NSW GOVERNMENT

NSW RURAL FIRE SERVICE

# NSW BUSH FIRE SEASON 2021-22 OUTLOOK

PREPARE. ACT. SURVIVE.

# Contents


Contents 2

About this statement 3

Letter to the Minister 4

Conditions leading into the 2021-22 Bush Fire Season 6

- Forest fuel loads 6
- Grassland and crop fuel loads 7
- Fuel state 9
- Bush fire risk through Spring 10

Forecast weather conditions 12

- Climate drivers 12
- Temperature and rainfall outlooks 13
- NSW Dam and Water Storage levels 14

Predicted fire season outlook 16

Managing bush fire risk 18

- Australian Fire Danger Rating System 18
- Bush Fire Risk Management Plans and Outcomes 18
- NSW RFS Interface Mapping and Treatment Project 19
- Mitigation crew works 20
- Addressing bush fire hazard complaints 21

Operational preparedness 24

- Response to the NSW Bushfire Inquiry 24
- COVID-19 planning 25
- Ignition management 26
- Aviation 26
- Heavy plant 27
- Support for agency personnel 27

Agency firefighting capability 28

Community preparedness 29

# About this statement

The annual NSW Bush Fire Season Outlook Statement has been prepared by the NSW Rural Fire Service (NSW RFS).

The statement provides a summary of available information relating to the bush fire risk across the state including weather and climatic conditions, agency information relating to firefighting capability and resources, risk management and mitigation works, and research relating to community preparedness.

The report provides a summary of this information as of late August 2021, and this information will change as the bush fire season advances.

The statement is an outcome of the NSW Government's independent inquiry into the 2019-20 bush fire season, which was led by former NSW Police Deputy Commissioner Dave Owens APM, and Independent Planning Commission Chair and former Chief Scientist and Engineer Professor Mary O'Kane AC.

# Letter to the Minister

The Hon. David Elliott MP
Minister for Police and Emergency Services
Parliament House
Sydney NSW 2000

Dear Minister

I am pleased to submit to you the NSW Bush Fire Season Outlook Statement for the 2021-22 season. The Statement is an annual output in response to recommendations 2, 30 and 8(e) of the NSW Bushfire Inquiry.

Following the devastating bush fire season of 2019-20 where large and destructive forest fires impacted on communities across the state, the risk profile across NSW has continued to shift due to good rainfall and an increase in grass and crop loads in many areas.

With the spring outlook for 2021 favouring the increased odds of above median rainfall, this growth will continue, and with warmer and drier conditions across Spring and Summer, there is an increased risk of grass and crop fires in many areas.

Grass fires pose a significant risk to the community. They start easily and spread quickly, impacting people, properties and infrastructure, and have a significant impact on local economies.

While more than 5 million hectares were burnt in the 2019-20 season, there remains large pockets of unburnt land, and these forested areas remain at a normal level of risk.

The bush fire risk normally starts earliest in the northern parts of the state and shifts to the south as the season develops.

The image on the following page shows the outlook for the entire NSW bush fire season and takes into account the expected increase in grass and crop fuel loads across Spring and the drying effect of warmer weather. It shows an above normal fire potential for grassland areas across the central and north-western parts of the state. This risk will shift towards the central and southern parts of the state later in the season.

The climate drivers and growth driving this outlook are described in more detail in this statement.

The experience of the 2019-20 bush fire season continues to affect many people across NSW, such as rebuilding and the mental health effects of such a devastating period. This has been compounded by the ongoing effect of COVID-19. Despite this, there is a need for fire agencies, land managers and the community to work together and prepare for the inevitable return of fire conditions.

Given this need, the NSW Rural Fire Service is focused on the delivery of a new bush fire risk planning process, with trials underway in the Hunter region. This new process will better inform communities and agencies about the level of bush fire risk and allow improvements in the way treatments are targeted. This work, in conjunction with a focus on delivering a tenure blind approach to hazard complaints, will increase community confidence while reducing the risk to our communities.

Rob Rogers AFSM

Commissioner

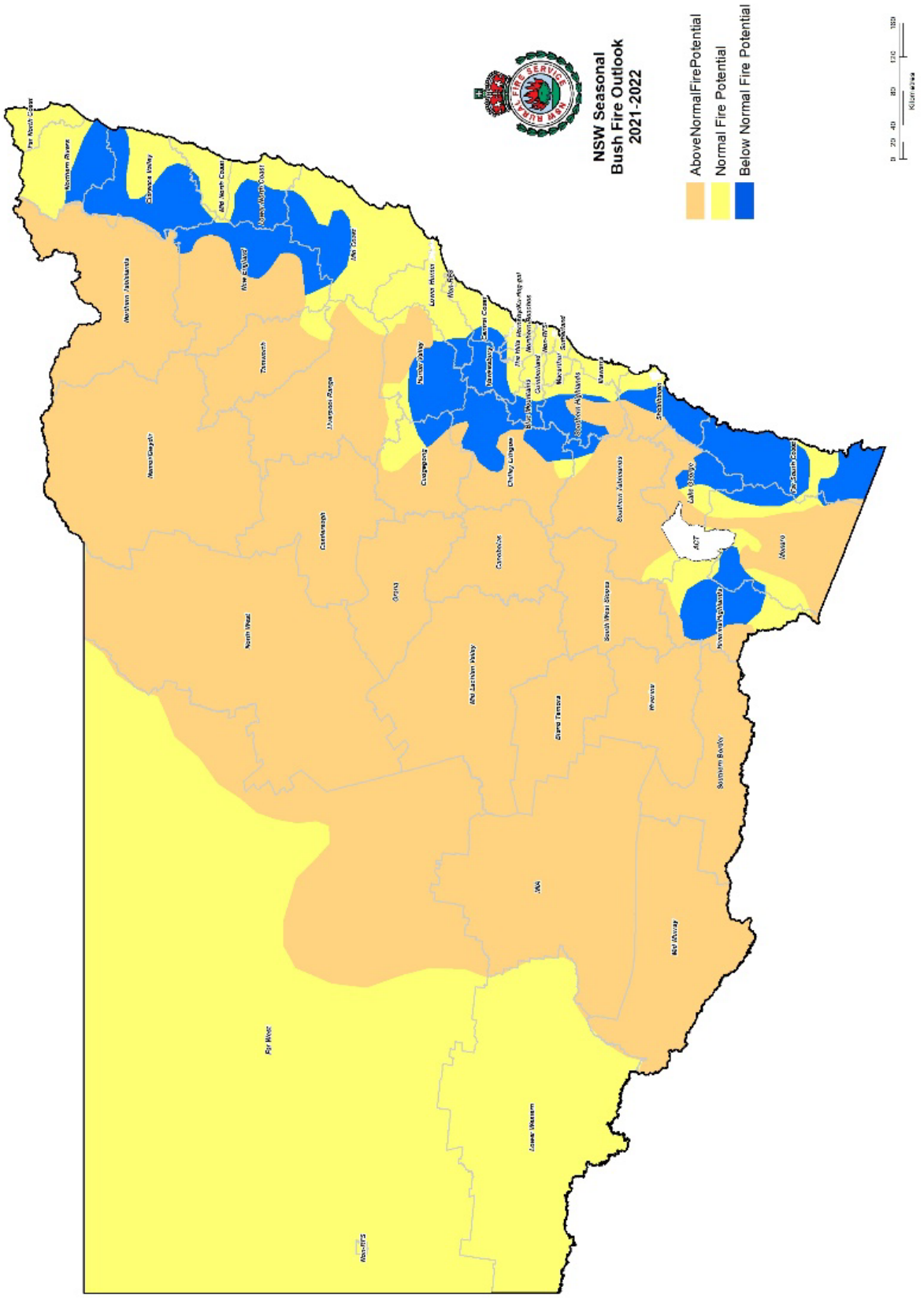



Figure 1 - NSW Seasonal Bush Fire Outlook 2021-22

# Conditions leading into the 2021-22 Bush Fire Season

The summer of 2020-21 saw above to very-much-above average rainfall in the January to March period (Figure 2). This resulted in the predicted record crop harvest and grass fuel loads eventuating through many areas west of the ranges.

There were bursts of fire weather and operational activity in the southwest of the state. There were 13 days of severe fire danger or above.

