Distance: ❍ <50 m ❍ 50-200 m ❍ >200 m

Sensitive location in vicinity of proposed burn (eg hospital): ❍ **Yes /** ❍ **No**

Distance: ❍ <100 m ❍ 100-1000 m ❍ >1000 m

Other restrictions on burn in the vicinity: ❍ **Yes /** ❍ **No**

❍ Public road ❍ Power lines ❍ Tourism ❍ Bat colony ❍ Other

Details for locations affected by smoke:

Can work be conditioned for smoke management requirements: ❍ **Yes /** ❍ **No***

❍ **PILE / WINDROW BURN**

Pile/windrow construction as per Standards: ❍ **Yes /** ❍ **No**

Can proposal be modified to meet Standards: ❍ **Yes /** ❍ **No***

Details:

❍ **PRESCRIBED BURN**

Can proposal be conditioned to meet fire intensity requirements (Cl 5.2): ❍ **Yes /** ❍ **No***

Details:

Existing containment lines adequate (Cl 5.3): ❍ **Yes /** ❍ **No**

Can work be conditioned to meet containment line construction requirements: ❍ **Yes /** ❍ **No***

Details:

Fire Regime (Clause 5.5)

Fire interval requirements:

Fire interval for vegetation type in BFRMP: ❍ **Yes /** ❍ **No** **SFAZ:** _____ **LMZ:** _____

Fire interval for vegetation type in Code: ❍ **N/A** (if in BFRMP) **SFAZ:** _____ **LMZ:** _____

Fire interval for threatened species / EEC: ❍ **N/A** **Interval:**

Fire history of site:

Current time since fire: _____ Previous fire interval: _____

Does the burn comply with fire interval requirements: ❍ **Yes /** ❍ **No**

Can the burn be conditioned to comply with fire interval requirements: ❍ **Yes /** ❍ **No***

Details:

❍ **LMZ (Clause 5.5.4.2)**

Has >50% of vegetation type burnt in last 2 years: ❍ **Yes* /** ❍ **No**

Is there any: Significant vegetation ❍ **Yes /** ❍ **No** Wildlife corridor ❍ **Yes /** ❍ **No**

Will some of the community / corridor remain at time since fire greater than the minimum interval: ❍ **Yes /** ❍ **No***

Is the area being managed to maintain a mosaic pattern: ❍ **Yes /** ❍ **No***

Details:

Bush Fire Hazard Reduction Certificate Assessment Guidelines

Version 2.0 February 2006

FOREWORD

Background

In May 1999, an Interdepartmental Committee (IDC) was formed by the Minister for the Environment and then Minister for Emergency Services to look into the procedures used for environmental assessment of bush fire hazard reduction proposals.

The IDC found that significant impacts on the environment were possible due to bush fire hazard reduction works. However, the process for determining which hazard reduction works were likely to adversely impact on the environment was potentially complex and time consuming. As a result many hazard reduction activities were not being undertaken or works were being carried out without any environmental assessment leading to legislative breaches. The IDC determined that a streamlined system for ascertaining which hazard reduction works were likely to adversely impact the environment should be developed. In this way the majority of hazard reduction works could be approved subject to simple environmental protection conditions whilst those works that required the more complex assessment could be dealt with by the existing system.

The IDC therefore recommended establishing a streamlined approval process for essential bush fire hazard reduction works, which were consistent with the local Bush Fire Risk Management Plan and a Bush Fire Environmental Assessment Code. The IDC required that the Code identify those works that could be undertaken without significant adverse impacts on the environment.

The Bush Fire Coordinating Committee and the 2002 Joint Parliamentary Select Committee on Bushfires supported the findings and recommendations of the IDC. On 10 January 2002, the Government formally accepted the IDC's recommendations, which then formed part of the *Rural Fires and Environmental Assessment Legislation Amendment Act 2002*, including the preparation of a *Bush Fire Environmental Assessment Code* (the Code).

The first Code was gazetted in July 2003 after consultation with the major environmental regulatory authorities and other key stakeholders, including submissions received as a result of public exhibition. The Code was extensively reviewed and revised in 2005, and this second version of the Code was gazetted in February 2006.

The purpose of the Code

The *Rural Fires Act 1997* provides a streamlined environmental assessment process for those bush fire hazard reduction works that are unlikely to have a significant adverse effect on the environment. It is important to note that environment includes a range of issues from impacts on biodiversity through to impacts on human industry and health and safety.

The Code provides the mechanism by which bush fire hazard reduction works that are unlikely to have a significant impact on the environment can be readily selected. The Code does this by identifying indicators of environmental risk within each environmental issue. Management conditions are then applied to mitigate impacts. These conditions vary according to the methods to be implemented and the degree of environmental risk. A Bush Fire Hazard Reduction Certificate (Certificate or HRC) may be issued where hazard reduction works are in accordance with the Code and the Bush Fire Risk Management Plan (BFRMP). The implementation of the Certificate and associated conditions when undertaking the hazard reduction works is expected to greatly reduce the potential for such works to significantly impact on the environment.

It is important to note that the Code also identifies circumstances where the potential for a significant environmental impact cannot be eliminated. For this reason such circumstances are excluded from the Code and a Certificate cannot be issued. Hazard reduction works that fall into these categories require a more detailed assessment under the regular environmental assessment legislation.

Using this document

This document is designed to guide RFS Certificate Issuing Officers through the process of issuing Hazard Reduction Certificates. Each step in the process of assessing a Certificate is described, including:

- the requirements of the Code
- further interpretation and description of these requirements
- where to find information required to make an assessment
- reasons requiring denial of a Certificate
- conditions that must be included on a Certificate

The term clause is used to refer to clauses within the Code, while section is used to refer to sections within this document.

Important items are highlighted in the following manner:

! Action – This is something that you must do at this point of the assessment

Information – Suggestions on where to find further information

Conditions – These conditions must be added to the Certificate

Denied Reason – Circumstances requiring denial of a Certificate

BRIMS Action – Items requiring action in BRIMS. NB. As BRIMS is updated regularly, not all data entry items and explanations are included here. Refer to the BRIMS HR Module User Guide for details on the latest release.

Contacting other agencies

In some circumstances you will need to contact another agency for further information. For contact details, see the website of each agency:

Agency	Website URL
Department of Environment and Conservation (DEC): Parks and Wildlife Division (formerly NPWS) Cultural Heritage Division (formerly NPWS) Environment Protection and Regulation Division (formerly EPA)	www.environment.nsw.gov.au
Department of Natural Resources (DNR) (formerly DIPNR)	www.dlwc.nsw.gov.au
Department of Planning (DP) (formerly DIPNR)	www.planning.nsw.gov.au
Department of Primary Industries (DPI) Forests NSW (formerly State Forests)	www.dpi.nsw.gov.au/forests
Department of Lands	www.lands.nsw.gov.au
Roads and Traffic Authority (RTA)	www.rta.nsw.gov.au

Accessing legislation

Various Acts are referred to within this document, for the latest version of legislation, see www.legislation.nsw.gov.au.

1 PRELIMINARY

1.1 Introduction

1.1.1 Purpose

This document supports Policy P6.1.3 Environmental Assessment for Bush Fire Hazard Reduction Works and Standard Operating Procedure P6.1.3-1 Hazard Reduction Certificates, and provides the procedures that must be followed by RFS Certificate Issuing Officers (CIOs) for the assessment and determination of Bush Fire Hazard Reduction Certificates (HRC). It is designed to assist CIOs interpret the Code in accordance with RFS policy. All requirements within the Code (as detailed in these guidelines) must be met before a Certificate may be issued.

Note that the Code has been prepared in accordance with section 100J of the Rural Fires Act 1997, having regard to:

(a) the principles of ecological sustainable development, and

(b) considerations under section 111 of the *Environmental Planning & Assessment Act 1979*.

1.1.2 Associated documents and documentation

📖 The following documents are required when undertaking assessments under the Code:

Bush Fire Environmental Assessment Code;

Threatened Species Hazard Reduction List;

Conditions for Hazard Reduction and Aboriginal Heritage;

Conditions for Hazard Reduction and Cultural Heritage (under preparation);

Standards for Low Intensity Hazard Reduction Burning;

Standards for Asset Protection Zones;

Standards for Pile Burning;

Standards for Windrow Burning;

Before You Light that Fire;

Application Instructions for a Bush Fire Hazard Reduction Certificate; and

Natural Environment Services Notes as prepared.

A **flow chart** showing the Certificate assessment process in detail is included at Appendix 4.

! A **HRC Assessment Form** (SOP P6.1.3-1c) must be completed for each Certificate and retained on file.

Records must be kept on file of the detail of each Certificate assessment. The actual file will depend on D/T/Z file protocol; for example, a file for all HRCs for the calendar year within each District; or with other community safety items (e.g. DAs and complaints) on a property/street/suburb file. All records kept should be signed and dated. For each Certificate hard copies of the following (if prepared) are to be kept on the file:

- Bush Fire Hazard Reduction Certificate **Application Form** with signatures;
- Council advice of landowner/s details;
- Bush Fire Hazard Reduction Certificate **Assessment Form**;
- Site Inspection records, e.g. notes, maps, photos;
- Copy of the signed **Bush Fire Hazard Reduction Certificate** and associated map;
- Aboriginal heritage report from DEC;
- Consents, permits and agreements;
- Phone, email, correspondence records; and
- Information used, e.g. aerial photos, topographic maps, spatial data.


Data must be entered into the **BRIMS** database (Hazard Reduction Module) in order for a Certificate to be issued. HRC Applications must be promptly entered into BRIMS so that workloads can be tracked and addressed if problems arise.

Note that 100F and 100G HRCs follow different paths within BRIMS. Make sure you use the correct path:

100F "Add New HRC Request from Private Land Holder"
100G "Add New HR Proposal"

Refer to the BRIMS User Guide for instructions on the pages and data fields (can be found online under "General Information" on the Main Page of BRIMS). If any issues arise (enquiries, error messages, etc) contact **Applications Support** for advice (NB the envelope button within BRIMS generates an email to Applications Support).

1.1.3 Definitions

Terms are as defined in the dictionaries of the *Rural Fires Act 1997*, and the *Bush Fire Environmental Assessment Code*. Some words in the Code will be defined by other legislation. Common terms have been defined in the **Hazard Reduction Certificate SOP** (SOP P6.1.3-1). If there is difficulty in interpretation of terms then contact Region CSO staff for advice.

1.1.4 Delegations and authorities

In all cases, a Bush Fire Hazard Reduction Certificate must be issued under the signatory of an accredited Certificate Issuing Officer (CIO). An RFS officer may only be accredited as a CIO by the Manager of Natural Environment Services in accordance with **Requirements for Attainment of NSW RFS Certificate Issuing Officer Competency and Authorities** (SOP P6.1.3-1d).

However, an RFS officer may undertake Certificate assessments if they are under the supervision of an accredited CIO endorsed for this purpose and as directed by the relevant Regional Office. The CIO who is supervising the trainee CIO is responsible for ensuring the assessment is accurate and responsible for approving/denying the Certificate.

1.2 Determining the reason for the issue of the Certificate

Most local Councils have conferred certain functions to the RFS under individual Rural Fire District Service Agreements (RFDSA). These functions include such matters as the issuing of 100F Certificates and the issuing of section 66 notices to reduce bush fire hazards.

Note that the RFS has the power to issue 100G Certificates if undertaking works under section 73 of the RF Act. However, the issuing of 100G Certificates under section 66 notices is a result of the conference of the function to issue notices.

Currently, only a few Councils have not conferred these functions to the RFS. However, it is important to note that conference agreements have expiry dates and may be amended on the agreement of both parties. Therefore, it is important to monitor the currency and content of the RFDSA in your area.

Liaise with Region in the first instance if you believe that there are concerns with the RFDSA in your area.

1.2.1 Section 100F

The Certificate assessment is to be prepared under section 100F (RF Act) if the Certificate:

- is for bush fire hazard reduction works on private land or any other land not covered by a Certifying Authority (see Table 1.1 below), and
- the Certificate request is from the owner/occupier of that land.

In these circumstances an application form must be completed by the applicant.

Note: If the hazard reduction works (or part thereof) applied for under 100F are denied and a site inspection reveals that the works are necessary, then the works should be considered as a duty of care matter under the complaints process and an REF considered.

A 100F Certificate cannot be issued by the RFS for managed lands in Table 1.1.

1.2.2 Section 100G

NSW Rural Fire Service

The Certificate assessment is to be prepared under section 100G (RF Act) if the work is directed by the Commissioner of the NSW Rural Fire Service under the provisions of section 66, 70, or 73 (RF Act).

In these circumstances no Application Form or owner's consent is required.

Other Certifying Authorities

The table below details the other certifying authorities and the land for which they may issue Certificates.

The RFS is not to issue a Certificate for these lands. For processing a complaint against any of these lands, refer to the Hazard Complaints SS and SOP.

Note that in some circumstances a Certificate may be able to be issued by the RFS under 100F for Rail lands (ARTC), and land managed by the Department of Lands that is not unoccupied Crown land. Discuss with Region for confirmation before proceeding.

Code Table 1.1 Land under the control of Certifying Authorities

Land	Certifying Authority
Any land that is vested in or under the control of a local authority	The local authority for the area in which the land is situated (e.g. Council)
Unoccupied Crown land	Department of Lands
Land that is dedicated or reserved, or acquired for the purpose of reservation under the *Forestry Act 1916*	Department of Primary Industries (Forests NSW)
Land that is dedicated or reserved, or acquired for the purpose of dedication or reservation under the *National Parks and Wildlife Act 1974*	Department of Environment and Conservation (Parks and Wildlife Division)
Land that is vested in or under the control of RailCorp	RailCorp
Land that is vested in or under the control of the Rail Infrastructure Corporation	Rail Infrastructure Corporation
Land that is vested in or under the control of the Roads and Traffic Authority	Roads and Traffic Authority
Land that is within the catchment area of a water authority	The water catchment authority of that land

1.3 Hazard Reduction Certificate Application Form

1.3.1 Hazard Reduction Certificate Application Form and Application Instructions

All applications for 100F Certificates are to be prepared by (or on behalf of) the applicant using the **Hazard Reduction Certificate Application Form** (SOP P6.1.3-1b). An application may be made by a public authority (including the RFS) provided consent has been obtained from all parties (see section 1.4.4).

The *Application Instructions for a Bush Fire Hazard Reduction Certificate* should be provided to the applicant to assist them preparing the application form. This will minimise the potential of insufficient or incorrect information being provided by the applicant.

The form and instructions can be obtained on the RFS website www.rfs.nsw.gov.au, and copies should also be displayed at your RFS office. The official form (SOP P6.1.3-1b) is not to be changed for local use, though adding a stamp of the FCC address is recommended. Once completed, the HRC Application Form will need to be submitted by the applicant to the local RFS office.

Note that an application form is not required in circumstances under 100G of the RF Act.

1.3.2 Receipt and Registration of HRC Application Form

The local RFS office is to sign and date all HRC Application Forms received. The application details must be promptly entered on BRIMS.

Enter application details on BRIMS

1.4 Review HRC Application Form

1.4.1 Review Application Form

HRC Application Form shall be reviewed in accordance with *Application Instructions for a Bush Fire Hazard Reduction Certificate* to ensure the application is complete in detail. This task may be undertaken by administration staff or other RFS staff under instruction of an accredited CIO.

1.4.2 Incomplete information

If HRC Application Form is not complete then the relevant additional information is to be requested from the applicant/s. This action is to be detailed on the HR Assessment Form and on BRIMS.

Consideration should be given to sending the applicant a 'highlighted' copy of the Application Form and/or *Application Instructions for a Bush Fire Hazard Reduction Certificate*, if this will assist in demonstrating the type and depth of information required.

! If there is insufficient information, the application must be referred back to the applicant.

Set 'Sufficient Information' to "No". The 'Determination Due' date will not be set until this is changed back to "Yes". Change to "Yes" when sufficient information has been received.

If the requested information is not received within a reasonable timeframe, you may choose to deny the Certificate. In BRIMS, leave the 'Sufficient Information' set to "No" and continue to the "Denied" Page.

Denied Reason: 'Insufficient information supplied'

1.4.3 Location description

Ensure that the applicant has supplied an adequate description of the location on the application form and a map showing the size, extent and distance of proposed works from the assets to be protected. Determine any other information necessary to identify the location of the proposed works (e.g. the map grid reference). The Lot and DP number are particularly useful and enable rapid identification via the cadastre layer on BRIMS.

! If there is insufficient information, the application must be referred back to the applicant, as described above in 1.4.2.

1.4.4 Verification of landholders

HRC Application Form shall also be reviewed in conjunction with advice from Council as to the registered land ownership. Check ownership details are correct by means agreed to with Council in the RFDSA for the District where the hazard reduction works are proposed. This is to ensure the application is received from the verified owner/owners of that land and that their application contains the correct signatory.

! If ownership details cannot be verified by Council, contact the applicant to seek evidence of ownership. If ownership details cannot be verified and no evidence can be provided then the Certificate must be denied.

Denied Reason: 'Insufficient information supplied'

1.4.5 Written consent from all landowners/occupiers (Clause 2.8)

For a Certificate to be issued under section 100F, ensure that the application form includes the written consent of all landowners/occupiers of the land where the proposed work is to be undertaken.

In the case of multiple land tenures for one hazard reduction activity, a single application can be prepared and a single Certificate can be issued to cover that activity. The applicant for multiple tenures, for example, may be a private person, a land management agency or an RFS District Manager. The applicant is not required to be the owner or manager of any of the land. However, the application must include the written consent of all landowners/occupiers.

A Certifying Authority listed in Table 1.1 above may be the applicant under 100F for a multiple tenure hazard reduction proposal but the proposal cannot include land managed by the certifying authorities. For example, the Area Manager for a District National Parks Office may be seeking to undertake a prescribed burn across a National Park and adjacent private land. The Area Manager could apply to the RFS for a 100F Certificate on behalf of the affected landowners (with their written consent). However, the application could not include any of the National Park, this would be the subject of a 100G Certificate issued by the Parks Division of DEC.

The details of landowners/occupiers must be verified as described above in 1.4.4.

Note: change in landownership may occur after the issue of a Certificate. For single ownership changes the Certificate is still valid if the new owner agrees and signs a statement to this effect. The same rationale applies where there are a number of landowners.

! If all identified owners consent is not obtained with signature, the application must be referred back to the applicant advising that the Certificate cannot be progressed until relevant signatures are obtained.

Set 'Permission of All Land Owners' to "No". Change to "Yes" when written consent of all owners has been received.

If the requested information is not received within a reasonable timeframe, you may choose to deny the Certificate. In BRIMS, leave the 'Permission of All Land Owners' set to "No" and continue to the "Denied" Page.

Denied Reason: 'Written consent not provided'

1.5 Undertake hazard reduction proposal assessment

Undertake hazard reduction proposal assessment for both 100F and 100G Certificates in accordance with the remainder of these guidelines. These guidelines provide the RFS position on the interpretation of the Bush Fire Environmental Assessment Code clauses, and as such must be adhered to.

1.5.1 Time to determine an application (Clause 2.2)

Determination of a 100F Certificate should be made within 7 days after receipt of the application, unless a longer time was agreed to by the applicant. There may be circumstances when it is not possible to issue a Certificate within 7 days. In the case where work loads preclude the issuing of all Certificates within 7 days then the works with the greatest priority should be afforded a Certificate first. For example, APZ works before LMZ works. Priority may also relate to windows of opportunity for burning, e.g. priority SFAZ works may require a Certificate before less essential APZ works. In these circumstances liaison is to be undertaken with the applicant as soon as possible to arrange a suitable and agreed timeframe.

Enter 'Application Received' date and 'Agreed Determination Time' (default is 7 days) information in BRIMS.

It should be noted that under section 100F of the Rural Fires Act 1997 there is no right of appeal against a determination of, or a failure or refusal to determine an application for a Certificate.

If unresolvable issues arise it may be appropriate to advise the applicant that they may seek approval, consent or other authorisation for bush fire hazard reduction work under relevant environmental legislation, even if an Issuing Authority has refused or failed to issue a Certificate.

It should also be noted that the reasons for delay should be documented for auditing purposes if Certificates are not issued within 7 days.

Determination of a 100G Certificate must be undertaken as soon as possible and within the timeframes appropriate for the serving of the notice.

Where workload or staff level issues create a quantity of overdue Certificate applications, discuss the situation with Region. Note that, if all applications are promptly entered and processed within BRIMS, Region will be able to identify these issues.

1.5.2 Raise and complete HR Assessment Form

A HRC Assessment Form must be raised for both 100F and 100G Certificates. This can be obtained from the RFS intranet. This Form shall be used for auditing purposes.

! The HRC Assessment Form must be completed as a summary record of the assessment findings for both 100F and 100G Certificates.

1.5.3 Modification of works from that sought in application

Assessments may result in the need for the RFS to modify a hazard reduction proposal from that which the applicant sought through their application.

Where these changes are not significant the modifications can be accommodated by including them in the issued Certificate. Such changes include any reduction in works from that proposed or the use of methods that have less adverse impacts.

However, where such changes are significant the applicant should be contacted to ascertain whether they are prepared to submit a new application. Such changes include the incorporation of additional works, or a change from mechanical to burning, or increase in impact of methods (e.g. from hand clearing to slasher).

1.6 Restrictions and considerations on land and activity type

1.6.1 Bush Fire Risk Management Plan (Clause 3.1)

A Certificate can only be issued for land to which a Bush Fire Risk Management Plan applies. Any works approved must be in accordance with the Bush Fire Risk Management Plan.

Determine the hazard class, community risk category and risk management zone on the local Bush Fire Risk Management Plan.

Enter BFRMP category details in BRIMS

Determine whether the proposed works are consistent with the strategies for the risk category and risk management zone within the Plan.

Note that Strategic Fire Advantage Zones and Land Management Zones must be described or mapped within the BFRMP.

Denied Reason: ‘Inconsistent with BFRMP’

1.6.2 Land excluded from the Code (Clause 2.3)

Determine if the land subject to the proposal is within one of the categories listed in clause 2.3 of the Code. If so, a Certificate cannot be issued. Provide the applicant with advice on where to go to get the required approvals. If it is likely to be a 100G matter, then refer the application to NES.

Excluded land:

(a) land to which State Environmental Planning Policy No 14—Coastal Wetlands applies;

📖 SEPP 14 Wetland maps are available in BRIMS

(b) land to which State Environmental Planning Policy No 26—Littoral Rainforests applies;

📖 SEPP 26 Littoral Rainforest maps are available in BRIMS.

(c) land declared to be the critical habitat of an endangered species, population or ecological community under section 47 of the *Threatened Species Conservation Act 1995*;

📖 The DEC website (www.environment.nsw.gov.au) provides details of any areas of critical habitat. Current listings in Table 1.1.

Table 1.1 Critical habitat

Critical Habitat	Status
Wollemi Pine habitat in Wollemi National Park	pending finalisation
Bomaderry Zieria (*Zieria baeuerlenii*) within Bomaderry Bushland	pending finalisation
Little Penguin population at North Harbour	declared
Mitchell's Rainforest Snail in Stotts Island Nature Reserve	declared

(d) land within Lord Howe Island;

(e) any other land prescribed (as excluded land) by the regulations;

📖 See section 45 of the *Rural Fires Regulation 2002*. NB No other land has been prescribed by the regulations at this point in time.

(f) land to which an 'integrated forestry operations approval' (within the meaning of the *Forestry and National Parks Estate Act 1998*) applies. This applies to much of but not all State Forest land.

If any of the above applies, a Certificate can not be issued.

! Advise the applicant that other environmental approval may be required if they wish to proceed. This is likely to involve the obtaining of development consent from Council. The applicant should be advised to contact Council in the first instance.

☒ Denied Reason: 'Land excluded - SEPP14, SEPP26, or critical habitat (Clause 2.3)'

1.6.3 Land on which the Code is restricted (Clause 2.4)

Determine if the land subject to the proposal is within one of the categories listed in clause 2.4 of the Code. If so, a Certificate cannot be issued except where it involves only the manual removal of noxious or environmental weeds (as defined within clause 4.9).

Restricted land:

(a) the following vegetation formations (as defined in Keith 2004, refer to section 4.9.2):

- rainforests;
- saline wetlands;
- freshwater wetland classes: montane bogs and fens, coastal freshwater lagoons, montane lakes;
- alpine complex;

📖 Determine the vegetation type from a vegetation map and/or site inspection using Keith (2004)

(b) wetlands of international significance under the RAMSAR Convention;

📖 These are listed on DEC website (www.environment.nsw.gov.au and search for RAMSAR). Check this website for new listings. Refer to Figure 1.1 and Table 1.2 for an overview.

Figure 1.1 & Table 1.2 RAMSAR sites in NSW (DEC August, 2005)

Name of Ramsar site	Location
Blue Lake	Kosciuszko National Park, Snowy Mountains
Fivebough and Tuckerbil wetlands	Crown lands near Leeton
Gwydir wetlands	Four private properties near Moree
Hunter Estuary wetlands	Comprises Kooragang Nature Reserve and Shortland Wetlands (The Wetlands Centre, private land), near Newcastle
Lake Pinaroo	Sturt National Park near Tibooburra
Little Llangothlin Lagoon	Little Llangothlin Nature Reserve near Glen Innes
Macquarie Marshes	Comprises the Macquarie Marshes Nature Reserve and Wilgara Wetlands (private land) near Quambone
Myall Lakes	Myall Lakes National Park near Forster
Narran Lake	Narran Lake Nature Reserve near Narrabri
NSW Central Murray state forests	State forests near Deniliquin
Towra Point	Towra Point Nature Reserve near Botany Bay

(c) a wilderness area within the meaning of the *Wilderness Act 1987*;

📖 Sites can be identified via DEC website www.environment.nsw.gov.au. Wilderness areas are currently only declared on lands managed by DEC.

(d) coastal dune vegetation within 100 metres of the mean high water mark.

📖 Note that the intent here is to avoid sand dune 'blowouts' and the resulting instability. Removal of vegetation on unstable sand dunes beyond the 100 metre mark should also be avoided. Contact Region if you are unsure if a site contains dunal vegetation.

All these areas are considered to be of such significance and sensitivity as to require more detailed and site specific assessment than is possible under the Code.

! If the work can be achieved through the removal of environmental or noxious weeds only, a Certificate may be issued provided this is made very clear. The conditions below must be used, preferably listing the weed species that may be removed. Clause 4.9 (Standards relating to weeds) will also need to be addressed.

☑ Condition: 'Clearing as permitted by this Certificate involves the removal of noxious or environmental weed species only. No native species are to be removed or harmed.

OR

☑ Condition: 'Clearing as permitted by this Certificate involves the removal of the following weed species only: {insert species name/s}'

AND

☑ Condition: 'This Certificate does not permit the removal of any native vegetation'

If the work can not be achieved through the removal of environmental or noxious weeds only, the Certificate must be denied.

! Advise the applicant that other environmental approval may be required if they wish to proceed. This may involve preparation of a review of environmental factors under Part 5 of the EP&A Act, taking into account the issues listed under section 5A, development consent from Council or DNR or Commonwealth or other approvals. The applicant should be advised to contact Council.

☒ Denied Reason: 'Land excluded - sensitive vegetation, etc (Clause 2.4)'.

1.6.4 Activities to which the Code does not apply (Clause 2.5)

Certificates can be issued under this Code for bush fire hazard reduction work only as defined. The RF Act defines 'bush fire hazard reduction' as:

- *the establishment or maintenance of fire breaks on land, and*
- *the controlled application of appropriate fire regimes or other means for the reduction or modification of available fuels within a predetermined area to mitigate against the spread of a bush fire,*

but does not include construction of a track, trail or road.

Activities that are for land management purposes such as those listed below are not covered by the Code:

(a) The construction and maintenance of a track, trail or road

As defined by the *Rural Fires Act*, construction and maintenance of tracks, trails and roads are not hazard reduction. Such construction is potentially a major undertaking that requires full consideration of environmental impacts. Maintenance works are usually provided for within the initial construction approval. A Certificate cannot be issued for these works.

! Advise the applicant that other environmental approval may be required if they wish to proceed. This may involve preparation of a review of environmental factors under Part V of the EP&A Act taking into account the issues listed under section 5A of the EP&A Act, or a development consent from Council or DNR. The applicant should be advised to contact Council.

☒ Denied Reason: 'Activities excluded from Code (Clause 2.5)'

(b) Agricultural activities that do not have an existing requirement for environmental assessment, such as stubble burning, and burning of sugar cane and diseased crops.

Routine agricultural activities carried out on land zoned for agriculture often do not require environmental approval.

As a general rule, the clearing of land (by burning or mechanical works) to establish a new agricultural activity (e.g. changing land use from grazing to cropping) should not be considered a routine agricultural practice. However, some rotational farming practices involve rotating fields between grazing and cropping. There should be evidence of such rotation in the past.

The main point here is that it is up to the landholder to determine if their activity is agricultural in nature. If they believe that the works they wish to undertake do not require environmental approval then it is their decision as to whether they are breaching the law. If the landowner is uncertain then they should contact DNR and/or DEC for advice (depending on the circumstances). It is outside the scope of the RFS to provide legal advice to landowners on these matters other than that specified in the Code, i.e. stubble burning, and burning of sugar cane and diseased crops.

! Advise the applicant that other environmental approvals are unlikely to be required unless it involves damage to native vegetation in which case it could require approval from DNR, Council or DEC. Advise applicant to contact Council.

☒ Denied Reason: 'Activities excluded from Code (Clause 2.5)'

(c) Vegetation clearance other than for bush fire hazard reduction work

For example, clearing to establish pasture, or site preparation for construction work.

! Advise the applicant that other environmental approvals may be required. Advise applicant to contact DIPNR, Council or DEC.

☒ Denied Reason: 'Activities excluded from Code (Clause 2.5)'

(d) Burning of:

- green garden waste,
- construction and industrial waste,
- other rubbish, or
- windrows (except plantation windrows).

These activities may require approval from DEC (Environmental Protection and Regulation Division) or the local authority (Council) and will have to comply with the *Protection of the Environment Operations (Control of Burning) Regulation 2000*. Refer to the joint RFS/DEC publication *Regulation of Open Burning in NSW* for explanation of these matters (can be located on DEC website www.environment.nsw.gov.au).

! Advise the applicant that an approval may be required if they wish to proceed. Determine which Schedule of the Protection of the Environment (Control of Burning) Regulation applies. Advise applicant if the activity requires approval from DEC (Environmental Protection and Regulation Division) or Council.

☒ Denied Reason: 'Activities excluded from Code (Clause 2.5)'

(e) Bush regeneration burns including pile burns of weed species for ecological purposes

Burning may be used as part of land management activities including ecological burns, or burning for weed eradication. Such activities cannot be approved under the Code.

These activities may require approval from DEC (Environmental Protection and Regulation Division) or the local authority (Council) and will have to comply with the *Protection of the Environment Operations (Control of Burning) Regulation 2000*. Refer to the joint RFS/DEC publication Regulation of Open Burning in NSW for explanation of these matters (can be located on DEC website www.environment.nsw.gov.au).

However, there is no impediment to issuing a Certificate if the activity is a legitimate bush fire hazard reduction activity and these bush regeneration outcomes are also achieved.

! Advise the applicant that an approval may be required if they wish to proceed. Determine which schedule of the Protection of the Environment (Control of Burning) Regulation applies. Advise applicant if the activity requires approval from DEC (Environmental Protection and Regulation Division) or Council.

! Advise the applicant that consent may also be required for the activity under the *Environmental Planning & Assessment Act 1979*. Advise the applicant to contact Council for further information.

☒ Denied Reason: 'Activities excluded from Code (Clause 2.5)'

1.6.5 Conservation and land management agreements (Clause 2.6)

If the applicant has advised that a land management agreement listed below applies to the land, determine if conditions can be added to ensure the proposal is consistent with the requirements of the agreement.

(a) any conservation agreement entered into under Division 12 of Part 4 of the *National Parks and Wildlife Act 1974,*

(b) any property agreement entered into under Part 5 of the *Native Vegetation Conservation Act 1997,*

(c) any trust agreement entered into under Part 3 of the *Nature Conservation Trust Act 2001,*

(d) any property management plan approved by the Director-General of National Parks and Wildlife under section 91 of the *Threatened Species Conservation Act 1995,*

(e) any property vegetation plan agreement entered into under Part 4 of the *Native Vegetation Act 2003.*

The applicant should be able to provide copies of any agreements. However, there is potential, particularly where the property has been sold, that the new owner may not disclose the existence of an agreement. Therefore the authorities responsible for these agreements are establishing processes that will assist the RFS to identify some of these lands and the conditions that apply.

Enter agreement type in BRIMS.

If works can be conditioned, add any necessary conditions to the Certificate to ensure consistency with the agreement.

☑ Condition: 'The Certificate holder shall comply with any relevant conditions to ensure conformity to any {select land management agreement'}'

☑ Add text Condition/s: Any relevant conditions to ensure conformity to the land management agreement

! If works cannot be conditioned to meet the requirements of the conservation agreement, advise the applicant that a Certificate cannot be issued.

☒ Denied Reason: 'Inconsistent with land management agreement (Clause 2.6)'

1.6.6 Existing consents and approvals (Clause 2.7)

1.6.6.1 Development consent

! Check with Council to determine if there is any existing development consent on the land by means agreed to with Council in the RFDSA.

If Council can not supply details within a reasonable timeframe (3 working days), proceed with the Certificate assessment. If you cannot come to an agreement with Council to provide information in a timely manner, ensure that Council are aware of the reason why you seek this information, and that this may lead to approval of works contrary to consent restrictions.

If a development consent is current and the proposed work is covered by the provisions of that consent, the environmental assessment has already been made and no Certificate is required.

In this case, discuss with Council whether there is provision for the RFS to provide a copy of the consent to landowners, or whether it is preferable to advise the landowner to contact Council directly. The purpose of this is that not all landowners have a copy of their consent conditions, and therefore to ensure that the landowner is aware of the limits to the works that can be undertaken without a Certificate.

! Advise the applicant that a Certificate is not required to undertake the proposed work, provided it is consistent with the existing development consent.

☒ Denied Reason: 'HRC not required – covered by existing consent (Clause 2.7)'

If the proposed work is not provided for within the development consent, you may still consider an application for a Certificate.

If a development consent contains restrictions on damage to or management of vegetation, any Certificate issued will need to be consistent with the restrictions of the consent.

! Add any necessary conditions to the Certificate to ensure consistency with the development consent.

☑ Condition: 'The Certificate holder shall comply with any relevant conditions to ensure conformity to any {select land management agreement'}'

☑ Add text Condition/s: Any relevant conditions to ensure conformity to the consent

! If works cannot be conditioned to meet the requirements of any relevant development consent, advise the applicant that a Certificate cannot be issued. Advise the applicant to contact Council.

☒ Denied Reason: 'Inconsistent with development consent (Clause 2.7)

An approval for residential development provides some ancillary rights associated with the construction and use of the dwelling, such as the mowing of lawns. Further consent is not usually required for the mowing of lawns around the curtilage of the dwelling – unusual restrictions on routine activities will be contained within the development consent. If there is no restriction, there is no requirement for a hazard reduction Certificate to undertake residential lawn mowing to maintain an APZ.

The applicant should be advised to contact Council for further advice if they feel that there may be unusual restrictions on lawn mowing on their property.

1.6.6.2 Rivers and Foreshores permit

Determine if a permit has been issued under the *Rivers and Foreshores Improvement Act 1948*. If so, any Certificate issued will need to be consistent with the requirements of the permit. Seek advice from DP.

Until a process is in place for access to this information easily, use the information provided by the applicant on the Application Form. If the applicant has declared that a RFI permit is in place, they will also need to provide you with the details. If the applicant has not declared a RFI permit is in place, but you have reason to believe a RFI permit might exist (i.e. within 40 metres of a river, coastal lake or lagoon), check with Council or DP.

! If works can be conditioned, add any necessary conditions to the Certificate to ensure consistency with the RFIA permit.

☑ Condition: 'The Certificate holder shall comply with any relevant conditions to ensure conformity to any {select land management agreement'}'

☑ Add text Condition/s: Any relevant conditions to ensure conformity to the permit

! If works cannot be conditioned to meet the requirements of any relevant development consent, advise the applicant that a Certificate cannot be issued. Advise the applicant to contact DP

☒ Denied Reason: 'Inconsistent with development consent (Clause 2.7)

1.6.6.3 Plantations authorisation

Determine if an authorisation has been issued under the *Plantations and Reafforestation Act 1999*. If so, any Certificate issued will need to be consistent with the requirements of the authorisation. Seek advice from DNR.

Until a process is in place for access to this information easily, use the information provided by the applicant on the Application Form. If the applicant has declared that a P&R authorisation is in place, they will also need to provide you with the details. If the applicant has not declared a P&R authorisation is in place, but you have reason to believe a P&R authorisation might exist (i.e. within a plantation), check with DNR.

! If works can be conditioned, add any necessary conditions to the Certificate to ensure consistency with the authorisation.

☑ Condition: 'The Certificate holder shall comply with any relevant conditions to ensure conformity to any {select land management agreement'}'

☑ Add text Condition/s: Any relevant conditions to ensure conformity to the authorisation

! If works cannot be conditioned to meet the requirements of any relevant development consent, advise the applicant that a Certificate cannot be issued. Advise the applicant to contact DNR

☒ Denied Reason: 'Inconsistent with development consent (Clause 2.7)

2 HAZARD REDUCTION TYPES

2.1 Is there a bush fire hazard?

Determine if the work is genuinely required for the purpose of bush fire hazard reduction. Is there a bush fire hazard? What is the fuel loading? Is there a risk to existing assets? Will the works provide protection to assets? Refer to the local BFRMP (regarding hazard class and community risk category), recent air photos and conduct a site inspection. Determine the vegetation type/s present. Is the proposed work designed to reduce or remove the hazard?

Particular consideration of these matters should be applied to Land Management Zones. The purpose of the works must be for bush fire hazard reduction.

If the works are not for bush fire hazard reduction then a Certificate cannot be issued.

! If the work is not required for hazard reduction as covered by the Code, advise the applicant that a Certificate cannot be issued and another form of environmental approval may be required.

☒ Denied Reason: 'Activities not for hazard reduction'

🕮 If the work is for genuine hazard reduction, the following resources will be required for assessment. These will be explained in the relevant sections.

The Bush Fire Risk Management Plan,
A topographic map 1:25000 or best available scale,
Aerial photos or satellite imagery if available,
Spatial data, including:
- Vegetation
- Threatened species
- Fire history
- Contours &/or Soil erosion risk
- Drainage &/or Stream order,

Threatened Species Hazard Reduction List,
Minimum Fire Interval Table (in BFRMP or Code),
Local Environmental Plan (LEP),
Relevant development consent/s, and
Tree Preservation Orders.

2.2 Type of hazard reduction works proposed

Determine what type of hazard reduction is proposed, i.e. is the work for the purpose of Asset Protection, Strategic Fire Advantage or Land Management, or a combination of all three? (See Part 3 of the Code).

Determine the type of works intended, that is, whether the works are mechanical (and the type) or burning or a combination of both.

The impact that hazard reduction works can have on environmental values can be significant. For this reason there are limited circumstances (as described below) for which the Code can be used to assess hazard reduction proposals, particularly earthworks. Proposals outside these parameters will require full environmental assessment.

Note that Fire Exclusion Zones are dealt with separately (refer to section 5.3).

2.3 Asset Protection Zones (APZ) (Clause 3.2)

The APZ for residential buildings and special fire protection buildings should be sufficient to provide defendable space and flame zone protection in light of the existing fuel loads. Further advice will be provided from RFS Hazard Management Services in the near future.

The Code covers APZs for the following assets adjacent to a bush fire hazard:

(a) Residential buildings (i.e. a dwelling),

(b) Special fire protection buildings (as per section 100B of the *Rural Fires Act 1997*):

- schools
- child care centres
- hospitals
- hotels, motels, and other tourist accommodation
- homes or establishments for mentally incapacitated persons
- SEPP 5 housing for older people or people with a disability
- SEPP 9 group homes
- retirement villages
- any other prescribed by the regulations,

(c) Major buildings such as:

- farm/hay sheds
- machinery sheds
- industrial and commercial buildings
- communication towers
- stockyards
- timber bridges
- heritage buildings

But **not** structures such as internal property fences, outdoor toilets and garden sheds. If in doubt contact Region (NB advice on these matters will increase as more examples come to light),

(d) Plantations greater than 30 hectares:

Plantation means an area of land on which the predominant number of trees or shrubs forming, or expected to form, the canopy are trees or shrubs that have been planted. See *Plantations and Reafforestation Act 1999* for further detail,

(e) Boundary fences (i.e. fences erected on the boundary separating land owned by different persons/agencies).

☞ IF NOT FOR APZ GO TO SECTION 2.4

2.3.1 Extent of works permitted within an APZ

The maximum extent of the works approved by a Certificate must be within the distances specified below (also in clause 3.2.1 of the Code). The necessity of establishing the maximum distances will depend upon the nature of the hazard, e.g. if a well maintained SFAZ is in place with low fuel loadings then the maximum distances may not be necessary. The need for the maximum distance will also depend on the nature of the asset and its capacity to withstand a wildfire in adjacent vegetation. Equally, the type of vegetation will influence the distance, e.g. grass versus forest.

If the extent of the work proposed by the applicant is greater than the distances specified in the Code, conditions must be imposed on the Certificate to limit the activity to the extent that is permissible under the Code.

If the applicant wishes to carry out additional work they will need to use the normal environmental assessment processes. However, if a site inspection reveals that greater distances are required than the Code allows then consideration should be given to issuing a section 66 notice (as a duty of care matter). In these circumstances an REF will need to be considered for that part of the works not covered by a Certificate. If there is an urgent need to establish a portion of the intended APZ it may be better to issue a Certificate for that part covered by the Code. Note that splitting the work into two portions may result in increased costs for the landowner and the merits of this approach should be discussed with the landowner. Alternatively an REF could be undertaken for the entire site.

In general and for safety reasons, hazard reduction within an APZ should be carried out using mechanical means or pile burns rather than burning.

! The area and distance to which the asset protection zone works applies must be mapped and/or described as a condition within the bush fire hazard reduction Certificate.

☑ Condition: 'All {hazard reduction work} permitted by this Certificate shall be carried out within the areas identified on the attached map'

Ensure that if the work extends onto an adjacent property, that the written consent of all owners of that property are included on the application.

All distances are measured in the horizontal plane from the edge of the asset, as in Figure 2.1. This is consistent with how one would measure the distance on a topographic map.

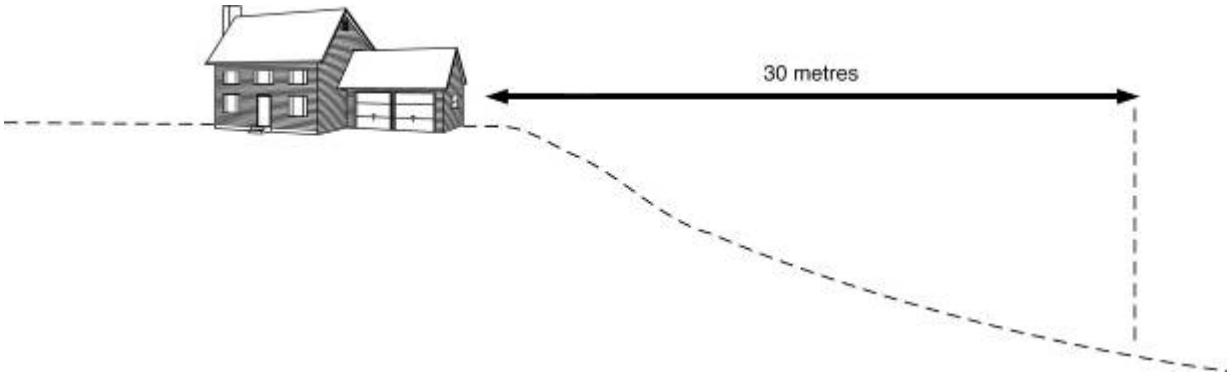


Figure 2.1: Distance is measured in the horizontal plane from asset

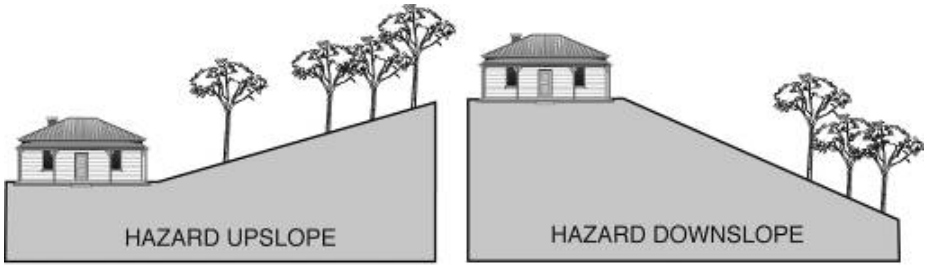
2.3.1.1 Maximum APZ distances

The maximum APZ distance permitted depends on the asset type as specified below:

Residential buildings and special fire protection buildings

Code Table 3.1 Maximum APZ widths for residential and special fire protection buildings

Slope (refer Figure 2.2)	**Maximum Distance**
Hazard upslope	20 metres
Hazard downslope <10˚	20 metres
Hazard downslope 10˚-15˚	30 metres
Hazard downslope >15˚	40 metres



A hazard downslope will require a greater APZ distance then a hazard upslope of the asset

Figure 2.2 Hazard upslope and downslope

☑ Condition: 'All {select clearing type} is permitted to a maximum distance of {insert distance} metres from {insert asset type}'

☒ Denied Reason: 'Inconsistent with requirements for an APZ'

Major buildings

20 metres maximum

☑ Condition: 'All {select clearing type} is permitted to a maximum distance of {insert distance} metres from {insert asset type}'

☒ Denied Reason: 'Inconsistent with requirements for an APZ'

Boundary fences

6 metres maximum on each side of the fence

This must not involve the removal of native vegetation that is older than 10 years. The age of the vegetation can be determined from site inspection or local records. If you think the age of the vegetation is close to 10 years but unsure contact Region for advice.

Note that clearing can only be conducted on both sides of the fence (under 100F of the Code) if the consent of the owners of both properties is obtained.

☑ Condition: 'All {select clearing type} is permitted to a maximum distance of {insert distance} metres to the {insert direction} of the fence'

AND

☑ Condition: 'This Certificate does not permit the removal of any vegetation that is more than 10 years old'

☒ Denied Reason: 'Native vegetation to be removed is more than 10 years old'

OR

☒ Denied Reason: 'Inconsistent with requirements for an APZ'

Plantations

30 metres maximum, either:

- Within the boundaries of the plantation, or
- For maintenance of existing slashed breaks.

"Within the boundaries of the plantation" means within the area of planted trees, not necessarily the property boundary. Where the property boundary extends beyond the planted area, any APZ clearing must be either of the planted area itself, or maintenance of existing slashed breaks. Native vegetation between the planted area and property boundary is not permitted to be cleared using this provision.

If there are existing slashed breaks around the plantation these can be maintained up to a maximum of 30 metres. If the slashed breaks are less than 30 metres then they cannot be extended to 30 metres under the Code. If the slashed breaks extend beyond the property boundary, the written permission of the adjacent land owner is required for a 100F Certificate to include works on that land.

The work must not involve the removal of native vegetation that has been retained to be managed for biodiversity as part of the plantation authorisation. Therefore the CIO will need to contact DIPNR, or view the authorisation. If the authorisation cannot be obtained, then obtain a written statement from the plantation owner stating the conditions that apply, if any.

☑ Condition: 'All {select clearing type} permitted by this Certificate must be contained within the boundaries of the plantation'

OR

☑ Condition: 'All {select clearing type} permitted by this Certificate must be restricted to existing cleared breaks'

AND

☑ Condition: 'This Certificate does not permit the removal of native vegetation that has been retained for biodiversity outcomes as part of a plantation authorisation under Division 6 of the Plantations and Reafforestation (Code) Regulation 2001'

OR

☑ Condition: 'This Certificate does not permit the removal of any native vegetation'

☒ Denied Reason: 'Inconsistent with requirements for an APZ'

2.3.2 Type of works permitted within an APZ

The following works are permitted within an APZ, if assessed to be in accordance with Part 4 and/or Part 5 of the Code:

(a) **Mechanical** hazard reduction to establish or maintain an APZ. Works must be assessed in accordance with Part 4 of the Code,

(b) **Removal or pruning of trees**. Works must be assessed in accordance with Part 4 of the Code,

(c) **Prescribed burning**. Works must be assessed in accordance with Part 5 of the Code,

(d) **Construction of control lines** for the safe containment of a prescribed burn. Works must be assessed in accordance with Part 5 of the Code, and

(e) **Pile burning** for the disposal of vegetation removed during APZ or SFAZ works:

An approval to burn the pile is only required where such burning is restricted by the Control of Burning Regulation (Schedule 1 Part 1 and 2 areas).

Must be a pile (as per *Standards for Pile Burning*) not a windrow. See section 4.1 for further detail to determine if the pile is appropriate.

Only permitted where the material in the pile cannot be disposed of by other means, e.g. disposed of by green waste/garbage removal, taken to tip, or mulched/composted on site.

If a Certificate hasn't been issued for the works that created the pile, other approval (if approval required for the activity) needs to be shown before a Certificate can be issued to burn the pile.

Works must be assessed in accordance with the requirements of clauses 5.1, 5.2, 5.4, 5.6, 5.7, 5.8 and 5.9 of the Code.

☒ Denied Reason: 'Inconsistent with requirements for an APZ'

☞ IF ONLY FOR APZ AND FOR MECHANICAL WORKS GO TO CHAPTER 3

☞ IF ONLY FOR APZ AND ONLY FOR BURNING GO TO CHAPTER 4

2.4 Strategic Fire Advantage Zones (SFAZ) (Clause 3.3)

2.4.1 Extent of works permitted within a SFAZ

SFAZ works can only be approved on land identified or mapped as SFAZ within the Bush Fire Risk Management Plan.

☒ Denied Reason: 'Inconsistent with BFRMP'

Note that SFAZ works may be conducted around a plantation if:

(a) The plantation is identified in the BFRMP, and

(b) A SFAZ for the plantation is described in the BFRMP.

In these cases, low intensity prescribed burning can be assessed as per SFAZ works up to the first natural containment line within 1000 metres of the plantation.

☒ Denied Reason: 'Inconsistent with requirements for a SFAZ'

Ensure that if the work extends onto an adjacent property, that the written consent of all owners of that property are included on the application.

! A map defining the boundaries and extent of permissible work for a SFAZ must be attached to the Certificate.

☑ Condition: ''All {hazard reduction work} permitted by this Certificate shall be carried out within the areas identified on the attached map'

☞ IF NOT FOR SFAZ GO TO SECTION 2.5

2.4.2 Type of works permitted within a SFAZ

The following works are permitted within a SFAZ, if assessed to be in accordance with Part 4 and/or 5 of the Code:

(a) **Mechanical** work. Only permitted:

- along existing linear fire breaks that are identified in the BFRMP, or
- along boundary fences (to a maximum width of 6 m).

Must not involve the removal of native vegetation that is more than 10 years old. The age of the vegetation can be determined from site inspection or local records. If you think the age of the vegetation is close to 10 years but unsure contact Region for advice. Works must be assessed in accordance with Part 4 of the Code;

☑ Condition: 'All {clearing type} permitted by this Certificate must be restricted to existing cleared breaks'

AND/OR

☑ Condition: 'All {select clearing type} is permitted to a maximum distance of {insert distance} metres to the {insert direction} of the fence'

AND

☑ Condition: 'This Certificate does not permit the removal of any vegetation that is more than 10 years old'

☒ Denied Reason: 'Native vegetation to be removed is more than 10 years old'

(b) **Prescribed burning**. Works must be assessed in accordance with Part 5 of the Code;

(c) **Construction of control lines** for the safe containment of a prescribed burn. Works must be assessed in accordance with Part 5 of the Code;

(d) **Pile burning** (as per APZs as described above in 2.3.2); and

(e) **Windrow burning** for disposal of windrows created as part of plantation operations (as defined in the *Plantations and Reafforestation Act 1999*).

A Certificate can not be issued for any other windrows, e.g. clearing for development or agriculture.

Evidence of approval to create the windrow must be presented before a Certificate can be issued to burn a windrow.

The windrow must be considered to be a fire hazard

Works must be assessed in accordance with Part 5 of the Code.

☒ Denied Reason: 'Inconsistent with requirements for a SFAZ'

☞ IF ONLY FOR SFAZ AND FOR MECHANICAL WORKS GO TO CHAPTER 3

☞ IF ONLY FOR SFAZ AND ONLY FOR BURNING GO TO CHAPTER 4

2.5 Land Management Zones (LMZ) (Clause 3.3)

2.5.1 Extent of works permitted within a LMZ

Land Management Zone works are permitted within land described or mapped as a LMZ in the BFRMP.

☒ Denied Reason: 'Inconsistent with BFRMP'

Hazard reduction in a LMZ should aim to provide a mosaic of areas with varying fuel load structures within the landscape. Equally, LMZs should be managed to allow optimum fire intervals for the maintenance of biodiversity.

These two goals can be met by careful planning to target appropriate areas to be burnt on a rotational basis over a period of several years. The BFRMP may give some guidance on how to implement this within an LGA.

Note that, as per Code clause 3.1, the work must have a hazard reduction value.

Where possible, the extent of works approved should take advantage of existing or natural containment lines.

Ensure that if the work extends onto an adjacent property, that the written consent of all owners of that property are included on the application.

! The area to which the LMZ works applies must be mapped as a condition within the Certificate.

☑ Condition: 'All {hazard reduction work} permitted by this Certificate shall be carried out within the areas identified on the attached map'

2.5.2 Type of works permitted within a LMZ

The following works are permitted within a LMZ, assessed in accordance with Part 5 of the Code:

(a) **Prescribed burning**. Works must be assessed in accordance with Part 5 of the Code;

(b) **Construction of control lines** for the safe containment of a prescribed burn. Works must be assessed in accordance with Part 5 of the Code; and

(c) **Windrow burning** (as per SFAZs as described above in 2.4.2).

☒ Denied Reason: 'Inconsistent with requirements for a LMZ'

☞ IF ONLY FOR LMZ AND BURNING GO TO CHAPTER 4

3 MECHANICAL HAZARD REDUCTION

3.1 Methods of mechanical hazard reduction

Mechanical works as described in the Code are in categories that represent increasing levels of environmental impact. Hence greater restrictions (i.e. for soil erosion and riparian buffers) are placed on methods with a greater impact.

The categories used in the Code are:

- Use of hand tools and hand held machinery

  Hand tools include tools such as rakes, hoes, leaf blowers. These are used to remove the fine fuel/leaf litter layer from the ground. This material is gathered and disposed of safely (compost/mulch, green waste collection, pile burning). If the Certificate is to approve only this type of work, select “hand clearing” as the method in BRIMS.

  Hand held machinery includes tools such as brushcutters and push mowers. These are used to keep grass, weeds and similar vegetation short, where understorey vegetation has already been removed/reduced. Select “mowing/brushcutting” as the method in BRIMS.

  Both hand tools and hand held machinery may be used together. If this is the intention then select “hand clearing/mowing/brushcutting” as the method in BRIMS.

- Use of slashing machinery

  This includes machines such as slashers, ride-on mowers, tractor-towed implements, reach mower or flail head type extensions, and tritterers. These are used to remove understorey vegetation. Select “slashing/trittering” as the method in BRIMS.

- Use of graders, ploughs and dozers

  These are to be used only for vegetation removal, not for earth-moving. Select “ploughing/grading” as the method in BRIMS.

- Tree removal and pruning

  When assessing tree works, a determination must be made of whether pruning is sufficient, or removal required (see section 3.4). Select either “tree pruning” or “tree removal” as the method in BRIMS.

3.2 Land to which mechanical works do not apply (Clause 4.1)

Mechanical works (other than construction of control lines using hand tools) cannot be approved within areas of isolated vegetation including:

(a) A patch of vegetation that is less than 1 hectare in size and greater than 100 metres away from any other patch of vegetation that is greater than 1 hectare; or

(b) A linear strip of vegetation (e.g. road, rail or stream corridor) that is less than 20 metres wide.

A 20 metre wide linear strip of vegetation refers to the width of the strip of vegetation either side of the road, rail or stream corridor.

In the case of vegetation patches larger than 1 hectare clearing the vegetation cannot be continued beyond the point at which the patch becomes smaller than 1 hectare.

In the case of linear strips of vegetation wider than 20 metres, clearing the vegetation cannot be continued beyond the point at which the strip of vegetation becomes narrower than 20 metres.

The area of vegetation needs to be distinguished from surrounding managed vegetation, that is "managed grassland" (e.g. recreational areas, commercial/industrial land, residential land, airports/airstrips, gardens, and lawn) or "agricultural lands" (e.g. grazing land, cropping land, market gardens, and nurseries). Isolated vegetation (as described above) that is surrounded by a larger area of managed vegetation is still to be treated as isolated vegetation. In situations where a hazard exists due to the combined area and state of the managed vegetation, the managed vegetation is to be treated regularly rather than clearing the isolated vegetation. If unsure seek advice from Region.

It may be difficult to determine the size of a patch from aerial photos due to incremental clearing or revegetation subsequent to the photo being taken. It may be necessary to confirm the size of the patch during a site visit.

It may be prudent to inspect all the assets surrounding the patch (particularly those just larger than 1 hectare) to ensure that the limited amount of vegetation that can be cleared is cleared at the most appropriate places. For example, dwellings on the other side of the patch may not have any setback from the vegetation and it would be better to establish an APZ for these dwellings rather than the dwelling proposed.

☒ Denied reason: 'Isolated vegetation prevents works'

☞ IF RESTRICTIONS ABOVE APPLY THEN STOP OR CONSIDER BURNING

! Note that for land restricted by clause 2.4 of the Code, mechanical works must be restricted to selective weed removal only. See section 1.11 for details.

3.3 Soil erosion (Clause 4.2)

3.3.1 General mechanical clearing

Some proposals involve only the raking of surface fine fuels with the intention of conducting a pile burn. The clearing work should also be approved by the Certificate as hand clearing within the APZ area.

