

Savanna Regional Bushfire Management Plan

2022-23



Document title	Savanna Regional Bushfire Management Plan
Contact details	Bushfires NT
Approved by	Savanna Regional Bushfire Management Committee
Date approved	9 January 2023
Document review	Annually

Version	Date	Author	Changes made
1.0	2018	Bushfires NT	Version 1.0
2.0	October 2022	Natalie Chester	Revision of format and updated content.

Acronym	Full form
ALFA	Arnhem Land Fire Abatement Inc.
BFNT	Bushfires NT
DEPWS	Department of Environment, Parks & Water Security
JSA	Job Safety Analysis
NAFI	North Australia Fire Information
NT	Northern Territory
SOP	Standard Operating Procedures
NTG	Northern Territory Government



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For further information about this Plan, contact the Department of Environment, Parks and Water Security (DEPWS), Bushfires NT, Katherine on (08) 8973 8871.

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1. Executive Summary

The purpose of this plan is to support community wide fire management within the Savanna Fire Management Zone in accordance with the *Bushfires Management Act 2016*. This fire management plan applies to the land and people within the Savanna Fire Management Zone as of October 2022. It will be reviewed annually by the Savanna Regional Bushfires Committee.

Arrangements for the management of fire in the region are based on risk management principles and guidelines that will direct and evaluate these activities.

The risks identified in the 2022-23 Savanna Regional Bushfire Plan arise from meetings held in early 2022 with the Savanna Regional Bushfires Committee.

Three issues were identified as posing a current or emerging High risk to achieving regional bushfire management objectives and were further details are outlined in the table below:

1. Higher frequency of larger, more intense fires threatening life, property, industry and environment caused by the spread of problematic fire weeds (Gamba, Mission, Grader grass).
2. Risk of damaging fires crossing property boundaries as a result of loss of cooperation between neighbouring properties and land managers with an insufficient level of expertise in fire management.
3. Risk of recurring wildfires impacting multi-tenure fire and land management objectives.

Risk Rating	Risk	Detail
HIGH	Higher frequency of larger, more intense fires threatening life, property, industry and environment caused by the spread of problematic fire weeds (Gamba, Mission, Grader grass).	Gamba grass, <i>Andropogon gayanus</i> is a significant threat to the region. Gamba is a fire climax species (one that benefits from fire). When infested areas burn during dry conditions, flame heights can reach into canopies and create more intense than normal fire causing habitat alteration, loss of biodiversity and increases bushfire risk to life, property, culture and the environment. Additionally, Mission Grass, <i>Pennisetum polystachion</i> and Grader Grass, <i>Themeda quadrivalvis</i> pose significant threats to Savanna woodlands through the creation of monocultures and an increase in fire risk where incursions are located. While not currently elevating fuel hazard across wide areas of the Savanna region, these species are present and spreading and represent a future elevated risk that is best treated now by containing or eradicating outlying incursions.

Risk Rating	Risk	Detail
HIGH	Risk of damaging fires crossing property boundaries as a result of loss of cooperation between neighbouring properties and land managers with an insufficient level of expertise in fire management.	<p>The Savanna Fire Management Region contains some of the most diverse land use in the Territory. As a result, there are various and often conflicting fire management objectives. Landholders may not be able to achieve their fire management objectives without negotiation and cooperation from their neighbours. It was perceived by the Committee that there is a breakdown of communication and cooperation between neighbours because of a lack of regular fire planning meetings and engagement efforts.</p> <p>Capacity and capability in the region is critical in sustaining good fire management practices. There is a loss of fire management knowledge, networks and depth of experience of which underpin the success of fire programs. This challenge is coupled with a decreased focus on regional fire management needs by government.</p>
HIGH	Risk of recurring wildfires impacting multi-tenure fire and land management objectives.	<p>There are patterns of annual wildfires originating from the same location, impacting the same properties on an annual basis. This is problematic as these events can threaten life and property, damage non-environmental, environmental and cultural values or assets. Recurring wildfires can reduce the morale of land managers and be detrimental to motivate land managers in delivery of their fire management actions as their neighbours may not be proactively managing fire.</p>

Table 1. A summary of strategic regional bushfire risks identified by the Savanna Regional Bushfires Committee. These risks are considered of most concern to the region in achieving strategic bushfire management objectives.

2. Regional Bushfires Committee Recommendations

The risk register in Section 9 identifies a number of strategies (existing and potential controls) to manage the 3 highest risks. These include:

1. Raise the profile of the risk of fire weeds, particularly Gamba Grass, Mission Grass and Grader Grass within the Savanna Region by ensuring the risk is managed in Weed Management plans and fire plans.
2. Increased understanding of roles and responsibilities of landowners, Ranger groups, other stakeholders and Government agencies (local, NT and Commonwealth), particularly under the Bushfires Management Act 2016.
3. A regional assessment to be made to identify the correlation between recurring wildfires and contributing factors in problematic areas. A larger push toward the development of individual property plans for landholders to follow, therefore increasing the chance for good fire management to occur on their property.
4. Improved engagement with landholders, stakeholders and the wider community to educate and guide them in appropriate fire management and how to achieve objectives. This includes regular community fire planning meetings and the creation of an awareness campaign to encourage landholders and the wider community to report suspicious fires.
5. Increased training opportunities for fire managers where they can access fire management tools such as NAFI, the Fire Incident Map and Wildfire Risk Management Framework to inform and build their skillsets with on ground fire management. More incentives for fire managers to improve retention, longevity and therefore corporate knowledge in the region.