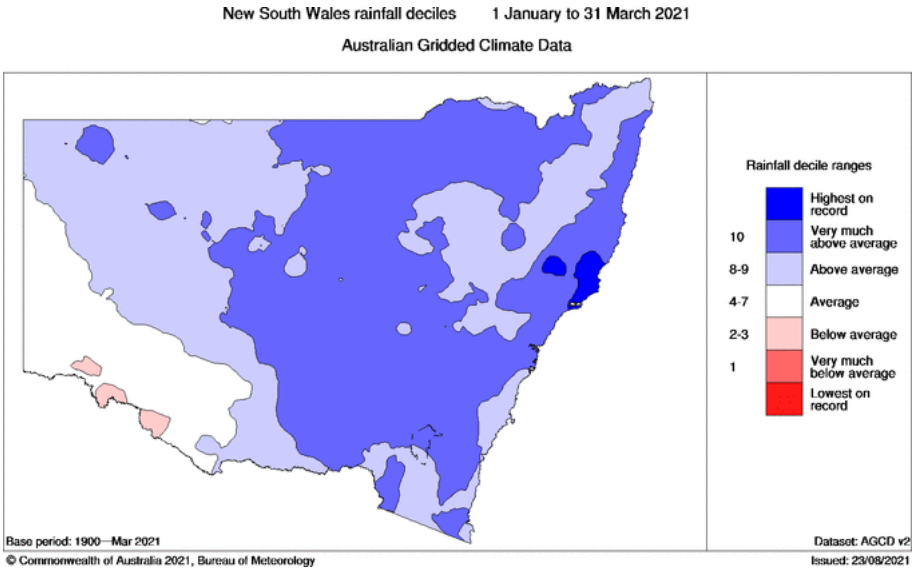



Figure 2 - Bureau of Meteorology rainfall observations for the period 1st of January to 31st of March 2021

## Forest fuel loads

Predicted forest fuel loads leading into the 2021-22 fire season are displayed in Figure 3. This fuel load mapping is derived from modelling using time since fire and fuel accumulation curves. It uses the average re-accumulation rate of fuels post fire and the map displays extremely high fuel loads in red and lower fuel loads in dark green.

The burn scar from the 2019-20 fire season is still evident along the coast and ranges of this year's map. However, there are still high fuel loads on the coast and ranges, particularly around Sydney, Wollongong and the Hunter.

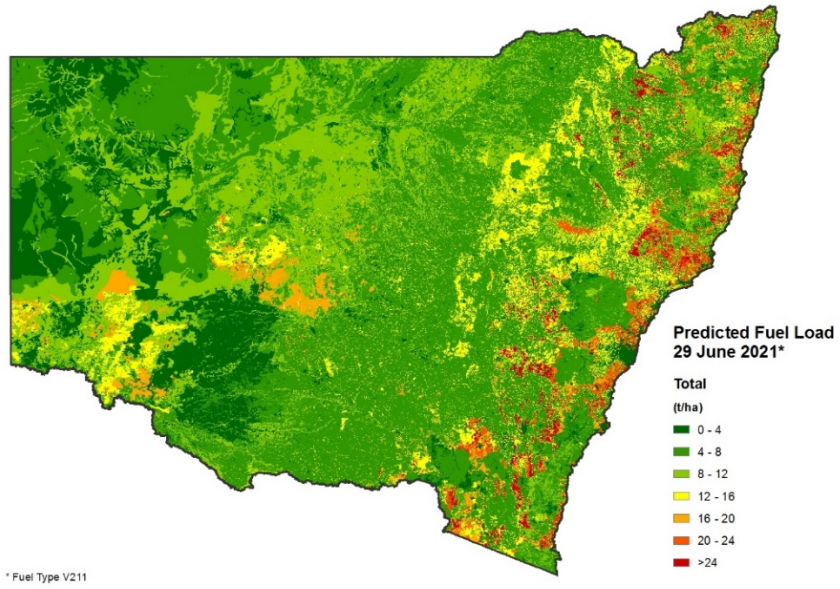



Figure 3 - Predicted Forest and Woodland Fuel loads as at 29th of June 2021

Fuel loads depicted in this map are dependent on severity of the preceding fire and growing conditions. Fuels may be locally higher or lower than predicted. This is particularly important for grassland and cropland fuel loads. These fuels are considered current at the time of map preparation; however, their load may fluctuate significantly depending on growing conditions, stocking, and cropping cycles.

## Grassland and crop fuel loads

Grassland fuel load varies from season to season depending on growing conditions. Winter and spring rainfall, temperature, and other factors such drought status, stocking and sowing rates are key factors in determining the hazard associated with grass and crop loads across the state.

Leading into the season, very high grass fuel load reports have been received particularly in the north, north-west and Southern Highlands.

Figure 4 - Grass fuel loads from a central and north-western NSW source: NSW Rural Fire Service

Figure 5 shows recent rainfall leading into this year's fire season has been above average in the central west and south-east. Below average rainfall was observed through Sydney, the Hunter and parts of the North Coast. These conditions suggest continued good growing conditions for crop and grassland areas.

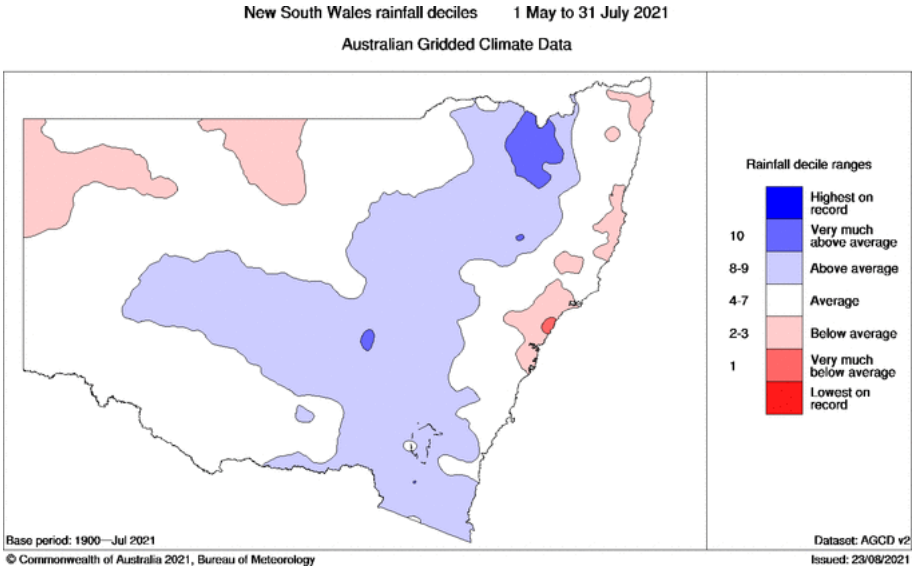



Figure 5 - NSW Rainfall Deciles 1st May to 31st July 2021 (source BoM)

According to the July 2021 NSW Agriculture Australian Crop Report, crop prospects into spring are likely to be strong. There are large areas of winter crops planted similar to last year, particularly in northern and western regions. Summer crop production was up last year, with similar conditions again this year, summer crop production is again likely to be high. At various intervals during the cropping cycle, these crops will be more susceptible to fire and present as a fire hazard.

Grass growth is likely to accelerate in the southern regions as temperatures warm. These areas will also record very high grass fuel loads.