☑ Condition: 'All clearing permitted by this Certificate involves the manual removal of fine fuels (leaf litter and naturally fallen vegetation) only'

Removed vegetation must not be left in a manner causing a fire hazard. Vegetation material may be mulched or composted on the site, removed from the site and disposed of sensibly (e.g. Council tip or green waste depot), or a pile burn approved if appropriate.

Determine whether a pile burn is an appropriate method of disposal for removed vegetation. A pile burn may not be appropriate in many circumstances, e.g. residential areas, where there is no safe location, where smoke management is difficult (e.g. near main roads).

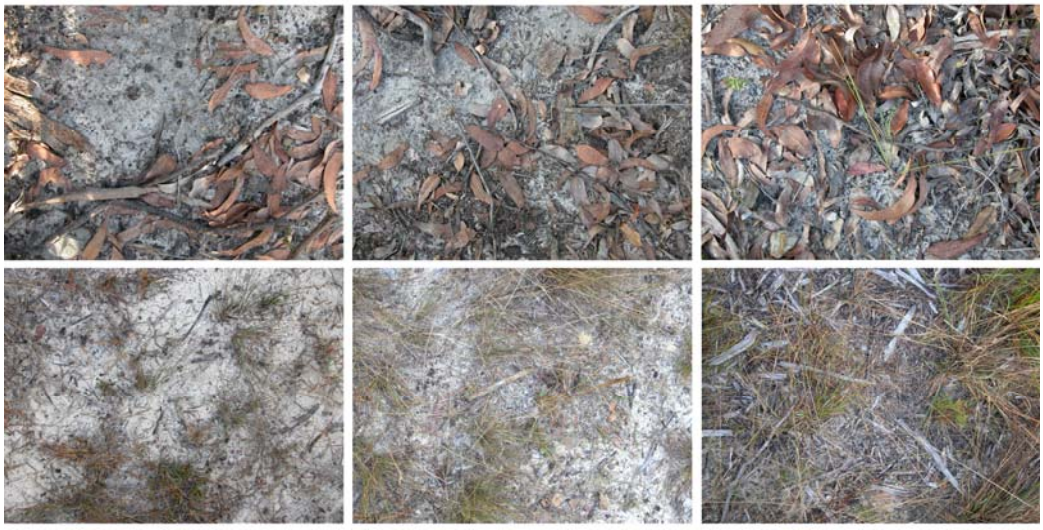
! If a pile burn is required, determine whether approval is required. This must be assessed under Part 5 of the Code.

☑ Condition: 'Removed vegetation should be mulched or removed from the site for disposal at a suitable location (e.g. Council tip)'

3.3.2 Ground Cover

Mechanical works that result in an exposed soil surface render the ground vulnerable to erosion. To minimise soil erosion, at least 75% ground cover (see Figure 3.1) should be retained (increased to 90% for slashing where SER is 80-220 t/ha). In areas to be maintained permanently as APZs, a suitable groundcover (e.g. short grass cover) is to be established.

NB It is understood that 75% ground cover cannot be retained in circumstances where there is less than 75% cover occurring naturally prior to the works being carried out. Consider whether natural litter fall will assist ground cover in the short term or whether spreading of some of the cleared vegetation is required.



50% 75% 100%

Figure 3.1 Comparison of ground cover

☑ Condition: 'At least 75% ground cover should be maintained, in accordance with the RFS document *Standards for Asset Protection Zones*'

☑ Condition: 'A permanent groundcover (e.g. short grass) must be established within the asset protection zone'

3.3.3 Standards for soil erosion where maps of Soil Erosion Risk are available

📖 Soil erosion risk maps have been developed by DNR. This classifies the susceptibility of an area to erosion based on soil regolith, rainfall erosivity and slope. A further map is also being developed by DNR indicating areas susceptible to mass movement. These maps will be made available through BRIMS, where they exist (see Figure 3.2).

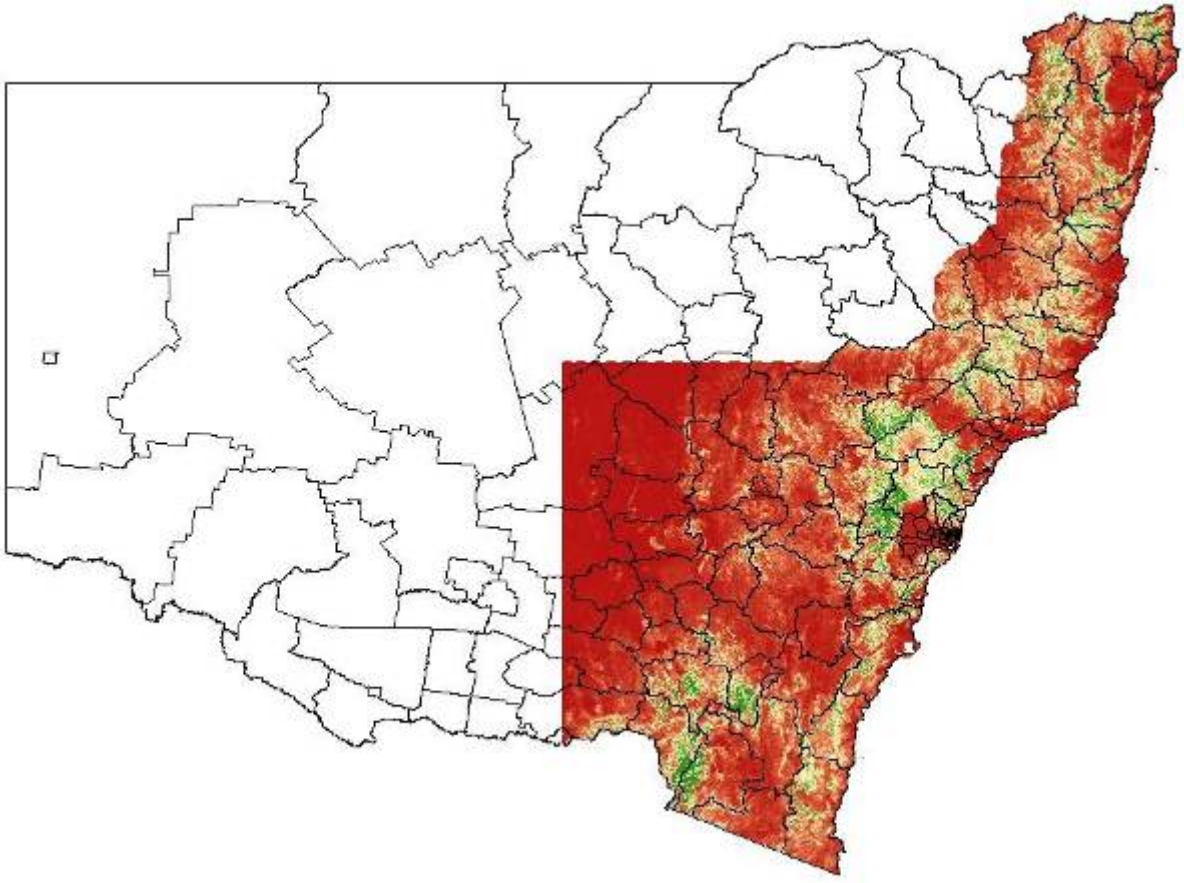


Figure 3.2 Current extent of Soil Erosion Risk mapping

Restrictions apply to mechanical works depending on the method of works and the soil erosion risk class, as per clause 4.2.1 of the Code. A Certificate may only be issued where works are consistent with the requirements of the relevant mapped Soil Erosion Risk classification as specified in Tables 4.1 (for APZs) and 4.2 (SFAZs) of the Code (below).

Where land is mapped as susceptible to mass movement, works must be consistent with the relevant conditions specified in Tables 4.1 (APZs) and 4.2 (SFAZs) of the Code (below).

Code Table 4.1 Works permissible within APZs

SER Map	Soil Erosion Risk (t/ha/yr)	Use of hand tools and hand held machinery	Use of slashing machinery	Use of graders, ploughs and dozers	Removal and pruning of trees
Green	0-40	Permitted	Permitted	All topsoil must remain on the soil surface	Permitted
Light Green	40-80	Permitted	Permitted	All topsoil must remain on the soil surface. Where possible, machinery work must be conducted parallel to contours	Permitted
Yellow	80-150	Permitted	Vegetation must not be slashed below 5 cm. Maintain at least 90% ground cover	Not permitted	Root structure of removed trees must be left undisturbed
Orange	150-220	Permitted	Vegetation must not be slashed below 10 cm. Maintain at least 90% ground cover	Not permitted	Pruning only. 75% of original canopy cover must be retained
Red	Over 220 or land susceptible to mass movement	Permitted	Not permitted	Not permitted	Pruning only. 75% of original canopy cover must be retained

Code Table 4.2 Works permissible within SFAZs

SER Map	Soil Erosion Risk (t/ha/yr)	Use of hand tools and hand held machinery	Use of slashing machinery	Use of graders, ploughs and dozers
Green	0-40	Permitted	Permitted	All topsoil must remain on the soil surface
Light Green	40-80	Permitted	Vegetation must not be slashed below 5 cm	All topsoil must remain on the soil surface. Where possible, machinery work must be conducted parallel to contours. There must be a time interval of 2 years between successive work
Yellow	80-150	Permitted	Vegetation must not be slashed below 5 cm. Maintain at least 90% ground cover	Not permitted
Orange	150-220	Permitted	Vegetation must not be slashed below 10 cm. Maintain at least 90% ground cover	Not permitted
Red	Over 220 or land susceptible to mass movement	Permitted	Not permitted	Not permitted

Note that the Soil Erosion Risk Map is based on 25 or 100 metre grids (NB DIPNR is moving toward 25 metre grid in all areas over time). Therefore the coloured classes will appear as square grids when zooming in on the map (see Figure 3.3). The works approved within the Certificate must comply with the requirements of the tables above, i.e. where overlap occurs between the classes use the higher class. However, site inspections may reveal that using the lower class is sensible and appropriate along the boundary of two classes where it is clear that the nature of the landscape conforms to the lower class. Discuss this with Region if you are considering applying this.

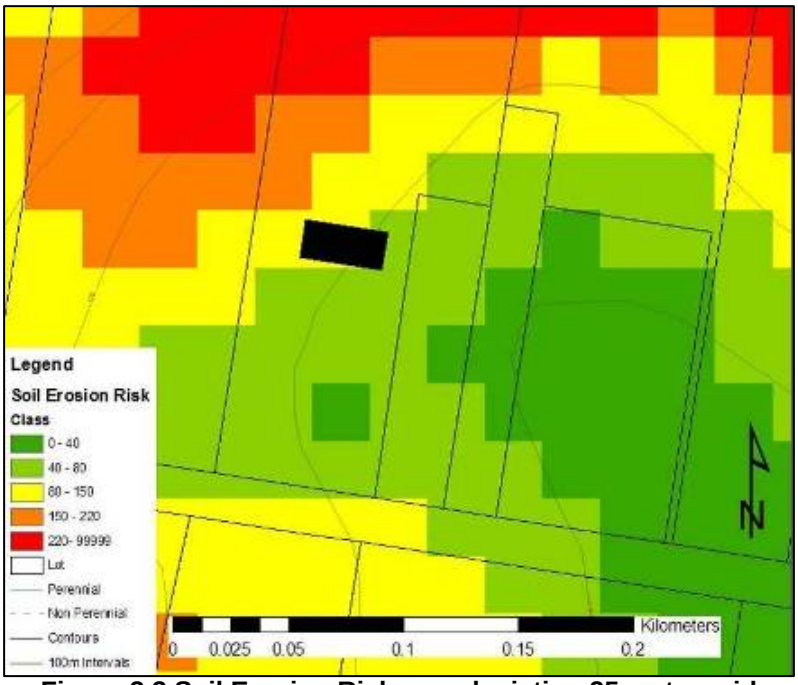


Figure 3.3 Soil Erosion Risk map depicting 25 metre grid

3.3.4 Standards for soil erosion where maps of Soil Erosion Risk are not available

Where a soil erosion risk map has not been supplied, restrictions to method of mechanical works are based on slope, as per clause 4.2.2 of the Code as indicated below:

Use of hand tools and hand held machinery

- Permissible on all slopes

Use of slashing machinery

- Not permitted on slopes greater than 18°
- On slopes greater than 10° slashing must not leave vegetation shorter than 10 cm from the ground surface
- Note: the operation of machinery on slopes greater than 15º may be unsafe

Use of graders, ploughs and dozers

- Not permitted on slopes greater than 10°
- Machinery work must not reshape the soil surface or result in re-direction of surface water runoff
- All topsoil must remain on the soil surface
- Machinery work should be conducted parallel to contours

Tree removal and pruning

- Only permitted within APZs
- Where trees are removed on slopes greater than 10°, the root structure must be left undisturbed
- Tree removal is not permitted on slopes greater than 18°
- Pruning is only permitted on slopes greater than 18° if at least 75% of the original canopy cover is retained

3.3.5 Summary of standards for both methods of managing soil erosion

Use of hand tools or hand held machinery

- Removal of vegetation (other than trees) with hand tools or hand held machinery is permitted on all SER classes and all slopes

Use of slashing machinery

- Slashing and trittering cannot be approved on SER >220 t/ha, land susceptible to mass movement, or slopes greater than 18°
- Where SER exceeds 150 t/ha (or slope exceeds 10 degrees) vegetation must not be slashed below 10 cm height. Ground cover needs to be retained at 90%. This may require distributing slashed vegetation over the ground surface
- Where SER exceeds 80 t/ha vegetation must not be slashed below 5 cm height. Ground cover needs to be retained at 90%. This may require distributing slashed vegetation over the ground surface
- Where SER exceeds 40 t/ha in a SFAZ vegetation must not be slashed below 5 cm height

☑ Condition: 'Vegetation must not be slashed below {5 or 10} cm height'

☑ Condition: 'At least 90% ground cover is to be maintained. This may require distribution of some mulched vegetation over the ground surface'

☑ Condition: 'All {clearing type} permitted by this Certificate shall be conducted in a manner to ensure the retention of all topsoil on the ground surface'

☑ Condition: '{clearing type} is not permitted within the exclusion area identified on the attached map'

☑ Condition: '{clearing type} is not permitted on slopes exceeding {18} degrees'

☑ Condition: 'Clearing on land with slopes greater than 18 degrees is to be done by selective hand clearing only. Caution will need to be exercised on steep land'

☑ Conditions: 'Trees and shrubs less than 3 metres in height may be removed as part of the {clearing type} approved by this Certificate'

☒ Denied Reason: 'Soil erosion standards prevent works'

Use of graders, ploughs and dozers

- Use of graders, ploughs and dozers cannot be approved on SER >80 t/ha, land susceptible to mass movement, or slopes exceeding 10 degrees
- Machinery work should be conducted parallel to contours
- In SFAZ there must be an interval of 2 years between successive works

☑ Condition: 'All {clearing type} permitted by this Certificate shall be conducted in a manner to ensure the retention of all topsoil on the ground surface'

☑ Condition: 'Machinery work must be conducted in a manner to prevent the re-shaping of the soil surface or the re-direction of surface water runoff'

☑ Condition: 'Machinery work must be conducted parallel to the contour of the land'

☑ Condition: '{clearing type} is not permitted within the exclusion area identified on the attached map'

☑ Condition: '{clearing type} is not permitted on slopes exceeding {10} degrees'

☒ Denied Reason: 'Soil erosion standards prevent works'

Tree removal or pruning

- Tree removal cannot be approved where SER exceeds 150 t/ha (or slope exceeds 18 degrees) or on land susceptible to mass movement
- For tree removal where SER exceeds 80 t/ha (or slope exceeds 10 degrees), the root structure of the tree must be left undisturbed
- For tree pruning where SER exceeds 150 t/ha (or slope exceeds 18 degrees), at least 75% of the natural canopy cover must be retained

☑ Condition: 'The root structure of removed trees must be left undisturbed'

☑ Condition: 'Pruning works must leave at least 75% of the canopy cover intact'

☒ Denied Reason: 'Soil erosion standards prevent works'

3.4 Tree removal and pruning (Clause 4.4)

3.4.1 Determine if tree works are permitted

Tree works (removal/pruning) are only permitted:

(a) Within an APZ

(b) If the tree/s are:

- within 5 m of a building, or
- part of a continuous canopy within the APZ.

Tree works are not permitted:

(a) within a SFAZ or LMZ,

☒ Denied Reason: 'Inconsistent with requirements for a SFAZ/LMZ'

(b) where soil erosion provisions prevent tree works, i.e.:

- Soil Erosion Risk is greater than 220 (t/ha/yr),
- slopes are greater than 18 degrees, or
- land is mapped as susceptible to mass movement.

☒ Denied Reason: 'Soil erosion standards prevent works'

☞ IF NO TREE REMOVAL GO TO SECTION 3.4

3.4.2 Provisions and conditions for tree works

When assessing the removal of trees to create or maintain an APZ under the provisions of the Code, the following criteria apply:

- Any part of a tree within 5 metres of the building may be removed (this may involve pruning of the tree, rather than total removal);
- The canopy should be discontinuous – approval can be given for works to separate tree crowns by a maximum of 5 metres (again, this may involve pruning of the tree, rather than total removal);
- Removal of trees and shrubs less than three metres in height can be permitted;
- Skirting (the removal of lower branches) to separate the tree canopy from the ground or understorey vegetation should be used in preference to tree removal where appropriate; and
- Pruning or branch removal must be carried out in accordance with *Standards for Asset Protection Zones* or *AS 4373 – 1996 Pruning of Amenity Trees*.
  These documents provide advice on pruning practices and procedures that reduce the risk of: hazard development, branch failure, fungal infection, premature tree death, and unbalancing a tree such that it is more prone to falling under wet and/or windy conditions.

In selecting trees for removal the following is to be applied:

- Trees that have been determined to be dangerous by the local authority should be removed in preference to other trees;
- Species that are noxious or environmental weeds should be removed in preference to other species;
- Non-native species should be removed in preference to native species wherever possible;
- Species with rough, flaky or stringy bark should be removed in preference to those with smooth or tightly held bark;
- Small trees without hollows should be removed in preference to large trees and trees with hollows;
- Locally common species should be removed in preference to species that are regionally significant or valuable for habitat or food source;

Consideration for tree works:

- Be familiar with your local Council's Tree Preservation Order,
- Do not approve works on species listed as significant, heritage, etc within Council's Tree Preservation Order without discussing with Council's Tree Preservation Officer
- Discuss tree work applications with your Council's Tree Preservation Officer if relevant,
- Take great care to specify the trees that can be removed/pruned,
- Be sure the applicant is aware of what tree works you have approved, and
- Advise the applicant to use an arborist particularly in relation to safe implementation of *AS 4373 – 1996 Pruning of Amenity Trees*.

! Selection of trees to be removed or pruned is the responsibility of the CIO not the applicant. During the site inspection:

Determine if any trees are within 5 m of a building

Determine if the tree canopy within the APZ is continuous

! If yes, then:

Determine if separation from the building and/or canopy separation can be achieved with safe pruning rather than full tree removal

Determine which trees need to be pruned/removed to achieve separation from the building and/or canopy separation

! If several trees are to be removed, use the rules above to determine the order in which to remove them

! Any trees selected for removal or pruning must be clearly indicated to the applicant. The most appropriate method will depend on the site details and number of trees selected for works. Methods may include one or several of the below:

Clear indication of the location of tree/s on a map

Photographs that clearly identify the tree/s

Physically marking the tree/s to be removed

Physically marking the tree/s to be retained

Conditions for selection of trees to be removed/pruned:

☑ '{insert number} trees may be {method of tree works}, as specified on the attached map and photos'

OR

☑ '{insert number} trees may be {method of tree works}, as specified on the attached map'

OR

☑ 'Trees marked {insert details} may be {method of tree works}'

OR

☑ 'All trees marked {insert details} are to be retained. This Certificate does not permit the pruning or removal of these trees'

General tree works conditions:

☑ 'Do not remove, prune or damage any tree contrary to Council's Tree Preservation Order

☑ 'Skirting (removal of branches within 2 metres of ground level) of trees is permitted within {distance} metres of the {asset type}'

☑ 'This Certificate does not permit the removal of any trees greater than 3 metres in height or greater than 300 mm in girth (as measured at 1.3 metres above ground level)'

Tree pruning conditions:

☑ 'Pruning or branch removal must be conducted in accordance with the RFS document *Standards for Asset Protection Zones*'

OR

☑ 'Pruning or branch removal must be conducted in accordance with Australian Standard 4373-1996 Pruning of Amenity Trees'

AND

☑ 'A qualified arborist is required for all tree removal or pruning works'

☒ Denied Reason: 'Inconsistent with requirements for an APZ'

3.5 Aboriginal heritage site assessment (Clause 4.6)

3.5.1 General

Aboriginal people have lived in NSW for more than 50,000 years. This occupation is reflected across the landscape in many different ways. Many people are familiar with shell middens, rock art, stone artefacts and other such tangible objects. However, not everyone is aware of the existence and importance of places of social significance. These include sites that have spiritual, traditional, historical or contemporary associations, such as ceremonial sites, burial sites, dreaming sites and massacre sites. These sites may not always have physical evidence of their existence, and if so may not be readily apparent to the untrained eye.

The loss or damage of Aboriginal objects and places is an irreplaceable loss of Australia's rich heritage and is of significant concern to Aboriginal people and other Australians. Bush fire hazard reduction works can have significant impact upon these values and must therefore be undertaken with a level of understanding of the potential for damage. The State and Commonwealth laws reflect the importance of these sites. It is therefore important that the Certificate Issuing Officer ensures that the landholder is fully aware of their obligations. This applies equally to informing RFS volunteers who may be assisting in the implementation of a hazard reduction.

DEC maintains the Aboriginal Heritage Information Management System (AHIMS). This includes a database of sites that have been reported to DEC. If the area of interest is particularly large or contains data of a sensitive nature, an Aboriginal Heritage Information Licence Agreement (AHILA) may be required. This is an agreement between DEC and the Issuing/Certifying authority, and is designed to ensure that any data supplied under the agreement is used appropriately.

Liaison should be established with the Aboriginal groups within your area to gain an understanding of local concerns and negotiate the best outcome in sensitive areas. It is important to be aware that the data within the AHIMS database is limited to that which has been provided to DEC. Other areas will exist and should be taken into account if identified by chance or if advised of as such by local Aboriginal groups.

If new Aboriginal objects or places are identified during hazard reduction works, they should be protected from impact and DEC must be advised immediately. Of particular importance are Aboriginal burials. Where skeletal material is discovered during hazard reduction activity, the police should be contacted immediately and the area treated as a potential crime scene. The police will determine if the area is a crime scene and contact DEC if the remains appear to be of Aboriginal origin.

3.5.2 Determining presence of Aboriginal heritage sites

3.5.2.1 Issuing Authorities

Applications for hazard reduction must be referred to DEC in the following cases to ensure protection of Aboriginal sites:

- ! If the proposal involves slashing and/or trittering in areas not previously subject to slashing, trittering, significant tree removal or earthworks
- ! If the proposal involves removal of trees with a trunk greater than 100cm in diameter at breast height

If DEC does not meet the 3 working day turn around then the Issuing Authority may proceed to process the application (NB this does not apply to Certifying Authorities, see below).

Note: RFS Districts that have a data licence agreement in place with DEC are not required to refer to DEC (for the areas subject to the licence agreement) unless records indicate that Aboriginal sites are in the area to be subjected to the hazard reduction works. In these situations, the full process described above applies.

3.5.2.2 Certifying Authorities

Certifying authorities that have a data licence agreement in place with DEC are not required to refer to DEC (for the areas subject to the licence agreement).

Certifying authorities that do not have a data licence agreement must refer the proposal details to DEC (Cultural Heritage Division) in the circumstances described in 3.4.2.1 above.

If DEC does not meet the 3 working day turn around then the Certifying Authority must consult with DEC before proceeding with the Certificate. The intent here is to require consultation with DEC before proceeding with the proposal to ascertain the status of the request for information. A timeframe for DEC's response should be arranged.

3.5.3 Process of referral to DEC

The Certificate Issuing Officer must send to DEC (Cultural Heritage Division):

! a copy of the application

! a map indicating location of proposed works (preferably topographic map)

! full grid references for the location of proposed works

📖 Fax: 9585 6094 addressed to the "AHIMS Registrar" with the subject "Hazard Reduction Certificate Aboriginal site search"

📖 Email: ahims@npws.nsw.gov.au with the subject "Hazard Reduction Certificate Aboriginal site search"

📖 Telephone: 9585 6513

DEC will provide information to the Certificate Issuing Officer within 3 working days, detailing any Aboriginal sites of concern.

The 3 working day turn around does not commence until receipt of the information by DEC (Cultural Heritage Division).

3.5.4 Determining management conditions for Aboriginal heritage

DEC will provide the Issuing/Certifying Authority with written advice as to whether Aboriginal sites are within the vicinity of the land planned to be hazard reduced. This advice will include the type of site feature that occurs (identified by its AHIMS code acronym, see Table 3.1).

☞ If no sites are identified, GO TO SECTION 3.5

Where Aboriginal heritage sites are indicated to be present, then hazard reduction works must be undertaken in accordance with the relevant conditions specified in the RFS/DEC document *Conditions for Hazard Reduction and Aboriginal Heritage* (see Appendix 1). The requirements from this document are addressed below, and in Table 3.1 and Figure 3.4.

! The preferred hazard reduction method must be used unless there is a valid reason (e.g. safety) to use another method.

! If the preferred method can not be use, the method used must have a low or medium impact (see Appendix 1). If the hazard reduction method has a high impact, it can not be used within 100 metres of the identified site location. This will require exclusion of this area from the hazard reduction activity, or denial of the Certificate.

! Where multiple site types are identified, conditions for all site types must be applied. Where there is a conflict in the preferred method or the conditions, contact NES before continuing

Table 3.1 Aboriginal site feature codes and groups

CODE	SITE FEATURE	SITE GROUP	PREFERRED HR METHOD
ACD	Aboriginal Ceremony and Dreaming	5	Low intensity burn
ARG	Aboriginal Resource and Gathering	3	Hand clearing
ART	Art	2	Hand clearing
AFT	Artefacts	1	Low intensity burn
BUR	Burials	5	Low intensity burn
CMR	Ceremonial Ring	5	Low intensity burn
CFT	Conflict	5	Low intensity burn
ETM	Earth mound	1	Low intensity burn
FSH	Fish Trap	4	Low intensity burn
GDG	Grinding Grooves	2	Hand clearing
HAB	Habitation Structure	3	Hand clearing
HTH	Hearth	1	Low intensity burn
TRE	Modified Tree	3	Hand clearing
BOM	Non Human Bone and Organic Material	1	Low intensity burn
OCQ	Ochre Quarry	1	Low intensity burn
PAD	Potential Archaeological Deposit	1	Low intensity burn
SHL	Shell	1	Low intensity burn
STA	Stone Arrangement	4	Low intensity burn
STQ	Stone Quarry	4	Low intensity burn
WTR	Waterhole	3	Hand clearing

 Enter the Site Group into BRIMS

 In BRIMS, an Aboriginal Heritage Conditions list will appear on the Conditions List page. Select all relevant conditions for the site type as per *Conditions for Hazard Reduction and Aboriginal Heritage*

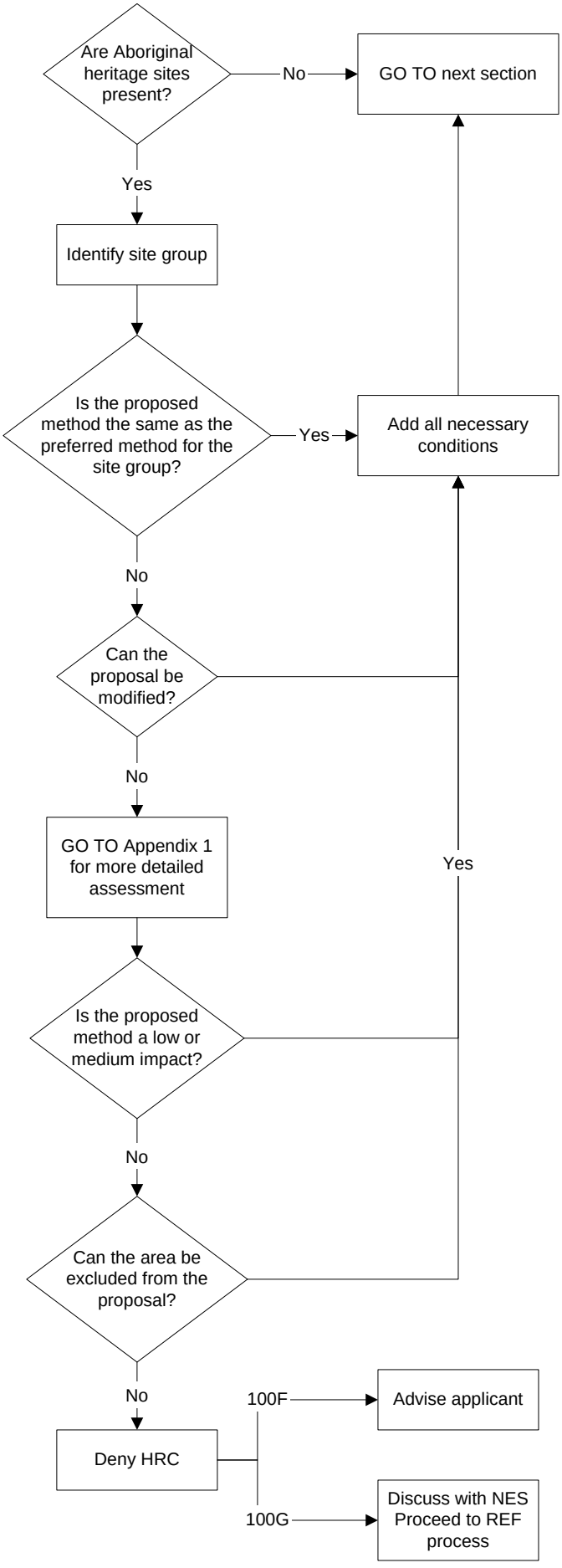


Figure 3.4 Aboriginal heritage site assessment

General considerations that need to be taken into account:

- Ensure that the person/s undertaking the works recognises that all aspects of all Aboriginal sites must be treated with respect, keeping in mind that things of significance are not always apparent when one is not familiar with different belief systems;
- In addition, it is to be made clear to the person/s carrying out the works that any other areas that contain features similar to the identified site features must also be hazard reduced in accordance with the relevant conditions;
- Partake in discussions with personnel undertaking the hazard reduction activities to ensure that they understand and respect cultural values, including respect for confidentiality of sites, and their role in being stewards for Aboriginal people and Australian history;
- Ensure conditions are addressed for at least 100 metres in all directions from the identified site location.

☑ Conditions: Select all relevant conditions for the site group and HR method from Conditions document

AND/OR

☑ If further detailed conditions are required, enter them as free text conditions within the Aboriginal Heritage Conditions list section.

The following conditions must be applied to the Bush Fire Hazard Reduction Certificate for all site feature groups and hazard reduction methods:

☑ No one must drive off established roads in the vicinity of the site

☑ Unnecessary walking within the site area must be avoided

☑ Hoses and other equipment must not be dragged across Aboriginal sites

☑ Rubbish must not be left within the site

☑ All known sites are to be re-inspected after hazard reduction works are completed, and if any site disturbance has occurred then details must be provided to DEC

☒ Denied Reason: 'Aboriginal heritage conditions prevent work'

3.6 Threatened species assessment (Clause 4.5)

3.6.1 General

Threatened species, populations and ecological communities (EECs) can all be significantly impacted by bush fire hazard reduction works. Because they are at risk of extinction they require careful management to ensure their continued existence. The NSW and Commonwealth Government provide for strict penalties for harming and damaging threatened species, populations and EECs without obtaining appropriate approvals. Further, the government allocates resources toward recovery programmes for these species, populations and EECs. It is therefore important to consider and ameliorate any adverse impacts that might occur when undertaking bush fire hazard reduction works. The Code provides the mechanism for these considerations as detailed below.

3.6.2 Determining presence of threatened species, populations or ecological communities

- The locations of threatened species and populations that are required to be addressed have been provided by DEC as the *Threatened Species Hazard Reduction Map*. This is available via MapInfo and BRIMS
- A list of threatened species and populations is provided for each LGA. This was produced by overlaying the location records with Local Government Areas (LGAs)
- The mapping of vegetation across NSW is not always adequate to readily identify and map all EECs. A list of relevant references for the majority of EECs is provided to Certificate Issuing Officers which includes some mapping of the EECs and/or a more detailed description of its likely location
- A list of potential EECs is provided for each LGA. This is based on the NSW Scientific Committee's Final Determinations (www.environment.nsw.gov.au) which include reference to the LGAs where each EEC is likely to occur. NB In some cases EECs are identified at the Bioregional scale although the EEC may not occur in every LGA within that Bioregion

If you are aware of any threatened species, populations or EECs in your area that are not identified on the TSHR Map then you should also address the conditions as if it was identified. This is in accordance with the RFS's Ecologically Sustainable Development obligations under s9(3) of the *Rural Fires Act*. Advise DEC as soon as possible of new locations.

In addition to the above, a Certifying Authority must determine the likely presence or otherwise of any threatened species, populations or EECs from such data, reports or papers available to the Certifying Authority.

Due to the sensitivity of the threatened species data the site specific location of records is only available to authorities who operate in accordance with a DEC threatened species data licence that applies to them. The RFS has a licence with DEC for the use of threatened species location data. Data is only to be used for the purpose of Certificate assessment and other purposes authorised by the data licence agreement. Other authorities who issue or certify certificates are required to formally agree to the conditions of the RFS threatened species licence prior to using threatened species data in BRIMS. The RFS can assist authorities with this matter.

! In all cases consult the *Threatened Species Hazard Reduction Map* and *List*. For Certifying Authorities utilise the above and any relevant data, reports or papers available.

Where a species has been identified, enter the Species Type in BRIMS. A Threatened Species Conditions list will appear on the Conditions List page.

If no threatened species, populations or ecological communities are present GO TO SECTION 3.6

3.6.3 Determining management conditions from the TSHR List

! If threatened species, populations, or EECs are identified on the *Threatened Species Hazard Reduction Map* (and by other means in the case of Certifying Authorities), or otherwise known to occur at the site, then the management actions identified on the *Threatened Species Hazard Reduction List* must be imposed as a condition on any Certificate issued. The List can be viewed on the RFS website www.rfs.nsw.gov.au. See Appendix 2 for explanation of the data fields in the List.

The List will be updated as new threatened species, populations and ecological communities are listed on the *Threatened Species Conservation Act 1995* (TSC Act), and as new information becomes available. The List consists of the following 3 parts:

(a) threatened plants (including endangered populations),

(b) threatened animals (including endangered populations), and

(c) endangered ecological communities.

This section also uses this logical separation to present the general conditions and associated rationale.

📖 Information on threatened species, populations and EECs can be obtained from DEC website www.environment.nsw.gov.au. This site contains species information sheets, recovery plans and photos of some of the species. Be aware that recovery plans require consideration under section 3.8 of the Code. Therefore, any management conditions should reflect considerations within the recovery plan (if one has been prepared).

📖 Threatened species, populations and EECs are listed under the TSC Act by the NSW Scientific Committee if the Committee is of the opinion that the species, population or community is at risk. The Committee provides reasons for the listing and describes the attributes in the form of a Final Determination which can be located on DEC's website www.environment.nsw.gov.au, (then plants and animals, then threatened species and then Scientific Committee determinations).

3.6.3.1 Threatened plants (including populations)

A 100 metre buffer is required in all directions around the known location of any plants. This is principally on the basis that the records are only accurate to 100 metres and the species may occur anywhere within a 100 metre radius of the centre-point of the known location. Therefore no works (mechanical or burning) may be undertaken within this radius unless they are consistent with the conditions on the List and the principles below.

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.

If such works are required within the buffer area around known occurrences of threatened plants then a more detailed assessment of the significance of the expected impacts will be required.

3.6.3.2 Threatened animals (including populations)

The Wildlife Atlas (from which the *Threatened Species Hazard Reduction Map* is derived) is useful for indicating which threatened animals are likely to occur within a broad area. However, as the majority of animal species are mobile, the Wildlife Atlas records have limited use in terms of identifying a species specific location for the purpose of the Code. For example, animals will use a larger area than the area immediately surrounding a site record. Therefore conditions are more descriptive and buffer distances surrounding a known location will vary depending on the species and its habitat requirements. Again, no works (mechanical or burning) may be undertaken within any radius prescribed by the List unless the works are consistent with the conditions on the List and the principles below.

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

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 waterbodies, and thus this habitat can be identified and protected.

It should be noted that the List does not address all threatened animal species and care must be taken as those that are addressed have differing requirements over differing distances.

The RFS will also be working in conjunction with DEC to identify and resolve issues with the TSHR List through the recovery planning and the bush fire risk management planning process.

3.6.3.3 Endangered ecological communities

A site inspection will be required to ascertain the boundary of any EEC. The conditions from the List and the principles below must be applied to all relevant areas of the EEC.

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

If such works are required in areas where EECs are known to occur then a more detailed assessment of the significance of the expected impacts will be required.

3.6.3.4 Outcome

If any threatened species are located in the area, determine if the proposed work can proceed:

! within the specifications of the *Threatened Species Hazard Reduction List*,

! with appropriate conditions, or

! by excluding the area where the threatened species occurs from the hazard reduction approved area.

☑ Conditions: Select all relevant conditions from Threatened Species Hazard Reduction List

AND/OR

☑ If further detailed conditions are required, enter them as free text conditions within the Threatened Species Conditions list section.

OR

☑ Condition: 'No {hazard reduction work} is permitted within the exclusion area marked on the attached map'

If the works cannot progress in accordance with the conditions on the List then a more detailed assessment of the significance of the expected impacts can be undertaken. Proceed to section 3.5.4 below.

3.6.4 Modifying management conditions from the TSHR List

3.6.4.1 Issuing Authorities

Where conditions on the *Threatened Species Hazard Reduction List* would prevent the works, an Issuing Authority may proceed to assess the 100F Certificate if a licence under Section 91 (or a Certificate under Section 95(2)) of the *Threatened Species Conservation Act 1995* has been issued to the landowner by DEC. The conditions in the s91 licence (or s95(2) Certificate) must be imposed.

If a section 91 licence has not been attached to the application, contact the landowner to notify them of the issue and determine how they wish to proceed in light of the following options:

(a) A Certificate could still be issued for a portion of the works if the area containing the threatened species, population or ecological community was excluded from the Certificate;

(b) The Certificate could be issued if a section 91 licence is obtained by the landowner from DEC. The landowner should be advised of the species, population or ecological community of concern and to contact DEC for information on how to proceed; or

(c) The Certificate could be denied and alternative environmental approval sought by the landowner.

☑ Apply all conditions required to comply with the s91 licence

☒ Denied Reason: 'Threatened species conditions prevent work'

3.6.4.2 Certifying Authorities

! For the following provisions to apply you must refer to RFS Head Quarters Natural Environment Services.

This section relates to the RFS for circumstances where the RFS is the proponent by virtue of a section 66 notice, or undertaking works under section 70 or 73 of the RF Act.

Where conditions on the *Threatened Species Hazard Reduction List* would prevent the works, a Certifying Authority may proceed to assess the 100G Certificate in the following circumstances (Note that any assessment under this clause must be referred to RFS Head Quarters Natural Environment Services for assistance and determination):

(a) If a site inspection (under DEC *Threatened Biodiversity Survey and Assessment Guidelines for Developments and Activities*) indicates that the species, population or EEC of concern, or their habitat, is not likely to occur at the site, or

The data location points included in the Threatened Species Hazard Reduction Map are those points expected to be accurate within a 100 metre radius. However, this may not always be the case. A species-specific survey in accordance with DEC's guidelines may be undertaken to ascertain whether the species or its habitat actually occurs on site. An area of at least a 100 metre radius around the expected location is to be surveyed, however, adjacent tenure is not required to be surveyed. This survey only needs to focus on the species identified by the List (and other known records in the case of Certifying Authorities) as occurring at the site. If the species or its habitat is not located at the site then the certificate assessment may proceed as if that species did not occur at the site. A detailed report on the survey must be attached to the file.

(b) If a site assessment/inspection (under DEC *Threatened Biodiversity Survey and Assessment Guidelines for Developments and Activities*) indicates that the location of the species, population or EEC of concern or their habitat is such that the conditions can be modified to protect the species, population or EEC, or the extent of works limited. The principles of making such a modification to the conditions are detailed in the explanatory notes of the *Threatened Species Hazard Reduction List* and must be followed. A detailed report on the survey and the assessment of impacts must be attached to the file, or

The principles of making modifications to the conditions will be refined and improved during 2006 (see Appendix 2 for preliminary determinations). The RFS will prepare species, population and ecological community specific guidelines (where appropriate) in conjunction with DEC. Adding conditions in accordance with these guidelines will enable a Certificate to be issued.

(c) If a licence under Section 91 (or a Certificate under Section 95(2)) of the *Threatened Species Conservation Act 1995* has been issued by DEC. The conditions in the s91 licence (or s95(2) Certificate) must be imposed. The extent of the works sought is to be no more than the minimum required for the protection of life or dwellings only. An explanation for the extent of the hazard reduction proposed is to be provided to DEC.

The RFS is to undertake the appropriate assessment (8 Part Test) and seek the s91 licence from DEC.

The process of applying these alternatives is described below.

1. CIO provide NES with species, population or EEC of concern, details of site (including aerial photos) and nature of intended works.
2. NES ascertain if survey required, and if so the nature of survey to be undertaken and when.
3. NES ascertain whether NES, consultant or CIO is to undertake survey (depending on species of concern and competency of staff).
4. Conduct survey.
5. Person carrying out survey to prepare a report for NES detailing how survey undertaken and findings of survey in relation to works required.
6. NES assess findings of survey and report.
7. NES ascertain whether:
   - species (or habitat) not present,
   - species present, and conditions can be modified, or
   - species present, and conditions cannot be modified.
8. NES determine outcome and:
   - advise CIO to proceed with Certificate and modifications as required,
   - undertake application for s91 licence (or SIS), or
   - advise CIO refuse Certificate.

☑ Apply all conditions required to comply with the assessment or s91 licence

AND/OR

☑ Condition: 'No {hazard reduction work} is permitted within the exclusion area marked on the attached map'

☒ Denied Reason: 'Threatened species conditions prevent work'

3.6.5 Summary of process for threatened species

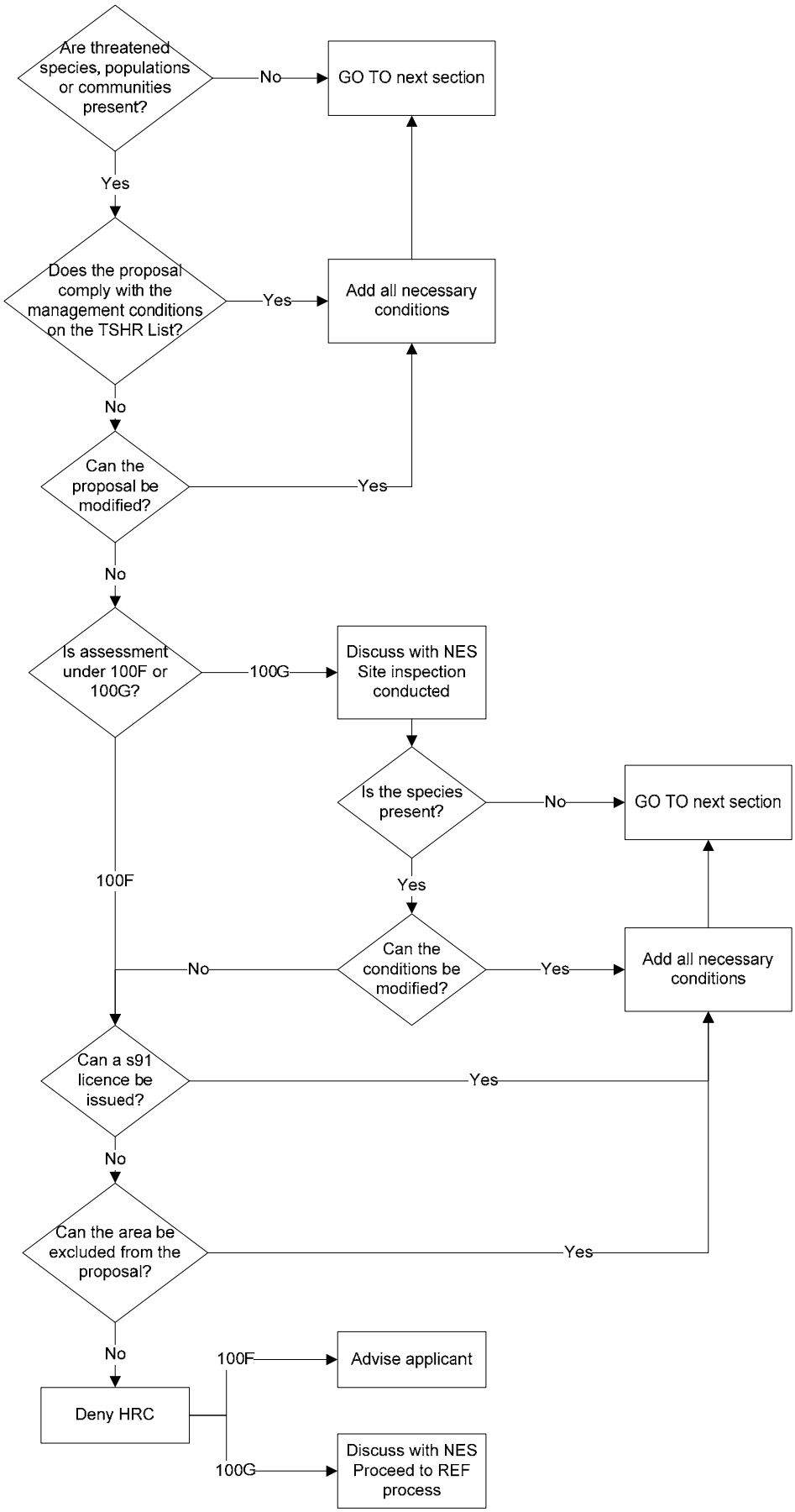


Figure 3.5 Threatened species assessment

3.7 Riparian buffer zones (Clause 4.3)

3.7.1 General

Riparian zones play an important role in maintaining water quality as well as terrestrial and aquatic habitat.

A riparian buffer zone is an area of vegetation located between a source of disturbance and a creek, river or wetland. These areas play an important filtering role protecting water quality and preventing river bank erosion. They also contain vegetation communities that can be essential for maintaining fish habitat and stream ecology. It is also significant vegetation in its own right, in that it provides important habitat for a unique assemblage of terrestrial species. In most cases the differences in vegetation between the riparian zone and the surrounding vegetation will be readily apparent.

! Identify waterbodies as shown on 1:25,000 scale topographic maps, or if not published, the most detailed maps available from the Land Information Centre. Undertake a site inspection to ascertain whether there are any unmapped streams.

! Note that if a waterbody is not mapped then the riparian buffer must still be implemented. Contact Region if there is ambiguity regarding stream order classification or interpretation of the top of the highest bank.

3.7.2 Stream order

Strahler's (1952) stream order system is a simple method of classifying stream segments based on the number of tributaries upstream. A stream with no tributaries (headwater stream) is considered a first order stream. A segment downstream of the joining of two first order streams is a second order stream. Thus, a nth order stream is always located downstream of the joining of two (n-1)th order streams.

- Any watercourse which has no other watercourses flowing into it is classed as a 1st order watercourse (1).
- Where two 1st order watercourses join, the watercourse becomes a 2nd order watercourse (2).
- If a 2nd watercourse is joined by a 1st order watercourse, it remains a 2nd order watercourse.
- When two or more 2nd order watercourses join they form a 3rd order watercourse (3).
- A 3rd order watercourse does not become a 4th order watercourse until it is joined by another 3rd order watercourse.
- And so on.

In summary:

- When two streams with the same order join, the order increases by one.
- The order only changes when two of the same numbers join.

Generally, smaller streams that sit higher in the catchment will have a lower ranking and require a smaller buffer distance.

Determine the stream order or wetland rank from the stream order map or by using a topographic map. If a site inspection reveals that a stream is not marked on the topographic map then it is likely to be the first order stream.

📖 Investigations are underway to develop GIS data layers of stream order maps for the State. Until such time as these are available, stream order may be determined from a topographic map by starting at the top of a catchment, as illustrated in Figure 3.6.

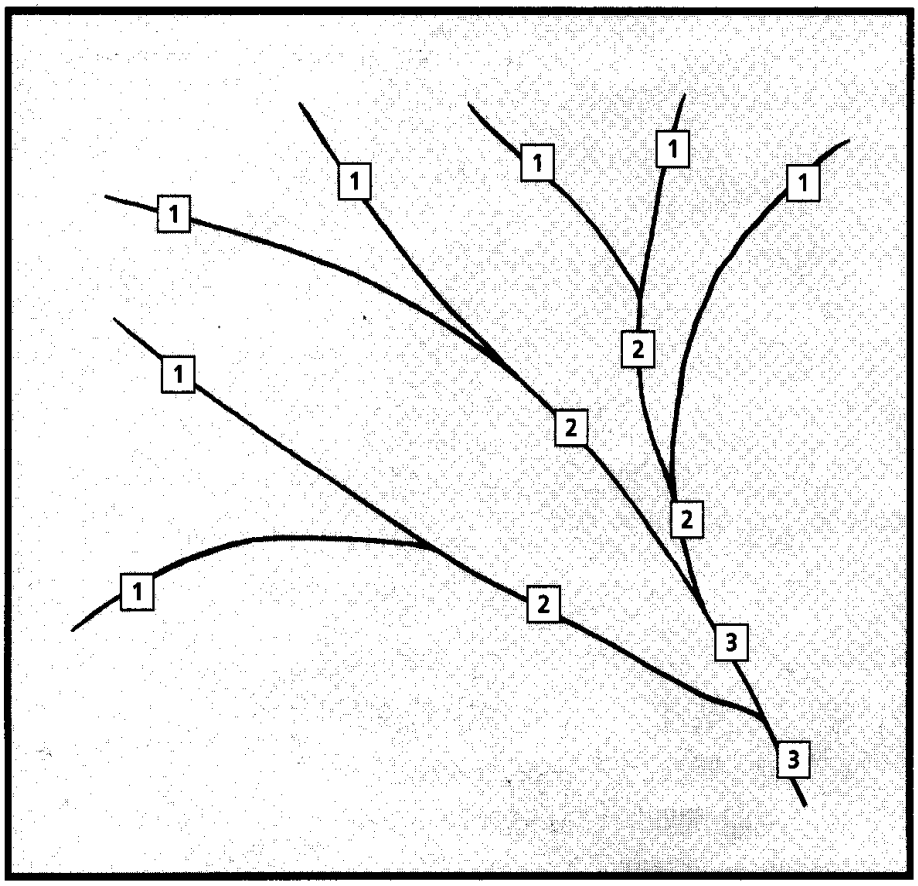


Figure 3.6 The Strahler method of stream ordering

3.7.3 Establishing conditions

Mechanical hazard reduction works must not be carried out within the setbacks to watercourses and waterbodies contained in clause 4.3 of the Code and as described in Tables 4.3 (for APZs) and 4.4 (SFAZs) of the Code below.

☑ Condition: '{clearing type} is not permitted within {distance} metres of the {bank} of the {waterbody}'

☒ Denied reason: 'Riparian buffer zone conditions prevent works'

The distance (metres) is measured from the top of the:

- highest bank (streams and rivers),
- shore (wetlands and lakes), or
- mean high water mark (tidal waters).

Where the waterbody is linear, the distance applies to both sides of the waterbody.

If in doubt about the stream order, use the largest buffer distance.

Code Table 4.3 Riparian buffer zones for APZs (metres)

Water body	Use of hand tools and hand held machinery	Use of slashing machinery	Use of graders, ploughs and dozers	Removal of trees
1st Order and unmapped streams	5	5	10	5
2nd Order Streams; Wetlands, Lakes and Lagoons greater than or equal to 0.1 ha but less than 0.5 ha	5	10	15	10
3rd Order Streams; Wetlands, Lakes and Lagoons greater than or equal to 0.5 ha but less than 2 ha	10	15	20	15
4th Order Streams & greater; Estuaries; Wetlands, Lakes and Lagoons greater than or equal to 2 ha	10	20	20	20

Code Table 4.4 Riparian buffer zones for SFAZs (metres)

Water body	Use of hand tools and hand held machinery	Use of slashing machinery	Use of graders, ploughs and dozers
1st Order and unmapped streams	5	5	10
2nd Order Streams; Wetlands, Lakes and Lagoons greater than or equal to 0.1 ha but less than 0.5 ha	5	10	20
3rd Order Streams; Wetlands, Lakes and Lagoons greater than or equal to 0.5 ha but less than 2 ha	10	15	30
4th Order Streams and greater; Estuaries; Wetlands, Lakes and Lagoons greater than or equal to 2 ha	15	20	40

Wetlands

It is important to note that a wetland extends as far as it is likely to be inundated by water. Therefore the riparian buffer zone often commences at some distance from the point at which the water may currently occur.

Where mechanical works are required to create or maintain an APZ in or adjacent to certain wetland vegetation types, the riparian buffer zones do not apply to that wetland (i.e. are not required). These vegetation classes are: coastal heath swamps, coastal swamp forests, and coastal floodplain wetlands of Keith (2004) (see Table 3.2). While this may allow for the removal of vegetation in these areas, care must be taken as many of these wetlands are now classified as Endangered Ecological Communities. Advice must therefore be sought from NES prior to approving any mechanical works within these wetland types.

! Note that works are not permitted in SEPP 14-Coastal Wetlands which are excluded under the Code

! Some wetlands are restricted by clause 2.4 of the Code to allow weed removal only

! Checks should always be made to determine whether the wetland is an Endangered Ecological Community or environmental protection zone in which case mechanical clearing may not be allowable under the Code

Table 3.2 Wetland vegetation types

Vegetation Formation (and Chapter in Keith 2004)	Riparian Buffer
Freshwater wetlands (8)	
- Coastal heath swamps	Not Required in APZ
- Montane bogs and fens	Required
- Coastal freshwater lagoons	Required
- Montane lakes	Required
- Inland floodplain swamps	Required
- Inland floodplain shrublands	Required
Forested wetlands (9)	
- Coastal swamp forests	Not Required in APZ
- Coastal floodplain wetlands	Not Required in APZ
- Eastern riverine forests	Required
- Inland riverine forests	Required
Saline wetlands (10)	Required

3.8 Standards for the protection of other cultural heritage (Clause 4.7)

3.8.1 Identifying relevant sites

There are a number of heritage lists that need to be inspected to ascertain the items and places of significance in your area. These range from national listings through to state and local government listings. There are also a variety of registers within each level of government (e.g. World Heritage, National Heritage List, Register of National Estate and the Commonwealth Heritage List at the Commonwealth level).

📖 Determine if there are sites from heritage lists as follows:

📖 Check the Commonwealth Department of Environment and Heritage website (www.deh.au.gov). Select 'Australian Heritage' then scroll down and select 'Australian Heritage Places Inventory'. A search can be undertaken for your local government area. Be aware that there are some limitations within this search, e.g. the Blue Mountains area is a World Heritage site, however a search on the Blue Mountains LGA does not indicate this listing, this is because it is registered under Hawkesbury LGA. This difficulty appears to be addressed within the next step.

📖 Check the NSW Heritage Office website (www.heritage.nsw.gov.au). Select 'search for heritage listings' which will take you to the on-line database search facility. Search on your local government area. The search results are separated into two categories, those under the NSW *Heritage Act* and those listed by local government and state agencies. Both categories will need to be checked.

📖 Check with your local Council as to the mechanisms that they have in place for the identification of heritage sites. This may include Local Environment Plans (LEPs), Development Control Plans (DCPs) and/or s149 Certificates. They may also have such data on a GIS map layer.

NB On the basis that there is currently no comprehensive mapping of all these sites, it is recommended that you firstly identify the listings that apply within your area. Then select those that are relevant to hazard reduction, e.g. heritage bank buildings in the middle of town surrounded by other buildings are unlikely to be of interest. This approach will be more efficient than checking the databases each time you do a Certificate. However, the databases should be checked on a regular basis to ensure that any new listings are accommodated.

3.8.2 Determining appropriate conditions

If there is a site on any of the registers that may be affected by the proposed work, conditions must be imposed to protect the values of the site. Such conditions must be consistent with the RFS/NSW Heritage Office document *Guidelines for Bush Fire Hazard Reduction Works Affecting Heritage Items.*

! Note that the *Guidelines for Bush Fire Hazard Reduction Works Affecting Heritage Items* are currently under development. If any sites are indicated to be present contact NES for advice before proceeding.

Be aware that NSW's heritage is diverse and includes buildings, objects, monuments, Aboriginal places, gardens, bridges, landscapes, archaeological sites, shipwrecks, relics, bridges, streets, industrial structures and conservation precincts. It is important to note that heritage names may not be descriptive of the entire heritage item. For example, an historic house may also include protection of its grounds including the vegetation.

💻 Where a site or item has been identified, enter the name in BRIMS. A Cultural Heritage Conditions list will appear on the Conditions List page. Select or enter all relevant conditions as per the *Guidelines for Bush Fire Hazard Reduction Works Affecting Heritage Items*.

☑ Conditions: Select all relevant conditions

AND/OR

☑ If further detailed conditions are required, enter them as free text conditions within the Cultural Heritage Conditions list section.

OR

☑ Condition: 'No {hazard reduction work} is permitted within the exclusion area marked on the attached map'

3.9 Other specified environmental values (Clause 4.8)

3.9.1 Identification of sites

Determine if the site contains any locally significant environmental areas or constraints identified in the Council's LEP. The provision of this information is part of the RFDSA. Ensure arrangements are in place for efficient inspection of LEP and associated maps. Note that LEPs change over time.

! Determine if the site is affected by any LEP restrictions/requirements. Check for the following sections/items within the LEP:

Land zoning objectives and controls

Protected areas

General provisions of relevance (e.g. tree management, vegetation clearing)

Special provisions for environmental protection (e.g. riparian, slope, catchment)

Heritage items and conservation provisions

Significant vegetation communities or species

! Determine if the site is affected by any other plans of management relating to the protection of the environment. For example:

SEPP 44 – Koala Habitat, and associated Plans of Management (contact Council to determine if there are any in your area),

Recovery Plans for threatened species, populations and ecological communities (identify all threatened species, populations and ecological communities in your local government area- Council usually has a list, and then view the list of draft and final recovery plans on DEC website www.environment.nsw.gov.au),

Council Plans of Management for bush reserves (contact Council),

Other (contact Council).

