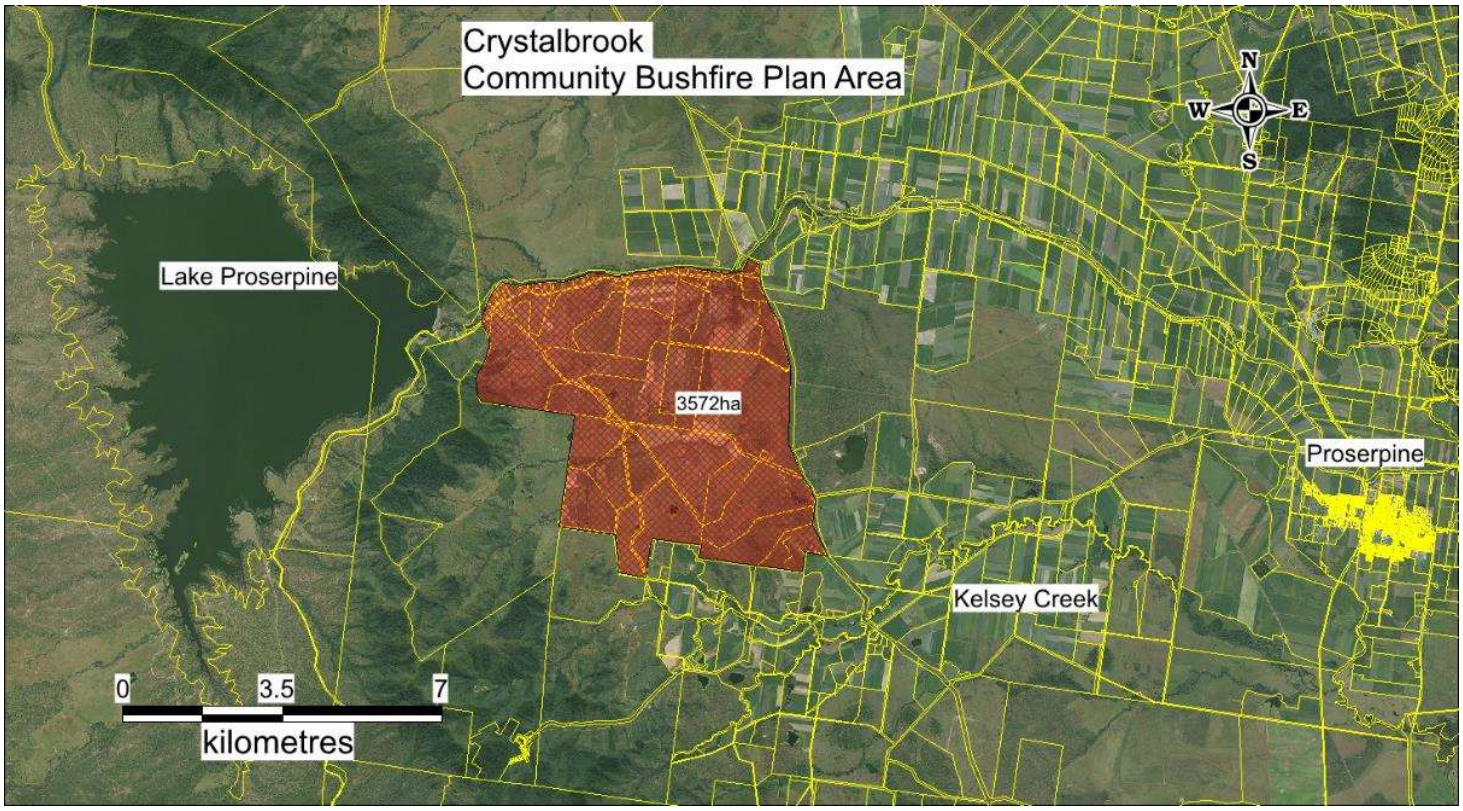
Community Bushfire Management Plan

Crystalbrook
2024-2033



Approved by Whitsunday Regional Council CEO: _____

Date: 21/03/24

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Executive Summary

The purpose of the Crystalbrook Community Bushfire Management Plan is to document bushfire hazard and describe how this hazard will be managed for the next 10 years (2024-2033). This Bushfire Plan is specifically written for the Crystalbrook residents and bushfire management stakeholders. The Crystalbrook Fire Plan area covers the land between the Proserpine River and Kelsey Creek and covers 3,572 ha.

The Crystalbrook Community Bushfire Plan includes 32 rural residential lots and 26 rural lots. The population in the Crystalbrook area is less than 200 people. The land use in the study area includes:

- rural residential 76ha,
- sugarcane 880ha,
- grazing 2201ha,
- bushland 415ha, and, Council land 0ha.

The reason why this Bushfire Management Plan has been developed is the large number of rural-residential dwellings occurring in and adjacent to medium to high bushfire hazard areas in the Crystalbrook area. Fire management agencies are concerned that wild fires in the Crystalbrook area could threaten numerous residential properties. The Crystalbrook Bushfire Plan seeks the following outcomes:

- Describe the extent of bushfire hazard.
- Identify possible bushfire ignition areas.
- Describe the location of existing and potential fire control lines and fire breaks.
- List the roles and responsibilities for bushfire management.
- List the proposed schedule of bushfire mitigation tasks.

While this proposed Community Bushfire Management Plan provides guidelines on how the Crystalbrook bushfire hazard could be managed. Each landholder is responsible under legislation to manage their own bushfire hazard. The Council encourages landholders to discuss their bushfire planning and management with their neighbours.

The Council has developed this Community Bushfire Management Plan in consultation with the Queensland Fire and Emergency Services (QFES), Reef Catchments, and representatives of the local Rural Fire Brigade. The information contained in this Bushfire Plan is based on data collected from stakeholders over recent years and information available on the Queensland Rural Fire Brigade website.

Acknowledgements

The Whitsunday Regional Council would like to thank the following stakeholders who have contributed to the Crystalbrook Community Bushfire Management Plan;

- Queensland Fire and Emergency Services (QFES)
- Reef Catchments Natural Resource Management Group
- Kelsey Creek Rural Fire Brigade

Document Control

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1. Introduction

Crystalbrook is a rural locality approximately 15 kilometres west of Proserpine between the Proserpine River and Kelsey Creek. The Crystalbrook area has been identified as having a medium to high bushfire hazard due to the vegetation type, slope, terrain and aspect. The Crystalbrook area has a population of less than 200 residents.

The locality of Crystalbrook has a history of planned and unplanned bushfire. Crystalbrook has a risk for loss of life and/or property if the bushfire hazard is not managed appropriately. There are numerous residential dwellings located in and adjacent to flammable vegetation. Fire Management agencies are concerned that wildfires in the Crystalbrook area could cause damage to a number of properties which are surrounded by Eucalypt and Acacia woodland.

The Council, together with the Queensland Fire and Emergency Services (QFES) have defined an area in the Crystalbrook area which has vegetation, topographic conditions and residential land use which warrant more detailed community bushfire planning. The Crystalbrook Fire Plan area has been defined based on the likelihood of bushfires occurring and the residential lots which could be affected. The Crystalbrook Fire Plan area covers 3572ha. The Whitsunday Regional Council owns or manages 0ha of land in this area.

The purpose of this Community Bushfire Management Plan is to identify the actions required to reduce bushfire hazard in the Crystalbrook and surrounding area for the next 10 years (2024-2033) (Figure 1). The objectives of this Plan include;

- Identify where fire lines are required to protect life and property from fire,
- Identify possible bushfire ignition areas,
- Maintain an ecologically appropriate controlled burn program,
- Improve community awareness,
- Maintain coordination and communication between landowners,
- Description of a maintenance program to manage bushfire hazard and risk.

It is envisaged that this Community Bushfire Management Plan will be used as a communication tool to inform stakeholders and the community of the bushfire hazard within Crystalbrook and how it could be managed. Ultimately, each landholder will be responsible for managing bushfire hazard on their own land. The Council encourages a coordinated and cooperative approach to community bushfire hazard management.

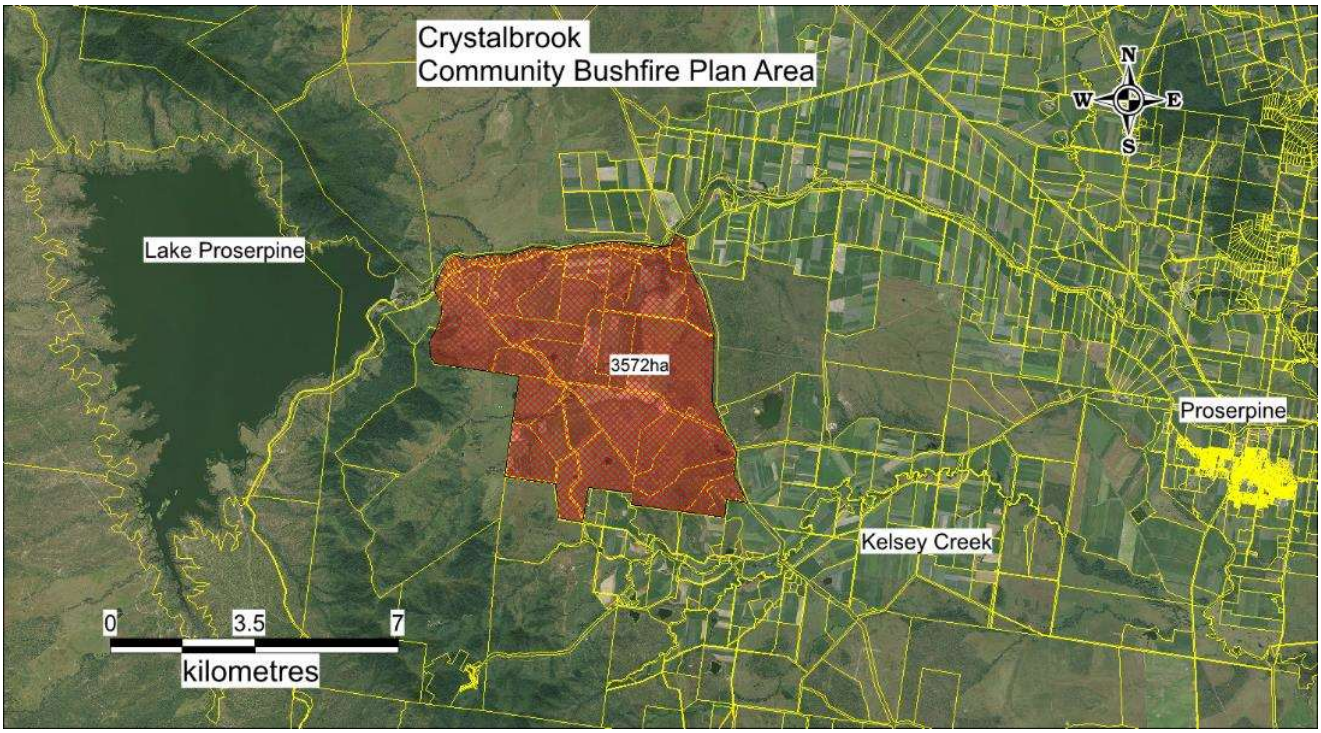

Figure 1: *The Crystalbrook Community Bushfire Management Plan area.*

2. Background

2.1 Land Tenure and Ownership

The Crystalbrook Community Bushfire planning area covers approximately 3572ha. There is 0 ha owned or managed by the Whitsunday Regional Council. The upland area to the west of the study area is part of the Clarke Range and is managed by the Queensland Government. There are 26 rural lots covering 3496ha and 32 rural residential properties covering 76ha.

Figure 2: *Land tenure.*

2.2 Site Description

Geology, Landform and Soils

The geology of the Crystalbrook area was mapped by the Queensland government in 1972. An extract of the Proserpine geology map is shown in figure 3. The hills are formed on Carmila Beds (Pla) which are Lower Permian in age (298 to 252 million years) and dominated by acid to intermediate volcanic and sedimentary deposits. The geology influences the fertility of the soils and also the type of vegetation which occurs.