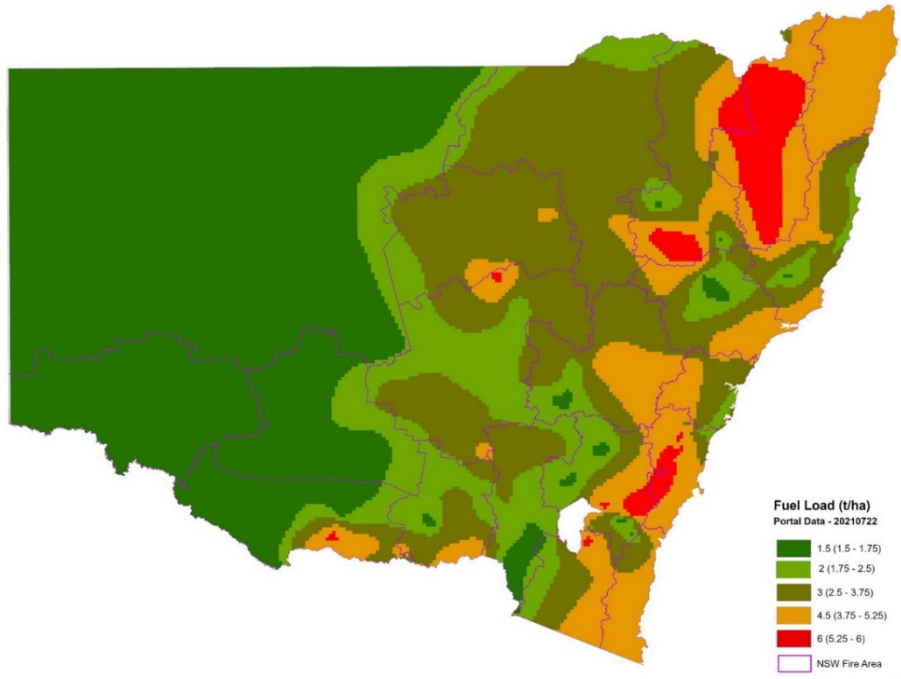



Figure 6 - Grassland Fuel Load map based on observations

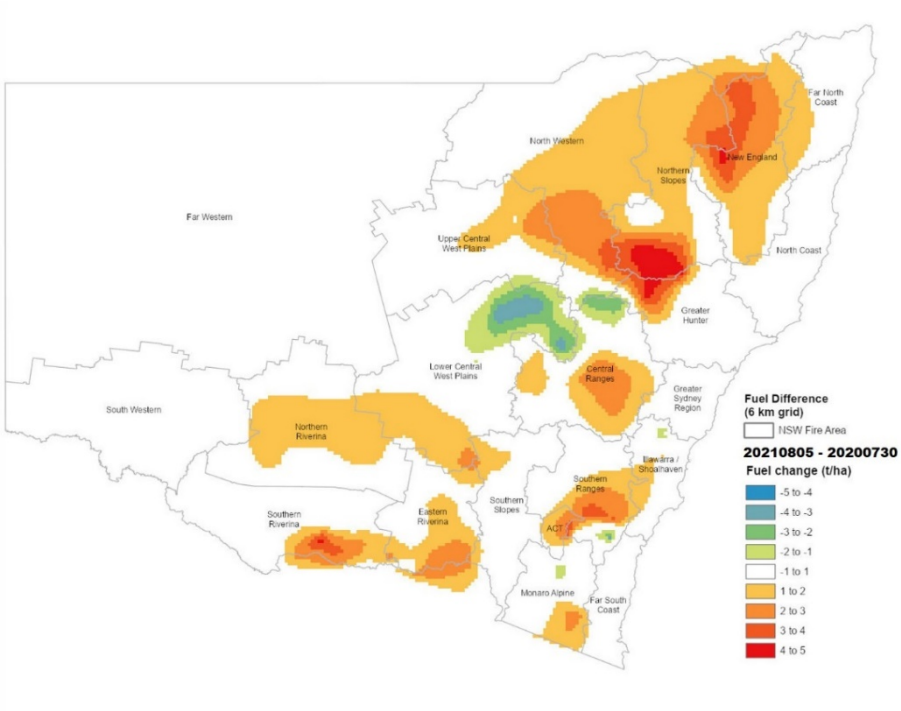



Figure 7 - Grassland Fuel Load difference between the start of the 2021 fire season and the start of last fire season

## Fuel state

Fuel state or how dry fuels are leading into a fire season is a particularly important indicator for the level of early fire season activity, but also how difficult fires will be to suppress. Drier

fuels ignite more easily and in times of prolonged drought, very dry soil and fuel make putting fires out more difficult. This is because the dry fuels take more water and resources to effectively suppress if ignited.

Within the fire industry, fuel state leading into a season is often inferred through the KBDI anomaly map. This map compares current conditions to those preceding. Figure 8 displays calculated soil moisture conditions.

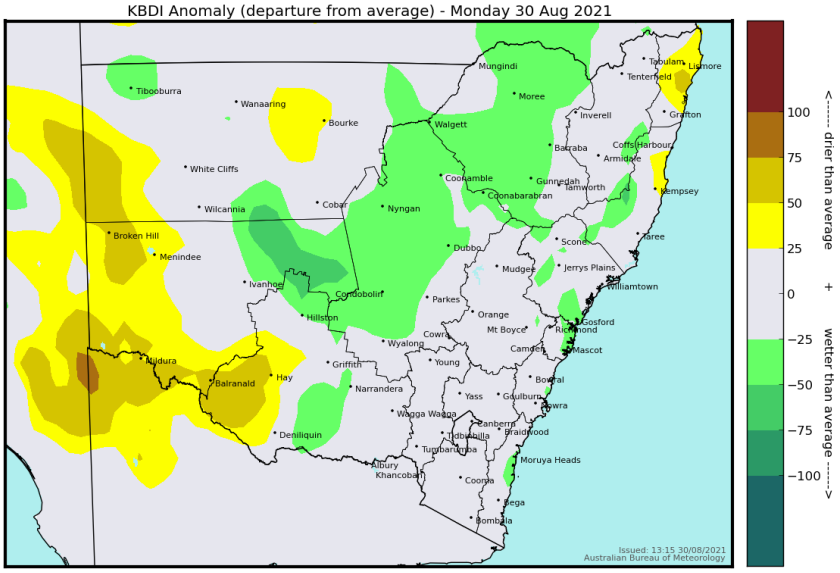



Figure 8 - KBDI Anomaly map. Source: BoM 30 August 2021

Wetter than average soils have been calculated by the BoM through the central and west of the state, while areas of drier than average conditions have been calculated for the far west and south west as well as parts of the north coast.

## Bush fire risk through Spring

The NSW RFS works with member agencies of the Australasian Fire and Emergency Services Authorities Council (AFAC) to produce quarterly fire season outlook statements. An example of the September to November outlook is shown in Figure 9.

Although the seasonal statement map and the seasonal outlook map have several similarities, the differences arise from timescales. In this case, the quarterly outlook map reflects the reports of high grass and crop fuel loads through the northern parts of the state and the current climate outlook for rainfall odds of receiving above median rainfall in other parts of the state.

The September to November quarter outlook for NSW depicts above normal fire potential for grassland areas in central and northern NSW. This has been based on reports of high grass and crop fuel loads particularly in the New England, Northern Tablelands and

Liverpool Ranges. Curing, or how readily grass will burn, is also higher through these areas and includes parts of the Hunter.

Traditionally, the northern areas of the state are the first to start their Bush Fire Danger Periods, this pattern is likely to occur during this quarter with average to slightly drier than average conditions currently being experienced on the north coast. For areas east of the Great Dividing Range not affected by the 2019-20 fires, this outlook period should see the normal risk. In any season we can see periods of escalated fire danger and fires that require assistance from beyond the area from which they originate.

With the strongly favourable signal for above median rainfall in grassland areas west of the ranges and south of Sydney, these areas may see a delayed start to the fire season. However, this rainfall and warmer Spring growth may see grass and crop fuel loads build during the outlook period.

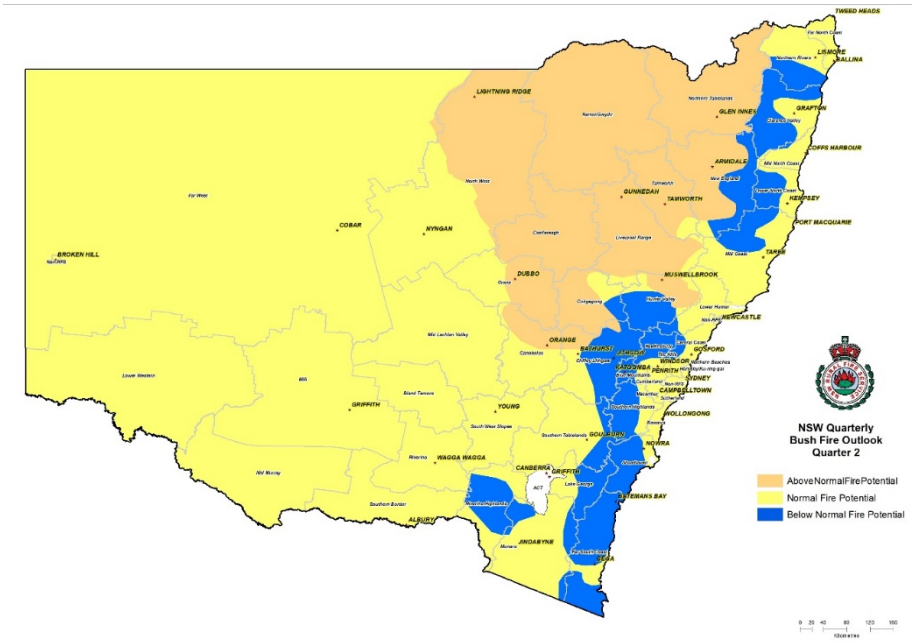



Figure 9 - 2020-21 Spring seasonal outlook (September to November)

# Forecast weather conditions

NSW fire agencies work very closely with the Bureau of Meteorology (BoM) to monitor weather impacts and to understand the medium and longer term weather forecasts for fire operations and planning.

