

Adverse Fire Weather Event 3-6 February 2022

Community Report

DFES Incidents:

- Bayview Rise – 559811
- Bridgetown – 559961
- Shackleton – 560058
- Narrogin East – 560035

Supplementary Report

- Calgardup – 554503 (8-12 December 2021)



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Acknowledgements

The report acknowledges the participation in the review process by members of the following:

- State Emergency Service
- Volunteer Fire and Emergency Service
- Volunteer Fire and Rescue Service
- Bush Fire Brigades
- Career Fire and Rescue Service
- Department of Fire and Emergency Services (DFES) leadership personnel who were involved in managing the response to the incidents
- DFES and Department of Biodiversity, Conservation and Attractions (DBCA) Regional Teams
- DFES, including Digital Media, Operational Information Systems Branch, the All Hazards Information Management System (AHIMS) Web Based Emergency Operations Centre (WebEOC) Team, Fire Investigation and Analysis Unit, Bushfire Technical Services, Health and Safety Services, Special Operations, and various data custodians.
- External stakeholders include Local Governments (LG), Western Australian Local Government Association (WALGA), DBCA, Bureau of Meteorology (BoM) and the Department of Communities (DoC).

Purpose

The purpose of this Community Report is to gather and validate observations from relevant sources internal and external to DFES. These observations have been used to develop insights and lessons that can be utilised to improve and assist the DFES and the broader emergency management sector in operational responses.

The Community Report is specific to the Adverse Fire Weather Event (AFWE) experienced in Southern Western Australia during February 2022.

This Community Report identifies primary areas of interest in Planning and Mitigation, Emergency Response and Resources capability areas of the State Emergency Management Committee (SEMC) Emergency Management Capability Framework.

The lessons identified in this report will be considered by the DFES and shared with our emergency management partners, for consideration. All observations will be retained and may be used for further learning opportunities.

The Calgardup Bushfire which occurred in December 2021, occurred during the same high-threat period and was a precursor event to the AFWE. This bushfire is included as a supplementary report within this Community Report due to the similarity across the themes collected from the observations.



Approvals

The SEMC requires that emergency management agencies undertake debriefs, reviews, and analysis of their operational activities to identify areas of improvement. This requirement is outlined in the State Emergency Policy (4.12, 4.13), and State Emergency Plan (4.8, 5.7). This report emphasises the Fire and Emergency Services (FES) Commissioner’s commitment to continuous improvement, in addition to addressing obligations under Western Australian Emergency Management arrangements.

Approval to conduct the Community Report for the AFWE was granted by the FES Commissioner, overseen by a review team comprised of DFES, DBCA, WALGA and Bushfire Operations Committee representatives, chaired by the FES Commissioner’s delegate Assistant Commissioner Metropolitan Operations.



Commissioner's Foreword

The Adverse Fire Weather Event in February 2022 was an unprecedented event in DFES recent history. With the onset of catastrophic fire conditions resulting in four Level 3 bushfires running concurrently, the preparedness, coordination and resilience of operational and frontline personnel and volunteers alike, was tested.

The ability of the community to work alongside emergency management agencies, whilst being impacted, is a testament to the resolve of those effected communities and the relationships fostered over time.

I regard the After Action Review process as fundamental to the development of an efficient and effective response to incidents, alongside the overall preparedness of the State. This provides an opportunity for DFES and its partner agencies to continue to learn from these events and continue to work towards making Western Australia a safer state.



Fire and Emergency
Services Commissioner
Darren Klemm AFSM

Executive Summary





Executive Summary

The AFWE in the South West (SW) Land Division of Western Australia between 3-6 February 2022 resulted in four concurrent Level 3 Incidents that impacted the Shires of Denmark, Bridgetown-Greenbushes, Bruce Rock, Quairading, Corrigin, Kondinin, and Narrogin.

The development of a deep trough along the West Coast on 3 February 2022, was notable for sustained winds above 40 km/h and temperatures exceeding 40 degrees Celsius. The passage of the trough led to an elevated fire risk that extended from the SW Land Division coastal to inland areas over several days. The consequential Fire Danger Ratings (FDR) were unusual for many of the areas included in the forecast and resulted in catastrophic ratings in areas that had never recorded such conditions.

The weather system was forecast to rapidly change from a deep trough to a deep low-pressure system from late on 6 February 2022 and bring with it a much cooler environment with cold wet weather by 7 February 2022. It was evident to DFES State and Regional/Metropolitan Operational Centres (SOC/ROC/MOC) personnel, that the passage of this trough would present significant challenges in preventing and responding to the ignition of bushfires in the landscape before any respite that the forecast weather change presented.

The State undertook a higher level of preparation leading into the highest threat days, initiating early requests and deployment of various state and interstate resources, including personnel, appliances, machinery, and aerial assets. This preparedness enabled the SOC, MOC, and ROC resources to rapidly respond to the incidents as they occurred.

This unprecedented event resulted in four concurrent Level 3 Incidents, with the complete loss of 77 structures and 41 structures sustained levels of damage varying from severe to slight. No human lives were lost during this emergency, however other losses included agricultural productivity and disruption to farming, flora, fauna, and livestock.

The total resource commitment from DFES and its partner agencies between the period of 4-13 February 2022 included 292 firefighting appliances, and 996 personnel (staff and volunteer). This amounted to 23,774 hours of combined effort. At the same time, DFES responded to an additional 1,098 incidents across the remainder of Western Australia.

DFES initiated a joint After Action Review (AAR) with DBCA and WALGA. The response to these emergencies required significant State-wide coordination involving numerous emergency management agencies.

The response and recovery aspects of the report centre on four Level 3 bushfires including:

- Bayview Rise Bushfire in the Shire of Denmark (commenced on Friday 4 February 2022)
- Bridgetown Bushfire in the Shire of Bridgetown-Greenbushes (commenced on Saturday 5 February 2022)
- Shackleton Complex Bushfire in Shires of Bruce Rock, Quairading, Kondinin and Corrigin (commenced on Saturday 6 February 2022)
- Narrogin East Bushfire in the Shire of Narrogin (commenced on Saturday 6 February 2022).



Adverse Fire Weather Event – Community Report

The purpose of the Community Report is to gather and validate observations from relevant sources internal and external to DFES. These observations have been used to develop insights and lessons that can be utilised to improve and assist the DFES and the broader emergency management sector in operational responses.

Key stakeholders from LG, WALGA, and DBCA together with DFES participated in a range of data collection methods including online surveys, debriefs, interviews and LG submissions to source 1,110 separate observations. These observations have been themed across emergency response, planning and mitigation, resources, community involvement, governance, analysis, and continuous improvement.

From these observations, 31 separate insights were identified with six lessons being drawn from these insights.





Adverse Fire Weather Event – Community Report

The six lessons are outlined below:

Lesson 1: Pre-emptive preparation	Preliminary preparations made by the SOC, MOC, and ROCs based on the predicted weather, relating to resource stand-by and deployment, were deemed successful and should be considered for future events.
Lesson 2: Early communications to pre-formed teams	Personnel involved in the pre-formed teams (PFT) were able to deploy with little notice, even those not on-call. While this was successful, there should be a more coordinated roll out of the information to ensure sufficient information is provided to those attending.
Lesson 3: Role clarity of communication lines	Improved communication is imperative during incidents, for not only battling bushfires but for planning and resource deployment.
Lesson 4: Contingency plans for identified locations	Facilities at or close to the fireground need to ensure they are in safe identified locations, with contingency plans in place.
Lesson 5: Planned and coordinated community communication	There is an opportunity for improvement when it comes to community messaging to ensure consistent, timely, coordinated, and current messaging is always used.
Lesson 6: Wider engagement at event locations	Learning opportunities are present during and after all incidents and should be actioned and embraced more widely.

DFES regards the AAR process as fundamental to the development of an efficient and effective response to incidents, alongside the overall preparedness of the State. This report details the observations, insights, and lessons gained from this process. This provides an opportunity for DFES and its partner agencies to continue to learn from these events.

General Overview

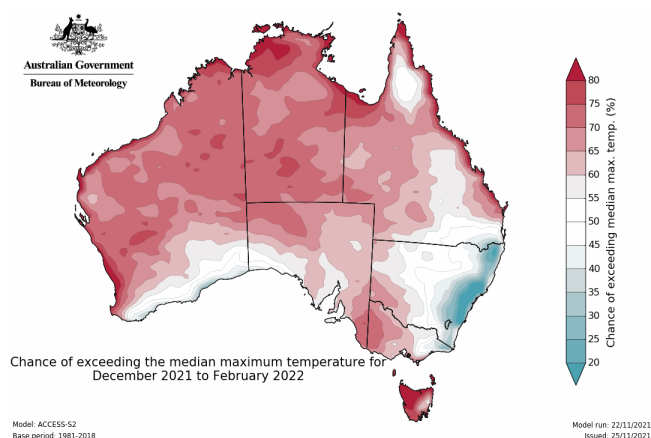


Weather

The AFWE that occurred in the SW Land Division in February 2022 was the trigger to initiate the preparation and deployment of resources required to manage the four concurrent Level 3 Incidents across Western Australia. Antecedent soil, fuel and climactic conditions contributed to the rapid escalation of the fires and fire behaviour during this period.

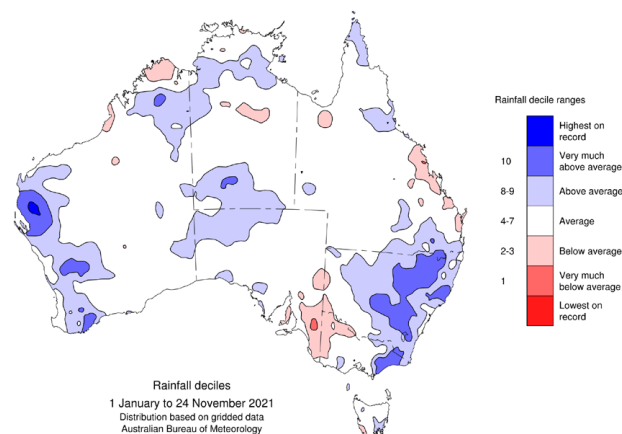
The Seasonal Bushfire Outlook prepared and published by the Australian Fire and Emergency Services Authorities Council (AFAC), advised the predicted daily minimum and maximum temperatures to be above average across most of the State (see Figure 1). This combined with above-average fuel loads was expected to result in higher fire potential for the following regions: Pilbara, Gascoyne, and Murchison, Swan Coastal Plain, Jarrah Forest and the Western most areas of Esperance Plains and Mallee Bioregions (to the North and West of Esperance). Reports indicated the fire potential to be normal for the remainder of the state.

**Figure 1: Maximum temperature outlook
December 2021 - February 2022**



Source: AFAC Seasonal Bushfire Outlook Summer 2021 Late winter rainfall eased a lengthy drought over the SW of Western Australia, creating conditions that facilitated the growth of vegetation and crops. See Figure 2.

**Figure 2: Rainfall deciles for
1 January - 24 November 2021**



Source: AFAC Seasonal Bushfire Outlook Summer 2021.