3. Endorsement and Approval

Prepared by BFNT	DATE: 04/10/2022
Submission to Regional Bushfire Committee for endorsement	DATE: 18/10/2022
Notice of endorsement to Executive Director BFNT	DATE: 12/12/2022
Public notice of Regional Bushfire Management Plan	DATE:
Version valid until	DATE: November 2023

Signed:



Chairperson, Savanna Regional Bushfire Committee

DATE: 06/12/2022



Executive Director, Bushfires NT

DATE: 23/01/2023

4. Background

The Northern Territory is large (1,355,235 km²) and sparsely populated (233,000 in 2021) with the majority of people living around Darwin and in a few larger rural centres. It spans climate zones and features vegetation communities from desert to tropical forests.

Across this spectrum, landowners are an essential part of the fire management process. Communication, co-operation and shared responsibility within the community, matched by a capacity to undertake self-protective measures, form the basis of successful fire management throughout the Northern Territory. Equally, this plan acknowledges the autonomy of land managers in harnessing fire as a tool to achieve their land management objectives, tempered by their responsibilities under the *Bushfires Management Act 2016* and principles of good land stewardship.

The Savanna Fire Management Zone encompasses a land area of approximately 294,963 km², which includes the regional townships Katherine (Population, 9600 people) to the north, Borroloola to the east and Timber Creek to the west.

The population of the Savanna region are based in regional townships and in smaller communities and homelands/outstations throughout the region. The region also has a high concentration of pastoral stations, National Parks and protected areas.



Figure 1: Location of the Savanna Fire Management Zone within the Northern Territory.

The annual growth of flammable vegetation across a large and sparsely populated area and the changing nature of fire management in northern Australia suggest that the Savanna Regional Bushfire Management Plan should be reviewed every 12 months.

This fire management plan applies to the land and people within the Savanna Fire Management Zone as of October 2022.

Regional plans are designed to:

- Identify and categorise risk at a regional level *and*
- Enable the optimal allocation of resources and specific controls in the risk management process.

Figures 2 and 3 below display where the regional plan aligns relative to other types of fire management planning in the NT. This document relates to tactical level planning.



Figure 2: Northern Territory Bushfire Management Framework

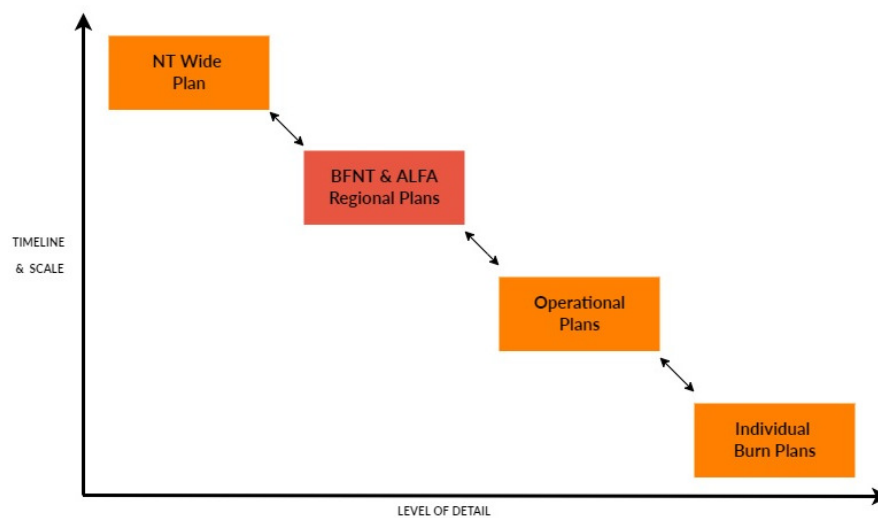


Figure 3: The Planning Perspective. Displaying the relative timeline, scale and detail of various fire management plans.

5. Land use

Table 2. Summary of land use in the Savanna Fire Management Zone

Land Tenure Types	Land uses
Remote Communities/ Outstations	Residential, rural industries
Aboriginal Land	Customary use/ Conservation/ Pastoral/ Carbon Abatement
Indigenous Protected Areas	Conservation
National Parks	Conservation, Tourism
Defence	Defence infrastructure, training
Crown Land	Corridors (Road, Power, Water, Gas, Riverine)
Pastoral Lease	Cattle grazing/ Pastoral enterprises
Local Government	Towns, municipal services and roads
Mining Tenures	Mining (Exploration & Extraction)
Emergency Response Areas (around Katherine)	Regional Centres

Within the Savanna Fire Management Zone (Figure A1) there are a range of land uses. The fire management objectives for each land use have been summarised above in Table 2. This list is finite and aims at recognising all values as equally important. These should be updated as new land uses emerge. Note – they are not in priority order.