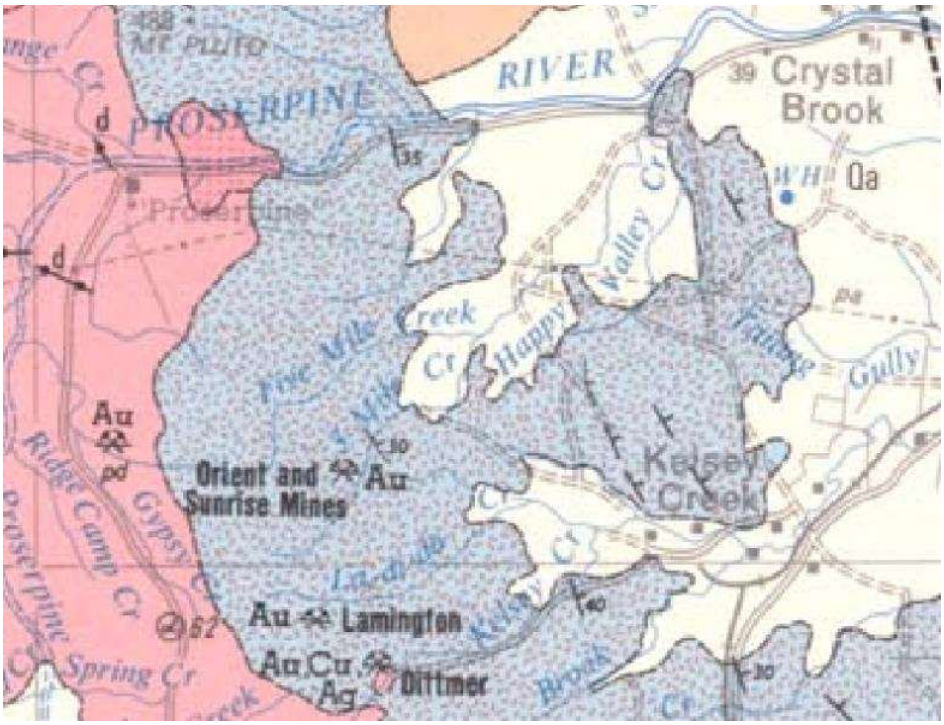

Figure 3: *The geology map covering the Crystalbrook area (Paine and Cameron, 1972).*

The soils of the Crystalbrook area were mapped by Hardy (2003). The main soils in the northern section of the Management Area in the hillslope areas are shallow sandy, dispersive duplex soils with low fertility (Dittmer -Di and Ossa- Os soil profile classes) (Figure 4).

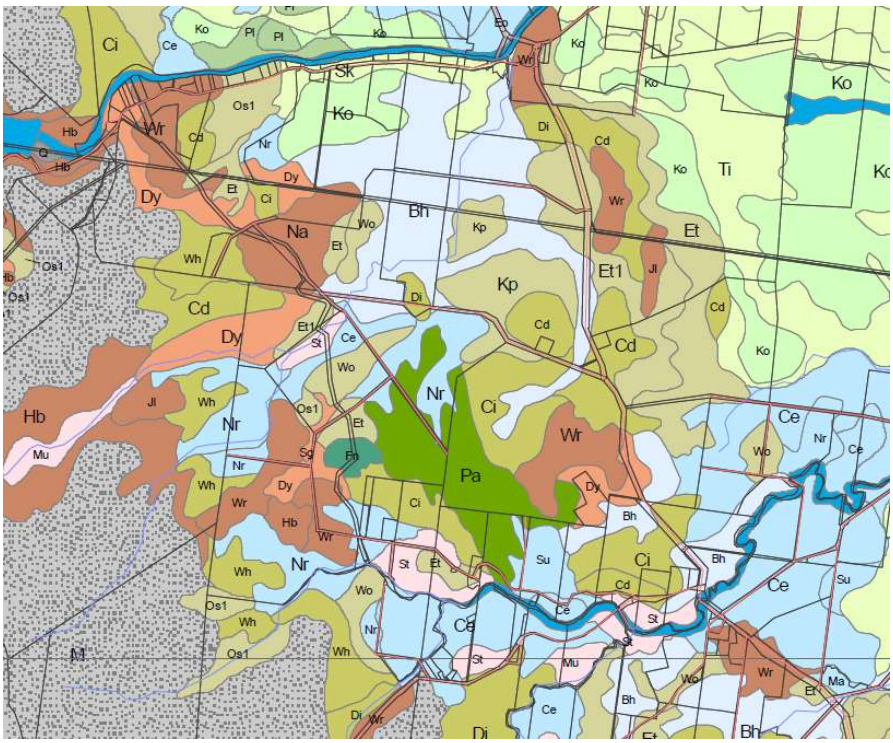

Figure 4: *The soils of the Crystalbrook area.*

Vegetation

The vegetation of the Crystalbrook area has been mapped by the State government. The regional ecosystem map for the Crystalbrook area can be found in the appendix of this report. The geology, fertility of the soils and rainfall patterns influence the vegetation of the Crystalbrook area. The dominant vegetation surrounding the Crystal brook area is sugarcane land, cleared grazing land and eucalypt woodland. The dominant regional ecosystems are:

- RE 8.3.5. Eucalyptus platyphylla and/or Lophostemon suaveolens and/or Corymbia clarksoniana woodland on alluvial plains
- Re 8.12.6 - Eucalyptus drepanophylla +/- E. platyphylla +/- Corymbia clarksoniana woodland to open forest on low to medium hills on Mesozoic to Proterozoic igneous rocks
- RE 8.12.18. Semi-evergreen notophyll/microphyll to complex notophyll Argyrodendron spp. vine forest +/- Araucaria cunninghamii, of foothills and uplands on near-coastal ranges and islands, on Mesozoic to Proterozoic igneous rocks

2.3 Bushfire Legislation and Policy

Australia and Queensland

All levels of government have a responsibility and role in bushfire management. In 2014, the Council of Australian Governments approved the National Bushfire Management Policy Statement (National Forest Fire Management Group, 2014). The National Policy identifies Local government and other landholders having an important role in bushfire management and planning. The National Bushfire Policy identifies four main strategic objectives and 14 bushfire management goals. The four strategic National bushfire management objectives are:

- Effectively managing the land with fire
- Involved and capable communities
- Strong land, fire and emergency partnerships and capability
- Actively and adaptively managing risk

In 2020, the Commonwealth government initiated a Royal Commission into bushfires. The final Royal commission report contained 80 recommendations (CoA, 2020). Of the 80 recommendations there are four which are particularly relevant to the development of the Whitsunday Paradise Community Bushfire Plan:

- **Recommendation 10.1 Disaster education for individuals and communities**
  - State and territory governments should continue to deliver, evaluate and improve education and engagement programs aimed at promoting disaster resilience for individuals and communities.
- **Recommendation 11.1 Responsibility for local government disaster management capability and capacity**
  - State and territory governments should take responsibility for the capability and capacity of local governments to which they have delegated their responsibilities in preparing for, responding to, and recovering from natural disasters, to ensure local governments are able to effectively discharge the responsibilities devolved to them.
- **Recommendation 11.2 Resource sharing arrangements between local governments**
  - State and territory governments should review their arrangements for sharing resources between their local governments during natural disasters, including whether those arrangements:
    - provide sufficient surge capacity, and
    - take into account all the risks that the state or territory may face during a natural disaster.

- **Recommendation 19.3 Mandatory consideration of natural disaster risk in land-use planning decisions**
    - State, territory and local governments should be required to consider present and future natural disaster risk when making land-use planning decisions for new developments.

There is a legislative requirement under Common Law and the *Queensland Fire and Emergency Services Act 1990* for Local Government and residents as owners and occupiers of land to prevent fires escaping from their land and damaging property (Tran and Peacock, 2002). Councils and other landholders have an obligation to manage their land responsibly to prevent the loss of life or property and reduce the 'human' impacts of bushfires. Landholders are also required however to achieve this and still maintain their obligations under other legislation. Obligations under the *Nature Conservation Act 1992* for example require local authorities to protect and conserve rare or threatened species, biodiversity and ecological processes.

The *Fire and Emergency Services Act 1990* is the principle legislation that deals with lighting fires in the open in Queensland. The Act makes it illegal to light a fire without a 'Permit to Light Fire' issued by a fire warden.

The *Queensland Vegetation Management Act (1999)* regulates vegetation clearing. However, there are exemptions available to clear vegetation to develop and maintain fire breaks and fire control lines. The exemptions are found in the appendix of this report.

Whitsunday Regional Council

Whitsunday Regional Council developed a Bushfire Management Policy and Bushfire Management Plan in 2018. The purpose of the Policy is to define Council's intension in bushfire management, planning and on-ground actions. The purpose of the Council's Bushfire Plan is to identify high risk Council lots for bushfire risk and outline a program of works to better manage bushfire risk on Council managed lots. The Council Bushfire Management Plan lists community education and awareness concerning bushfire hazard as an important action and outcome.

Council has developed a local law which includes the regulation of fires. The Whitsunday Regional Council Local Law No. 3 (Community and Environmental Management) 2014 defines fire hazard;

- s16 Fire hazards
    - (1) This section applies where an authorised person forms the opinion that a fire hazard exists on an allotment.
    - (2) The authorised person may, by compliance notice given to the responsible person for the allotment, require the responsible person to take specified action to reduce or remove the fire hazard.

The Whitsunday Regional Council Subordinate Local Law No. 3 (Community and Environmental Management) 2014 provides more information on the regulation of fire hazard:

- s8 Fire hazards—Authorising local law, s 16(3)(b):
    - For section 16(3)(b) of the authorising local law, the following are declared to be fire hazards—
        - (a) live cinders or hot ash that is not enclosed in a fireplace so constructed as to prevent the escape of cinders or ash;
        - (b) a substantial accumulation of grass clippings that is liable to spontaneous combustion;
        - (c) dry vegetation that could be easily ignited or other flammable materials;
        - (d) abandoned sugar cane crops which have not been harvested for 24 months or more;
        - (e) accumulation of goods and materials that could ignite or cause danger to persons or property.

2.4 Bushfire Hazard and Risk

Bushfire Hazard

Bushfire hazard refers to the conditions which could support the presence of a fire. There are a number of methods that can be used to assess bushfire hazard. One of the most commonly used bushfire hazard assessment tool is documented in the Queensland State Planning Policy 1/03. According to Risk Frontiers (2011) the Queensland Fire and Rescue Service have used the SPP 1/03 bushfire hazard methodology and the Interface Zone (I Zone) methodology to identify bushfire hazard areas. The I-Zone is where the urban-rural residential land use meets flammable vegetation (Risk Frontiers, 2011).

The Queensland State Planning Policy bushfire hazard process involves the assessment of vegetation, slope and aspect. Scores are allocated to vegetation, slope and aspect. The bushfire attribute scores are then added to determine the total hazard score.

The vegetation communities hazard assessment is shown in Table 1, the slope assessment is shown in Table 2 and the aspect assessment is shown in Table 3. The classification of bushfire hazard is shown in Table 4.

Table 1: *Vegetation communities assessment table used to determine vegetation hazard score.*

Vegetation Communities	Fire Behaviour	Hazard Score
Wet sclerophyll forest, tall eucalypts (>30m), with grass and mixed shrub understorey	Infrequent fires under severe conditions, flame lengths may exceed 40m, floating embers attack structures for 1 hour, radiant heat and direct flame are destructive for 30 minutes.	10
Paperbark heath and swamps, eucalypt forest with dry-shrub ladder fuels.	Fire intensity depends on fuel accumulation, but can be severe, with flame lengths to 20m, spot fires frequent across firebreaks, radiant heat and direct flame for 15 minutes.	8
Grassy eucalypt and acacia forest, exotic pine plantations, cypress pine forests, wallum heath	Fire intensity may be severe with flam lengths to 20m, but less attack from embers	6
Native grasslands (ungrazed), open woodlands, cane fields	Fast moving fires, available to fire annually to 4 years. Usually no ember attack, radiant heat for >10m, duration < 2minutes.	5
Intact acacia forests, with light grass to leaf litter, disturbed rainforests.	Fires infrequent, usually burn only under severe conditions, relatively slow fires, usually little ember attack.	4
Orchards, farmlands, kikuyu pastures	Fires very infrequent, slow moving, may be difficult to extinguish, frequent fire breaks.	2
Grazed grassland, slashed grass	Grazing reduces intensity and rate of spread of fire, duration < 2 minutes.	2
Desert lands (sparse fuels), mowed grass	Gaps in fuel, usually slow fire spread.	1
Intact rainforest, mangrove forest, intact riverine rainforest	Virtually fire proof.	0

Table 2: *The slope assessment table used to determine the slope hazard score.*

Slope	Hazard Score
Gorges and Mountains (>30%)	5
Steep Hills (20% - 30%)	4
Rolling Hills (10% to 20%)	3
Undulating (5% to 10%)	2
Plain (0% to 5%)	1

Table 3: *The aspect assessment table used to determine the aspect hazard score.*

Aspect	Hazard Score
North to North-west	3.5
North-west to West	3
West to South	2
North to East	1
East to South and all land under 5% slope	0

Table 4: *The determination of bushfire hazard using the Queensland SPP 1/03 system.*

Total Hazard Score	Severity of Bushfire Hazard
13 or greater	High
6 to 12.5	Medium
1 to 5.5	Low

Fuel load is a main contributor to bushfire hazard (Middelmann, 2007). There are a number of methods used to estimate, measure and assess fuel loads. Hines *et al.* (2010) have developed a system of measuring forest fuel loads in Victoria. The method developed by Hines *et al.,* (2010) for estimating fuel loads is based on separating the forest into fuel layers and then estimating or measuring the potential fuel within each of these layers. The amount of fuel contained in these layers is measured in terms of tonnes per hectare.

More recently the CSIRO have developed a slightly different approach to determining and mapping bushfire hazard (Leonard, 2014). The methods developed by Leonard *et al.,* (2014) have been used to develop the current Queensland bushfire hazard mapping. The CSIRO method uses vegetation type, slope and estimated fuel load to allocate land to 20 Vegetation Hazard Classes.

The Queensland Fire Emergency Service (QFES) have produced bushfire hazard rating maps for Queensland. Bushfire hazard is rated as either low, medium or high based on vegetation type, aspect, topography and climate. The QFES bushfire hazard rating maps are usually produced at a scale of 1:250,000 or 1:100,000. Bushfire hazard areas rated as low on the QFES maps mostly relate to rainforest areas, while high risk areas relate to Eucalypt and wattle areas. The bushfire hazard maps can be a useful guide to bushfire hazard and the likely risk of bushfire occurring in a locality. However, these bushfire hazard maps may not be accurate on properties less than 20ha. Land with a high or medium bushfire hazard rating should have some bushfire management plan or process in place.