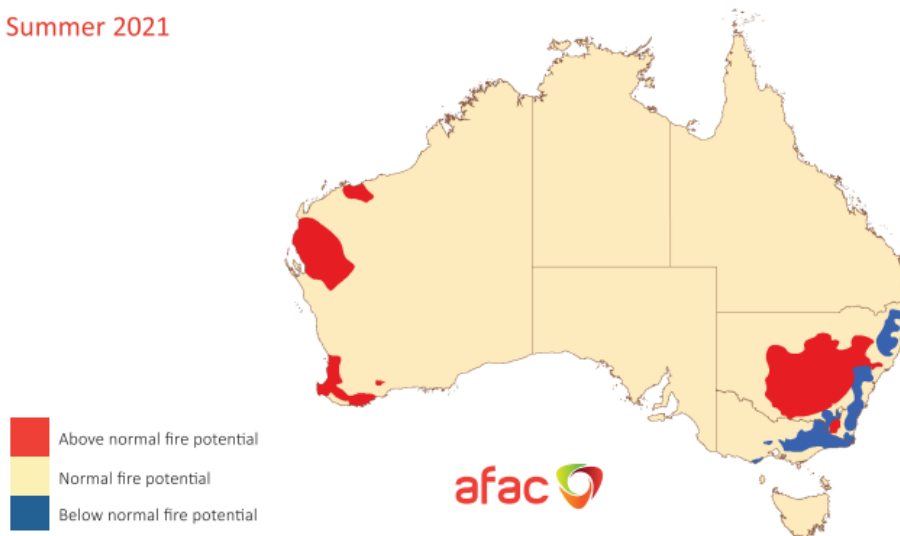
This growth consequently resulted in higher fuel loads in many locations within the State that correlated with an above-normal fire potential, and dryer conditions combining to form above-average bushfire conditions. Further, the summer outlook also identified dryer conditions in the State may lead to above-average bushfire conditions for the 2021-22 bushfire season (Figure 3).



Adverse Fire Weather Event – Community Report

Figure 3: Areas based on the interim biogeographical regionalisation for Australia and other geographical features.

Summer 2021



Source: AFAC Seasonal Bushfire Outlook Summer 2021

During December 2021, successive heatwaves assisted with the rapid curing of the fuel and left the landscape of the SW primed in the event of any bushfires.

Throughout January 2022 prolonged high temperatures and continuing heatwaves combined with a series of troughs meant the Southern half of Western Australia was exposed to an extended period of significantly elevated fire risk. The weather experienced in Western Australia was in total contrast to the Eastern States where emergency services were responding to significant flooding events which continued for several months.

The development of a deep trough along the West coast on 3 February 2022 resulted in sustained winds above 40 km/h and temperatures exceeding 40 degrees Celsius. The passage of the trough led to elevated fire risk extending from the SW Land Division coastal to inland areas over several days. The consequential FDR was exceedingly unusual for many of the areas included in the forecast and resulted in Catastrophic ratings in areas that had never recorded such conditions. The uncertainty of the atmospheric stability was also reflected in the cHaines index exceeding 12 for much of the SW on 5 February 2022 and 13 for large areas of the SW by 6 February 2022. High cHaines indices indicate the potential for fires to become large or erratic as vertical movement of air can create strong convection columns above a fire with strong indraft winds at ground level as a result, 13 is the maximum index value.

The weather system was forecast to rapidly change from a deep trough to a deep low-pressure system from late on 6 February 2022 and bring with it a much cooler environment with cold wet weather by 7 February 2022. It was evident though that the passage of this trough would present significant challenges in preventing and responding to the ignition of fires in the landscape before any respite that the weather change presented.

The development of the significant fire weather in the SW followed a sustained period of activity in the North West of the State with the passage of a Tropical Low, which had impacted Broome and surrounding areas during the previous week, enquiring about sustained coordination between the SOC and the affected regional areas.



State Preparedness

The SOC, MOC and ROCs, at least twice weekly, review their expected risk and available resources using the Forecast Risk and Resource Assessment (FRRRA) process. This process looks at factors that may increase the likelihood of DFES response and the personnel levels available should the likelihood eventuate. Risk levels are set to:

- Minor
- Moderate
- Major
- Extreme

When a risk level is established as Moderate or greater, the relevant SOC/MOC/ROC shall then implement pre-determined Heightened Risk and Readiness Actions (HRRRA), aligned with this risk level for their Region or the State. These actions identify preparedness activities that enhance DFES' responses during these heightened risk periods.

The State was actively monitoring a cyclone and the breaching of the Transcontinental Railway by flooding resulting in supply shortages across the State and reliance on road networks during the preceding weeks. As a result, the SOC had activated on 29 January 2022 to prepare for any response needed across the State, to support the State resupply effort, and to monitor/support several bushfires through the Goldfields Midlands (GM) and Midwest Gascoyne Regions.

On Thursday 3 February 2022, six of the nine DFES Regions had already increased their FRRRA to Moderate, and the SOC pre-emptively triggered an FRRRA of Major. This escalated further on 4 February 2022, with three DFES Regions increasing to Major and the State FRRRA increased to Extreme. This resulted in the activation of several predetermined processes, as listed in the HRRRA, which ensured broad coverage of the risk areas from both a staffing and resourcing perspective. The first bushfire started shortly after this.



Adverse Fire Weather Event – Community Report

State Operations Centre

The development of the weather systems was closely monitored into the lead-up by the SOC, and ahead of the first ignition, a range of measures to prevent and limit fires were implemented. The response to these emergencies required significant State-wide coordination involving numerous emergency management partner agencies which are summarised in the table below.

Date	Occurrence
Thursday 03/02/2022	• State FRRA set to Major ◦ 6 of 9 DFES Regions FRRA set to Moderate • 7 x Total Fire Bans (TFB) established and declared • SOC staffing established at Phase Two Augmentation • Operational Preparedness Briefing (OPB) and All Hazards Liaison Group (AHLG) meetings are scheduled daily • Pre-emptive State Operations Reporting Cycle established • Developed a State Aircraft Plan • Advice from DBCA State Duty Officer (SDO) that capacity is low • Request National Resource Sharing Centre (NRSC) to ◦ Supply 2nd Large Air Tanker (LAT) ◦ Supply additional Line Scanner ◦ Prepare for possible requests for interstate support
Friday 04/02/2022	• State FRRA pre-emptively set to Extreme ◦ 3 of 9 DFES Regions FRRA set to Major ◦ 4 of 9 DFES Regions FRRA set to Moderate • By 1600 hours, DFES Regional FRRA were ◦ 1 of 9 DFES Regions set to Extreme ◦ 6 of 9 DFES Regions set to Major ◦ 1 of 9 DFES Regions set to Moderate • 20 x TFB were declared • 2nd LAT and Line Scanner arrived • Duty Assistant Commissioner (DAC) Strategic Intent for the period until Monday 7 February 2022 communicated at OPB and in WebEOC • NRSC requested to place a 36-person Level 3 Incident Management Team (IMT) on standby • 12 x IMT identified, including 2 x Level 3 IMT • 6 x Metropolitan Task Forces (TF) were identified in addition to Regional TF. • State Strategic Risk Assessment prepared • State Freight Re-supply Response Plan developed
Saturday 05/02/2022	• 109 x TFB were declared, of which 90 were pre-emptive • SOC staffing established at Phase Three Augmentation and campaign rostering implemented • DBCA State Commander part of SOC team • NRSC formal request for interstate 36-person Level 3 IMT • 3rd LAT requested from NRSC and arrived ◦ Essential Services Network Operators (ESNO) representatives present in the SOC ◦ BoM provides personnel for day and night shifts in the SOC



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Date	Occurrence
Sunday 06/02/2022	• 103 x TFB were declared, of which 34 were pre-emptive • A Level 2 IMT located at DFES Headquarters for rapid deployment • A Level 3 IMT was identified and located at Northam Regional Office for rapid deployment • SW ROC collapsed with staff transferred to a new Level 2 IMT • Employees SMS to seek assistance for IMT roles • DFES Pilbara and Kimberley Regions provided additional Level 2 IMT for deployment • Interstate 36-person Level 3 IMT arrives



Adverse Fire Weather Event – Community Report

Regional Operations Centres

In addition to the SOC preparedness actions, each DFES Region undertook their preparedness actions, where their FRRA was set to Moderate or higher. Several Regions were already active due to existing incidents occurring within their Regions.

The preparedness actions of the DFES regions which were impacted by the Level 3 Incidents are as follows:

Great Southern

Date	Occurrence
Thursday 03/02/2022	• Region FRRA set to Minor • 4 x Staff deployed to Lower South West (LSW) Region to support active incidents in that Region • Resource capacity set to reduced • Country Operations MS Teams – IMT/ROC Staffing considerations
Friday 04/02/2022	• Region FRRA set to Major (PM) • Level 2 IMT sourced from Upper Great Southern (UGS) Region/Great Southern (GS) Region/DBCA staff placed on-call • Staff deployed to LSW Region return • ROC Structure established UGS Region /GS Region (On Call) • Rostered Day Off (RDO) cancelled • Incident Control Vehicle (ICV) Crew identified • Machinery placed on standby • 2 x City of Albany TF identified • Enhanced Career Fire and Rescue Service (CFRS) crewing implemented • ROC Activated • TFBs declared in place across Region
Saturday 05/02/2022	• Regional FRRA set to Major • TFB declared across Region • Additional Level 2 IMT sourced from UGS/GS Regions and DBCA placed on-call
Sunday 06/02/2022	• Regional FRRA set to Major

Lower South West

Date	Occurrence
Thursday 03/02/2022	• Region FRRA set to Moderate • Resource capacity set to reduced • LSW Region staff deployed to DBCA managed Level 2 Incident • Level 2 IMT identified • Regional TF deployed to existing Level 2 Bushfire. Additional TF identified.



Adverse Fire Weather Event – Community Report

Date	Occurrence
Friday 04/02/2022	• Region FRRA set to Major • ROC activated set to Level Two Augmentation, with the support of staff from GS Region • Joint Level 2 IMT with SW Region identified • Additional TF identified • Regional High Season Appliances crewing confirmed • Continuity planning with Country South Regions to maintain the availability of 2 x Level 2 IMT and 2 x ROC teams to support all Country South Regions as the trough moves through.
Saturday 05/02/2022	• Region FRRA set to Major
Sunday 06/02/2022	• Region FRRA set to Major

Goldfield Midlands

Date	Occurrence
Thursday 03/02/2022	• Region FRRA set to Moderate • Confirm availability of Goldfield Air Services aircraft based in Kalgoorlie • Level 2 IMT identified • TFs identified • Monitoring risks related to - o Border Quarantine process arrangements - o Limited welfare and historically limited preparedness of travellers along the Eyre Highway - o A significant increase in triple road trains between South Australia and Kalgoorlie, and double road trains between Kalgoorlie and Perth, due to the washout of the Transcontinental Railway line.
Friday 04/02/2022	• Region FRRA set to Major • ROC activated • Chief Bush Fire Control Officer (CBFCO) /Volunteer Fire and Rescue Service (VFRS)/ Volunteer Fire and Emergency Service (VFES) teleconferences held • Operational Area Support Group (OASG) briefing • Availability of Regional High Season Appliances confirmed, crewed, and pre-positioned • 2 x DFES Officers and 4 x Appliances staged at Fraser Range station • 2 x Helitaks staged at Northam airfield • 2 x Machinery placed on call
Saturday 05/02/2022	• Region FRRA set to Major • 2 x Machinery staged at Fraser Range Station, in addition to DFES Officers and Appliances • Level 2 IMT on call and based staged at Northam Regional office
Sunday 06/02/2022	• Region FRRA set to Major • Metropolitan TF staged at Northam



Adverse Fire Weather Event – Community Report

Upper Great Southern

Date	Occurrence
Thursday 03/02/2022	• Region FRRA set to Minor • Level 2 IMT and ROC teams identified in conjunction with GS Region and DBCA Wheatbelt Region • Request for additional IMT staff submitted to SOC.
Friday 04/02/2022	• Region FRRA set to Extreme • Established availability of TF within the Region • Confirm DBCA machinery availability • Regional High Season Appliances crewing confirmed • Pre-emptive TFB established
Saturday 05/02/2022	• Region FRRA set to Extreme • All ROC and IMT staff placed on call • ROC Activated • Discussion with DFES Aviation to re-deploy aircraft to Narrogin on Sunday 6 February 2022 • Re-establish Level 2 IMT due to staff due deployed to Bayview Rise Fire. • Regional stakeholder briefing • Region-wide TFBs declared
Sunday 06/02/2022	• Region FRRA set to Extreme • Metropolitan Superintendent deployed to assist ROC • Region-wide TFBs declared

TFBs were declared, through predetermined triggers or pre-emptively, as the AFWE moved through the State.