## Climate drivers

The Bureau of Meteorology (BoM) releases fortnightly updates to Australian climate drivers. In the update released on 20 July 2021, the BoM indicated that a negative Indian Ocean Dipole (IOD) event is underway. A negative IOD increases the likelihood of above average winter–spring rainfall for much of eastern Australia.

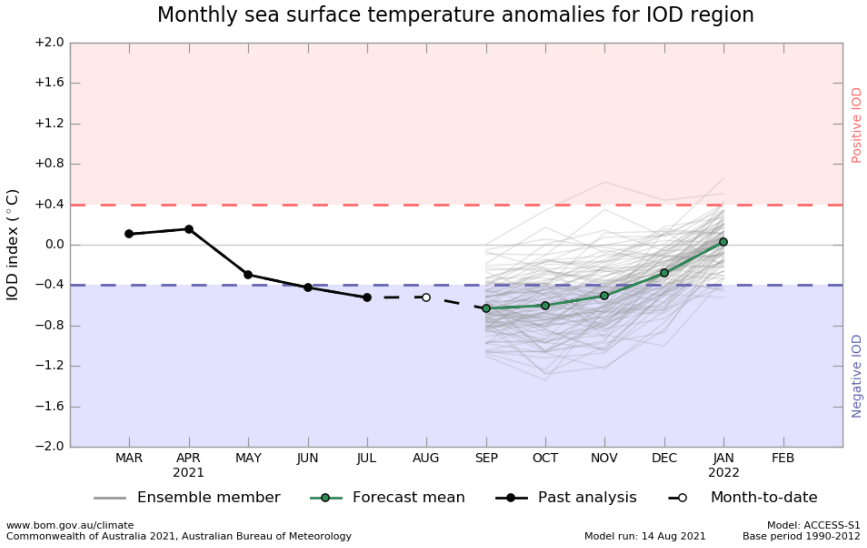



Figure 10 - BoM Indian Ocean Dipole Forecast

The latest weekly value of the IOD index (to 15 August) was −0.37 °C, with the index generally remaining below the negative IOD threshold (-0.4C) since mid-May. Four out of five climate models surveyed by the Bureau predict a negative IOD pattern will persist through spring, with all five models returning to neutral values by December. This negative IOD event is likely to be weaker than in 2016, and therefore expected to have relatively less impact on the climate.

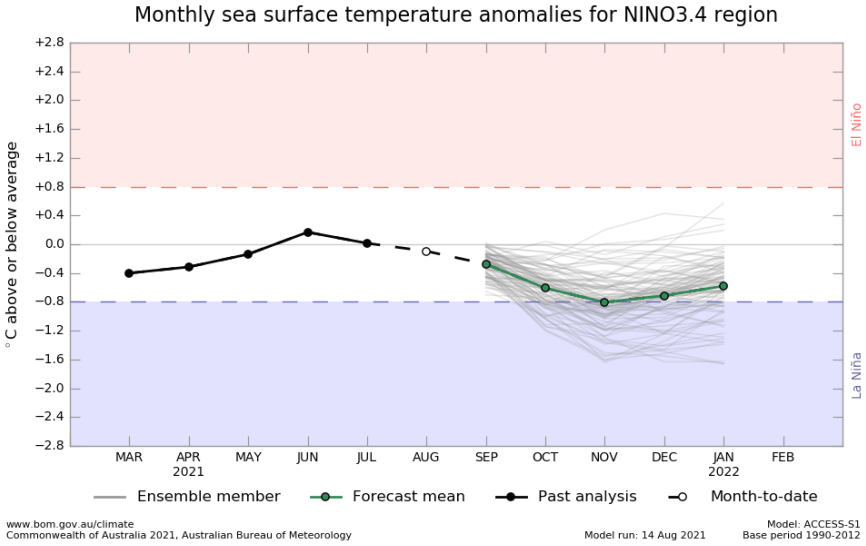



Figure 11 BoM ENSO outlook forecast

The El Niño–Southern Oscillation (ENSO) is currently neutral. Most of the climate models surveyed by the Bureau anticipate NINO3.4 will cool during the coming months, but vary in how much cooling they expect. Three of the seven surveyed models anticipate NINO3.4 will meet or exceed La Niña thresholds during November, but only one sustains cooling long enough between October and December to indicate a full-fledged event.

The majority, four models, predict a neutral ENSO pattern to continue through to January 2022.

La Niña typically enhances spring rainfall in northern and eastern Australia, and the shift towards cooler forecast values of NINO3.4 may be contributing to the wetter than average rainfall outlooks for parts of the country.

## Temperature and rainfall outlooks

Current rainfall and temperature outlooks issued by the BoM indicate September 2021 (Figure 12) is likely to see wetter than average conditions and warmer than average overnight temperatures across much of NSW. Warmer than average daytime temperatures are also favoured across eastern NSW, whilst there are no strong indications for warmer or cooler than average days in western NSW.

Outlooks for October to December 2021 (Figure 13) are showing similar patterns for rainfall and temperature. They suggest wet conditions are likely to linger through spring 2021, although this will depend heavily on the state of the negative IOD and the timing of its decay, in addition to the ENSO outlook other climate drivers through the season.

It's important to note that these outlooks are averaged across several months and do not model individual weather events. Despite the wet outlook, periods of dry weather and perhaps early heatwaves remain possible during spring, which can elevate bush fire risk.

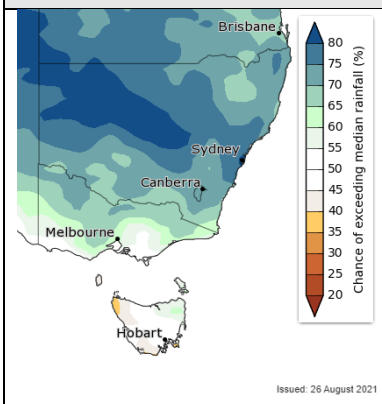
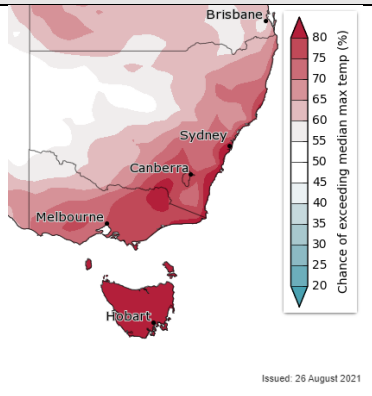
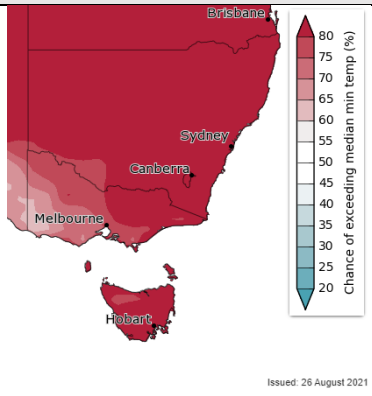
| Rainfall | Maximum Temperature | Minimum Temperature |
|---|---|---|
|  |  |  |



Figure 12 BoM Temperature and Rainfall Outlook (September 2021) issued 26th August 2021