3.9.2 Establishing conditions

If the LEP includes locally significant areas that apply to the land then add conditions to comply with the restrictions. The conditions must be consistent with the objectives of the LEP zone/plan.

Equally, if any plans of management exist then ensure works are consistent with the plan.

☑ Condition: Add free text conditions as required to comply with the LEP or PoM

3.10 Weeds assessment (Clause 4.9)

Hazard reduction activities may involve land infested with weeds. Proposals for hazard reduction need to be assessed in terms of their effect on the control and/or spread of weeds. When considering a hazard reduction proposal the following matters must be considered. As discussed below herbicides can only be used for weed removal.

3.10.1 Presence of weeds

! Determine the presence and population of noxious or environmental weeds within the area that work is to be undertaken. You need to be familiar with the species that are listed as noxious or environmental weeds within your LGA.

Noxious weeds

📖 Listed by NSW Agriculture (Dept. of Primary Industries) at:

http://www.agric.nsw.gov.au/noxweed/

Categories of noxious weeds:

- For a W1 noxious weed, the presence of the weed on land must be notified to the local control authority and the weed must be fully and continuously suppressed and destroyed
- For a W2 noxious weed, the weed must be fully and continuously suppressed and destroyed
- For a W3 noxious weed, the weed must be prevented from spreading and its numbers and distribution reduced
- For a W4 noxious weed, the action specified in the declaration must be taken in respect of the weed.

Environmental weeds

📖 Listed by local authority:

📖 Check with your Council Weeds Officer

📖 See Council documents, e.g.:

Vegetation Management Policy
Weed Management Plan
Local Environment Plan
Tree Preservation Order

General

Information on other weeds of significance may be available in Council State of the Environment reports. Council weeds inspectors can also provide information on the life cycle and control measures for particular weeds.

3.10.2 Establishing conditions

! If weeds are present, then conditions must be imposed to prevent their spread

! Sensitive areas may require follow up inspections and weed control actions by the land manager to prevent weed growth

! If required place conditions regarding machinery hygiene

! Consult with the Council's weed officer to determine if further conditions need to be added to the Certificate to minimise the effects of weeds

See NSW Agriculture and Weeds CRC for information on weed management. Also discuss with your Council's weed officer. Weed CRC Best Practice Management Guidelines are found at http://www.weeds.crc.org.au/publications/weed_man_guides.html

Identify any factors present that may encourage or inhibit weed growth as a result of the works. For example:

- Hand removal of vegetation may result in the spread of weeds if measures are not taken to dispose of the vegetation properly
- Removal of weeds should be undertaken prior to seeding
- Some weeds may reproduce from any part of the plant. If small pieces of the plant are caught in machinery they may be easily spread. If conducting works in such areas, care should be taken to avoid areas of weed wherever possible and inspect machinery/vehicles before leaving the area to remove any weed propagules present. Alligator Weed is one such problem weed

☑ Condition: 'All noxious and environmental weeds are to be removed, and measures taken to prevent further spread of weed species'

☑ Condition: '{Species name} is to be removed and managed in accordance with the Weed CRCs Best Practice Management Guidelines'

☑ If further detailed conditions are required, enter them as free text conditions

3.10.3 Herbicides

Herbicides can only be used within this Code for removing weeds and use must be consistent with the label and not contrary to the *Pesticides Act 1999.*

☑ Condition: 'The use of herbicides is only permitted by this Certificate for the removal of weed species'

☑ Condition: 'Only herbicides registered by the Australian Pesticides and Veterinary Medicines Authority (www.apvma.gov.au) that are approved for the intended situation of use may be used'

☑ Condition: '{Species name} is to be removed and managed in accordance with the Weed CRCs Best Practice Management Guidelines'

☑ Condition: 'Herbicides must be used in accordance with the *Pesticides Act 1999*, the *Protection of the Environment (Operations) Act 1997*, the *Noxious Weeds Act 1993*, and the directions on the herbicide container label'

☑ Condition: 'Herbicide use must be conducted in a manner to prevent injury to persons, property and non-target plants and animals'

Use of herbicides is not permitted within 100 metres of any species on the *Threatened Species Hazard Reduction List*. Check the TSHR Map for threatened species in the locality of intended herbicide use. If necessary, clause 4.5.3 of the Code may be considered.

☑ Condition: 'Herbicide use is not permitted within the exclusion area indicated on the attached map'

☒ Denied Reason: 'Threatened species prevent work'

The use of herbicides near waterbodies is not permitted if it is likely to result in water pollution (a minimum of 10m from any riparian area).

The following considerations may be applied to reduce the risk of water pollution:

- Consider methods such as cutting weed and painting herbicide on cut end
- Avoid spraying near drainage lines
- No spraying within 30 metres of the headwaters of creeks
- Restrict the type of herbicide used to those specified as safe for waterbodies
- Do not spray under weather conditions likely to cause spray to drift
- Check weather forecast and avoid spraying if rain is forecast within a few days.

☑ Condition: 'Herbicide use is not permitted within the exclusion area indicated on the attached map'

☑ Condition: 'Herbicide use near water bodies must be conducted in a manner to prevent water pollution'

☑ If further detailed conditions are required, enter them as free text conditions

☞ IF BURNING GO TO CHAPTER 4

☞ IF NO BURNING GO TO CHAPTER 5

4 HAZARD REDUCTION USING PRESCRIBED BURNING

4.1 Land to which burning does not apply

! A Certificate for burning cannot be approved in:

Fire Exclusions Zones in the BFRMP;
Peat soils; and
Land restricted by clause 2.4 of the Code (see section 1.11):
- Rainforest, Saline wetland, Freshwater wetland (montane bog and fen, coastal freshwater lagoon, montane lake), Alpine complex (Keith, 2004),
- RAMSAR wetlands,
- Wilderness areas,
- Coastal dune vegetation.

4.1.1 Fire Exclusion Zones (Clause 5.1)

Fire is to be excluded from these zones. These can include rainforest, other ecologically sensitive areas, fire sensitive plantations and commercial crops. If the land is mapped as a fire exclusion zone in the BFRMP, fire (including burning of piles and windrows) cannot be used as a method of hazard reduction.

! Advise applicant that fire cannot be used as a method of hazard reduction. It may be possible to approve some burning beyond the exclusion area.

☑ Condition: 'Hazard reduction burning is not permitted within a fire exclusion zone as identified on the attached map'

☒ Denied Reason: 'Land excluded from burning – fire exclusion or peat soil'

4.1.2 Peat soils (Clause 5.1)

Fire (including burning of piles and windrows) is to be excluded from areas containing peat soils. Peat soils may burn underground for months and even years. Such underground burning can cause significant environmental problems and result in the occurrence of wildfire. The same principle applies to areas containing exposed coal seams.

Peat may be present but not pose a fire hazard, depending on the depth and thickness of the peat layer. Utilise local knowledge and check the local soils map for peat dominated soil types. A peat soil map is being developed by DNR, and will be available in BRIMS when completed.

! Advise applicant that fire cannot be used as a method of hazard reduction. Add condition to exclude fire from exclusion zones, if the Certificate can otherwise be issued over the remainder of the site.

☑ Condition: 'Hazard reduction burning is not permitted within a fire exclusion zone as identified on the attached map'

☒ Denied Reason: 'Land excluded from burning – fire exclusion or peat soil'

☞ IF NOT UNDERTAKING A PILE OR WINDROW BURN GO TO SECTION 4.4

4.2 Pile burning

A Certificate is required for the burning of a pile if the land on which it is to be carried out is within an LGA listed under Schedule 1, Parts 1 and 2 of the *Protection of the Environment Operations (Control of Burning) Regulation 2000.*

📖 Refer to the joint RFS/DEC publication *Regulation of Open Burning in NSW* for explanation of these matters (can be located on DEC website http://www.epa.nsw.gov.au/air/roob/index.htm).

! If not listed, a Certificate is not required for the pile burning. Note that a Certificate may be required for the clearing associated with the creation of the pile.

A Certificate may be issued for a pile burn only where:

- The material in the pile is vegetation waste resulting from bush fire hazard reduction works from APZ or SFAZ works approved by the RFS, local Council, DIPNR or another authority,
- Evidence of approval (a Certificate or any approval, consent or authorisation otherwise required) for the collection of the material forming the pile must be presented before a Certificate can be issued to burn a pile,
  NB Approval is generally not required for just raking leaf litter from the ground surface
- The material in the pile cannot be disposed of by the normal green waste/garbage collection, or mulched/composted on site,
- The pile is contained within an APZ or a SFAZ, and
- The pile burn is carried out in accordance with the *Standards for Pile Burning*.

Where pile burning is for the disposal of material for other purposes such as property maintenance or rubbish disposal, the applicant is to be directed to contact their local Council or DEC (EPA) for approval. The applicant will need to justify why they cannot dispose of the material by the normal garbage collection or reuse on site.

☒ Denied reason: 'Activities excluded from the Code'

The material within the pile and the construction of the pile must be in accordance with the document *Standards for Pile Burning*. This includes:

- Material that is to be burnt must only be vegetation from the locality, not household rubbish, general garden waste, or building material
- Logs over 150mm in diameter should not be added to piles
- All material to be burnt must be dead and dry
- Piles should be constructed long and wide rather than high (size, ideally no greater than 2 metres by 2 metres across and 1.5 metres high)
- The pile must be in a safe location, well away from any buildings, fences, overhanging trees, power lines, etc.

Refer to Figure 4.1.

! If pile burn does not satisfy these criteria, burning is not permitted under the Code. Advise applicant that the streamlined process does not apply, and advise to contact Council or EPA.

☒ Denied Reason: 'Activities excluded from the Code'

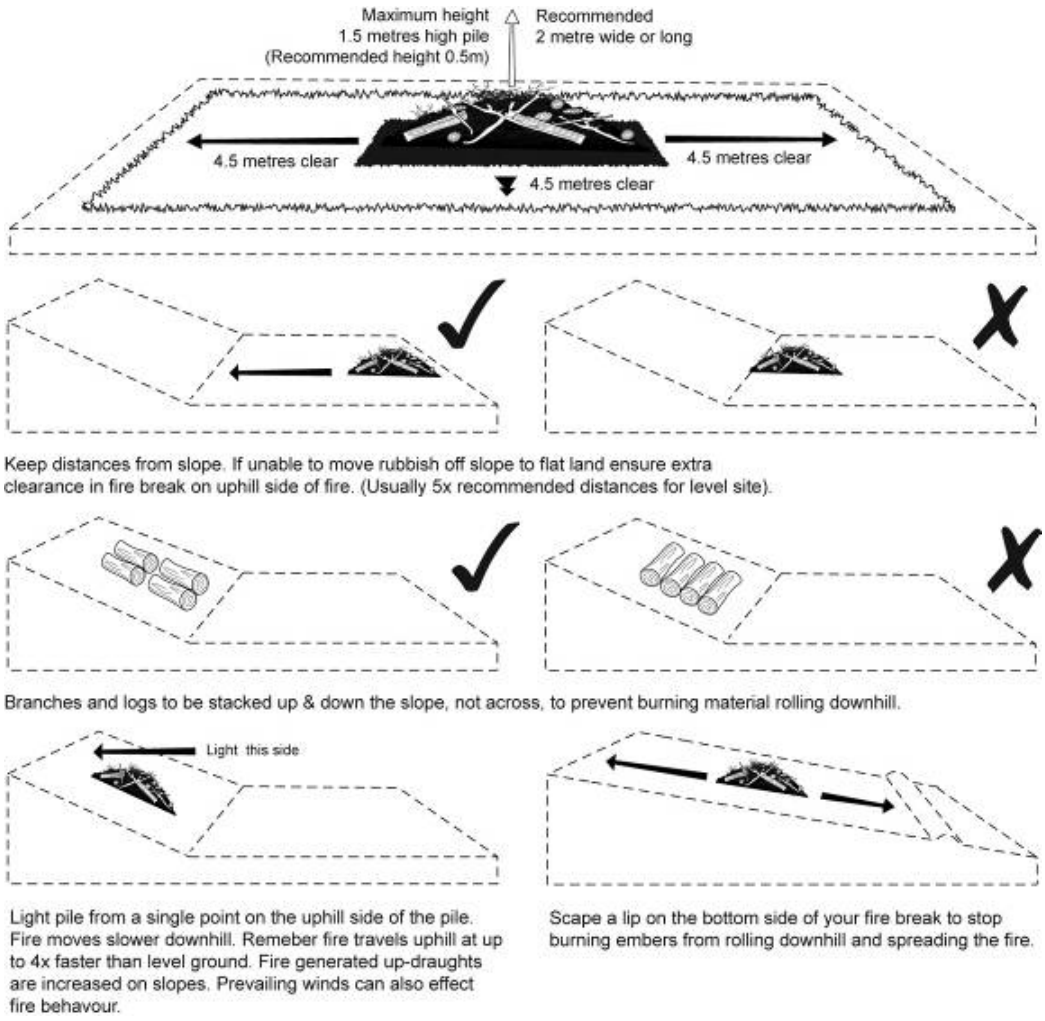


Figure 4.1 Pile burn construction considerations

! Works must be assessed in accordance with the requirements of :

Land to which burning does not apply (cl. 5.1)
Type of burn (cl. 5.2)
Threatened species (cl. 5.4)
Fire permits (cl. 5.6)
Notification (cl. 5.7)
No Burn Days (cl. 5.8)
Smoke management (cl. 5.9)

☑ Condition: 'The pile burn shall be conducted in accordance with the RFS document *Standards for Pile Burning*'

☑ Condition: 'All material to be burnt must be vegetation from the site, no building materials or general rubbish is to be included'

☑ Condition: 'All material to be burnt must be less than 150 mm in diameter'

! Provide the applicant with the *Standards for Pile Burning*.

☞ IF ONLY UNDERTAKING PILE BURNING GO TO SECTION 4.5

4.3 Windrow burning

A Certificate may only be issued for a windrow burn where:

- Associated with plantation works (as defined in the Code dictionary and the *Plantations and Reafforestation Act 1999*) and for the purpose of:
  - reducing the threat of wildfires impacting on life and / or property and to protect the environment;
  - reducing the threat of wildfire to a surrounding plantation asset; or
  - providing access to a plantation area for reafforestation and fire control works.
- In SFAZ and LMZ areas
- The windrow represents a fire hazard
- Evidence of approval to create the windrow is presented

Windrow burning must be conducted in accordance with the requirements of:

- *Plantations and Reforestation Act 1999*, and *Plantations and Reafforestation (Code) Regulation 2001*; and
- *Standards for Burning Windrows*.

As per *Standards for Burning Windrows,* windrows cannot be constructed within the buffer distances in Table 4.1.

Table 4.1 Windrow buffer distances

Feature	Buffer distance (metres)
other windrow	30
property boundary	40
building	50
powerlines	25
native vegetation retention area	20
waterbody	20
drainage line	20
Aboriginal burial site	50
Aboriginal scarred tree or stones	20
artefact scatter or other relic or place	10

! Provide the applicant with the *Standards for Windrow Burning*.

☑ Condition: 'The windrow burn shall be conducted in accordance with the RFS document *Standards for Windrow Burning* and the Plantations and Reafforestation (Code) Regulation 2001'

☑ Condition: 'No burning is to be conducted within {distance} metres of the {feature/location}'

☒ Denied Reason: 'Activities excluded from the Code'

! Certificate must be assessed in accordance with all the requirements of Part 5 of the Code.

☞ IF ONLY UNDERTAKING WINDROW BURNING GO TO SECTION 4.5

4.4 Determine the intensity of the proposed burn (Clause 5.2)

Clause 5.2 of the Code specifies what intensity of burning is permissible in different vegetation types, and how each burn type should be conducted (i.e. in accordance with Standards). This is summarised in Table 4.2.

Table 4.2 Burn type conditions

Burn Type	Vegetation (other than that identified in clause 2.4 of the Code)	Conditions
Low Intensity	Any	Standards for Low Intensity Burning
Moderate Intensity	Grassland	Standards for Low Intensity Burning
Moderate Intensity	Other than grassland	Fire fighting agency in attendance with approved burn plan
Moderate Intensity	Isolated area (Clause 4.1 of Code) of forest, woodland or wetland	Not permitted
High Intensity	Grassland	Standards for Low Intensity Burning
High Intensity	Heathland or shrubland	Fire fighting agency in attendance with approved burn plan
High Intensity	Other than grassland, heathland or shrubland	Not permitted

! In order to determine the intensity of the burn you will need to inspect the site and assess the vegetation type and fuel loads. If necessary, discuss with District staff who have operational experience.

Note: Burning to create or maintain an APZ may need to be of a moderate intensity to achieve effective and sufficient removal of fuels. Under this treatment the RFS or another fire fighting authority must be present at the burn and using an approved burn plan. This treatment is not recommended.

In the main, an APZ should be managed through mechanical means such as slashing or mowing. Burning should be considered only where other methods are impractical or likely to create a more significant adverse impact. Methods should be discussed with the applicant.

4.4.1 High intensity prescribed burning

High intensity prescribed burning involves removal of a substantial portion of the shrub layer. On average, flame heights will be greater than two metres and some canopy fire may occur.

High intensity burning is not permitted in forest, woodland or wetland vegetation types. High intensity fire can be approved in grassland, heathland or shrubland vegetation only.

☒ Denied Reason: 'High intensity burning is not permitted'

High intensity burning in shrubland or heathland can only be approved where a fire fighting agency will be in attendance and conducting the burn in accordance with an agency approved burn plan.

☑ Condition: 'Attendance of the {Fire Agency} is required during the lighting and conduct of the burn permitted by this Certificate'

☑ Condition: 'A burn plan shall be prepared and approved by the {Fire Agency} prior to the commencement of the hazard reduction burn. The burn plan shall include measures, where required, to prevent fire where the {SER/slope exceeds limit}'

High intensity burning in grassland can be conducted by the landowner if conducted in accordance with the NSW RFS *Standards for Low Intensity Bush Fire Hazard Reduction Burning*. It is understood that a fire in grassland will usually result in a high intensity fire. However, the intent of this clause is to ensure that fires in grassland are only lit under weather conditions that are described in the Standards.

☑ Condition: 'All hazard reduction burning permitted by this Certificate shall be conducted in accordance with the RFS document *Standards for Low Intensity Bush Fire Hazard Reduction Burning*'

! Provide the applicant with the *Standards for Low Intensity Bush Fire Hazard Reduction Burning*.

4.4.2 Moderate intensity prescribed burning

Moderate intensity prescribed burning involves the removal of a substantial portion of the shrub layer. On average flame heights will be between one and two metres and some canopy scorching may occur. These fires are often patchy and the moister creeks generally will not be burnt. This type of prescribed burning is generally used for hazard reduction to provide asset protection closer to the urban interface.

Moderate intensity burning is not permitted in any area of isolated forest, woodland or wetland vegetation including:

- Any patch of vegetation less than 1 hectare in size that is separated from any other patch of vegetation larger than 1 hectare by a distance of 100 m or more,
- Linear strips of vegetation less than 20 m wide along a road, rail or stream corridor. Note: refer to clause 3.1 of this guideline for advice on determining size of linear strips.

☒ Denied reason: 'Isolated vegetation prevents works'

Moderate intensity fire can only be approved under the Code where a fire-fighting agency will be in attendance and conducting the burn to an agency approved burn plan (except in grassland).

☑ Condition: 'Attendance of the {Fire Agency} is required during the lighting and conduct of the burn permitted by this Certificate'

☑ Condition: 'A burn plan shall be prepared and approved by the {Fire Agency} prior to the commencement of the hazard reduction burn. The burn plan shall include measures, where required, to prevent fire where the {SER/slope exceeds limit}'

Moderate intensity burning in grassland can be conducted by the landowner if conducted in accordance with the NSW RFS *Standards for Low Intensity Bush Fire Hazard Reduction Burning*.

☑ Condition: 'All hazard reduction burning permitted by this Certificate shall be conducted in accordance with the RFS document *Standards for Low Intensity Bush Fire Hazard Reduction Burning*'

! Provide the applicant with the *Standards for Low Intensity Bush Fire Hazard Reduction Burning*.

4.4.3 Low intensity prescribed burning

Low intensity prescribed burning involves removal of the leaf litter, grass and shrub layer with minimal canopy scorching. Fires will be patchy and the actual area burnt may vary between 40% and 80%. The average flame height will be less than one metre. This can be achieved by lighting under conditions where a combination of some or all of following factors influence fire behaviour - low fuel loads, moist fuels, low temperatures, high humidity, low wind speeds and fire lighting patterns.

Low intensity prescribed burning must be conducted in accordance with *Standards for Low Intensity Bush Fire Hazard Reduction Burning*.

Note that it is the responsibility of the CIO to determine if the landowner is capable of carrying out the burn safely within the conditions established in *Standards for Low Intensity Bush Fire Hazard Reduction Burning*. If there is doubt then it may be appropriate to add safety conditions, or even require a burn plan and/or agency attendance.

☑ Condition: 'All hazard reduction burning permitted by this Certificate shall be conducted in accordance with the RFS document *Standards for Low Intensity Bush Fire Hazard Reduction Burning*'

! Provide the applicant with the *Standards for Low Intensity Bush Fire Hazard Reduction Burning*.

4.5 Control lines (Clause 5.3)

Prescribed burns must be contained within planned control lines. The closest natural/existing containment lines to the intended perimeter of the burn should be used where available.

☑ Condition: 'The hazard reduction burn must be contained within control lines'

OR

☑ Condition: 'Control lines must be constructed prior to the conduct of the hazard reduction burn, as indicated on the attached map'

4.5.1 Limits on construction

Although the width of a control line must not exceed 4 metres, construction of additional control lines must be limited to the minimum extent necessary to carry out the burn safely. NB There are limited circumstances where a 4 metre wide control line is justified and the 4 metre provision is only provided within the Code to accommodate these circumstances. At other times a 1 metre wide control line will be adequate.

Construction of control lines is only permitted where works are consistent with the requirements of the relevant mapped Soil Erosion Risk as specified in Code Table 5.1. Where land is mapped as susceptible to mass movement, works must be consistent with the relevant conditions specified in Table 5.1 of the Code below.

Code Table 5.1 Conditions for control line construction where Soil Erosion Risk maps are available

SER Map	Soil Erosion Risk (tonnes/ha/yr)	Use of hand tools and hand held machinery	Use of slashing machinery	Use of graders, ploughs and dozers	Tree removal
Green	0-40	Permitted	Permitted	Permitted in APZ and SFAZ only	Permitted in APZ only
Light Green	40-80	Permitted	Permitted in SFAZ and APZ only	Permitted in APZ only	Permitted in APZ only
Yellow	80-150	Permitted	Permitted in APZ only	Not permitted	Not permitted
Orange	150-220	Permitted	Not permitted	Not permitted	Not permitted
Red	Over 220 or land susceptible to mass movement	Permitted	Not permitted	Not permitted	Not permitted

Where a soil erosion risk map has not been supplied, restrictions to method of mechanical works are based on slope. For the purpose of RFS implementation of the Code, Table 4.3 is to be used.

Table 4.3 Conditions for control line construction where Soil Erosion Risk maps are not available

Slope	Use of hand tools and hand held machinery	Use of slashing machinery	Use of graders, ploughs and dozers	Tree removal
<10	Permitted	Permitted	Permitted in APZ and SFAZ only	Permitted in APZ only
10-18	Permitted	Permitted in SFAZ and APZ only	Not permitted	Not permitted
>18	Permitted	Not permitted	Not permitted	Not permitted

☑ Condition: 'Control lines are to be constructed using {clearing method} to a maximum width of {width} metres'

☑ Condition: 'Construction of control lines must not involve the removal of any trees greater than 3 metres in height or greater than 300 mm in girth (as measured at 1.3 metres above ground level)'

4.5.2 Placement of control lines

Control lines must be constructed in a manner that minimises the potential for soil erosion. Control lines should be constructed where native vegetation has already been disturbed, in preference to undisturbed vegetation. Conditions must be imposed to ensure that control lines constructed through native vegetation in SFAZs and LMZs are allowed to regenerate following the burn.

☑ Condition: 'Control lines are to be constructed where vegetation has been previously disturbed'

☑ Condition: 'Control lines must be allowed to revegetate after the hazard reduction burn has been conducted'

Control line construction should be balanced between the need for the control strategy to be adequate whilst minimising the amount of vegetation disturbance the construction creates. Where tree removal is permitted, trees should only be removed where necessary. Pruning of trees should be considered if vehicle access is required rather than total tree removal. Particular concern needs to be applied when constructing wide control lines with earthmoving machinery. Some meandering of the control line around individual trees may provide for all outcomes to be achieved (refer to Figure 4.2).

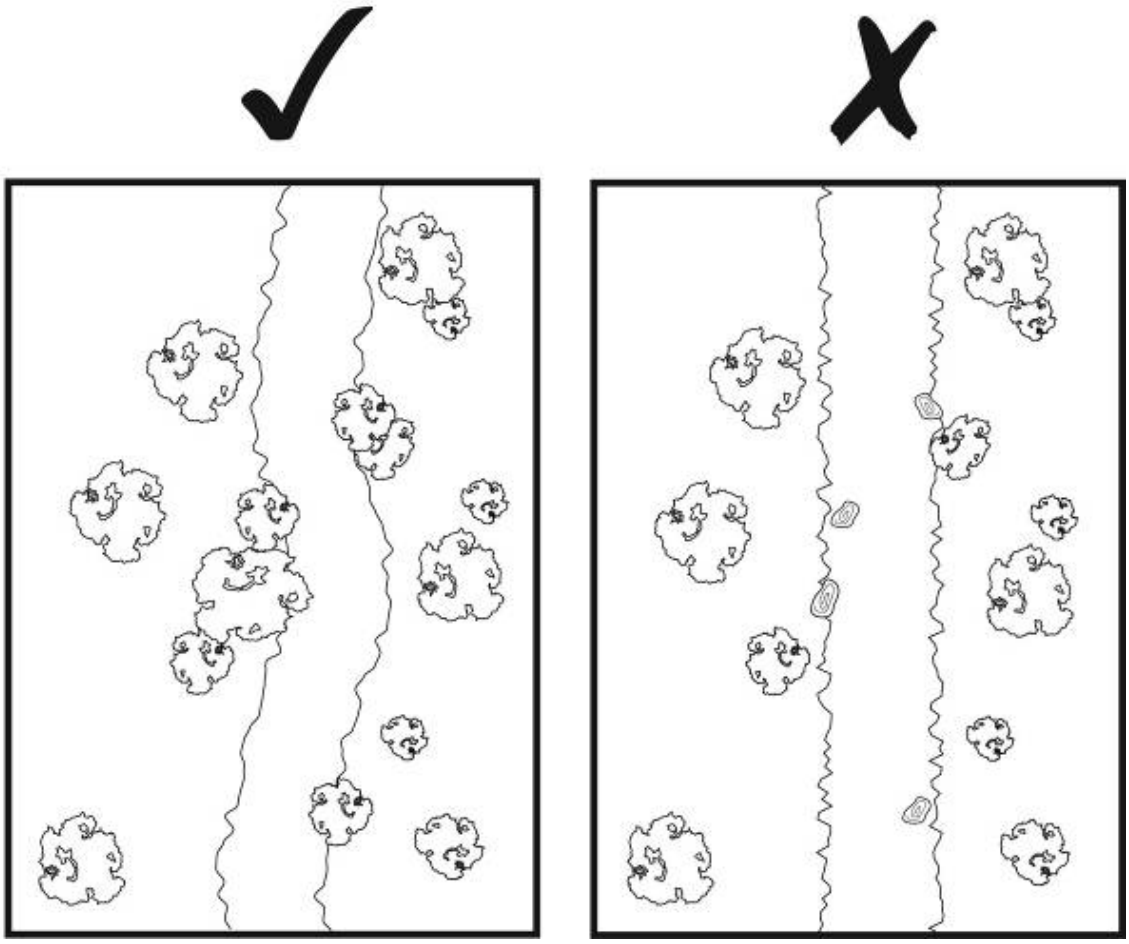


Figure 4.2 Do not unnecessarily remove trees when constructing control lines

4.5.3 Drainage structures

There is also a potential for soil erosion where water may be channelled along a control line (Figure 4.3). Appropriate measures will depend on the situation; use the following considerations (in order of preference):

1. Control lines should be established such that their position in the landscape and their direction minimises the potential for soil erosion and therefore the need for complex mitigative measures.
2. Assess whether placing items such as logs, rocks, hay bales, etc across control lines will be sufficient to minimise soil erosion.
3. Complex drainage structures (such as cross banks, culverts and mitre drains – refer to figure 8 below) must be constructed at 50 metre intervals under the following circumstances:

   (a) where the Soil Erosion Risk is greater than 80 (t/ha/yr) (or slope greater than 18° where soil erosion risk maps are not available);

   (b) the control line will be perpendicular to the contour; and

   (c) the control line will be greater than 1 metre wide.

   Construction of drainage structures must be conducted in accordance with *Standards for Low Intensity Bush Fire Hazard Reduction Burning*.

☑ Condition: 'Drainage structures must be provided at 50 metre intervals along the control line in accordance with the RFS document *Standards for Low Intensity Bush Fire Hazard Reduction Burning*'

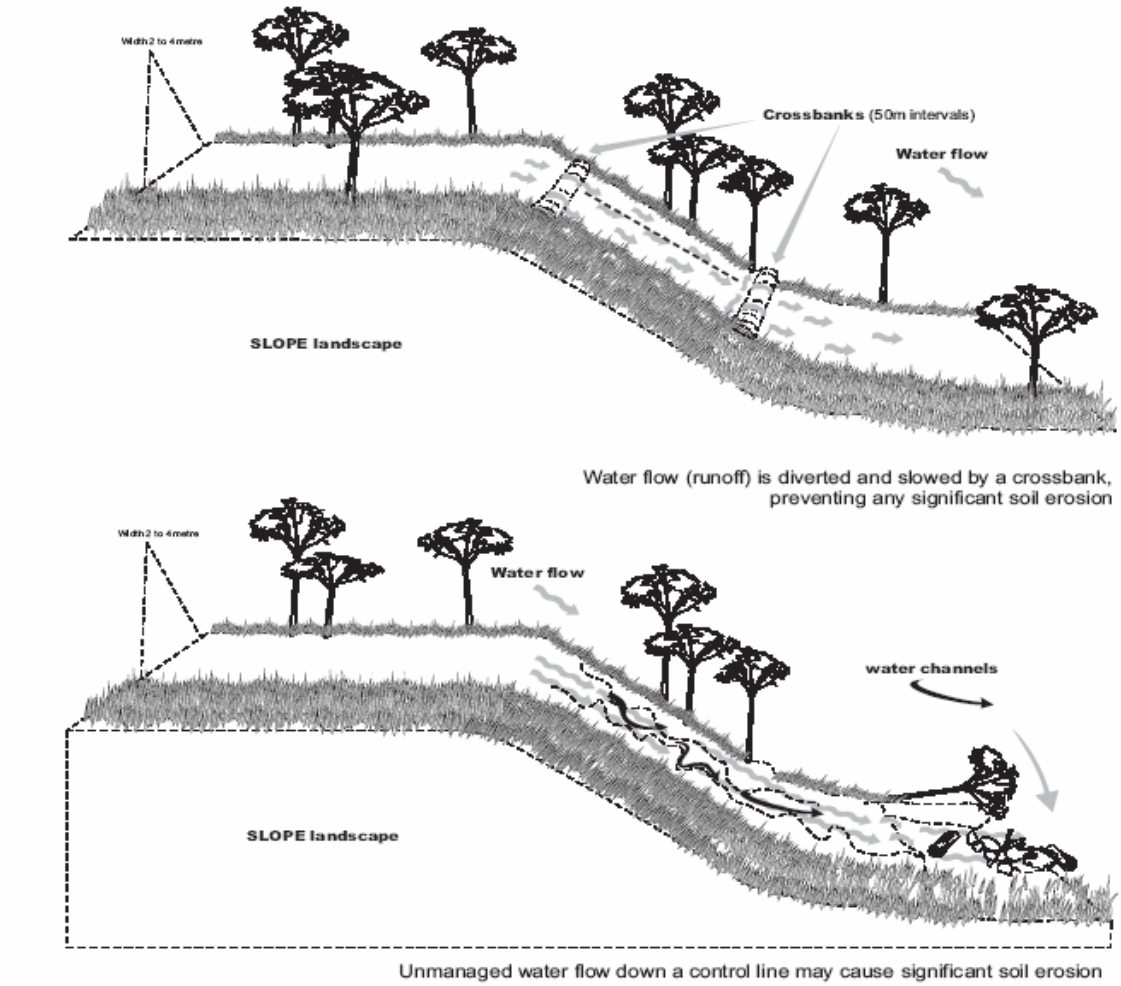


Figure 4.3 Soil erosion and control lines

4.5.4 Riparian buffers

Control lines that run parallel to a water body must not be constructed within the riparian buffer distances specified in Table 4.3 of the Code. Control lines may be constructed within riparian buffers where they are constructed perpendicular to a stream (refer to Figure 4.4). Drainage structures must be constructed between 5 and 20 metres of the highest bank of the stream.

See section 3.6 for further details on determining stream order and riparian buffers.

☑ Condition: 'Control lines must not be constructed within {distance} of any {waterbody}'

☑ Condition: 'Drainage structures must be provided on the control line within 5 to 20 metres of the stream in accordance with the RFS document *Standards for Low Intensity Bush Fire Hazard Reduction Burning*'

Code Table 4.3 Riparian buffer zones for APZs (metres)

Water body	Use of hand tools and hand held machinery	Use of slashing machinery	Use of graders, ploughs and dozers	Removal of trees
1st Order and unmapped streams	5	5	10	5
2nd Order Streams; Wetlands, Lakes and Lagoons greater than or equal to 0.1 ha but less than 0.5 ha	5	10	15	10
3rd Order Streams; Wetlands, Lakes and Lagoons greater than or equal to 0.5 ha but less than 2 ha	10	15	20	15
4th Order Streams & greater; Estuaries; Wetlands, Lakes and Lagoons greater than or equal to 2 ha	10	20	20	20

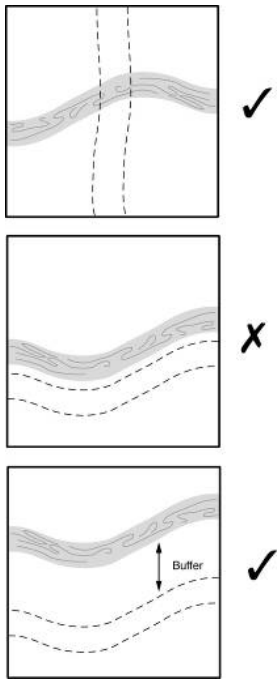


Figure 4.4 Control lines and riparian zones

4.6 Aboriginal heritage site assessment (Clause 5.11)

4.6.1 General

Aboriginal people have lived in NSW for more than 50,000 years. This occupation is reflected across the landscape in many different ways. Many people are familiar with shell middens, rock art, stone artefacts and other such tangible objects. However, not everyone is aware of the existence and importance of places of social significance. These include sites that have spiritual, traditional, historical or contemporary associations, such as ceremonial sites, burial sites, dreaming sites and massacre sites. These sites may not always have physical evidence of their existence, and if so may not be readily apparent to the untrained eye.

The loss or damage of Aboriginal objects and places is an irreplaceable loss of Australia's rich heritage and is of significant concern to Aboriginal people and other Australians. Bush fire hazard reduction works can have significant impact upon these values and must therefore be undertaken with a level of understanding of the potential for damage. The State and Commonwealth laws reflect the importance of these sites. It is therefore important that the Certificate Issuing Officer ensures that the landholder is fully aware of their obligations. This applies equally to informing RFS volunteers who may be assisting in the implementation of a hazard reduction.

DEC maintains the Aboriginal Heritage Information Management System (AHIMS). This includes a database of sites that have been reported to DEC. If the area of interest is particularly large or contains data of a sensitive nature, an Aboriginal Heritage Information Licence Agreement (AHILA) may be required. This is an agreement between DEC and the Issuing/Certifying authority, and is designed to ensure that any data supplied under the agreement is used appropriately.

Liaison should be established with the Aboriginal groups within your area to gain an understanding of local concerns and negotiate the best outcome in sensitive areas. It is important to be aware that the data within the AHIMS database is limited to that which has been provided to DEC. Other areas will exist and should be taken into account if identified by chance or if advised of as such by local Aboriginal groups.

If new Aboriginal objects or places are identified during hazard reduction works, they should be protected from impact and DEC must be advised immediately. Of particular importance are Aboriginal burials. Where skeletal material is discovered during hazard reduction activity, the police should be contacted immediately and the area treated as a potential crime scene. The police will determine if the area is a crime scene and contact DEC if the remains appear to be of Aboriginal origin.

4.6.2 Determining presence of Aboriginal heritage sites

4.6.2.1 Issuing Authorities

Applications for hazard reduction must be referred to DEC in the following cases to ensure protection of Aboriginal sites:

- ! If the proposal involves slashing and/or trittering in areas not previously subject to slashing, trittering, significant tree removal or earthworks
- ! If the proposal involves removal of trees with a trunk greater than 100cm in diameter at breast height

If DEC does not meet the 3 working day turn around then the Issuing Authority may proceed to process the application (NB this does not apply to Certifying Authorities, see below).

Note: RFS Districts that have a data licence agreement in place with DEC are not required to refer to DEC (for the areas subject to the licence agreement) unless records indicate that Aboriginal sites are in the area to be subjected to the hazard reduction works. In these situations, the full process described above applies.

4.6.2.2 Certifying Authorities

Certifying authorities that have a data licence agreement in place with DEC are not required to refer to DEC (for the areas subject to the licence agreement).

Certifying authorities that do not have a data licence agreement must refer the proposal details to DEC (Cultural Heritage Division) in the circumstances described in 4.6.2.1 above.

If DEC does not meet the 3 working day turn around then the Certifying Authority must consult with DEC before proceeding with the Certificate. The intent here is to require consultation with DEC before proceeding with the proposal to ascertain the status of the request for information. A timeframe for DEC's response should be arranged.

4.6.3 Process of referral to DEC

The Certificate Issuing Officer must send to DEC (Cultural Heritage Division):

- ! a copy of the application
- ! a map indicating location of proposed works (preferably topographic map)
- ! full grid references for the location of proposed works

- 🕮 Fax: 9585 6094 addressed to the "AHIMS Registrar" with the subject "Hazard Reduction Certificate Aboriginal site search"
- 🕮 Email: ahims@npws.nsw.gov.au with the subject "Hazard Reduction Certificate Aboriginal site search"
- 🕮 Telephone: 9585 6513

DEC will provide information to the Certificate Issuing Officer within 3 working days, detailing any Aboriginal sites of concern.

The 3 working day turn around does not commence until receipt of the information by DEC (Cultural Heritage Division).

4.6.4 Determining management conditions for Aboriginal heritage

DEC will provide the Issuing/Certifying Authority with written advice as to whether Aboriginal sites are within the vicinity of the land planned to be hazard reduced. This advice will include the type of site feature that occurs (identified by its AHIMS code acronym, see Table 4.4).

☞ If no sites are identified, GO TO SECTION 4.7

Where Aboriginal heritage sites are indicated to be present, then hazard reduction works must be undertaken in accordance with the relevant conditions specified in the RFS/DEC document *Conditions for Hazard Reduction and Aboriginal Heritage* (see Appendix 1). The requirements from this document are addressed below, and in Table 4.4 and Figure 4.5.

- ! The preferred hazard reduction method must be used unless there is a valid reason (e.g. safety) to use another method.
- ! If the preferred method can not be use, the method used must have a low or medium impact (see Appendix 1). If the hazard reduction method has a high impact, it can not be used within 100 metres of the identified site location. This will require exclusion of this area from the hazard reduction activity, or denial of the Certificate.
- ! Where multiple site types are identified, conditions for all site types must be applied. Where there is a conflict in the preferred method or the conditions, contact NES before continuing

Table 4.4 Aboriginal site feature codes and groups

CODE	SITE FEATURE	SITE GROUP	PREFERRED HR METHOD
ACD	Aboriginal Ceremony and Dreaming	5	Low intensity burn
ARG	Aboriginal Resource and Gathering	3	Hand clearing
ART	Art	2	Hand clearing
AFT	Artefacts	1	Low intensity burn
BUR	Burials	5	Low intensity burn
CMR	Ceremonial Ring	5	Low intensity burn
CFT	Conflict	5	Low intensity burn
ETM	Earth mound	1	Low intensity burn
FSH	Fish Trap	4	Low intensity burn
GDG	Grinding Grooves	2	Hand clearing
HAB	Habitation Structure	3	Hand clearing
HTH	Hearth	1	Low intensity burn
TRE	Modified Tree	3	Hand clearing
BOM	Non Human Bone and Organic Material	1	Low intensity burn
OCQ	Ochre Quarry	1	Low intensity burn
PAD	Potential Archaeological Deposit	1	Low intensity burn
SHL	Shell	1	Low intensity burn
STA	Stone Arrangement	4	Low intensity burn
STQ	Stone Quarry	4	Low intensity burn
WTR	Waterhole	3	Hand clearing

 Enter the Site Group into BRIMS

 In BRIMS, an Aboriginal Heritage Conditions list will appear on the Conditions List page. Select all relevant conditions for the site type as per *Conditions for Hazard Reduction and Aboriginal Heritage*

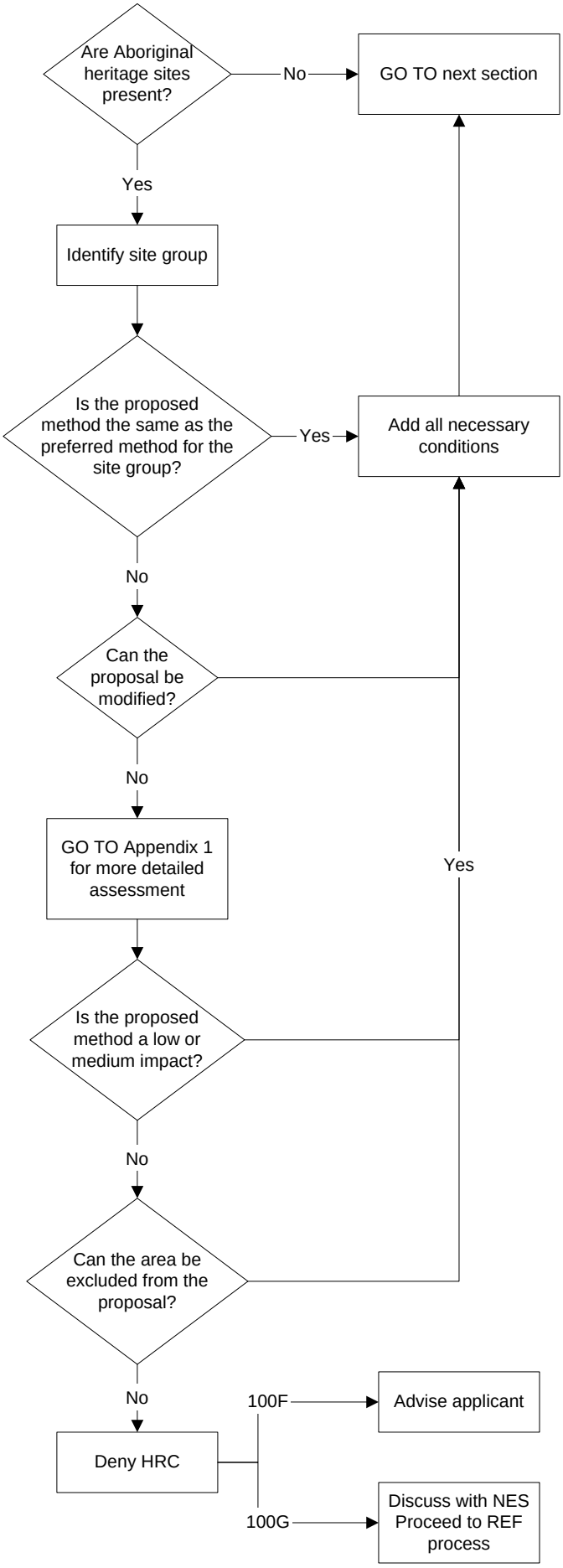


Figure 4.5 Aboriginal heritage site assessment

General considerations that need to be taken into account:

- Ensure that the person/s undertaking the works recognises that all aspects of all Aboriginal sites must be treated with respect, keeping in mind that things of significance are not always apparent when one is not familiar with different belief systems;
- In addition, it is to be made clear to the person/s carrying out the works that any other areas that contain features similar to the identified site features must also be hazard reduced in accordance with the relevant conditions;
- Partake in discussions with personnel undertaking the hazard reduction activities to ensure that they understand and respect cultural values, including respect for confidentiality of sites, and their role in being stewards for Aboriginal people and Australian history;
- Ensure conditions are addressed for at least 100 metres in all directions from the identified site location.

☑ Conditions: Select all relevant conditions for the site group and HR method from Conditions document

AND/OR

☑ If further detailed conditions are required, enter them as free text conditions within the Aboriginal Heritage Conditions list section.

The following conditions must be applied to the Bush Fire Hazard Reduction Certificate for all site feature groups and hazard reduction methods.

☑ No one must drive off established roads in the vicinity of the site;

☑ Unnecessary walking within the site area must be avoided;

☑ Hoses and other equipment must not be dragged across Aboriginal sites, and rubbish must not be left in the area;

☑ All known sites are to be re-inspected after hazard reduction works are completed, and if any site disturbance has occurred then details must be provided to DEC; and

☑ If an unregistered site is discovered during works then site must be treated with appropriate conditions as described in the table, and details of discovery provided to DEC.

☒ Denied Reason: 'Aboriginal heritage conditions prevent work'

4.7 Threatened species assessment (Clause 5.4)

4.7.1 General

Threatened species, populations and ecological communities (EECs) can all be significantly impacted by bush fire hazard reduction works. Because they are at risk of extinction they require careful management to ensure their continued existence. The NSW and Commonwealth Government provide for strict penalties for harming and damaging threatened species, populations and EECs without obtaining appropriate approvals. Further, the government allocates resources toward recovery programmes for these species, populations and EECs. It is therefore important to consider and ameliorate any adverse impacts that might occur when undertaking bush fire hazard reduction works. The Code provides the mechanism for these considerations as detailed below.

4.7.2 Determining presence of threatened species, populations or ecological communities

- 🕮 The locations of threatened species and populations that are required to be addressed have been provided by DEC as the *Threatened Species Hazard Reduction Map*. This is available via MapInfo and BRIMS
- 🕮 A list of threatened species and populations is provided for each LGA. This was produced by overlaying the location records with Local Government Areas (LGAs)
- 🕮 The mapping of vegetation across NSW is not always adequate to readily identify and map all EECs. A list of relevant references for the majority of EECs is provided to Certificate Issuing Officers which includes some mapping of the EECs and/or a more detailed description of its likely location
- 🕮 A list of potential EECs is provided for each LGA. This is based on the NSW Scientific Committee's Final Determinations (www.environment.nsw.gov.au) which include reference to the LGAs where each EEC is likely to occur. NB In some cases EECs are identified at the Bioregional scale although the EEC may not occur in every LGA within that Bioregion

If you are aware of any threatened species, populations or EECs in your area that are not identified on BRIMS then you should also address the conditions as if it was identified. This is in accordance with the RFS's Ecologically Sustainable Development obligations under s9(3) of the *Rural Fires Act*. Advise DEC as soon as possible of new locations.

In addition to the above, a Certifying Authority must determine the likely presence or otherwise of any threatened species, populations or EECs from such data, reports or papers available to the Certifying Authority.

Due to the sensitivity of the threatened species data the site specific location of records is only available to authorities who operate in accordance with a DEC threatened species data licence that applies to them. The RFS has a licence with DEC for the use of threatened species location data. Other authorities who issue or certify certificates are required to formally agree to the conditions of the RFS threatened species licence prior to using threatened species data in BRIMS. The RFS can assist authorities with this matter.

! In all cases consult the *Threatened Species Hazard Reduction Map* and *List*. For Certifying Authorities utilise the above and any relevant data, reports or papers available.

 Where a species has been identified, enter the Species Type in BRIMS. A Threatened Species Conditions list will appear on the Conditions List page.

☞ If no threatened species, populations or ecological communities are present GO TO SECTION 4.8

4.7.3 Determining management conditions from the TSHR List

! If threatened species, populations, or EECs are identified on the *Threatened Species Hazard Reduction Map* (and by other means in the case of Certifying Authorities), or otherwise known to occur at the site, then the management actions identified on the *Threatened Species Hazard Reduction List* must be imposed as a condition on any Certificate issued. The List can be viewed on the RFS website www.rfs.nsw.gov.au. See Appendix 2 for explanation of the data fields in the List.

The List will be updated as new threatened species, populations and ecological communities are listed on the *Threatened Species Conservation Act 1995*, (TSC Act), and as new information becomes available. The List consists of the following 3 parts:

(a) threatened plants (including endangered populations),

(b) threatened animals (including endangered populations), and

(c) endangered ecological communities.

This section also uses this logical separation to present the general conditions and associated rationale.

📖 Information on threatened species, populations and EECs can be obtained from DEC website www.environment.nsw.gov.au. This site contains species information sheets, recovery plans and photos of some of the species. Be aware that recovery plans require consideration under section 3.8 of the Code. Therefore, any management conditions should reflect considerations within the recovery plan (if one has been prepared).

📖 Threatened species, populations and EECs are listed under the TSC Act by the NSW Scientific Committee if the Committee is of the opinion that the species, population or community is at risk. The Committee provides reasons for the listing and describes the attributes in the form of a Final Determination which can be located on DEC's website www.environment.nsw.gov.au, (then plants and animals, then threatened species and then Scientific Committee determinations).

4.7.3.1 Threatened plants (including populations)

A 100 metre buffer is required in all directions around the known location of any plants. This is principally on the basis that the records are only accurate to 100 metres and the species may occur anywhere within a 100 metre radius of the centre-point of the known location. Therefore no works (mechanical or burning) may be undertaken within this radius unless they are consistent with the conditions on the List and the principles below.

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 factors such as the age at which there is sufficient seed production for the plant to persist. 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. If fire cannot be excluded from the known location of the species then a more detailed assessment will be required.

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 is required.

4.7.3.2 Threatened animals (including populations)

The Wildlife Atlas (from which the *Threatened Species Hazard Reduction Map* is derived) is useful for identifying which threatened animals are likely to occur within a broad area. However, as the majority of animal species are mobile, the Wildlife Atlas records have limited use in terms of identifying a species specific location for the purpose of the Code. For example, animals will use a larger area than the area immediately surrounding a site record. Therefore conditions are more descriptive and buffer distances surrounding a known location will vary depending on the species and its habitat requirements. Again, no works (mechanical or burning) may be undertaken within any radius prescribed by the List unless the works are consistent with the conditions on the List and the principles below.

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 waterbodies, and thus this habitat can be identified and protected.

It should be noted that the List does not address all threatened animal species and care must be taken as those that are addressed have differing requirements over differing distances.

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 exist between various age classes of suitable habitat, and that mosaics are of suitable size to support the species.

The RFS will also be working in conjunction with DEC to identify and resolve issues with the TSHR List through the recovery planning and the bush fire risk management planning process.

4.7.3.3 Endangered Ecological Communities

A site inspection will be required to ascertain the boundary of any EEC. The conditions from the List and the principles below must be applied to all relevant areas of the EEC.

As discussed earlier, 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 EECs are identified on the basis of their constituent plant species and are therefore sensitive to the impacts of fire frequency.

The RFS works with DEC to identify appropriate fire regimes for EECs through the recovery planning and the bush fire risk management planning process. As such, a Certificate may be issued if the fire frequency interval is longer than, or equal to, the minimum fire frequency interval in the bush fire risk management plan.

However, the bush fire risk management plans only identify the fire regimes for a limited number of EECs at this point in time. To ensure that all EECs are addressed by the Code the List provides minimum fire intervals for all EECs. There are also a number of EECs for which the condition is ‘no fire’.

Conditions for EECs are as follows:

- No part of an EEC is to be subjected to successive fires more frequently than the minimum fire interval, and
- At least 50% of the EEC within each LGA must exist in a state that has been burnt less frequently than the minimum fire interval.

This can be achieved by strategic rotational burning of portions of the EEC within each LGA. Ideally, old growth patches of each EEC should be maintained in those areas not critical for the protection of life and property.

For example, if an EEC was 50 hectares in extent and required a minimum fire interval of 7 years, then 25 hectares must always have a fire interval of greater than 7 years. If a wildfire occurs before the minimum frequency is reached then no prescribed burning can be undertaken under the Code until such time as the minimum fire frequency is again achieved for at least 50% of the EEC. Furthermore, each portion of the EEC is not to be subjected to fire more often than once every seven years.

If hazard reduction burns within EECs are likely to exceed these requirement, for example, if an EEC is only known from one location and is particularly small, then a more detailed assessment of the expected impacts will be required.

4.7.3.4 Outcome

If any threatened species are located in the area, determine if the proposed work can proceed:

- ! within the specifications of the *Threatened Species Hazard Reduction List*,
- ! with appropriate conditions, or
- ! by excluding the area where the threatened species occurs from the hazard reduction approved area.

☑ Conditions: Select all relevant conditions from Threatened Species Hazard Reduction List

AND/OR

☑ If further detailed conditions are required, enter them as free text conditions within the Threatened Species Conditions list section.

OR

☑ Condition: 'No {hazard reduction work} is permitted within the exclusion area marked on the attached map'

If the works cannot progress in accordance with the conditions on the List then a more detailed assessment of the significance of the expected impacts can be undertaken. Proceed to section 4.7.4 below.

4.7.4 Modifying management conditions from the TSHR List

4.7.4.1 Issuing Authorities

Where conditions on the *Threatened Species Hazard Reduction List* would prevent the works, an Issuing Authority may proceed to assess the 100F Certificate if a licence under Section 91 (or a Certificate under Section 95(2)) of the *Threatened Species Conservation Act 1995* has been issued to the landowner by DEC. The conditions in the s91 licence (or s95(2) Certificate) must be imposed.

If a section 91 licence has not been attached to the application, contact the landowner to notify them of the issue and determine how they wish to proceed in light of the following options:

(a) A Certificate could still be issued for a portion of the works if the area containing the threatened species, population or ecological community was excluded from the Certificate;
(b) The Certificate could be issued if a section 91 licence is obtained by the landowner from DEC. The landowner should be advised of the species, population or ecological community of concern and to contact DEC for information on how to proceed; or
(c) The Certificate could be denied and alternative environmental approval sought by the landowner.

☑ Apply all conditions required to comply with the s91 licence

☒ Denied Reason: 'Threatened species conditions prevent work'

4.7.4.2 Certifying Authorities

! For the following provisions to apply you must refer to Natural Environment Services.

This section relates to the RFS for circumstances where the RFS is the proponent by virtue of a section 66 notice, or undertaking works under section 70 or 73 of the RF Act.

Where conditions on the *Threatened Species Hazard Reduction List* would prevent the works, a Certifying Authority may proceed to assess the 100G Certificate in the following circumstances (NB any assessment under this clause must be referred to Natural Environment Services for assistance and determination):

(a) If a site inspection (under DEC *Threatened Biodiversity Survey and Assessment Guidelines for Developments and Activities*) indicates that the species, population or EEC of concern, or their habitat, is not likely to occur at the site, or

The data location points included in the Threatened Species Hazard Reduction Map are those points expected to be accurate within a 100 metre radius. However, this may not always be the case. A species-specific survey in accordance with DEC's guidelines may be undertaken to ascertain whether the species or its habitat actually occurs on site. An area of at least a 100 metre radius around the expected location is to be surveyed, however, adjacent tenure is not required to be surveyed. This survey only needs to focus on the species identified by the List (and other known records in the case of Certifying Authorities) as occurring at the site. If the species or its habitat is not located at the site then the certificate assessment may proceed as if that species did not occur at the site. A detailed report on the survey must be attached to the file.

(b) If a site assessment/inspection (under DEC *Threatened Biodiversity Survey and Assessment Guidelines for Developments and Activities*) indicates that the location of the species, population or EEC of concern or their habitat is such that the conditions can be modified to protect the species, population or EEC, or the extent of works limited. The principles of making such a modification to the conditions are detailed in the explanatory notes of the *Threatened Species Hazard Reduction List* and must be followed. A detailed report on the survey and the assessment of impacts must be attached to the file, or

The principles of making modifications to the conditions will be refined and improved during 2006 (see Appendix 2 for preliminary determinations). The RFS will prepare species, population and ecological community specific guidelines (where appropriate) in conjunction with DEC. Adding conditions in accordance with these guidelines will enable a Certificate to be issued.

(c) If a licence under Section 91 (or a Certificate under Section 95(2)) of the *Threatened Species Conservation Act 1995* has been issued by DEC. The conditions in the s91 licence (or s95(2) Certificate) must be imposed. The extent of the works sought is to be no more than the minimum required for the protection of life or dwellings only. An explanation for the extent of the hazard reduction proposed is to be provided to DEC.

The RFS is to undertake the appropriate assessment (8 Part Test) and seek the s91 licence from DEC.

The process of applying these alternatives is described below.

1. CIO provide NES with species, population or EEC of concern, details of site (including aerial photos) and nature of intended works.
2. NES ascertain if survey required, and if so the nature of survey to be undertaken and when.
3. NES ascertain whether NES, consultant or CIO is to undertake survey (depending on species of concern and competency of staff).
4. Conduct survey.
5. Person carrying out survey to prepare a report for NES detailing how survey undertaken and findings of survey in relation to works required.
6. NES assess findings of survey and report.
7. NES ascertain whether:
   - species (or habitat) not present,
   - species present, and conditions can be modified, or
   - species present, and conditions cannot be modified.
8. NES determine outcome and:
   - advise CIO to proceed with Certificate and modifications as required,
   - undertake application for s91 licence (or SIS), or
   - advise CIO refuse Certificate.