Bushfire Risk

Bushfire risk refers to the likely occurrence or frequency of a bushfire. Middlemann, (2007) states that “the likelihood of bushfire hazard can be summarised in terms of the probability of a fire arriving at a point in the landscape and the intensity of the fire at that point “. Risk can be increased due to a number of factors including a high bushfire hazard and proximity to ignition sources such as roadsides and populated areas. Bushfire planning and mitigation measures can reduce bushfire hazard and risk.

Local governments are involved in bushfire risk reduction measures such as the development of local laws regulating fires, development planning, development of disaster management plans and implementation of bushfire mitigation measures (Middlemann, 2010).

There are a number of methods used to measure risk. The NSW Rural Fire Service (2008) have developed a matrix to describe bushfire risk (Figure 5). The NSW Rural Fire Service risk matrix requires the determination of the likelihood of a bushfire occurring and the likely consequences.

Consequence / Likelihood	Minor	Moderate	Major	Catastrophic
Almost certain	High	Very High	Extreme	Extreme
Likely	Medium	High	Very High	Extreme
Possible	Low	Medium	High	Very High
Unlikely	Low	Low	Medium	High

Figure 5: *The determination of bushfire risk (NSW Rural Fire Service 2008).*

The likelihood of a bushfire occurring will depend largely on the bushfire hazard. The consequence of a bushfire occurring at a given location will depend on the environmental values and development present (NSW Rural Fire Service, 2008).

New bushfire fire line intensity mapping

In 2019, the Queensland government released the Bushfire Resilient Communities Technical Reference Guide for the State Planning Policy. The Bushfire Resilient Communities report outlines a revised method for assessing bushfire hazard. In addition, the report provides technical guidance on procedures for:

- reviewing bushfire prone area mapping
- undertaking a Bushfire Hazard Assessment (BHA)
- undertaking a Vegetation Hazard Class Assessment
- calculating asset protection zone provisions, and,
- preparing a Bushfire Management Plan and Landscape Maintenance Plan (QFES, 2019).

The new method of determining and mapping bushfire hazard is centred on the concept of Fireline intensity. According to QFES (2019), “potential fire line intensity is a function of fire weather severity (measured by the Forest Fire Density Index or FFDI), landscape slope and fuel load based on classified vegetation communities according to the method described by the CSIRO (figure 6). Fireline intensity is a measure of energy released from the flame or combustion zone, one of whose sides is a unit length of fire front (measured in kilowatts per metre of flaming front) (QFES, 2019). According to QFES (2019) Forest Fire Danger Index (FFDI) is the most widely used fire weather index in Australia and forms part of many operational systems and instruments, such as AS3959 (Standards Australia, 2009). The bushfire hazard maps produced by the Queensland are now expressed in terms of “potential Fireline intensity”. The bushfire intensity levels are medium (4,000 – 20,000 kW/m), High (20,000 -40,000 kW/m), Very high (40,000+ kW/m) (QFES, 2019).

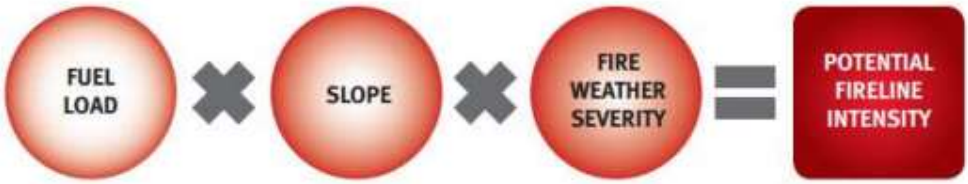

Figure 6. The attributes used to calculate potential Fireline intensity.

Crystalbrook Bushfire Hazard

The Queensland State government have mapped the bushfire hazard in the Crystalbrook area (Figure 6). The bushland through most of Crystal brook has a medium to very high bushfire hazard. The sugarcane areas have been mapped as low Bushfire hazard (white).

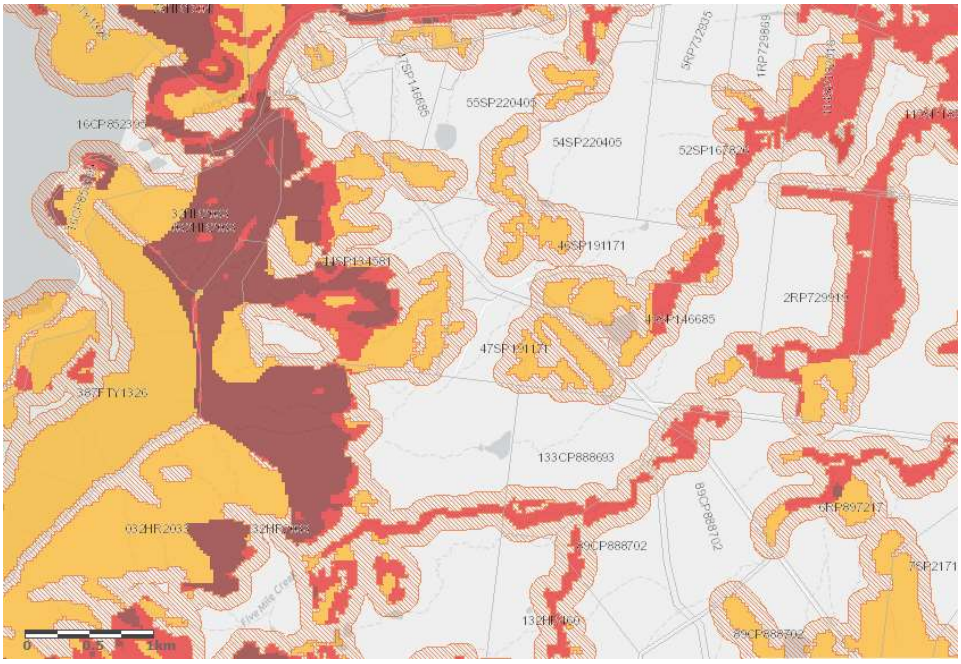

Figure 7: *Showing the bushfire hazard in the Crystalbrook area (Red=High hazard, Orange=Medium hazard)*

Source: https://spp.dsdip.esriaustraliaonline.com.au/geoviewer/map/planmaking).

2.5 Bushfire Management Guidelines

Bushfire Guidelines for Regional Ecosystems

The regional ecosystem characteristics can provide information which can guide bushfire management and planning. Council is partially included in the Central Queensland Coast and Northern Brigalow Belt bioregions. There are 83 individual regional ecosystems in the Central Queensland Coast bioregion and 172 regional ecosystems found in the Northern Brigalow Belt bioregion.

The type of vegetation community, it's fire requirements and hazard can be used for bushfire planning. Bushfire management advice for a selected number of regional ecosystems is listed in Table 5. The bushfire management advice provided by the Queensland State government for each regional ecosystem is found at: https://publications.qld.gov.au/dataset/redd/resource/c77196df-7af9-4c09-ac88-256867c39806

Table 5: *Showing the bushfire management advice for selected regional ecosystems in the Crystalbrook Area.*

Bioregion	Regional Ecosystem	Description	Bushfire Advice
CQC	8.3.5	Eucalyptus platyphylla and/or Lophostemon suaveolens and/or Corymbia clarksoniana woodland on alluvial plains	SEASON: Vary; winter, late winter and storm burns. INTENSITY: Moderate. INTERVAL: No more frequent that 3 - 5 years except were weed control takes priority (i.e., within rehabilitation zones). STRATEGY: Aim to burn no more that 70 % of any given area preferably less. ISSUES: Fire regimes required by this ecosystem will be largely dependent on the level and type of weed infestations present, and/or the level of vine forest emergence present. The implications of grazing either domestic and/or feral animals also needs consideration. In areas historically subjected to cattle grazing (lack of fire over long periods) or frequent burning, this woodland may have significant gaps in canopy layering. Fire management should consider the long-term goal of maintaining the woodland structure.
CQC	8.12.6	Eucalyptus drepanophylla +/- E. platyphylla +/- Corymbia clarksoniana woodland to open forest on low to medium hills on Mesozoic to Proterozoic igneous rocks	SEASON: Any time providing sufficient soil moisture is available. INTENSITY: Moderate. INTERVAL: 4-6 years. STRATEGY: Retain at least 20% unburnt in any given year. ISSUES: The location of this ecosystem within the landscape makes it susceptible to widespread fire (both planned and wild). Emphasis should be placed on the general principles of mosaic burning, and diversity of fire types. Progressive burning may be a useful tool in some circumstances.
CQC	8.12.18	Semi-evergreen notophyll/microphyll to complex notophyll Argyrodendron spp. vine forest +/- Araucaria cunninghamii, of foothills and uplands on near-coastal ranges and islands, on Mesozoic to Proterozoic igneous rocks	ISSUES: Fire sensitive.
CQC	8.12.20	Eucalyptus drepanophylla and/or E. platyphylla +/- Corymbia spp. +/- E. crebra woodland on low gently undulating landscapes on Mesozoic to Proterozoic igneous rocks	SEASON: 8.12.20a: Winter through to storm burning. 8.12.20c: Any time providing sufficient soil moisture is present (active growing season). INTENSITY: Low to moderate. INTERVAL: 8.12.20a: 3 - 6 years. 8.12.20c: 4 - 8 years. STRATEGY: 8.12.20a: Ensure at least 30% remains unburnt in any given area. 8.12.20c: Aim to retain about 25% unburnt. ISSUES: Emphasis should be placed on the general principles of mosaic burning, and diversity of fire types.

Other Regional Fire Management Guidelines

The Reef Catchments Natural Resource Management Group together with the Clarke Connors Range Bush Fire Consortium developed fire management guidelines for the Central Queensland coast region (Reef Catchments, 2009).

The fire guidelines have been developed for 12 landscape types. For each of the 12 landscape types recommendations are made for fire frequency, fire intensity, season and whether mosaic burns are required.

The purpose of the guidelines is to reduce unplanned burns (wildfires). The landscape types and the recommended guidelines are shown in Table 6.

Table 6: *Clarke - Connors range fire management guidelines.*

Landscape Type	Fire Frequency	Fire Intensity	Preferred Season for Hazard Reduction	Mosaic Burning
Mangroves and estuaries	Not burnt	Nil	Nil	No
Beaches and foreshores	Not burnt	Nil	Nil	No
Hind dunes	Not burnt	Nil	Nil	No
Riverine and wetlands	Not burnt	Nil	Nil	No
Alluvial flat country	Every 5 years	Medium	Winter	50%
Grassy woodlands and open forests	Every 5 years	Medium	Winter	50%
Tall wet eucalypt forests	Every 3-5 years	Medium	Winter	50%
Eucalypt forest and woodlands on hills	Every 5 years	Medium	Winter	25%
Rainforest and vine thickets	Not burnt	Nil	Nil	No
Island and rocky headlands	Every 3-5 years	Medium	Winter	50%

The Queensland State government have developed Planned Burn Guidelines for Central Queensland Coast Bioregion of Queensland (DNPRSR, 2012). The planned burn guidelines are used to plan and implement prescribed burns in National Parks and State land. The State government guidelines are also applicable to Council owned and managed bushland lots.

2.6 Whitsunday Bushfire Management Planning Framework

The bushfire management and planning structure and workflow between organisations is reflected in Figure 8. Council has a Bushfire Management Policy and a Bushfire Management Plan to guide the management of bushfire hazard and risk on Council managed lots.

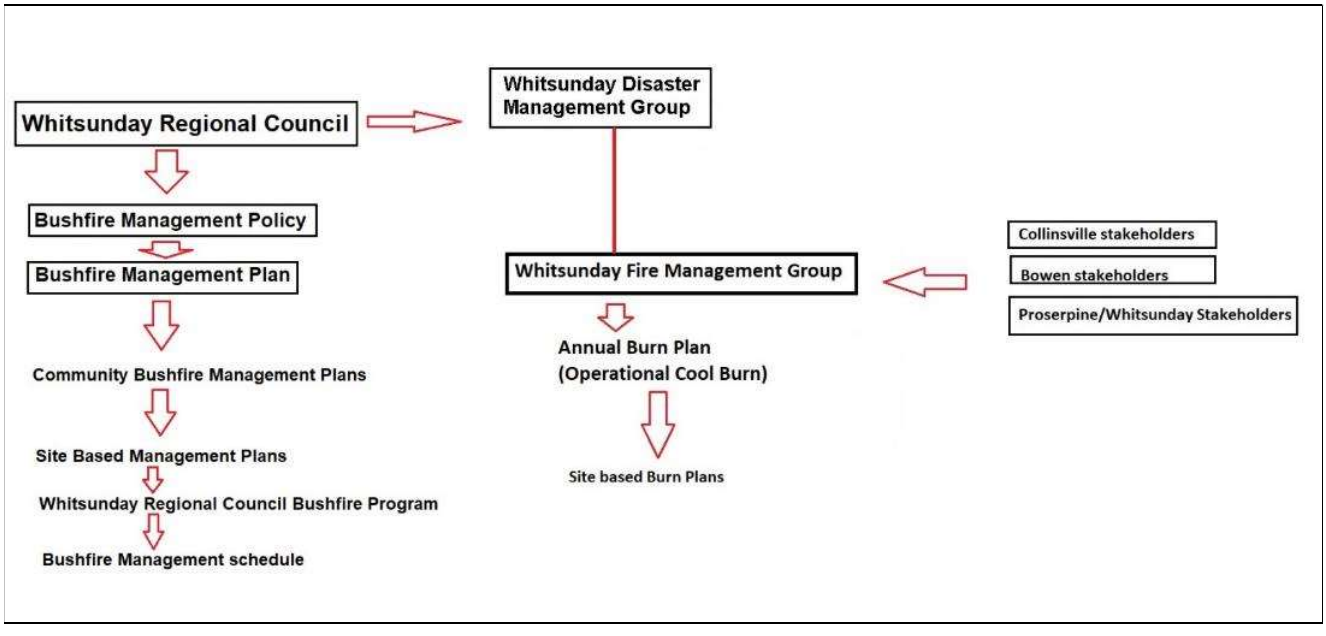

Figure 8: *The bushfire management and planning framework.*

2.7 Bushfire Mitigation and Management Strategies

There are a number of strategies that can be undertaken to reduce bushfire hazard and risk. Table 7 lists the bushfire risk factors and some of the mitigation measures that can be used to reduce the occurrence of bushfires.