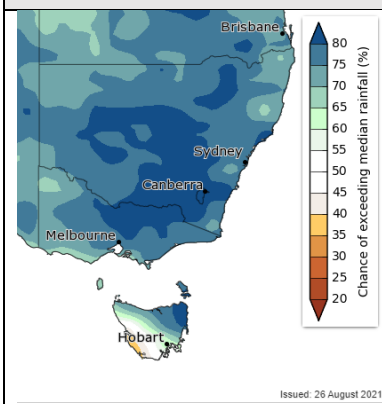
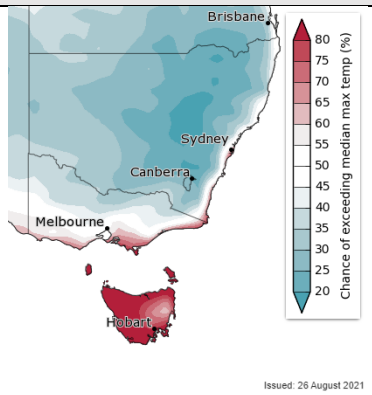
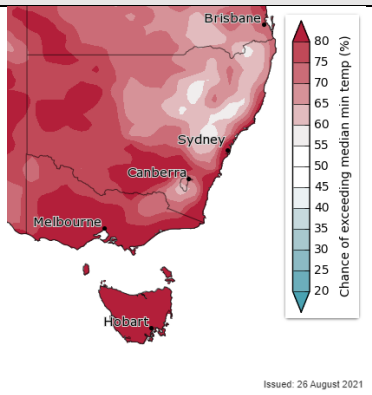
| Rainfall | Maximum Temperature | Minimum Temperature |
|---|---|---|
|  |  |  |



Figure 13 BoM Temperature and Rainfall Outlook (October to December 2021) issued 26th August 2021

## NSW Dam and Water Storage levels

Leading into the season, NSW Water reports good water storage levels within our regional dams. This information is important in context of the 2019-20 season as special provisions for access to water for firefighting was required during the drought. This year with dam storage levels being at or near capacity for most dams around the state, there is not expected to be any significant issues relating to water supply during firefighting operations.

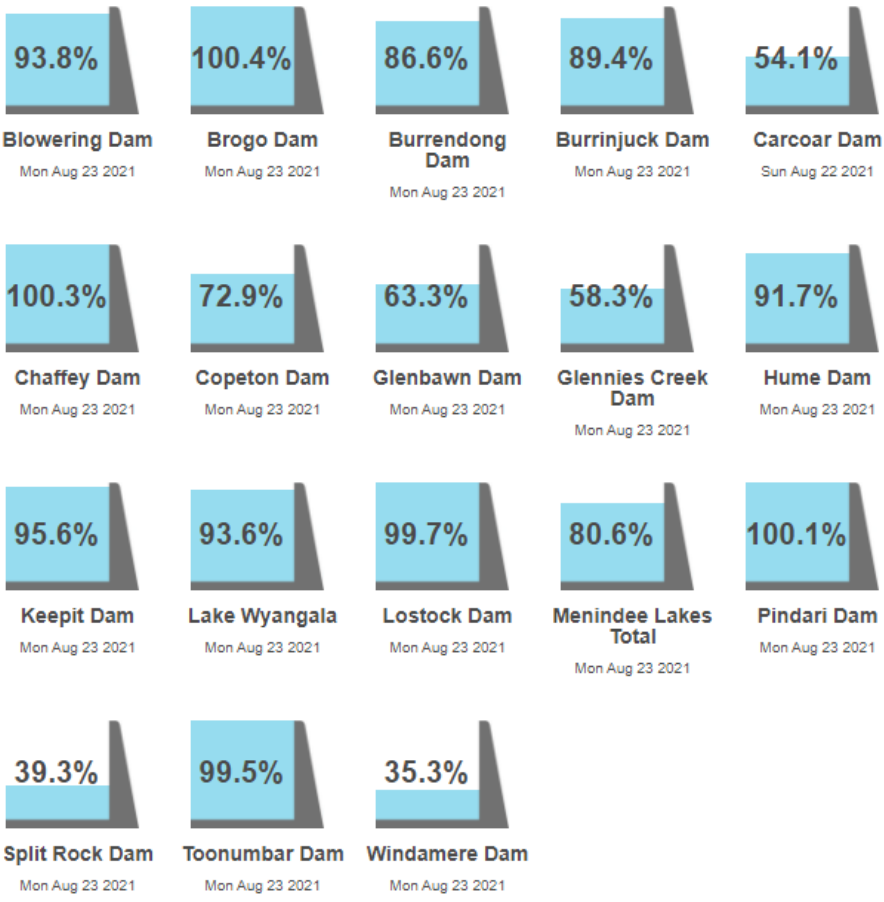



Figure 14 Water NSW Regional Dam levels as at 24 August 2021

# Predicted fire season outlook

There are a number of factors that are assessed in predicting the bush fire seasonal outlook. These include bush fire fuel loads and their current and predicted state - the hazard, the likelihood of these fuels being susceptible to fire via climate outlooks and the assessment of the hazard and likelihood to form the seasonal outlook.

The accuracy of bush fire seasonal outlook maps is dependent on a range of factors. These include fuels and how susceptible these fuels are to fire, the likelihood of fire weather and ignitions occurring and how fire authorities prepare and respond to the risk.

The information is based on forecasts that are available at the time of production and it should be noted that there can be a large amount of uncertainty in climate outlook forecasts, particularly forecasts longer than three months in duration.

This year's outlook reflects the current grass and crop growth and the potential for a continuation of good growing conditions leading into spring. The areas highlighted as having above normal potential are predominantly the grassland and cropping areas. The concern being that high grass and crop fuel loads will continue to persist into summer when we could see a change in the climate outlook with the IOD forecast to break down.

Higher grass fuel loads can cause higher fire danger ratings and higher intensity fires that are more difficult to put out. Continuous grass fuels in the landscape can also result in larger fires as the fires are more easily able to spread. Crop and grass fires can also spread more rapidly in comparison to bush fires.

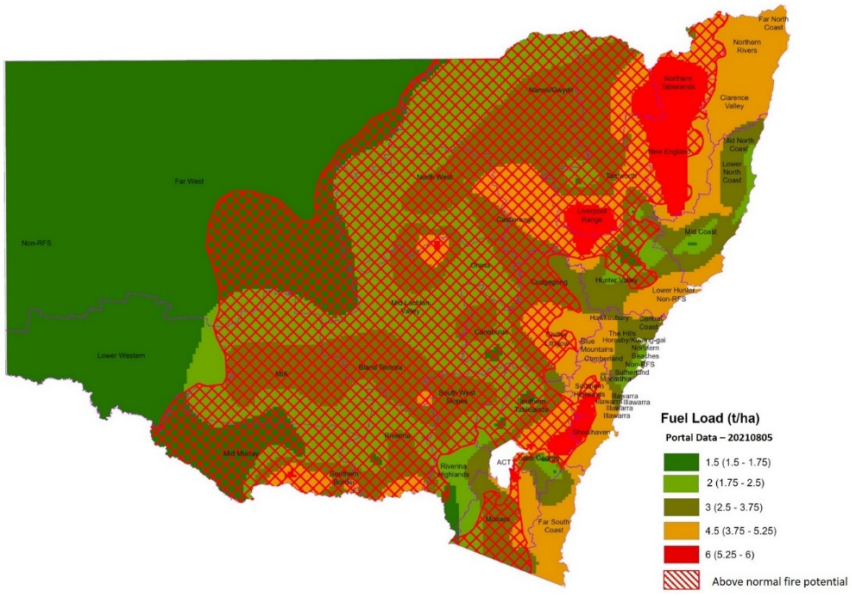



Figure 15 - Comparison of above normal fire season potential to grass fuel loads leading into the bush fire season

Figure 15 compares grass fuel load leading into the 2021-22 fire season to the prediction for above normal fire potential. This map shows that the prediction for above normal fire potential has been produced in response to current and predicted crop and grass fuel growth during Spring.

The seasonal outlook is shown in Figure 16. The blue areas are those considered to have below normal potential. These areas are those recovering from the 2019-20 fire season. Although it may appear to be a significant jump between some of the blue areas and the above normal. This has arisen as the grassland areas are more dynamic in their response to fire than the forested areas.

The areas east of the Great Dividing Range, highlighted as having normal potential, reflect the slightly reduced chances of above median rainfall and the expectation that in any season we could see periods of escalated fire danger and fires that require assistance from beyond the area from which they originate.

Although the North Coast is currently dry and could see fire activity in the lead up to commencement of their Bush Fire Danger Period starting on 1 September, the likelihood of above median rainfall to November is strongest west of the ranges and could mean a delayed start to the fire season for these areas.