☑ Apply all conditions required to comply with the assessment or s91 licence

AND/OR

☑ Condition: 'No {hazard reduction work} is permitted within the exclusion area marked on the attached map'

☒ Denied Reason: 'Threatened species conditions prevent work'

4.7.5 Summary of process for threatened species

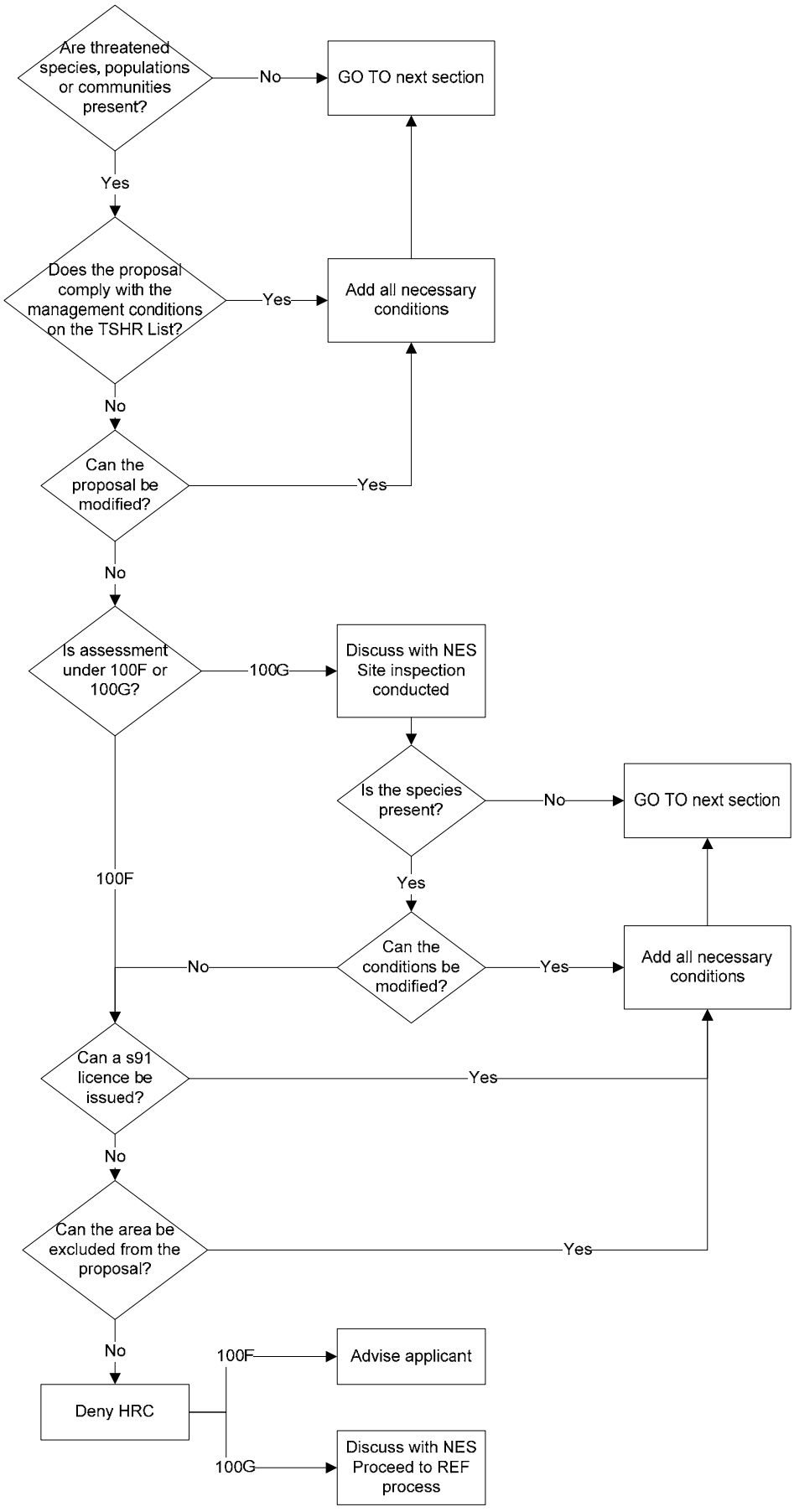


Figure 4.6 Threatened species assessment

4.8 Fire frequency (Clause 5.5)

Inappropriate fire frequency can have adverse effects on biodiversity (particularly high frequency fire).

📖 For this part of the assessment, you will need to determine the fire interval required for the area. A set of minimum fire intervals has been developed for broad vegetation formations across NSW and included in the Code as Appendix A. Where available, local criteria specified in a Bush Fire Risk Management Plan is to be used in preference to the table in the Code.

The following factors need to be resolved before you can progress assessment under this section:

(a) Understanding vegetation classification

(b) Determining vegetation type

(c) Determine the fire history

(d) Determining the minimum fire interval required

(e) Management zone requirements

4.8.1 Understanding Vegetation Classification

📖 The formations and classes used within the Code are those of Keith (2004).

Vegetation classification can be described in a hierarchy:

(a) vegetation formation - broad structural and functional grouping, then

(b) vegetation class - general habitat and floristic grouping, then

(c) vegetation community - specific local habitat and floristic grouping.

The process of vegetation classification involves field surveys, air photo interpretation and data analysis at a local level to recognise distinct assemblages of plants (communities). These will be the 'plant communities', 'map units' or similar terminology within a local vegetation map/report (e.g. moist escarpment New England blackbutt forest). At a regional level, several vegetation maps may be combined, with similar communities combined into vegetation classes (e.g. northern escarpment wet sclerophyll forest). At a broader scale, communities and/or classes are combined into more generalised formations (e.g. wet sclerophyll forest). The Keith (2004) Ocean Shores to Desert Dunes has applied this process to available vegetation mapping across NSW to give a state-wide consistent approach to vegetation types.

! For the purpose of the Code vegetation generally only needs to be identified to formation level. However, some freshwater wetland and forested wetland vegetation classes are excluded from specific types of work, and so these will need to be identified to class level. Identification to community level is only required if LMZ burning is proposed within a regionally significant community.

4.8.2 Determining Vegetation Type

Using vegetation maps

You should endeavour to source vegetation maps and reports locally. Consult with your Regional GIS officer and/or Council regarding availability of appropriate vegetation map data layers. NES can assist you to group the vegetation communities into the formations used in the Code.

Consulting a vegetation map should be part of your pre-inspection data gathering. A site inspection is then required to verify the vegetation type accurately.

Where no vegetation maps are available, determination of vegetation type will need to be based solely on a site inspection. Take notes and photos.

Using the Keith (2004) book

The vegetation formations used within the Code are those from Keith (2004). The identification key in Appendix 3 should be used to determine vegetation formations.

Note the requirements specified in clause 5.5 of the Code regarding situations where there is more than one vegetation type on the site. This may not be obvious from a vegetation map (depending on its scale), so be sure to check for this during the site inspection.

Using the key in Keith

The identification key of Keith (Appendix 3) will step you through identifying the vegetation formation. The key is a series of questions, each with two alternative answers (e.g. A and A*). To use the key, read both alternative answers, choose the most correct one and go to the next question immediately below the correct answer until you reach a formation name in bold italics.

Once you have determined the formation, go to the relevant chapter of the book and read the details on the classes. The distribution map, description and indicative species will help you to determine which classes are relevant to your area. You should become familiar with the vegetation classes in your area.

The key is a series of questions, each with two alternative answers (e.g. A and A*). To use the key, read both alternative answers, choose the most correct one and go the to next question immediately below the correct answer until you reach a formation name in bold italics.

For more information and to confirm your identification, turn to the relevant Chapter in Part II. Note that for some formations there is more than one possible path to arrive at the formation. See glossary for definition of terms.

4.8.3 Determining the fire history

You will also need details of fire history, sourced locally. Fire history includes both wildfire and prescribed fire. A site inspection should be performed to verify the accuracy of any mapped/recorded fires for the site. If there are no records of fire for the site, a site inspection should be conducted to determine evidence of previous fires.

NB It is understood that knowledge of the fire history (hazard reduction and wildfire) of vegetation varies across the landscape. In circumstances where the CIO has no fire history record for an area an effort should be made to determine likely fire history. If no fire history is apparent, then the commencement date of this Code may be used as year one for the purpose of the minimum fire interval table. In order to address the issue of minimum fire intervals in the future, the CIO is to record fire history (hazard reduction and wildfire) from the commencement date of this Code. Recent fire events should be recorded as part of the Operations Plan for the District/Zone.

4.8.4 Determining the minimum fire interval required

Check the BFRMP for fire intervals determined for local conditions. If no fire intervals are specified in the BFRMP, refer to the Fire Interval Tables in Appendix A of the Code.

Code Appendix A: Fire Interval Table for SFAZs and LMZs

Vegetation Formation (and Chapter in Keith 2004)	Minimum fire interval for SFAZ (years)	Minimum fire interval for LMZ (years)
Rainforests (1)	No burning permitted	No burning permitted
Wet sclerophyll forests (shrubby subformation) (2)	25	30 Low intensity fire only
Wet sclerophyll forests (grassy subformation) (2)	10	15 Low intensity fire only
Grassy woodlands (3)	5	8
Grasslands (4)	2	3
Dry sclerophyll forests (shrub/grass subformation) (5)	5	8
Dry sclerophyll forests (shrubby subformation) (5)	7	10
Heathlands (6)	7	10
Alpine complex (7)	No burning permitted	No burning permitted
Freshwater wetlands (8) *Differs depending on vegetation class*	*As below*	*As below*
- Coastal heath swamps	7	10
- Montane bogs and fens	No burning permitted	No burning permitted
- Coastal freshwater lagoons	No burning permitted	No burning permitted
- Montane lakes	No burning permitted	No burning permitted
- Inland floodplain swamps	7	10
- Inland floodplain shrublands	7	10
Forested wetlands (9)	7	10
Saline wetlands (10)	No burning permitted	No burning permitted
Semi-arid woodlands (grassy subformation) (11)	6	9
Semi-arid woodlands (shrubby subformation) (11)	10	15
Arid shrublands (chenopod subformation) (12)	No burning permitted	No burning permitted
Arid shrublands (acacia subformation) (12)	10	15

4.8.5 Management zone requirements

📖 If the work is in a SFAZ or LMZ, the following resources are required for determination of fire interval:

The Bush Fire Risk Management Plan or Code Appendix A fire interval table
Fire history map and/or records
A vegetation map
Aerial photos or satellite imagery if available
Site inspection

4.8.5.1 Fire frequency for APZ

Consideration of fire frequency is not part of the assessment for APZ works unless threatened species, populations or ecological communities are identified, as per clause 5.4.1. of the Code (see section 4.7). This is due to the degree of disturbance required for the creation and maintenance of an APZ and the limited extent of the area involved.

If threatened species, populations or ecological communities presence is indicated, then a Certificate may only be issued for prescribed burning if the time since fire is longer than, or equal to, the fire interval required by the *Threatened Species Hazard Reduction List* (if specified). Note that the area of concern is in most cases limited to a 100 metre radius around the known location of threatened species and populations. Ecological communities require the appropriate fire frequency across their extent.

☑ Condition: 'No {hazard reduction work} is permitted within the exclusion area marked on the attached map'

☒ Denied Reason: 'Threatened species prevent works'

4.8.5.2 Fire frequency for SFAZ

In a SFAZ the time since fire at the site must be longer than or equal to the minimum SFAZ fire interval for the relevant vegetation formation/s.

☑ Condition: 'All {hazard reduction} permitted by this Certificate shall be carried out within the areas defined on the attached map'

☑ Condition: 'The hazard reduction burn must be conducted in a manner to prevent burning within the {sensitive vegetation type} as indicated on the attached map'

☒ Denied Reason: 'Fire interval below minimum allowed'

Threatened species

If threatened species, populations or ecological communities presence is indicated, then a Certificate may only be issued for prescribed burning if the time since fire is longer than, or equal to, the fire interval required by the *Threatened Species Hazard Reduction List* (if specified). Note that the area of concern is in most cases limited to a 100 metre radius around the known location of threatened species and populations. Ecological communities require the appropriate fire frequency across their extent.

☑ Condition: 'No {hazard reduction work} is permitted within the exclusion area marked on the attached map'

☒ Denied Reason: 'Threatened species prevent works'

4.8.5.3 Fire frequency for LMZ

In a LMZ a more thorough assessment of fire frequency is required. Consideration is to be given to pervious fire intervals and the landscape effects of burning. The assessment rules for fire interval in LMZ involves two steps.

Step 1. Fire Intervals

The fire interval rules for LMZ give you several different options, provided that the fire history of the site is good enough to record multiple fires through time at the site.

! If only the most recent fire is recorded (or if no fire history is recorded - in which case time since fire must be determined from a site inspection) then:

The time since fire for the site must be longer than (or equal to) the minimum LMZ fire interval

! With a more detailed fire history, more options are open:

The time since fire for the site must be longer than (or equal to) the minimum LMZ fire interval AND the interval between the most recent fire and the preceding fire must be longer than (or equal to) the minimum LMZ fire interval;

OR

If the interval between the most recent fire and the preceding fire is shorter than the minimum LMZ fire interval, then the time since fire for the site must be longer than (or equal to) the minimum LMZ fire interval multiplied by 1.5;

OR

If the time since fire for the site is shorter than the minimum LMZ fire interval BUT longer than the minimum SFAZ fire interval, THEN the interval between the most recent fire and the preceding fire must be longer than (or equal to) the minimum LMZ fire interval

The possible outcomes are summarised in Table 4.5 and Figure 4.7.

Table 4.5 LMZ fire interval assessment

Time between proposed burn and previous fire	Time between previous fire and preceding fire	Outcome
≥LMZ	unknown	approve
<LMZ	unknown	deny
≥LMZ	≥LMZ	approve
≥LMZ but <LMZ*1.5	<LMZ	deny
≥LMZ*1.5	<LMZ	approve
<LMZ but ≥SFAZ	≥LMZ	approve
<LMZ but ≥SFAZ	<LMZ	deny
<LMZ and <SFAZ	≥LMZ	deny
<LMZ and <SFAZ	<LMZ	deny

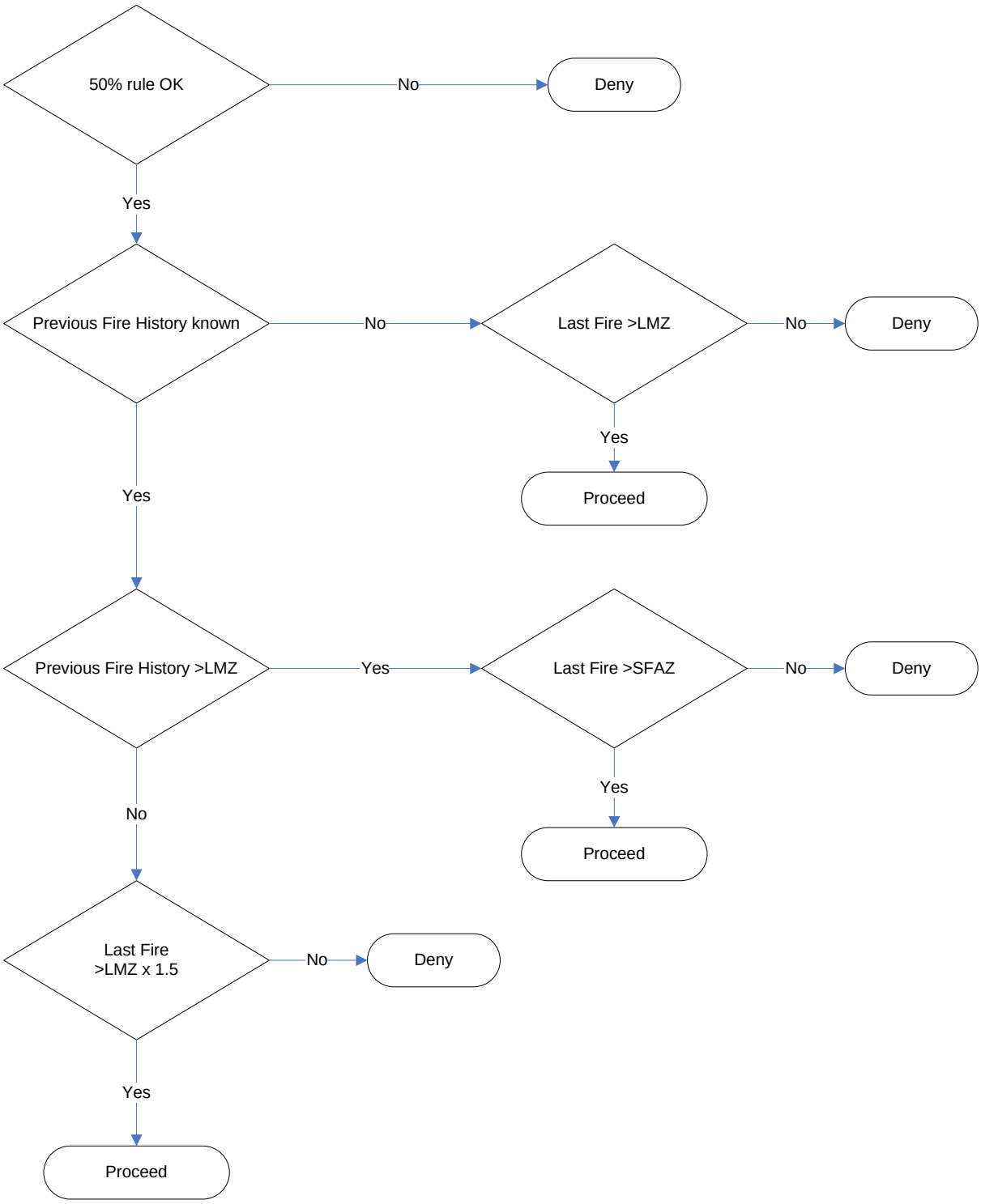


Figure 4.7 LMZ Fire interval assessment

A computer program has been developed to analyse your site fire history against these rules. Install the Fire Interval Calculator and see the User Manual.

☑ Condition: 'All {hazard reduction} permitted by this Certificate shall be carried out within the areas defined on the attached map'

☑ Condition: 'The hazard reduction burn must be conducted in a manner to prevent burning within the {sensitive vegetation type} as indicated on the attached map'

☒ Denied Reason: 'Fire interval below minimum allowed'

Threatened species

If threatened species, populations or ecological communities presence is indicated, then a Certificate may only be issued for prescribed burning if the time since fire is longer than, or equal to, the fire interval required by the *Threatened Species Hazard Reduction List* (if specified). Note that the area of concern is in most cases limited to a 100 metre radius around the known location of threatened species and populations. Ecological communities require the appropriate fire frequency across their extent.

☑ Condition: 'No {hazard reduction work} is permitted within the exclusion area marked on the attached map'

☒ Denied Reason: 'Threatened species prevent works'

Step 2 Landscape considerations

Landscape assessment

An assessment must also be made of the state of the vegetation type within the entire area covered by the BFRMP. If more than 50% of the vegetation type has been burnt within the last 24 months, a LMZ burn cannot be approved.

A lookup table will be provided with the approximate percentage of each vegetation formation that has been burnt within the last 2 years within your LGA. The data in this table will be recalculated by GIS & NES on a regular basis.

This data needs to be edited within the Fire Interval Calculator program (see User Manual)

☒ Denied Reason: 'Inconsistent with requirements for LMZ'

Significant vegetation

If the proposed burn is located within either:

(a) a regionally significant vegetation community, or
(b) a known wildlife corridor,

then a reasonable part of the area covered by that community/corridor must remain at a time since fire equal to (or greater than) the minimum fire interval.

This may require denying or modifying the proposal.

☒ Denied Reason: 'Inconsistent with requirements for LMZ'

Mosaic burning

LMZ must be managed in a manner to provide a mosaic of different age structures within the vegetation. This provides both a sensible pattern of fuel reduced areas to assist in fire suppression, and a more sustainable biodiversity outcome.

A Certificate may be modified or refused where a proposed burn does not meet these objectives or is not consistent with the BFRMP. A decision will need to be made as to the pattern of mosaic sought over the timeframe of the relevant vegetation formation fire interval. For example, a mosaic outcome is not provided by burning a large portion of the landscape in one year. This method does not provide for appropriate bush fire risk mitigation over the long term. A staggered approach to selecting suitable LMZ sites is required such that all sites may be burned over the cycle of the required fire interval.

☒ Denied Reason: 'Inconsistent with requirements for LMZ'

4.8.5.4 General conditions

The area approved for burning must be clearly indicated on a map attached to the Certificate.

☑ Condition: 'All {hazard reduction} permitted by this Certificate shall be carried out within the areas defined on the attached map'

☑ Condition: 'The hazard reduction burn must be conducted in a manner to prevent burning within the {sensitive vegetation type} as indicated on the attached map'

Standards to protect soil erosion and stability (Clause 5.10)

📖 Soil erosion risk maps have been developed by DIPNR. This classifies an area based on soil regolith, rainfall erosivity and slope. A further map is also supplied by DIPNR indicating areas susceptible to mass movement. These maps will be made available through BRIMS, where they exist. Refer to section 3.5 for further advice on erosion issues.

If a moderate or high intensity burn is being used, conditions must be imposed that the burn plan must include measures to ensure that moderate intensity fire is not used in areas mapped with a Soil Erosion Risk of greater than 150 (t/ha/yr) or land susceptible to mass movement.

Where maps of Soil Erosion Risk are not available, the burn plan must include measures to ensure that moderate intensity fire is not used on soil surface slopes greater than 18°.

4.9 Riparian buffer zones (Clause 5.10)

Riparian zones play an important role in maintaining water quality as well as terrestrial and aquatic habitat.

A riparian buffer zone is an area of vegetation located between a source of disturbance and a creek, river or wetland. These areas play an important filtering role protecting water quality and preventing river bank erosion. They also contain vegetation communities that can be essential for maintaining fish habitat and stream ecology. It is significant vegetation in its own right, in that it provides important habitat for a unique assemblage of terrestrial species. In most cases the differences in vegetation between the riparian zone and the surrounding vegetation will be readily apparent.

! No lighting of a prescribed burn is permitted within the riparian buffer zone distances specified in Table 5.2 of the Code below. The distance is measured from the top of the highest bank or shore (or mean high water mark for tidal waters) of streams, rivers, wetlands and lakes.

! For prescribed burns being conducted near water bodies, all reasonable steps (excluding clearing vegetation and the use of foams or retardants) should be taken to ensure that the fire does not burn within the riparian buffer zone. Particular care should be taken in area of contiguous native vegetation.

! Fires should be lit under conditions so that if they do burn within the target widths they are patchy and of low intensity, and there is no soil disturbance (including hand trails) within the target setback area.

! No lighting of a windrow burn is permitted within 20 metres of any water body regardless of vegetation type.

Refer to section 3.6.2 of these guidelines for the method to be used for determining stream order.

Code Table 5.2: Buffer zones for waterbodies

Waterbody	Buffer zone (metres)
1st order and unmapped streams	5
2nd order streams; wetlands, lakes and lagoons greater than or equal to 0.1 but less than 0.5 ha	5
3rd order streams; wetlands, lakes and lagoons greater than or equal to 0.5 but less than 2 ha	10
4th order and greater streams; estuaries; wetlands, lakes and lagoons greater than or equal to 2 ha	20

☑ Condition: 'Direct lighting of vegetation is not permitted within {distance} metres of the {waterbody}'

☑ Condition: 'The burn shall be conducted in a manner to prevent burning within {distance} metres of the {waterbody}'

☑ Condition: 'No windrow burning is permitted within {distance} metres of any {waterbody}'

Wetlands

Riparian buffer zone restrictions do not apply (i.e. are not required) to prescribed burns within the following vegetation formations of Keith (2004): freshwater wetlands (excluding vegetation classes excluded under clause 2.4 of the Code) and forested wetlands. This is identified within Table 4.6.

NB The purpose of this clause is to provide for prescribed burning to be carried out in some wetland/riverine vegetation types. The requirement to comply with minimum fire intervals is an important consideration here. Vegetation adjoining the riparian vegetation may have a lower minimum fire interval. If a prescribed burn is planned for the adjoining vegetation then care will need to be taken that the minimum fire interval of the riparian vegetation is maintained. In these cases the riparian buffer zone will need to be implemented.

Many of these wetlands are now classified as Endangered Ecological Communities. Fire frequency will therefore need to comply with any requirements under the Code's threatened species clause (Clause 5.5).

Note that works are not permitted in SEPP 14-Coastal Wetlands which are excluded under the Code.

It is important to note that a wetland extends as far as it is likely to be inundated by water. Therefore the riparian buffer zone often commences at some distance from the point at which the water may currently occur.

Table 4.6 Wetland vegetation types

Vegetation Formation (and Chapter in Keith 2004)	Riparian Buffer
Freshwater wetlands (8)	
- Coastal heath swamps	Not Required
- Montane bogs and fens	Required
- Coastal freshwater lagoons	Required
- Montane lakes	Required
- Inland floodplain swamps	Not Required
- Inland floodplain shrublands	Not Required
Forested wetlands (9)	
- Coastal swamp forests	Not Required
- Coastal floodplain wetlands	Not Required
- Eastern riverine forests	Not Required
- Inland riverine forests	Not Required
Saline wetlands (10)	Required

4.10 Standards for the protection of other cultural heritage (Clause 5.13)

4.10.1 Identifying relevant sites

There are a number of heritage lists that need to be inspected to ascertain the items and places of significance in your area. These range from national listings through to state and local government listings. There are also a variety of registers within each level of government (e.g. World Heritage, National Heritage List, Register of National Estate and the Commonwealth Heritage List at the Commonwealth level).

📖 Determine if there are sites from heritage lists as follows:

📖 Check the Commonwealth Department of Environment and Heritage website (www.deh.au.gov). Select 'Australian Heritage' then scroll down and select 'Australian Heritage Places Inventory'. A search can be undertaken for your local government area. Be aware that there are some limitations within this search, e.g. the Blue Mountains area is a World Heritage site, however a search on the Blue Mountains LGA does not indicate this listing, this is because it is registered under Hawkesbury LGA. This difficulty appears to be addressed within the next step.

📖 Check the NSW Heritage Office website (www.heritage.nsw.gov.au). Select 'search for heritage listings' which will take you to the on-line database search facility. Search on your local government area. The search results are separated into two categories, those under the NSW *Heritage Act* and those listed by local government and state agencies. Both categories will need to be checked.

📖 Check with your local Council as to the mechanisms that they have in place for the identification of heritage sites. This may include Local Environment Plans (LEPs), Development Control Plans (DCPs) and/or s149 Certificates. They may also have such data on a GIS map layer.

NB On the basis that there is currently no comprehensive mapping of all these sites, it is recommended that you firstly identify the listings that apply within your area. Then select those that are relevant to hazard reduction, e.g. heritage bank buildings in the middle of town surrounded by other buildings are unlikely to be of interest. This approach will be more efficient than checking the databases each time you do a Certificate. However, the databases should be checked on a regular basis to ensure that any new listings are accommodated.

4.10.2 Determining appropriate conditions

If there is a site on any of the registers that may be affected by the proposed work, conditions must be imposed to protect the values of the site. Such conditions must be consistent with the RFS/NSW Heritage Office document *Guidelines for Bush Fire Hazard Reduction Works Affecting Heritage Items*.

! Note that the *Guidelines for Bush Fire Hazard Reduction Works Affecting Heritage Items* are currently under development. If any sites are indicated to be present contact NES for advice before proceeding.

Be aware that NSW's heritage is diverse and includes buildings, objects, monuments, Aboriginal places, gardens, bridges, landscapes, archaeological sites, shipwrecks, relics, bridges, streets, industrial structures and conservation precincts. It is important to note that heritage names may not be descriptive of the entire heritage item. For example, an historic house may also include protection of its grounds including the vegetation.

💻 Where a site or item has been identified, enter the name in BRIMS. A Cultural Heritage Conditions list will appear on the Conditions List page. Select or enter all relevant conditions as per the *Guidelines for Bush Fire Hazard Reduction Works Affecting Heritage Items*.

☑ Conditions: Select all relevant conditions

AND/OR

☑ If further detailed conditions are required, enter them as free text conditions within the Cultural Heritage Conditions list section.

OR

☑ Condition: 'No {hazard reduction work} is permitted within the exclusion area marked on the attached map'

4.11 Other specified environmental values (Clause 5.14)

4.11.1 Identification of sites

Determine if the site contains any locally significant environmental areas or constraints identified in the Council's LEP. The provision of this information is part of the RFDSA. Ensure arrangements are in place for efficient inspection of LEP and associated maps. Note that LEPs change over time.

! Determine if the site is affected by any LEP restrictions/requirements. Check for the following sections/items within the LEP:

Land zoning objectives and controls

Protected areas

General provisions of relevance (e.g. tree management, vegetation clearing)

Special provisions for environmental protection (e.g. riparian, slope, catchment)

Heritage items and conservation provisions

Significant vegetation communities or species

! Determine if the site is affected by any other plans of management relating to the protection of the environment. For example:

SEPP 44 – Koala Habitat, and associated Plans of Management (contact Council to determine if there are any in your area),

Recovery Plans for threatened species, populations and ecological communities (identify all threatened species, populations and ecological communities in your local government area- Council usually has a list, and then view the list of draft and final recovery plans on DEC website www.environment.nsw.gov.au),

Council Plans of Management for bush reserves (contact Council),

Other (contact Council).

4.11.2 Establishing conditions

If the LEP includes locally significant areas that apply to the land then add conditions to comply with the restrictions. The conditions must be consistent with the objectives of the LEP zone/plan.

Equally, if any plans of management exist then ensure works are consistent with the plan.

☑ Condition: Add free text conditions as required to comply with the LEP or PoM

4.12 Weeds assessment (Clause 4.9)

Hazard reduction activities may involve land infested with weeds. Proposals for hazard reduction need to be assessed in terms of their effect on the control and/or spread of weeds. When considering a hazard reduction proposal the following matters must be considered. As discussed below herbicides can only be used for weed removal.

4.12.1 Presence of weeds

! Determine the presence and population of noxious or environmental weeds within the area that work is to be undertaken. You need to be familiar with the species that are listed as noxious or environmental weeds within your LGA.

Noxious weeds

📖 Listed by NSW Agriculture (Dept. of Primary Industries) at:

http://www.agric.nsw.gov.au/noxweed/

Categories of noxious weeds:

- For a W1 noxious weed, the presence of the weed on land must be notified to the local control authority and the weed must be fully and continuously suppressed and destroyed
- For a W2 noxious weed, the weed must be fully and continuously suppressed and destroyed
- For a W3 noxious weed, the weed must be prevented from spreading and its numbers and distribution reduced
- For a W4 noxious weed, the action specified in the declaration must be taken in respect of the weed.

Environmental weeds

📖 Listed by local authority:

📖 Check with your Council Weeds Officer

📖 See Council documents, e.g.:

Vegetation Management Policy
Weed Management Plan
Local Environment Plan
Tree Preservation Order

General

Information on other weeds of significance may be available in Council State of the Environment reports. Council weeds inspectors can also provide information on the life cycle and control measures for particular weeds.

4.12.2 Establishing conditions

! If weeds are present, then conditions must be imposed to prevent their spread

! Sensitive areas may require follow up inspections and weed control actions by the land manager to prevent weed growth

! If required place conditions regarding machinery hygiene

! Consult with the Council's weed officer to determine if further conditions need to be added to the Certificate to minimise the effects of weeds

See NSW Agriculture and Weeds CRC for information on weed management. Also discuss with your Council's weed officer. Weed CRC Best Practice Management Guidelines are found at http://www.weeds.crc.org.au/publications/weed_man_guides.html

Identify any factors present that may encourage or inhibit weed growth as a result of the burn. For example:

- Burning of weeds should be undertaken prior to seeding, e.g. St. John's Wort is an agricultural weed and may be found in adjoining bushland and on travelling stock routes etc. It may be controlled by burning as fire will destroy the seeds.
- Some weeds may reproduce from any part of the plant. If small pieces of the plant are caught in machinery they may be easily spread. If conducting works in such areas, care should be taken to avoid areas of weed wherever possible and inspect machinery/vehicles before leaving the area to remove any weed propagules present. Alligator Weed is one such problem weed.

☑ Condition: 'All noxious and environmental weeds are to be removed, and measures taken to prevent further spread of weed species'

☑ Condition: '{Species name} is to be removed and managed in accordance with the Weed CRCs Best Practice Management Guidelines'

☑ If further detailed conditions are required, enter them as free text conditions

4.12.3 Herbicides

Herbicides can only be used within this Code for removing weeds and use must be consistent with the label and not contrary to the *Pesticides Act 1999*.

☑ Condition: 'The use of herbicides is only permitted by this Certificate for the removal of weed species'

☑ Condition: 'Only herbicides registered by the Australian Pesticides and Veterinary Medicines Authority (www.apvma.gov.au) that are approved for the intended situation of use may be used'

☑ Condition: '{Species name} is to be removed and managed in accordance with the Weed CRCs Best Practice Management Guidelines'

☑ Condition: 'Herbicides must be used in accordance with the *Pesticides Act 1999*, the *Protection of the Environment (Operations) Act 1997*, the *Noxious Weeds Act 1993*, and the directions on the herbicide container label'

☑ Condition: 'Herbicide use must be conducted in a manner to prevent injury to persons, property and non-target plants and animals'

Use of herbicides is not permitted within 100 metres of any species on the *Threatened Species Hazard Reduction List*. Check the TSHR map for threatened species in the locality of intended herbicide use. If necessary, clause 4.5.3 of the Code may be considered.

☑ Condition: 'Herbicide use is not permitted within the exclusion area indicated on the attached map'

☒ Denied Reason: 'Threatened species prevent work'

The use of herbicides near waterbodies is not permitted if it is likely to result in water pollution (a minimum of 10m from any riparian area).

The following considerations may be applied to reduce the risk of water pollution:

- Consider methods such as cutting weed and painting herbicide on cut end
- Avoid spraying near drainage lines
- No spraying within 30 metres of the headwaters of creeks
- Restrict the type of herbicide used to those specified as safe for waterbodies
- Do not spray under weather conditions likely to cause spray to drift
- Check weather forecast and avoid spraying if rain is forecast within a few days.

☑ Condition: 'Herbicide use is not permitted within the exclusion area indicated on the attached map'

☑ Condition: 'Herbicide use near water bodies must be conducted in a manner to prevent water pollution'

☑ If further detailed conditions are required, enter them as free text conditions

4.13 Smoke management assessment (Clause 5.9)

Note that many of the following smoke management issues require notification, as summaries in Table 4.7.

Table 4.7 Smoke notification

Issue	Notification Time
Neighbours	24 hours prior
Sensitive Locations	7 days prior
Traffic	7 days prior (liaise with RTA/Council & Police) 24 hours prior (notify RTA/Council)
Power Lines	7 days prior
Fire Authority	24 hours prior

📖 This assessment will require the following resources:

the bush fire risk management plan,
a map of the sensitive locations,
knowledge of sensitive areas such as bat colonies (DEC map) and mine shaft air intakes, and aerial photos or satellite imagery if available.

! Determine whether the fire will be a 'small' or 'large' fire. Clause 5.9 of the Code defines the size of fires as:

Small fires – fires up to 1ha (including pile burns)

Large fires – fires greater than 1ha (and windrow burns)

☑ Condition: 'All burning is to be conducted in such a way as to minimise smoke emissions. Refer to the RFS document *Standards for Low Intensity Bush Fire Hazard Reduction Burning*'

4.13.1 Notification of neighbours

Adjoining land

Notice must be given to the occupiers (or if no occupiers, the owners) of all land adjoining the site (no matter the distance) of a proposed fire at least 24 hours prior to the intended date of the burn. Adjoining land includes land separated by a road, river, etc.

☑ Condition: 'The owner/occupier of all adjoining properties (including land separated by a road or waterway) shall be advised of any proposed burning at least 24 hours before lighting the burn'

Neighbouring residences

Determine if any residential dwelling is within the distances specified in clause 5.9.1 of the Code (as below).

At least 24 hours notification of the intended date of the burn must be given to adjoining neighbours if their dwelling is within:

- 50 metres of a small fire; or
- 200 metres of a large fire.

Notification of more distant neighbours may be warranted in other cases where, for example, local topography channels smoke.

☑ Condition: 'The owner/occupier of all residential premises within {50/200}" metres shall be advised of any proposed burning at least 24 hours before lighting the burn'

4.13.2 Sensitive locations

Special conditions will apply to burns that are conducted within specified distances to sensitive areas. These include, but are not limited to, areas such as schools, public institutions, hospitals, nursing homes, retirement villages, ventilation intakes (e.g. mine shafts) and airports.

Use the sensitive locations map provided with the BFRMP and other local information to determine if a sensitive area is located within:

- 100 m of a small fire, or
- 1000 m of a large fire.

Additional notification may be warranted in other cases where, for example, local topography channels smoke.

Discussions should be initiated with the owner/manager of a sensitive location to ascertain the smoke issues and whether the wind direction or timing of the burn is important. For example, consideration should be given to whether burning should be restricted to daylight hours.

☑ Condition: '' The owner/manager of {facility} shall be advised of any proposed burning at least 7 days before lighting the burn'

☑ Condition: 'All burning shall be conducted during closed hours of the {facility}, or where the prevailing winds are blowing away from the {facility} and the burn can be conducted free of any forecast wind shifts greater than 45 degrees. Contingency plans shall be prepared so that in the event of an unpredicted wind shift greater than 45 degrees occurring, smoke generation will be minimised. This may include halting the burn until conditions have improved (if this is safe to do)'

☑ Condition: 'All burning is to be restricted to daylight hours'

4.13.3 Traffic

Determine whether the proposed burn is likely to affect traffic safety, whether by smoke, or vehicles or personnel being at risk along road verges.

Contact the local Council in the first instance as they will be able to identify the relevant roads authority (local Council or the Roads and Traffic Authority (RTA)).

Where the proposed burn will produce smoke that has the potential to detrimentally affect traffic, the person carrying out the works must:

- as soon as possible, liaise with police and the relevant road authority (RTA or Local Council) to determine when traffic conditions are likely to be most suitable to carry out the burn and any requirements for road safety and traffic management including public communications, signage, constraints on ingress and egress from the road carriageway,
- comply with any requirements so specified, unless those requirements are contrary to any other condition of the Certificate, in which case the work cannot be conducted, and
- notify the relevant road authority (RTA or Local Council) 24 hours before the proposed burn if the conditions are such that the smoke will affect a nearby road.

☑ Condition: 'The {RTA/Council} and police shall be contacted at least 14 days before the proposed burn to determine if any traffic management arrangements are required. The Certificate holder shall comply with any requirements that may be imposed regarding suitable times for burning and traffic management strategies. If such conditions are contrary to any other condition on this Certificate, the burn cannot proceed'

☑ Condition: 'The {RTA/Council} shall be advised at least 24 hours before lighting the burn'

4.13.4 Tourism

The intent of this consideration is to, wherever possible, avoid disrupting major community events. This will minimise community angst and adverse economic impacts.

The first step is to check the Bush Fire Risk Management Plan to determine if any tourism issues are highlighted. The second step is to consider other major tourism in the area and whether they would be affected by a burn.

If tourism is significant in the area it may be necessary to condition the Certificate so that burning does not take place during the peak holiday periods or during major sporting or community events. For example, burning is often suspended during the Easter Holidays in some areas, or in the vicinity of a triathalon.

☑ Condition: 'No burning permitted by this Certificate shall be carried out between {start date} and {end date}'

4.13.5 Power lines

If high voltage powerlines are located within the boundaries of the proposed burn, conditions must be imposed requiring that the person acting on the Certificate must:

- at least 7 days prior to the planned burn, liaise with the electricity provider to determine when conditions are likely to be most suitable to carry out the burn and any safety requirements; and
- comply with any requirements so specified, unless those requirements are contrary to any other condition of the Certificate, in which case the work cannot be conducted.

For example, the Certificate may need to be conditioned to ensure that specific burn patterns are implemented to minimise smoke impact, such as using lightning patterns so that the fronts burn away from the powerlines.

☑ Condition: '{electricity provider} shall be advised at least 7 days before the proposed burn. The Certificate holder shall comply with any requirements that the {electricity provider} may impose. If such conditions are contrary to any other condition on this Certificate, the burn cannot proceed'

☑ Condition: 'No burning is permitted within {distance} metres of any powerlines'

4.13.6 Significant bat colonies

Discuss with your local DEC (NPWS) office if there are any known locations of significant bat colonies. If significant bat colonies are within:

- 100m of a small fire, or
- 1000m of a large fire,

then the burning is to be carried out only when predicted weather patterns indicate the wind will be blowing away from that area.

If there is a need to implement the burn with the wind blowing toward the colony then the Certificate must contain conditions that require a site inspection of the colony prior to carrying out the burn and only proceeding with the burn if the colony is not present at that time of the burn.

! If compliance with this requirement severely limits the likelihood of being able to carry out the burn, NES should be consulted.

☑ Condition: 'All burning shall be conducted where the prevailing winds are blowing away from the {direction} and the burn can be conducted free of any forecast wind shifts greater than 45 degrees'

☑ Condition: 'No burning permitted by this Certificate shall be carried out between {start date} and {end date}'

4.14 Fire permits, notification of fire fighting authorities, and No Burn days

Where a Certificate is issued for the use of fire, conditions must be added regarding the notification of the relevant fire fighting authority and NO Burn days.

4.14.1 Fire permits

The person acting on a Certificate must ascertain whether at the proposed time of the burn a fire permit is required under section 87 or section 88 of the *Rural Fires Act 1997*. If a fire permit is required, this must be obtained prior to conducting the burn.

! Provide applicant with a copy of 'Before You Light That Fire'.

4.14.2 Notification of fire fighting authorities

The person acting on a Certificate must give at least 24 hours notice prior to lighting the burn as follows:

- in a Rural Fire District, to the fire control officer,
- in a NSW Fire Brigade District, to the officer in charge of the fire station nearest the land on which the burn is to be conducted.

4.14.3 No Burn days

On making notification as per above, the person must ascertain from the local fire control officer or officer in charge of the nearest NSW Fire Brigade station whether:

- a No Burn Notice has been or is likely to be issued by DEC Environment Protection and Regulation Division), and
- if the proposed activity qualifies for an exemption from the No Burn Notice.

Standard conditions will be added by BRIMS

5 CONCLUSION

By now there will be a list of conditions that you have identified to be included in the Certificate. Before printing the Certificate, you need to check and ensure that none of the conditions are contradictory or unnecessarily repetitive. You need to ensure that conditions that are overridden or made redundant by other conditions are deleted or rewritten to make the intent clear.

You also need to consider whether the combined effect of the conditions renders the Certificate inoperable. You may have a situation where the conditions imposed limit the works to the extent that, in practical terms, the work will not be able to be carried out. For example, a burn is proposed on a site where there is a nursing home to the west, a hospital to the north and a bat colony to the south. The conditions applied to protect each of the sensitive areas will mean that the burn cannot be carried out in any weather, as wind from any direction will affect one or more of the sensitive areas. In such a case, although the Certificate can be issued, you need to discuss the implications with the applicant and ensure that they understand the limitations. The applicant may wish to pursue the normal environmental approval processes, as another consent authority with a greater degree of discretion may be able to provide a more practical approval than is possible under the Code.

5.1 Issuing the Bush Fire Hazard Reduction Certificate

If the Certificate is issued under 100F:

- Advise the applicant of all relevant requirements by posting the Certificate with conditions attached.
- If the hazard reduction works and associated conditions require verbal advice then contact the applicant and explain such that you are confident that the applicant understand the works required and any limitations.

If the Certificate is issued under 100G:

- Provide the Certificate to the RFS Officer managing the complaint/duty of care process.
- Ensure HR notice and Certificate are consistent. If more works are necessary than the Certificate can provide for, the potential for using an REF will need to be investigated for the remaining works.

! Provide the land owner with the appropriate Standards documents

5.2 Notification of completion of hazard reduction works

The applicant is required to notify the RFS within 7 days of completing the hazard reduction works. However, the Certificate is current for 12 months from date of issue and notwithstanding any restrictive conditions the works may be undertaken at any time within this period. Therefore, at a minimum, the landowner should be contacted within 2 months of the expiry of the Certificate.

However, it is recognised that the capacity to contact landowners in all cases may not be possible due to work loads. Therefore, each CIO is to prioritise contact with landowners. Prioritising contact should include consideration of those:

- works that are the subject of a HR notice (inspection is a requirement of the complaints process),
- works that are considered necessary for safety (e.g. APZs in high risk areas), and
- activities that are useful to record on BRIMS for Bush Fire Risk Management Planning, Operations and auditing purposes (e.g. burns in SFAZs that meet the strategies in BFRMPs).

Direct contact may not be always be required. Prescribed burns require notification of the RFS or NSW Fire Brigades 24 hours before carrying out the burn. Therefore liaison should be established within the office to ensure that an exchange of this information occurs.

 Add all activity details on BRIMS in accordance with BRIMS manual.

APPENDIX 1: CONDITIONS FOR HAZARD REDUCTION AND ABORIGINAL HERITAGE

Introduction

This paper is a component of the Bush Fire Environmental Assessment Code. As such, a level of understanding of the Code will assist in comprehending this paper, particularly in regard to matters such as terminology.

Nevertheless, it is important to note that the Code provides for a streamlined environmental assessment process for hazard reduction works under certain circumstances. The Code identifies issues of environmental concern. Works which are likely to impact on these environmental concerns are required to be carried out in accordance with described conditions.

This paper provides the conditions that are to be adhered to when Department of Environment and Heritage advises that Aboriginal heritage may occur at a site. The process of consultation that must be followed with DEC is described within the Code.

Aboriginal Heritage Information Management System (AHIMS) reports

The AHIMS is used by DEC to determine whether Aboriginal heritage occurs in the area that is proposed to be hazard reduced. The subsequent report from DEC details the type/s of Aboriginal site and its/their location.

Determining appropriate conditions

There are three tables (attached) which must be referred to when determining the appropriate conditions to apply to a hazard reduction when Aboriginal heritage occurs at the site.

Site Features Table

There are currently twenty different types of site features recognised by DEC. These site features have an associated three lettered code which appears on the reports from DEC. For example, grinding grooves are a recognised type of feature which are coded as GDG. The complete list of different site features, their code and a description of the site feature is contained in this paper.

Site Features Grouping and Site Protection Conditions Table

Site Feature Groupings

Site features are grouped into five categories on the basis that they respond to the various forms of hazard reduction similarly.

Site Protection Conditions

The site protection conditions are linked to the five different site feature groups. Conditions selected will depend upon which hazard reduction method/s is/are to be implemented.

Hazard Reduction Risk Rating Matrix Table

The report from DEC also attributes a risk rating to any identified site features. This matrix relates to the site feature groupings. There may be different risk ratings depending on the type of hazard reduction to be used. Only methods rated as low or medium may be used for the purpose of issuing a Bush Fire Hazard Reduction Certificate.

General Site Protection Considerations

When hazard reduction proposals are assessed under the Code, officers must ensure they act in accordance with the following:

- Ensure that hazard reduction activities are only approved if the method is rated as LOW or MEDIUM and use the preferred method unless there is valid reason (e.g. safety) to use another appropriate method;
- Ensure that the person/s undertaking the works recognises that all aspects of all Aboriginal sites must be treated with respect, keeping in mind that things of significance are not always apparent when one is not familiar with different belief systems;
- Partake in discussions with personnel undertaking the hazard reduction activities to ensure that they understand and respect cultural values, including respect for confidentiality of sites, and their role in being stewards for Aboriginal people and Australian history;
- Recognise that the local Aboriginal community will have important ties to these features and that relationships with the Aboriginal community should be fostered (for example, the Local Aboriginal Land Council);
- Address all relevant conditions in cases where there are multiple (and different) site features within the area to be hazard reduced. In circumstances where there is conflict between conditions then RFS Head Office must be contacted;
- Ensure conditions are addressed for at least 100 metres in all directions from the identified site location. In addition, it is to be made clear to the person/s carrying out the works that any other areas that contain features similar to the identified site features must also be hazard reduced in accordance with the relevant conditions;

General Conditions

The following conditions must be applied to the Bush Fire Hazard Reduction Certificate for all site feature groups and hazard reduction methods.

- No one must drive off established roads in the vicinity of the site;
- Unnecessary walking within the site area must be avoided;
- Hoses and other equipment must not be dragged across Aboriginal sites, and rubbish must not be left in the area;
- All known sites are to be re-inspected after hazard reduction works are completed, and if any site disturbance has occurred then details must be provided to DEC; and
- If an unregistered site is discovered during works then site must be treated with appropriate conditions as described in the table, and details of discovery provided to DEC

.

TABLE 1: SITE FEATURES

Site Features	Site Feature Code	Site Feature Description
1. Aboriginal Ceremory and Dreaming	ACD	previously referred to as mythological sites these are spritual/story places where no physical evidence of previous use of the place may occur, e.g. natural unmodified landscape features, ceremonial or spiritual areas, men's/women's sites, dreaming (creation) tracks, marriage places etc
2. Aboriginal Resource and Gathering	ARG	related to everyday activities such as food gathering, hunting, or collection and manufacture of materials and goods for use or trade. Contact should be made with the local Aborginal community before undertaking hazard reduction activities to identify the specific plant resources used for resource and gathering around site to ensure their protection.
3. Art	ART	art surfaces which may be painted, abraded, pitted or engraved for the purpose of ceremony and/or self expression on the part of the artist
4. Artefacts	AFT	objects such as stone tools, spears, manuports, grindstones, discarded stone flakes, modified glass or shell demonstrating evidence of use of the area by Aboriginal people
5. Burials	BUR	a traditional or contemporary burial of an Aboriginal person which may occur outside designated cemeteries and may not be marked, e.g. in caves, marked by stone cairns, in sand areas, along creek banks etc
6. Ceremonial Ring	CMR	bora grounds where initiations occurred
7. Conflict	CFT	previously referred to as massacre sites where confrontations occurred between (1) Aboriginal and non-Aboriginal people, or (2) between different Aboriginal groups
8. Earth mound	ETM	a mound of earth which may be associated with ceremonial activities, e.g. bora grounds, or may be a bi-product of continued traditional and contemporary use of an area, e.g. shell midden
9. Fish Trap	FSH	can be a modified or unmodified area on watercourses where fish were trapped for short term storage and gathering
10. Grinding Grooves	GDG	a groove in a rock surface resulting from manufacture of stone tools such as ground edge axes and spears, may also include rounded depressions resulting from grinding of seeds and grains.
11. Habitation Structure	HAB	structures produced by, or for, Aboriginal people for short or long-term shelter. More ephemeral structures are commonly preserved away from the NSW coastline, may include historic camps of contemporary significance such as Aboriginal mission and reserves. Smaller structures may make use of natural materials such as branches, logs and bark sheets or manufactured materials such as corrugated iron to form shelters.
12. Hearth	HTH	the remains of a campsite or tool manufacture/reworking location which is marked by hearth stones, usually also contains charcoal and may also contain heat treated stone fragments
13. Modified Tree	TRE	mature tree species which show the marks of modification as a result of cutting of bark from the trunk for use in the production of shields, canoes, boomerangs, burials shrouds, for medicinal purposes, foot holds etc, or alternately intentional carving of the heartwood of the tree to form a permanent marker to indicate ceremonial use/significance of a nearby area, again these carvings may also act as territorial or burial markers.
14. Non Human Bone and Organic Material	BOM	objects which can be found within archaeological deposits as components of an Aboriginal site such as fish or mammal bones, ochres, cached objects which may otherwise have broken down such as resin, twine, dilly bags, nets etc
15. Ochre Quarry	OCQ	a source of ochre used for ceremonial occasions, burials, trade and artwork
16. Potential Archaeological Deposit	PAD	an area where surface artefacts may or may not have been identified and where further subsurface artefacts and/or other cultural materials are thought likely to occur
17. Shell	SHL	an accumulation of shell from beach or estuarine crustacean species resulting from Aboriginal gathering and consumption, usually found in deposits previously referred to as shell middens in association with other objects like stone tools, fish bones, and burials. Will vary greatly in size and components.
18. Stone Arrangement	STA	human produced arrangements of stone usually associated with ceremonial activities, or used as markers for territorial limits or to mark/protect burials
19. Stone Quarry	STQ	usually a source of good quality stone which is quarried and used for the production of stone tools
20. Waterhole	WTR	a source of water for Aboriginal groups which may have traditional ceremonial or dreaming significance and/or may also be used to the present day as a rich resource gathering area (e.g. waterbirds, eels, clays, reeds etc)

NOTE: Multiple site features within the one Aboriginal site: For any Aboriginal site listed in an AHIMS Aboriginal site report there may be more than one site features within the "List of Features" column of the report. For example [ART, BUR, CMR & TRE] would indicate Art, Burial, Ceremonial Ring and Tree features for the site. While these features might have different Preferred Hazard Reduction methods (and may fall into different Site Groups for the purpose of determining the Preferred Hazard Reduction method) a single HR method will still be recommended.

TABLE 2: SITE GROUPING & SITE PROTECTION CONDITIONS

	Site Group 1	Site Group 2	Site Group 3	Site Group 4	Site Group 5
Site Features in each Site Group	4. Artefact (AFT) 8. Earth Mound (ETM) 12. Hearth (HTH) 14. Non Human Bone (BOM) 15. Ochre Quarry (OCQ) 16. Potential Arch deposit (PAD) 17. Shell (SHL)	3. Art (ART) 10. Grinding Groove (GRG)	2. Abl Resource & Gathering (ARG) 11. Habitation Structure (HAB) 13. Modified Tree (TRE) 20. Water Hole (WTR)	9. Fish Trap (FSH) 18. Stone Arrangement (STA) 19. Stone Quarry (STQ)	1. Abl Ceremony & Dreaming (ACD) 5. Burial (BUR) 6. Ceremonial Ring (CMR) 7. Conflict (CFT)
Site Protection Conditions for Hazard Reduction	Do not break earth around known sites, especially where there is surface evidence of artefacts, shell, charcoal or ochre. Any surface impact adjacent to site must be immediately returned to previous state, a note made of site location, and details of site disturbance provided to DEC. Vehicles or heavy equipment must not be used on or within these sites unless a path exists that will not damage the site Vegetation which is screening the site must not be damaged. There must be no slashing/trittering of vegetation, no tree removal, and no use of earthmoving equipment such as bulldozers. If using fire place the control lines well away from the site.	If burning, loose leaf litter must be carefully removed from rock platforms and from under overhangs. Leaf litter is to be returned to the site after the fire as site may be covered for protection from vandalism. If using fire place the control lines well away from the site. Heavy equipment (including vehicles) must not be used on rock platforms, or within 10 metres of sites unless there is an existing road available for use. If burning, rake loose leaf litter away from vegetation in the vicinity of the site if smoke is likely to impact upon rock paintings. No use of chemicals or other retardants within 20 metres of art sites. If windy the distance is to be extended to 50 metres. Vegetation which is screening the site must not be damaged. There must be no slashing/trittering of vegetation, no tree removal, and no use of earthmoving equipment such as bulldozers.	Loose leaf litter and low ground cover is to be manually cleared by raking for 10 metres around carved or scarred trees and wooden structures. Wooden structures and trees of concern are to be protected at time of burn. For example, dampen earth around structure and trees to be protected, and minimise risk of ember attack. If using fire place the control lines well away from the site. Trees of concern must be examined as soon as possible after the passage of the fire and embers that might cause the tree to burn must be extinguished. Chemicals or other retardants that can impact upon plants and animals used by Aboriginal people or cause damage to water holes must not be used. There must be no slashing/trittering of vegetation, no tree removal, and no use of earthmoving equipment such as bulldozers. *If site is used by Aboriginal people for resource and gathering then liaise with the Aboriginal community to ensure that hazard reduction is timed to cause minimal damage to the resource, and is not disruptive to gathering practices. Do not proceed if damage cannot be avoided.*	Do not move loose stones (i.e. to create a "natural fire break"), especially where they have been already grouped or arranged. Heavy machinery is not to be used in these areas or adjacent to these types of sites. Do not drive vehicles or use heavy equipment within these sites unless a path exists that will not damage the site. Vegetation which is screening the site must not be damaged. There must be no slashing/trittering of vegetation, no tree removal, and no use of earthmoving equipment such as bulldozers. If using fire place the control lines well away from the site. *Note: there is a high likelihood that other sites from Grouping 1 will be in the general vicinity.*	There must be no slashing/trittering of vegetation, no tree removal, and no use of earthmoving equipment such as bulldozers. There must be no breaking of earth near known sites of this group, especially near burials and ceremonial rings. If human skeletal remains are located (and it cannot be confirmed they are a known Aboriginal burial) then the Police must be called and the immediate location treated as a "crime scene". Vehicles or heavy equipment must not be used on or within these sites unless on established vehicular access. Vegetation which is screening the site must not be damaged. If using fire place the control lines well away from the site. *These types of sites are highly sensitive. Discussions must be held between the RFS and DEC Aboriginal Heritage Conservation Officer and the local Aboriginal people prior to undertaking any hazard reduction works. Do not proceed if a resolution cannot be reached.* *Note: there is a high likelihood that sites from the other groupings will be in the general vicinity.*

TABLE 3: HAZARD REDUCTION RISK MATRIX

Preferred HR method	Prescribed Burn (Low Intensity)	Manual Clearing	Manual Clearing	Prescribed Burn (Low Intensity)	Prescribed Burn (Low Intensity)
HR impact risk rating matrix	**Site Group 1**	**Site Group 2**	**Site Group 3**	**Site Group 4**	**Site Group 5**
Manual clearing and raking (MANCLR)	MEDIUM	**LOW**	**LOW**	MEDIUM	MEDIUM
Prescribed Burn (PRESBU)	**LOW**	LOW	HIGH	**LOW**	**LOW**
Herbicides and other chemicals (HERBIC)	LOW	MEDIUM	HIGH	LOW	LOW
Slashing and Trittering (SLASHT)	HIGH	HIGH	HIGH	HIGH	HIGH
Chainsaw/ Heavy Clearing (CHAINS)	HIGH	HIGH	HIGH	HIGH	HIGH
Bulldozer/ Mechanical clearing (BULDOZ)	HIGH	HIGH	HIGH	HIGH	HIGH

Definitions used in Aboriginal sites and Hazard Reduction Matrix:

- **Site Group**: Used in matrix to group sites by like environmental variables, ie relative to likely fire & hazard reduction impacts. Doesn't indicate any grouping of sites features on ground.
- **Preferred HR method**: The most suitable HR method for each site feature (as grouped). HR method must be used in line with Site Protection Conditions.
- **HR impact risk rating (LOW):** Where HR method is carried out (in recommended manner) adjacent to a known site there will be a low likelihood that the site would be impacted upon.
- **HR impact risk rating (MEDIUM):** Where HR method is carried out adjacent to a site there will be a medium likelihood that the site would be impacted upon.
- **HR impact risk rating (HIGH):** Where HR method is carried out adjacent to a site there is a high likelihood that the site would be damaged. Method not to be used near known sites.