Table 7: *Common bushfire mitigation strategies.*

Bushfire Factor	Mitigation Strategy or Measure
Litter build up from Eucalypt vegetation communities	• Obtain a permit to light fire from the local fire warden to reduce fuel loads. • Liaise with a local Rural Fire Brigade to undertake a fuel reduction burn. Subsequent burns may need to be conducted every 3 years. • Clear juvenile gum tree samplings from areas near the house and property. • Gum trees (such as Iron barks and Blue gums) should be removed from within 30 m of the house and properties. This may require an application to Council for permission. If in doubt contact the Council for advice.
Grass build up	• Grass species such as Guinea grass (*Megathyrsus maximus*) respond well to fire. This species needs to be chemically controlled, kept short through mowing or slashing, or grazed. • Revegetate areas with rainforest species to shade out grass and therefore reduce fuel loads. • Grass should be kept to a minimal height around houses and property using mowing, brush cutting or use of approved herbicides depending on site conditions. • Establish separation zones between buildings and grassy fuel by installing hard areas e.g., paving and gravel etc. • The use of cattle/live-stock to control grass growth.
Aspect	• Northerly aspects are worse for fires. The siting or positioning of houses on a property should consider aspect. • The head of gullies should also be avoided • East to south facing slopes generally have a lower hazard rating.
Slope	• Updraughts assist fire movement upslope. There should be a sufficient distance down slope of houses and properties that are free of fire prone vegetation. • Slopes above 30% have a higher hazard score opposed to flat to undulating land. • Installation of hard areas of gravel and paving may be necessary. • To reduce erosion on steep slopes, these areas could be revegetated using rainforest shrubs or low growing grasses that are easily controlled and are less flammable.
Climate	• Hot dry climates assist fire. Beware of climatic conditions that increase fire risk severity such as the dry season in the Whitsunday's, especially between the months of July and December.
Proximity to land uses that use fire	• Fire breaks could be used to reduce spread of fire, provide access for fire fighters, a secure line from which to burn from or back burn from. • Sugarcane land has a moderate to high bushfire risk
Vegetation communities that have a high fire risk	• Fire breaks could be used to reduce the spread of fire. The SPP recommends that perimeter roads be constructed that are cleared for 20 m AND comply with local government standards. • Fire maintenance trails should only be accepted if it is not practicable to provide firebreaks in the form of a road due to topographic conditions or vegetation constraints. • The construction of the fire breaks should consider plants protected under the *Nature Conservation Act (1992)* or communities protected under the Vegetation Management legislation. • Site the house in the lowest risk area on the property. • For lots greater than 2500m2, buildings and structures should be set back from hazardous vegetation by at least 1.5 times the height of the canopy vegetation (particularly if they are Eucalypt) or a minimum of 10 m. • Retention of rainforest in drainage lines and creeks will assist in reducing bushfire risk. • Design subdivisions without cul-de-sacs and provide access for a conventional drive vehicle (e.g., fire engine).

2.8 Previous Bushfire Management

This Bushfire Plan is the first formal Bushfire Plan for the Crystalbrook area.

The following is a brief summary of previous planned and un-planned burns in the Crystalbrook area:

- Unplanned-
    - 2009
    - 2010
- The fire history as recorded on the North Australia and Rangelands Fire History website (NAFI) is shown in the appendix.

2.9 Community Consultation

The Whitsunday Regional Council conducted an initial community meeting on the 17th of May 2023 to discuss the potential development of a Community Bushfire Plan.

The draft Crystalbrook Community Bushfire Plan was placed out for community consultation from the 21st of September to the 27th of October 2023. The following were some of the comments from the community;

- Control of planned burns on rural properties.
- Risk of fires starting on rural residential properties.
- Concern over planned burns escaping properties and impacting on smaller rural residential lots.

3. Management Plan

3.1 Bushfire Plan Goals

The goals of this Bushfire Management Plan are:

- To protect life and property as a priority then ensure the bushfire management practises maximise biodiversity values.
- To identify possible ignition areas.
- To ensure all stakeholders support a common bushfire management direction.
- To pro-actively manage the bushfire hazard within and surrounding Crystalbrook.
- To develop and maintain good relationships between the stakeholders and landholders and encourage cooperative approaches to manage bushfire hazard in the area.

3.2 Stakeholder General Roles and Responsibilities

The general roles and responsibilities for bushfire management, planning and mitigation are summarised in Table 8.

Table 8: *The main tasks for each stakeholder.*

Task	Council	Rural Fire	QFES	QPWS	Landholder
Legal control of the fire	✓	✓			✓
Conduct hazard reduction burns		✓			✓
Applying for permits					✓
Supervising the hazard reduction burn		✓	✓	✓	✓
Informing the community	✓	✓			
Monitoring fuel loads		✓			✓
Maintaining the fire breaks					✓
Developing and updating the bushfire plan	✓	✓	✓	✓	
Reporting hazard reduction burns		✓	✓		✓
Regulating and control of illegal dumping	✓				
Manage accumulation of green waste	✓				✓

3.3 Bushfire Management Areas and Mitigation Measures

Main ignition areas and risk

The landscape of the Crystalbrook area needs to be prioritised in terms of bushfire management and planning. Areas close to residential areas need a higher level of monitoring and fuel management than areas further away. The likely ignition areas in the Crystal brook area include:

- Ignition area 1 – Sugarcane land – South of Proserpine River
    - Cause – Fire escaping cane land
    - Likelihood – Low to medium
    - Risk condition and impact – With a northerly wind could drive fire south into grazing land spreading the fire.

- Ignition area 2 – Sugarcane land – Kelsey Creek
    - Cause – Fire escaping cane land
    - Likelihood – Low to medium
    - Risk condition and impact – With a south-eastly wind could drive fire north into grazing land spreading the fire.
- Ignition area 3 – Crystal brook grazing land
    - Cause – Fire escaping planned burns on grazing land
    - Likelihood – Low to medium
    - Risk condition and impact – With a northerly wind could drive fire south into grazing land spreading the fire.
- Ignition area 4 – Bushland – Spoors rd. – Tailing gully
    - Cause – Fire escaping planned burns on large bushland area
    - Likelihood – Medium
    - Risk condition and impact – With an easterly wind could drive fire west into grazing land spreading the fire.

Fire Management Areas and bushfire hazard

Fire Management Areas (FMAs) are tracts of land which have uniform vegetation, land use, bushfire hazard, risk and assets. The Crystalbrook area has a complex assemblage of land use, lots of land and landscape/vegetation areas. The complex land use and vegetation patterns have meant that there is a relatively high number of FMA's mapped in the Crystalbrook Bushfire Plan area. There are 71 Fire Management Areas identified for the Crystalbrook Fire Area (Figure 9). The high number of FMAs has been necessary to delineate so that a suitable bushfire hazard classification can be applied to the area, and a suitable planned burn regime developed. The Fire Management Areas have been classified for bushfire hazard (Figure 10). Each resident should be aware of the bushfire hazards on their property and adjacent to their property.

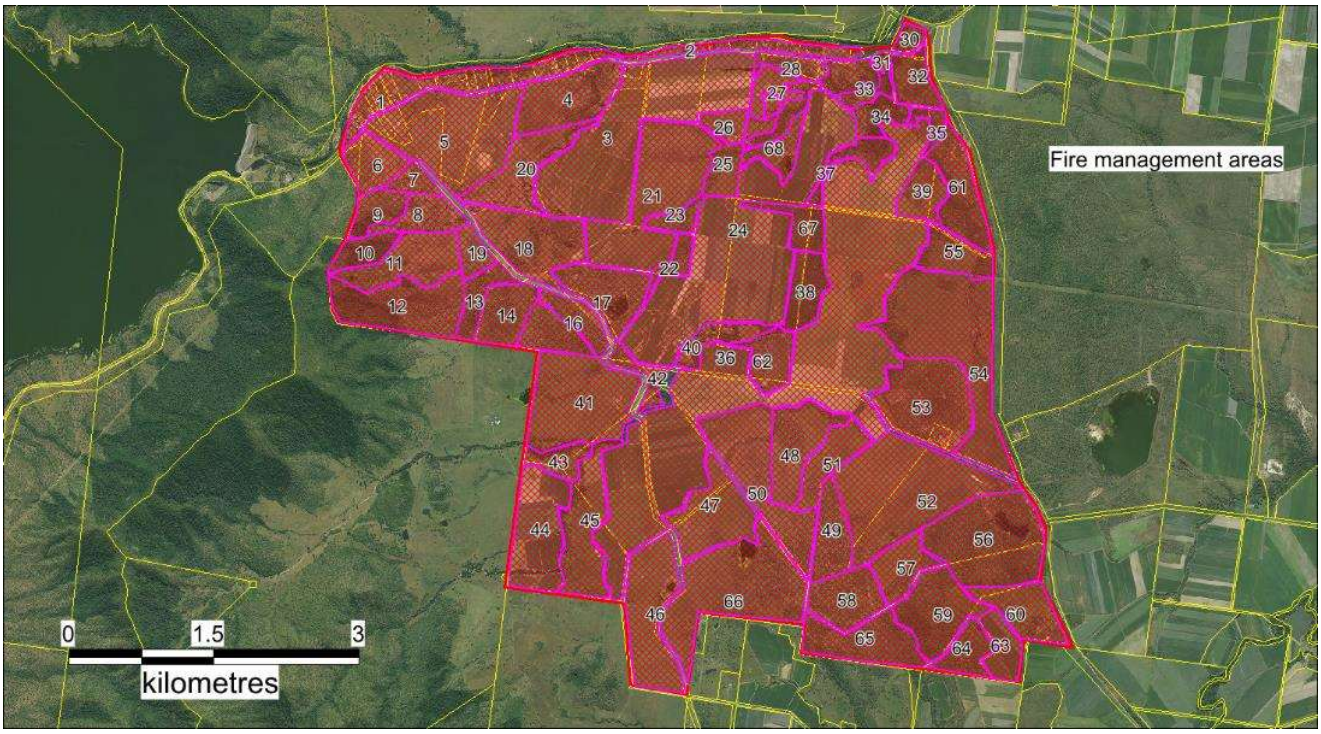

Figure 9: *The Crystalbrook fire management areas.*

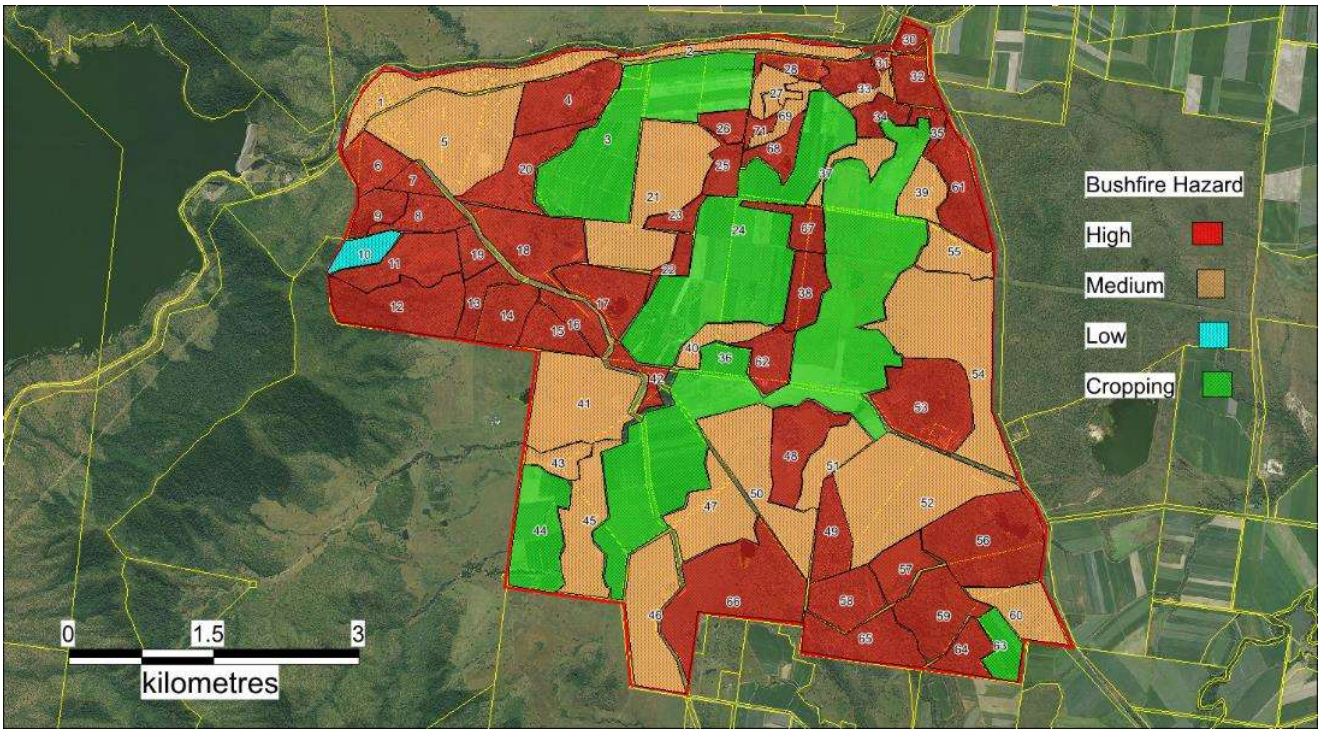

Figure 10: *Revised bushfire hazard rating.*

The Victorian state government has developed a system of prioritising bushfire management activities (DSE, 2012). The Victorian government have developed fire management zones as a means of prioritising land areas for bushfire management:

- APZ – Asset Protection zone - Areas close to residential areas – high priority for management (high hazard and high priority),
- BMZ – Bushfire Moderation zone – aim to achieve asset protection and achieve some ecological outcomes (medium hazard and medium priority)
- LMZ – Landscape management zone – planned burns are primarily undertaken for fuel reduction to maintain ecological processes (medium hazard and low - medium priority)
- PBEZ – Planned burning exclusion zone – no fire permitted (low-medium hazard and lower priority).

The priority for bushfire management activities have been reviewed to reflect the bushfire hazard rating. It is noted that there are individual residential properties on most of the 58 lots in the study area. In many cases there is cleared land around the residential houses. It is also noted that the dominant wind direction is from the south-east. The Asset Protection Zone (APZ) has been determined to be the rural residential lots on the Proserpine River. The majority of the Crystalbrook area has been mapped as “Landscape Management Zone” (LMZ) (Figure 11). The LMZ areas are land units where planned burns may be necessary to reduce fuel loads and maintain ecological processes. The BEZ management units have the potential for wildfires to threaten residential properties.

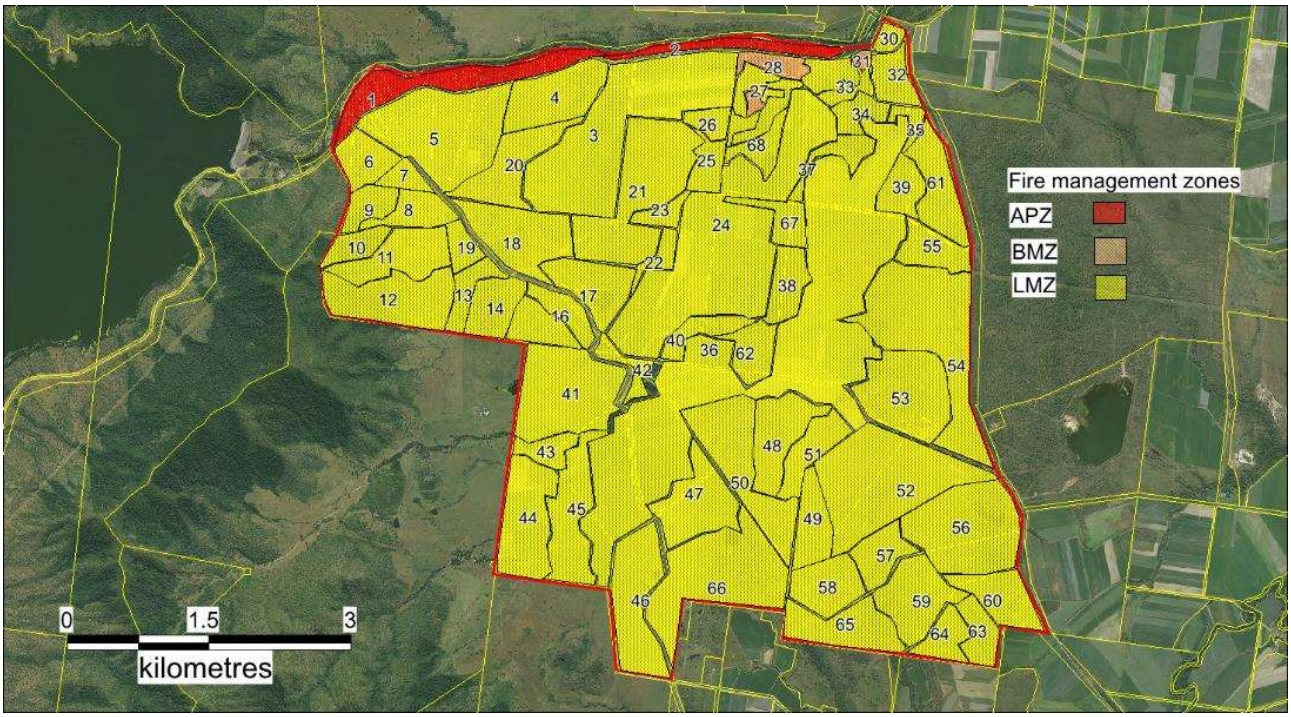

Figure 11: *The fire management areas and fire management class.*

Prescribed burn schedule

The prescribed burn program for Crystalbrook area will be programmed around the site vegetation, seasonal fuel load and timed for optimum climatic conditions. Graziers will need to consider the suitability of planned burns within their property grazing practices. The timing of prescribed burns will be based on recommendations as given at the time of annual hazard assessments. The frequency of prescribed burns will be guided by the recommendations set out in "Fire Management Guidelines" by Reef Catchments 2009, recommendations from the Queensland government, from site specific annual fuel load assessments and grazing practises.

The fire management areas will also be used to determine hazard reduction burn frequencies. The proposed planned burn frequencies for each vegetation type are shown in Table 9.

Table 9: *Vegetation communities and hazard reduction burn frequencies.*

Vegetation Community	RE	Hazard Reduction Burn Frequency	Fire Management Areas	Fire Zones
Eucalyptus platyphylla and/or Lophostemon suaveolens and/or Corymbia clarksoniana woodland on alluvial plains	8.3.5	3-5 years	Numerous	LMZ
Eucalyptus drepanophylla +/- E. platyphylla +/- Corymbia clarksoniana woodland to open forest on low to medium hills on Mesozoic to Proterozoic igneous rocks	8.12.6	3-7 years	Numerous	LMZ
Semi-evergreen notophyll/microphyll to complex notophyll Argyrodendron spp. vine forest +/- Araucaria cunninghamii, of foothills and uplands on near-coastal ranges and islands, on Mesozoic to Proterozoic igneous rocks	8.12.18	Not burnt	10	PBEZ
Eucalyptus drepanophylla and/or E. platyphylla +/- Corymbia spp. +/- E. crebra woodland on low gently undulating landscapes on Mesozoic to Proterozoic igneous rocks	8.12.20	3-7 years	Numerous	LMZ

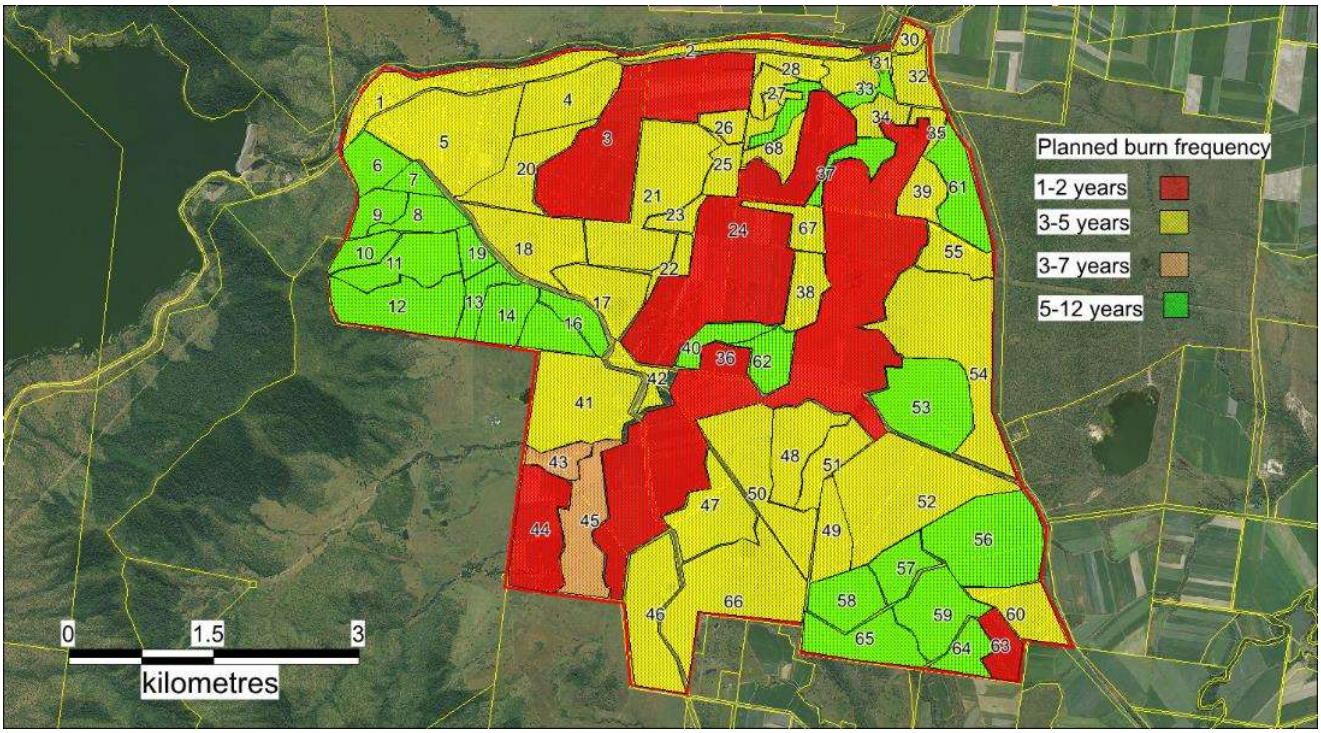

Figure 12: *Proposed planned burn frequencies.*

The bushfire hazard, risk to property and possible bushfire mitigation measures are suggested in table 10.

Table 10: *The bushfire hazard and mitigation measures for fire management units in the Crystalbrook area.*

Fire Area	Hazard	Zone	Planned burn frequency	Land use	Mitigation Options
1	Med	APZ	3-5	Rural res.	Use grazing and mowing the reduce grass growth. Maintain access track around boundary. 30m vegetation free buffer around house and sheds.
2	Med	APZ	3-5	Rural res	Use grazing and mowing the reduce grass growth. Maintain access track around boundary. 30m vegetation free buffer around house and sheds.
3	Crop	LMZ	1-2	Sugar	Consider green harvest
4	Med	LMZ	3-5	Grazing	Old re-growth vegetation. Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
5	High	LMZ	3-5	Rural res	Use grazing and mowing the reduce grass growth. Maintain access track around boundary. 30m vegetation free buffer around house and sheds.
6	High	LMZ	5-12	Bushland	Old re-growth vegetation. Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
7	High	LMZ	5-12	Bushland	Old re-growth vegetation. Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
8	High	LMZ	5-12	Bushland	Old re-growth vegetation. Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
9	High	LMZ	5-12	Bushland	Eucalypt woodland. Manage fire breaks around block.
10	Low	LMZ	5-12	Bushland - rainforest	Mostly rainforest. Mange firebreak around foot slope.
11	High	LMZ	5-12	Bushland	Eucalypt woodland. Manage fire breaks around block.
12	High	LMZ	5-12	Bushland	Eucalypt woodland. Manage fire breaks around block foot of hill.
13	High	LMZ	5-12	Bushland	Eucalypt woodland. Manage fire breaks around block.
14	High	LMZ	5-12	Bushland	Eucalypt woodland regrowth. Manage fire breaks around block.
15	High	LMZ	5-12	Bushland	Old re-growth vegetation. Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
16	High	LMZ	5-12	Bushland	Old re-growth vegetation. Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary