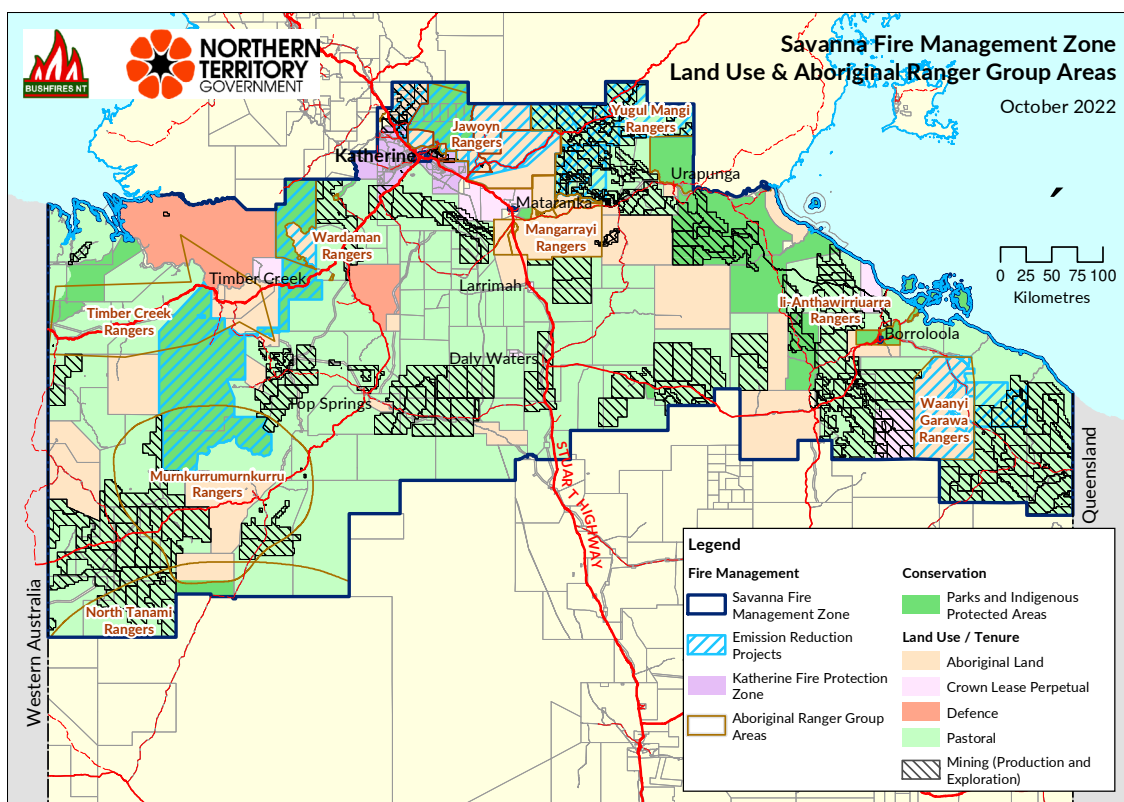


Figure A1: Land Use and operational areas of Aboriginal Ranger Groups in the Savanna Fire Management Zone.

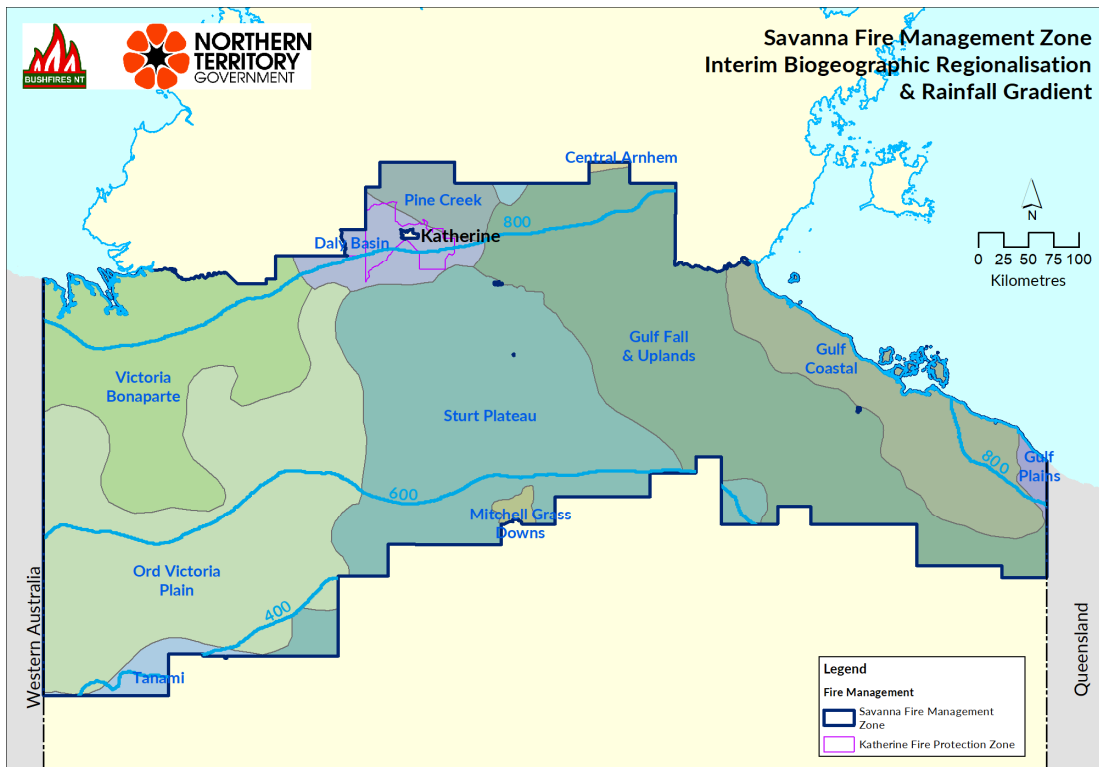


Figure A2: Interim Biogeographic Regionalisation for Australia bioregions, including rainfall gradients in the Savanna Fire Management Zone.