APPENDIX 2: THREATENED SPECIES HAZARD REDUCTION LIST EXPLANATORY NOTES

Principles of acceptable modifications to the conditions in the list

Step 1

If the RFS has prepared a species, population or ecological community specific guideline for the species, population or ecological community of concern then add the relevant conditions from the guideline to the Certificate. The guideline will identify the level of survey required in order that the conditions within the guideline can be met.

Any guidelines that have been prepared will be identified on the RFS intranet. Guidelines will be prepared by the RFS in conjunction with DEC and only for species, populations or ecological communities that are likely to be frequently encountered when undertaking bush fire hazard reduction (e.g. Lower Hunter Spotted Gum Ironbark Forest in the Sydney Basin Bioregion).

Step 2

If guidelines have not been prepared for the species, population or ecological community of concern then the following principles must be followed when determining if conditions can be applied to the Certificate.

NES must undertake an 8 Part Test with the following principles taken into account.

Initially, assess habitat and assume species occurs. Then ascertain whether works can be modified. If the works cannot be modified then ascertain whether a survey would assist in identifying exact location of species and therefore allow sufficient hazard reduction to be undertaken. If the works can still not be modified and the hazard reduction is essential then a s91 licence (or SIS) should be sought from DEC.

Plants

Minimum radius of 20 metres (buffer) surrounding identified location/s of plants, except for those species identified below:

No species currently identified as exceptions.

Plants and ecological communities

Retain sufficient trees and cover for shade tolerant species.

Wherever possible when mechanically clearing, do not isolate patch of vegetation containing species of concern. Retain vegetation corridor linking vegetation surrounding species of concern to larger vegetation patches.

Animals

No conditions currently developed.

Timing of surveys

Surveys for species and populations may only be undertaken during times that the species can be identified or is likely to utilise the site (e.g. many orchid species are not identifiable unless they are in flower, some animals only occupy a site seasonally or when conditions are suitable such as during wet seasons).

Guide to columns in the Threatened Species Hazard Reduction List

Class

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. amphibians.

Species scientific name

This is the name of the species as described on the Schedules of the *Threatened Species Conservation Act*.

Common name

This is the name by which the species is commonly known. However, species may have more than one common name or no common name at all. Therefore this name is only a guide for ease of use and the scientific name should be used where there is any doubt.

Name as per the Threatened Species Act

This column is only used for Endangered Ecological Communities, and indicates the name of the community as described by the TS Act.

Status on TSC Act

This column refers to the status of the species, population or ecological community on the *Threatened Species Conservation Act* i.e. the TSC Act. Endangered species are more threatened than vulnerable species. Endangered populations are a defined subset of a species that have biological significance and which are considered to be at risk of extinction. The Department of Environment and Conservation's website provides further advice on the listing process under the TSC Act.

Listed on EPBC Act

This column refers to whether a species is listed on the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999*. Advice on this Act can be located at www.deh.gov.au.

Species-specific conditions relating to the use of fire

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

Conditions relating to the mechanical forms of hazard reduction

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

APPENDIX 3: AN IDENTIFICATION KEY TO THE VEGETATION FORMATIONS

OF NEW SOUTH WALES AND THE AUSTRALIAN CAPITAL TERRITORY FROM KEITH (2004) OCEAN SHORES TO DESERT DUNES

A. Vegetation dominated by trees (single-stemmed woody plants, or multi-stemmed mallee eucalypts that are generally more than 5 m tall when mature).

B. Forests or woodlands dominated by eucalypts.

C. Tall forests (typically >30 m) dominated by tall straight-trunked eucalypts, usually with soft-leaved shrubs, ferns or herbs in the understorey. Largely confined to moderately fertile soils in sheltered locations on the coast and escarpment where average annual rainfall exceeds 900 mm. Excludes riverine forests west of the Great Divide that lack the understorey characteristics described above.

Wet sclerophyll forests (Ch 2)

[The wet sclerophyll forests can be further divided into two subformations: *shrubby,* which have understories dominated by softleaved shrubs but only sparse grass cover; and *grassy,* which have understories dominated by a more continuous cover of grasses and herbs but only sparse shrub cover.]

C*. Forests or woodlands dominated by short to moderately tall trees (rarely >35 m), usually branching at less than half of their height. The understorey generally lacks ferns and shrubs with broad soft leaves, but may include abundant grasses, hard-leaved shrubs or ephemeral herbs. Widespread east and west of the Great Divide.

D. Forests or woodlands with an abundance of plant groups in the understorey that are able to tolerate periodic inundation or waterlogging, particularly sedges, rushes and reeds. Confined to damp, low-lying parts of the coast, or adjacent to rivers, lakes or swamps in the inland.

Forested wetlands (Ch 9)

D*. Forests or woodlands generally lacking plants that tolerate inundation or waterlogging. Rarely in damp, low lying sites adjacent to rivers, lakes or swamps.

E. Forests or rarely woodlands with an abundance of hard-leaved (sclerophyllous) shrubs in the understorey. Only rarely dominated by 'box' eucalypts. Ground cover often sparse and typically dominated by sclerophyllous sedges, but may sometimes include reasonably continuous swards of grasses. Confined to the coast, tablelands, and the western slopes where average annual rainfall exceeds 500 mm, largely on infertile sandy or loamy soils.

Dry sclerophyll forests (Ch 5)

[The dry sclerophyll forests can be further divided into two subformations: *shrubby* which have understories dominated by hardleaved shrubs but very sparse grass cover; and *shrub/grass* which have understories with a more continuous cover of grasses and herbs but a variable cover of hard-leaved shrubs.]

E*. Woodlands, or rarely forests, that lack an abundance of hard-leaved (sclerophyllous) shrubs in the understorey. 'Box' eucalypts often dominant or present in the tree layer. Grasses prominent in the understorey, except in some semi-arid areas. Widespread across NSW on various soils west of the Great Divide, but typically found on relatively fertile loams on the coast, tablelands and western slopes.

F. Woodlands, or rarely forests, typically 15–35 m tall though shorter at subalpine elevations. Ground cover continuous and dominated by perennial tussock grasses, and interspersed perennial herbs including 'geophytic' orchids and lilies, but few ephemeral herbs and grasses. Shrubs generally sparse and typically not including chenopods or other drought-tolerant species. Widespread on relatively fertile loams and clay loams of the coastal lowlands, the tablelands, and the western slopes where average annual rainfall exceeds 500 mm.

Grassy woodlands (Ch 3)

F*. Woodlands or open woodlands (i.e. with widely spaced tree canopies) typically 5–20 m tall. Ground cover sparse to continuous, usually with an abundance of ephemeral herbs and grasses apparent after rain, and a variable cover of perennial tussock grasses. Drought tolerant shrubs prominent in the understorey, and often including chenopods (saltbushes, bluebushes, copperburrs). Widespread on a variety of soils on the western plains where average annual rainfall does not exceed 500 mm.

Semi-arid woodlands (Ch 11)

[The semi-arid woodlands can be further divided into two subformations: *grassy*, found on floodplains occasionally exposed to inundation, often dominated by eucalypts more than 15 m tall and with an understorey predominantly of grasses and/or chenopod shrubs; and *shrubby*, found on peneplains and hills not exposed to floodwaters, dominated by eucalypts rarely more than 15 m tall and with open understories containing a variety of drought-tolerant shrubs and a variable cover of grasses.]

B*. Forests or woodlands not dominated by eucalypts, although these may be present as scattered individuals.

G. Forests dominated by trees with dense canopies touching those of adjacent trees (i.e. a 'closed' canopy), and with horizontally held leaves. Trees and shrubs typically with soft leaves. Primarily occurring on the coast and escarpment where average annual rainfall exceeds 1000 mm, but with limited occurrences in dry rocky gorges of the escarpment and dry hills of the north-western slopes.

H. Trees tolerant of (and subjected to) tidal inundation, understorey sparse to non-existent. Restricted to tidal estuaries along the coast.

Saline wetlands (Ch 10) [Mangrove Swamps]

H*. Trees not tolerant of (or subjected to) tidal inundation, understorey usually open to dense, rarely sparse, never non-existent. Found on the coast, escarpment and north-western slopes, but never in tidal estuaries.

I. Trees belonging to various plant families, their leaves broad and usually soft. Vines often occur in the tree canopies or understorey. Understorey typically includes ferns and herbs. Found on the coastal lowlands, islands and escarpment on fertile or moderately fertile soils, extending to restricted locations on the north-western slopes.

Rainforests (Ch 1)

I*. Canopy dominated by wattles with fine feathery leaves. Vines, ferns and grasses uncommon. Understorey with a sparse cover of shrubs and sedges. Restricted to steep rocky foothills and gorges on the south coast and ranges.

Dry sclerophyll forests (Ch 5) [Southern Wattle Dry Sclerophyll Forests]

G*. Woodlands and open forests dominated by trees with open canopies that barely touch (typically wattles and casuarinas or paperbarks) and usually with hard pendulous leaves. Widespread on the western plains, with more restricted occurrences on the coast and tablelands.

J. Open forests 15–30 m tall with canopies of adjacent trees often touching and an abundance of plants that tolerate periodic inundation or waterlogging. Dominant trees include casuarinas or paperbarks, but not wattles. Understorey includes a clumped or continuous ground cover of sedges, rushes or grasses and scattered shrubs, but no chenopods. Confined to the coast and tablelands adjacent to streams, lakes or swamps.

Forested wetlands (Ch 9)

J*. Woodlands and open woodlands 5–20 m tall with canopies of adjacent trees rarely touching, and generally lacking plants that tolerate periodic inundation or waterlogging. Dominant trees include wattles or casuarinas, but not paperbarks. Understorey includes an open ground cover of perennial and ephemeral grasses and herbs, and a variable cover of drought-tolerant shrubs, usually including chenopods (saltbushes, bluebushes and copperburrs). Extensive areas of the western plains where average annual rainfall is less than 500 mm.

Semi-arid woodlands (Ch 11)

[The semi-arid woodlands can be further divided into two subformations: *grassy*, found on floodplains occasionally exposed to inundation, often dominated by trees more than 15 m tall and with an understorey predominantly of grasses and/or chenopod shrubs; and *shrubby*, found on peneplains and hills not exposed to floodwaters, dominated by trees rarely more than 15 m tall and with open understories containing a variety of drought-tolerant shrubs and a variable cover of grasses.]

A*. Trees absent, or present only as scattered emergent individuals.

K. Vegetation dominated by plants that tolerate prolonged seasonal burial in snow. Restricted to the alpine zone of the southern tableland, above 1600–1800 m elevation.

Alpine complex (Ch 7)

K*. Vegetation dominated by plants that cannot tolerate prolonged seasonal burial in snow. Distributed in non-alpine landscapes (below 1800 m elevation).

L. Vegetation with an abundance of plants that tolerate periodic inundation or waterlogging, dominated by emergent sedges, rushes, reeds, grasses or succulent herbs, or in some cases by submerged or floating aquatic herbs. Soils are deep and often black ordark grey with partly decomposed organic matter.

M. Dominated by shrubs, sedges, grasses or non-succulent herbs that tolerate permanent or periodic inundation or waterlogging with freshwater. Restricted to swamps with humic or gleyed soils on the coast, tablelands, western slopes and plains.

Freshwater wetlands (Ch 8)

M*. Dominated by herbs (including succulents), grasses or rarely shrubs that tolerate periodic inundation or waterlogging with saline water. Restricted to tidal estuaries on the coast, and salt lakes on the western plains.

Saline wetlands (Ch 10)

L*. Vegetation with few, if any, plants that tolerate periodic inundation or waterlogging, usually dominated by shrubs or grasses, sometimes including an abundance of sedges, but never submerged or floating aquatic herbs. Soils may be grey, brown, yellow or red; usually dry or damp though may be flooded on rare occasions.

N. Vegetation dominated by perennial tussock grasses with herbs. Shrubs very rarely present. Generally found on clay soils on flat to undulating terrain on the coast, tablelands, western slopes and plains.

Grasslands (Ch 4)

N*. Vegetation dominated by shrubs. Perennial tussock grasses are absent or occasional, though never dominant. Generally found on sandy or loamy soils of the coast, tablelands and western plains.

O. Vegetation dominated by hard-leaved but not drought-tolerant shrubs, usually also with perennial sedges, herbs and grasses, though generally lacking e plants. Restricted to infertile soils, often on exposed sites along the coast and tablelands where average annual rainfall exceeds 800 mm.

Heathlands (Ch 6)

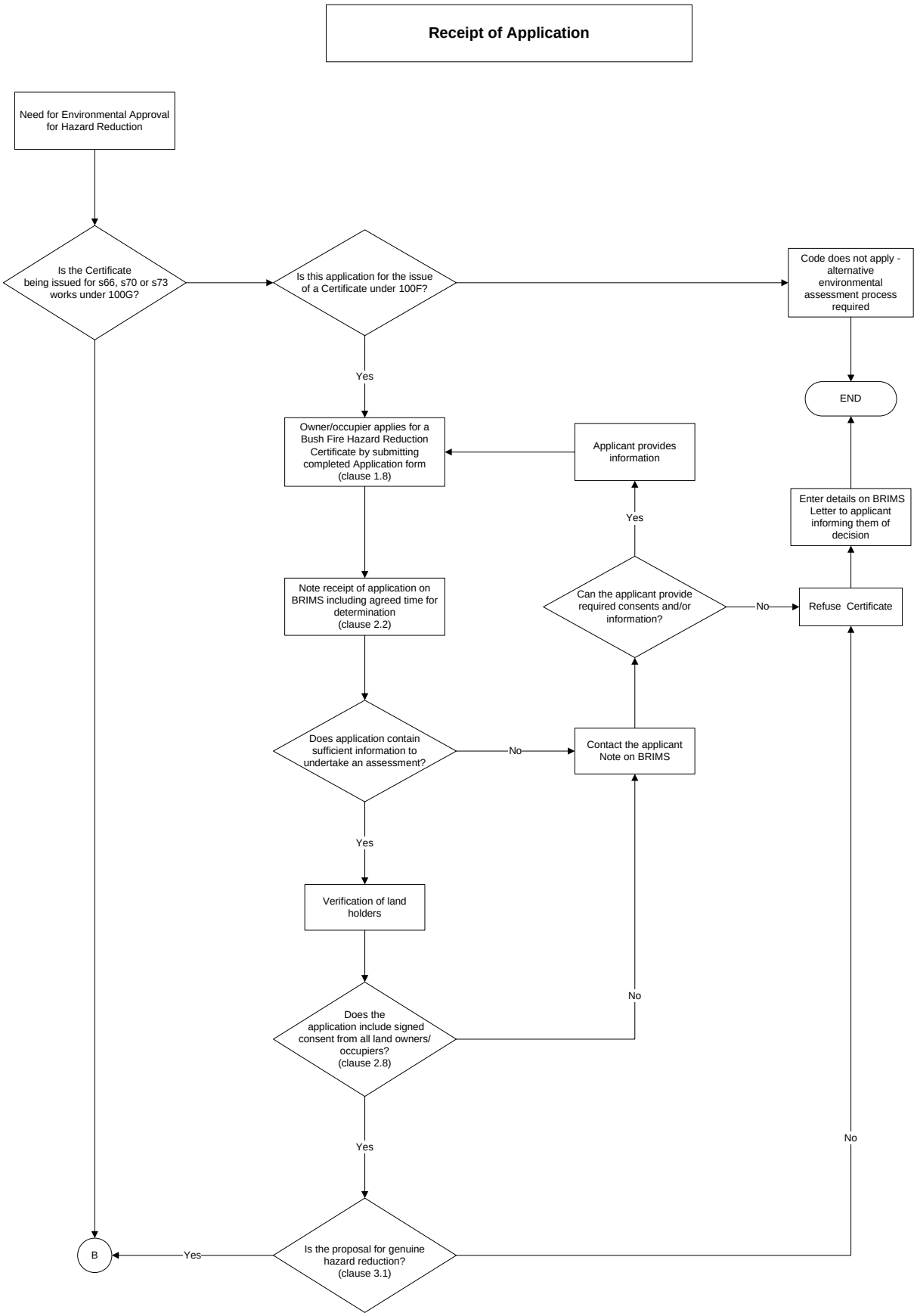
O*. Vegetation dominated by drought-tolerant shrubs, including chenopods (saltbushes, bluebushes, copperburrs), with some perennial grasses and herbs, as well as abundant ephemeral grasses and herbs after rain. Widespread on various soils on the western plains where average annual rainfall is less than 500 mm.

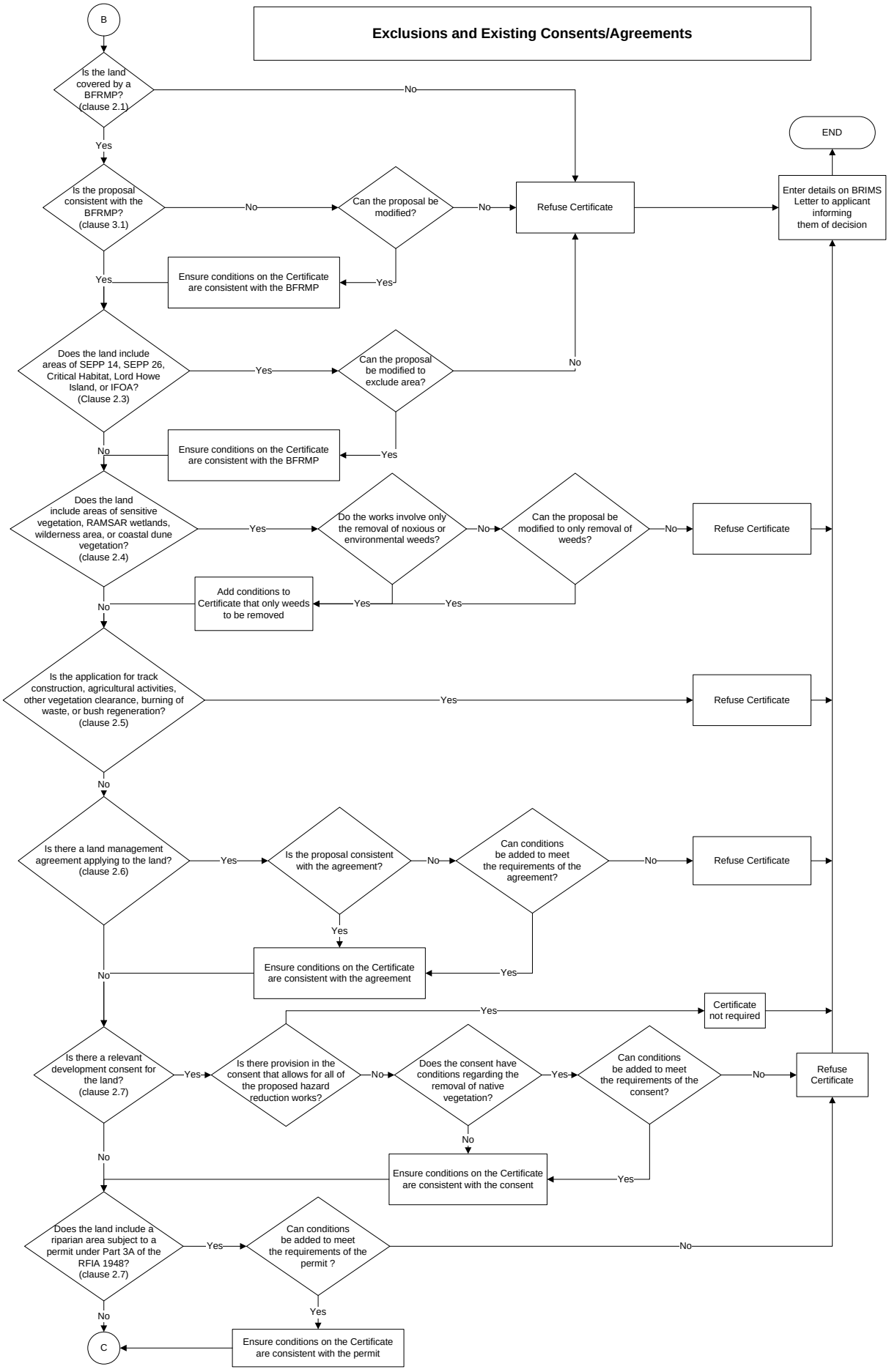
Arid shrublands (Ch 12)

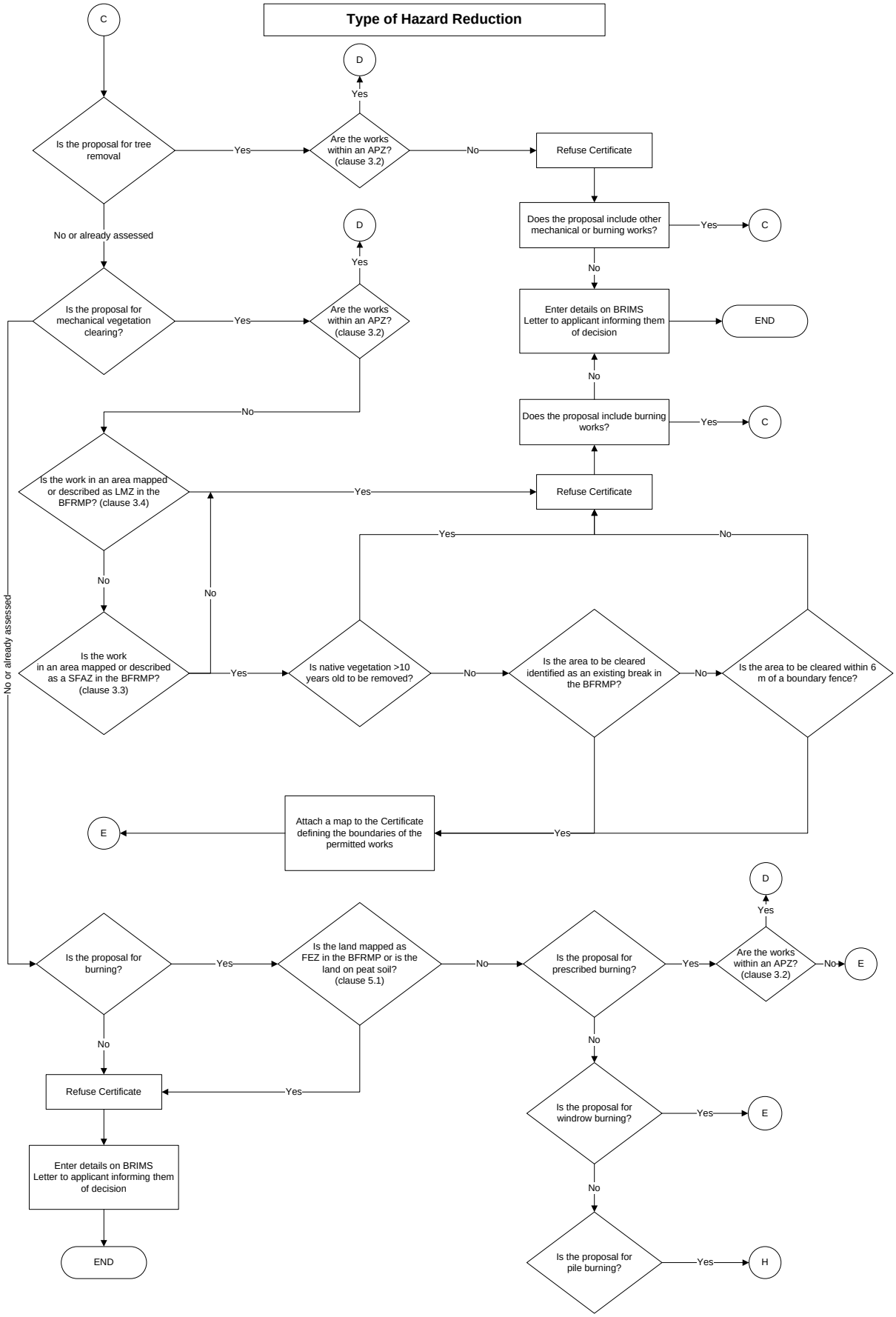
[The arid shrublands can be further divided into two subformations: *chenopod,* which are dominated by chenopod shrubs up to 1.5 m tall and usually have perennial tussock grasses in the ground cover, though never hummock grasses (spinifex); and *acacia*, which are dominated by wattles and other hard-leaved shrubs up to 5 m tall, and sometimes have abundant hummock grasses in the ground cover.]

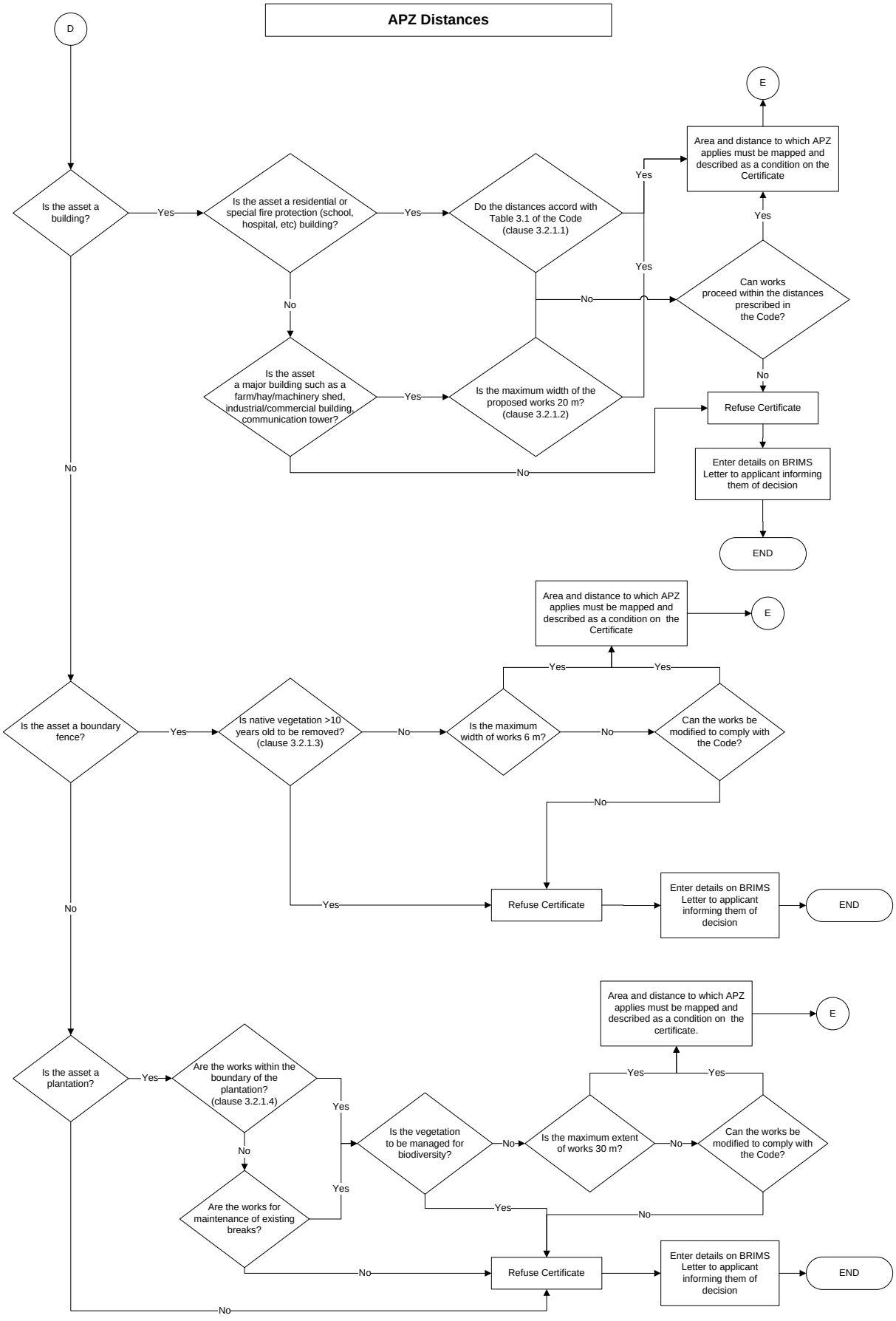
APPENDIX 4: HRC ASSESSMENT PROCESS FLOWCHART

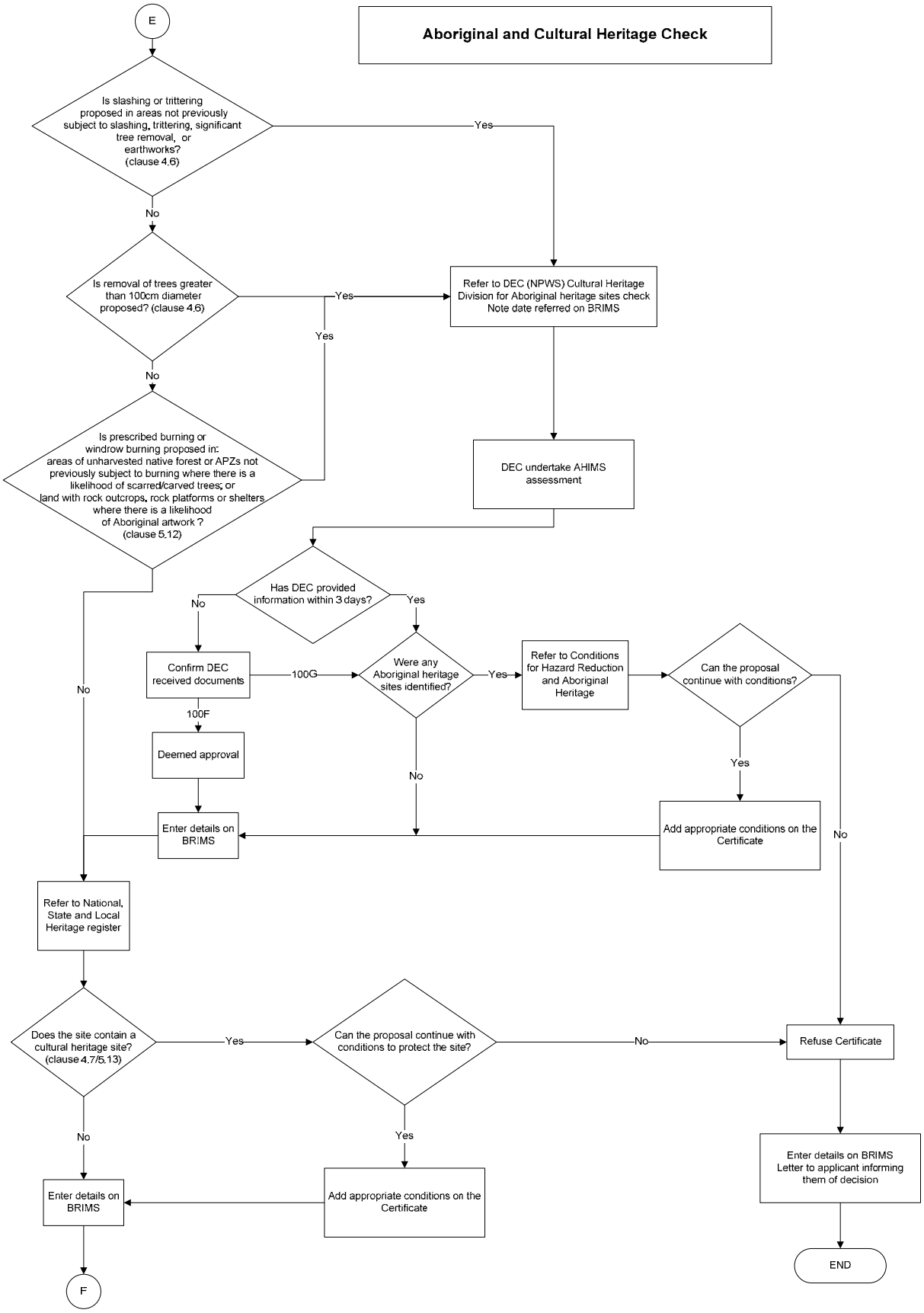
NB This Flowchart is available on the intranet as an A3 size pdf file.

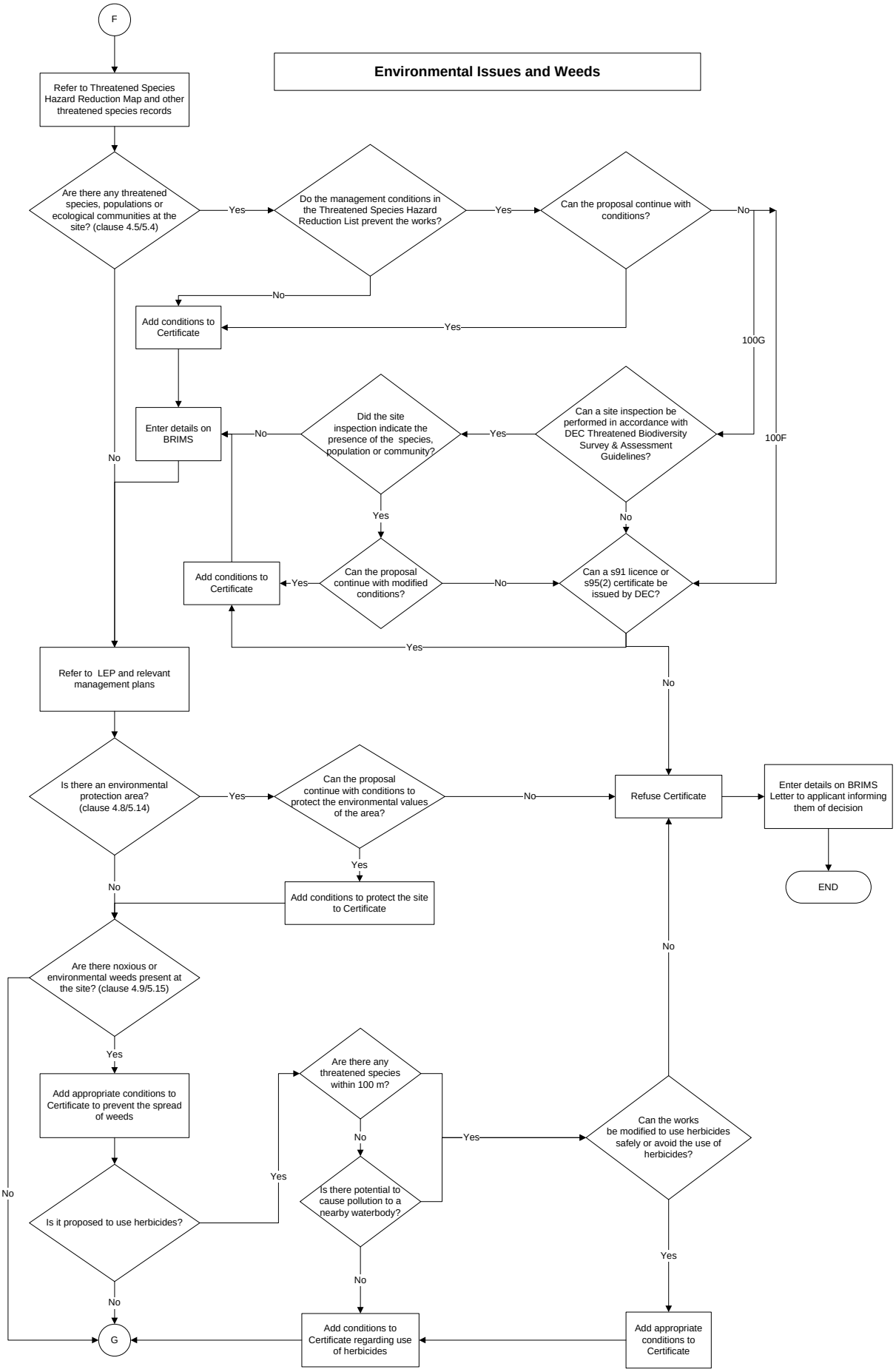


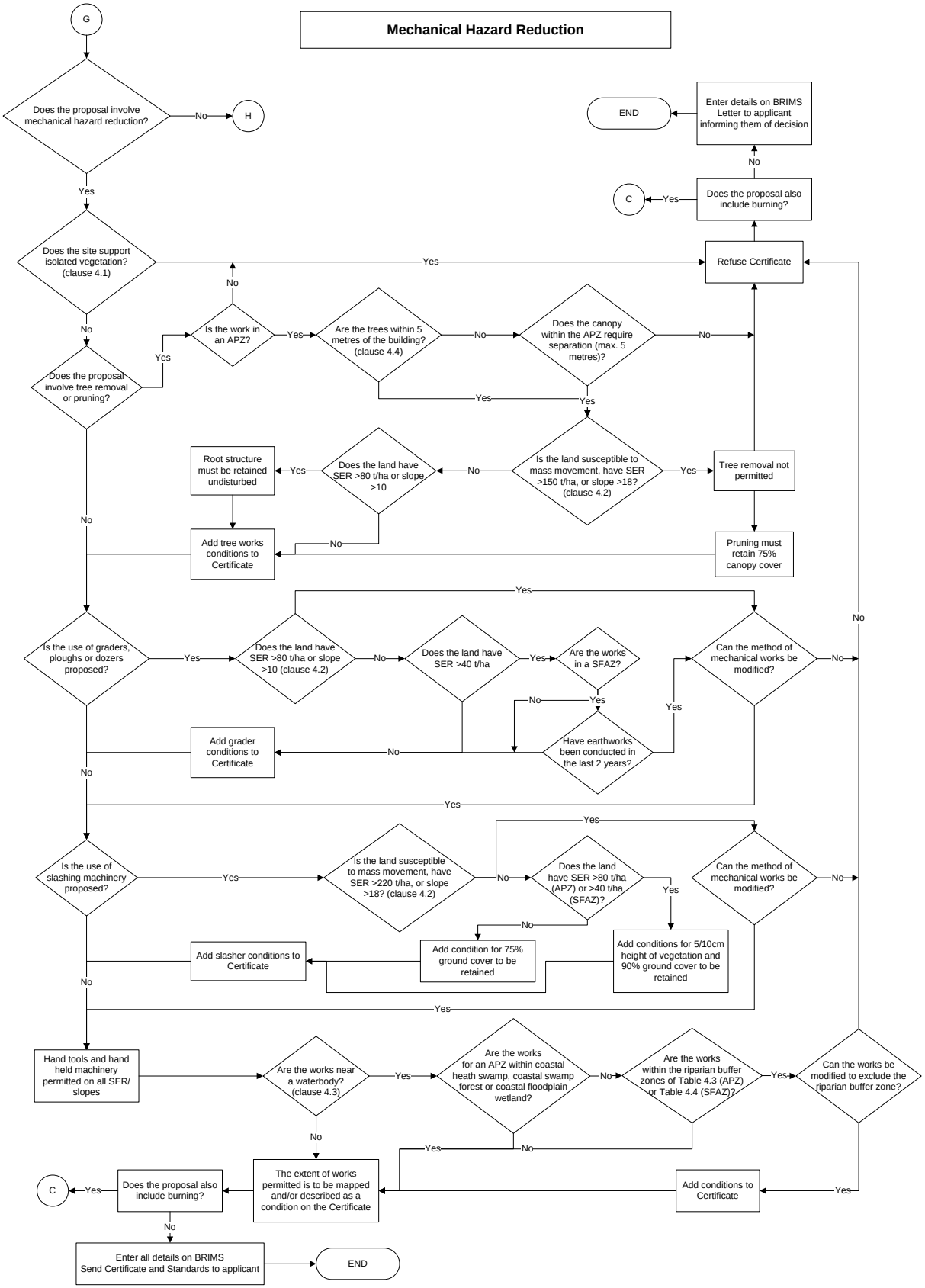

B
Exclusions and Existing Consents/Agreements
Is the land covered by a BFRMP? (clause 2.1)
No
Yes
END
Is the proposal consistent with the BFRMP? (clause 3.1)
No
Can the proposal be modified?
No
Refuse Certificate
Enter details on BRIMS Letter to applicant informing them of decision
Yes
Ensure conditions on the Certificate are consistent with the BFRMP
Yes
Does the land include areas of SEPP 14, SEPP 26, Critical Habitat, Lord Howe Island, or IFOA? (Clause 2.3)
Yes
Can the proposal be modified to exclude area?
No
No
Ensure conditions on the Certificate are consistent with the BFRMP
Yes
Does the land include areas of sensitive vegetation, RAMSAR wetlands, wilderness area, or coastal dune vegetation? (clause 2.4)
Yes
Do the works involve only the removal of noxious or environmental weeds?
No
Can the proposal be modified to only removal of weeds?
No
Refuse Certificate
No
Add conditions to Certificate that only weeds to be removed
Yes
Yes
Is the application for track construction, agricultural activities, other vegetation clearance, burning of waste, or bush regeneration? (clause 2.5)
Yes
Refuse Certificate
No
Is there a land management agreement applying to the land? (clause 2.6)
Yes
Is the proposal consistent with the agreement?
No
Can conditions be added to meet the requirements of the agreement?
No
Refuse Certificate
Yes
No
Ensure conditions on the Certificate are consistent with the agreement
Yes
Yes
Certificate not required
Is there a relevant development consent for the land? (clause 2.7)
Yes
Is there provision in the consent that allows for all of the proposed hazard reduction works?
No
Does the consent have conditions regarding the removal of native vegetation?
Yes
Can conditions be added to meet the requirements of the consent?
No
Refuse Certificate
No
Ensure conditions on the Certificate are consistent with the consent
Yes
Does the land include a riparian area subject to a permit under Part 3A of the RFIA 1948? (clause 2.7)
Yes
Can conditions be added to meet the requirements of the permit ?
No
Yes
No
C
Ensure conditions on the Certificate are consistent with the permit

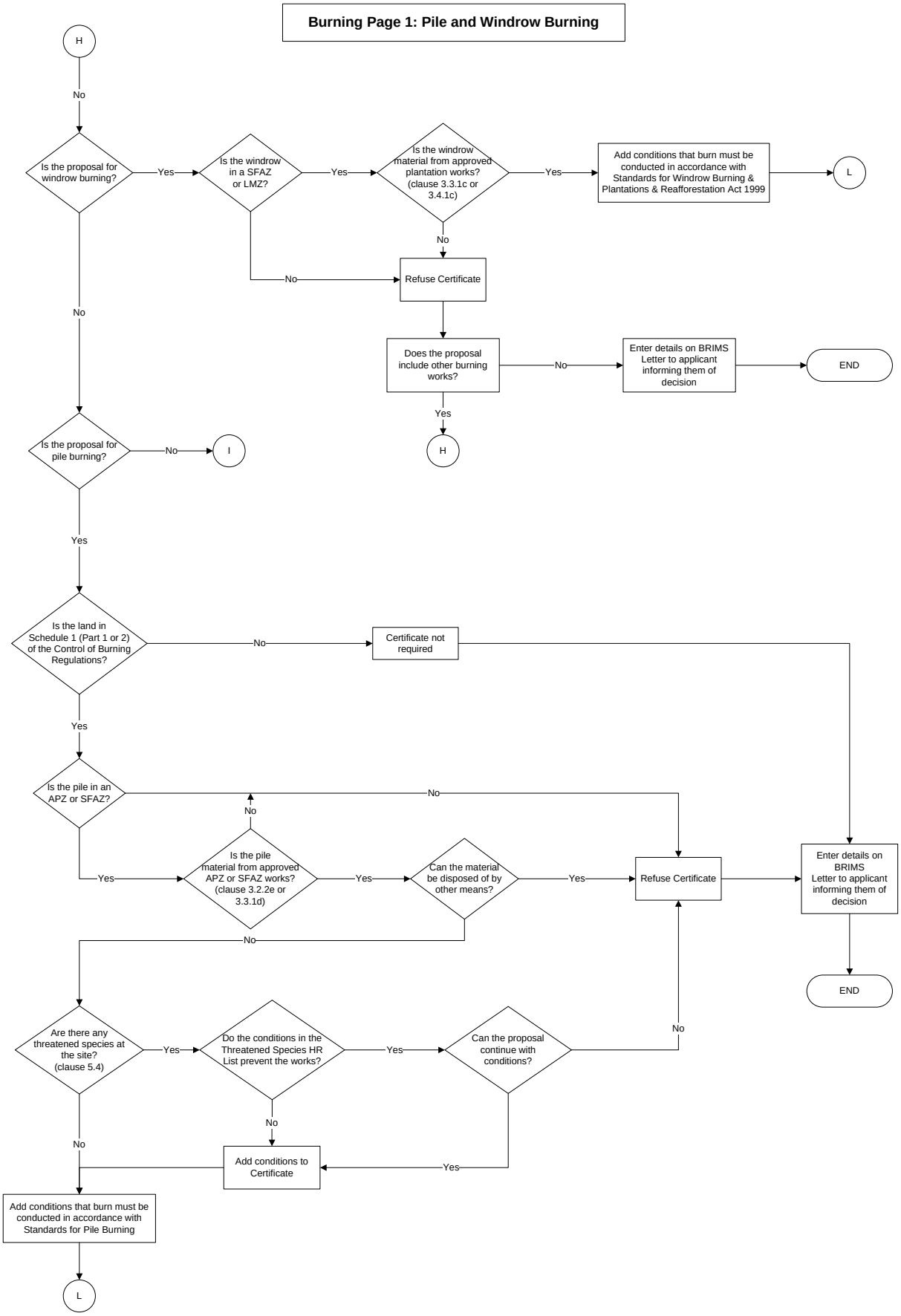

Type of Hazard Reduction
C
D
Yes
Is the proposal for tree removal
Yes
Are the works within an APZ? (clause 3.2)
No
Refuse Certificate
Does the proposal include other mechanical or burning works?
Yes
C
No
No or already assessed
D
Yes
Is the proposal for mechanical vegetation clearing?
Yes
Are the works within an APZ? (clause 3.2)
Enter details on BRIMS Letter to applicant informing them of decision
END
No
Does the proposal include burning works?
Yes
C
No
Is the work in an area mapped or described as LMZ in the BFRMP? (clause 3.4)
Yes
Refuse Certificate
Yes
No
No
No
Is the work in an area mapped or described as a SFAZ in the BFRMP? (clause 3.3)
Yes
Is native vegetation >10 years old to be removed?
No
Is the area to be cleared identified as an existing break in the BFRMP?
No
Is the area to be cleared within 6 m of a boundary fence?
No or already assessed
E
Attach a map to the Certificate defining the boundaries of the permitted works
Yes
D
Yes
Is the proposal for burning?
Yes
Is the land mapped as FEZ in the BFRMP or is the land on peat soil? (clause 5.1)
No
Is the proposal for prescribed burning?
Yes
Are the works within an APZ? (clause 3.2)
No
E
No
Refuse Certificate
Yes
No
Is the proposal for windrow burning?
Yes
E
Enter details on BRIMS Letter to applicant informing them of decision
No
Is the proposal for pile burning?
Yes
H
END

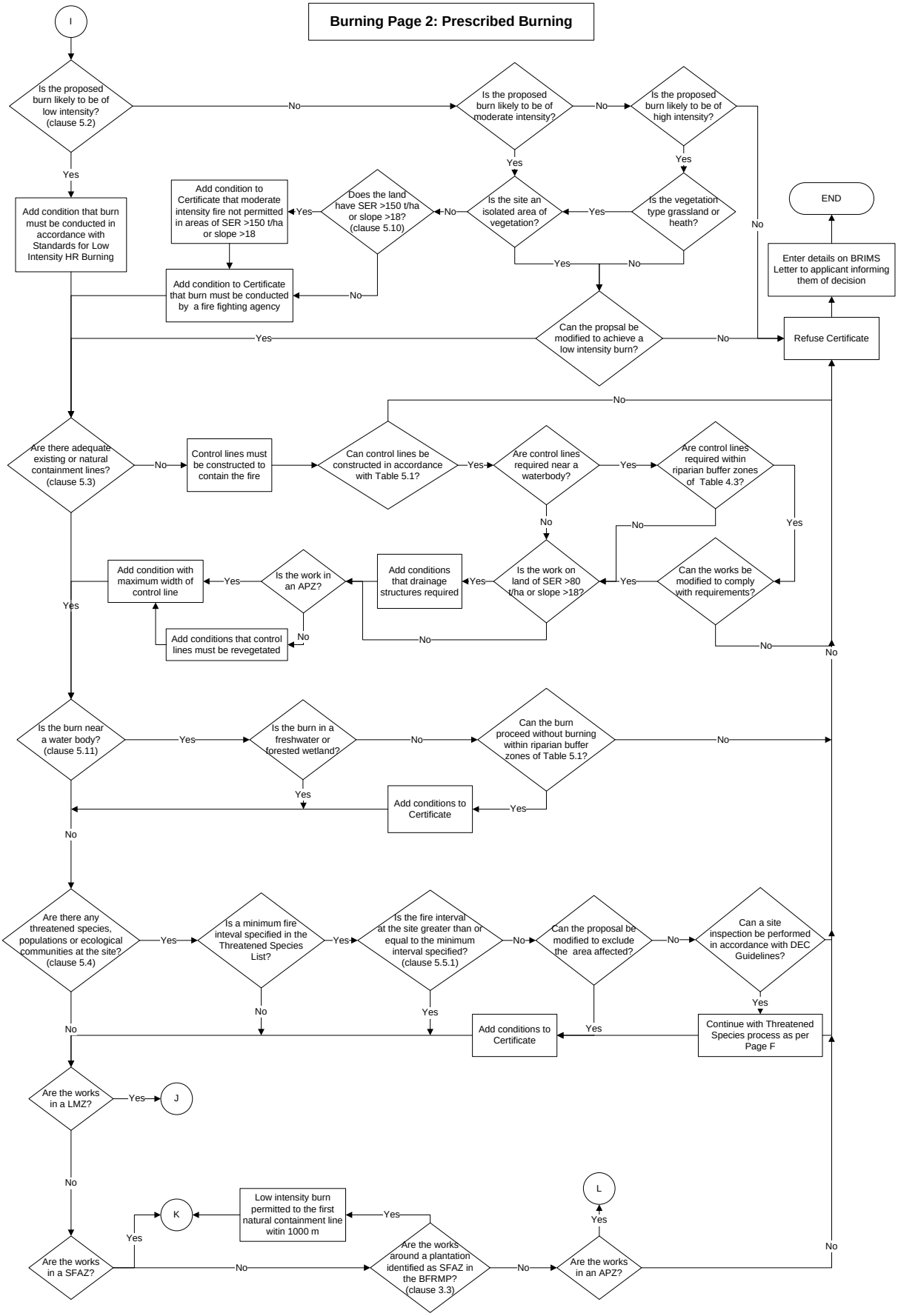

APZ Distances
D
Is the asset a building?
Yes
Is the asset a residential or special fire protection (school, hospital, etc) building?
Yes
Do the distances accord with Table 3.1 of the Code (clause 3.2.1.1)
Yes
Area and distance to which APZ applies must be mapped and described as a condition on the Certificate
E
Yes
Yes
Can works proceed within the distances prescribed in the Code?
No
No
Is the asset a major building such as a farm/hay/machinery shed, industrial/commercial building, communication tower?
Yes
Is the maximum width of the proposed works 20 m? (clause 3.2.1.2)
No
Refuse Certificate
Enter details on BRIMS Letter to applicant informing them of decision
END
No
Area and distance to which APZ applies must be mapped and described as a condition on the Certificate
E
Is the asset a boundary fence?
Yes
Is native vegetation >10 years old to be removed? (clause 3.2.1.3)
No
Is the maximum width of works 6 m?
No
Can the works be modified to comply with the Code?
Yes
Yes
No
Yes
Refuse Certificate
Enter details on BRIMS Letter to applicant informing them of decision
END
No
Area and distance to which APZ applies must be mapped and described as a condition on the certificate.
E
Is the asset a plantation?
Yes
Are the works within the boundary of the plantation? (clause 3.2.1.4)
Yes
No
Is the vegetation to be managed for biodiversity?
No
Is the maximum extent of works 30 m?
No
Can the works be modified to comply with the Code?
Yes
Yes
Yes
Are the works for maintenance of existing breaks?
Yes
Yes
No
No
Refuse Certificate
Enter details on BRIMS Letter to applicant informing them of decision
END
No

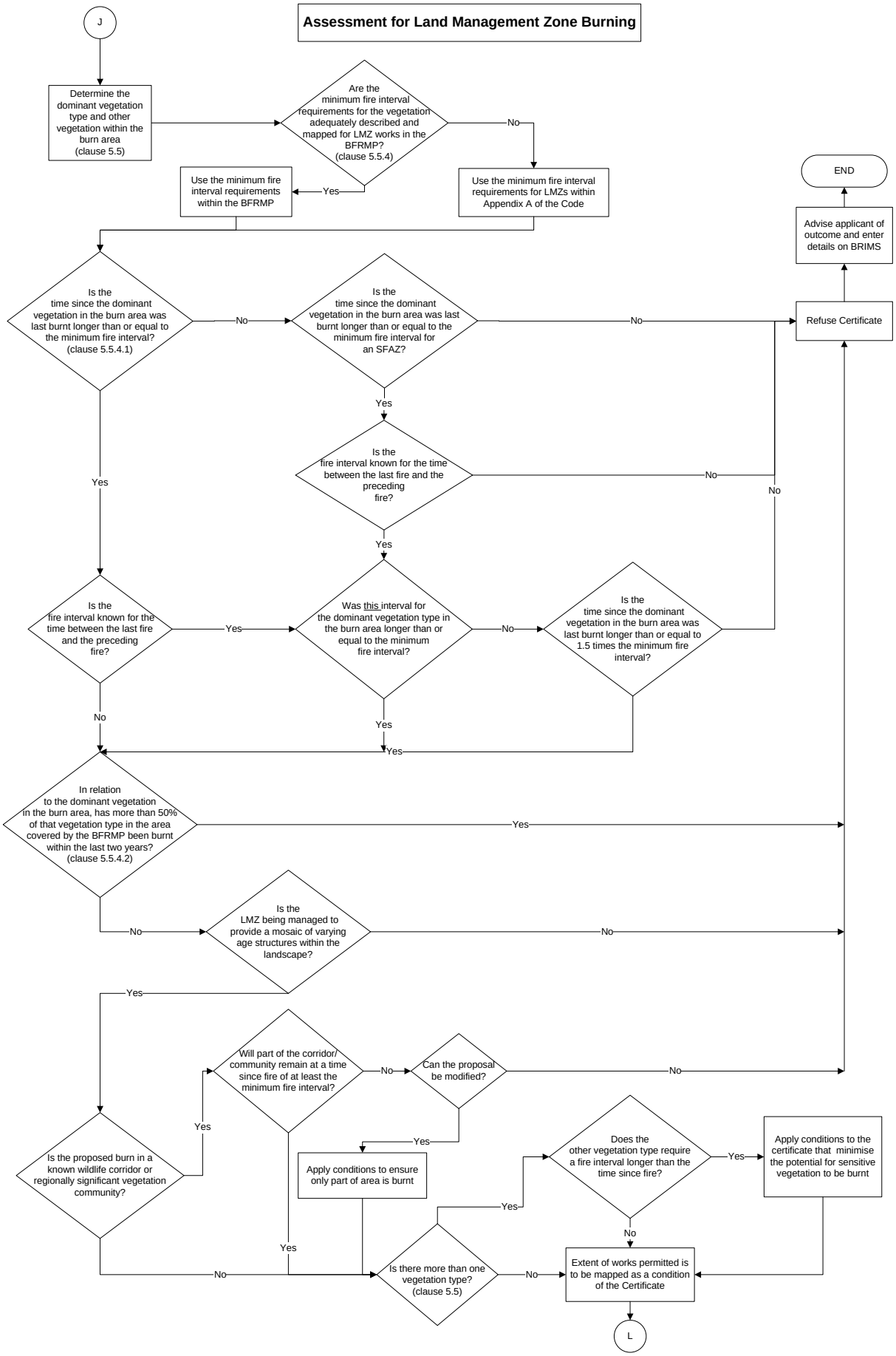

E
Aboriginal and Cultural Heritage Check
Is slashing or trittering proposed in areas not previously subject to slashing, trittering, significant tree removal, or earthworks? (clause 4.6)
Yes
No
Is removal of trees greater than 100cm diameter proposed? (clause 4.6)
Yes
Refer to DEC (NPWS) Cultural Heritage Division for Aboriginal heritage sites check Note date referred on BRIMS
Yes
No
Is prescribed burning or windrow burning proposed in: areas of unharvested native forest or APZs not previously subject to burning where there is a likelihood of scarred/carved trees; or land with rock outcrops, rock platforms or shelters where there is a likelihood of Aboriginal artwork ? (clause 5.12)
DEC undertake AHIMS assessment
Has DEC provided information within 3 days?
No
Yes
Confirm DEC received documents
100G
Were any Aboriginal heritage sites identified?
Yes
Refer to Conditions for Hazard Reduction and Aboriginal Heritage
Can the proposal continue with conditions?
100F
Deemed approval
No
Yes
Enter details on BRIMS
Add appropriate conditions on the Certificate
No
No
Refer to National, State and Local Heritage register
Does the site contain a cultural heritage site? (clause 4.7/5.13)
Yes
Can the proposal continue with conditions to protect the site?
No
Refuse Certificate
No
Yes
Enter details on BRIMS
Add appropriate conditions on the Certificate
Enter details on BRIMS Letter to applicant informing them of decision
F
END