This measure played a significant role in ensuring that the number of potential incidents was minimised. This was supported by LGs implementing harvest and vehicle movement bans to complement the DFES preparations.

Throughout the series of bushfires (4-13 February 2022), 1098 additional incidents required a response from DFES resources across the State.

The four concurrent Level 3 Incidents covered in this report are the following:

- Bayview Rise Bushfire 559811
- Bridgetown Bushfire 559961
- Shackleton Bushfire 560058
- Narrogin East Bushfire 560035

Adverse Fire Weather Event – Community Report

Figure 4: Total Fire Ban Map 3 February 2022



Image Source – DFES

Figure 5: Total Fire Ban Map 4 February 2022



Image Source – DFES

Figure 6: Total Fire Ban Maps 5 February 2022

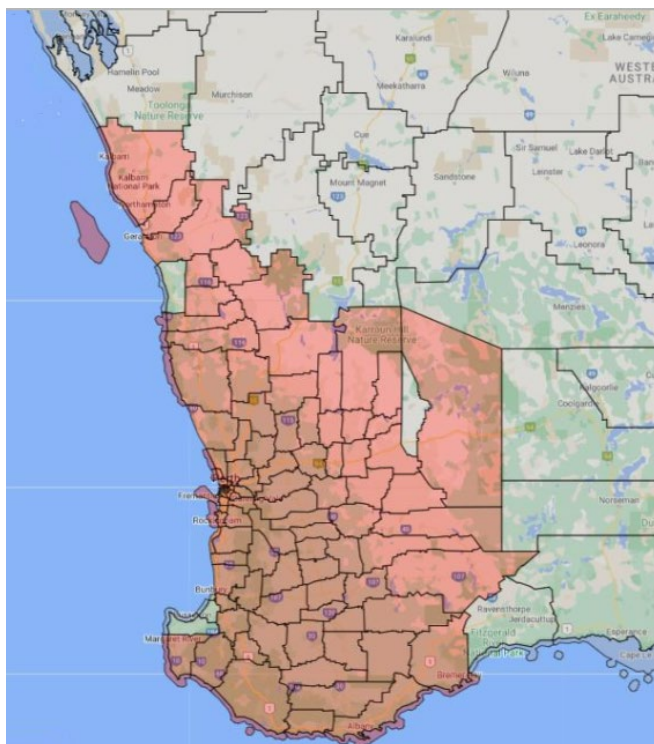


Image Source – DFES

Figure 7: Total Fire Ban Maps 6 February 2022

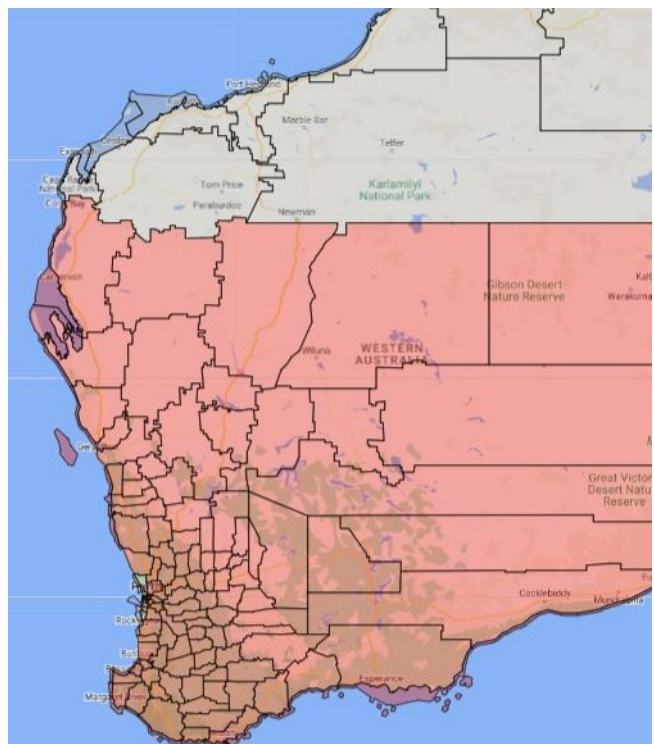
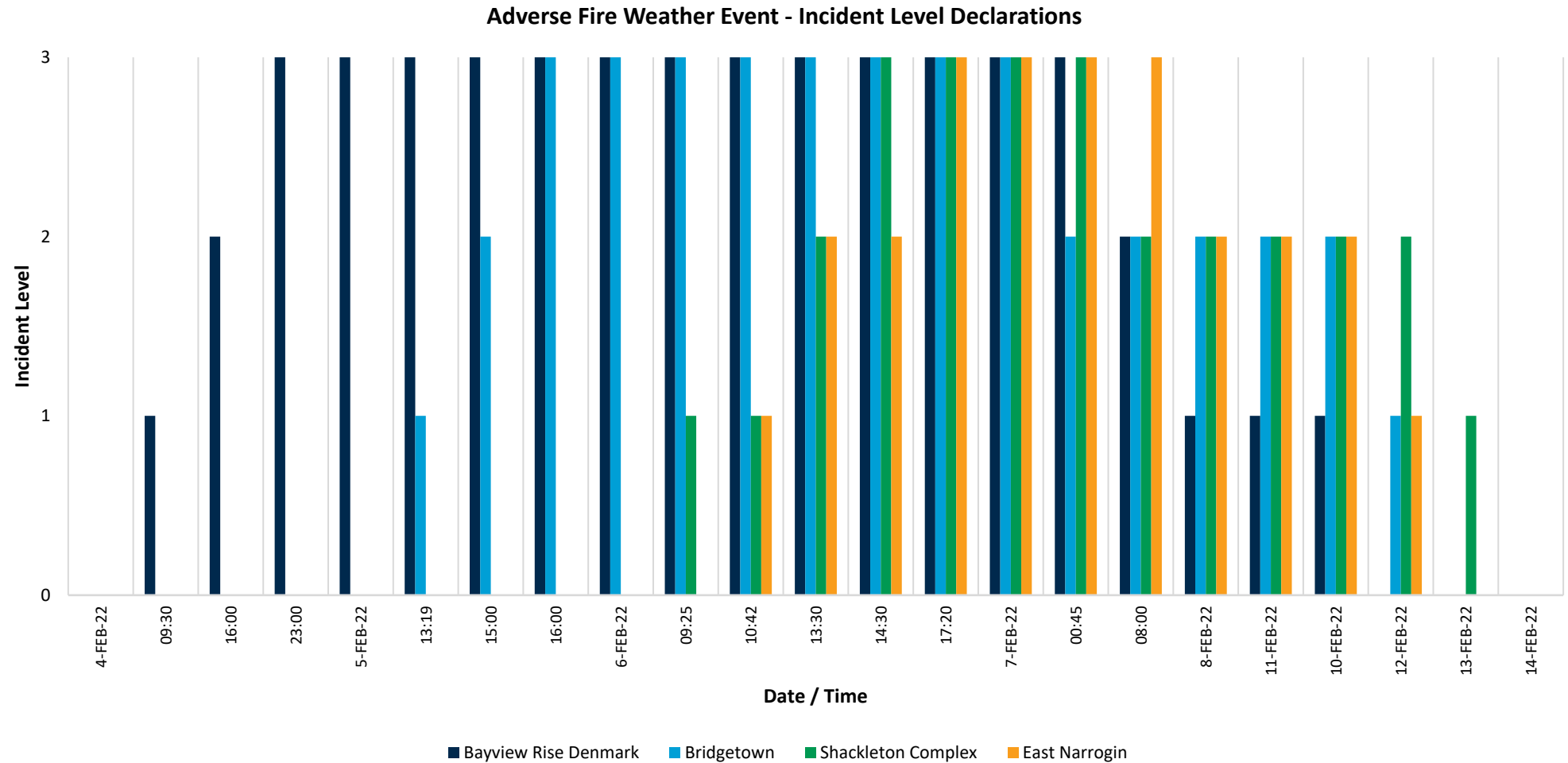


Image Source – DFES

Adverse Fire Weather Event – Community Report

Figure 8: Alignment of incidents, escalation to Level 3 and de-escalation



The above graph shows the date and time associated with each incident level declaration, culminating in the unprecedented situation of having four concurrent Level 3 Incidents being managed.