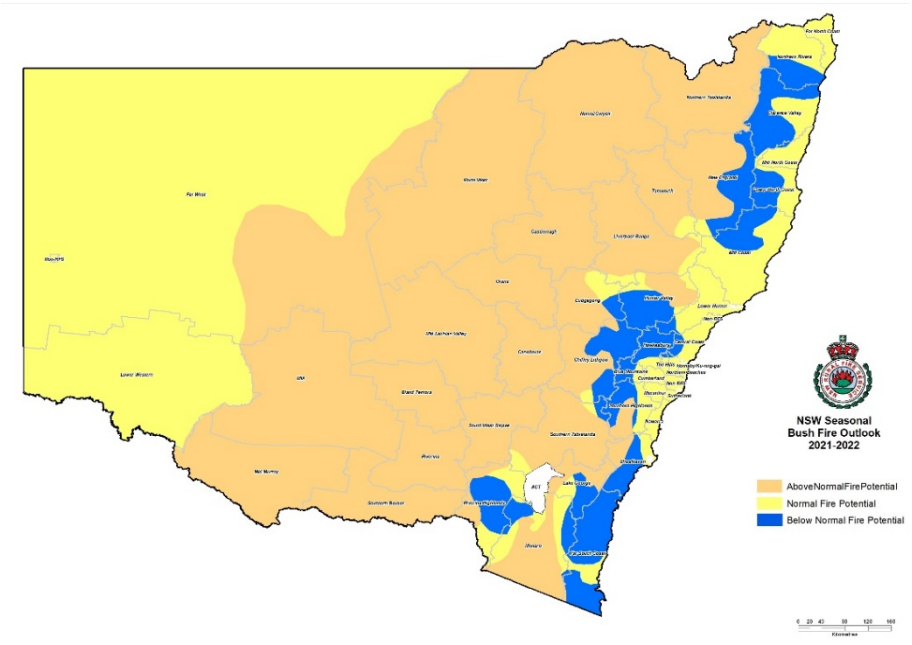



Figure 16 NSW Seasonal Bush Fire Outlook.

# Managing bush fire risk

## Australian Fire Danger Rating System

The NSW RFS is playing a leadership role in the establishment of a new Australian Fire Danger Rating System.

While there have been changes to the way fire danger is described to the community, most notably after the devastating 2009 Black Saturday bush fires in Victoria which saw the introduction of Catastrophic, the science underpinning the system has been largely unchanged for more than 50 years.

Using the latest science, observations and mapping of the different types of vegetation across Australia, the Fire Danger Rating System is being refined.

The NSW RFS has led the development of the infrastructure, science and technology to calculate and display fire danger information to decision makers. The operational system is being piloted and tested throughout the 2021-22 bush fire season.

The revised system will also result in changes to public messaging including the colours and names of each level. This has been based on the outcomes of a large social research project across the country, which there were opportunities to make the system more effective for communities by simplifying the number of levels. The national changes to public facing products is expected to commence in 2022.

## Bush Fire Risk Management Plans and Outcomes

Local Bush Fire Management Committees are required to prepare a works plan to treat hazards identified within their Bush Fire Risk Management Plans. These works programs are reviewed and re-prioritised annually after the fire season to take into account previous seasons fire history and subsequent modifications to risk.

In support of a recommendation from the NSW Bushfire Inquiry, the NSW RFS has commenced the implementation of a new risk management planning process, including new risk plans developed by local Bush Fire Management Committees.

Committees use a range of treatment options to manage the bush fire risk across the state, including hazard reduction, management of bush fire hazard complaints and community engagement.

These works are, where possible, targeted and prioritised to provide the best level of protection to communities.

The operational capability and response from fire agencies also contributes to the protection of communities.

Over the last year, Bush Fire Management Committees have made significant progress in reducing bush fire hazards in their communities. Once again, implementation has been affected by winter rainfall. Over the last financial year 176,499ha of hazard reduction has been completed, protecting over 120,000 properties.

NSW fire authorities will continue to undertake hazard reduction burning when conditions allow.

### NSW RFS Interface Mapping and Treatment Project

The NSW RFS is currently identifying, mapping and managing areas of bushland around urban interfaces throughout NSW to better protect communities. The NSW RFS is using local brigades to assist in the identification of bushland or heavily vegetated areas adjacent to built-up areas, where properties could be threatened by fire.

The following sites have been identified for inspection or treatment.

| Area | Number of sites identified | Number of works required |
|---|---|---|
| **Greater Sydney** | 140 | 130 |
| **Hunter** | 52 | 101 |
| **North Eastern** | 257 | 71 |
| **North Western** | 111 | 25 |
| **South Eastern** | 280 | 238 |
| **South Western** | 523 | 156 |
| **Western** | 259 | 66 |
| **Total** | **1622** | **787** |

Following inspections, members are working to treat these areas. Some locations have been found to be compliant, while some require further inspection or are dealt with through the hazard complaints process. A total of 787 works have been identified as being required, with work progressing on addressing each of these. Additionally there are 113 sites which are currently being dealt with through the hazard complaints process in accordance with the provisions of Part 4 of the *Rural Fires Act 1997*.

The following images depict recent Interface works undertaken in collaboration with the local Brigades, community and Mitigation Crews to demonstrate the reduction in fuel loads

to better protect communities. The local Brigade mapped the area of concern using the Interface Application, with Mitigation Crews planning and undertaking works in collaboration with the Brigade.

Example of Inspected areas before (top) and after (bottom) works have been undertaken

## Mitigation crew works

In line with Recommendation 21 of the NSW Bushfire Inquiry, the NSW RFS has extended the Mitigation Crew program to take full advantage of opportunities to implement hazard reduction activities. Figure 17 provides a summary of mitigation works undertaken.

| | Total to date (including 20/21 FY and as at 25 August 2021) |
|---|---|
| AIDER (Assist Infirm, Disabled & Elderly Residents) Program | 507 |
| Mitigation | 916 |
| Properties protected | 33,881 |

Figure 17 - Summary of RFS Mitigation crew activity leading into the 2021-22 bush fire season

With seasonal outlooks indicating a greater potential for prolific grass growth, the NSW RFS developed and rolled out the Rural and Regional Mitigation Program that saw in addition to its own fleet the engagement of additional machines to focus on Asset Protection Zone (APZ) maintenance and creation.

To date the Rural and Regional Mitigation Program has undertaken over to 1,000 hours of machine mitigation works by NSW RFS mitigation crews since commencement in July 2020.

## Addressing bush fire hazard complaints

During the last financial year, a total of 1,701 Bush Fire Hazard Complaints were received. This is slightly reduced in comparison to the previous year. Of these complaints, around 33% were upheld. By comparison to the previous year, the number of complaints that were upheld has increased by 20%. (Figure 18).

The hazard management process, including the mechanism by which the NSW RFS engages with the community around hazard complaints, is necessarily undergoing a significant change. The NSW RFS is developing an approach which will be tenure blind, ensuring that all lands, public and private are dealt with consistently with a focus on ensuring that were hazards are identified they are dealt with. This change is driven by our commitment to increase community confidence and the timeliness of response to hazard complaints.

Whilst we apply considerable effort in our response to hazard complaints, their volume and complexity has challenged our agency. To improve our service levels, we have started a recruitment campaign to increase the number of Hazard Management Officers in the Districts and Area Commands. It is anticipated that these additional officers and a focussed training strategy for existing District personnel will be fully operational by the end of this current financial year.

An important element of the change to the hazard complaint process includes the introduction of a streamlined and simpler way to report complaints. The NSW RFS has launched its “Guardian” platform for hazard complaint reporting. This platform brings a modern approach to the ease with which the community can contact us; and to the detail they can provide with each report. It is anticipated that the “Guardian” portal will deliver a better understanding of our hazard complaints environment, allowing us to match work effort to risk.

One of the fundamental changes to hazard management that will commence this year is the introduction of the new generation of Bush Fire Risk Management Plans. To understand the bush fire risk to communities, computer modelling will be used to assist local Bush Fire Management Committees to understand potential impact from bush fires in their areas. Using the outcome of the modelling, combined with local knowledge, each Bush Fire Management Committee will settle a five year risk plan. These plans will focus on reducing unacceptable risks across each area by targeting amongst other things, fuel management; ignition prevention; community preparedness; and response protocols. The complete roll

out of the new generation plans is targeted for completion during the 2023/2024 financial year.

A critical driver of the change in our hazard management approach is the *Bushfires Legislation Amendment Bill 2020* which increases the audit and oversight responsibility of the NSW RFS beyond plans of operations and fire access and fire trail plans.

The NSW RFS Commissioner now has consistent oversight of the outcomes of risk management plans and the hazard complaint management process for those complaints that relate to public lands, consistent with private lands.

As we operationalise the provisions of the Amendment Bill and gain a better understanding of the complaints environment, be they public or private land complaints, we will work with all our stakeholders to ensure that our responsibilities under the Act are met and that the provisions of the Act deliver an increased level of community safety.