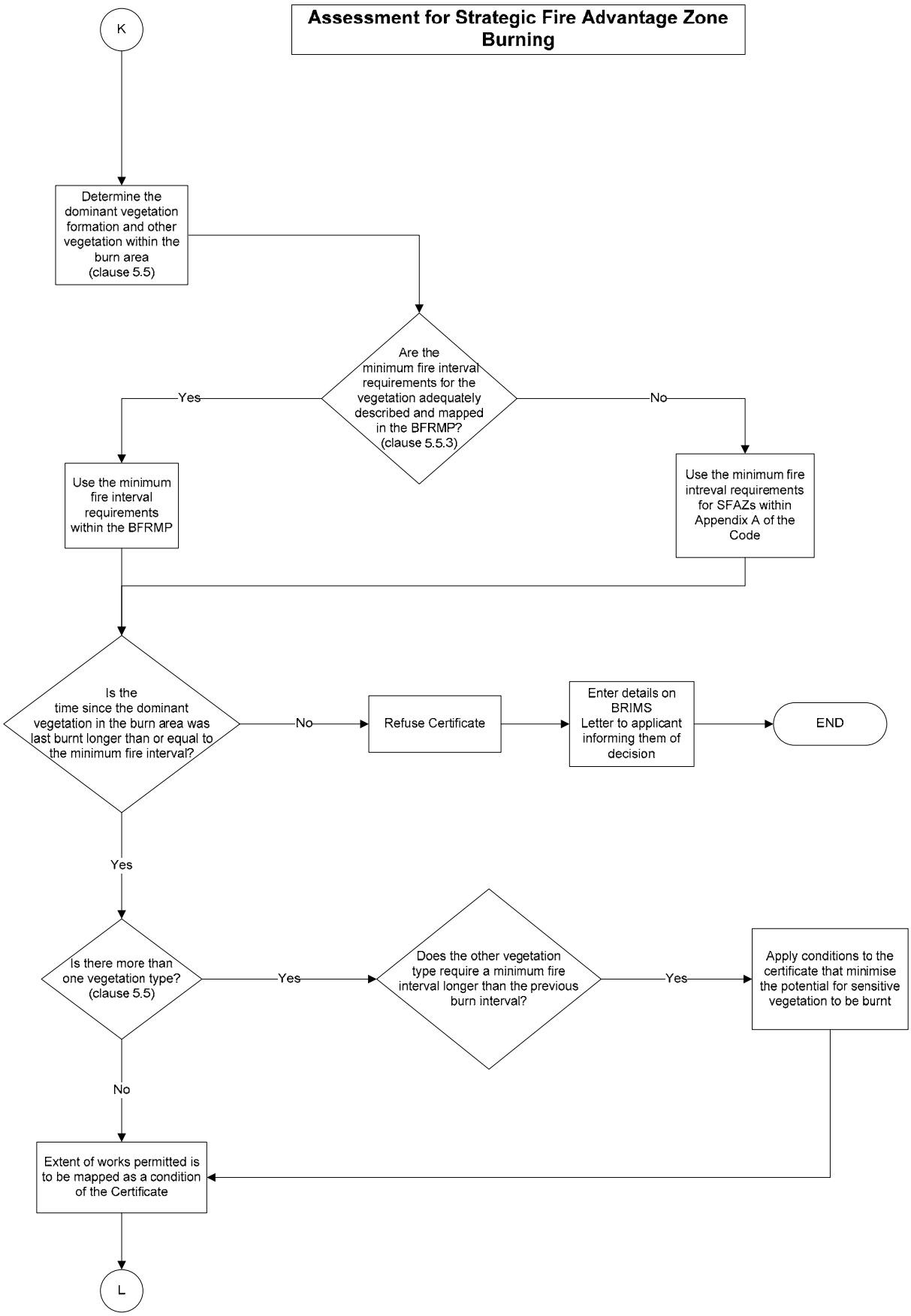

F
Environmental Issues and Weeds
Refer to Threatened Species Hazard Reduction Map and other threatened species records
Are there any threatened species, populations or ecological communities at the site? (clause 4.5/5.4)
Yes
Do the management conditions in the Threatened Species Hazard Reduction List prevent the works?
Yes
Can the proposal continue with conditions?
No
No
Add conditions to Certificate
Yes
100G
Enter details on BRIMS
No
Did the site inspection indicate the presence of the species, population or community?
Yes
Can a site inspection be performed in accordance with DEC Threatened Biodiversity Survey & Assessment Guidelines?
100F
No
Yes
No
Add conditions to Certificate
Yes
Can the proposal continue with modified conditions?
No
Can a s91 licence or s95(2) certificate be issued by DEC?
Yes
No
Refer to LEP and relevant management plans
Is there an environmental protection area? (clause 4.8/5.14)
Yes
Can the proposal continue with conditions to protect the environmental values of the area?
No
Refuse Certificate
Enter details on BRIMS Letter to applicant informing them of decision
END
Yes
No
Add conditions to protect the site to Certificate
Are there noxious or environmental weeds present at the site? (clause 4.9/5.15)
No
Yes
Add appropriate conditions to Certificate to prevent the spread of weeds
Are there any threatened species within 100 m?
No
Yes
Can the works be modified to use herbicides safely or avoid the use of herbicides?
Is it proposed to use herbicides?
Yes
Is there potential to cause pollution to a nearby waterbody?
No
Yes
No
No
Add conditions to Certificate regarding use of herbicides
Add appropriate conditions to Certificate
G

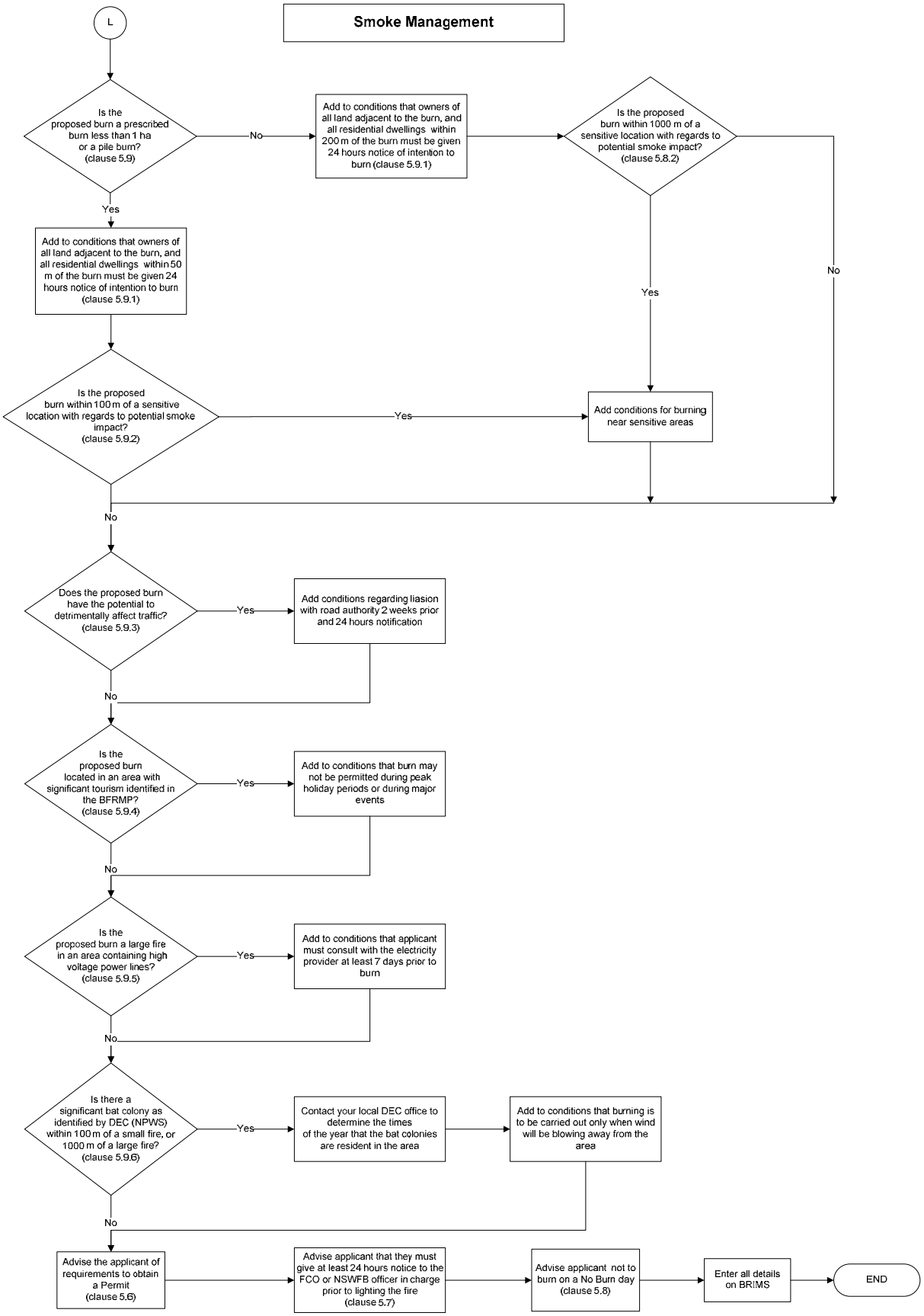

Mechanical Hazard Reduction
G
Does the proposal involve mechanical hazard reduction?
No
H
Yes
Does the site support isolated vegetation? (clause 4.1)
Yes
Refuse Certificate
No
Is the work in an APZ?
Yes
Are the trees within 5 metres of the building? (clause 4.4)
No
Does the canopy within the APZ require separation (max. 5 metres)?
No
Yes
Yes
Yes
Does the proposal involve tree removal or pruning?
Yes
No
Root structure must be retained undisturbed
Yes
Does the land have SER >80 t/ha or slope >10
No
Is the land susceptible to mass movement, have SER >150 t/ha, or slope >18? (clause 4.2)
Yes
Tree removal not permitted
Add tree works conditions to Certificate
No
Pruning must retain 75% canopy cover
No
Yes
Is the use of graders, ploughs or dozers proposed?
Yes
Does the land have SER >80 t/ha or slope >10 (clause 4.2)
No
Does the land have SER >40 t/ha
Yes
Are the works in a SFAZ?
Yes
No
Can the method of mechanical works be modified?
No
Yes
Add grader conditions to Certificate
No
Have earthworks been conducted in the last 2 years?
No
Yes
No
Yes
Is the use of slashing machinery proposed?
Yes
Is the land susceptible to mass movement, have SER >220 t/ha, or slope >18? (clause 4.2)
No
Does the land have SER >80 t/ha (APZ) or >40 t/ha (SFAZ)?
Yes
Can the method of mechanical works be modified?
No
Yes
No
Add slasher conditions to Certificate
Add condition for 75% ground cover to be retained
Add conditions for 5/10cm height of vegetation and 90% ground cover to be retained
No
Yes
Hand tools and hand held machinery permitted on all SER/ slopes
Are the works near a waterbody? (clause 4.3)
Yes
Are the works for an APZ within coastal heath swamp, coastal swamp forest or coastal floodplain wetland?
No
Are the works within the riparian buffer zones of Table 4.3 (APZ) or Table 4.4 (SFAZ)?
Yes
Can the works be modified to exclude the riparian buffer zone?
No
Yes
No
Yes
The extent of works permitted is to be mapped and/or described as a condition on the Certificate
Add conditions to Certificate
Yes
C
Yes
Does the proposal also include burning?
No
Enter all details on BRIMS
Send Certificate and Standards to applicant
END
C
Yes
Does the proposal also include burning?
No
Enter details on BRIMS
Letter to applicant informing them of decision
END


Burning Page 1: Pile and Windrow Burning
H
No
Is the proposal for windrow burning?
Yes
Is the windrow in a SFAZ or LMZ?
Yes
Is the windrow material from approved plantation works? (clause 3.3.1c or 3.4.1c)
Yes
Add conditions that burn must be conducted in accordance with Standards for Windrow Burning & Plantations & Reafforestation Act 1999
L
No
No
Refuse Certificate
No
Does the proposal include other burning works?
No
Enter details on BRIMS Letter to applicant informing them of decision
END
Yes
H
Is the proposal for pile burning?
No
I
Yes
Is the land in Schedule 1 (Part 1 or 2) of the Control of Burning Regulations?
No
Certificate not required
Yes
Is the pile in an APZ or SFAZ?
No
No
Yes
Is the pile material from approved APZ or SFAZ works? (clause 3.2.2e or 3.3.1d)
Yes
Can the material be disposed of by other means?
Yes
Refuse Certificate
Enter details on BRIMS Letter to applicant informing them of decision
END
No
Are there any threatened species at the site? (clause 5.4)
Yes
Do the conditions in the Threatened Species HR List prevent the works?
Yes
Can the proposal continue with conditions?
No
No
Add conditions to Certificate
Yes
No
Add conditions that burn must be conducted in accordance with Standards for Pile Burning
L


Burning Page 2: Prescribed Burning
I
Is the proposed burn likely to be of low intensity? (clause 5.2)
No
Is the proposed burn likely to be of moderate intensity?
No
Is the proposed burn likely to be of high intensity?
Yes
Yes
Yes
Add condition that burn must be conducted in accordance with Standards for Low Intensity HR Burning
Add condition to Certificate that moderate intensity fire not permitted in areas of SER >150 t/ha or slope >18
Yes
Does the land have SER >150 t/ha or slope >18? (clause 5.10)
No
Is the site an isolated area of vegetation?
Yes
Is the vegetation type grassland or heath?
No
END
Yes
No
Add condition to Certificate that burn must be conducted by a fire fighting agency
No
Enter details on BRIMS Letter to applicant informing them of decision
Can the propsal be modified to achieve a low intensity burn?
Yes
No
Refuse Certificate
No
Are there adequate existing or natural containment lines? (clause 5.3)
No
Control lines must be constructed to contain the fire
Can control lines be constructed in accordance with Table 5.1?
Yes
Are control lines required near a waterbody?
Yes
Are control lines required within riparian buffer zones of Table 4.3?
Yes
No
No
Yes
Add condition with maximum width of control line
Yes
Is the work in an APZ?
Add conditions that drainage structures required
Yes
Is the work on land of SER >80 t/ha or slope >18?
Yes
Can the works be modified to comply with requirements?
Yes
Add conditions that control lines must be revegetated
No
No
No
No
Is the burn near a water body? (clause 5.11)
Yes
Is the burn in a freshwater or forested wetland?
No
Can the burn proceed without burning within riparian buffer zones of Table 5.1?
No
Yes
Add conditions to Certificate
Yes
No
Are there any threatened species, populations or ecological communities at the site? (clause 5.4)
Yes
Is a minimum fire inteval specified in the Threatened Species List?
Yes
Is the fire interval at the site greater than or equal to the minimum interval specified? (clause 5.5.1)
No
Can the proposal be modified to exclude the area affected?
No
Can a site inspection be performed in accordance with DEC Guidelines?
Yes
No
No
Yes
Add conditions to Certificate
Yes
Continue with Threatened Species process as per Page F
Are the works in a LMZ?
Yes
J
No
No
K
Low intensity burn permitted to the first natural containment line witin 1000 m
Yes
Are the works around a plantation identified as SFAZ in the BFRMP? (clause 3.3)
Yes
L
Yes
Are the works in a SFAZ?
Yes
No
No
Are the works in an APZ?
No


Assessment for Land Management Zone Burning
J
Determine the dominant vegetation type and other vegetation within the burn area (clause 5.5)
Are the minimum fire interval requirements for the vegetation adequately described and mapped for LMZ works in the BFRMP? (clause 5.5.4)
No
Yes
Use the minimum fire interval requirements within the BFRMP
Use the minimum fire interval requirements for LMZs within Appendix A of the Code
END
Advise applicant of outcome and enter details on BRIMS
Refuse Certificate
Is the time since the dominant vegetation in the burn area was last burnt longer than or equal to the minimum fire interval? (clause 5.5.4.1)
Is the time since the dominant vegetation in the burn area was last burnt longer than or equal to the minimum fire interval for an SFAZ?
Is the fire interval known for the time between the last fire and the preceding fire?
Is the fire interval known for the time between the last fire and the preceding fire?
Was this interval for the dominant vegetation type in the burn area longer than or equal to the minimum fire interval?
Is the time since the dominant vegetation in the burn area was last burnt longer than or equal to 1.5 times the minimum fire interval?
In relation to the dominant vegetation in the burn area, has more than 50% of that vegetation type in the area covered by the BFRMP been burnt within the last two years? (clause 5.5.4.2)
Is the LMZ being managed to provide a mosaic of varying age structures within the landscape?
Will part of the corridor/ community remain at a time since fire of at least the minimum fire interval?
Can the proposal be modified?
Is the proposed burn in a known wildlife corridor or regionally significant vegetation community?
Apply conditions to ensure only part of area is burnt
Does the other vegetation type require a fire interval longer than the time since fire?
Apply conditions to the certificate that minimise the potential for sensitive vegetation to be burnt
Is there more than one vegetation type? (clause 5.5)
Extent of works permitted is to be mapped as a condition of the Certificate
L


Assessment for Strategic Fire Advantage Zone Burning
K
Determine the dominant vegetation formation and other vegetation within the burn area (clause 5.5)
Are the minimum fire interval requirements for the vegetation adequately described and mapped in the BFRMP? (clause 5.5.3)
Yes
No
Use the minimum fire interval requirements within the BFRMP
Use the minimum fire intreval requirements for SFAZs within Appendix A of the Code
Is the time since the dominant vegetation in the burn area was last burnt longer than or equal to the minimum fire interval?
No
Refuse Certificate
Enter details on BRIMS Letter to applicant informing them of decision
END
Yes
Is there more than one vegetation type? (clause 5.5)
Yes
Does the other vegetation type require a minimum fire interval longer than the previous burn interval?
Yes
Apply conditions to the certificate that minimise the potential for sensitive vegetation to be burnt
No
Extent of works permitted is to be mapped as a condition of the Certificate
L


L
Smoke Management
Is the proposed burn a prescribed burn less than 1 ha or a pile burn? (clause 5.9)
No
Add to conditions that owners of all land adjacent to the burn, and all residential dwellings within 200 m of the burn must be given 24 hours notice of intention to burn (clause 5.9.1)
Is the proposed burn within 1000 m of a sensitive location with regards to potential smoke impact? (clause 5.8.2)
Yes
Add to conditions that owners of all land adjacent to the burn, and all residential dwellings within 50 m of the burn must be given 24 hours notice of intention to burn (clause 5.9.1)
Yes
No
Is the proposed burn within 100 m of a sensitive location with regards to potential smoke impact? (clause 5.9.2)
Yes
Add conditions for burning near sensitive areas
No
Does the proposed burn have the potential to detrimentally affect traffic? (clause 5.9.3)
Yes
Add conditions regarding liasion with road authority 2 weeks prior and 24 hours notification
No
Is the proposed burn located in an area with significant tourism identified in the BFRMP? (clause 5.9.4)
Yes
Add to conditions that burn may not be permitted during peak holiday periods or during major events
No
Is the proposed burn a large fire in an area containing high voltage power lines? (clause 5.9.5)
Yes
Add to conditions that applicant must consult with the electricity provider at least 7 days prior to burn
No
Is there a significant bat colony as identified by DEC (NPWS) within 100 m of a small fire, or 1000 m of a large fire? (clause 5.9.6)
Yes
Contact your local DEC office to determine the times of the year that the bat colonies are resident in the area
Add to conditions that burning is to be carried out only when wind will be blowing away from the area
No
Advise the applicant of requirements to obtain a Permit (clause 5.6)
Advise applicant that they must give at least 24 hours notice to the FCO or NSWFB officer in charge prior to lighting the fire (clause 5.7)
Advise applicant not to burn on a No Burn day (clause 5.8)
Enter all details on BRIMS
END

SOP P6.1.3-2
Review of Environmental Factors (REF)

These SOPs form part of	Policy 6.1.3 Environmental Assessment for Bush Fire Hazard Reduction Works
Attached forms:	▪ REF Application Form ▪ REF Template ▪ REF Approval Letter Template ▪ REF Approval Form Template
Supporting documents:	▪ REF Assessment Guidelines

1. Purpose

1.1 This SOP details the responsibilities, process and minimum standards for assessment of Reviews of Environmental Factors (in accordance with Part 5 of the *Environmental Planning and Assessment Act 1979* **("EP&A Act")**) by officers of the RFS.

1. Procedures

Definitions

- **Bush Fire Risk Information Management System ("BRIMS")** means an inter-agency database that provides for the collation, storage and reporting of matters relating to bush fire management. The system is administered by the RFS on behalf of the Bush Fire Coordinating Committee **("BFCC")**. All Bush Fire Hazard Reduction Certificates **("HRCs")** and REFs are required to be recorded on BRIMS.

- **Certificate Issuing Officer ("CIO")** means an employee of the RFS who is authorised to issue HRCs, in accordance with the requirements of SOP P6.1.3-1d Requirements for Attainment of NSW RFS Certificate Issuing Officer Competency and Authorities. A CIO trainee may, under the supervision of an accredited CIO, carry out HRC assessments. However, only an accredited CIO may make the determination to issue or deny a HRC.

- **Duty of Care** means the responsibility of RFS employees to ensure that bush fire hazard reduction work is undertaken on land where they observe that there has been a failure by the public authority, owner or occupier of that land to perform a duty imposed upon it by section 63 of the *Rural Fires Act 1997*. Refer to *Service Standard 4.2.6 Bush Fire Hazard Complaints*.

- **Issued Certificate** means a HRC that has been approved and signed to that effect by an accredited CIO.

- **Reviews of Environmental Factors ("REFs")** means the framework (prepared by the Department of Planning) utilised by the RFS to consider whether a bush fire hazard reduction proposal is likely to significantly affect the environment. If the proposal is likely to significantly affect the environment then an Environmental Impact Statement **("EIS")** is required. If the RFS determines that the proposal is not likely to significantly affect the

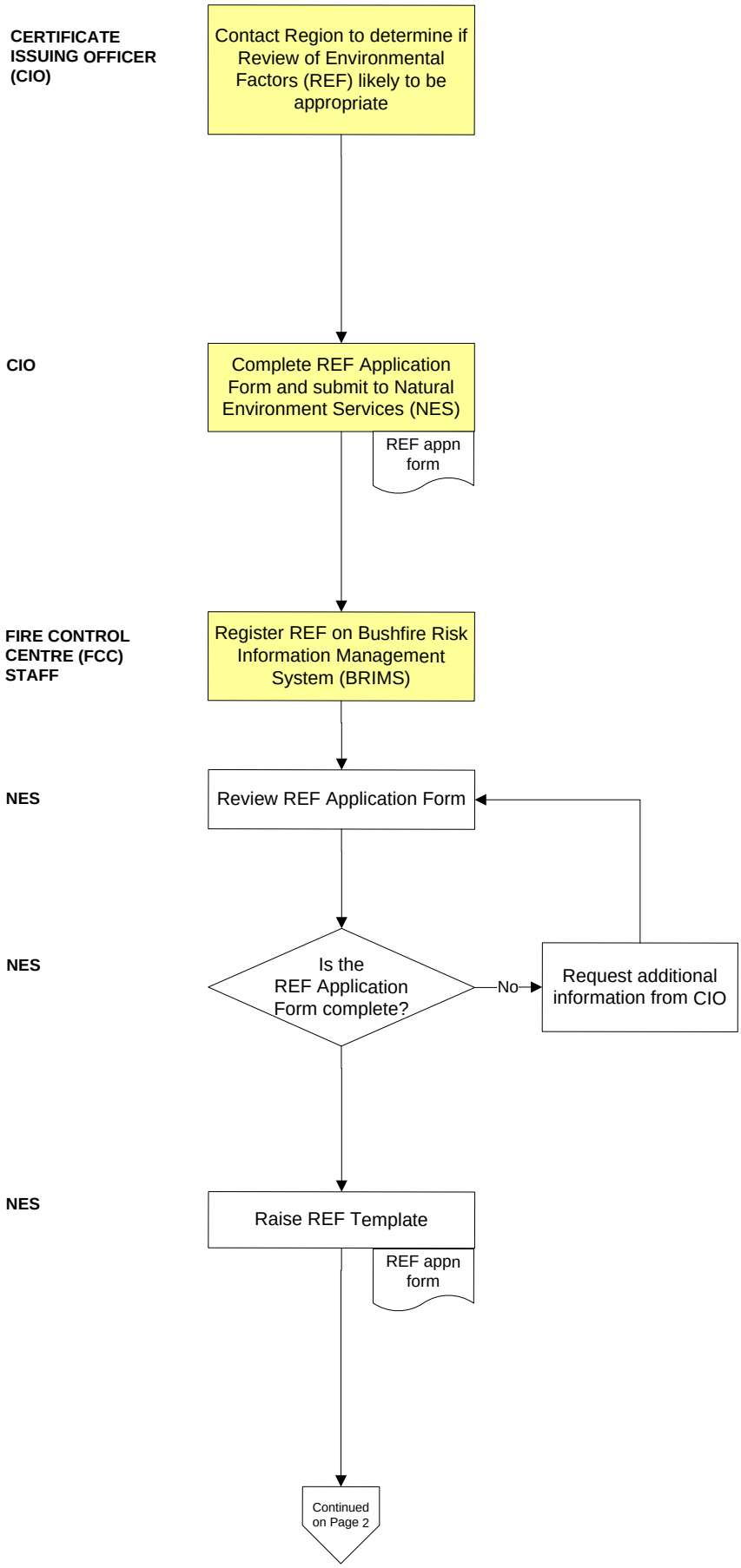
environment then the RFS may proceed with the proposal. Proposals may be modified to avoid causing a significant effect on the environment.

- **Review of Environmental Factors Register** refers to the register maintained by Natural Environment Services **("NES")** to record REF requests received by NES.

Note that other terms are as defined by the Rural Fires Act 1997 and other relevant legislation.

RESPONSIBILITY:

NOTES:



CIO to discuss proposal with Region in order for Region to determine whether an REF is likely to be appropriate

An REF may only be considered for privately owned lands where a Bush Fire Hazard Reduction Certificate (HRC) cannot be issued where:
- a valid complaint or duty of care referral exists (refer to SS 4.2.6 Bush Fire Hazard Complaints); or
- the RFS has sought to undertake a prescribed burn for the purpose of bush fire hazard reduction (in accordance with SS 3.1.6 Fireground Procedures).

NB: Environmental approvals for land other than private land is to be undertaken by the relevant land manager.

REF Application Form available via RFS Intranet and upon request of NES.

Completed REF Application Forms shall be submitted (emailed) to the Manager NES
NB: 'Training Bushfire Risk Information Management System (BRIMS))' should be used to assist completion of the REF Application Form.

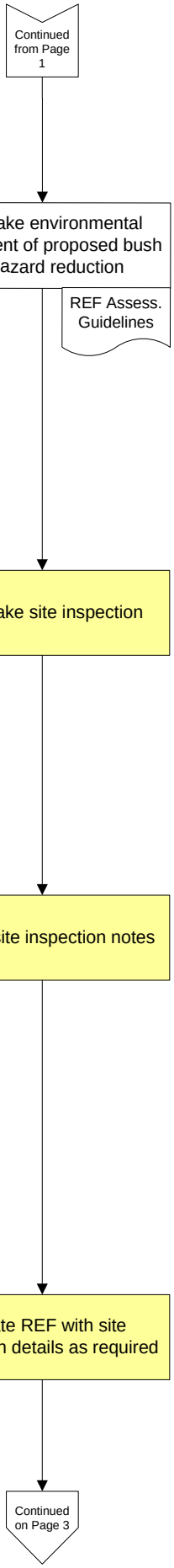
Enter details on BRIMS:
- Fill in Proposal Details page and link the REF to the Complaint or RFS/BFMC request.
Refer to User Guides and Release Notes contained within the General Information section of BRIMS.

Review REF Application Form to ensure sufficient detail is provided, particularly:
- confirmation that a HRC cannot be issued for the works;
- that adequate description is provided to identify the land parcel; and
- whether the application is complete in detail.

NES to raise REF Template

RESPONSIBILITY:

NOTES:



NES shall undertake REF Assessments. NES officers shall declare any conflict of interest prior to undertaking any REF Assessment, as required (refer to Service Standard 1.1.7 Code of Conduct and Ethics).

Proposed works shall be assessed in accordance with REF Assessment Guidelines to ascertain whether the works are likely to have a significant adverse effect on the environment, considering such matters as:

- Biodiversity;
- Cultural heritage;
- Soils, erosion and slope stability;
- Planning zones and Plans of Management;
- Air and water quality, noise;
- Protected areas; and
- Community issues and infrastructure;

All assessment information (i.e. the REF) shall be recorded using the REF Template

A site inspection must be performed by the CIO (or NES if CIO advised by NES) for all REFs. The site inspection shall:

- confirm information (obtained via 'desk top') provided in the REF Application Form;
- confirm information provided by other sources;
- validate existing or develop new maps to reflect key features of the site;
- include photos of site;
- validate compliance or ability to comply with REF Assessment Guidelines requirements as per the type of works proposed.

CIO (or NES) shall record site inspection notes including such matters as:

For mechanical works:

- distance of works from assets;
- vegetation type;
- slope;
- riparian areas;
- presence of weeds;
- if tree works are proposed, then tree type and distance to asset and/or canopy separation.

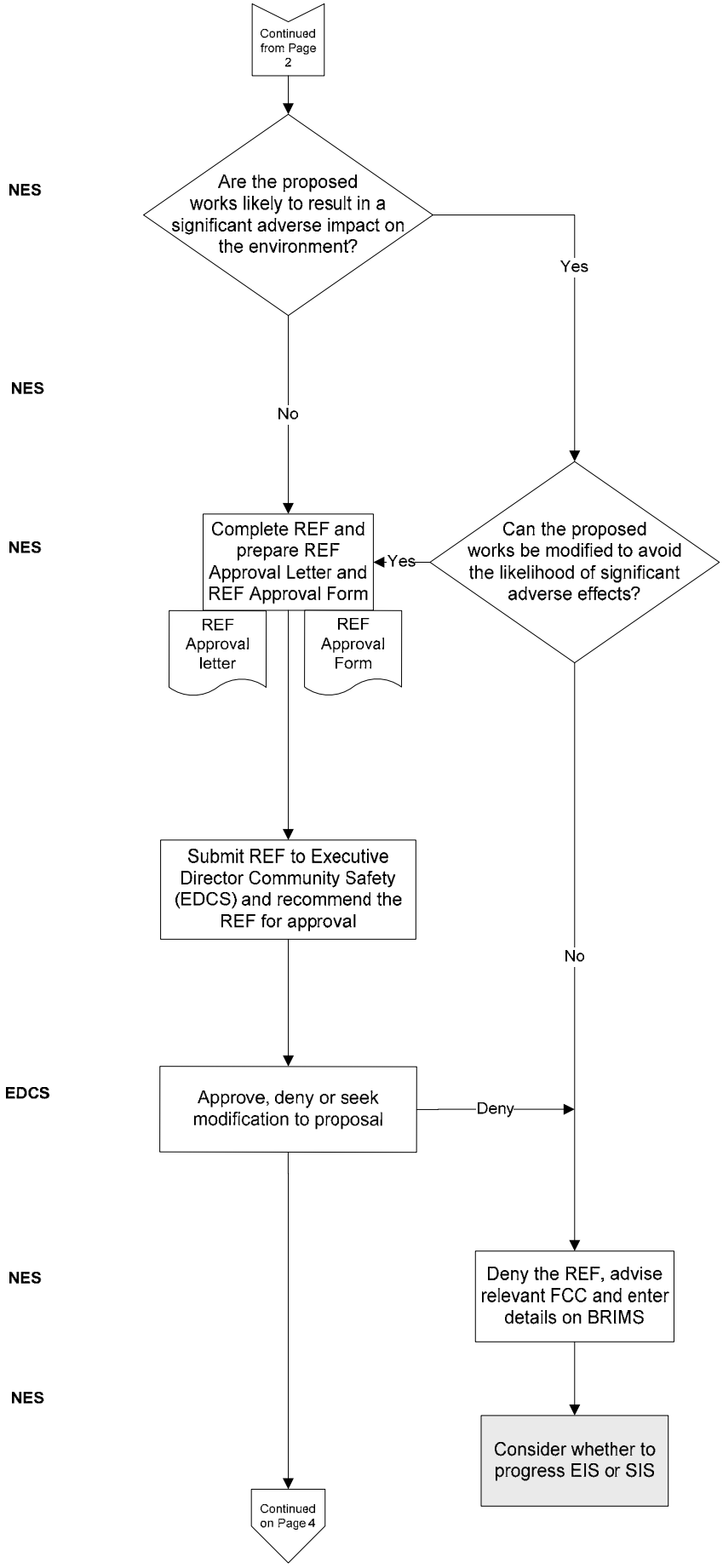
For prescribed burning:

- vegetation type;
- fire history;
- riparian areas;
- presence of, or need for, control lines;
- presence of weeds;
- smoke management issues.

Update REF with site inspection details as required.

RESPONSIBILITY:

NOTES:



If the assessment under REF Assessment Guidelines indicates that a significant adverse effect is likely, either:
- modify the proposal so that a significant adverse effect is not likely (this may include not progressing components of the proposal); or
- deny the REF application.

If the proposed works can be modified to avoid the likelihood of significant adverse effects then reassess proposal in accordance with REF Assessment Guidelines..

All REFs to be submitted for approval shall use the REF Template outlining all required conditions relating to the hazard reduction, and detailing any modifications made to the proposal.
NES to prepare REF Approval Letter using the REF Approval Letter Template.
NES to prepare REF Approval Form using the REF Approval Form Template

If the REF is the result of a complaint, then discuss with CIO to ensure that there is consistency between the works approved on the REF and those required by the '66D or 63 hazard advice' letter or 66E notice (refer to SS 4.2.6 Bush Fire Hazard Complaints). *Note: Components of the work required as outlined within the '66D or 63 hazard advice' letter or 66E notice may have received assessment and approval under the HRC process.*

A map shall be produced in BRIMS Hazard Reduction (HR) Methods page identifying the extent of works permitted. A map may be produced in a suitable Geographic Information System (GIS) tool provided that it shows at least as much detail as the BRIMS generated map.

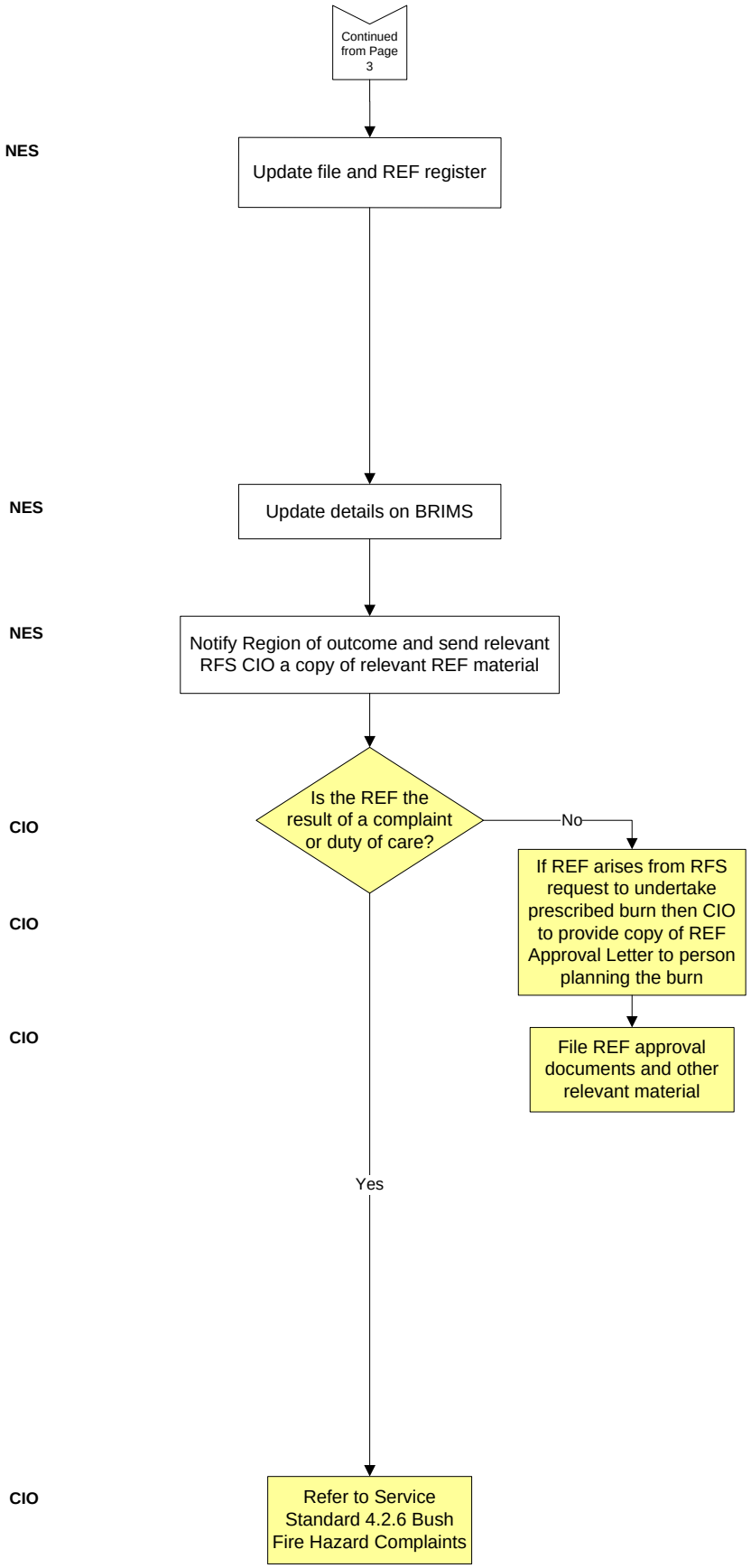
Only the EDCS (or the Commissioner) may approve an REF as per SS 1.3.1 Delegations and Authorisations.
If EDCS requires modification to the proposal, then NES to reassess proposal in accordance with REF Assessment Guidelines and prepare new REF for submission to EDCS.

If REF denied then NES to document, file and advise the relevant FCC (and Community Hazards Management if relates to the issue of a '66D or 63 hazard advice' letter or 66E notice).
NB: *Where the REF is the result of an RFS request to undertake a prescribed burn then the proposal may require denial, modification or consideration of whether 'duty of care' is triggered (refer to SS 4.2.6 Bush Fire Hazard Complaints).*

NES to discuss the issues with EDCS, Community Hazards Management and the relevant District/Zone/Team to determine whether to progress the proposal by undertaking an Environmental Impact Statement (EIS) (and/or Species Impact Statement (SIS)).

RESPONSIBILITY:

NOTES:



NES shall maintain:
- relevant REF files; and
- REF register

REF documentation to be retained on file, including:
- REF Application Form
- relevant emails;
- site inspection notes;
- REF Approval Letter;
- REF Approval Form;
- signed copy of REF;
- Aboriginal heritage report from the Department of Environment and Climate Change (DECC);
- detail of consents and approvals;
- detail of land management agreements;
- Council evidence regarding land ownership;
- photos of the site;
- information used including topographic maps, aerial photos, spatial data;
- any additional correspondence; and
- note regarding advice of works completion.

Complete details in BRIMS Assessment page. Refer to User Guides and Release Notes contained within the General Information section of BRIMS.

NES to notify Region of outcome and send CIO the:
- REF approval letter;
- REF approval form;
- copy of the REF; and
- map showing approved works.

If REF arises from RFS request to undertake prescribed burn then CIO to provide the following to the person responsible for planning the burn (and explain conditions as required):
- copy of the REF Approval Letter provided by NES; and
- copy of the map showing approved works.

NB: liaise with the person planning the burn to ensure that there is consistency between the REF and burn plan conditions.

CIO to file:
- copy of the REF Approval Letter provided by NES;
- copy of the map showing approved works;
- documented discussions with person responsible for planning the prescribed burn (as required);
- the REF; and
- the REF Approval Form.

Note:
- When the CIO is sending the '66D or 63 hazard advice' letter or 66E notice to the landholder (in accord with SS 4.2.6 Bush Fire Hazard Complaints) the CIO is also required to attach the following REF approval documents:
- *the REF Approval Letter (NB: do not send REF);*
- *the map showing approved works; and*
- *copy of all relevant Standards documents.*

- In addition, the CIO is to contact the landholder (as required), to ensure the landholder understands all conditions on the REF (e.g. Fire Permit requirements, notification process prior to burns).
- The CIO is also required to file:
- *copy of REF Approval Letter provided by NES;*
- *copy of map showing approved works;*
- *documented discussions with landholder (as required);*
- *the REF; and*
- *the REF Approval Form.*

REVIEW OF ENVIRONMENTAL FACTORS (REF)

APPLICATION FORM

This information will be used by Natural Environment Services (NES) to prepare an REF (in accord with Section 111 and Part 5 of the Environmental Planning and Assessment Act 1979) for the purpose of taking into account to the fullest extent possible all matters likely to affect the environment as a result of the proposed activity.

It is the responsibility of the CIO to provide NES with answers to as many of the questions below as possible. Assessing the proposal using the Bush Fire Environmental Assessment Code process will provide the answers to many of the questions below. NES is available to answer any queries and will remain in contact with the relevant CIO during the REF process.

Name of Certificate Issuing Officer:	
Location of relevant RFS District/Team/Zone:	
Date of emailed request to NES:	

State key reason why HRC could not be issued (e.g. steep slopes): Has a HRC been issued for part of the proposal: Yes/No

A locality map of appropriate scale showing the affected land and adjoining properties is to be provided to NES. This map should be prepared using BRIMS or MapInfo. It should use aerial photography where available and depict relevant GIS layers (e.g. scale, contour lines, roads, and environmental features such as threatened species locations). The area for which the work is proposed should also be indicated. Site photos should also be provided to NES.

Part 1 The Activity

1. Description of the Proposed Activity

a) Activity name:	
b) Local Government Area:	
c) Address and Lot/DP of proposed activity:	
d) Describe the work required (if relevant include duration, timing and any associated work):	
e) Describe the location of the asset and the dimensions of the proposed works (including the size of the area affected in hectares):	
f) What is the zone within the Bush Fire Risk Management Plan?	
g) What is the land tenure of the site?	

h)	What is the name of the landowner/leaseholder?
i)	What is the land use of the site?
j)	What is the zoning in the LEP? (e.g. Zone Residential A (low density))
k)	What is the nature of the adjacent land? (e.g. grazing)

2. Hazard Assessment Outcomes:

Summarise the hazard assessment outcomes (and attach hazard assessment)

3. Objectives of Proposed Activity:

The objectives are to:

Part 2 Key Environmental Attributes

1. Soil and Stability

What is the slope and SER if known? (e.g. 25 degrees and SER of over 220)
What is the aspect? (e.g. site faces north-west)
Are there any soil issues in the area? (e.g. acid sulfate soils, salinity, landslip)

2. Waterbodies

What types of waterbodies occur on the site (or within close proximity)? (e.g. 2nd order stream, lake greater than or equal to 0.5 ha but less than 2ha)
Are these waterbodies significant (e.g. Coastal wetlands - SEPP 14, RAMSAR Wetlands)

3. Vegetation

What is the vegetation formation type? (e.g. Dry Sclerophyll Forest (shrubby sub-formation), heathlands).

If known (from mapping) what is the name of the vegetation community? (e.g. Castlereagh Swamp Woodland).
What is the vegetation structure? (e.g. grassy understorey with no shrubs and sparse tree canopy)
Describe whether the vegetation is part of a large naturally vegetated area, an isolated remnant, or whether it forms part of a corridor of vegetation
If the vegetation to be removed is different to other vegetation in the area then describe differences?
Is the vegetation type significant? (e.g. Littoral rainforest - SEPP 26

4. Biodiversity

List any threatened species, populations or ecological communities that are likely to occur at the site:
Has the site got any other significance attached? (e.g. Critical Habitat, SEPP 44 – Koala Habitat)
Are there any significant bat colonies in the area? (flying foxes or other)
Are there any weeds/feral animals in the area, and if so are there any management programmes?

5. Aboriginal Heritage

Name any Aboriginal relics, places or items of cultural significance that are likely to occur at the site? (use AHIMS)
Are you aware of any wild food resources utilised by Aboriginal people?

6. Non-Indigenous Heritage

Are there any items/structures listed?

7. Smoke Issues

If the proposal involves burning are there any sensitive locations in the area? (e.g. special fire protection buildings as defined by Planning for Bush Fire Protection, residential areas, tourism operations, roads, restaurants, ventilation intakes, airports, rail, sporting venues, community recreation, power lines).

8. Conservation Areas

Do any of the following apply:	
Any land management agreements under Clause 2.6 of the Code	
World Heritage	
Wilderness within meaning of Wilderness Act 1987	
Marine protected areas in the vicinity	
Environmental protection areas within the LEP	

9. Sensitive Areas

Does the area contain any sensitive landscapes? (e.g. coastline, dunes, alpine, caves, other unique landforms)
Does the area contain any sensitive biological communities? (e.g. any land restricted by Clause 2.4 of the Code)
Is the area scenic and visually significant? (e.g. escarpment, tourist values)

10. Fire History

What is the fire history of the area? (state years fire occurred if known)
When was the area last subject to fire?

Part 3 Map

A map showing the following should be included with the application.

- The general location of the area in question, including cadastre;
- A background of aerial photography or satellite imagery (depending on what is available) or topographic map if there is no image alternative;
- Other data layers such as roads, towns, NPWS or SF boundaries etc which assist in identifying the area;
- The data layer showing the environmental issue requiring the REF e.g. SEPP 14 Wetland, Threatened Species, etc;
- A scale bar;
- A north arrow;
- The proposed works;
- A key/legend of the layers shown on the map;
- A title stating REF application for *(activity description provided at question 1 parts a, b, & c)*;

If the data layer used to show the environmental issue obscures detail on the aerial photography and /or cadastre then a separate map showing everything apart from the environmental issue data should be attached.

REVIEW OF ENVIRONMENTAL FACTORS
Record Sheet

(*Approval Number*)

Prepared by:

……

PART 1 THE ACTIVITY

2. <u>Description of the Proposed Activity</u>

a) Activity name……

……

……

b) Local Government Area……

……

c) Location of hazard reduction activity……

……

……

d) The nature of the activity (include any associated work) ……...

……..

……..

……..

……

……

e) Duration and timing of the proposed activity (include any staging) ……

……

……

f) Location of asset and dimensions of proposed works (including size of the area affected in hectares ……..

……

……

……

g) Relationship to the Bush Fire Risk Management Plan (specify zoning and whether distances are appropriate) ……..

……..……

h) Tenure of Area ……

Who is the landowner/leaseholder? ……..

……

i) What is the land use (e.g. urban, rural, reserve)? ……

……

j) What is the zoning in the LEP? ……..

……

k) What is the nature of the adjacent land? ……

……

2. Indicative Cost of Activity

……

……

3. Objectives of Proposed Activity

……

……

……

……

4. Reversibility of Proposed Activity

……

……

PART 2 ALTERNATIVES CONSIDERED

Which alternatives were considered? ……

……

……

……

PART 3 THE NATURE OF THE ENVIRONMENT AND POTENTIAL IMPACTS

Answer the following for each section as appropriate:

1. Provide - Descriptor / Yes / No / Unknown
2. Where applicable, provide as much detail as possible in accordance with guidelines
3. List all information sources which were investigated?

Note that this is a proforma and can be expanded to accommodate extra information

Climatic Data

Describe rainfall, temperature

……

……

Soils, Landscape and Stability

What is the soil type and its properties? ……

……

What is the slope? ……

……

What is the landform element? ……

……

What is the aspect? ……..

……

Is the soil type susceptible to mass movement? ……

……

Is the soil type susceptible to structural decline? ……

……

Is the soil prone to acidification? ……

……

Is the soil prone to salinisation? ……..

……

Are there any acid sulfate soils in the area? ……

……

Protected Lands

Is the site within 20 metres of a Prescribed Stream? ……
……
Is the site on steeply sloping land? ……
……
Is the land mapped as environmentally sensitive? ……
……

Waterbodies

Does the site contain any waterbodies (or within close proximity)? ……
……
Name the type of waterbody ……
Is the area a groundwater recharge area? ……
……
If the area contains wetlands, what is the classification? (e.g. SEPP 14, RAMSAR Wetlands, Wetlands of National Importance)? ……
……
What are the water catchment values? ……
……
Is the river classified as 'stressed rivers'? ……
……

Vegetation

What is the vegetation structure? ……
……
What is the name of the vegetation community (from mapping)? ……..
……
What is the vegetation formation type? ……..
……
Is the vegetation SEPP 26? ……
……
Is the vegetation SEPP 19? ……
……

Is the vegetation, remnant vegetation (include native grasses)? ……

……

What proportion of the area is remnant vegetation? ……..

Does it adjoin large areas of vegetation? ……

……

Does the vegetation on site form part of a vegetation corridor between other vegetation?

……

Is the vegetation to be removed different to other vegetation in the area? ……

If different, in what way is it different? ……..

……

Biodiversity

Are there any threatened species, populations or ecological communities likely to occur in the area? ……

……

Detail relevant life cycle and habitat useage information on these species, populations and ecological communities? ……..……..

……..

What habitat components are identified at the site? ……

……..

Do any of the species, populations or ecological community habitat requirements occur at the site? ……

……

Has the site been declared Critical Habitat? ……

Are there any bat colonies in the area? ……

……

Does the area contain any mapped SEPP 44 – Koala Habitat? ……..

……

Does the area contain any habitat required for migratory birds? ……..

……

Are there any weeds/feral animals in the area? ……

……

Are there any programs operating in the area to manage these weeds/feral animals?

……

Aboriginal Heritage

Does the area contain fixed items/structures having a heritage order? ……

……

Does the area have or is it likely to have any Aboriginal relics, places or items of cultural significance? ……

……

Does the area contain wild food resources utilised by Aboriginal people? ……..

……

Are there any land claims, Native Title claims or Indigenous Land Use Agreements that apply? .....

Non-Indigenous Heritage

Are there any items/structures listed? ……

……

Community Issues

Are there any sensitive locations in the area? ……

……

Are there any places used for community recreation in the area? ……

……

Which roads are to be utilised for operations and will impact on community use?

……

Are there any rail networks in the area? ……..

……

Are there any tourism/sporting/community events in the area? ……..

……

Are there any power lines in the area? ……

……

What is the land use of the area? ……

……

Conservation Areas

Are there any Voluntary Conservation Agreements applicable to the area? …….

……

Is the area World Heritage? ……

……

Does SEPP 56 – Sydney Harbour apply? ……

……

Is the area 'Wilderness'? ……

……

Are there any marine protected areas in the vicinity? ……

……

Does the land have a Nature Conservation Trust agreement? ……

……

Sensitive Areas

Does the area contain any sensitive landscapes? ……

……

Does the area contain any sensitive biological communities? ……

……

Is the area scenic and visually significant? ……

……

Fire History

What is the fire history of the area? ……

……

When was the area last subject to fire? ……

……

PART 4 ENVIRONMENTAL IMPACTS

Detail the issues and how such issues will be mitigated.

Air Impacts

Will the activity produce any smoke or dust? ……

……

Detail who and what will be affected, and how they will be affected ……..

……

If the activity involves fuel reduction through prescribed burning, is the area subject to no burn days? ……

……

Water impacts

Will water quality be affected? ……

……

Who or what will this quality impact upon? ……..

……

Will there be any impacts due to water extraction? ……

……

Is there likely to be any changes to flooding regimes? ……

……

Soil and Stability impacts

Is the activity likely to result in any loss of soil due to erosion? ……

……

Is there likely to be any potential for landslip? ……

……

Is there likely to be any loss of structural integrity of soil? ……..

……

Is there likely to be any soil contamination? ……

……

Is there likely to be any soil salinisation? ……

……

Is there likely to be any soil acidification? ……

……

Is there likely to be any acid sulfate issues? ……

……

Noise and Vibration impacts

Will surrounding areas be subject to unacceptable noise or vibration levels?

……

Hazardous Chemicals

Are any herbicides (or any other such chemicals) to be used? ……

……..

Will foam be used? ……

……..

Are there any stored chemicals on site? ……

……..

Vegetation

If burning, has adequate time passed since the last fire to conform with the 'minimum fire interval' table? ……

……

Will more than 50% of the vegetation formation within the LGA (after the works) conform with the 'minimum fire interval'? ……

……

What is the nature and extent of the clearing or modification proposed? ……

……

Is the vegetation community at the limit of its distribution? ……

……

Is the vegetation community considered to be a 'sensitive area'? ……

……

Are there any clearing restrictions imposed on the vegetation by virtue of the RVMP?
……..

Does the vegetation to be cleared provide a 'corridor' between other vegetated areas?
……..

Will the vegetation to be cleared increase the 'edge effect'? ……

……

Plants

Will there be any clearing of threatened plants (including populations)? ……

……

Will any threatened plants (including populations) be subjected to fire? ……

……

If so, does the time since last fire conform with conditions on the Threatened Species Hazard Reduction List? ……

……

Animals

Will any threatened animal (including populations) be subjected to fire? ……..

……

If so, will the implementation of the burn conform with the conditions on the Threatened Species Hazard Reduction List? ……..

……

Will the activity displace or disturb species and/or populations? ……

……..

Will the activity disrupt the breeding cycle? ……..

……..

Will the activity disrupt roosting behaviour? ……

……..

Will the activity change foraging behaviour? ……

……..

Will the activity affect migration and dispersal ability? ……..

……..

Will the activity disrupt recruitment? ……

……

Will the activity affect the interaction between species and other species in the community? ……

……

Habitat

Will there be any clearing/burning or other type of damage to important habitat components? ……

……

Which habitat components will be impacted and in what way? ……

……

EECs

Will there be any clearing of an endangered ecological community? …….

……

Will any endangered ecological communities be subjected to fire? ……..

……

If so, does the time since last fire conform with conditions on the Threatened Species Hazard Reduction List? ……

……

Weeds and Pest Species

Will the activity provide opportunity for weeds or feral animals to proliferate?

……..

Natural Resources

Are any industries utilising natural resources likely to be impacted? If yes, describe the impacts? ……..

……

Will the works result in the loss of natural resources? ……..

……

Will the activity degrade an area reserved/managed for conservation purposes?

……

Community Resources

Will any community services or infrastructure be affected?

- **Medical services** ……
- **Roads and bridges** ……
- **Public access and enjoyment of recreational/other sites** ……..
- **Public use of waterways** ……
- **Powerlines** ……..
- **Tourism, sporting or community events** ……
- **Rubbish removal** ……..
- **Diversion of resources** ……

If yes, in what way? ……

……..

……..

Social Factors

Is there likely to be any disruption to the community? ……

- **Neighbour cohesion** ……
- **Community identity/cultural character** ……

Is anyone or group likely to be disadvantaged? ……

Is there likely to be any impacts on:

- **Health** ……..
- **Privacy** ……
- **Visual/Scenic landscape** ……
- **Safety** ……

If yes, in what way? ……
……
……

Economic Factors

Is there likely to be any impacts on any industries or economic stability?
……

Land Use Impacts

Is there likely to be any property value impacts? ……
……

Transportation Impacts

Will the activity lead to traffic congestion? ……
……..
Are any roads or railways likely to be affected by smoke? ……
……

Aboriginal Heritage

Does the activity affect Aboriginal relics? ……
……
Does the activity affect places of significance or importance to the Aboriginal community?
……..
……
Does the activity affect wild food resources? ……
……
Does the activity affect areas subject to land claims, Native Title claims or Land Use Agreements? ……

Non-Indigenous Heritage

Does the activity affect heritage items or relics? ……

……

Consultation

Has the owner/occupier/land manager been consulted? ……..

If not, why not? ……

Who has been consulted on the environmental aspects of the proposed activity?

……

DECC / council officers / local conservationists / Aboriginal land council / community groups / residents

PART 5 ANALYSIS OF ENVIRONMENTAL IMPACTS

ISSUE	**EXTENT AND NATURE OF IMPACT (not applicable, positive, negligible, or low, medium or high adverse)**
Air	
Water	
Soil and Slope Stability	
Noise and Vibration	
Hazardous Chemicals	
Vegetation	
Plants	
Animals	
Habitat	
EECs	
Weeds and Pest Species	
Natural Resources	
Community Resources	
Social Factors	
Economic Factors	
Land Use	
Transportation	
Aboriginal Heritage	
Non-Indigenous Heritage	

PART 6 SUMMARY OF ENVIRONMENTAL IMPACTS

Discuss the cumulative impacts of the activity

……..

……..

PART 7 CONCLUSION AND RECOMMENDATION

ISSUE	RECOMMENDED CONDITIONS
Air	
Water	
Soil and Slope Stability	
Noise and Vibration	
Hazardous Chemicals	
Vegetation	
Plants	
Animals	
Habitat	
EECs	
Weeds and Pest Species	
Natural Resources	
Community Resources	
Social Factors	
Economic Factors	
Land Use	
Transportation	
Aboriginal Heritage	
Non-Indigenous Heritage	

Does the evidence suggest that the activity will have an impact such that:

- **waste product could result in significant environmental problems including air, water or land pollution? [ ]**
- **endangered species, population, community, critical habitat <u>may</u> be significantly affected? [ ]**
- **native vegetation, protected plants and animals will be significantly affected [ ]**
- **Aboriginal relics, places or sites <u>may</u> be damaged? [ ]**
- **Item or place of Non-Indigenous heritage <u>may</u> be damaged? [ ]**

Comment: ……

……

What benefits will accrue to the community as a result of the activity? …….

……

Were any issues raised by the community? ……..

……..

If any 7 Part Tests have been undertaken attach to this documentation? Yes/No
RECOMMENDED CONDITIONS FOR AMELIORATION:

……
……
……
……
……
……

Comment: ……..
……..
……
……
……
……

Person responsible for preparing the REF.

DECISION: ……
……..
……..
SIGNATURE: …… **POSITION:** …… **DATE:** ……

Person responsible for managing person preparing the REF (if applicable).

SIGNATURE: …… **POSITION:** …… **DATE:** ……

Person responsible for determining if an EIS is required.

DECISION: ……
……..
……..
SIGNATURE: …… **POSITION:** …… **DATE:** ……

Bush Fire Hazard Reduction Environmental Approval

(Approval number {insert HRREF, year, number})

In accordance with the considerations under Part 5 of the *Environmental Planning and Assessment Act 1979*, and the Review of Environmental Factors {insert HRREF, year, number} prepared by the NSW Rural Fire Service, the hazard reduction works referred to below are:

- Approved by NSW Rural Fire Service
- For works to be carried out at {insert address and Lot/DP number}
- for the purpose of {insert reason}
- using the following method of hazard reduction works:

  * {insert description of method}

- The size of the area to be treated is: approximately {insert area} (ha)
  (or in accordance with the attached map)
- This approval shall be effective from {insert date}

This approval provides authority to carry out bush fire hazard reduction work on the land described above in accordance with:

- the {insert name} Bush Fire Risk Management Plan; and
- the conditions specified below.

Conditions

This approval is granted subject to the following conditions:

* {insert conditions}

* The Rural Fire Service is to be notified on completion of the works using the return form attached.