Adverse Fire Weather Event – Community Report

Figure 9: Overview of DFES Incidents in Southern Western Australia

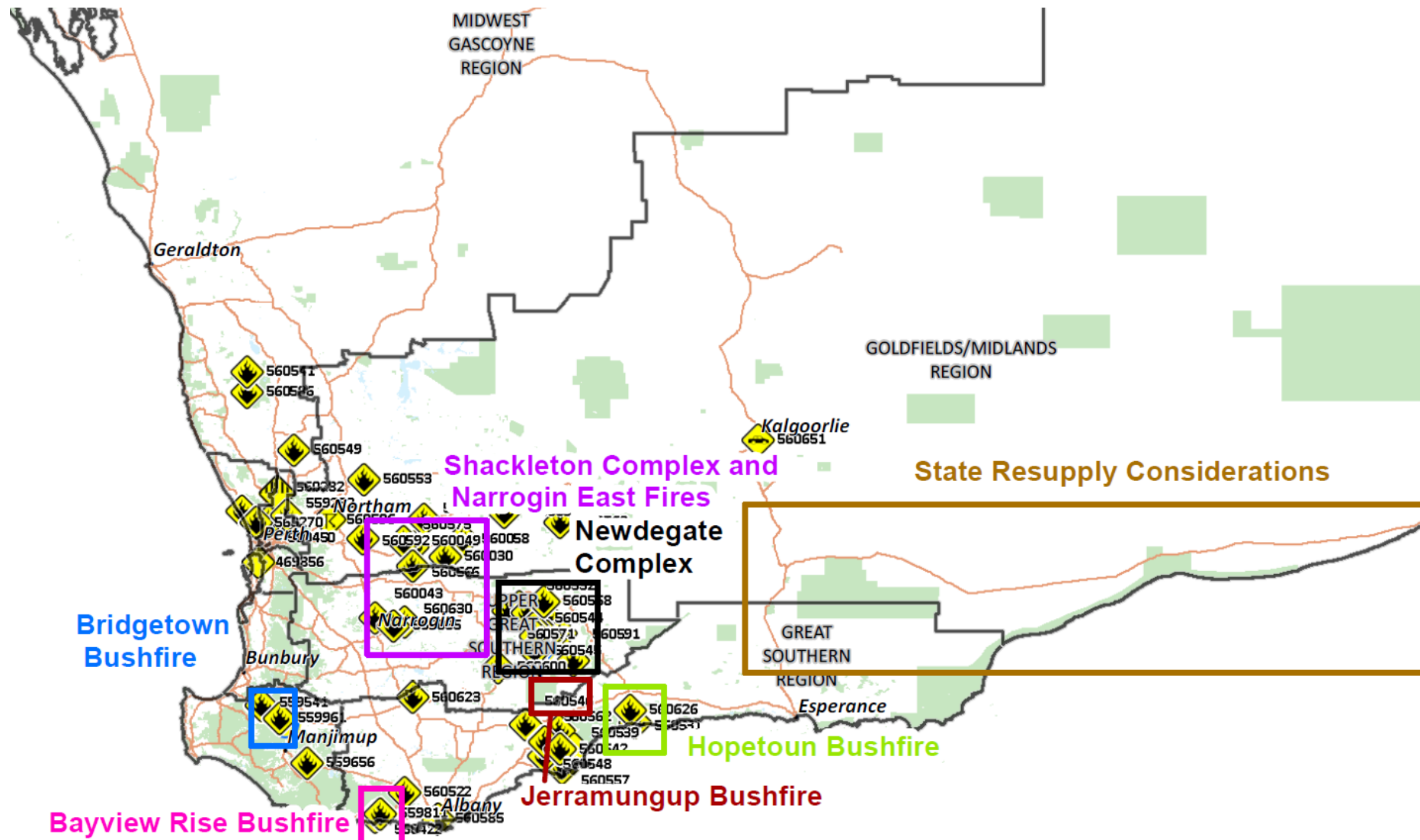


Image source - DFES

Bayview Rise Bushfire (559811) – Great Southern Region





Adverse Fire Weather Event – Community Report

The bushfire was first managed by the Shire of Denmark after being reported on 4 February 2022 at 09:28hrs. DFES took control of the incident at 14:15hrs after a Section 13 was issued. The bushfire was declared a Level 2 Incident at 16:00hrs and escalated to a Level 3 Incident by 23:00hrs the same day.

Bayview Rise Bushfire Timeline

As previously mentioned, SOC pre-preparedness actions, assisted in the rapid deployment of resources to the bushfires that occurred in Bayview Rise on 4 February 2022.

Date	Time	Occurrence
Thursday 03/02/2022		Fire Danger Rating - HIGH State Operation Centre - State FRRR Major Regional Operation Centre - GS Region FRRR Minor
Friday 04/02/2022		Fire Danger Rating - VERY HIGH State Operation Centre State FRRR Extreme
	09:28hrs	000 Fire reported - ComCen Started in the Shire of Demark
	13:30hrs	Regional Operation Centre GS Region FRRR Major
	14:15hrs	Section 13 issued, DFES assumes control
	16:00hrs	Level 2 Incident Declaration
	23:00hrs	Level 3 Incident Declaration
Saturday 05/02/2022		Total Fire Ban implemented Fire Danger Rating - SEVERE
Sunday 06/02/2022		Total Fire Ban implemented Fire Danger Rating - EXTREME
Monday 07/02/2022	08:00hrs	Fire Danger Rating- VERY HIGH Incident downgraded to a Level 2 Incident
Tuesday 08/02/2022	13:00hrs	Fire Danger Rating- LOW-MODERATE Incident downgraded to a Level 1 Incident
Wednesday 09/02/2022		Fire Danger Rating - HIGH
Thursday 10/02/2022	14:00hrs	Fire Danger Rating - HIGH Fire Contained and Controlled
	14:00hrs	Section 13 revoked Transfer of incident control to Shire of Denmark

Adverse Fire Weather Event – Community Report

Date	Time	Occurrence
Thursday 24/02/2022	17:39hrs	Incident closed

Overview

Figure 10: Bayview Rise Bushfire Map



Image source - DFES

The Bayview Rise Bushfire was the first of the Level 3 Incidents to occur during the AFWE. The bushfire was reported via a triple zero call at 09:28hrs on Friday 4 February 2022, with the caller reporting seeing thick dense smoke and flames approximately three metres high.



Adverse Fire Weather Event – Community Report

Fire crews from Harewood, East Denmark, Ocean Beach, William Bay, Scottsdale/Shadforth, East Denmark, Owingup, Tingledale, Kordabup, Somerset Hill Bush Fire Brigades (BFB) and Denmark VFRS were dispatched to the bushfire by the Shire of Denmark's CBFCO. The Shire of Denmark was the controlling agency during the initial stages of the bushfire, whilst DFES Communication Centre (ComCen) coordinated the dispatch of approximately 30 additional appliances, including four aerial assets mobilised to assist with controlling the fire.

The forecast temperature for 4 February 2022 was expected to reach 35 degrees Celsius with Northerly winds shifting to Westerly, before a late afternoon South Westerly sea breeze. The FDR for the Shire of Denmark was listed at Very High. Whilst there were no TFB in place on the day, the fire occurred during the 'Prohibited Burning Period' meaning the lighting of fires, including garden refuse, within the Shire of Denmark was banned.

During the day, and despite the earlier despatch of resources, the bushfire escalated. DFES assumed control at 14:15hrs with a Section 13 issued, a Level 2 Incident declaration being made a few hours later at 16:00hrs. Despite ongoing control efforts, the bushfire further escalated and was declared a Level 3 Incident at 23:00hrs with an Incident Controller (IC) appointed from the DBCA.

To support control efforts and the safety of the public areas around the South Coast Highway, multiple local roads were closed by the Western Australia Police Force (WAPF). The William Bay National Park and Parry Beach campsites were also closed. The DoC set up an evacuation centre at Denmark Recreation Centre, Brazier Street, Denmark for those who needed emergency accommodation and assistance.

At its height, the fire was approximately 2000 hectares in size and operations involved nearly 800 personnel from several agencies. Two LATs, four Helitaks and four water bombers dropped around 1.94 million litres of water on the area. The IMT was in operation for seven consecutive days, undertaking day and night shifts for the first three days of the bushfire (4-6 February 2022), and day shifts for the remainder as resources obtained control (7-10 February 2022). The bushfire continued to be monitored until it was handed back to the Shire of Denmark on 10 February 2022, to transition to recovery.



Additional Incidents

Throughout the Bayview Rise Bushfire (3-10 February 2022), 36 additional incidents required a response from DFES resources in the GS Region.

Coordination

Whilst communications and response across teams and the ROC were sometimes delayed, this was taken as a symptom of the number of concurrent operations taking place in the Region.

Generally, resources from the multiple agencies worked very effectively together overcoming any communications issues. Remote handovers were identified as a challenge but necessary.

The table below summarises the number of appliances/resources dispatched to the Bayview Rise Bushfire, including fire crew personnel and State Emergency Service (SES) volunteers. The figures are reflective of the information captured in the DFES records, however, are not conclusive due to different reporting requirements and the inability to record spontaneous volunteers and others who don't use DFES systems for resource management. Therefore, the number of personnel and hours completed is likely to be higher. The information is provided to demonstrate the volume of resources used to manage an incident the size of the Bayview Rise Bushfire.

Resources	Appliances	Members (approximate)	Hours Completed (approximate)
Total	57	326	8079

Bayview Rise Bushfire Structure Loss and Damage

Rapid Damage Assessments (RDA) were completed by the DFES Urban Search and Rescue (USAR) team on 83 structures within the William Bay and Shadforth areas. Five structures were a total loss, two had moderate damage and two had slight damage caused by the bushfire.

Figure 11: USAR RDA Map at Bayview Rise Bushfire

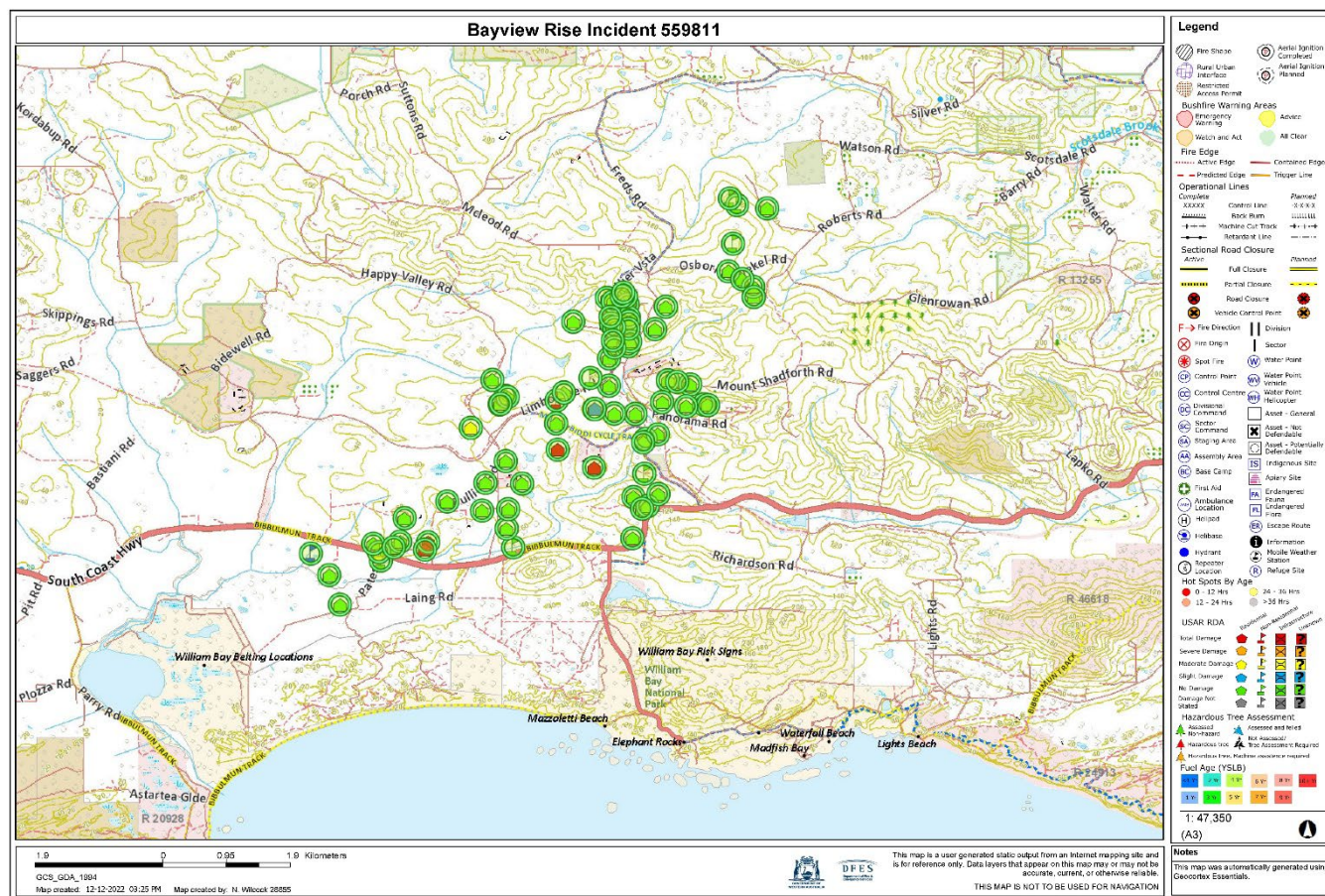


Image Source - DFES.

Bayview Rise Bushfire – Rapid Damage Assessment Table

Damage Severity	Residential	Non-Residential	Infrastructure	Unknown	Total
Total Damage/Destroyed	4	1	0	0	5
Severe Damage	0	0	0	0	0
Moderate Damage	1	1	0	0	2
Slight Damage	1	1	0	0	2
No Damage - Unaffected	67	7	0	0	74
Damage Not Stated/ Inadequately Described	0	0	0	0	0
Total per Category	73	10	0	0	83

Adverse Fire Weather Event – Community Report

Figure 12: Aerial Image of Bayview Rise Bushfire.