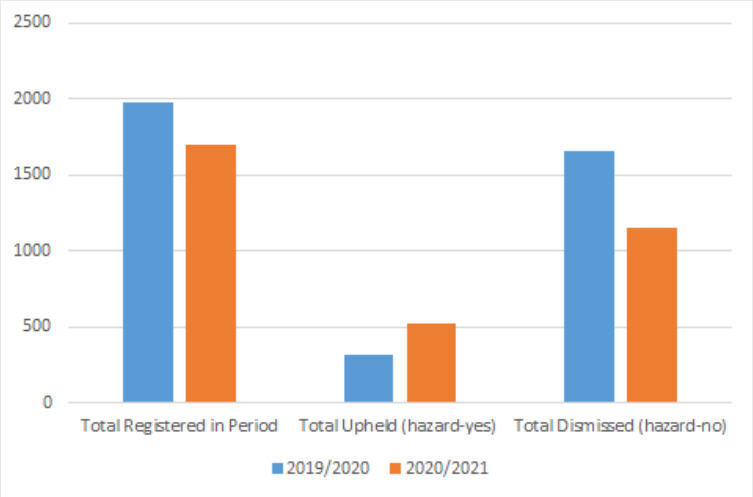



Figure 18 - Bush Fire Hazard Complaints and their assessment status

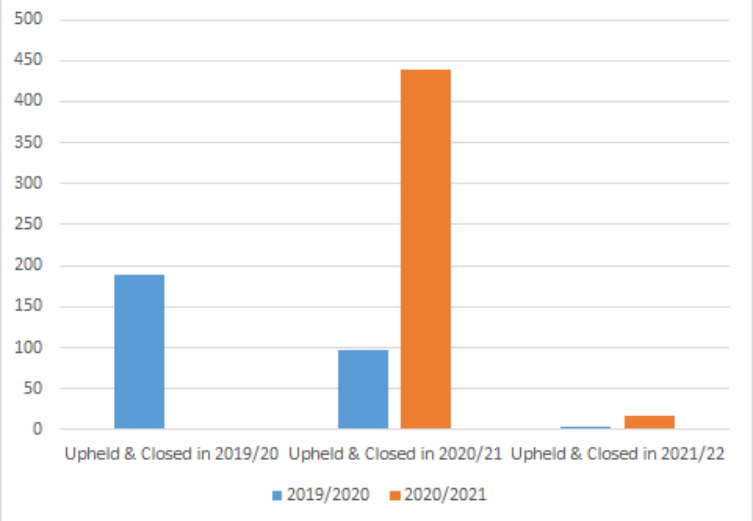



Figure 19 - Number of upheld bush fire hazard complaints closed by financial year (hazard addressed)

Figure 19 displays the number of hazard complaints that have been addressed by financial year. This shows that during the last financial year, over 500 hazards were addressed through the hazard complaints process. The tables also demonstrate that more complex complaints can extend across financial years, taking substantial time to resolve. As of 20 August, although early in the 2021-2022 financial year, bush fire hazards identified on 21 sites have already been addressed.

Figure 20 shows the number of bush fire hazard complaints received, based on land tenure.

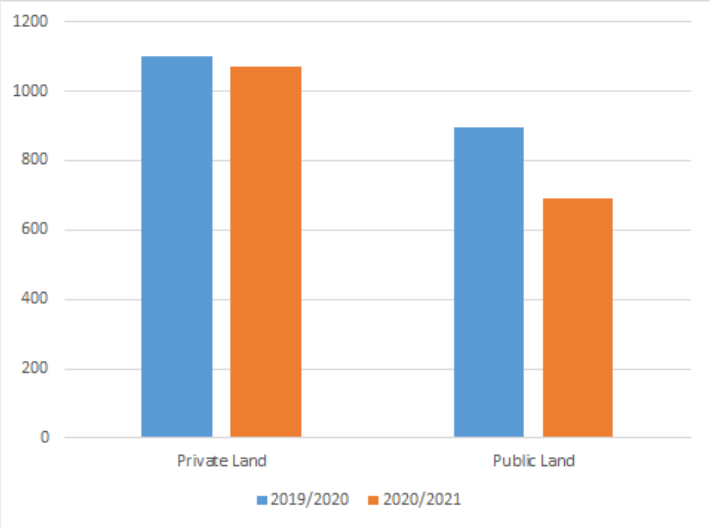



Figure 20 - Bush Fire Hazard Complaint by land tenue

# Operational preparedness

During the 2020-21 fire season, fire authorities responded to over 4,700 bush and grass fires. Whilst lower than previous years, there remained a focus on supporting communities recovering from the recent fires and supporting the significant COVID-19 response across NSW.

The NSW RFS, through the State Operations Centre, will continue to monitor forecast conditions, changing risk assessments and incident activity, to maintain a high level of operational preparedness.

## Response to the NSW Bushfire Inquiry

Agencies continue to make progress in implementing programs resulting from the 2019-20 bush fire season.

The NSW Bushfire Inquiry made a total of 76 recommendations. Thirty-seven of these recommendations included a further 109 sub-recommendations which require implementation of discrete actions or projects.

As a result, Resilience NSW is reporting against a total of 148 recommendations and sub-recommendations, with responsibility for delivery against a range of different agencies.

As of 30 June 2021, 147 recommendations (99.3%) were completed or in progress, while one was being scoped.

The NSW RFS is the lead agency for 79 recommendations and sub-recommendations.

The NSW Government has announced a range of initiatives to respond to the inquiry recommendations totalling more than $450 million. This includes a $268.2 million funding package announced in the NSW Budget in June, consisting of:

- $50.9 million to support firefighting tanker replacement and safety retrofits for frontline NSW RFS, FRNSW, NSW National Parks and Wildlife Service and Forestry Corps NSW fleet;
- $37.6 million for the continued funding of additional mitigation crews in the NSW RFS and NSW National Parks and Wildlife Service to deliver greater hazard reduction;
- $34.4 million to accelerate the state-wide delivery of strategic fire trails;
- $22.7 million for a personal protective clothing replacement program for FRNSW;
- $19.9 million to upgrade the FRNSW dispatch systems;

- $17.2 million to operationalise two black hawk helicopters to replace existing NSW RFS helicopters;
- $10.6 million to assist with the implementation of the new National Fire Danger Rating System;
- $6.7 million to enhance firefighter safety through fire ground tracking, training and accreditation of heavy plant machinery operators; and
- $5.2M to increase FRNSW remotely piloted aircraft systems capability (personnel, fleet and aircraft).

A $192.2 million funding package announced in October 2020 included:

- $36 million for a new first responder mental health strategy for emergency services;
- $23 million in additional personal protective clothing for frontline firefighters;
- $17 million to retrofit NSW RFS and NPWS vehicles and replace FRNSW tankers;
- $8.3 million extension of an integrated dispatch system for the NSW RFS;
- $9.5 million for the delivery of a strategic fire trail network;
- $5.4 million enhancements to the RFS aerial fleet and training facilities;
- $2.5 million improvements to NSW RFS's Fires Near Me app; and
- $2.85 million to deliver critical equipment for 31 multi-agency Emergency Operations Centre.

## COVID-19 planning

Responding to fires during the COVID-19 pandemic continues to present unique challenges. The outbreak of the Delta variant has seen NSW fire agencies need to adapt and ensure members are provided with adequate safeguards.

The NSW RFS continued to manage the changing situation through a dedicated Incident Management Team, working in close partnership with other Emergency Services, to ensure a consistent approach across all agencies and a COVID-19 plan that was adaptable to change as required.

As COVID-19 restrictions continue to change, the NSW RFS updated advice to members regarding internal activities and events. Consistent with NSW Government advice and current restrictions, activities and events continued to be undertaken provided COVID-Safe practices continued to be in place.

The NSW RFS has introduced Rapid Antigen Testing at high priority locations such as the State Operations Centre, and this will be extended to locations such as Incident Management Teams, air bases and base camps.

## Ignition management

Fire permits are used as a way of managing ignitions. These are free legal documents that place conditions on the use of fire on the ground and in the open.

Permits are issued during the Bush Fire Danger Period (BFDP). Permits are also issued by FRNSW outside of this period where a fire might impact on a building.