17	High	LMZ	3-5	Grazing	Old re-growth vegetation. Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
18	High	LMZ	3-5	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
19	High	LMZ	5-12	Bushland	Old re-growth vegetation. Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
20	High	LMZ	3-5	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
21	Med	LMZ	3-5	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
22	High	LMZ	3-5	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
23	High	LMZ	3-5	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
24	Crop	LMZ	1-2	Sugar	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
25	High	LMZ	3-5	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
26	High	LMZ	3-5	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
27	Med	BMZ	3-5	Grazing	Residential lot. Control grazing pressure to manage fuel loads. Maintain at least 30m mowed buffer around house and sheds.
28	High	BMZ	3-5	Grazing	Residential lot. Control grazing pressure to manage fuel loads. Maintain at least 30m mowed buffer around house and sheds.
29	High	LMZ	3-5	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
30	High	LMZ	3-5	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
31	High	BMZ	3-5	Grazing	Residential lot. Control grazing pressure to manage fuel loads. Maintain at least 30m mowed buffer around house and sheds.
32	High	LMZ	3-5	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
33	Med	LMZ	5-12	Bushland	Vegetation regrowth. Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
34	High	LMZ	3-5	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
35	High	LMZ	3-5	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
36	Crop	LMZ	1-2	Sugar	Consider green harvest.
37	Med	LMZ	5-12	Bushland	Vegetation regrowth. Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
38	High	LMZ	3-5	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
39	Med	LMZ	3-5	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
40	Med	LMZ	5-12	Bushland	Vegetation regrowth. Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
41	Med	LMZ	3-5	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
42	High	LMZ	3-5	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
43	Med	LMZ	3-7	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
44	Crop	LMZ	1-2	Sugar	Consider green harvest
45	Med	LMZ	3-7	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
46	Med	LMZ	3-5	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
47	Med	LMZ	3-5	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
48	High	LMZ	3-5	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
49	High	LMZ	3-5	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary

50	Med	LMZ	3-5	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
51	Med	LMZ	3-5	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
52	Med	LMZ	3-5	Grazing	Some regrowth of vegetation. Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
53	High	LMZ	5-12	Bushland	Eucalypt woodland. Manage fire breaks around block.
54	Med	LMZ	3-5	Grazing	Regrowth vegetation. Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
55	Med	LMZ	3-5	Grazing	Old regrowth. Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
56	High	LMZ	5-12	Bushland	Eucalypt woodland. Manage fire breaks around block.
57	High	LMZ	5-12	Bushland	Eucalypt woodland. Manage fire breaks around block.
58	High	LMZ	5-12	Bushland	Eucalypt woodland. Manage fire breaks around block.
59	High	LMZ	5-12	Bushland	Eucalypt woodland. Manage fire breaks around block.
60	Med	LMZ	3-5	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
61	High	LMZ	5-12	Bushland	Eucalypt woodland. Manage fire breaks around block.
62	High	LMZ	5-12	Bushland	Eucalypt woodland. Manage fire breaks around block.
63	Crop	LMZ	1-2	Sugar	Consider green harvest
64	High	LMZ	5-12	Bushland	Eucalypt woodland. Manage fire breaks around block.
65	High	LMZ	5-12	Bushland	Eucalypt woodland. Manage fire breaks around block.
66	High	LMZ	3-5	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
67	High	LMZ	3-5	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
68	High	LMZ	3-5	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
69	Med	LMZ	5-12	Bushland	Eucalypt woodland. Manage fire breaks around block.
70	Med	LMZ	3-5	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary
71	High	LMZ	3-5	Grazing	Control grazing pressure to manage fuel loads. Maintain a 3m wide track around boundary

3.4 Schedule of Bushfire Management and Mitigation Tasks

The schedule of bushfire management and maintenance tasks is summarised in Table 11.

Table 11: *Schedule of bushfire management actions.*

No	Task	Who is responsible	Timing
1	Assess fuel loads	Landholders and Rural Fire Brigade	May
2	Develop an annual fire plan	Rural fire brigade and residents	June
3	Approve the annual fire plan	Rural fire brigade	June
4	Slash fire lines/fire breaks	Landholders	May and October
5	Inspect condition of fire lines	Landholders	May
5	Earthworks for fire lines/breaks	Landholders	As required
6	Coordinate planned burns	Rural fire brigade/QFES and residents	As per approved plan
7	Community awareness	Rural fire brigade/QFES and residents	Use of media in May
8	Seeking fire permit	Landholders	As required

The draft schedule of planned burns for the various fire management areas are shown in Table 12.

Table 12: *The proposed timing of future planned burns for Crystalbrook management areas.*

Fire Management Area	Description	Zone	Planned Burn Frequency	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
1	Rural res.	APZ	3-5										
2	Rural res	APZ	3-5										
3	Sugar	LMZ	1-2										
4	Grazing	LMZ	3-5										
5	Rural res	LMZ	3-5										
6	Bushland	LMZ	5-12										
7	Bushland	LMZ	5-12										
8	Bushland	LMZ	5-12										
9	Bushland	LMZ	5-12										
10	Bushland - rainforest	LMZ	5-12										
11	Bushland	LMZ	5-12										
12	Bushland	LMZ	5-12										
13	Bushland	LMZ	5-12										
14	Bushland	LMZ	5-12										
15	Bushland	LMZ	5-12										
16	Bushland	LMZ	5-12										
17	Grazing	LMZ	3-5										
18	Grazing	LMZ	3-5										
19	Bushland	LMZ	5-12										
20	Grazing	LMZ	3-5										
21	Grazing	LMZ	3-5										
22	Grazing	LMZ	3-5										
23	Grazing	LMZ	3-5										
24	Sugar	LMZ	1-2										
25	Grazing	LMZ	3-5										
26	Grazing	LMZ	3-5										
27	Grazing	BMZ	3-5										
28	Grazing	BMZ	3-5										
29	Grazing	LMZ	3-5										
30	Grazing	LMZ	3-5										
31	Grazing	BMZ	3-5										
32	Grazing	LMZ	3-5										
33	Bushland	LMZ	5-12										
34	Grazing	LMZ	3-5										
35	Grazing	LMZ	3-5										
36	Sugar	LMZ	1-2										
37	Bushland	LMZ	5-12										
38	Grazing	LMZ	3-5										
39	Grazing	LMZ	3-5										
40	Bushland	LMZ	5-12										
41	Grazing	LMZ	3-5										
42	Grazing	LMZ	3-5										

43	Grazing	LMZ	3-7										
44	Sugar	LMZ	1-2										
45	Grazing	LMZ	3-7										
46	Grazing	LMZ	3-5										
47	Grazing	LMZ	3-5										
48	Grazing	LMZ	3-5										
49	Grazing	LMZ	3-5										
50	Grazing	LMZ	3-5										
51	Grazing	LMZ	3-5										
52	Grazing	LMZ	3-5										
53	Bushland	LMZ	5-12										
54	Grazing	LMZ	3-5										
55	Grazing	LMZ	3-5										
56	Bushland	LMZ	5-12										
57	Bushland	LMZ	5-12										
58	Bushland	LMZ	5-12										
59	Bushland	LMZ	5-12										
60	Grazing	LMZ	3-5										
61	Bushland	LMZ	5-12										
62	Bushland	LMZ	5-12										
63	Sugar	LMZ	1-2										
64	Bushland	LMZ	5-12										
65	Bushland	LMZ	5-12										
66	Grazing	LMZ	3-5										
67	Grazing	LMZ	3-5										
68	Grazing	LMZ	3-5										
69	Bushland	LMZ	5-12										
70	Grazing	LMZ	3-5										
71	Grazing	LMZ	3-5										

The development of fire breaks and fire control lines are a landholder's responsibility. Ideally the breaks should be created along property boundaries, or along contours, or between different forest types (e.g., rainforest- Eucalypt Forest). Fire breaks or control line tracks located on steep slopes will be subject to erosion and will cost more to maintain.

There are a number of locations where additional fire breaks could be beneficial and are shown in figure 13. A number of these proposed fire breaks are located on unformed road reserves in or near bushland areas.

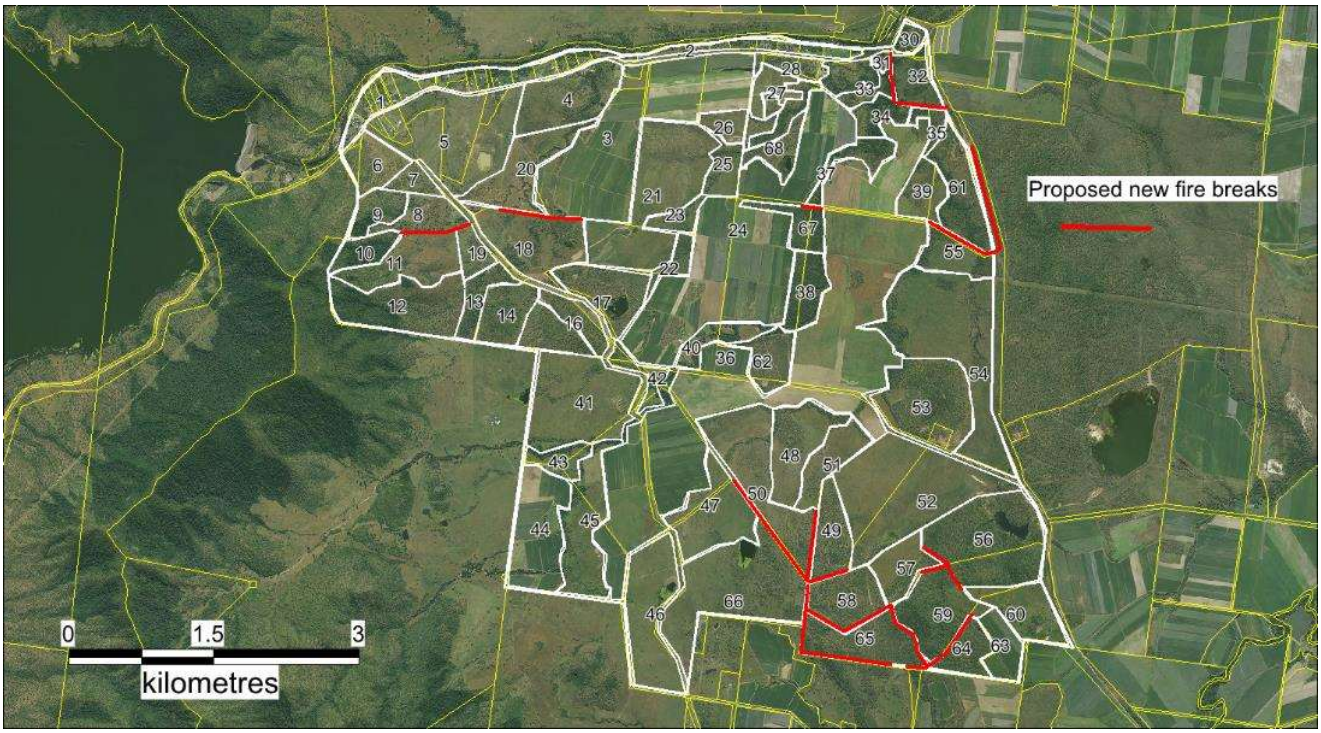

Figure 13. Proposed new fire breaks.

3.5 Fire Fighting – Response and Resources

The responsibility of responding to fires in the Crystalbrook area is the primary role of the Kelsey Creek rural fire brigade.

The water for fighting unplanned fires is sourced from:

- Farm dams
- Proserpine River
- Kelsey Creek irrigation channel

4. Conclusion

The Crystalbrook Community Bushfire Management Plan has been developed to document stakeholder responsibilities, guide mitigation measures and communicate the main bushfire priorities for this area. The Crystalbrook area covers 3572ha and is divided up into 71 fire management areas based on land with similar land use and bushfire hazard. Each fire management area has a set of recommendations to reduce the bushfire hazard and risk to property.

The draft Crystalbrook Community Bushfire Plan was placed out for community consultation from the 21st of September to the 27th of October 2023. The following were some of the comments from the community;

- Concern over control of planned burns on rural properties.
- Risk of fires starting on rural residential properties.
- Concern over planned burns escaping properties and impacting on smaller rural residential lots.

The intension of this Bushfire Plan is to enable bushfire management mitigation to occur under agreed conditions and to maximise community safety whilst recognising the importance of the area's ecological values.