Image source - DFES Media

Figure 13: Oakford BFB at Bayview Rise Bushfire



Image Source - DFES Media

Bridgetown Bushfire (559961) – Lower South West Region





Adverse Fire Weather Event – Community Report

The fire was first managed by the Shire of Bridgetown-Greenbushes after being reported on 5 February 2022 at 13:19hrs. DFES took control of the bushfire at 14:45hrs after a Section 13 was issued. The fire was declared a Level 2 Incident at 15:05hrs and escalated to a Level 3 Incident by 15:56hrs the same day.

Bridgetown Bushfire Timeline

As previously mentioned, pre-preparedness SOC actions, assisted in the rapid deployment of resources to the bushfire that occurred in Bridgetown on 5 February 2022.

Date	Time	Occurrence
Thursday 03/02/2022		Fire Danger Rating - VERY HIGH State Operation Centre - State FRRM Major Regional Operation Centre - LSW Region FRRM Moderate
Friday 04/02/2022		Fire Danger Rating - VERY HIGH State Operation Centre - State FRRM Extreme Regional Operation Centre - LSW Region FRRM Major
Saturday 05/02/2022		Total Fire Ban implemented Fire Danger Rating - SEVERE
	13:19hrs	000 Fire reported - ComCen Started in the Shire of Bridgetown-Greenbushes
	14:45hrs	Section 13 issued, DFES assumes control
	15:05hrs	Level 2 Incident Declaration
	15:56hrs	Level 3 Incident Declaration
Sunday 06/02/2022		Total Fire Ban implemented Fire Danger Rating - HIGH
Monday 07/02/2022	04:00hrs	Fire Danger Rating - HIGH Incident downgraded to a Level 2 Incident
Tuesday 08/02/2022		Fire Danger Rating - HIGH State Operation Centre State FRRM Moderate
Wednesday 09/02/2022		Fire Danger Rating - HIGH
Thursday 10/02/2022		Fire Danger Rating - VERY HIGH
Friday 11/02/2022		Total Fire Ban implemented Fire Danger Rating - VERY HIGH

Adverse Fire Weather Event – Community Report

Date	Time	Occurrence
Saturday 12/02/2022		Fire Danger Rating - HIGH
	07:00hrs	Incident downgraded to a Level 1 Incident
	14:30hrs	Fire Contained and Controlled
	17:35hrs	Section 13 Revoked Transfer of incident control to the Shire of Bridgetown-Greenbushes
Monday 21/02/2022	18:14hrs	Incident closed



Overview

Figure 14: Bridgetown Bushfire Map

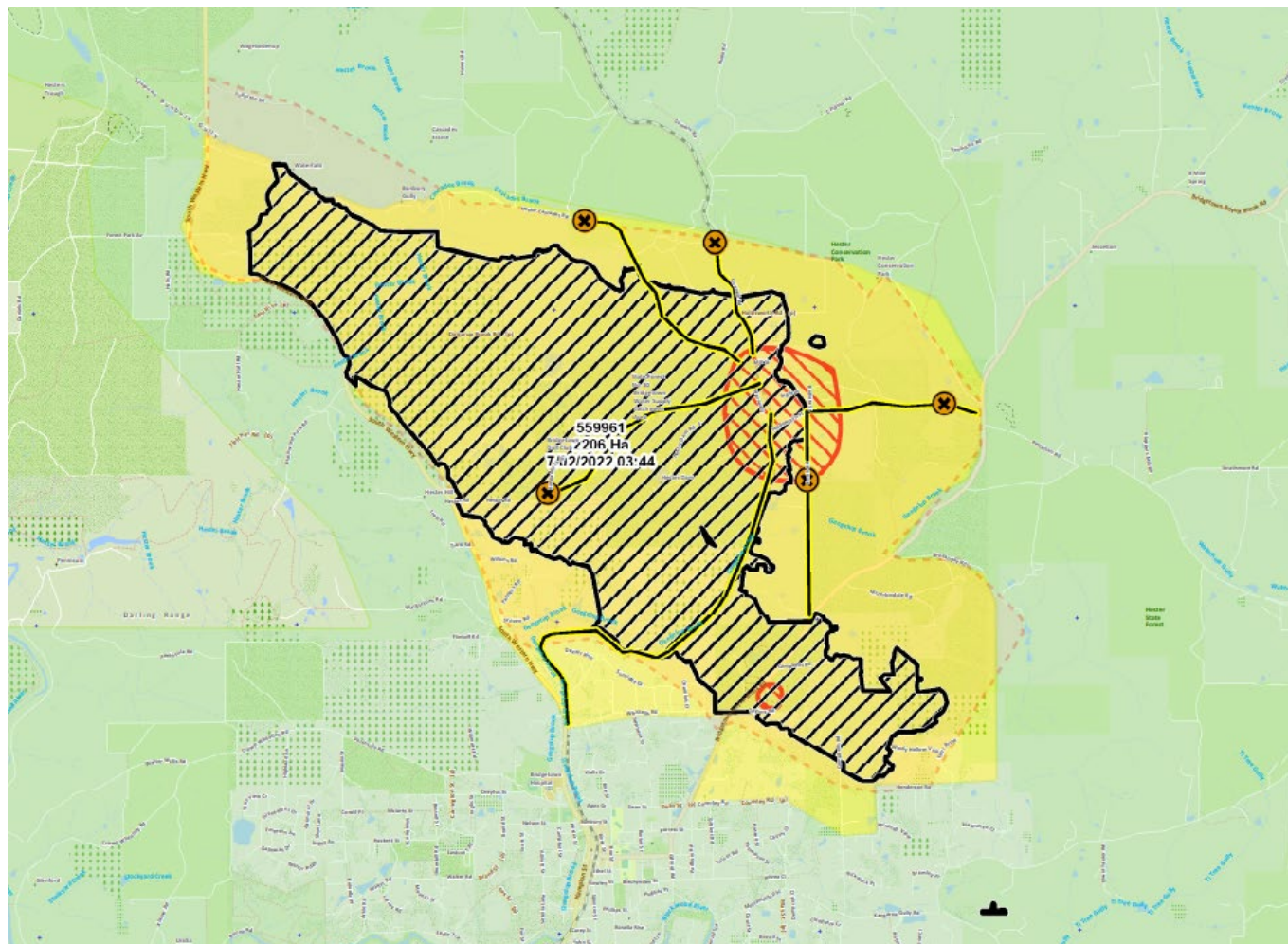


Image source - DFES

The Bridgetown Bushfire was reported via a triple zero call at 13:19hrs on 5 February 2022. The caller reported seeing 'fairly big' flames which could be seen from a power pole. The fire was spreading at a fast pace in a Southerly direction and was on Hester Cascades Road, Hester Brook, in the Shire of Bridgetown-Greenbushes.

At the same time, in the LSW Region, there were six existing fires, and the Bayview Rise Bushfire was escalating. Due to this, the LSW Region was using a significant number of DFES, LG and DBCA resources.

The FDR was Severe on the day, with a TFB in place for 5 February 2022 for the Shire of Bridgetown-Greenbushes. The fire occurred during the Shires 'Prohibited Burning Period'.

An Emergency Warning was issued at 14:01hrs for Hester Brook and Bridgetown. At 14:45hrs the bushfire was declared a Level 2 Incident with a Section 13 completed and issued, authorising DFES to take control of the bushfire. A local DFES Officer was appointed the IC at 15:05hrs with the ICC established at the Bridgetown BFB Station.



Adverse Fire Weather Event – Community Report

The fire was moving rapidly in a South-Easterly direction with spotting 3-6km ahead of the fire and crews working on asset protection as the priority. The South Western Highway, Bridgetown-Boyup Brook Road and multiple local road closures were in place during the fire.

An escalation to a Level 3 Incident was declared at 15:56hrs, with a DFES Level 3 IC appointed at 20:00hrs. By this time, the fire had burnt approximately 2012 hectares of land.

The Bridgetown Community were notified using the Telephone Warning System (TWS) message to evacuate and relocate to Manjimup. With assistance from the DoC and the Shire of Manjimup, an Evacuation Centre was set up in the Manjimup Basketball Centre on Rutherford Street, where approximately 300 people attended and were briefed on the conditions of the fire. Of these, 180 people stayed overnight. Patients from the Bridgetown Hospital and residents from aged care facilities were transferred to alternate locations in the Warren District and Manjimup.

During the duration of the fire, three community meetings were held at the Evacuation Centre in Manjimup and five community briefings in Bridgetown, keeping residents and members of the community updated on the status of the fire.

The fire was downgraded to a Level 2 Incident at 04:00hrs on 7 February 2022. The IMT was in operation for eight consecutive days undertaking day and night shifts for the first three days of the bushfire (5-7 February 2022), and day shifts for the remainder (8-12 February 2022) until it was handed back to the Shire of Bridgetown-Greenbushes to manage.



Additional Incidents

Throughout the Bridgetown Bushfire (5-12 February 2022), 22 additional incidents required a response from DFES resources in the LSW Region.

Coordination

Figure 15: Bridgetown Bushfire, ember attack



Image source – Evan Collis, DFES Media

Coordination across agencies was deemed effective during this event with recognition of previous exercises and engagements contributing to effective collaboration and operations between agency resources. There were key observations around the benefits of local knowledge and resources within teams, alongside the identification and separation of State or local control and decision-making. Whilst State support was appreciated, the importance of local knowledge, in some instances, was not recognised.

The table below summarises the number of appliances/resources dispatched to the Bridgetown Bushfire, including fire crew personnel and SES volunteers. The figures are reflective of the information captured in the DFES records, however, are not conclusive due to different reporting requirements and the inability to record spontaneous volunteers and others who don't use DFES systems for resource management, therefore the number of personnel and hours completed may be higher.

This information is provided to demonstrate the volume of resources used to control a fire the size of the Bridgetown Bushfire.

Resources	Appliances	Members (approximate)	Hours Completed (approximate)
Total	117	370	7690

Bridgetown Bushfire Structure Loss and Damage

RDAs were completed by the DFES USAR team at 69 structures within the Hester Brook and Bridgetown areas. Ten structures were a total loss, one had severe damage, one had moderate damage, and three other structures sustained a slight level of damage caused by the bushfire.