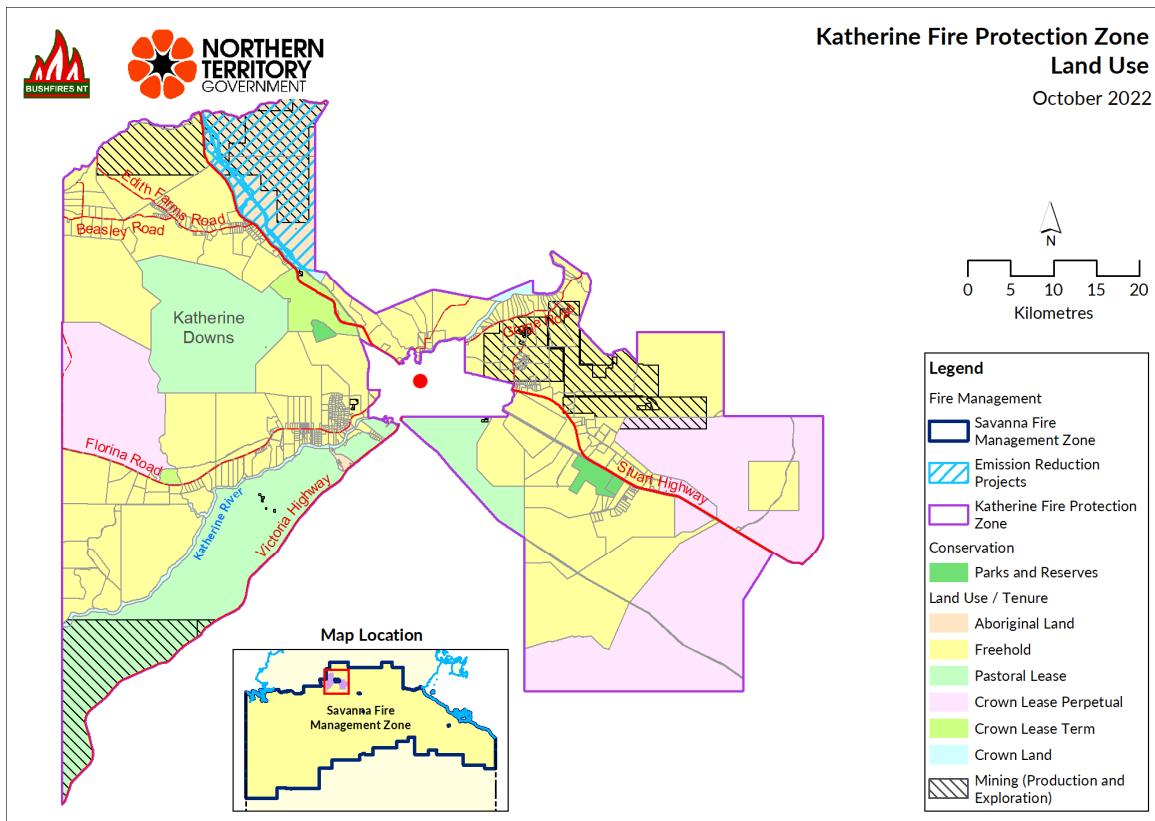


Figure A3: Land use for the Katherine Fire Management Zone.

6. Purpose

A Regional Bushfire Management Plan is established as a provision of the *Bushfires Management Act 2016*, section 78 as follows:

(1) The Executive Director may, by written notice:

(a) Direct Bushfires NT to prepare within a specified period, in consultation with the regional committee for a fire management zone, a draft regional bushfire management plan for the zone; and

(b) Specify matters to be addressed by the plan.

(2) As soon as practicable after preparing a draft regional bushfire management plan, Bushfires NT must submit it to the regional committee for endorsement.

(3) On endorsement by the regional committee, the plan has effect as a regional bushfire management plan for the fire management zone.

(4) As soon as practicable after endorsing a regional bushfire management plan, the regional committee must give written notice of the endorsement to the Executive Director.

(5) As soon as practicable after being given notice under subsection (4), the executive director must give public notice of the plan.

The purpose of this Plan is to support community wide fire management with the Savanna Fire Management Zone, in line with the above provision. Of priority, the Plan aims to manage bushfire hazard by reducing the risk of its impact to assets and values within the region.

7. Fire Management Objectives

Land Use	Fire Management Objectives
Remote Communities Communities, Aboriginal outstations homesteads, work camps, tourist accommodation.	<u>Safety</u> - Protection of life and property. <u>Asset Protection</u> - Utilise fire to protect assets.
Customary Use Managing land and resources utilising indigenous knowledge and cultural practices.	<u>Resource Management</u> - Use of fire to manage native flora and fauna resources. <u>Access</u> - Use of fire to remove vegetation and increase access to country. <u>Protection</u> - Use of fire to protect sites of cultural significance from unplanned fire. <u>Hunting</u> - Use of fire in hunting practices. <u>Cultural Obligations</u> - Manage fire according to traditional customs and beliefs.
Conservation Managing natural resources.	<u>Biodiversity Enrichment</u> - Use fire to increase species diversity or as protection around fire sensitive species.

Land Use	Fire Management Objectives
	<p><u>Research Activity</u> - Provide an opportunity for researchers to observe the effect of different fire regimes in different vegetation communities.</p> <p><u>Habitat Protection</u> - Manage fire to protect native plant and animal habitat.</p> <p><u>Exclusion</u> - Exclude fire from specific areas to conserve natural features.</p> <p><u>Safety</u> - Manage fuel loads to ensure a safe environment in which people can live and work.</p> <p><u>Structural Asset Protection</u> - Utilise fire to protect assets.</p> <p><u>Bushfire Suppression</u> - Utilise fire as part of bushfire suppression practices.</p> <p><u>Cultural Protection</u> - Utilise fire in the practice and preservation of cultural heritage.</p> <p><u>Weed Management</u> - Use fire to manage weed incursion.</p> <p><u>Skills and Knowledge</u> - Improve skills and knowledge in the application and management of fire associated with conservation.</p>
<p>Carbon Abatement Managing fire in the landscape to reduce emissions and sequester carbon.</p>	<p><u>Emissions reduction</u> – reduce the greenhouse gas emissions from fire</p> <p><u>Carbon Sequestration</u> – manage fire to increase stores of carbon in landscape</p>
<p>Pastoralism Protect livelihoods and maintain protection of grazing areas/ livestock.</p>	<p><u>Safety</u> - Protection of life and property.</p> <p><u>Asset Protection</u> - Utilise fire to protect assets.</p> <p><u>Weed Management</u> - Use fire to manage weed incursion.</p> <p><u>Pasture Management</u> – Using fire to restore productive pastures.</p>
<p>Corridors (Road, Rail, Power, Water, Gas, Riverine Corridors) Edge burning to protect essential infrastructure and provide a buffer from fire for adjoining properties.</p>	<p><u>Safety</u> - Protection of life and property.</p> <p><u>Asset Protection</u> - Utilise fire to protect assets and infrastructure.</p> <p><u>Weed Management</u> - Use fire to manage weed incursion.</p>
<p>Mining & Exploration Protect assets and infrastructure.</p>	<p><u>Safety</u> - Protection of life and property.</p> <p><u>Asset Protection</u> - Utilise fire to protect assets and infrastructure.</p>