5. References

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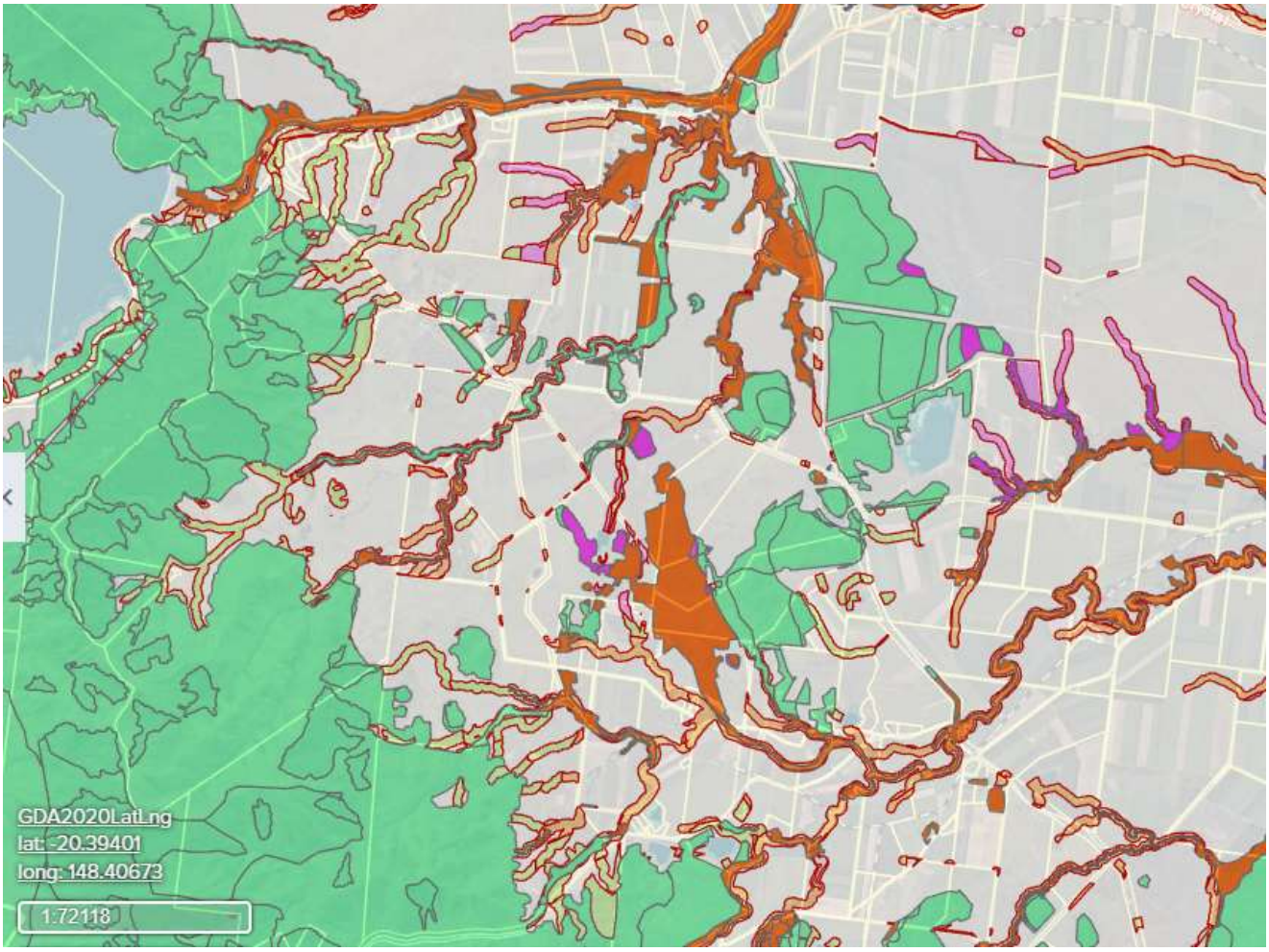
6. Appendix

6.1 Hydrant and Water Resources Map

There is no town water – there are no water hydrants.

There are limited farm dams for water.

6.2 Regional Ecosystem Maps

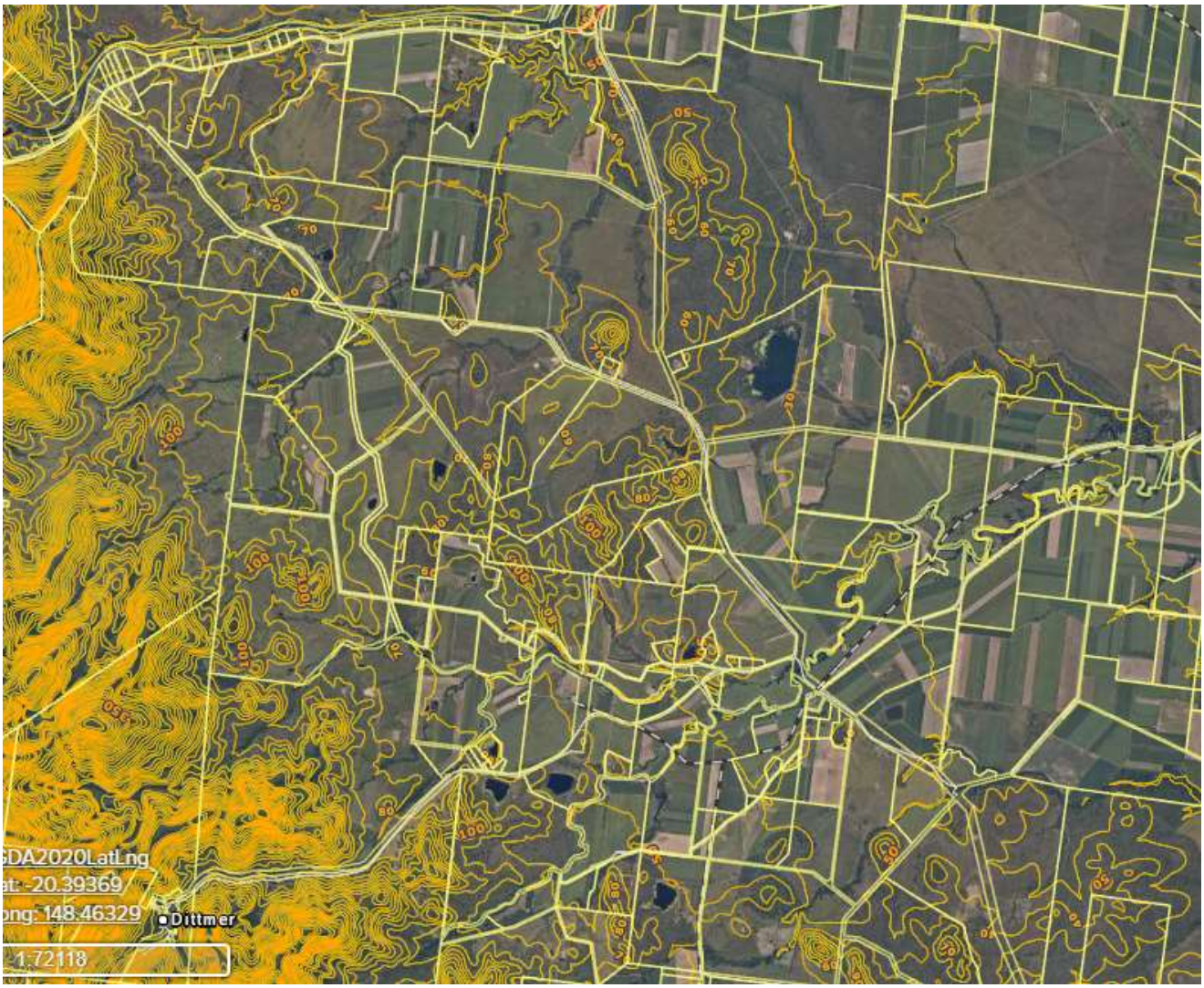


Map 1. Regional ecosystem map

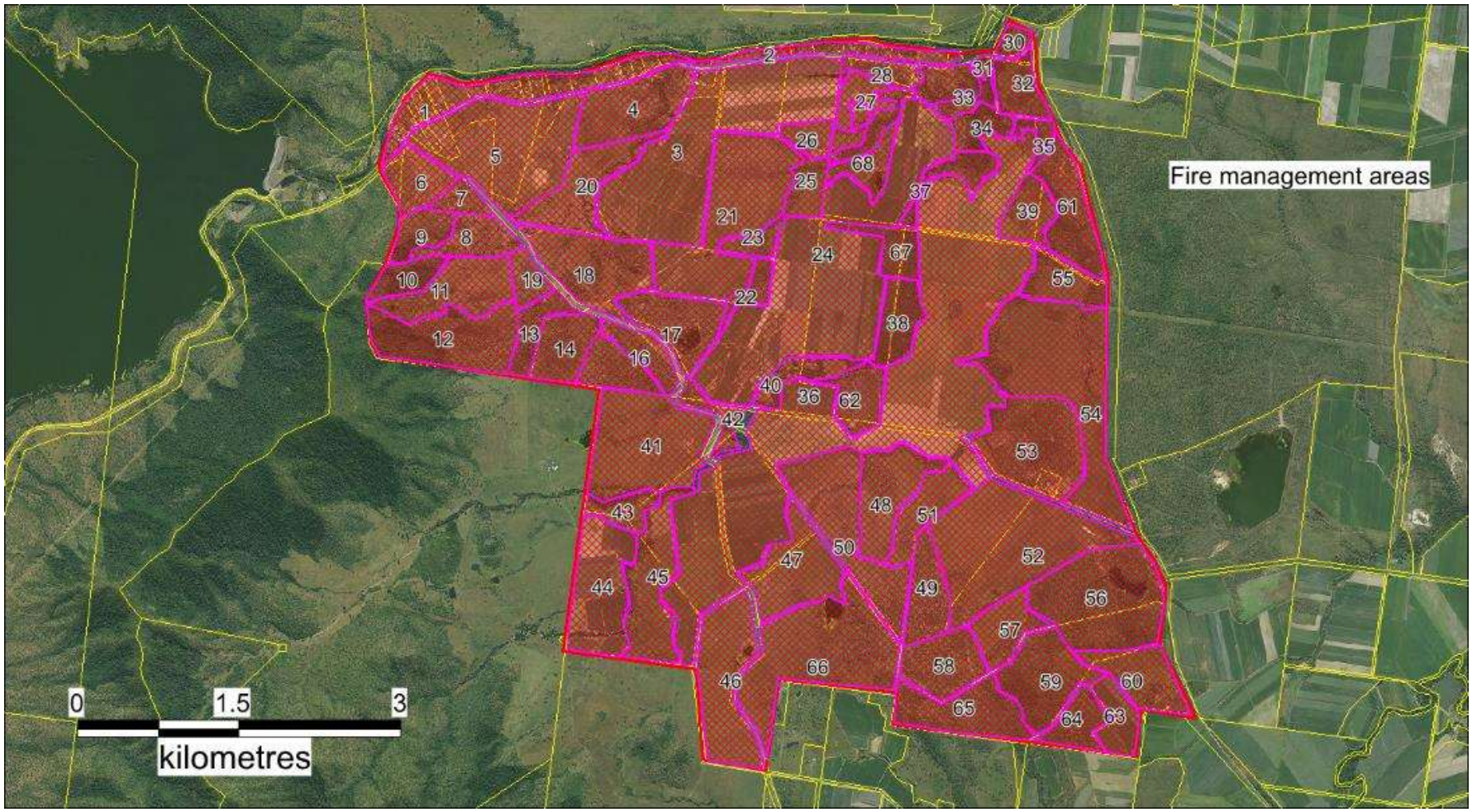
Map 2. Regional ecosystem map extract – Central Crystal brook area.

6.3 Contours and Fire Management Areas

Bushfire Control lines and access tracks should be located along property boundaries and/or along the contour.