Figure 16: USAR RDA Map at Bridgetown Bushfire

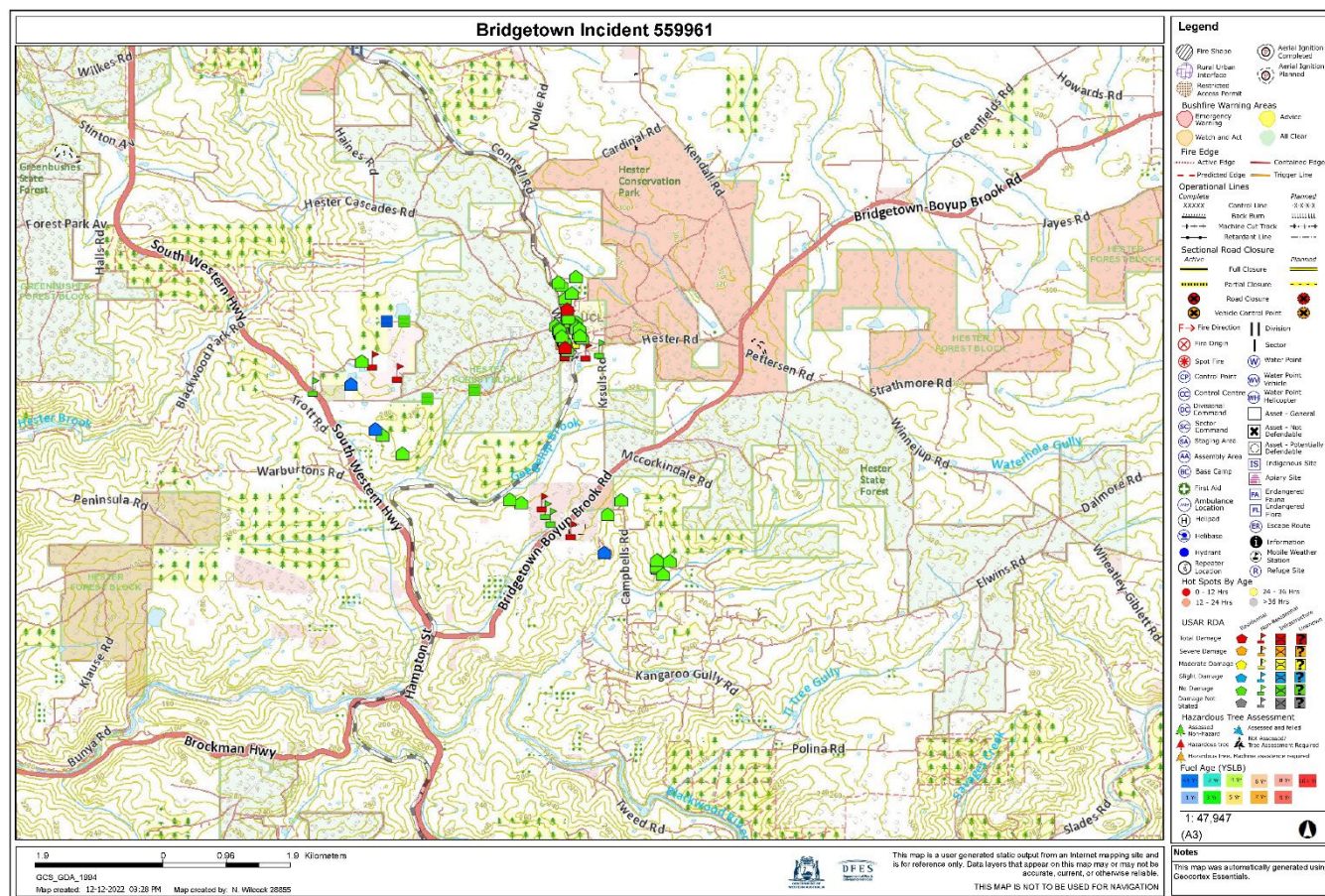


Image Source - DFES.

Bridgetown Bushfire – Rapid Damage Assessment Table

Damage Severity	Residential	Non-Residential	Infrastructure	Unknown	Total
Total Damage/Destroyed	2	8	0	0	10
Severe Damage	0	1	0	0	1
Moderate Damage	0	1	0	0	1
Slight Damage	3	0	1	0	4
No Damage - Unaffected	46	4	3	0	53
Damage Not Stated/ Inadequately Described	0	0	0	0	0
Total per Category	51	14	4	0	69

Figure 17: Bridgetown Bushfire



Image source - Evan Collis, DFES Media

Shackleton Complex (560058) - Goldfields Midlands Region





Adverse Fire Weather Event – Community Report

The first bushfire that occurred was managed by the Shire of Bruce Rock after being reported on 6 February 2022 at 09:23hrs. The second bushfire that occurred was managed by the Shire of Quairading after being reported on 6 February 2022 at 12:46hrs. DFES took control of these bushfires between 13:00hrs-14:00hrs after Section 13s were issued. The bushfires escalated to a Level 3 Incident by 14:30hrs the same day and were managed as a complex incident.

Shackleton Bushfire Timeline

As previously mentioned, pre-preparedness SOC actions, assisted in the rapid deployment of resources to the bushfire that occurred in the Shackleton Complex on 6 February 2022.

Date	Time	Occurrence																
Thursday 03/02/2022		Fire Danger Rating - VERY HIGH State Operation Centre - State FRRA Major Regional Operation Centre - GM FRRA Moderate																
Friday 04/02/2022		Fire Danger Rating - VERY HIGH State Operation Centre - State FRRA Extreme Regional Operation Centre - GM FRRA Major																
Saturday 05/02/2022		Fire Danger Rating - VERY HIGH																
Sunday 06/02/2022		Total Fire Ban implemented Fire Danger Rating - CATASTROPHIC																
		<table><tr><th>Incident 560030</th><th>Incident 560049</th></tr><tr><td>09:23hrs</td><td></td></tr><tr><td>000 Fire reported - ComCen Started in the Shire of Bruce Rock</td><td></td></tr><tr><td>12:46hrs</td><td></td></tr><tr><td></td><td>000 Fire reported - ComCen Started in the Shire of Quairading</td></tr><tr><td>13:00hrs – 14:00hrs</td><td>Section 13 issued, DFES assumes control</td></tr><tr><td>14:30hrs</td><td>Level 3 Incident Declaration (both incidents)</td></tr><tr><td>14:39hrs</td><td>Complex Incident created to manage incidents as a single event - Now known as Incident 560058</td></tr></table>	Incident 560030	Incident 560049	09:23hrs		000 Fire reported - ComCen Started in the Shire of Bruce Rock		12:46hrs			000 Fire reported - ComCen Started in the Shire of Quairading	13:00hrs – 14:00hrs	Section 13 issued, DFES assumes control	14:30hrs	Level 3 Incident Declaration (both incidents)	14:39hrs	Complex Incident created to manage incidents as a single event - Now known as Incident 560058
Incident 560030	Incident 560049																	
09:23hrs																		
000 Fire reported - ComCen Started in the Shire of Bruce Rock																		
12:46hrs																		
	000 Fire reported - ComCen Started in the Shire of Quairading																	
13:00hrs – 14:00hrs	Section 13 issued, DFES assumes control																	
14:30hrs	Level 3 Incident Declaration (both incidents)																	
14:39hrs	Complex Incident created to manage incidents as a single event - Now known as Incident 560058																	
Monday 07/02/2022		Fire Danger Rating - HIGH																
	16:30hrs	Incident downgraded to a Level 2 Incident																
Tuesday 08/02/2022		Fire Danger Rating - HIGH																



Adverse Fire Weather Event – Community Report

Date	Time	Occurrence
Wednesday 09/02/2022		Fire Danger Rating - HIGH
Thursday 10/02/2022	07:43hrs	Fire Danger Rating - SEVERE Both fires Contained and Controlled
	12:00hrs	Incident downgraded to a Level 1 Incident
Friday 11/02/2022		Fire Danger Rating - SEVERE
Saturday 12/02/2022		Fire Danger Rating - VERY HIGH
	17:30hrs	Incident downgraded to a Level 1 Incident
Sunday 13/02/2022		Fire Danger Rating - HIGH
Monday 14/02/2022		Fire Danger Rating - HIGH
	09:25hrs	Section 13 Revised Partial transfer of control to the Shire of Bruce Rock
	09:30hrs	Section 13 Revised Partial transfer of control to the Shire of Kondinin
	14:39hrs	Section 13 Revised Partial transfer of control to the Shire of Quairading
Tuesday 15/02/2022		Fire Danger Rating- HIGH
	08:30hrs	Section 13 Revised Partial transfer of control to the Shire of Corrigin
	10:00hrs	Section 13 (fully) Revoked
Monday 21/02/2022	10:35hrs	Incident Closed
Monday 07/03/2022	08:29hrs	Incident closed

Overview

Figure 18: Shackleton Bushfire Map

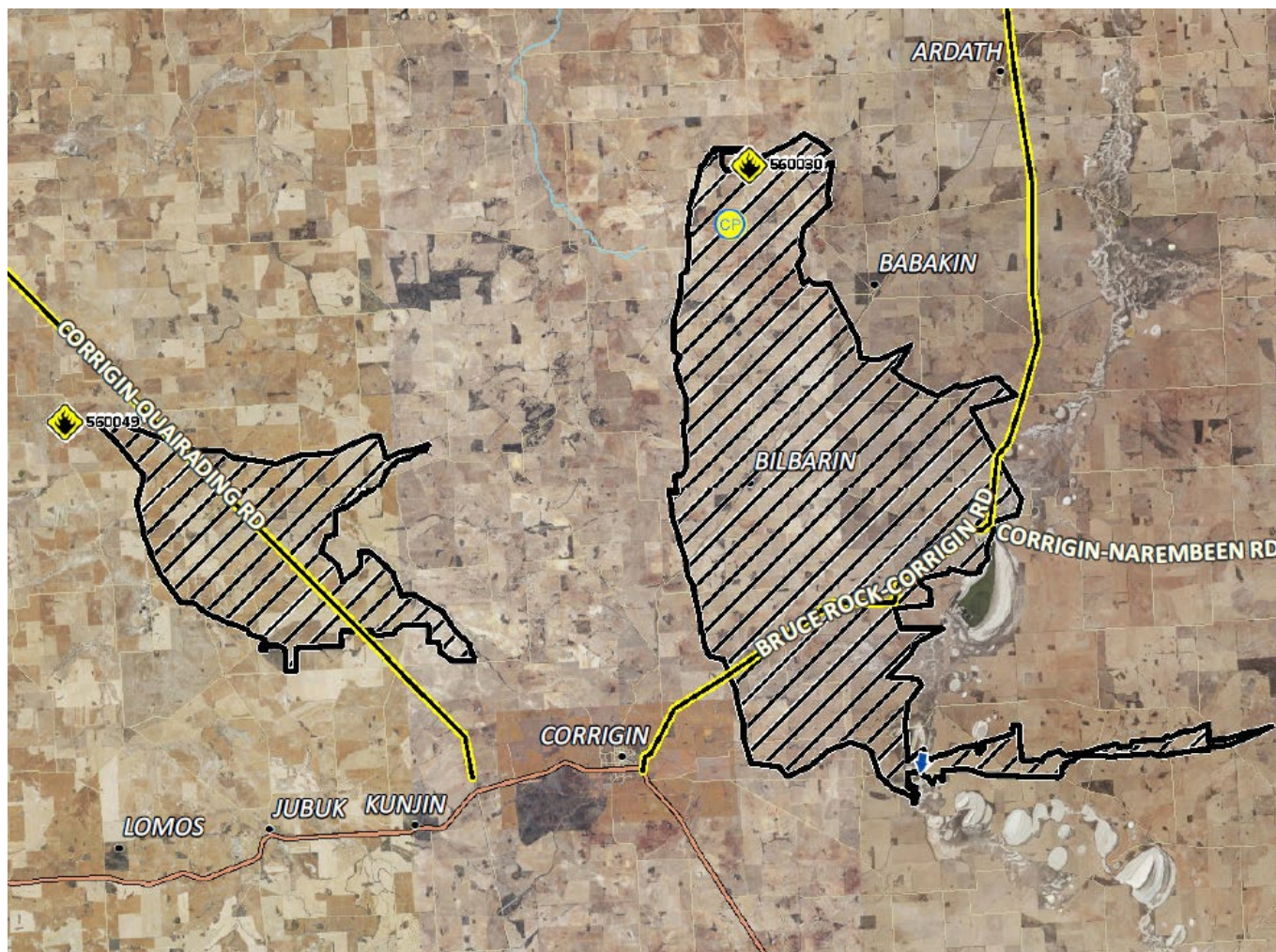


Image source -DFES

The Shackleton Complex Bushfire consisted of two separate bushfires that were in and being managed by the DFES GM ROC. Details of the individual bushfires and their locations are as follows:

- **560030** - Yarding South Road, Babakin WA 6428 - Shire of Bruce Rock. Reported at 09:23hrs on 6 February 2022 on a farming property near Yarding South and Jones Roads, Babakin.
- **560049** - Robb Lane, Wamenusking WA 6383 - Shire of Quairading. Reported at 12:46hrs on 6 February 2022 on a property on Robb Lane, Wamenusking.