If the works require the use of fire, the approval holder must also comply with the following conditions:

1) The approval holder is give the fire control officer for the {insert name of FCC} 24 hours prior to conducting the activity on phone: {insert number} or if the land on which the fire is to be lit is in a NSW Fire Brigade District the officer in charge of the fire station nearest the land on phone: {insert number}.
2) The approval holder is required to comply with No Burn notices issued by the NSW Department of Environment and Climate Change.
3) If the activity is to be conducted within a bush fire danger period a bush fire permit must also be obtained by the approval holder.

Disclaimer:
Failure to comply with these conditions may result in action being taken for breaches under relevant environmental legislation.

Authorisation by

Date:

Signed
{insert name}
Executive Director Community Safety
NSW Rural Fire Service

Please deliver to the Rural Fire Service:

Fire Mitigation Officer
{insert District/Team/Zone}

{insert address}

PH: {insert contact number}

_____ fold here _____

_____ fold here _____

I have completed the Bush Fire Hazard Reduction work, in accordance with the specified conditions, for Approval number {insert HRREF, year, number} at:

- {insert address including Lot/DP}

The work was completed on ____/____/20____

_____ Date:_____
Signed

_____
Name

Comments: _____

{Insert HR Type and Bush Fire Risk Management Zone Type} for {Insert Name of HR}

Conclusions

To conclude the REF:

1. The activity is not likely to significantly affect the environment, as such an EIS is not required.
2. The activity is not likely to have a significant effect on threatened species, populations, ecological communities, or their habitats, as such a SIS is not required.
3. The activity is not in respect of land that is, or is a part of, critical habitat, as such a SIS is not required.

{insert name and title of assessing officer}

{insert name}
Manager
Natural Environment Services

Determination Notice

I, *{insert name of ED Community Safety}*, acting as a delegate of the Commissioner of the NSW Rural Fire Service, having considered the proposed activity described above and, in accordance with Section 111 of the *Environmental Planning and Assessment Act 1979*, having taken into account to the fullest extent possible all matters likely to affect the environment as a result of the proposed activity, **hereby determine** the Activity Application by the granting of approval subject to the conditions specified in the attached Schedule 1.

{insert name}
Executive-Director
Community Safety
NSW Rural Fire Service

NSW RURAL FIRE SERVICE

REVIEW OF ENVIRONMENTAL FACTORS - GUIDELINES

The following guidelines have been developed to assist in the preparation of a Review of Environmental Factors (REF). The REF is to be recorded on the REF Record Sheet using the REF Template (P6.1.3-2b). Local information is to be obtained from NSW Rural Fire Service (RFS) staff in the form of the REF Application Form (P6.1.3-2a).

INTRODUCTION

The *Environmental Planning and Assessment Act 1979* (EP&A Act) requires an approval to be obtained for circumstances where there is likely to be a significant impact on the environment. Statutory matters which must be considered in order to determine whether an activity should be approved, under s.111 of the EP&A Act, have been included in this document. The REF process identified in this document provides a structured and systematic method for determining the likely effect of an activity on the environment and whether an Environmental Impact Statement (EIS), and/or a Species Impact Statement (SIS), is required pursuant to Part 5 of the EP&A Act.

It is also necessary to consider whether the proposal is compatible with relevant legislation, policies or plans, and the identified impacts. If the activity is not compatible having regard to the identified impacts and any relevant policies, plans or any legislation, strong justification must be provided for recommending the activity for approval.

The first step in the environmental impact assessment process is to determine whether the proposed activity is permissible. Generally speaking, hazard reduction works are permissible under NSW and Commonwealth laws. However, relevant environmental planning instruments (EPIs) such as state environmental planning policies (SEPPs), regional environmental plans (REPs) and local environmental plans (LEPs) should be checked to ensure the proposed activity is permissible under these instruments and that the activity fits within the objectives of these EPIs. The following sites provide guidance:

- SEPP summary list: State Environmental Planning Policies (SEPPs).
- Click here to search the Department of Local Government's list of councils for information and maps of Local Government areas.
  Click here to view a list of council websites.
- Click here for list of suburbs in each council, and maps of council boundaries.

RFS Policies

RFS policies can apply to a range of issues including planning, financial, and operational processes. These policies are mostly contained in the RFS's Policies, Service Standards and Standard Operating Procedures. Relevant policies must be considered in determining the appropriateness of the proposed activity.

1 The Activity

1.1 Description of Proposed Activity

Please Note:

- Much of the information required for this section should be available within the Section 66 hazard inspection report,
- Only one local map may be required if the map can clearly depict all aspects of the activity.

(a) Activity name

Usually a name that helps identify the nature of the proposed activity eg. Mechanical APZ works at 6 Jones Street, Smithtown.

(b) Local Government Area

Include the name of the Local Government Area.

(c) Location of the hazard reduction activity

Describe the location of the activity and any areas which are likely to be affected (show on maps wherever possible - regional and local scales).

Provide a description of the land using street and suburb address, map coordinates, Lot and DP numbers (if available), name of adjacent reserve or other simple property descriptions. Nearest town and road should be included. Well known property names may be useful in rural areas.

A locality map of appropriate scale showing the affected land and adjoining properties and nearest roads should be attached. The location of any native vegetation affected should be indicated. A larger scale map of the local government area or region at an A4/A3 size and indicating where the activity is to occur may also be useful. Such a map should indicate urban, rural and natural areas. In many cases maps from the relevant bush fire risk management plan will assist.

(d) The nature of the activity (include any associated work)

The description of the proposed activity should provide a reader of the REF, who may not be familiar with the area or the proposed activity, with sufficient information so the reader is aware of what will be involved in the carrying out of the hazard reduction.

This includes the hazard reduction methods (e.g. clearing of vegetation, hand tool lines and prescribed burning intensity) and tools to be used (e.g. type of machinery, drip torch, foam), final dimensions, visual aspects, other development associated with the activity (e.g. establishment of fire trails) and summary of any environmental impact mitigation measures (e.g. soil stabilisation works). The location of the various components of the activity should be described and mapped.

The inclusion of maps, photographs and diagrams are essential in this section.

(e) Duration and timing of the proposed activity (include any staging)

Indicate if the proposal is to be undertaken on one day (or night) or over a period of days. Will the activity require different stages over time? Some activities may be seasonally driven such as “during autumn”. In some cases, the activity may be limited to weekends due to possible traffic congestion impacts. Some hazard reduction prescribed burns may seek to provide a mosaic pattern of burns and should be indicated as such, including the period over which the burns will occur. Also indicate if the activity is anticipated to be undertaken on an annual (or otherwise) basis.

(f) Location of asset and dimensions of proposed works

Describe the asset to be protected and its position in relation to the proposed works. Describe the size of the area to be affected. Provide width and length of intended works but separate distances if a combination of prescribed burning and mechanical clearing are to be undertaken.

If area is known in acres, divide by 2.5 to determine hectares. Note that 1 hectare = 100m by 100m. Ensure that the asset and proposed works are marked on the aforementioned maps.

Provide a brief description of the existing site characteristics. For example:

- *the site of the proposed activity is a densely vegetated, and gently sloping (4^o) area of $500m^2$ (approximately 25m x 20m) adjacent to houses. Access to the site is via a 2km unsealed road from the Pacific Highway;* or
- *The area proposed to be burned is approximately 1 km wide and 1.5km long and immediately to the west of the town. The slope of the area varies from 2^o to 11^o.*

(g) Relationship to the Bush Fire Risk Management Plan.

Does the activity form part of the bush fire risk management plan strategies? If so, which one(s)? Describe the relevant strategies to which the activity relates.

If the activity does not have a relationship to the plan, then the rationale for the activity will need to be clearly articulated. Consideration should be given to addressing the issue within the next review of the plan.

(h) Tenure of the area

An REF may only be considered for privately owned lands where a Bush Fire Hazard Reduction Certificate (HRC) cannot be issued where:

- A valid complaint or duty of care referral exists (refer to SS 4.2.6 Bush Fire Hazard Complaints); or
- The RFS has sought to undertake a prescribed burn for the purpose of bush fire hazard reduction (in accordance with SS 3.1.6 Fireground Procedures).

NB: Environmental approvals for land other than private land is to be undertaken by the relevant land manager.

Land tenure (ownership) can be checked by checking cadastral mapping and by confirming with the local council.

In the west of the State, many properties are leased from the Crown through the Western Lands Commission or Department of Lands. Such areas should be indicated as a prompt to determine if lease conditions need to be considered prior to implementing any controversial activity.

NB: Public land includes Council managed properties but may be managed by almost any NSW or Commonwealth Government Agency. National Parks and Wildlife and State Forests will undertake their own environmental assessments for fuel management activities within their own estates. Other public lands may be managed by the Department of Lands, Department of Infrastructure, Planning and Natural Resources (sometimes for conservation purposes), Rural Lands Protection Boards in the form of Traveling Stock Routes or Stock Reserves, or Rail Infrastructure Corporation or ARTC in relation to railway lines. The Roads and Traffic Authority and Councils will generally have responsibility for road and public thoroughfares. Each authority is responsible for undertaking its own environmental assessments prior to implementation of bush fire hazard reduction works. Some public lands are managed by Trusts appointed under the Crown Lands Act or National Parks and Wildlife Act. In such cases, the Trusts should also be encouraged to undertake their own environmental assessments.

(i) What is the land use of the site?

Councils Local Environment Plan (LEP) and associated maps will indicate general land use such as urban, rural, reserve or natural area.

(j) What is the zoning in the LEP ?

Provide number and descriptor e.g. 2A-Residential. A copy of the relevant LEP land use zoning table should be attached to the REF. Should also investigate whether council has prepared a Development Control Plan that relates to the land upon which the activity is to occur.

(k) What is the nature of the adjacent land?

It is important to check whether public land is adjacent to the site, such as a reserve for open space, recreation or protection of the environment. For public lands, the purpose for the land and its current use should be determined and stated. If the land is reserved for public use, enjoyment or protection of the environment, this must be indicated. The use of the land for environmental protection or related uses should be a warning to carefully examine the potential impacts.

1.2 Indicative Cost

This should be undertaken at the final stage of this process once costs can be reasonably estimated. In many cases this information will be unknown or difficult to ascertain. However the following should be considered:

- Planning includes costs associated with investigating the hazard and preparing the s66 hazard report. Assessment includes costs associated with undertaking this REF process, including any necessary site inspections and consultants reports.
- Implementation includes costs associated with undertaking the proposed hazard reduction activity, including machinery, and person-hours (inclusive of volunteer time). Much of these costs are likely to be attributed to the landowner and will not be able to be determined.
- Ongoing maintenance. Much of these costs are likely to be attributed to the landowner and will not be able to be determined.
- Remedial works includes such matters as soil stabilisation works, weed removal.
- Monitoring includes such matters as monitoring the response of an endangered plant species to the imposed fire frequency, or monitoring soil erosion. Monitoring is only likely to be required under unusual circumstances.

1.3 Objectives of Proposed Activity

The objectives of the activity should clearly describe the reasons behind the proposed activity. The reasons should conform with the Bush Fire Risk Management Plan. These reasons should be consistent with RFS criteria on setbacks relating to various types of assets and attributes such as slope and vegetation type.

For example, the objectives of deciding to clear vegetation may be:

- to provide an Asset Protection Zone adjacent to a dwelling, or
- establish a Strategic Fire Advantage Zone in a known fire path.

1.4 Reversibility of Proposed Activity

This question is about identifying whether the proposed activity will result in permanent changes to the environment, or if the activity and its impacts are reversible. For the purposes of hazard reduction proposals, this means whether the works will result in changes which are unlikely to be reversed within a human lifespan.

For example, the complete removal of all vegetation can be considered as permanent whilst the selective trimming of undergrowth may be considered as achieving a level of reversibility in that the local habitat is not being significantly altered. Regeneration of a cleared area (unlikely

within the context of creating APZs) rarely brings about a complete reversal of the cleared habitat.

The impacts of prescribed fire could be viewed as being reversible if the frequency is not more often than the appropriate minimum fire intervals. Permanent changes to the environment can be expected where the fire frequency is more frequent than appropriate.

2 Alternatives

The various biophysical, economic and social costs and benefits of the activity and the impacts of any alternatives should be compared.

The alternatives should be viable and can include different technologies, locations, design, methods and operational management. It should be clear to the reader what defining features of the chosen option make it the most rational, and how it meets the objectives identified above. The 'do nothing' option should also be included in these considerations, including what would happen if the activity is not approved.

For example, on slopes over 18 degrees some hand removal of vegetation, community awareness (residual risk) including face-to-face with residents pre-fire season is an option that could be compared against clearing of vegetation and the associated cost of stabilising the slope against possible slope collapse.

3 The Nature of the Environment and Potential Impacts

It is important to identify those aspects or key attributes of the site and its surrounding environment which will be significant in the assessment of the proposed activity.

The environment surrounding the site should also be considered as it could also be affected by the activity. For example if an activity is likely to interfere with the quantity or quality of water on the site, the environment down stream may also be affected and should therefore be considered.

This section allows particularly sensitive areas of the environment to be identified. If an activity will affect environmentally sensitive areas, the impact will usually be high, unless ameliorative measures can be devised. The sections below provide information on where to obtain data.

An analysis of the existing environment will require topographic maps and aerial photos (where available), www.lpi.nsw.gov.au/maps. A range of such information is available on the RFS Geographic Information System (GIS) database. This system also contains contours and cadastre information, including major land tenure. Hazmap2 also provides relevant information.

Additional general sources of information can be located on the Department of Planning website www.dipnr.nsw.gov.au under iPLAN, and on the CANRI website www.canri.nsw.gov.au. This information and some of the information below can be collated for the LGA of interest. For example, Wetlands identified as SEPP 14 do not occur in western NSW. Conversely some of the information is more dynamic, such as threatened species locations, and will need to be checked more regularly.

Australian Natural Resources Atlas can be found at audit.ea.gov.au/ANRA/atlas_home.cfm.

Refer to www.epa.nsw.gov.au (then State of the Environment, then Local Government SoE Reports) which provides links through to some council websites.

Australian Spatial Data Directory (ASDD) provides some mapping information and may be useful. Refer to the Geoscience Australia website at www.ga.gov.au.

Key Issues in Summary

Climate
Climatic data

Soils and Landscape
Soil Data
Landscape Data
Slope
Mass Movement
Structural Decline
Acidification
Salinisation
Acid sulfate soils

Protected Lands
Protected Lands

Waterbodies
Waterbodies
Wetlands (including SEPP 14, Wetlands of National Importance, Ramsar)
Water catchment values

Vegetation
Native Vegetation Mapping
Vegetation Formations
Urban Bushland (SEPP 19)
Rainforest (including SEPP 26)

Biodiversity
Threatened Species, Populations and Ecological Communities
Bat colonies
Koala habitat (SEPP 44)
Migratory Birds (including Jamba/Camba/Bonn)
Weeds and Feral Animals

Heritage
Aboriginal heritage
European heritage

Community Issues and Infrastructure
Sensitive locations
Community recreation
Tourism
Power lines
Surrounding land uses

Conservation Areas
Voluntary Conservation Agreements
World Heritage
Sydney Harbour (SEPP 56)
Wilderness
Marine Protected Areas
Nature Conservation Trust areas

Sensitive Areas
Sensitive landscapes
Sensitive biological communities
Scenic and visually significant

Fire History
Fire frequency

Key Issues in Detail

Climate

Climatic Data

Bureau of Meteorology has information at www.bom.gov.au.

Determine the following where possible:

- Rainfall Data – annual rainfall, monthly rainfall patterns and storm events (intensity-frequency-duration (IFD) is required for the determination of peak water flows and rainfall erosivity to inform regarding erosion and sediment control measures).
- Temperature – is a major determinant of evaporation rates.
- Rainfall/Evaporation Data – to determine long-term water balance over a site.
- Wind Data – wind erosion and evaporation rates

Soils, Landscape and Stability

Useful background information to soil assessment issues can be found at *Soil and Landscape Issues in Environmental Impact Assessment* (DLWC Technical Report #34, 2000).

Soil Data

Access all available background soil and landscape information for the site. This information will provide an indication of potential site limitations that may lead to significant environmental impacts, and therefore the need for detailed site surveys. The following sources should be investigated:

- Soil landscape maps and reports – are the best source of land resource information in NSW. They integrate the soil and landscape characteristics and constraints of an area into a single map unit. In particular, the maps and associated reports provide detail on the type of limitations that may occur over a particular area. A list of areas covered can be located at www.dlwc.nsw.gov.au (Soil Landscape Mapping, Soil Landscape Mapping Publication Status. For ordering forms and online copies in some cases, refer to www.bookshop.nsw.gov.au (then advanced search on soil landscape map). *Where these publications are not available it is recommended that the relevant Land Capability Map be sourced from DLWC (see DLWC website). There are 2 types, rural lands capability and urban development capability,*
- NSW Soil and Land Information System (SALIS) provides detailed soils and landscape data for numerous soil and landscape types. It provides a valuable reference where the proposed hazard reduction site coincides with a stored profile description. Refer to www.dlwc.nsw.gov.au (then soils).
- Other relevant local studies include local council Local Environment Plan (LEP) background studies and catchment management plans, refer to www.dlwc.nsw.gov.au, then catchment management plans.

Some of this information can also be accessed through CANRI.

Also see Protected Lands section below.

Slope

Slope gradient – affects erosion hazard, slope stability and site drainage characteristics. This is preferably measured with a clinometer. Alternatively, utilise topographic maps (at least 1:25 000, where published) to determine slope from contours.

Slope length – the length of the uninterrupted slope surface can be readily measured with a range finder or through use of a topographic map.

Also see Protected Lands section below.

Landscape Data

Landform element – refers to the position of the site in the landscape, e.g. crest, mid-slope or foot slope, drainage plain (more detail provided in *McDonald et al. 1990*). Generally measured by site observation and use of topographic map.

Site drainage details and height of water table – consider patterns of water run-on and run-off over the site, the size of the catchment above the site, the presence of poorly drained sites and areas of ground seepage (N.B. vegetation often changes).

Aspect

Describe the aspect of the site i.e. the general direction the slope faces e.g. North-west or flat.

Mass Movement

The potential for mass movement is essentially a geotechnical engineering problem. The impacts can be extremely deleterious, including damage to infrastructure and the associated danger to human life.

Slope failure leading to mass movement occurs when the weight of the slope material exceeds the material's restraining capacity. This usually takes place during or following intense rainfall periods, when the weight of the slope material has been increased by saturation with water, and a zone of weakness in the underlying material has been further weakened and lubricated by infiltrating water. Slope failure usually occurs within the soil mantle, rather than within unweathered bedrock.

Vegetation removal will generally increase the potential for mass movement occurrences.

The soil landscape maps discussed in the soil data section above will provide information on the soil and slope stability for the areas covered by these maps. Any soils on slopes over 18 degrees are particularly susceptible to mass movement. Also see Protected Lands section below.

Structural Decline

Structural decline results from continued compaction under heavy vehicles or machinery, and increases potential for erosion. Information on structural decline can be found at www.dlwc.nsw.gov.au, or Soil Structure Decline Map, http://www.dlwc.nsw.gov.au/../soilstructuredecline.pdf, *Detecting Soil Structure Decline* (Soil Conservation Service of NSW 1991).

Acidification

Acidification refers to the gradual increase in acidity in soil. Can be due to constant removal of vegetation and the increased leaching processes following loss of deep-rooted vegetation. Information on acidification can be found at www.dlwc.nsw.gov.au.

State of the Environment 2001 and 2006 - Land Condition and Hazard Maps provides maps on Surface Soil pH and Surface Soil Acidification Hazard.

Salinisation

Salinisation may be caused by loss of vegetation, and the resultant increase in the height of the water table. Low lying areas are more susceptible.

Information on salinity can be found at www.dlwc.nsw.gov.au (then salinity), including spatial distribution and location of salt outbreaks and catchments with existing salinity problems. Also information at same website through Catchment Management Blue Prints. CANRI has a range of information on salinity, including "Metadata Statement for NSW Dryland Salinity Assessment 2000". Contact Keith Emery on 9895 6161.

What parts of NSW are affected? From the map, Dryland Salinity - known locations in NSW , it can be seen that the known areas of major concern in relation to dryland salinity are:

- A north-south belt near Canberra, taking in the Yass River Valley;
- The south-western part of the Lachlan River Catchment;
- East of Wagga Wagga in the Murrumbidgee River Catchment; and
- East of Dubbo in the Macquarie River Catchment.

Salt load data is available from rising groundwater for most catchments within the Murray Darling Basin, and some coastal rivers. Indicates catchments at risk on a very broad basis, and therefore an indication as to whether more in-depth analysis required of potential salinity problems.

Acid Sulfate Soils

Due to its estuarine origin, the upper surface of acid sulfate soils is generally below 1m AHD and is commonly found at elevations between 0 and 0.3m AHD. The translocation of the products of pyrite oxidation may extend acid sulfate soils above this elevation.

Therefore, areas with high risk acid sulfate soils close to the soil surface, including acid sulfate soil scalds, are generally wetlands, degraded wetlands, or were previously wetlands. In their natural (pre-drainage or disturbance) range of hydrologic states, the native vegetation of backswamp (extending to backplain) sites would have varied from woodland around swamp margins, through to sedgeland or rushland in the generally wettest sites where trees are generally excluded. Areas of sulfidic sands may also occur, particularly in higher energy, lower estuarine and coastal locations.

Acid sulfate soils are found in every coastal estuary and embayment in NSW. There are over 260,000 ha of high risk areas, of which some 150,000 ha are under agricultural production. The largest such areas are located on the coastal floodplains of northern NSW, particularly the floodplains of the Tweed, Richmond, Clarence, Macleay, Hastings, Manning and Hunter Rivers.

Information on locations of acid sulfate soils can be found at www.dlwc.nsw.gov.au (then Acid Sulfate Soils, then Where Are Acid Sulfate Soils). This site provides indication of areas and maps which can be obtained.

Acid Sulfate Soils online papers ...
Acid Sulfate Soils Risk Maps ...
Acid Sulfate Soils Risk Maps (Guidelines for the Use of…) (DLWC 1998).

Protected Lands

Protected Lands

Some hazard management activities could involve the disturbance of soil profiles or vegetation. Land within 20 metres of streams or steeper slopes in particular are to be protected from disturbance of soil or vegetation. Hazard management activities are subject to the *Native Vegetation Conservation Act 1997* so as to protect streams and prevent erosion.

Under the *Native Vegetation Conservation Act 1997*, trees on "protected land" must not be destroyed, removed or injured without an authority. "Tree" includes both "shrub" and "scrub". Protected land includes:

- the area within 20 metres of the bed or bank of specified rivers and lakes (Prescribed Streams can be located at www.dlwc.nsw.gov.au. In practice, all major watercourses and a large number of other streams and lakes are covered;

- steeply sloping land in notified catchment areas and land within 20 metres of watercourses identified on maps prepared by DLWC. Most of the Eastern sea board has been mapped under this provision, including a great deal of timbered country (refer to www.dlwc.nsw.gov.au);

- land mapped by DLWC as being "environmentally sensitive or affected or liable to be affected by soil erosion, siltation or land degradation". Land mapped, so far, as environmentally sensitive includes endangered bird habitat, remnant rainforest communities outside dedicated conservation reserves, significant Aboriginal sites and areas of visual amenity (refer to www.dlwc.nsw.gov.au).

Waterbodies

Waterbodies

The definition of a waterbody includes rivers, streams, creeks, swamps, lakes, ponds (billabongs), estuaries and coastal lagoons and artificial waterbodies. Should also consider farm systems such as dams.

Utilise topographic maps (at least 1:25 000, where published) and aerial photographs to determine locations of waterbodies. CANRI also has information. Also see Protected Lands section above.

Consideration must also be given to whether a groundwater recharge area is within the area to be hazard reduced. Hilltops are often groundwater recharge areas.

An assessment of Australia's Rivers, Description of the Condition Classes.

audit.ea.gov.au/ANRA/atlas_home.cfm

Wetlands

a) Wetlands
Wetlands are areas with permanent or temporary shallow open water, such as marshes, swamps and mangroves. Wetlands can be any area of land that is regularly underwater. This includes marine areas where the water is less than six metres deep at low tide.

Australia has a great diversity of wetlands. However, since colonisation in 1788, over half of Australia's wetlands have been destroyed and others are under threat. Wetlands are important. They:

- provide habitat for wildlife and ensure the survival of many threatened species;
- are breeding grounds for many animals, particularly fish and waterbirds;
- purify water by trapping sediments and nutrients;
- provide protection from floods;
- protect coastal shorelines from the action of waves;
- may reduce erosion on farms and in urban areas;
- are often natural firebreaks;
- may be refuges for wildlife in times of drought; and
- help maintain biological diversity.

The DECC website www.npws.nsw.gov.au (then Nature and Conservation, then Rivers and Wetlands) has map of distribution and extent of NSW's 20 000 wetlands, Distribution of wetlands in NSW, Rivers & wetlands.

The Department of Planning website www.dlwc.nsw.gov.au (then wetlands, then wetlands and activities) Wetlands & Activities in Your DLWC Region, provides information on important wetlands within each of the following NSW areas:

- Sydney South Coast,
- Hunter,
- North Coast,
- Barwon,
- Central-West,
- Murrumbidgee,
- Murray, and
- Far-West.

The NSW Wetlands Management Policy can also be located on the DLWC website.

b) SEPP 14 – Coastal Wetlands

Ensures coastal wetlands are preserved and protected in the environmental and economic interests of the State. It applies to local government areas with frontage to the Pacific Ocean (excluding those in the Sydney metropolitan area). It identifies over 1300 wetlands of high natural value from Tweed Heads to Broken Bay, and from Wollongong to Cape Howe. Under the policy, land clearing, levee construction and drainage or filling may only be able to be carried out on wetlands identified by the policy with the consent of the local council and the concurrence of the Director-General of Planning. Such development also requires an EIS to be lodged with the development application. Refer to Department of Planning website www.planning.nsw.gov.au (then iPLAN). Some local government areas also have websites showing SEPP 14 locations.

c) Wetlands of National Importance

In June 1993, the Australian Nature Conservation Agency (ANCA) published the first edition of "*A Directory of Important Wetlands in Australia*". A second, revised edition was published in 1996 by Environment Australia (EA). The Wetlands Unit of EA has compiled a third edition of *A Directory of Important Wetlands in Australia.* The third edition consists of a summary of nationally important wetlands with the associated detailed site information made available on EA's website. EA launched the third edition of the Directory, on World Wetlands Day which is on 2 February 2001. The Directory describes over 700 of Australia's nationally important wetlands. The wetlands described in the Directory are those which meet the criteria of national importance as revised by the ANZECC Wetlands Network in August 1994.

The goal of the *Directory* project is to not only to compile information on nationally important wetlands but also to assist the States and Territories in gathering data for the management of wetland sites other than those which qualify against the nationally 'important' criteria. The ultimate goal of the project is the development of a comprehensive wetland database for each State and Territory in Australia. Although the focus of the Directory is on the more significant wetland sites, this should not be taken to mean that those sites not listed are not important and do not require good management. All Australian wetlands play a key role in maintaining the vitality and health of our catchments and must therefore be managed sensibly. For further information on the criteria used for determining nationally "important " wetlands visit Environment Australia's website.

NSW currently has 94 wetlands, with a total area of 2, 171, 737 Ha described under the Directory of important wetlands in Australia. The location of these wetlands is shown on the Wetlands of National and International Importance Map. A complete list of these wetlands is available on the "Wetlands and Activities in your DLWC Region" pages of the DLWC website.

d) Ramsar Wetlands

The Ramsar Convention on Wetlands was signed in the Iranian town of Ramsar in 1971. Countries that are parties to the convention nominate wetlands to be included in the list of 'Wetlands of International Importance' (Ramsar sites). These can be in national parks and reserves, other public land, or on private land. Countries are expected to manage their Ramsar sites and all other wetlands so as to preserve their unique ecological characteristics.

There are 10 Ramsar sites in NSW, including:

- six sites which are located wholly within NPWS-managed areas,
- the Macquarie Marshes Ramsar site, which covers Macquarie Marshes Nature Reserve and private land,
- the Hunter Estuary Wetlands, which covers Kooragang Nature Reserve and community-owned land, and
- Fivebough and Tuckerbil swamps, which are managed by state government authorities.

Refer to DECC website www.npws.nsw.gov.au (then Nature and Conservation, then Rivers and Wetlands), Ramsar wetlands .

Water Catchment Values

The DECC has developed an information database known as “the Water Information Systems for the Environment” (WISE). This system is a collection of databases, each containing comprehensive bibliographies of water information connected to different parts of a specific catchment. Refer to www.npws.nsw.gov.au, Search WISE bibliographic databases online. Currently available for the following catchments:

- Gwydir (North-West), Gwydir catchment;
- Macquarie Central-West), Macquarie catchment;
- Namoi (North-West), Namoi catchment;
- Paroo-Warrego (Far West), Paroo-Warrego catchment;
- Coastal (i.e. east of the Great Dividing Range), Coastal catchments; and
- Barwon-Darling (Far West) Barwon-Darling catchment.

Information can also be obtained on catchment values at www.dlwc.nsw.gov.au via Catchment Management Blue Prints, Catchment Blueprints.

DECC (previously DLWC, in conjunction with NPWS) and NSW Fisheries have identified conservation values of sub-catchments (stressed river sub-catchments). This analysis provides a linkage between vegetation management and its impact on water resources. Refer to Stressed

Rivers Assessment Report: NSW State Summary, 1998 , and Assessing the conservation value and health of NSW rivers .

Vegetation

Vegetation Structure

Describe vegetation in accordance with:

STRUCTURAL FORMATIONS IN AUSTRALIA (after **Specht** 1970)

Native Vegetation Mapping

Native vegetation in NSW is being mapped at a fine scale through the Native Vegetation Mapping Program (NVMP). This Program is a whole-of-government initiative managed by DECC (previously DIPNR) following the introduction of *The Native Vegetation Conservation Act* in 1997.

The maps are generated from extensive botanical survey, detailed data analysis, and detailed interpretation of aerial photographs. This involved preparing more than 100 vegetation plots across each map sheet area, followed by detailed botanical description and quantitative analysis to identify vegetation communities. This information was matched with detailed remote sensing data, using aerial photography and satellite imagery, to precisely show the location and extent of the vegetation communities. Each series of maps is supported by a comprehensive scientific report.

The maps are produced by the DECC (previously DIPNR Centre for Natural Resources). The NVMP is funded to provide maps within priority areas in NSW. These maps show details of the extent and distribution of native vegetation at a 1:100 000 scale. Currently vegetation mapping is available at www.dlwc.nsw.gov.au then Native Vegetation Mapping, Native Vegetation Maps for the following areas:

- Central-West;
- South-West;
- South coast; and
- Northern.

Also available is vegetation mapping for Eastern Bushland (north, centre and south NSW) which can be located at www.dlwc.nsw.gov.au then Natural Resource Info – CANRI, Natural resource info - CANRI.

Vegetation mapping can also be obtained local council vegetation mapping and State of the Environment Reporting.

Digitised vegetation mapping is also available from the RFS GIS Unit.

Link to native vegetation information for Australia's bioregions, provides maps and vegetation descriptions of bioregions in NSW.

Specific vegetation maps can also be obtained through the Royal Botanical Gardens publication “Cunninghamia”, refer to website www.rbgsyd.gov.au for list of all articles and maps in Cunninghamia, Click here to view the list of papers in each issue published in *Cunninghamia* (1981-2003).

Australian Native Vegetation Assessment 2001 can be located at www.deh.gov.au (then biodiversity, then native vegetation, then National Vegetation Information System) and provides informative descriptions of the various vegetation types, National Vegetation Information System (NVIS). Also at this site is Australian Natural Resources Atlas Map Maker.

Also refer to vegetation formations section below.

Vegetation Formations

The DECC prepared "A Compilation Map of Native Vegetation for NSW, 2002". This report can be located at www.npws.nsw.gov.au, A Compilation map of native vegetation for New South Wales and includes descriptions of vegetation formations and the statewide vegetation map units that are a sub-set of each formation. NPWS - Vegetation coverage of NSW (Project 13.11) contains maps of these vegetation units. This document also includes reference to the regional vegetation mapping projects used to create this statewide approach. Identifying the appropriate vegetation formation is useful in order to identify the relevant "minimum fire intervals" which have been developed by the DECC.

SEPP 19 – Urban Bushland

Aims to protect and preserve bushland within the urban area because of its value to the community, as part of the natural heritage and as a recreational, educational and scientific resource. It is designed to protect bushland in existing public open space zones and reservations and to ensure that preserving bushland is given a high priority when local environmental plans for urban development are being prepared.

SEPP 26 – Littoral Rainforest

Aims to protect littoral rainforests, a distinct type of rainforest which is well suited to living in the harsh conditions of exposure to salt-laden and drying winds on the coast. The policy applies to mapped areas of littoral rainforest (the 'core' areas). It also applies to 'buffer' areas surrounding those core areas to a distance of 100m except for residential land and land to which SEPP 14 - Coastal Wetlands applies. Eighteen local government areas with direct frontage to the Pacific Ocean are affected, extending from Tweed Shire to Eurobodalla. The policy requires that the likely effects of developments proposed in these rainforest areas are thoroughly considered in an EIS.

Nothing in subclause (1) or (2) of SEPP 26 requires the consent of the Council to be obtained for:

(a) any act which is carried out in the ordinary course of residential occupation of the land concerned,
(b) controlling, by means not significantly detrimental to the native ecosystem, native flora declared to be noxious under the *Noxious Weeds Act 1993* , or
(c) unavoidably disturbing, removing, damaging or destroying native flora in the course of controlling adjacent native flora declared to be noxious under the *Noxious Weeds Act 1993* , or
(d) removal of leaf litter, shed bark or cured grasses for the purpose of reducing the risk of bushfire.

Biodiversity

Identify the species, ecological communities and habitats which are likely to occur in the area. It is also important to identify all the available information on these species and ecological communities.

NSW Threatened Species, Populations and Ecological Communities

Interim Guidelines for targeted and general flora and fauna surveys under the Native Vegetation Conservation Act 1997 [*Score: 0.8169*]

The Threatened Species Conservation Act provides for the protection of threatened species, populations and ecological communities, and their habitat. It is important to note that habitat is protected.

The NPWS Wildlife Atlas provides locality data for known sitings of threatened species and populations. The Wildlife Atlas can be searched via the DECC website www.npws.nsw.gov.au, Search the Wildlife Atlas.

The Threatened Species Hazard Reduction List contains a list of LGAs for which there is potential for each of the Endangered Ecological Communities (EECs) to occur. *Note that it is intended that the RFS will compile (in conjunction with DECC) electronic maps and otherwise of known occurrences of EECs, and references to assist in locating maps of EECs, where available.*

DECC (previously DIPNR) has also produced tSCAB which is essentially a predictive tool for identifying potential habitat and geographic range of threatened species. Also includes location of known EECs.

Local councils also have lists of known threatened species, populations and ecological communities contained within their State of the Environment Reports. They also often have reports detailing locations and habitat.

Other sources of data include the Royal Botanical Gardens, the Australian Museum and Birds Australia.

Information on threatened species, populations and ecological communities can be obtained from the DECC website www.npws.nsw.gov.au for:

- NSW Scientific Committee reasons for listing i.e. Determinations, Scientific Committee determinations,
- Species profiles are available for a range of species and ecological communities, Threatened species publications (and scroll down),
- Recovery Plans are available for some species and ecological communities, Recovery planning, and
- National Parks Plans of Management which often contain species information (useful if close to such a reserve). Go to DECC website and undertake advanced search on ‘plans of management’.

Search this website provides a search mechanism for species information on DECC website.

In addition the DECC has prepared species and ecological community profiles for the Greater Sydney Area for the purpose of answering the “7 Part Test”. Information booklets are also available for some species and ecological communities across NSW.

Refer to Ministerial Launch of the Bird Action Plan for access to Bird Action Plan.

The Threatened Species Hazard Reduction List contains conditions for hazard reduction, and can be accessed via the RFS website www.rfs.nsw.gov.au.

The Flora of Australia provides a search mechanism for information on a particular plant species, including details on the habitat and a map of its distribution *Flora of Australia* - online.

Plants of New South Wales

PlantNET – which includes:

- Plants of New South Wales (information and pictures);
- Plants@Risk - Rare and threatened plants in NSW;

- WeedAlert – Weeds in NSW;
- WattleWeb – for information on wattles (*Acacia* spp.) in NSW; and
- Type specimens (information and images) in the National Herbarium of NSW.

Australia's Virtual Herbarium for detailed maps of plants in Australia and click here for more information

Type photos held in Australian herbaria

Information relevant to the Murray and Murrumbidgee can be located at Use the Interactive Riverina Vegetation Guide, Surf the South West Slopes Revegetation Guide, View specimen images.

http://plantnet.rbgsyd.gov.au/PlantNet/wattle/species.html

http://plantnet.rbgsyd.gov.au/

National Plant Photographic Index

The Australian Plant Image Index (full) or search for digitised images

EPBC Act http://www.deh.gov.au/erin/ert/epbc/index.html,
Local Government Area Search

Platypus is a fauna relational database program developed by the ABRS ABIF-Fauna project.

It is also important to consider fish and marine plants which are listed under the Fisheries Management Act.

Critical habitat under NSW laws can be identified via Critical habitat protection on DECC website.

Identify the life cycle components of each threatened species, populations or ecological communities identified as being likely to occur in the area. Species profiles and other such information will assist in the identification of key life cycle components.

For plants consider:

- seeds (may be in soil, on soil, or attached to plant),
- juveniles,
- adult plants,
- breeding, and
- dispersal.

For animals consider:

- pre-birth (eggs),
- juvenile,
- immature adult,
- dispersing adult,
- mature adult, and
- breeding adult.

Consider effect in relation to matters such as habitat components and time of year.

Commonwealth Threatened Species, Populations and Ecological Communities

The Environment Protection and Biodiversity Act 1999 (EPBC Act) provides for the protection of threatened species, populations and ecological communities, and their habitat. It is important to note that habitat is protected. These are listed at *Environment Protection and Biodiversity Act 1999* , listed threatened species and ecological communities, Information and Resources, EPBC Protected Matters Search Tool.

Commonwealth critical habitat is at Register of Critical Habitat.

Habitat

Identify important habitat components for all threatened species, populations and ecological communities that are likely to occur in the area. Useful information can be located via the websites identified above.

- What habitats are present within the area?
- What is the condition (quality and quantity) of the habitats?
- What is the nature and extent of disturbance from natural or human-induced causes (incremental loss of habitat, weed encroachment, fire, introduced species, grazing, logging, pollution etc) that already exist within the study area?
- Is the habitat(s) connected with similar habitat(s) occurring outside the site?
- Will the activity remove the connection?
- What is the extent of the interconnectedness and distribution of the habitat(s) within the region?

Identify habitat components at the site and surrounding area, such as:

- availability of foraging material
- availability of trees containing hollows
- density of ground cover including shrubs and fallen trees
- caves, rock outcrops, overhangs, crevices
- presence or absence of permanent or intermittent water bodies

Bat Colonies

DECC has produced a CD Rom which contains known locations of Flying Fox camps. The RFS has a copy of this CD Rom.

Also consider if there are any microbat maternity caves (or other significant roosts) in the area.

SEPP 44 – Koala Habitat

The purpose of this SEPP is to encourage the conservation and management of areas of natural vegetation that provide habitat for koalas.

This SEPP applies to 107 local government areas within the known geographic range of koalas. This SEPP provides that councils can not issue consent, to affected development applications, without an investigation for core koala habitat. This SEPP provides a state-wide approach to ensure that appropriate development can continue, while still ensuring the ongoing protection of koalas and their habitat.

Council will be able to advise on whether any Koala Plans of Management and mapping have been prepared.

Migratory Birds

The EPBC Act provides for the national List of Migratory Species consisting of those species listed under the following International Conventions:

- Japan-Australia Migratory Bird Agreement (JAMBA) JAMBA
- China-Australia Migratory Bird Agreement (CAMBA) CAMBA
- Convention on the Conservation of Migratory Species of Wild Animals - (Bonn Convention), not currently relevant to hazard reduction.

The list of species can be located at www.deh.gov.au (then biodiversity, then migratory species), Migratory Species Lists.

> The Australian Government is conserving migratory waterbirds through a number of international agreements including the Ramsar and Bonn Conventions, Migratory Bird Agreements with Japan (JAMBA) and China (CAMBA). We are cooperating with countries throughout the Asia-Pacific region to conserve waterbirds and their habitat under the Asia Pacific Migratory Waterbird Conservation Strategy and its component Action Plan for the Conservation of Migratory Shorebirds in the East Asian-Australasian Flyway: 2001-2005.
>
> At a national level Commonwealth legislation, the *Environment Protection and Biodiversity Act 1999* provides for protection of migratory waterbirds as a matter of National Environmental Significance. A number of projects funded from the Natural Heritage Trust encourage the conservation of migratory waterbirds. They include the Shorebird Conservation Project, being undertaken by a consortium of non-government conservation groups across Australia, which is engaging communities in conservation activities at priority sites for migratory shorebirds.

Weeds and Feral Animals

An assessment of this can be determined by contacting local council's bush management/weed/pest officers. In some cases the area may have been identified by Landcare or other community groups as requiring rehabilitation and removal of pest species.

Consultation with such groups would be important in determining what method of fuel reduction may be appropriate and/or effective.

Refer to NSW Agriculture website Weeds for information and photos of some significant environmental weeds.

http://www.weeds.org.au (contains lists of noxious weeds and weeds of national significance).

Heritage

Identify nature and location of heritage items and places.

Aboriginal Heritage

It is important to understand that Aboriginal heritage is dynamic, it includes historical aspects and contemporary aspects. It also includes tangible and intangible expressions of culture that link generations of Aboriginal people over time. Aboriginal landscapes, areas, places and objects have associated values which include spirituality, law, knowledge, practices, traditional resources or other beliefs and attachments. Therefore, any activity which impacts on the landscape may impact on Aboriginal heritage. In addition, such aspects cannot be assessed in isolation of each other and will always require the close involvement and participation of Aboriginal people.

Consultation should always be sought (and undertaken if allowed) with traditional owners, native title holders/claimants, Local Aboriginal Land Councils, Elders Corporations and other Aboriginal people with a personal or family involvement with the area. Cultural protocols of

Aboriginal communities need to be understood and respected, and these may vary from one group to another, e.g. gender protocols.

Legislation relevant to management of Aboriginal heritage in NSW:

1. NP&W Act provides statutory protection for all Aboriginal objects and Aboriginal places in NSW,
2. EP&A Act establishes the requirement for formal assessment of Aboriginal heritage values in land use planning and development approval,
3. NSW Heritage Act provides statutory protection for items listed on the State Heritage Register,
4. Commonwealth's Aboriginal and Torres Strait Islander Heritage Protection Act may also be relevant if state-based processes are unable to provide protection, or for issues of national significance.

The NP&W Act provides for the protection of all Aboriginal relics across NSW, regardless of significance, land tenure and whether or not they are recorded in the DECC Sites Register. It is an offence to knowingly disturb, deface or cause to permit the destruction of relics without the written consent of the DECC. In addition the NP&W Act provides for the protection of areas that have been declared to be "Aboriginal Places" by the Minister. An Aboriginal Place is an area of land that "was or is of special significance to Aboriginal culture", not necessarily containing physical relics. It is an offence to knowingly disturb, deface or cause to permit the destruction of relics or an Aboriginal Place without the written consent of the DECC. The DECC has prepared Draft Aboriginal Place Guidelines outlining the nomination process and management of these areas.

The State's Aboriginal Land Council network operates as a three tiered system consisting of the peak body, NSWALC, its Branch offices, 13 Regional Aboriginal Land Councils (RALCs) and more than 100 Local Aboriginal Land Councils (LALCs).

a) The DECC AHIMS (previously Aboriginal Sites Register)

The DECC keeps a register of all known Aboriginal objects and Aboriginal places in NSW. The register is called the Aboriginal Heritage Information Management System (AHIMS). It was previously known as the Aboriginal Site Register.

DECC can organise a search of AHIMS to discover if an Aboriginal object has been recorded, or an Aboriginal place declared, on a parcel of land. In addition there is a database index of archaeological reports and a library of these reports. It is important to note that a report from the Register does not represent a comprehensive list of all Aboriginal sites in a specified area. In any given area there may be a number of undiscovered and/or unrecorded sites, as well as inaccuracies in the recorded data.

To consult the AHIMS ring the DECC on (02) 9585 6471 or (02) 9585 6843. Refer to www.npws.nsw.gov.au, Protecting Aboriginal objects & places, Find out more about AHIMS.

b) NSW State Heritage Register

The difference between the State Heritage Register and the DECC AHIMS is as follows.

- The DECC is responsible for the protection and preservation of all Aboriginal places and objects in NSW, therefore all sites known by DECC are recorded on AHIMS.
- The State Heritage Register protects particular places and items that the community has formally recognised as being of high cultural value.

The State Heritage Register provides an extra level of protection beyond that provided by the DECC AHIMS as it protects against any damage or destruction to these special places. The Aboriginal heritage of NSW is irreplaceable. There are heavy penalties for offences under the

Heritage Act. Check www.heritage.nsw.gov.au (then Aboriginal heritage) to access the State Heritage Register.

c) Site Inspections

A site inspection may be required where there is a high potential for sites to occur, and where the proposed activity has the potential to impact on sites e.g. ground disturbance, vegetation clearance, prescribed burning. Areas of high potential may be identified on the basis of previously recorded sites. Other situations that should be considered include:

- development is within 100m of a stream, river, lake or lagoon;
- development will impact on areas with landscape features such as sandstone outcrops, rock shelf/overhangs, old growth trees, sand bodies and dunes and water holes;
- bushland and undisturbed ground.

Site inspections must be conducted by an appropriately qualified individual. Such an individual may be an archaeologist or an Aboriginal consultant. The following information should be included in the REF:

- who undertook survey (including qualifications and experience),
- date of the survey,
- what techniques were employed (what was done, and where), and
- results and analysis of the survey.

d) Native Title holders and Claimants

The Commonwealth Native Title Act 1993, provides for the identification of native title holders or claimants. Refer to website of National Native Title Tribunal at www.nntt.gov.au (then maps and spatial data, then national and state maps, then state maps and then NSW).

e) Aboriginal Land Claims

Through the NSW Aboriginal Land Rights Act. vacant Crown land not required for an essential purpose or for residential land is returned to Aboriginal people. The DIPNR investigates and assesses Aboriginal Land Claims across the State.

Claims can only be lodged by Aboriginal Land Councils, which were established under the Aboriginal Land Rights Act to make land claims over vacant Crown land or purchase land that is for sale. There are more than 100 Local Aboriginal Land Councils (LALCs) in NSW, serviced by 13 Regional Aboriginal Land Councils (RALCs). The NSW Aboriginal Land Council is responsible for allocating funds to LALCs and RALCs for administration.

f) Commonwealth Heritage List

The Commonwealth Heritage List includes Indigenous and historic heritage places on Commonwealth lands and waters, or under Australian Government control, and identified by the Minister for the Environment and Heritage as having Commonwealth heritage values. This list has been established through amendments to the EPBC Act. Listed places are protected under the Act which means that no-one can take an action that has, will have or is likely to have, a significant impact on the environment of a listed place, including its heritage values, without the approval of the Minister. It is a criminal offence not to comply with this legislation.

The Commonwealth Heritage List is compiled and maintained by the Department of Environment and Heritage and included in the Australian Heritage database. Other Australian Government agencies are developing and maintaining registers of places that have heritage values.

g) Wild Resources

Wild resources are defined as including native and introduced species of flora and fauna which are utilised for food and medicine and materials. It includes the land and sea on which these resources are obtained. For example a beach, a pathway through a forest or a stand of trees could fall within this definition. While the word "resource" implies a focus on use, the land, and plants and animals is also associated with people's sense of identify and spirituality and connection with country.

The use of wild resources forms an important aspect of Aboriginal people's past and contemporary association with the land. Along with the spiritual or ceremonial links, the utilisation of wild resources is an integral part of the cultural significance of country. Refer to Australian National Botanical Gardens at www.anbg.gov.au for bibliography of wild food, and Aboriginal bush foods — information on food plants used by the Cadigal people of Sydney and the Darug people of the Blue Mountains.

Non-Indigenous Heritage

Heritage items include items that are an important part of NSW's cultural or natural history, e.g. cemeteries.

Determine if the place is listed on any of the following lists:

Statutory Lists:
- identified in Heritage Schedules within the LEP;
- identified in Heritage Schedules within the REP; or
- identified in the State Heritage Register (or subject to an order under the NSW Heritage Act);
- listed on DECC s.170 Register (a requirement under the NSW Heritage Act) Aboriginal sites and places; and
- listed on Commonwealth Heritage List.

Non-statutory Lists:
- classified by the National Trust of Australia (NSW);
- listed on the Register of the National Estate; or
- registers compiled by the Royal Institute of Architects, of Engineers Australia and other professional bodies.

Check www.heritage.nsw.gov.au for publicly accessible electronic database of all heritage items listed in the NSW statutory registers (State Heritage Inventory). It should be noted that the list may not include the most recent listings by local government so always check with council. You could go to the Australian Heritage Directory for a list of state heritage agencies and other organisations. If you are looking to see if a particular place is heritage listed, you could also search the Australian Heritage Database (www.deh.gov.au) or, for places that are listed on state or territory heritage registers, you could search the Australian Heritage Places Inventory.

Heritage Agreements may exist between the owners of items on the State Heritage Register and the Minister for the Heritage Act. These agreements may include constraints on use.

Conservation plans or conservation assessments may also have been undertaken for the site. Contact the relevant authority for more information in relation to a specific site.

Community Issues and Infrastructure

Sensitive Locations

Sensitive locations include, for example, schools, hospitals, residential aged care facilities, childcare facilities, residential areas, tourism operations, roads, restaurants, ventilation intakes (e.g. mine shafts), and airports.

Information can be obtained through local street directories, local phone directories and through consulting council or industry bodies.

Community Recreation

Local knowledge including that held by local council is the best way of ascertaining those areas which are used for recreational purposes by the community. Areas include swimming holes in rivers, picnic areas, walks, look outs, camping areas and so forth.

Traffic

Identify key roads which are adjacent to the site and which are likely to be utilised for carrying out the hazard reduction, and/or for which community use is likely to be impacted.

Use local street directories, topographic maps, CANRI, iPLAN, and/or RTA website www.rta.nsw.gov.au.

Railways

If utilising fire, identify whether any rail networks are in the area. Smoke is the major issue for rail.

Passenger rail lines can be identified via Australian Rail Maps. ARTC and RIC are the key managers of rail networks in NSW. However, there are also freight lines and tourist lines, and some lines used by train enthusiasts only occasionally.

Tourism/Sporting/Community Events

Contact local council to ascertain activities which are scheduled.

Also refer to www.tourism.nsw.gov.au for tourism information the media site lists some of the larger upcoming events. Local areas often have their own tourism websites.

The St. John Ambulance Australia often assists at sites when large numbers of people are expected to attend. It is likely that they will be aware of any upcoming events in the local area.

Power Lines

Location of power lines can be obtained by observation or contacting the local energy provider.

Land Use

Land use can be determined by viewing the LEP zoning on iplan at www.planning.nsw.gov.au, or visiting CANRI site. More detailed information can be obtained by consulting local council.

Conservation Areas

Voluntary Conservation Agreements

Voluntary conservation agreements are joint agreements between a landholder and the Minister for the Environment. They allow you to conserve the natural, cultural or scientific values of an area of land. The agreements provide permanent protection for the special features of your property. The agreements are entirely voluntary. The terms of each agreement are negotiated between the landholder and the DECC, which works on behalf of the Minister.

Several agreements are already in place to protect land:

- containing significant native plants and animals, rare and endangered species
- containing important habitat and vegetation types which are not represented in the existing national parks and reserves
- on which there are Aboriginal sites or historic places
- containing remnant vegetation
- linking areas of native vegetation
- containing special geological or landscape features
- containing critical habitat, or a threatened species population, ecological community or habitat
- containing limestone caves (Karst areas).

Refer to www.npws.nsw.gov.au, and contact DECC to determine if any VCAs in relevant LGA.

World Heritage

There are currently four World Heritage sites within NSW. They are:

- Lord Howe Island Group,
- Central Eastern Rainforest Reserves of Australia,
- The Greater Blue Mountains Area, and
- Willandra Lakes Region.

Obtain further information, including maps at www.deh.gov.au/heritage/worldheritage.

SEPP 56 – Sydney Harbour

State Environmental Planning Policy No 56—Sydney Harbour Foreshores and Tributaries was established to co-ordinate the planning and development of foreshore land of Sydney Harbour and its tributaries. It establishes a clear set of guiding principles for the development of all land on those parts of the foreshores to which the Policy applies and requires the preparation of master plans for those sites to ensure that the guiding principles for the foreshores are met. Refer to www.cs.nsw.gov.au/rozdev/FAQ, or for legislation Link to Legislation.nsw.gov.au.

Wilderness

The term 'wilderness' has a special meaning under the Wilderness Act (WA Act). It refers to a large area of land which, together with its native plant and animal communities and the ecosystems of which they are a part, is in an essentially natural state. Wilderness areas are those lands that have been least modified by modern technological society. They are the most intact and undisturbed expanses of our remaining natural landscapes.
Wilderness areas include:

- vast red deserts and dry sandy riverbeds,
- extensive inland plains,
- river valleys and ‘floodout’ country,
- rugged mountains cloaked in tall gum forests,
- misty rainforest gullies,
- jagged coastlines,
- snow-covered alpine areas.

Wilderness is a scarce and diminishing resource. Only four or five per cent of NSW could still be called wilderness, but less than a half of this has been legally declared as wilderness. Nearly all declared wilderness is within national parks and nature reserves. However some private land has been declared wilderness. See www.npws.nsw.gov.au (then advanced search on wilderness) for list of areas and associated maps and reports.

You need to determine if the land is identified as wilderness under the WA. An activity in a wilderness area will be prohibited if it is not in accordance with the aims and objectives of the

WA or in accordance with the plan of management for the wilderness area. Matters to be generally considered in association with wilderness areas when determining the appropriateness of an activity include:

- that wilderness areas are generally undisturbed;
- wilderness being managed to allow natural ecological process to continue with minimal intervention;
- most development in wilderness is prohibited and any activity must be compatible with these wilderness principles; and
- the plan of management for any wilderness area.

Marine Protected Areas

Marine Protected Areas include (refer to www.fisheries.nsw.gov.au, including map of marine protected areas):

- Aquatic Reserves (declared under the Fisheries Management Act 1994)
- Marine Parks (declared under the Marine Parks Act 1997)
- Marine components of national parks and nature reserves.

Nature Conservation Trust

Provides for the establishment of covenants on private property with associated land management objectives.

Sensitive Areas

Sensitive Landscapes

Sensitive landscapes include:

- Coastline,
- Dune fields,
- Alpine areas,
- Deserts,
- Caves,
- Geological sites, and
- Other unique landforms.

These areas can be identified through discussions with local council and reviewing local State of the Environment Reports. Refer to www.epa.nsw.gov.au (then State of the Environment, then Local Government SoE Reports) which provides links through to some council websites.

Information on coastal zone can be obtained at www.coastalcouncil.nsw.gov.au. Of particular relevance is the Coastal Policy NSW Coastal Policy 1997: A Sustainable Future for New South Wales.

There is information on the NSW Alpine Region Strategy (note that this strategy only deals with the greater Kozsciosko area) at the following website www.bookshop.nsw.gov.au.

Sensitive Biological Communities

Sensitive biological communities include:

- Corals,
- Seagrass beds,
- Wetland communities (coastal, peatlands, inland),
- Arid and semi-arid communities.

Scenic and Visually Significant

Local knowledge and discussions with local council will reveal local issues. Consider such matters as areas of community recreation and tourism.

Examples of determining scenic areas can be located at the following website addresses:

- http://www.lakemac.com.au/ourcity/lep2004/guide/G_Scenicb.pdf,
- http://www.epa.qld.gov.au/register/p00640aj.pdf.

Fire History

Fire Frequency

Fire history data can often be obtained from the local Fire Control or council. Other land management agencies such as the NPWS and State Forests of NSW often retain maps of fire history for their lands. Ultimately it is the intent that BRIMS have a spatial component which maps fire history.

The Threatened Species Hazard Reduction List includes minimum fire intervals (and other conditions) for a range of threatened species, endangered populations and endangered ecological communities.

The DECC has prepared a table of 'minimum fire intervals' for each of the 14 vegetation formations.

If known, detail whether fire was prescribed burn or wildfire, any information on season and intensity should also be sought.

4 Environmental impacts

This section seeks to identify all possible impacts on the environment which are likely to be caused by the activity. Section 5 of this document should be referred to prior to undertaking this section so that an analysis of the impacts may be undertaken concurrently.

There are six subsections within this section, as follows:

4.1 Pollution Issues,
4.2 Biodiversity,
4.3 Resources Use,
4.4 Community Issues,
4.5 Cultural Heritage Issues, and
4.6 Consultation.

As a general rule, apply conditions contained in the Bush Fire Environmental assessment Code in conjunction with considerations discussed below. Apply the considerations below in cases where:

- issues cannot be dealt with by the Code conditions; or
- issues are not dealt with by the Code.

4.1 Physical, Pollution and Safety Risk Issues during Construction

4.1.1 Air Impacts

In terms of hazard reduction this question is only likely to relate to the production of smoke, and dust.

Air Quality Impacts

Does the activity produce any dust, smoke, grit, odours, with associated economic, health, ecosystem or amenity considerations?

The extent and nature of the potential impact on the environment should be described and the overall level of the impact determined.

In determining the likely impact, the following matters should be considered:
- does the activity comply with DECC guidelines?
- will the activity have a long term impact?
- will the generation of smoke or dust provoke strong community interest?
- will the activity affect sensitive sites, e.g. educational, hospitals, residential areas, tourism operations, festivals, roads and restaurants? *See conditions below for more information.*
- will adjoining properties be affected by smoke, and if so, in what way?
- does the activity comply with RFS policies (where they exist, e.g. smoke management)?
- will the smoke affect any threatened species, e.g. nesting owls?
- Will smoke affect bat colonies?
- will the smoke affect any tourism/sporting events?