<i>Land Use</i>	<i>Fire Management Objectives</i>
Tourism Protect people and tourist attraction areas.	<u>Safety</u> - Protection of life and property. <u>Asset Protection</u> - Utilise fire to protect assets and infrastructure. <u>Exclusion</u> - Exclude fire from specific areas to conserve natural features.
Defence Protect assets and infrastructure.	<u>Safety</u> - Protection of life and property. <u>Asset Protection</u> - Utilise fire to protect assets and infrastructure.

Table 3. Land use and corresponding fire management objectives within the Savanna Fire Management Zone. These objectives are not in a prioritised order and multiple land uses can co-exist.

8. Bushfire Risk Management

The central component of the Savanna Regional Bushfire Management Plan is the evaluation of regional scale risks by the regional committee. It examines risk to achieving bushfire management aims and objectives, existing controls and possible treatment actions to reduce the level of risk. The DEPWS Risk Matrix prioritises each risk as shown below (Table 3).

Specifically, the risk register:

- Records risks;
- Classifies them in terms of consequence and likelihood of occurring;
- Documents existing and potential controls / treatments to mitigate each risk;
- Identifies who is responsible for implementing those controls; and
- Suggests criterion by which to evaluate the efficacy of the control methods.

Information used to develop the risk register was collected during the inaugural meeting with the Savanna Regional Bushfires committee (April 2022). Regional scale risks were identified at these meetings and were grouped and tabulated (Figure 1). Table 3 shows the DEPWS risk matrix, under which risks were categorised and rated. For each risk a number of controls were suggested by both Regional Committee and Bushfires NT staff. Risks are prioritised and ordered by scale in the following section.

Any reviews of this plan should incorporate the principles and guidelines of risk management outlined in International Standard ISO 31000.

		Consequences				
		Insignificant	Minor	Moderate	Major	Severe
Likelihood	Almost Certain	Medium	Medium	High	Extreme	Extreme
	Likely	Medium	Medium	High	High	Extreme
	Possible	Low	Medium	Medium	High	Extreme
	Unlikely	Low	Low	Medium	Medium	High
	Rare	Low	Low	Low	Medium	High

Table 4 - DEPWS WHS Risk Matrix

9. Regional Risk Register

9.1. Detrimental impacts of Gamba Grass and Fire Weeds

HIGH RISK: Higher frequency of larger, more intense fires threatening life, property, industry and environment caused by the spread of problematic fire weeds (Gamba, Mission, Grader grass).	
RISK RATING What level of threat does this risk present?	<ul style="list-style-type: none"> HIGH overall risk. LIKELY occurrence resulting in a MAJOR impact.
PRINCIPAL CONTROLS How this risk is currently managed	<ul style="list-style-type: none"> NT Weeds Management Act – legislative controls; Bushfire Management Act 2016 – legislative controls; Gamba Grass Weed Management Plan 2020- 2030 details a strategic approach in managing Gamba Grass to reduce risk and damage caused by fire.
TREATMENT ACTIONS Additional actions that should be applied to manage this risk	<ul style="list-style-type: none"> Raise the profile of this risk to Savanna Region by ensuring the risk is managed in accordance with the Gamba Grass Weed Management Plan. Legislative controls: NT Weeds Management Act (manage growth and spread). Bushfire Management Act 2016 (manage fuel). Increase understanding of roles and responsibilities of landowners, community/ contractor/ tourist awareness and participation in the management of fire weeds. Develop and implement strategic weed spread prevention protocols/permits/facilities for locals, visitors and contractors including wash-down bays, machinery hygiene, soil and gravel, hay, animal harvesting, transport. Shared weed mapping protocols and data with operational fire program planning.
TREATMENT LEADERS Who is responsible for managing the risk?	<ul style="list-style-type: none"> Aboriginal corporations, Ranger organisations, Pastoralists, Department of Environment, Parks and Water Security (Weeds Branch and Bushfires NT), Regional/ Town Councils, Landowners, Contractors, Tourism operators.
INDICATORS How will we know if we have managed this risk effectively?	<ul style="list-style-type: none"> Limited spread of existing fire weed incursions. New incursions of Gamba Grass are reported and contained. Reduction of wildfire on properties with Gamba incursion.
EVALUATION	Annual review at end of year fire meetings, Regional Weed Management Committee meetings.

9.2. The consequence of fires impacting life, values and assets.

HIGH RISK: Damaging fires crossing property boundaries as a result of loss of cooperation between neighbouring properties and land managers with an insufficient level of expertise in fire management.	
RISK RATING What level of threat does this risk present?	<ul style="list-style-type: none"> HIGH overall risk. POSSIBLE occurrence resulting in MAJOR impact.
PRINCIPAL CONTROLS	<ul style="list-style-type: none"> Proactive fire management planning and delivery. Support from Bushfires NT in provision of training and strategic planning (Implementation of operational programs). Media and extension programs (NTG and other)
TREATMENT ACTIONS Additional actions that should be applied to manage this risk	<ul style="list-style-type: none"> Community education program established and targeted at high risk areas. Landowners collaborate together in applying fire management to build trust, understanding, value, participation. Increased frequency of meetings for landowners to collaborate and communicate. Maintain fire management plans. Continue to identify and manage high risk areas. Maintain high levels of consultation particularly when considering new land uses. Provide adequate training and controlled exposure to gain competency in higher skilled and/or risk activities. Implement Large Property Plans with stakeholders. Develop processes to encourage succession planning.
TREATMENT LEADERS Who is responsible for managing the risk?	<ul style="list-style-type: none"> Landowners, Bushfires NT, Ranger Groups, Parks and Wildlife, local council.
INDICATORS How will we know if we have managed this risk effectively?	<ul style="list-style-type: none"> Reduction in late dry season wildfires across multiple tenures. Increased knowledge and capacity for landowners fire managers throughout the region. Amicable liaison between landholders, adjoining neighbours and stakeholders.
EVALUATION When should evaluation occur?	<ul style="list-style-type: none"> Outcomes presented and reviewed at Regional Committee meeting annually.