Fire crews were dispatched to the bushfires, which started escalating very quickly. A DFES Level 3 IC was appointed at 14:00hrs, requesting support from the DFES Air Operations via the GM ROC. A LAT was dispatched to assist in controlling the bushfire to the North of Corrigin.

To support control efforts and safety around Shackleton, the WAPF assisted with road closures and vehicle control points (VCP). The DoC set up an evacuation centre at Pingelly Recreation Centre for those who required emergency accommodation and assistance.

The two bushfires covered approximately 45,160 hectares and operations involved approximately 245 personnel from several agencies.



Adverse Fire Weather Event – Community Report

- Incident number 560030 resulted in approximately 34,500 hectares of land being burnt.
- Incident number 560049 resulted in around 10,660 hectares of land being burnt.

The IMT was in operation for five consecutive days, undertaking day and night shifts for the first day of the bushfire (6-7 February 2022), and day shifts for the remainder as resources obtained control (7-10 February 2022). The bushfire was recorded as being contained and controlled on 10 February 2022 and continued to be monitored until it was handed back to the Shires of Bruce Rock, Kondinin, and Quairading on 14 February 2022, to transition to recovery. A final handover was completed on 15 February 2022 to the Shire of Corrigin.



Additional Incidents

Throughout the Shackleton Complex (6-13 February 2022), 121 additional incidents required a response from DFES resources in the GM and UGS Regions.

Coordination

Observations around the coordination of resources and deployments revealed some issues, mostly about the understanding of processes and difficulties with the delineation of responsibilities between the State, Region and LG. These were exacerbated by the location where communication networks were limited, due to power outages.

The table below summarises the number of appliances/resources dispatched to the Shackleton Bushfire, including fire crew personnel and SES volunteers. The figures are reflective of the information captured in the DFES records however are not conclusive due to different reporting requirements and the inability to record spontaneous volunteers and others who don't use DFES systems for resource management, therefore the number of personnel and hours completed may be higher.

This information is provided to demonstrate the volume of resources used to battle a bushfire the size of the Shackleton Bushfire.

Resources	Appliances	Members (approximate)	Hours Completed (approximate)
Total	86	245	6498

Shackleton Bushfire Structure Loss and Damage

RDAs were completed by the DFES USAR team at 199 structures. 63 structures were a total loss, five had severe damage, thirteen had moderate damage and multiple other buildings and structures sustained a slight level of damage caused by the bushfires.

Figure 19: USAR RDA Map at Shackleton Bushfire

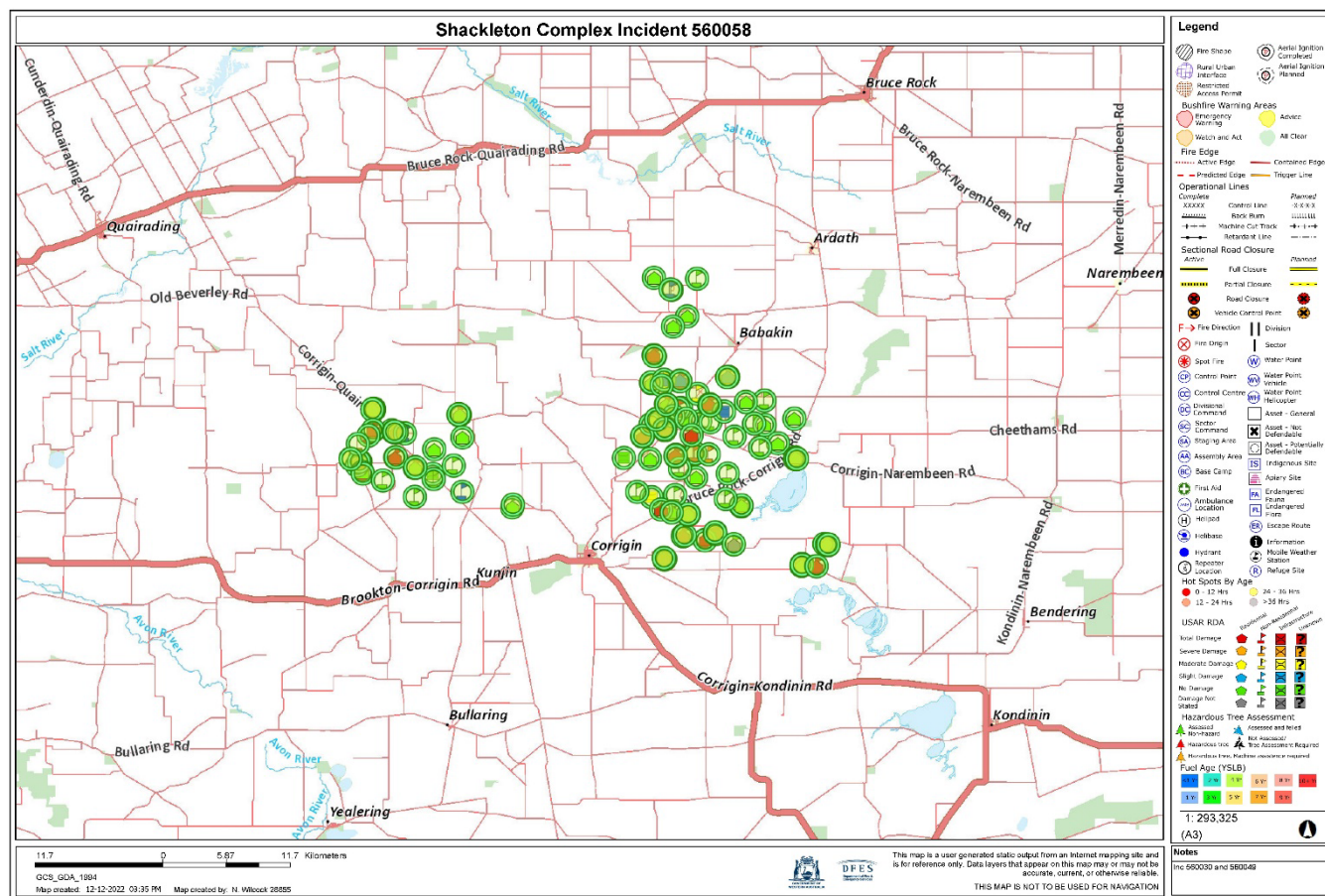


Image source -DFES

Shackleton Bushfire – Rapid Damage Assessment Table

Damage Severity	Residential	Non-Residential	Infrastructure	Unknown	Total
Total Damage/Destroyed	19	43	1	0	63
Severe Damage	0	5	0	0	5
Moderate Damage	4	8	1	0	13
Slight Damage	3	10	2	0	15
No Damage - Unaffected	33	67	2	0	102
Damage Not Stated/ Inadequately Described	1	0	0	0	1
Total per Category	60	133	6	0	199

Narrogin East Bushfire (560035) – Upper Great Southern Region





Adverse Fire Weather Event – Community Report

The bushfire was first managed by the Shire of Narrogin after being reported on 6 February 2022 at 10:42hrs. DFES took control of the bushfire at 13:30hrs after a Section 13 was issued. The bushfire was declared a Level 2 Incident, which quickly escalated to a Level 3 Incident at 17:20hrs the same day.

Narrogin East Bushfire Timeline

As previously mentioned, pre-preparedness SOC actions, assisted in the rapid deployment of resources to the bushfire that occurred in Narrogin East on 6 February 2022.

Date	Time	Occurrence
Thursday 03/02/2022		Fire Danger Rating- VERY HIGH State Operations Centre - State FRRRA Major Regional Operations Centre - UGS Region FRRRA Minor
Friday 04/02/2022		Fire Danger Rating - VERY HIGH State Operations Centre State FRRRA Extreme
Saturday 05/02/2022		Total Fire Ban implemented Fire Danger Rating - SEVERE Regional Operations Centre UGS Region FRRRA Extreme
Sunday 06/02/2022	10:42hrs	Total Fire Ban Implemented Fire Danger Rating - CATASTROPHIC 000 Fire reported – ComCen Started in the Shire of Narrogin
	13:30hrs	Section 13 issued, DFES assumes control
	14:25hrs	Level 2 Incident Declaration
	17:20hrs	Level 3 Incident Declaration
Monday 07/02/2022		Fire Danger Rating – VERY HIGH
Tuesday 08/02/2022		Fire Danger Rating – HIGH Incident downgraded to a Level 2 Incident
Wednesday 09/02/2022		Fire Danger Rating – HIGH
Thursday 10/02/2022		Fire Danger Rating- VERY HIGH
Friday 11/02/2022		Fire Danger Rating- VERY HIGH
Saturday 12/02/2022	12:00hrs	Fire Danger Rating - HIGH Incident downgraded to a Level 1 Incident Section 13 Revoked

Adverse Fire Weather Event – Community Report

Date	Time	Occurrence
		Transfer of incident control to Shire of Narrogin.
Sunday 11/03/2022	10:52hrs	Incident Closed