For the majority of NSW, the statutory BFDP declaration commences on 1 October 2021. However, many Local Government Areas (LGAs), particularly those in the north of the state, commenced their BFDP's early to manage ignitions where conditions are conducive for fires to escape. Six LGAs commenced their BFDP on 1 August 2021. A further 21 LGAs commenced on the 1 September 2021.

In addition, NSW fire agencies are focused on the most effective utilisation and pre-deployment of Rapid Aerial Response Teams and Pre-Determined Dispatch of aircraft to enable rapid initial attack of new remote area ignitions in the landscape, which has been driven by Recommendation 45 of the NSW Bushfire Inquiry.

## Aviation

Aircraft contract commencement dates have been finalised for the fire season, with 29 National Aerial Firefighting Centre contracted services available for firefighting in NSW. In addition to those services, the NSW RFS has access to over 300 state based Call When Needed aircraft.

This season, three Large Air Tankers will be available including the NSW RFS owned 737 and two contract aircraft. Of note, the NSW RFS 737 Large Air Tanker 'Marie Bashir' was deployed in our off season to the United States of America to assist with their firefighting efforts.

The NSW RFS continues to expand and develop its owned aircraft capability, with the addition of two NSW RFS owned Citation fixed wing jet aircraft. In a world first, these aircraft will be used for lead plane operations, detection and scanning and personnel transport. The development of this scanning capability continues for fire activity and other applications such as impact assessments, search operations and vegetation mapping.

The NSW RFS rotary wing fleet currently operates with three Bell 412 helicopters; two BK117 helicopters; and one AS350 helicopter. The rotary fleet will continue to be used for aviation search and rescue and firefighter transportation, including the deployment and extraction of remote area firefighters. The Bell 412 helicopter gifted by the Goodman Foundation will be incorporated into the fleet this fire season.

Airbases are ready to operate this season at Dubbo, Coffs Harbour, Richmond, and Albury to accommodate the Large Air Tankers.

During the 2021-22 fire season, several trials will be undertaken to enhance aviation capabilities, which directly relate to Recommendation 46 and 52 of the NSW Bushfire Inquiry. These trials include night-time aviation firefighting operations; expansion of pre-determined dispatch arrangements of aircraft to fires at the same time as fire appliances; equipment to automate and track loading of fire retardant; as well the use of medium size Remotely Piloted Aircraft Systems (RPAS).

## Heavy plant

With regards to Recommendation 49 of the NSW Bushfire Inquiry, Phase 1 of the Arena HP program has been completed.

The Arena HP Program is operational and facilitates the rapid identification of approved and contracted Heavy Plant Operators based on their locality to the event. It provides a significant reduction in processing of associated invoices.

Currently there are nearly 300 approved contractors registered to provide services through Arena HP and this will increase over coming years, and with 400 registered NSW RFS users.

Training and on boarding of contractors, users and supervisors will continue to be developed and rolled out in conjunction with interagency collaboration.

The secured funding specific to the ongoing development, integration and sustainability of Arena HP, will see the engagement of several personnel that can assist in the commencement of Phase 2 of the project.

This will be focused on integration with NSW RFS software and programs, GPS tracking of Heavy Plant deployed to fire grounds and better contractor performance management.

## Support for agency personnel

In acknowledgement of the significant impact the 2019-20 bush fire season has had on firefighters and other emergency service personnel, the NSW Government has committed $36 million to a new first responder mental health strategy for emergency services.

The NSW RFS, FRNSW and State Emergency Service have established the Joint Agency Initiative, providing access to improved counselling and support services.

As part of the overall program, and in response to Recommendations 41 and 42 of the NSW Bushfire Inquiry, the NSW RFS continues the implementation of permanent psychologists in local areas to support the mental health of volunteers and staff.

# Agency firefighting capability

| | |
|---|---|
| NSW Rural Fire Service | 75,354 members (61,800 firefighters)<br>700 Remote Area Firefighters<br>3,883 Appliances<br>9 Owned Aircraft (1 Large Air Tanker, 2 fixed wing, 6 rotary)<br>Over 300 contracted aircraft available<br>40 Aviation Rescue firefighters |
| NSW National Parks & Wildlife Service | 1,197 Firefighters (including 677 Remote Area Firefighters)<br>311 appliances and 180 heavy plant<br>3 owned (rotary) and 4 leased aircraft (2 rotary and 2 fixed-wing), plus 1 additional bushfire season contracted rotary for NPWS rapid aerial response teams (RART) |
| Forestry Corporation | 591 Firefighters<br>3 Aircraft |
| Fire & Rescue NSW | 6,864 firefighters (3,562 Permanent, 3,302 retained)<br>53 Bush fire appliances<br>396 Urban Pumpers. (420 including aerial appliances)<br>25 RPAS<br>513 Community Fire Units, 4,844 members |

# Community preparedness

As has been demonstrated in recent fire events, particularly during the 2019-20 bush fire season, the way the community prepares for and responds to fire events is critical.

Long-term research conducted by the NSW RFS, as part of its continuing Prepare Act Survive public awareness campaign, has found the general level of planning in the community remains high.

In February 2021, 78 percent of people surveyed stated they had some form of plan for what to do during a bush fire. This includes people who have discussed with their family what to during a fire, or developed a more formal plan.

This result is higher than the 77 percent recorded at the end of the 2019-20 season, and a significant increase on the 30 percent of people with a plan recorded more than a decade ago.

One of the most significant challenges, and a continued focus, is improving the quality of people's plans. Eighty-five percent of people state they have intentions to leave during a fire, while 45 percent say they have intentions to stay. This shows that many people have not made a clear decision, or are adopting a "wait and see" approach depending on the circumstances.

While the level of planning continues to be high, a challenge remains in getting people to undertake preparatory actions on their property. Fifty-four percent of people state they have taken steps to prepare their home for bush fire. The most common actions are clearing gardens, gutters and fuel from around their home.

Additionally, research conducted by the Bushfire & Natural Hazards Cooperative Research Centre and commissioned by the NSW RFS, provided valuable insights into the way the community responded during the 2019-20 fires. The research involved in depth interviews with people impacted by the fires, as well as a statewide survey of 1,000 people.

The research found the use of communications and warnings materials was extensive during the season. Nearly 60% had read the NSW RFS Guide to Making a Bush Fire Plan, while 44% had participated in a local NSW RFS brigade event.

During the season, 78% had received official warnings with sufficient time, and 71% with sufficient information.

Ninety-four percent had downloaded the Fires Near Me NSW application, with 78% stating it was their preferred source of information.

The research found there was an increasing expectation from the community of near real-time information about fires, such as highly detailed and localised information. Of particular

concern however was the fact that many people wanted this level of detail so they could leave their decision making to the last moment.

The first Get Ready NSW Household Preparedness Survey, conducted on behalf of Resilience NSW, has surveyed people across NSW and reported at Joint Organisation of Council level. It has assessed the level of bush fire preparedness across each area.


Figure 21 - Community preparedness index based on Joint Organisation of Council (Source: Resilience NSW)

The NSW RFS is continuing to focus on these issues through its ongoing public awareness activities. A new public awareness campaign is due to be launched for the 2021-22 bush fire season, highlighting the need to plan and prepare for fires, and how individual preparation actions are important for the protection of the community as a whole.

Local engagement continues to be key to the success of communicating risk and improving the levels of engagement, especially through brigade led activities. One of these is the annual Get Ready Weekend. Unfortunately, as was the case in 2020, this statewide event has been impacted by COVID-19 restrictions which have prevented most face-to-face activities, with volunteer brigades focusing on online activities.

Finally, focus group testing by the NSW RFS in various communities across NSW in the lead-up to the 2021-22 campaign has found COVID-19 has impacted on community attitudes to bush fire. Many people interviewed state that COVID-19 has presented additional challenges in their lives, and have not undertaken the necessary planning and preparation steps they would normally consider undertaking.

The testing has also found that as the length of time since the last major fires increases, there is a risk of apathy returning. Also, many people had not considered the changing risk profile as grass fires may be more likely in some areas.

These issues will continue to a be focus on communications and engagement activities across the bush fire season.

# NSW RURAL FIRE SERVICE

**Postal address**
NSW Rural Fire Service
Locked Bag 17
GRANVILLE NSW 2142

**Street address**
NSW Rural Fire Service
4 Murray Rose Avenue
Sydney Olympic Park NSW 2127

**T** (02) 8741 5555
**F** (02) 8741 5550
www.rfs.nsw.gov.au

**Social Media**
www.facebook.com/nswrfs/
@NSWRFS