HIGH RISK: Risk of recurring wildfires impacting multi-tenure fire and land management objectives.	
RISK RATING What level of threat does this risk present?	<ul style="list-style-type: none"> HIGH overall risk. LIKELY occurrence, resulting in MODERATE impact.
PRINCIPAL CONTROLS How will this risk be managed?	<ul style="list-style-type: none"> Consultation between Bushfires NT, brigades, Government Agencies at a regional level. Education of landholders through training opportunities provided by Bushfires NT. Landholders are aware of their roles and responsibilities under the Bushfire Management Act 2016 (firebreak installation). Implementation of BFNT operational programs. Media and extension programs (NTG and other)
TREATMENT ACTIONS Additional actions that should be applied to manage this risk	<ul style="list-style-type: none"> Increased consultation and support for landowners and fire managers, particularly those new to the area or who have limited experience. Development of Large Property Fire Management Plans for landholdings susceptible to regular wildfire. Increase compliance and enforcement program for land tenures with recurring wildfire.
TREATMENT LEADERS Who is responsible for managing the risk?	<ul style="list-style-type: none"> Bushfires NT, Brigades, Parks and Wildlife, Landowners, Ranger Groups.
INDICATORS How will we know if we have managed this risk effectively?	<ul style="list-style-type: none"> Reduced impact and occurrence of wildfires across multiple boundaries. Increased cooperation and collaboration between landholders, stakeholders, fire managers and their neighbours.
EVALUATION When should evaluation occur?	<ul style="list-style-type: none"> Annual review at Regional Committee meeting, informal meetings with brigades and Government agencies.

10. Controls and Actions to Reduce Risk – BFNT Operational Programs

Bushfires NT is identified as a lead in the treatment for most of the fire risks identified in the Savanna region. Many of the principal controls are existing BFNT - led programs and strategies into which additional treatment actions can be incorporated. Bushfires NT operational programs are designed to help reduce risk to life, property and the environment through strategic initiatives, enabling landowners to conduct best practice fire management on their property in a strategic manner. The following strategic programs are conducted with the aim of educating and empowering landowners in achieving their chosen fire management objectives and reducing the risk of wildfire across multiple land tenures.

- **Small and Large Property Fire Management plans (Pastoral & peri-urban scale)**

Property fire management plans are designed to cover off on a variety of fire management parameters for specific landholdings for consideration by the landowner. Fire history, fire frequency, climatic history (rainfall), annual actions and fire management objectives for the property are displayed in a simple one page format, for ease of reference for the landowner. These plans are developed in consultation with the landowner, encouraging accountability and enabling consideration of all aspects to consider when using fire as a management tool.

- **Volunteer Bushfire Brigade prescribed burning programs**

Volunteer Bushfire Brigades reduce risk of wildfire by conducting early dry season fire management through prescribed burning on individual properties, as well as on Vacant Crown Land (VCL) and road corridors within their Brigade Areas. These programs help to decrease the risk of wildfire for entire communities, as well as individual properties which may be susceptible to late dry season wildfire. Brigades assist landowners through the provision of specialist advice, assistance for landowners who need extra help and by conducting wildfire suppression late in the season to protect life, assets and the wider community. Brigade members can have a statutory authority through the provision of powers under the Bushfires Management Act 2016 as Fire Wardens, with some members being given the ability to write burn permits for landowners. All Brigade members who participate in prescribed burns and fire suppression activities are authorised to do so under the Act as Authorised Bushfire Volunteers.

- **Roadside Mitigation Program**

Bushfires NT work alongside the Department of Infrastructure, Planning and Logistics (DIPL) to reduce fuel loads and therefore lower the risk of human-enabled ignitions along road corridors. This program is aimed to ensure further protection of urban and peri-urban development, as well as rail corridors and vacant crown land. Often this program compliments strategic preparedness programs conducted by the NT Fire and Rescue Service to reduce wildfire risk across large swathes of land.

- **Compliance and Enforcement**

Bushfires NT has a dedicated Compliance unit who follow up on statutory requirements for landowners under the Bushfires Management Act 2016. This includes property visits, firebreak inspection and enforcement, investigative procedures/ follow up of suspicious fires and education initiatives (Fire Ready Week, vulnerable land holder assistance programs).

- **Aerial Prescribed Burning (APB) Program**

Bushfires NT operational staff work closely with landholders to initiate aerial burning to reduce fuel loads and create a mosaic style of fire scars to reduce the spread of wildfire. This program is also conducted on vacant crown land where landholdings are too large to conduct an on ground prescribed burn and/ or to compliment on ground burning where required.

11. Appendices

11.1. Appendix A - Planning, Review & Reporting

i. Regional Bushfire Management Plan

The Regional Bushfire Management Plan identifies risks that may impede good fire management in the Savanna region and makes provisions for their control.

ii. Arnhem Land Fire Abatement NT Limited (ALFA NT) Annual Integrated Fire Management Plan

A condition of the § 19 licences held by ALFA NT with the Northern Land Council (NLC), requires ALFA NT to provide an annual fire management plan in advance of the burning season. It must include specific detail of each activity proposed within the licence area.

iii. Individual Ranger Group Fire Management Plans

Ranger groups within the Savanna region have extensive land management plans which incorporate details of fire management. Those groups involved in the ALFA carbon abatement project, must also submit annual fire management plans to ALFA.

iv. Regional Planning (ALFA) Meetings

Each year in the early dry season, a large regional scale bushfire planning meeting is held. Upwards of 100 people attend, representing the nine Ranger groups involved in the Savanna Burning project as well as neighbouring pastoral properties and National Parks.