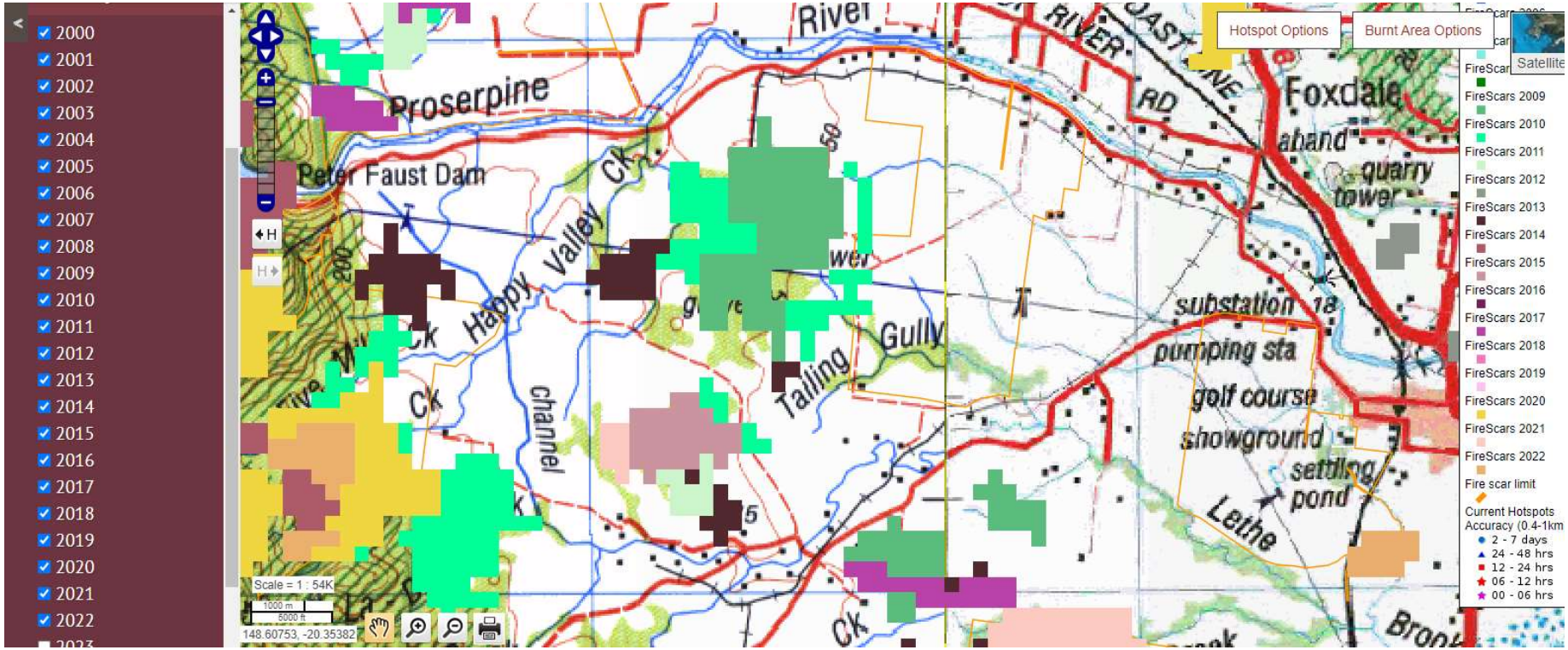


Map 3: *Crystal brook area contours*



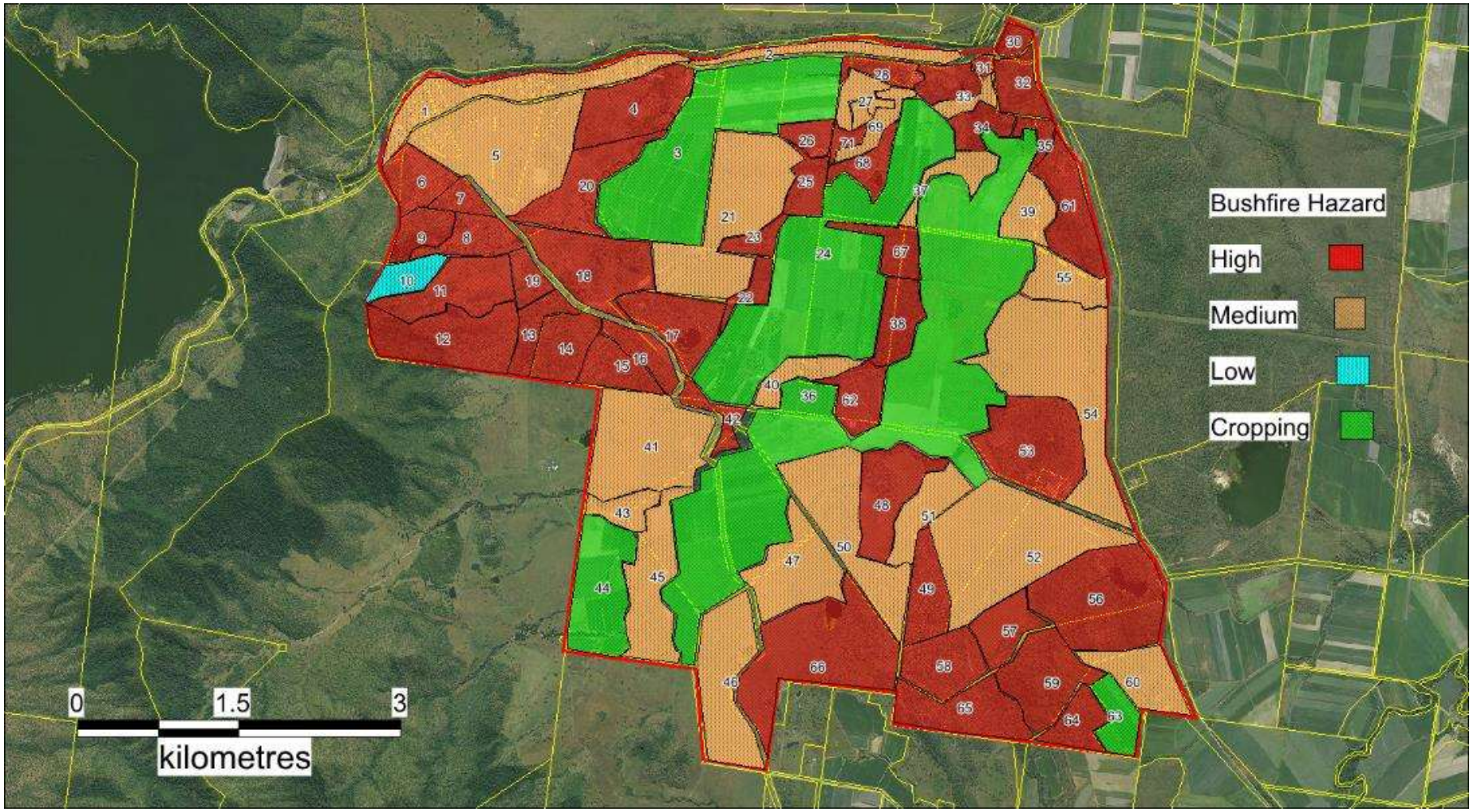
Map 4: *Showing fire management areas.*

6.4 Previous bushfire maps and fire hazard



Map 5. Showing the NAFI fire data from 2000 to 2023 - North Australia and Rangelands Fire Information.

https://firenorth.org.au/nafi3/



Map 6. Bushfire hazard.

6.5 Objectives for Bushfire Hazard Reduction Burning

Source: NSW Rural Fire Service
www.rfs.nsw.gov.au

A successful low intensity hazard reduction burn will reduce fuel load so that it creates a safe defensible area around an asset. It should also minimise the impact from the burn on the environment.

In carrying out a burn, you need to consider:

1. The fuel load and structure
2. The effects on the environment and the community
3. The specific zone objectives
4. If there are adequate fire breaks and control lines
5. The season and weather conditions
6. The topography and fire behaviour
7. What lighting patterns to use
8. Conducting a test burn
9. What safety measures may be needed
10. Mopping up afterwards
11. If you need to report the results

6.6 Check List for Hazard Reduction Burns

The following is a checklist of tasks and activities that should be followed prior to hazard reduction burns:

Table 13: *Checklist for Hazard Reduction Burns*

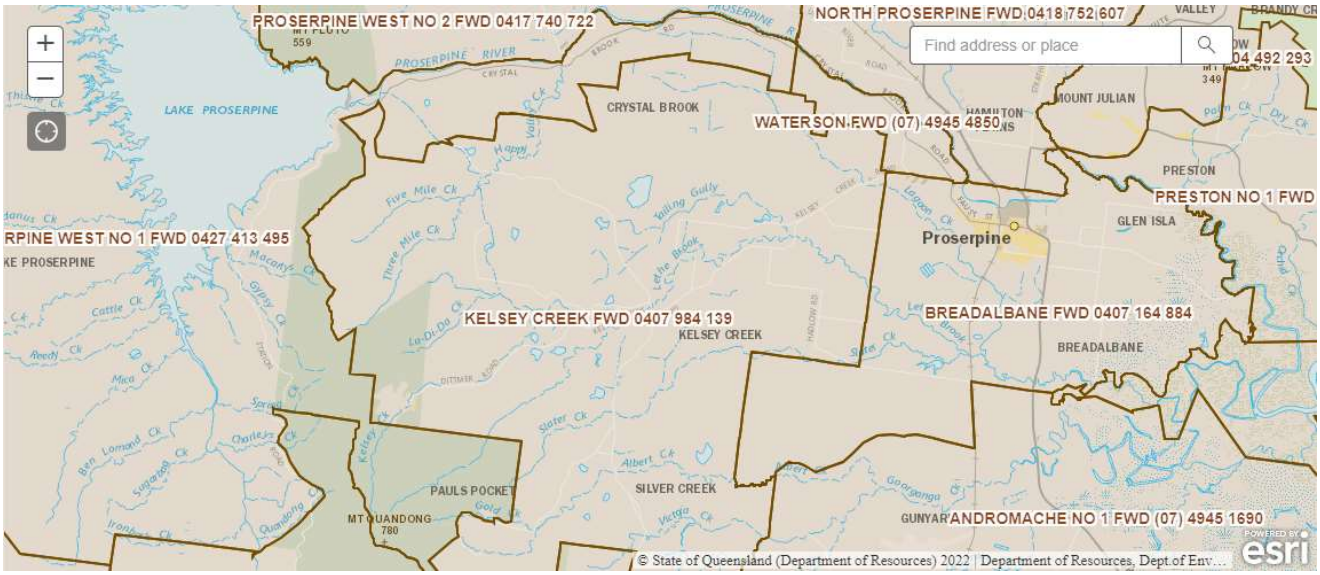
No.	Task	✓
1	Fuel load assessment conducted	
2	Bushfire fire hazard sufficient to warrant a hazard reduction burn	
3	Fire breaks and control lines are in good condition	
4	Burn plan developed – identifying where the burn will occur, timing and personnel availability	
5	Ensure adequately trained personnel are on hand for planned burn	
6	Fire permit gained for proposed burn plan	
7	Proposed hazard reduction burn is approved by Crystalbrook Fire Brigade	
8	Community awareness plan is developed and activated prior to burn	
9	Bushfire stakeholders advised of hazard reduction burn timing	
10	Machinery and trucks are in good working order. Water available.	
11	Contingency plan developed in case fire escapes the target area	
12	Hazard reduction burn is undertaken in accordance with QFES guidelines	
13	Fire control personnel ensure fire is out before leaving fire control area.	
14	A brief account of the hazard reduction burn submitted to QFES and Council.	

6.7 Stakeholder Contacts

- Whitsunday Regional Council – Scott Hardy – 0428 722 236 / (07) 4945 0245.
- QDNRM –Tim Koch – 0418 970 097
- QPWS – Ranger in Charge – (07) 4962 5206
- Kelsey Creek Rural Fire Brigade – 0407984139

For more information regarding the Queensland Rural Fire Brigade, visit:
https://www.ruralfire.qld.gov.au/Pages/fw_finder.aspx

6.8 Map of Rural Fire Areas and Warden Contacts



Map 7: *Showing the rural fire areas and warden contact numbers.*

6.9 Landholder Bushfire Planning Checklist

The following checklist can be used by residential landholders to plan and manage their bushfire hazard:

Table 14: *Landholder Bushfire Planning Checklist*

Task	Checked
Structure	
Clear leaves, twigs, bark and other debris from the roof and gutters.	
Purchase and test the effectiveness of gutter plugs.	
Enclose open areas under decks and floors.	
Install fine steel wire mesh screens on all windows, doors, vents and weep holes	
Point LPG cylinder relief valves away from the house.	
Conduct maintenance checks on pumps, generators and water systems.	
Seal all gaps in external roof and wall cladding.	
Access	
Display a prominent house or lot number, in case it is required in an emergency.	
Ensure there is adequate access to your property for fire trucks - 4 metres wide by 4 metres high, with a turn-around area.	
Vegetation	
Reduce vegetation loads along the access path.	
Mow your grass regularly.	
Remove excess ground fuels and combustible material (long dry grass, dead leaves and branches).	
Trim low-lying branches two metres from the ground surrounding your home.	
Consider removing flammable trees near residential buildings (e.g., removal of eucalypt trees) and replace with non-flammable rainforest species.	
Personal	
Check that you have sufficient personal protective clothing and equipment. Relocate flammable items away from your home, including woodpiles, paper, boxes, crates, hanging baskets and garden furniture.	
Check the first aid kit is fully stocked.	
Make sure you have appropriate insurance for your home and vehicles.	
Find out if there is a nearby **Neighbourhood Safer Place**.	
Review and update your household **Bushfire Survival Plan**.	
Other	
Consider the location of water points and possible direction of bushfire threats. In rural residential areas ensure water tanks are more than half full in bushfire season.	
Keep swimming pool full of water.	

Source: https://www.ruralfire.qld.gov.au/BushFire_Safety/Pages/Prepare-for-bushfire-season.aspx

6.10 Vegetation Clearing Rules

Exemptions apply to some clearing activities permitted under other legislation, including the *Forestry Act 1959*, *Fire and Emergency Services Act 1990*, *Electricity Act 1994*, *Electricity Regulation 2006* and *Disaster Management Act 2003.* Visit the Department of Environment and Science website for more information.

Exempt clearing work for fire management sourced from the Queensland government websites:

- You can undertake certain clearing activities to protect your property from bushfires without getting approval or notifying the Queensland government. These exemptions are summarised in the Table below.
- If you need to clear a wider area, you might be able to clear using a vegetation clearing code or apply for a development approval.
- **Firebreaks** are low-fuel areas located immediately adjacent to existing infrastructure (including a building, or other structure, built or used for any purpose) that are cleared and maintained to slow or stop the progress of a fire, or to perform back-burning.
- **Fire management lines** are roads, fence line clearings or tracks (including existing property tracks) used to access water for firefighting or divide the property for fuel reduction burning or back-burning.

Table 15: *Vegetation Clearing Rules*

Purpose for Clearing	Vegetation Category	Clearing Allowances
Fences, roads and tracks	Least concern regional ecosystems	Clearing to establish a necessary fence, road or vehicular track to a maximum width of 10m
Fire management line	All	Clearing for a necessary for management line to a maximum width of 10m
Firebreaks	All	For a fire necessary to protect buildings and other structures (other than a fence line); to a width of up to 1.5 times the height of the tallest vegetation or 20m (whichever is the widest)
Hazardous fuel load reduction	All	Fuel reduction burns can be done under a permit issued by the local fire warden
Maintain existing infrastructure	All	Clearing necessary to maintain existing buildings and other structures, fences, roads and watering points.
Risk to people and infrastructure	All	Clearing necessary to remove or reduce imminent risk the vegetation poses to people or buildings and other structures.

https://www.qld.gov.au/environment/land/management/vegetation/disasters/fire/code

https://www.dnrme.qld.gov.au/__data/assets/pdf_file/0009/847800/vegetation-clearing-exemptions.pdf


Whitsunday
Regional Council