Impacts for air pollution caused by smoke from most smaller burns (1 hectare) are expected to last only one to two days, with most of the smoke occurring over several hours on the first day. Potential impacts include:
- soot fallout that may affect some clothes hung out to dry,
- reduced visibility on nearby roads from smoke,
- possible respiratory effects on sensitive people,
- odour from smoke.

The impacts from smaller burns are expected to be minimal and short-lasting, particularly if local residents are notified of the burn and climatic conditions are favourable.

Where the emission of smoke, dust and odours is not in line with approved guidelines, processes or policies, where a long term impact may result or where there is strong community interest in the issues, you will need to:
- seek ameliorative conditions to avoid the impacts, or
- seek alternative means of hazard reduction.

If these options are not possible, then you will need to:
- provide strong justification should you consider the impact to be medium or high adverse.

Greenhouse Issues

Emissions include greenhouse gases or chemicals which are ozone depleting or produce photo-chemical smog. Although the burning of fuels through prescribed burns generates greenhouse gases greenhouse gases are also absorbed by plants during re-growth following the burn. This issue does not require addressing at this point.

Conditions

For the purpose of identification under this REF process, the size of fires shall be defined as follows:
- small fires are less than one hectare (including pile burns), and
- large fires are greater than one hectare.

No Burn Days

It is important to note "No Burn Days". The DECC may ban burning on days when weather conditions mean that burning is likely to contribute to significant air pollution (e.g. temperature inversions).

The DECC initiates the no-burn procedure by notifying the RFS two days before the proposed ban. On the morning of the ban, a no-burn notice is published in the public notices section of the *Sydney Morning Herald*. A copy can also be found on the DECC's website (www.epa.nsw.gov.au/airqual/aqupd.asp) when the regional pollution index is updated at approximately 4 p.m. in the afternoon before the ban, as well as on the day of the ban. The RFS also notifies its affected offices and the RFS recorded message is updated to note the no-burn notice. The DECC recorded message can also be accessed by calling 1300 130 520.

No-burn notices contain conditions that vary according to the prevailing circumstances. No-burn notices may last up to 7 days. The DECC may revoke the no-burn notice if the forecasted weather conditions change.

Hazard reduction burns viewed as absolutely essential may be exempt from the notice. The burns which are to be exempt are determined using a standard protocol compiled by the RFS and the DECC. These are finalised on the day before the ban comes into effect.

Therefore it is important to include conditions along the following lines, "no-burn notices are to be complied with unless the RFS advises (on the day prior to the intended burn) that the burn may proceed".

It needs to be noted that the POEO Act Schedule 1 lists LGAs in which burning is prohibited. Three different classes of burning are described within this schedule. Refer to DECC website www.epa.nsw.gov.au (then legal, then POEO Act).

Neighbouring residences

Section 86 of the *Rural Fires Act 1997* requires a person who lights a fire for the purpose of land clearance or for burning a fire break (including bush fire hazard reduction works) to notify any neighbours on all land contiguous to the land on which the fire is to be lit. Consider how issues raised by neighbours might be addressed within the conditions.

In addition, at least 24 hours notification of the intended date of the burn must be given to neighbours who reside within 50m of a small fire or 200m of a large fire.

Sensitive locations

Sensitive locations include, for example, schools, hospitals, residential aged care facilities, childcare facilities, residential areas, tourism operations, roads, restaurants, ventilation intakes (e.g. mine shafts), airports and sensitive crops (e.g. vineyards). Note that consultation should be considered.

If any of these locations are within 100m for small fires or 1000m for large fires, the following must be undertaken:

- the owner/manager must be given at least seven (7) days notification of the intended date of the burn;
- burning is to be carried out only when the facility is closed, or the weather patterns indicate that the wind will be blowing away from it; or
- in sensitive cases burning should be restricted to daylight hours.

In certain cases where, for example, local topography channels smoke, larger distances may be required when smoke is the likely impact.

Traffic

For large fires near major roads, the owner/occupier shall at least two weeks prior to the burning activity, liaise with Police and/or the relevant traffic authorities in order to plan when the traffic conditions are likely to be suitable and to implement any actions including any requirement for traffic management including signage.

For any fire near roads it is important to consider whether visibility is likely to be affected by smoke. Warning signs and/or people may be required to warn traffic. Refer to draft RFS SOP-Traffic and Smoke.

Tourism/Sporting/Community Events

If tourism/sporting/community events are significant in the area, conditions are to be applied so that burning takes into account visitation during peak holiday periods or during major sporting or community events. If there is no alternative to burning on these days then consultation must be undertaken with affected parties to ascertain whether ameliorative measures might be undertaken.

Power Lines

If high voltage power lines are within the boundaries of a large fire activity the RFS must inform and consult with the electricity provider to determine if any action is needed.

Consultation must be undertaken with the electricity provider any time that fire may impact upon electricity infrastructure.

Significant bat colonies.

If significant bat colonies identified by the DECC on the GIS layer are within 100m of small fires or 1000m of a large fire, then the burning is to be carried out only when the weather patterns indicates that the wind will be blowing away from that area or it is known that the colony is not present.

Threatened Species

If any threatened species are likely to be affected by smoke (e.g. nesting owls) then the burning is to be carried out only when the weather patterns indicates that the wind will be blowing away from that area.

General

Whenever possible carry out prescribed burning on days when the prevailing wind will carry pollutants away from the most densely settled nearby areas.

When mechanical clearing, minimise soil/dust exposure by retaining some vegetation cover, particularly ground cover.

When burning or mechanical clearing, use a mosaic pattern, avoid areas of greatest soil erodibility, hazard reduce upper and lower slopes in different years.

4.1.2 Is the activity likely to affect a waterbody, watercourse or wetland or natural drainage system?

Water Quality Impacts

Is there likely to be a change in water quality with economic, health, ecosystem or amenity effects e.g. salinity, colour, odour, turbidity, temperature, dissolved oxygen, nutrients, pH factors or pollutants.

The extent and nature of this impact should be described and the overall level of the impact determined.

The type of impact on water should be identified, for example:

- will the activity result in sedimentation and/or turbidity as a result of erosion, and will this be permanent or temporary in nature? and/or
- does the activity involve the introduction, or potential introduction, of residual, deoxygenating, hazardous or non-biodegradable chemicals (e.g. foam), or chemicals of unknown environmental impact to the water?

Is the activity to occur in an area which contains threatened species (e.g. frogs are particularly sensitive to the use of foams, fish are sensitive to suspended sediments)?

Where the impacts on waterbodies is not in line with approved guidelines, processes or policies, where a long term impact may result or where there is strong community interest in the issues, you will need to:

- seek ameliorative conditions to avoid the impacts, or
- seek alternative means of hazard reduction.

If these options are not possible, then you will need to:

- provide strong justification should you consider the impact to be medium or high adverse.

Impacts on Waterbodies due to Extraction

This question relates to whether the activity will use water contained in a waterbody. This is only likely to apply in circumstances where water is extracted for the purpose of stopping or extinguishing a prescribed burn. Generally this is only likely to be an issue in small waterbodies or if large volumes are to be extracted.

The type of impact on water should be identified, for example:

- does the activity change the area, volume or flow of a waterbody?

Impacts from changes to Flooding or Tidal Regimes

Only likely in terms of being affected by flooding e.g. clearing adjacent to waterbodies.

Where the proposal will result in alteration to flood or tidal regimes, either of a temporary or permanent nature, you will need to provide strong justification should you consider the impact to be medium or high adverse.

The extent and nature of the alteration to flooding or tidal regimes should be described and the overall level of the impact determined.

Conditions

Any stream, river, wetland or lake marked on a topographic map and within the proposed treatment area must have a riparian buffer zone. Bush fire hazard reduction work is therefore to be excluded from all vegetation adjacent to a water body (ie the riparian buffer zone) in accordance with the Bush Fire Environmental Assessment Code (Code) requirements. This must be applied to the watercourses and water bodies shown on 1:25 000 scale topographic maps, or if not published, the most detailed maps in the area that are published from the Land Information Centre.

It is understood that there are circumstances where it may not be possible to establish riparian buffers in accordance with the Code. If any mechanical clearing or burning activity is to occur within the riparian buffer consultation will be required with DECC to ascertain whether the impact is likely to be significant, and the level of remedial works required. This consultation is not necessary for the construction of containment lines that cross a stream if the works are carried out in accordance with the Code containment line requirements.

If the extraction of water from small waterbodies is expected to be noticeable then water is to be sourced from another site, or replaced as soon as possible. *Noticeable means that the drop in water level will be clearly apparent.*

General

Carry out hazard reduction when there is less likelihood of heavy rainfalls.

When burning or mechanical clearing minimise soil exposure by retaining some vegetation cover, particularly ground cover in accordance with the Code requirements.

When burning or mechanical clearing use a mosaic pattern and avoid areas of greatest soil erodibility in accordance with the Code. Consider hazard reducing upper and lower slopes in different years.

Wherever possible, access waterbodies from established access tracks, and refill tankers whilst on track.

The following guidelines are provided by the USA National Wildfire Coordinating Group (1992) and should be followed where possible:

- Inform all personnel using foam of the potential problems that can be caused by foams in water bodies,
- Locate foam mixing and loading areas to minimise contact with waterbodies,
- Exercise care to avoid spills at mixing, loading, and application areas – especially near streams,
- Exercise particular caution when using foams in watersheds where fish hatcheries are located,
- Avoid direct application or drops into waterbodies,
- Promptly notify appropriate authorities of any fish kill or spill into a waterbody,
- Include precautionary measures in training for personnel.

4.1.3. Soil and Stability Impacts

The DLWC document “Soil and Landscape Issues in Environmental Impact Assessment” is particularly useful in understanding soil related issues. It can be located on the web.

The EPA document “Model EMP. Environmental Management Plan for Landscaping Works” has some relevance and is also available on the web.

Erosion and Slope Instability

Is there likely to be any:

- loss of soil from wind or water erosion, or
- potential for land instability with high risks from landslides or subsidence?

Degradation of Soil Quality

Is there likely to be any:

- loss of structural integrity of the soil, including compaction due to heavy machinery,
- contamination,
- salinisation, or
- acidification of soil?

Where the soil and stability impacts are not in line with approved guidelines, processes or policies, where a long term impact may result or where there is strong community interest in the issues, you will need to:

- seek ameliorative conditions to avoid the impacts, or
- seek alternative means of hazard reduction.

If these options are not possible, then you will need to:

- provide strong justification should you consider the impact to be medium or high adverse.

Conditions

In order to minimise potential for landslip and other forms of mass movement undertake works in accordance with the Code. Where this is not possible consider the following:

Slopes greater than 18 degrees or slopes with a Soil erosion Risk of greater than 220 tonnes/ha/yr

Careful consideration is to be given to undertaking any mechanical works on slopes of greater than 18°. Skirting of trees, pruning of trees and removal of understorey is preferable to tree removal. If trees are to be removed then there needs to be selective removal sufficient for canopy separation. Tree roots are to be left in place. Avoid the use of machinery that is likely to compact the soil surface.

Subsidence or slip areas

If work is proposed in a subsidence or slip area, any conclusion as to the likely impact must be based on geotechnical advice. Minor works such as slashing grasses with ‘whipper-snipper’ are acceptable.

Removal by hand and mowing

Removal by hand and mowing is permissible on all slopes. However, mowing on slopes greater than 15º may be unsafe.

Ploughing or grading

Ploughing or grading is not permitted on slopes greater than 10°. It must not reshape the soil surface or result in re-direction of surface water runoff and all topsoil must remain on the soil surface. Conduct work parallel to the contours where possible.

General

Carry out hazard reduction when there is less likelihood of heavy rainfalls, to minimise erosion.

When undertaking mechanical clearing works minimise soil exposure by retaining some vegetation cover, particularly ground cover.

When burning use a mosaic pattern, avoid moderate intensity burns in areas of greatest soil erodibility, hazard reduce upper and lower slopes in different years.

Concentrated flow discharge must be prevented, particularly above infrastructure.

Acceptable Soil Loss

The aim of all hazard reduction activities should be to have minimal soil erosion and zero sediment loss from the site. Sediment basins and traps should be designed to intercept all sediment predicted to be eroded over the site. Appropriate measures must also be taken to prevent any wind erosion and dust transport from the site.

The current pollution licensing system of DECC under the POEO Act requires that stormwater leaving a project site should have no greater than 50 mg/litre of filterable material and 150 mg/litre of total turbidity. Under that Act it is also an offence to cause air pollution, including airborne dust, unless appropriately licensed. It is a reasonable defence to a prosecution if all the erosion and sediment controls are implemented in accordance with the relevant manuals.

In agricultural and forest areas (i.e. non-urban) DECC has adopted the following informal targets for maximum acceptable soil loss:

- For deep soils (greater than 1.5 m) a maximum of 10 tonnes/ha/year,
- For moderately thick soils (1-1.5 m) a maximum of 5 tonnes/ha/year,
- For shallow soils (less than 1 m) a maximum of 1 tonne/ha/year.

However, DECC is striving for sustainable rates of soil loss, which equates to approximately 0.02 to 0.4 tonnes/ha/year.

It is important to note that the loss of 12 tonne/ha is approximately equivalent to 1 mm thickness over a hectare.

Refer to www.dlwc.nsw.gov.au (then soils, then soil publications) also search on each relevant soil issue, also www.epa.nsw.gov.au.

Structural Decline

Minimise soil compaction from heavy vehicles and/or machinery. Control movement of heavy vehicles and equipment over the soil, including restricting movement over non-essential areas; use broad or multiple tyres or bulldozer type tracks which spread the weight over a larger surface area. Avoid using heavy machinery around the base of trees and close to drainage lines.

Refer to www.dlwc.nsw.gov.au.

Acidification

Maintain vegetation in ground water recharge areas (e.g. hilltops).

Refer to www.dlwc.nsw.gov.au.

Acid Sulfate Soils

There are five classes of acid sulfate soils. Class 1 soils are acid sulfate soils which are close to the surface. Do not progress with any form of mechanical clearing on Class 1 soil types.

Refer to www.dlwc.nsw.gov.au.

Erosion and Sediment Control Plan

Preparing an Erosion and Sediment Control Plan (CaLM 1994) (PDF 861KB).

Model Erosion and Sediment Control Policy (CaLM 1993) (PDF 718KB)

Locate sediment traps or filters above environmentally sensitive areas such as streams, lake foreshores and steep slopes.

Sediment filters include geotextile fabric fencing. Logs can also be placed across the slope to reduce the risk of erosion by slowing down rain runoff. Straw bales may also be used to reduce flow velocity.

Avoid sites with high mass movement potential, e.g. those that are steeply sloping or have weak sub-surface layers.

Retain deep-rooted trees and shrubs that serve to stabilise the soil mass and assist in the de-watering process.

Minimise water infiltration into the slope so as to prevent build-up of high pore water pressure at the base of slopes; may involve establishment of vegetation or an impervious ground cover, water diversion banks, and internal slope drainage systems.

Retention of adequate buffer zones along waterways.

Avoid soils with high erodibility (including high dispersibility); low permeability; poor structure; shallow soils; low wet bearing/shear strength; high shrink/swell potential; high plasticity; acid sulfate soils. Avoid steep slopes; poor drainage; flooding, high water tables; mass movement hazard.

Refer to www.dlwc.nsw.gov.au (then search for erosion and sediment control plan), also www.epa.nsw.gov.au, including handbook on Managing Urban Stormwater.

Construction of Control Lines

Prescribed burns must be contained within planned control lines. Undertake construction of control lines in accordance with the Code.

4.1.4 Noise and Vibration Impacts

Noise and vibration results in increased noise or vibrations to unacceptable levels for the surrounding communities (e.g. sensitive properties such as educational, hospitals, residential and heritage.

The extent and nature of the potential impact on the environment (which could include noise and vibrations at adjoining properties) should be described and the overall level of the impact determined.

Noise from hazard reduction could, for example, include the noise of machinery (dozers, chainsaws, slashers or pumps), trees falling, tankers and other vehicles, or shouting.

Where the noise and vibration impacts are not in line with approved guidelines, processes or policies, where a long term impact may result or where there is strong community interest in the issues, you will need to:

- seek ameliorative conditions to avoid the impacts, or
- seek alternative means of hazard reduction.

If these options are not possible, then you will need to:

- provide strong justification should you consider the impact to be medium or high adverse.

Refer to www.epa.nsw.gov.au, including Draft Noise Guide for Local Government, Draft Noise Guide for Local Government (December 2002) (draftnoiseguide.pdf 595 kb).

Conditions

Time activity in accordance with local issues, and do not operate outside of normal noise hours.

The proposed works must be carried out in such a manner so as to minimise the effects of noise on adjoining residents.

The hours of operation on the site for machinery are restricted to between 7.00 am and 5.00 pm Monday to Friday, and 8.00 am to 1.00 pm on Saturday. It is understood that these hours may not be possible due to other REF restrictions or the nature of the works. If this is the case then consultation must be undertaken with those landholders who will be affected. Burns are often undertaken during the evening. Consider the impact that the noise of operations will have on the surrounding landholders.

Heavy equipment utilised on the site must be fitted with residential muffler systems.

Machinery and tankers are to be placed such that noise and vibration impacts are minimised.

Neighbours are to be notified and consulted regarding any concerns that they may have.

4.1.5 Hazardous substances or chemicals

Chemicals, which may build up a residue in the environment, include fertilisers, herbicides and pesticides. Herbicides are sometimes used for hazard reduction.

Refer to www.epa.nsw.gov.au (then pesticides publications, then Environment Matters #22: What are Pesticides? (2000), and Environment Matters #28: Pesticides Act 1999 - Your Responsibilities (2000), and there is a draft guideline on using herbicides near water). It needs to be noted that pesticide matters above include herbicides.

The use of foam may also be of concern, particularly adjacent to waterbodies.

In addition, care should be undertaken to ensure that hazardous chemicals do not occur at a site for which hazard reduction is proposed.

Conditions

Herbicide use must be consistent with the label and the requirements of the Pesticides Act 1999. The use of herbicides near waters must be undertaken with care to prevent water pollution. Herbicides cannot be used within 100 metres of any species listed in the Threatened Species Hazard Reduction List, unless the List states otherwise.

All users are required to:

- use only herbicides registered by the National Registration Authority (NRA) that are approved for the intended situation, search www.nicnas.gov.au/australia, then AICS,
- strictly adhere to any directions on the label,
- not risk injury to persons, property and non-target plants and animals through the use of a herbicide,

- use in accordance with the requirements of the Pesticides Act 1999 www.epa.nsw.gov.au/envirom/pestact.htm, and the Protection of the Environment Operations Act 1997 More about the POEO Act, and
- operate in accordance with the Noxious Weeds Act 1993 www.austlii.edu.au/au/legis/nsw/consol_act/nwa1993182/.

If foam is likely to be used, refer to conditions within section 4.1.2 of this document.

If any hazardous substances such as flammable, explosive, toxic, radioactive, carcinogenic, mutagenic or any other unknown substances occur on site you must notify the DECC.

4.2 Biodiversity Issues

Where the impacts on biodiversity are not in line with approved guidelines, processes or policies, where a long term impact may result or where there is strong community interest in the issues, you will need to:

- seek ameliorative conditions to avoid the impacts, or
- seek alternative means of hazard reduction.

If these options are not possible, then you will need to:

- provide strong justification should you consider the impact to be medium or high adverse.

Note that where an 'Assessment of Significance' (otherwise referred to as the 7 Part Test) is required that the 7 Part Test is to be:

1. assessed in accordance with the DEC Document – Assessment of Significance (7 Part Test) Guidelines; and
2. recorded on the 7 Part Test Record Sheet. The record sheet is located at Appendix A of the above guidelines and when completed is to be attached to the REF Record Sheet (P6.1.3-2b).

4.2.1 Vegetation

Prescribed Burning

The DECC (Dr. D. Keith) has prepared "A Compilation Map of Native Vegetation for New South Wales". This document provides the information necessary to determine Vegetation Formations. The appropriate 'minimum fire interval' for each Vegetation Formation can then be determined from the Minimum Fire Interval Table.

Dr. Keith's paper categorises the vegetation across NSW into fourteen vegetation formations. The derivation of minimum fire intervals has been developed on the basis of the expected constituent species of these fourteen vegetation formations. The reason for having a minimum fire interval is that there is a probability of decline in the species composition of a Vegetation Formation when the time between successive fires is/are less than the specified desirable minimum.

In addition, there is also a probability of decline when the time between successive fires is/are less than the specified desirable minimum and such intervals prevail across more than 50% of the Vegetation Formation. The 50% rule is based on distribution of the Vegetation Formation within the landscape, i.e. the connectivity of occurrences of a Vegetation Formation. For practical purposes the 50% rule is best applied on a LGA basis. This approach also allows for different age classes of the Vegetation Formation both within and between LGAs.

Conditions

No part of a Vegetation Formation is to be subjected to successive fires more frequently than the minimum fire interval. In addition, at least 50% of the Vegetation Formation within each LGA must exist in a state that has been burnt less frequently than the minimum fire interval. This can be achieved by strategic rotational burning of portions of the Vegetation Formation within each LGA. Ideally, old growth patches of each Vegetation Formation would be maintained in those areas not critical for the protection of life and property.

For example, if a Vegetation Formation was only 50 hectares in extent and required a minimum fire interval of 7 years, then 25 hectares must always have a fire interval of greater than 7 years. Further, successive fires for any portion of that Vegetation Formation is not to exceed the minimum fire interval.

However, there may be exceptional circumstances where hazard reduction burns are required and these requirements can not be met, such as after major wildfires where all parts of the formation are at the same time since fire. Such circumstances will need to be clearly discussed and a strategy developed to ensure that an appropriate mosaic is established for the area.

Mechanical Clearing

If vegetation is to be cleared or modified, describe the area of vegetation communities to be cleared or modified, compared with the total area of vegetation communities in the general location of the proposal, as well as in the LGA.

In determining the likely impact, the following matters should be considered:

- what is the vegetation community?
- is the vegetation community at the limit of its distribution?
- is the vegetation community considered to be a 'sensitive area'?
- are there any clearing restrictions imposed on the vegetation by virtue of the Catchment Management Plan?
- does the vegetation to be cleared provide a 'corridor' between other vegetated areas?
- will the vegetation to be cleared increase the 'edge effect' (i.e. increase ratio of perimeter to area of the vegetated patch)? Significance increases as the patch becomes smaller in area.
- what is the nature and extent of the clearing or modification proposed?

If the area of clearing is large or there is the potential for multiple parcels to be cleared for hazard reduction then consideration should be given to the total area of a vegetation type that is likely to require clearing within the LGA for the purposes of hazard reduction over a 5 year period (based on existing development). This will give some indication of the significance of the cumulative impact of the clearing.

Conditions

No clearing of any vegetation type at the limit of its distribution, unless such clearing is minor and the patch of the vegetation type to be cleared is large.

No clearing of any sensitive landscapes, sensitive biological communities or scenic and visually significant sites. Minor clearing may be considered along coastlines, dunefields, wetland communities, arid and semi-arid communities, and scenic and visually significant sites under exceptional circumstances. Clearing will need to be carefully considered and kept to a minimum. Liaison should be undertaken with DECC.

No clearing to be undertaken that is inconsistent with the Catchment Management Plan. Discussions will need to be held with the CMA if there are bush fire hazard issues that cannot be resolved.

No clearing of 'corridors'. Minor clearing may be undertaken if it is not likely to adversely affect the movement of animals or dispersal of plants.

Consideration must be given to isolated patches of vegetation such that their function is not compromised.

If the edge effect is to be increased then attempts should be made to minimise this effect.

4.2.2 Plants

Mechanical Clearing

Slashing, trittering, tree removal and bulldozing are all methods that can destroy or significantly damage threatened flora. The potential for significant loss is particularly high due to the small numbers of threatened plants. For these reasons these methods of hazard reduction are not allowable for threatened flora.

If works are required where threatened plants are likely to occur then a survey must be undertaken in accordance with DECC 'Threatened Biodiversity Survey and Assessment: Guidelines for Development and Activities'. This is not required if operating in accordance with the conditions on the Threatened Species Hazard Reduction List.

Conditions

No slashing, trittering, tree removal or bulldozing of threatened flora.

If works are required, locate species by survey and leave buffer (no less than 10 metres radius) around each of the located plants. If possible provide for a connecting corridor to larger areas of vegetation. Liaise with DECC prior to proceeding with works.

A 7 Part Test must be undertaken if works are to proceed within the vicinity of any threatened species. Include any conditions resulting from the findings of the 7 Part Test.

Note that if a significant impact is likely that an SIS will need to be prepared.

Prescribed Burns

All plants are susceptible to the impacts of fire, albeit to varying degrees. The most serious impact is understood to be the adverse impacts of high frequency fire. The Threatened Species Hazard Reduction List provides minimum fire intervals for all threatened plant species. This has been based on factors such as the age at which there is sufficient seed production. 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 it may be based on the small number of individuals that exist. In these cases any loss of individuals is likely to be significant.

Conditions

If works are required where threatened plants are likely to occur then a survey must be undertaken in accordance with DECC 'Threatened Biodiversity Survey and Assessment:

Guidelines for Development and Activities'. This is not required if operating in accordance with the conditions on the Threatened Species Hazard Reduction List.

Any prescribed burning which will not meet the criteria in the Threatened Species Hazard Reduction List will require a more detailed assessment of the significance of the expected impacts through 7 Part Test.

It may be possible to exclude plants from fire by establishing a control line at a suitable distance around the plants and/or wetting the area. Liaise with DECC prior to proceeding with works.

Include any conditions resulting from the findings of the 7 Part Test.

Note that if a significant impact is likely that an SIS will need to be prepared.

Critical Habitat

Critical habitat is extremely sensitive to impacts.

Conditions

No works are to be undertaken in critical habitat. An SIS is required prior to undertaking any works in critical habitat.

4.2.3 Animals

The Wildlife Atlas is useful for informing which threatened animals are likely to occur within a broad area, such as an LGA or specific national park. However, as the majority of animal species are mobile, Wildlife Atlas records have limited use in terms of identifying a species specific location. For example, animals will use a larger area than the area immediately surrounding a site record.

Furthermore, Wildlife Atlas records do not (of themselves) identify what habitat features are important to the species in the area. Although habitat modeling is useful as a tool for identifying species habitat, extensive ground truthing and mapping is required for the scale of implementation necessary for the REF process. Furthermore, habitat is a dynamic medium which changes over time requiring such mapping to be updated. Such level of detail is not currently available, except in a few cases.

In addition, some animal species are so wide ranging that no practical conditions can be developed for hazard reduction, e.g. tree roosting micro-bats. Others, such as some owl species, are wide ranging but are likely to be disturbed by burning at particular times of the year and at specific locations, such as around active nest sites. For other species which are not so wide ranging, such as critical weight range mammals, the important habitat components are less clear, although factors such as sufficient ground and shrub cover are important. In these cases it is intended that an assessment of animal habitat models be undertaken in conjunction with appropriate vegetation mapping, combined with an analysis of the extent and frequency of hazard reduction, in order that priority areas for managing hazard reduction are identified.

However, the Threatened Species Hazard Reduction List provides some guidance for those species which have relatively small ranges with specific habitat requirements. For example, some frog species have a close relationship with vegetation surrounding waterbodies.

Ideally, long unburnt (and uncleared) patches of each threatened animal habitat would 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 patches. The important point is that reasonable dispersal corridors exist between various age classes of

suitable habitat, and that patches are of suitable size to support the species. Appropriate habitat extent and connectivity will be species and location specific. *Note: the DECC is currently preparing a database of information which will provide some guidance for managing the impact of fire on animals.*

Conditions

A 7 Part Test must be undertaken if works are to proceed within the vicinity of any threatened species. Include any conditions resulting from the findings of the 7 Part Test.

If works are required where threatened animals are likely to occur and the works are likely to adversely impact on the animal then a survey must be undertaken in accordance with DECC 'Threatened Biodiversity Survey and Assessment: Guidelines for Development and Activities'. This is not required if operating in accordance with the conditions on the Threatened Species Hazard Reduction List. Note that it is not necessary to undertake surveys for small amounts of clearing that will not impact on the species' habitat. If important habitat components are assumed to exist then the proposal can be modified accordingly. Liaison with DECC may be required.

Note that if a significant impact is likely that an SIS will need to be prepared.

4.2.4 Habitat

How is the proposal likely to affect the lifecycle of a threatened species and/or population? In order to be in a position to assess this factor, the decision-maker must have an understanding of the lifecycle of each of the threatened species known or likely to occur within the study area. For plants, important lifecycle components consist of seedbanks, recruitment (germination and establishment of plants) and reproduction (including pollination and fecundity). For animals, important lifecycle components include breeding, dormancy, roosting, feeding, migration and dispersal. Examples include:

- displaces or disturbs species and/or populations,
- disrupts the breeding cycle,
- disturbs the dormancy period,
- disrupts roosting behaviour,
- changes foraging behaviour,
- affects migration and dispersal ability,
- disrupts pollination cycle,
- disturbs seedbanks,
- disrupts recruitment,
- affects the interaction between species and other species in the community,
- are these factors likely to have an immediate or delayed effect?

A number of components of a species' lifecycle are dependant on the habitat of that species and disturbance regimes. The removal or modification of habitat and the disruption of the current disturbance regimes may be detrimental to the survival of that species. It is important therefore, that the decision-maker not only has an understanding of the species' lifecycle but also an understanding of the way in which a species utilises its habitat and exists under a regime of disturbance.

Components of a species' habitat and the regime of disturbance which may be essential to the lifecycle of a species include, but are not limited to:

- Trees with hollows. Such trees are utilised by hollow-dependent species as diurnal and nocturnal roosts or as breeding or hibernation sites. Hollow-dependent species are particularly sensitive to the removal of mature trees with suitable hollows during the breeding and/or hibernation period;

- Caves or rock crevices. Caves and rock crevices provide shelter and den sites for, for example, scansorial (ie. capable of or adapted for climbing) mammals and reptiles. Caves also provide some bat species with suitable breeding and hibernation roosts;
- Permanent, semi-permanent or ephemeral water bodies. Most species of amphibian are dependent on water bodies for at least part of their lifecycle. Some flora species, for example some orchids such as, *Phaius australis* and *Phaius tankervilliae* are dependant on swampy habitats. The degradation or destruction of these habitats is leading to a decline in the numbers of species dependent upon permanent, semi-permanent or ephemeral water bodies;
- Foraging substrate. Species such as the Glossy Black-Cockatoo feed exclusively on particular plant species. Such species are particularly sensitive to the removal of foraging habitat; and
- Fire and flooding regimes. For many plant species there may be few or even no above ground plants observable at any one point in time, even though the species has a large seedbank and at some point in the future will be commonly found at a site. For many plant species fire and rain influence the above ground abundance. This means that plant abundance for such species will vary widely over time in response to the timing of the recruitment of the species. Many species only recruit new individuals after a disturbance such as fire or flooding. The disruption of the disturbance regime may affect the viability of the population.

The decision-maker must identify (based on a knowledge of the species' lifecycle and habitat requirements) which stages of the species' lifecycle are likely to be disrupted by the proposed development or activity.

How is the proposal likely to affect the habitat of a species, population or ecological community? Does the activity:

- disturb any permanent, semipermanent or ephemeral water bodies,
- degrade soil quality,
- clear or modify native vegetation,
- introduce weeds, vermin or feral animals,
- remove/disturb key habitat features,
- affect natural revegetation/recolonisation following disturbance,
- are these factors likely to have an immediate or delayed effect?

Whether a significant area of habitat will be removed or modified will depend not only on the local and regional abundance of the habitat but also upon the habitat requirements of the threatened species, populations or ecological communities and the degree of tolerance that such species, populations or ecological communities have to habitat removal or modification.

When deciding whether an area of known habitat is likely to become isolated from currently interconnecting or proximate areas of habitat, it is necessary to identify and assess the patterns and extent of habitat connectivity to determine the strategic significance of the study area. It may form part of a corridor, be a cul-de-sac area of habitat or an isolate. Landsat imagery, aerial photographs, topographic maps and data obtained from ground investigations are useful information sources for assessing this point.

Consideration should be given to the dispersal and genetic exchange mechanisms of individual species and whether the isolation of currently interconnecting or proximate areas of habitat for threatened species, population or ecological communities will adversely affect the maintenance of gene flow and the ability to sustain viable populations.

Consideration should also be given to the potential for the proposed activity to contribute to the incremental creation of an isolating barrier. It should also be noted that isolation can occur by various habitat modifications and not only by the clearing of vegetation.

It is important to ascertain that any area affected by the activity is the minimal amount required to achieve the objective of the hazard reduction. Where the extent of the habitat is large, the potential impact of the activity will be minimal compared to an activity which affects the last remaining remnant. As such, the extent of the habitat locally and/or regionally must be determined.

Conditions

Address any conditions arising within the relevant threatened plant, animal or ecological community section.

4.2.5 Endangered Ecological Communities

Mechanical Clearing

Slashing, trittering, tree removal and bulldozing are all methods that can destroy or significantly damage EECs. The potential for significant loss is particularly high due to the small areas of each EEC that remains in the landscape. For these reasons these methods of hazard reduction are not allowable for EECs. If such works are required in areas where EECs occur then a more detailed assessment of the significance of the expected impacts will be required via the 7 Part Test.

Conditions

No slashing, trittering, tree removal or bulldozing of EECs is to be undertaken without thorough investigation as to how to minimise the adverse impacts.

A 7 Part Test must be undertaken if works are to proceed within any EECs. Include any conditions resulting from the findings of the 7 Part Test.

Liaison with DECC may be required depending on the remaining extent of the EEC.

Note that if a significant impact is likely that an SIS will need to be prepared.

Prescribed Burning

The DECC (Dr. D. Keith) has prepared “A Compilation Map of Native Vegetation for New South Wales”. This document provided the information necessary to determine the particular Vegetation Formation that applies to each EEC. The appropriate ‘minimum fire interval’ for each EEC was then determined from the Minimum Fire Interval Table within the Code.

Dr. Keith’s paper categorises the vegetation across NSW into fourteen vegetation formations. The derivation of minimum fire intervals has been developed on the basis of the expected constituent species of these fourteen vegetation formations. In light of this (and depending on the species present within each EEC) some of the EECs may require different fire intervals than would otherwise be indicated by the relevant vegetation formation. Such EECs are indicated by the conditions within the Threatened Species Hazard Reduction List.

The reason for having a minimum fire interval is that there is a probability of decline in the species composition of an EEC when the time between successive fires is less than the specified desirable minimum.

In addition, there is also a probability of decline when the time between successive fires is less than the specified desirable minimum and such short intervals prevail across more than 50% of the EEC.

Note that the 50% rule is based on distribution of the EEC within the landscape, i.e. the connectivity of occurrences of an EEC. For practical purposes (and therefore for the purpose of this assessment) the 50% rule is best applied on a LGA basis. This approach also allows for different age classes of the EEC to occur both within and between LGAs.

Conditions

No part of an EEC is to be subjected to successive fires more frequently than the minimum fire interval.

In addition, at least 50% of the EEC within each LGA must exist in a state that has been burnt less frequently than the minimum fire interval (this includes burning by wildfire). This can be achieved by strategic rotational burning of portions of the EEC within each LGA. Ideally, old growth patches of each EEC would be maintained in those areas not critical for the protection of life and property. Clearly there will be circumstances where a wildfire burns more than 50% of an EEC, and in these cases the EEC is not to be burned again until the appropriate minimum fire interval is achieved.

By way of example, if an EEC was only 50 hectares in extent and required a minimum fire interval of 7 years, then 25 hectares must always have a fire interval of greater than 7 years. Further, successive fires for any portion of that EEC is not to exceed the minimum fire interval.

If hazard reduction burns within the EEC are likely to exceed these requirements, for example, if an EEC is only known from one location and is particularly small, then there is likely to be adverse impacts, discuss with DECC.

A 7 Part Test must be undertaken if works are to proceed within any EECs. Include any conditions resulting from the findings of the 7 Part Test.

Liaison with DECC may be required depending on the remaining extent of the EEC. Liaison with DECC will be required if the spatial or interval requirements can not be met.

Note that if a significant impact is likely that an SIS will need to be prepared.

4.2.6 Weeds and Pest Species

Is the activity likely to introduce weeds, vermin, pest species or genetically modified organisms into an area?

The nature of the potential impact should be described and the overall level of the impact determined.

Conditions

Any equipment used on site must be cleaned prior to entering the site to ensure that weeds are not inadvertently released.

Operate in conjunction with NSW Agriculture, local council, DECC guidelines for weed species.

Where a proposal is likely to introduce weeds, vermin, pest species or genetically modified organisms into an area, you will need to provide strong justification should you consider the impact to be medium or high adverse.

Herbicide use must be in accordance with the Code.

4.3 Resource Use

4.3.1 Natural Resources

Is there likely to be any disruption or destruction of natural resources with associated impacts on industries based on these resources?

Ascertain the industries in the area that utilise natural resources or the natural environment in order to make a living. Note that tourism (including such activities as bird watching from established hides) would constitute such an industry. The aim of this question is to consider the impacts of the hazard reduction on income producing activities. For example impacts on water quality may have adverse impacts on fisheries industries such as oyster farming, and burning or clearing of flowering Eucalypts may disrupt apiarists.

Indicate whether the removal of vegetation is likely to preclude any future land uses (either on the site or adjacent to the site). The consideration of current land uses in the general area will provide an indication of potential land uses. Burning is unlikely to be a long term issue for future land uses.

Is there likely to be any wasteful use of large amounts of natural resources, or will the hazard reduction result in the substantial depletion of natural resources?

Resources include water, fuels, timber, or extractive materials.

If the answer is yes, describe the nature and extent of the loss of the natural resources.

Where a considerable amount of natural resources from an area are to be destroyed, you will need to provide strong justification should you consider the impact to be high adverse.

This is unlikely to be an issue for hazard reduction.

Is the activity likely to result in the degradation of any area reserved/managed for conservation purposes?

Land allocated for conservation purposes includes:

- World Heritage areas (EPBC Act),
- land in an environmental zone in an EPI,
- marine protected area,
- heritage item,
- SEPP 56 – Sydney Harbour,
- Wilderness area, or
- land which is the subject of a conservation agreement (e.g. Voluntary Conservation Agreement under the NP&W Act, Environment Trust).

If the answer is yes, describe the nature and extent of the impact on the area allocated for conservation purposes.

An activity which degrades land allocated for conservation purposes is likely to have a high adverse impact on the environment.

Conditions

Consultation must be had with any affected parties if there is likely to be an adverse impact on any industry.

For conservation areas, check Plans of Management or Conservation Agreements and ensure that works are in accordance with the requirements. Where the works are not in accordance with the requirements then discussions are to be held with the parties to whom the agreement applies, and or the responsible government authority.

4.3.2 Community Resources

Is the activity likely to affect the existing use of community services or infrastructure including access or increased visitation?

Services and infrastructure resources which are likely to be affected by hazard reduction include roads and medical services. Impacts are likely to be temporary and localised. If impacts are likely then describe the extent and nature of the impact on community services or infrastructure. Where the impact will be great enough to cause concern within the community, public consultation should be considered.

Is there likely to be any degradation of infrastructure such as roads and bridges?

Consider such matters as whether the vehicles to be used (including weight of vehicle when fully laden with water) are appropriate for the carrying capacity of the roads and bridges.

Does the activity affect sites of importance to the local or broader community for their recreational or other values, or access to these sites?

Sites of importance include places of conservation, heritage or cultural significance. This question relates to the impacts on community enjoyment of such sites.

Hazard reduction activities are only likely to temporarily affect sites in terms of public access. However, burning may result in medium term impacts on the ability of the community to access and undertake recreational activities at a site. As most burns proposed by the RFS will be on private land it is unlikely that public recreation and access will be an issue. Mechanical clearing may affect the capacity of the community to enjoy recreation at a site but this is unlikely on privately owned land.

If the answer is yes, then describe the extent and nature of the impact on sites of importance to the community for their recreational or other values.

Where the impact will be great enough to cause concern within the community, public consultation should be considered.

Will community use of the waterways downstream of the activity be compromised?

If the answer is yes, firstly describe the nature of the impact on the use of, or the community's ability to use the waterway. Such impacts generally relate to reduction in water quality due to factors such as erosion.

Where the community is relying on the protection of water catchments and water supply, there is a strong onus on the RFS to ensure these values are considered in the assessment process. Where an activity is going to impact upon water quality or quantity you will need to provide strong justification should you consider the impact to be medium or high adverse.

Are there any significant resource recycling or reuse schemes to reduce resource usage?

This is unlikely to be an issue for hazard reduction activities. However, consider such issues as removal of rubbish (including lunch refuse) from site.

Is there any diversion of resources to the detriment of other communities or natural systems?

The main issue here is whether the carrying out of works at the site impacts on the ability to undertake works required at other sites. Therefore, hazard reduction works should be prioritised to ensure that the works that are required most are given highest priority (depending on weather conditions and available resources).

Another issue is the loss of water from dams. Efforts should be made to refill water taken from farm dams.

Conditions

Consider whether there is the potential for an increase in demand for medical services as the result of issues such as smoke inhalation, or any injuries that may be sustained as a result of undertaking the activity. Consider whether it is necessary to have medical assistance on standby.

In terms of impacts on roads this is most likely to be temporary factors such as number of emergency vehicles required, road closures due to smoke and fire. If hazard management strategies are to be implemented adjacent to residential areas, traffic congestion should be considered. Hours of operation should be indicated if this would ameliorate or exacerbate traffic congestion.

Take into account the requirements of SEPP 4. When the RFS is proposing a “prescribed development” - which is a development or activity likely to strain the capacity of the road system, or adversely affect the movement of traffic in the area, or to significantly affect other land in the locality - then the RFS must notify the local council of its intentions and take into account its views in arriving at a decision. This should be done by supplying the council with a copy of the completed assessment documentation and providing them with an opportunity to comment on the proposal. There may be proposals which, while not formally triggering the requirement to refer a REF to council, would be prudently referred to council. For example, in situations where a proposal is locally contentious or is in a visually prominent position.

Ensure vehicles to be used (including weight of vehicle when fully laden with water) are appropriate for the carrying capacity of the roads and bridges.

Ensure community access to, and enjoyment of sites of community importance or recreation is not hampered.

Ensure that community use of water downstream from site is not restricted or otherwise made less enjoyable.

Ensure any rubbish is removed from site.

4.4 Community Issues

4.4.1 Social Factors

Is there likely to be any impacts which result in a change to the demographic structure of the community?

This is unlikely to be an issue for hazard reduction.

Is there likely to be any environmental impact that may cause substantial change or disruption to the community?

Relevant changes to the community include loss of neighbour cohesion, and community identity or cultural character.

There is the potential for divisions in a community between those who seek excessive hazard reduction and those who seek minimal works. Works should therefore be undertaken in accordance with the Bush Fire Risk Management Plan. A proactive approach should be undertaken with the public exhibition of this plan to ensure that members of the community have opportunity to provide comment on the plan. If the exhibition of the plan indicates that there is likely to be community division then it may be necessary to meet with the affected members to ensure that they understand the reasons why a certain level of hazard reduction is required (whether that be more or less than the community perceives as necessary).

However, it is understood that not all members of the community are aware of the bush fire risk management planning process or have opportunity to view and provide comment on the plan. Therefore community consultation may still be required if it is anticipated that the works will cause concern to the community.

Community issues may include such matters as the loss of vegetation which can significantly alter the character of an area, or impacts which affect tourism.

Are there likely to be any impacts which result in some individuals or communities being significantly disadvantaged?

Members of the community who are disadvantaged will include those whose income producing capacity is reduced as a result of the hazard reduction works.

Is there likely to be any impacts on the health, safety, security, privacy or welfare of individuals or communities?

Impacts are to be described in relation to:

- air pollution or odour,
- noise or vibration,
- lighting, overshadowing or visual impacts, loss of privacy, or glare to members of the community, particularly adjoining landowners.

Hazard reduction activities are highly likely to result in visual impacts, loss of privacy and glare to the landowner, adjoining landowners and members of the broader community. Noise and pollution may also be an issue.

If the answer is yes, describe the extent and nature of the impact.

Is the activity likely to have an impact on the safety of the community?

Hazard reduction activities may have an impact on the safety of the community. For example, danger may exist where trees are being felled, prescribed burns that result in uncontrolled wildfires, smoke hazards on roads. Such risks to the community and operators will need to be identified and detail provided as to how such risks will be dealt with.

Longer term risks such as slope instability and trees weakened by fire must also be considered and addressed.

Where the proposal is likely to create a safety risk for the community, you will need to provide strong justification should you consider the impact to be high adverse.

The positive impacts of the hazard reduction on the safety of the community should also be described here.

Is there likely to be any impacts that result in a change in the level of demand for community resources (e.g. facilities, services and labour force)?

This is unlikely to be an issue for hazard reduction.

Will the activity affect the visual or scenic landscape?

Hazard reduction activities are highly likely to affect the visual or scenic landscape. This may just affect the landowner, or it may also impact upon adjoining residents and the greater community.

In determining the likely impact, the following matters should be considered:

- what is the viewshed of the activity, i.e. over what area will the impacts of the activity be able to be seen from?
- are there any particular points within the viewshed of the activity which may cause concern, e.g. lookouts, popular walking tracks, neighbours etc?

If the answer is yes, then consider methods of ameliorating the impact. For example, leaving a strip of unaffected vegetation along escarpments, or between properties.

Conditions

In residential areas (or where visitation is likely) signage may need to be placed around the site to warn of dangers. If dangerous works are involved such as the use of machinery, tree felling or use of fire then people must be positioned to ensure that members of the public do not enter the site.

Checks of trees weakened by fire must be undertaken after the fire, and cut down where considered dangerous.

Consultation must be undertaken with local residents to ascertain if there are methods by which any negative impacts on their privacy or other such issues may be avoided. For example, retention of some trees may not increase the risk from bush fire but may allow for privacy and scenic amenity.

Do not proceed with the proposal without extensive consultation if there is likely to be any significant impact on important scenic and visual components of the landscape.

4.4.2 Economic Factors (including impacts on employment, industry and property)

Are there likely to be any impacts which result in a decrease to net economic welfare?

This is unlikely to be an issue.

Are there likely to be any impacts that result in a decrease in the economic stability of the community?

This is unlikely to be an issue. However, economic impacts may be experienced as a result of impacts on industry such as tourism. These matters are dealt with by previous questions.

Alternatively there are also positive impacts such as reduced risk of economic loss from bush fire.

Are there likely to be any impacts which result in a change to the public sector revenue or expenditure base?

This is unlikely to be an issue. However, there may be some minor localised loss of public revenue, e.g. forestry.

Conditions

Determine appropriate conditions, for example, it may be possible to alter the timing of the activity to avoid the negative impacts.

4.4.3 Land Use Impacts

Are there likely to be any major changes in land use?

This is unlikely to be an issue.

Is there likely to be any curtailment of other beneficial uses?

This is unlikely to be an issue.

Are there likely to be any property value impacts with land use implications?

This is unlikely to be an issue. However, there may be some loss of property value as a result of loss of privacy and amenity. There may also be positive impacts in that there is less risk from bush fire. The impact on property values will be dependent upon the circumstances and market perception.

Conditions

Consultation must be held with local residents to ascertain if there are methods by which any negative impacts may be avoided. For example, retention of some trees may not increase the risk from bush fire but may allow for privacy and scenic amenity.

4.4.4 Transportation Impacts (during construction and operation)

Are there likely to be any impacts which, directly or indirectly, result in additional traffic?

Hazard reduction is highly unlikely to cause any but temporary changes to traffic.

If the answer is yes, firstly describe the nature of the impact on traffic. *Please see the note on SEPP 4 in section 4.3.2.*

Are there likely to be any smoke impacts?

Any production of smoke that is likely to impact on visibility on roads or rail will require resolution.

Conditions

If traffic is likely to be significantly inconvenienced during operations then early notification may be necessary including signs indicating delays to be expected. Discussions with Police and local council may be required.

For large fires near major roads the landowner (unless RFS carrying out the burn) shall at least two weeks prior to the burning activity, liaise with Police and/or the relevant traffic authorities in order to plan when the traffic conditions are likely to be suitable and to implement any actions including any requirement for traffic management including signage.

Signage and traffic management may also be necessary for small fires and small roads.

Traffic management may also be required for vehicles entering and exiting a site, depending on the volume of traffic required for the work and that utilising the adjacent public roads.

Refer to draft RFS SOP – Safe Working on Roads ????

4.5 Cultural Heritage Issues

4.5.1 Aboriginal Heritage

The DECC "Guidelines for Aboriginal Heritage Impact Assessment" outlines in detail what is required for cultural heritage assessment and how it should be reported, www.npws.nsw.gov.au, Draft Aboriginal Heritage Impact Assessment Guidelines. The guidelines clarify the information requirements for proponents, consultants, and consent and determining authorities when seeking a permit under Section 90 of the NP&W Act or General Terms of Approval pursuant to Section 91 and 91A of the EP&A Act, and the NSW Heritage Act.

These guidelines also operate in conjunction with the following documents produced by the Australian Heritage Commission, now known as the Australian Heritage Council, www.ahc.gov.au:

- The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance,
- Ask First: A guide to respecting Indigenous heritage places and values, (online),
- Protecting Local Heritage Places, (Protecting Local Heritage Places-a guide for communities).

The RFS is to use any data provided under licence from the DECC. If the licence does not cover the area subject to the proposal then the RFS must refer the application to the DECC in the following circumstances:

- *slashing* areas not previously subject to slashing, trittering, removal of many trees, or earthworks;
- *trittering* areas previously subject to slashing, or areas not previously subject to trittering, significant tree removal, or earthworks;
- *removal of trees* (greater than 100 cm diameter at breast height).
- when burning of unharvested native forest areas, and areas in asset protection zones not previously subject to burning, where there is a likelihood that scarred and carved trees exist and land with known rocky outcrops, rock platforms or rock shelters, where there is a likelihood of artwork (especially painted art) existing.

The RFS must provide the DECC with all relevant information held by the RFS that is necessary to ascertain the location of the proposed hazard reduction works (e.g. maps and descriptors).

Does the activity affect places of significance or importance to the Aboriginal community or is the activity likely to affect Aboriginal relics?

Discuss with the DECC the need to consult the local Aboriginal community. This will be dependent on a number of factors including the cultural sensitivity of the location, the scale and intensity of the proposal, and the individual communities concerned.

The DECC will be able to assist you in identifying the appropriate groups to contact and also facilitate consultation. It is important that a full record of any consultation is maintained in the REF. Attach to the REF the names, dates and outcomes of meetings. In some instances a letter from the local community may be required (ie. in particularly sensitive locations). It is important that the community has a full understanding of the proposal and its implications and this may require one or more site visits.

Does the activity affect wild resources or access to these resources, which are used or valued by the Aboriginal community?

If the answer is yes, describe the type of wild resource which will be impacted and the nature and extent of impacts. This may include direct and indirect impacts.

Does the proposal affect areas nominated or declared as Aboriginal Places?

If an area proposed for hazard reduction is nominated or declared an Aboriginal Place, you will need to discuss with the DECC the need to consult the local Aboriginal community.

Does the proposal affect areas subject to land claims, Native Title claims or a Land Use Agreement?

Where an area is subject to a land claim or native title claim, the claimants should be consulted as to their view on the activity proposed. Consultation must also occur where there is a Land Use Agreement in place.

Conditions

The RFS has a table detailing the management actions that are to be undertaken depending on the site type and nature of the activity. These are to be incorporated as conditions within the REF.

If there are any indications that the proposal will occur on land that is important to the Aboriginal people then consultation must be undertaken. Consultation with Aboriginal people **Ask First: a guide to respecting Indigenous heritage places and values**. Australian Heritage Commission 2002, available online, provides guidance on these matters.

Do not proceed with the proposal if the Aboriginal community expresses concern over the proposal.

4.5.2 Non-Indigenous Heritage

Protecting Natural Heritage - using the Australian Natural Heritage Charter, Second Edition provides background.

Does the activity affect known heritage items or historic archaeological relics?

Describe the nature of the impact and how it relates to the purpose of the activity. Ascertain whether additional approvals would be required for the proposal to proceed.

Has a conservation plan or other conservation assessment been prepared for the place?

If so, state the conservation plan or assessment. Provide relevant details on its content. Determine whether the activity conforms with the conservation plan or assessment.

Is there likely to be any impacts on a locality, place, building or natural landmark having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific, recreational, scenic, aesthetic or social significance or other special value for present or future generations?

If so, consult with the relevant authority to ensure that adverse impacts are avoided.

Conditions

Do not carry out an activity which is not in accordance with a conservation plan or assessment.

Carry out works in accordance with 'best practice heritage management principles' issued by the Minister, and any Guidelines issued by the Heritage Council.

Where an activity is likely to directly impact upon known heritage items or historic archaeological relics, you will need to provide strong justification should you consider the impact to be medium or high adverse.

4.6 Consultation

4.6.1 Has consultation with the potentially affected community been undertaken?

Where an impact will be great enough to cause concern within the community, public consultation must be considered.

Describe the manner in which the consultation was undertaken and the outcome.

Ideas for Community Consultation: A Discussion on Principles and Procedures for Making Consultation Work

Has the owner/occupier/land manager been consulted?

It is essential that the owner/occupier/land manager be consulted in relation to the proposed activity. *Note that consultation is not required where the works are the result of a Section 66 notice as there is opportunity for the owner to object to the notice*. Consultation will assist in terms of identifying any special features or areas of concern. This will sometimes require a longer lead-time before implementation.

On some occasions, the owner/occupier of the land may not be accessible and, if this is the case, state as such.

Inspection of Plans of Management

Some land will have an associated plan of management, such as for a Conservation Agreement. This should be obtained and reviewed to ascertain whether any areas of particular significance should be planned for.

Who has been consulted on the environmental aspects of the proposed activity?

Have neighbours of the area to be hazard reduced been consulted? Consultation should reflect the issues that have become apparent as a result of the REF process.

To assist with the overall assessment of the environmental review a range of experts may need to be contacted. This will include the DECC, NSW Fisheries, State Forests, Department of Planning and council environmental officers. Where contact is being made, ensure that the persons contacted are the appropriate and most suitably qualified people for the task.

If a local conservation group is active in the area then the person completing the environmental review should liaise with that organisation. In many cases the Nature Conservation Council of NSW nominee to the Bush Fire Management Committee can be used to determine what local conservation groups are located in the area or who may have an interest in the area.

Local Aboriginal Land Councils may also be able to advise about local areas of Aboriginal cultural or spiritual significance. This is particularly important in areas of public lands which may not have had extensive disturbance or development.

5 Analysis of Environmental Impacts

This section seeks to analyse the environmental significance of the impacts identified above.

In order to determine the likely significance of the impact you must analyse the extent and nature of the impacts. Every identified impact is to be classified as:

- not applicable,
- negligible,
- positive,
- low adverse,
- medium adverse, or
- high adverse.

5.1 Analyse the extent of the impacts

The potential importance of each impact should be estimated based on the extent of the impact. The extent of the impact will depend on its size, scope, intensity and duration. For instance, impacts should be ranked as having a high adverse impact if they are very intense or affect a large area or significant numbers of individuals or species over a long period of time. Impacts that adversely affect threatened species or environmentally significant areas would also attract a ranking of high impact.

5.2 Consider the nature of the impacts

The potential importance of each impact should be estimated, taking into account all the criteria used to analyse the nature of the impact:

- the level of confidence in predicting the impact,
- the resilience of the environment to change,
- the reversibility of the impact,
- the effectiveness of the proposed methods to manage or mitigate the impact,
- compliance with any relevant policies or plans,
- the extent of public interest, and
- whether further information is required to confidently determine the impact of the activity.

For instance, impacts should be ranked as high adverse impact if there is a high level of uncertainty about the impacts themselves or the capacity of the environment to sustain such

impacts is low. Proposals which do not comply with standards or policies should also be regarded as having the potential to have a medium or high adverse impact. In some instances the overall benefits of a proposal will be positive. Where this is the case, the positive aspects of the impact should be commented upon.

A table to guide you in this decision making is provided below (Table 5.1).

Table 5.1

ANALYSE EXTENT OF IMPACTS	LOW ADVERSE	HIGH ADVERSE
Size	Small scale size/volume	Large scale/volume
Scope	Localised	Extensive
Intensity	Small impact dispersed over a long period	Large impact over a short or long period
Duration	Short term	Long term
Level of confidence in predicting impacts	High confidence/knowledge and past experience	Low confidence, numerous uncertainties & unknowns
Resilience of the environment to change	Good resistance of environment to change	Poor capacity to assimilate/ absorb change or recover from impact
Level of reversibility of impacts	Impacts are reversible and rehabilitation likely to be successful	Reversibility impossible or unlikely due to cost or other factors
Ability to manage or mitigate the impacts	Effective mitigation measures available	Mitigation measures untested or unavailable
Ability of the impacts to comply with standards, plans or policies	Total compliance	Uncertain or part compliance
Level of public interest	Low interest and predictable impacts on community	High interest and uncertain impacts on community
Requirement for further information on the impacts of the activity or mitigation	High level of understanding and information on the impact	Low level of information on and understanding of key issues

6 Summary of Environmental Impacts

This section should provide consideration of the cumulative impacts of the activity based on the classification of the individual impacts as low, medium or high adverse, negligible or positive in section 5.

It must be determined whether the activity as a whole has a significant affect on the environment and reasons should be given for the decision.

In addition to medium and high impacts, consideration should also be given to the overall effects of the low impacts. Although impacts may be of only low to medium concern when considered individually, the cumulative effect of the impacts acting together could be substantial.

If the overall impact of an activity is low, the impact is not regarded as significant. If the overall impact of the activity is medium or high, the activity will have a significant impact on the environment.

The significance of an activity as proposed is to be assessed, not the activity as it will be undertaken in accordance with conditions imposed on an activity approval.

The blue book '*Is an EIS required*?' provides further information as to when an activity should be regarded as significantly affecting the environment.

If the activity will have no more than a low impact and will not have a significant impact on the environment, it should then be determined whether the activity should be approved taking into account to the fullest extent possible all matters affecting or likely to affect the environment. Consideration should be given to all factors addressed in REF including permissibility, the appropriateness of the proposal and alternatives available.

7 Conclusion & Recommendation

The conclusions and recommendations are to be listed in this section.

The Department of Planning requires that agencies maintain a register of decisions made under Part 5 of the EP&A Act.