The meeting objective is to develop fire management plans for each Ranger group in conjunction with their neighbours. The sharing of maps and fire management work plans are an integral component. The meeting also provides opportunity to network, share knowledge and experience and discuss wider ranging land management topics.

Prior to and following the early season meeting, Ranger groups consult widely with landowners across their various estates to gain permission to burn specific areas. Likewise, at the end of the fire season, these same groups attend a post season fire meeting to review the effectiveness of their fire management throughout the year and discuss “lessons learned” during the course of the season.

v. Regional Planning Meetings – Savanna Region

Pre-season fire planning meetings occur across the region annually, notably for Mataranka, Borroloola, Top Springs township and Victoria River District. Sub- committees comprised of landowners, Pastoralists, private and government representatives meet to discuss strategic approaches to fire management, preparedness and mitigation/ suppression within their area.

vi. Property Fire Management Plans

Property Fire Management Plans focus on developing a fire strategy at a local level for landholders who experience issues with annual late season wildfire, as well as those who wish to take a proactive approach in fire management on their land.

vii. Community Fire Management Plans

Similarly to Property Fire Management Plans, these plans focus on developing a fire strategy at a local level for Aboriginal Communities who experience issues with annual late season wildfire, as well as those who wish to take a proactive approach in fire management on their land.

viii. Wildfire Risk Management Framework

The Wildfire Risk Management Framework is designed to enable fire managers to practice informed decision making when evaluating the risk involved in managing fire on their land. This is another tool to utilise in trying to increase knowledge and awareness for fire managers and landholders, especially when it comes down to determining factors such as fire behaviour, fuel loads, fire weed incursion, weather and topography.

11.2. Appendix B - Fuel Hazard Management

i. Aerial Burning

Aerial burning is a common method used for large scale fire hazard reduction application. It uses rotary wing aircraft to strategically reduce fuel loads and install burnt fire breaks. The great majority of aerial burning is conducted by Ranger Groups, Parks and Wildlife and some private landowners with small contributions from BFNT. A permit is required to undertake aerial burning at all times.

ii. Roadside Fuel Reduction

Brigades and NTFRS conduct roadside burning. The objective is to reduce fuel loads in strategic areas to decrease the risk of ignition and the potential for fires to carry across the landscape in the late dry season.

iii. Asset Protection

Landowners conduct asset protection around rural properties, pastoral station assets, communities, outstations / homelands and culturally important sites. The objective is to protect these areas from unmanaged fire and also reduce the potential for fires to carry away from these areas in the late dry season.

iv. Strategic Breaks

Land managers maintain strategic break networks across their properties. This includes firebreaks as directed under the *Bushfires Management Act 2016*.

v. Bushfire Suppression

Fire suppression is a management response to unplanned fires. The range of fire suppression capacity and experience across the Savanna region varies from high to low. Government Agencies (Bushfires NT, Parks and Wildlife), volunteer brigades and Ranger groups are known to work together during wildfire suppression campaigns, in order to reduce time spent actively suppressing wildfire and draining of personnel and resources. In addition, neighbouring pastoralists are known to work together during wildfire

suppression campaigns, in order to reduce the loss of natural pasture, livestock and assets. This is especially apparent when a wildfire spreads across multiple tenures.

11.3. Appendix C - Administration

i. *Bushfires Management Act 2016*

An Act to provide for the protection of life, property and the environment through the mitigation, management and suppression of bushfires, and for related purposes.

ii. Bushfires Council

The function of the Bushfires Council is to advise the Minister on measures to be taken to mitigate, manage and suppress bushfires in the territory.

The minister must ensure that at least one member of each regional committee is appointed as a member of the Council.

iii. Regional Committee

The function of the Regional Bushfires Committee is:

- to make recommendations to the Bushfires Council on measures to be taken to mitigate, manage and suppress bushfires in its fire management zone and;
- to endorse a regional bushfire management plan prepared by Bushfires NT for its fire management zone.

Typically, the committee will meet up to four times per year.

11.4 Appendix D - Tools and Resources

NAME	DETAIL	LINK
North Australia Fire Information	Provides information on up to date fire location, fire scar from this year and previous years and summaries of fire histories across the Northern Territory.	NAFI 3
NRM Infonet	NRM InfoNet uses the NAFI base map to generate reports threatened species, weed and pest species lists, fire frequency since 2000 and profiles of climate, vegetation and soils.	Infonet
Bureau of Meteorology	Provides weather data: 4 and 7 day forecasts, fire weather warning, current observations, past weather and outlooks. The dynamic user friendly Meteye provides in depth data in a map format.	BOM
Savanna Burning Methodology (SAVBAT)	A guide to the savanna burning methodology (For use in Carbon Project planning).	Clean Energy Regulator
Australian Fire Danger Rating System	National fire danger forecasting tool developed by state, territory and the Commonwealth Governments.	AFDRS
Long Paddock	Queensland Primary industries site that monitors pasture biomass, pasture growth over various periods of time, curing index and relative rainfall.	Long Paddock
LandSat and MODIS, Sentinel 2	Websites providing satellite images that are taken on a regular occurrence. The MODIS satellite provides a 250m pixel image daily; LandSat provides 25m pixels image every 14 days; Sentinel 2 provides 15m pixels image every 7 days. This imagery allows us to analyse fire scar in greater detail than NAFI for evaluation purposes. GIS is an essential tool for utilising this information.	NASA Worldview EOSDA
IBRA Assessment	A regular assessment tool for during the fire season to judge fuel loads, mitigation efforts, response capability and previous history to assess whether geographical regions are above average, average or below average fire potential. Feeds into Bushfires and Natural Hazards CRC working Group and the North Australian Fire Managers Forum databases.	IBRA Assessment
NR Maps	NR Maps is a NT Department of Natural Resources and Environment data visualiser for: Bushfires NT, Flora and Fauna, significant biodiversity areas, Parks and Reserves, Vegetation Resources, Land Resources, water inundation, Water Resources, Surface Water Drainage, Land Administration, Topographic Map Index, Mining Titles Register, Geology and Geophysics.	NR Maps
Secure NT	SecureNT brings together social media alerts and warnings from the Northern Territory Government emergency services and agencies. Members of the public can access information to prepare, respond and recover from all types of emergencies.	Secure NT

NAME	DETAIL	LINK
NT Fire and Rescue Service/ Bushfires NT Incident Map	The Northern Territory Fire Incident Map provides real-time information to the public regarding fire incidents across the Northern Territory.	NT Incident Map
NT Legislation Database	A database for all Northern Territory Legislative Assembly Legislation and Regulations.	Legislation Database
Google Earth	Google Earth is a 3D data visualiser which is either web or desktop based. The desktop version has basic mapping functions and can import other data such as hot spots or fire scars from NAFI.	Google Earth
Department of Environment Parks & Water Security	Provides information on Department Divisions including Bushfires NT, Weeds Branch, Rangelands, Flora and Fauna, Parks and Wildlife and Water Resources.	DEPWS Homepage
Katherine Regional Weeds Strategy 2021 -2026	Strategic paper to reduce adverse impacts of weeds in the Katherine Region.	Katherine Regional Weeds Strategy
Weed Management Plan – Gamba Grass 2020-2030	Statutory document to address the strategic management of Gamba Grass.	Gamba Grass Weed Management Plan

11.5 Appendix E - DEPWS Risk Register – Definition Tables

Likelihood Criteria

This table is used to estimate the likelihood of the risk occurring. It follows your estimate of the risk's impact on your objective(s) should the risk occur. To use this table, start at the top 'Rare' and ask yourself "how likely is the risk to occur?": using the rating and descriptions to guide your answer. If the answer is "yes"; then ask the same question for the next row down. When the answer is "no" the likelihood is that in the previous row.

NB: It is likely that the 'Time Period' scale will be appropriate in most assessments. However an alternative scale 'Incidence Rate' has been included, particularly for repetitive activities, and/or where the 'Time Period' scale does not provide a reasonable assessment.

Expected occurrence of risk		
Rating	Time Period	Incidence Rate
Rare	Likely to occur only every 20 years or more	< 1:10000
Unlikely	Likely to occur only every 5 – 20 years	1:1000 – 1:10000
Possible	Likely to occur only every 1 – 5 years	1:100 – 1:1000
Likely	Likely to occur at least annually	1:10 – 1:100
Almost Certain	Likely to occur at least monthly	> 1:10

Risk Tolerance Thresholds

Risk assessment also involves evaluating the risk. This is done by comparing the level of risk with the department's risk tolerance (or acceptability) thresholds. Each level of risk places certain obligations on the 'Risk Owner' to prudently manage the risk. The table below sets out the actions required and is designed to ensure that the majority of effort is focused on treating the risks which have the largest potential impact on the achievement of your objective(s).

Level of Risk	Action Required
Low	RISK IS ACCEPTABLE <ul style="list-style-type: none"> Minimum annual assessment of risks recommended, as low level risks are identified. No specific treatment action required but consideration may be given to streamlining excessive or redundant controls. Manage through routine processes/procedures. Consider the implementation of additional controls, only if they are a clearly quantifiable cost benefit.
Medium	RISK IS TOLERABLE <ul style="list-style-type: none"> Minimum annual assessment of risk required, as medium level risks are identified. Risk Treatment Plan is optional. Consider the implementation of any practicable controls that are cost effective in reducing the risk and planned within a reasonable timeframe.
High	RISK REQUIRES ATTENTION (UNACCEPTABLE) <ul style="list-style-type: none"> Risk assessment data entered into the Risk Register. Risk Treatment Plan developed and implemented within 4 weeks of assessment. Risk treatment actions linked to the appropriate Business Plan to ensure reporting and monitoring and the allocation of resources (e.g. person, time and dollars). Treatment Actions – Status Report on Progress of Risk Treatment Action column updated in the Risk Register at a minimum by the 'Due Date'. Minimum quarterly re-assessment of risk required, or when causes change or treatment actions implemented – controls change. Regular (at least quarterly) ongoing performance monitoring by the Management Team overseeing the Risk Register. Quarterly report to the department's management body responsible for audit and risk management on the management of high and extreme risks - prepared by the department's Audit and Risk Management Secretariat.
Extreme	RISK REQUIRES ATTENTION (UNACCEPTABLE) <ul style="list-style-type: none"> Risk assessment data entered into the Risk Register. Risk Treatment Plan developed and implemented within 4 weeks of assessment. Risk treatment actions linked to the appropriate Business Plan to ensure reporting and monitoring and the allocation of resources (e.g. person, time and dollars). Treatment Actions – Status Report on Progress of Risk Treatment Action column updated in the Risk Register at a minimum by the 'Due Date'. Minimum quarterly re-assessment of risk required, or when causes change or treatment actions implemented – controls change. Regular (at least quarterly) ongoing performance monitoring by the Management Team overseeing the Risk Register. Quarterly report to the department's management body responsible for audit and risk management on the management of high and extreme risks - prepared by the department's Audit and Risk Management Secretariat.