Overview

Figure 20: Narrogin East Bushfire Map

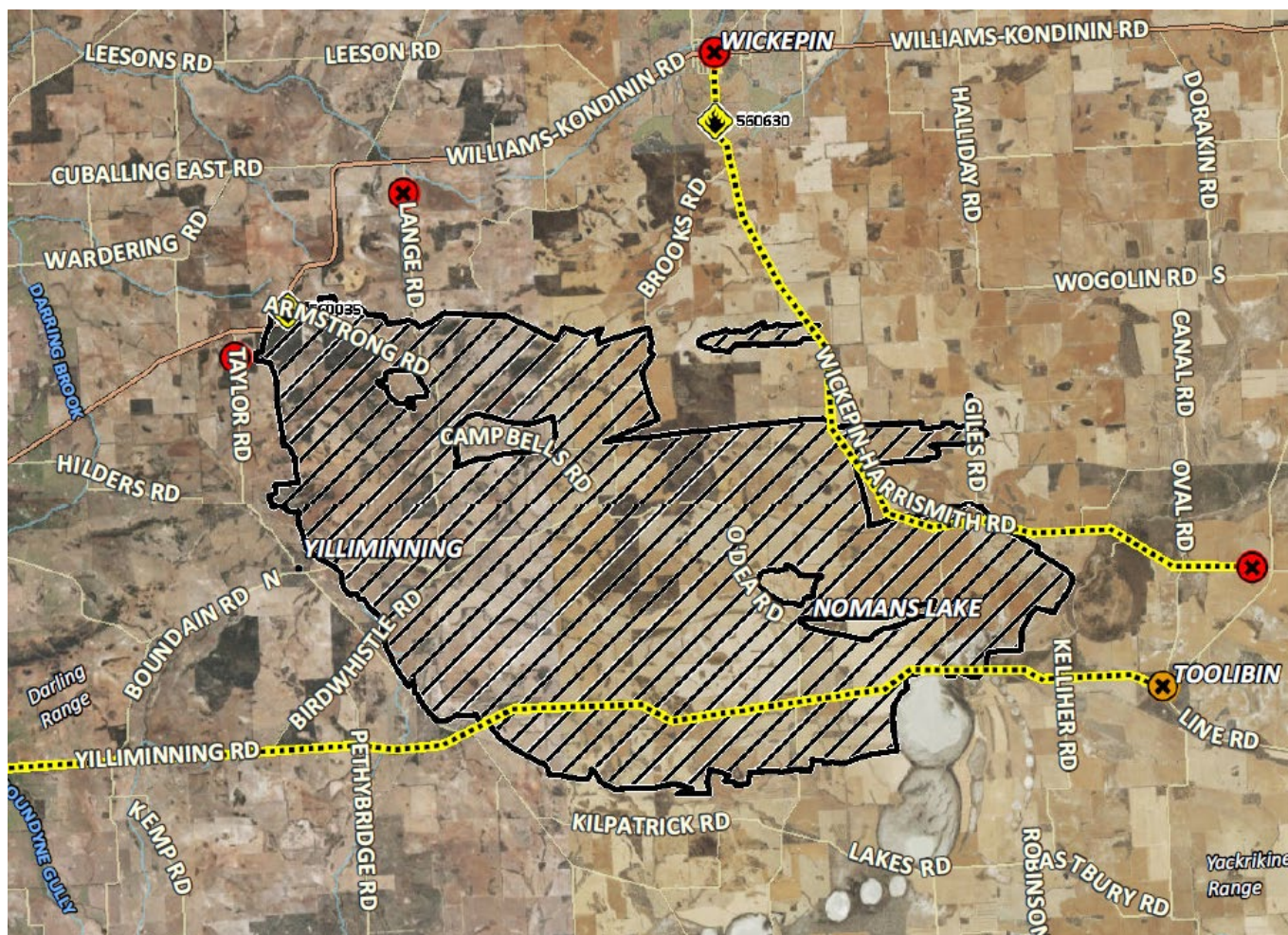


Image source -DFES

The Narrogin East Bushfire was reported via a triple zero call at 10:42hrs on Sunday 6 February 2022 where the caller reported a stubble fire towards Wickepin, within the Shire of Narrogin.

The Shire of Narrogin was the controlling agency during the initial stages of the bushfire, whilst DFES ComCen coordinated the dispatch of approximately four additional appliances, including one aerial asset to assist with controlling the bushfire. A Section 13 was completed, and DFES took control with an UGS Region officer nominated as the IC on 6 February 2022 at 13:30hrs until the IMT arrived.

The forecast temperature for 6 February 2022 was expected to reach 40 degrees Celsius with North-North East winds. The FDR for the Shire of Narrogin was listed as Catastrophic and a TFB was already in place within the Shire prior to the bushfire.

The bushfire was handed back to the Shire of Narrogin on 12 February 2022, to transition to recovery.



Additional Incidents



Throughout the Narrogin East Bushfire (6-12 February 2022), 40 additional incidents required a response from DFES resources in the UGS Region.

Coordination

The table below summarises the number of appliances/resources dispatched to the Narrogin East Bushfire, including fire crew personnel and SES volunteers. The figures are reflective of the information captured in the DFES records, however, are not conclusive due to different reporting requirements and the inability to record spontaneous volunteers and others who don't use DFES systems for resource management. Therefore, the number of personnel and hours completed is likely to be higher. The information is provided to demonstrate the volume of resources used to manage an incident the size of the Narrogin East Bushfire.

Resources	Appliances	Members (approximate)	Hours Completed (approximate)
Total	32	55	1507

Narrogin East Bushfire Structure Loss and Damage

RDAs were completed by the DFES USAR team at 36 properties. Four structures were a total loss, one had severe damage, and one had slight damage caused by the bushfires.

Figure 21: Narrogin East Bushfire Map

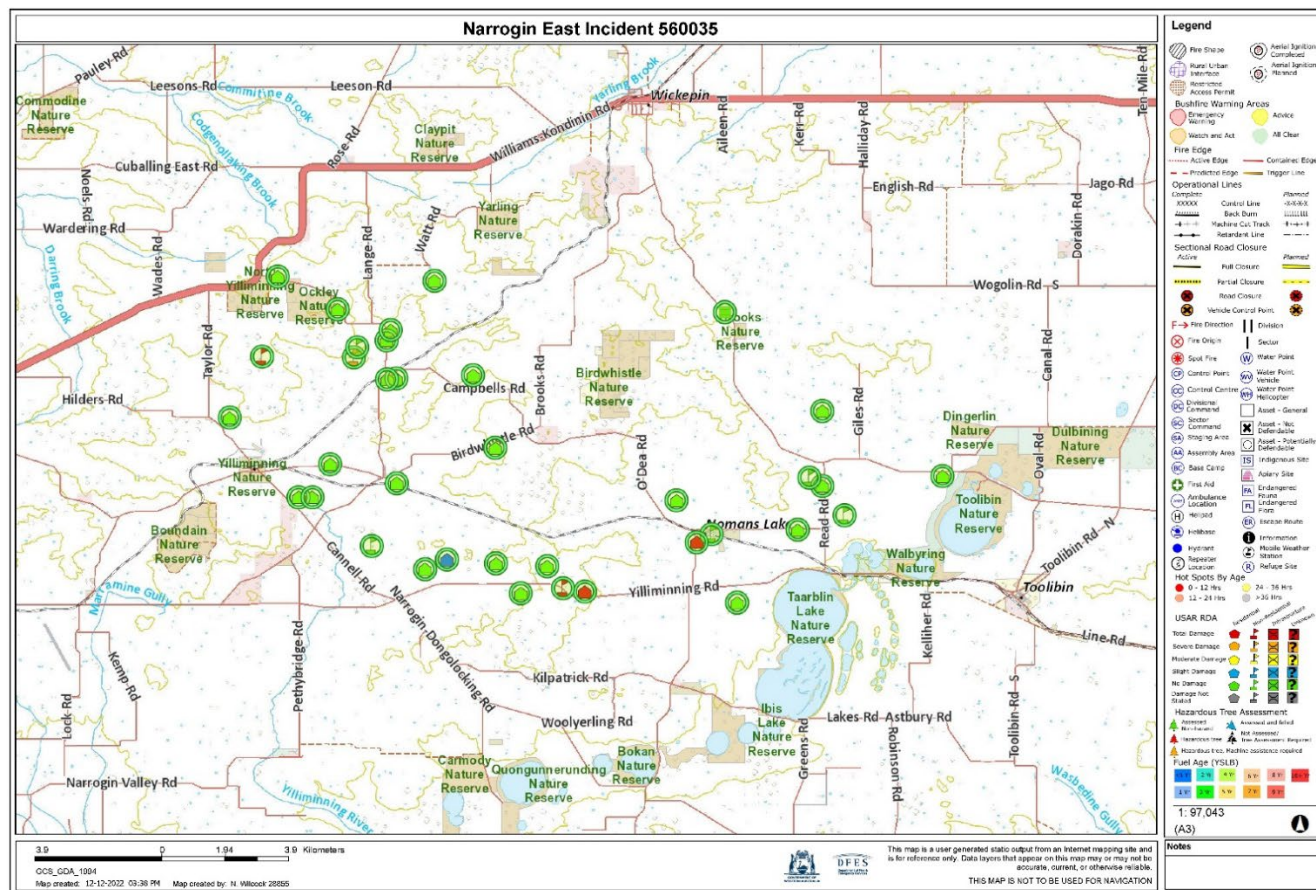


Image source -DFES

Narrogin East Bushfire – Rapid Damage Assessment Table

Damage Severity	Residential	Non-Residential	Infrastructure	Unknown	Total
Total Damage/Destroyed	2	2	0	0	4
Severe Damage	0	1	0	0	1
Moderate Damage	0	0	0	0	0
Slight Damage	1	0	0	0	1
No Damage - Unaffected	24	5	1	0	30
Damage Not Stated/ Inadequately Described	0	0	0	0	0
Total per Category	27	8	1	0	36

Figure 22: Narrogin East Bushfire



Image source - DFES

Lessons Management

A lesson is knowledge or understanding gained by experience.¹



¹ NATO Joint Analysis and Lessons Learned Centre. Source: AIDR Lessons Management Handbook



Lessons Management

The purpose of Lessons Management is to provide a consistent approach for the collection, analysis, and sharing of lessons in a way that ensures action is taken to effect change and improve DFES' performance. Lessons Management can facilitate learning, both at a local organisational level and across the Emergency Management Sector, resulting in improved safety and practices.

While this report focusses on the main lessons arising from preparatory activities associated with the AFWE. the Bayview Rise, Bridgetown, Shackleton, Narrogin East, and Calgardup bushfire responses, all submissions and analysis have been retained for potential future use.

DFES Lessons Management follows a process based on the Australian Institute for Disaster Relief (AIDR) [Lessons Management Reference Handbook](#) known as OILL.

- **Observations** are noteworthy facts or occurrences that someone has heard, seen, noticed, or experienced as an opportunity for improvement or an example of good practice.
- **Insights** are deductions drawn from the (observations) which need to be further considered. Insights occur when there are multiple similar observations or a single observation that poses a high risk to personnel or DFES. An insight defines the issue, not the solution.
- **Lessons** may be drawn from insights and present new or enhanced explicit knowledge for the organisation.
- **Lessons Learned** occur once the approved change is implemented, shared, and long-lasting. One measure of success will be the decline of similar observations over time.



Data Collection

Data collection for the Community Report was undertaken from June to August 2022. Observations were collected via various methods, including:

- Online Surveys
- Questionnaires to external agency personnel
- Debriefs/Interviews with key incident management roles and external agency representatives
- Seasonal Overviews
- DFES/DBCA Regional Debriefs
- LG Submissions.

Formal communications regarding the commencement of the Community Report and invitations to participate in the review were provided to the below agencies for further distribution to relevant stakeholders involved in the AFWE.

Key formal communications include:

- **General Circulars with Survey Link:** non-operational information published by DFES for the awareness of personnel. Through this form of communication, a call for participation was sent to DFES personnel. This contained five questions relating to the scope.
- **Full Survey (rest of the agencies):** DFES in association with their emergency management partners requested feedback in the form of five questions on the operations undertaken based on all areas relevant to DBCA, WAPF, DoC and volunteers.
- **LG Survey:** DFES in association with their emergency management partners requested feedback in the form of three questions on the operations undertaken based on the relevant areas for LG.
- Interviews were conducted with key personnel from various areas across each operational level.

Agency	Date	Source
WALGA DBCA	23/06/2022	Email correspondence including: • Participation Request • Online Survey Links • Survey/Questionnaire – Word Version • General Circular
DFES	24/06/2022	General Circular 107/2022
WALGA and LG	6/07/2022	Invitation to online briefing
DFES	12/07/2022	General Circular 120/2022
DoC	13/07/2022	Email correspondence including: • Participation Request • Online Survey Link • Survey/Questionnaire – Word Version



Adverse Fire Weather Event – Community Report

WALGA DBCA	19/07/2022	Email correspondence including: • Online Survey Links • General Circular 120/2022 • Full Survey (five questions) • LG Survey (three questions)
DFES	27/07/2022	General Circular 133/2022 Additional email (with Circular, survey links and word version) sent to Bushfire Centre of Excellence (BCoE) to further distribute to volunteers.

While numerous requests were sent to the various areas, and 1,110 observations were extracted, the level of response was lower than expected.

The observations were then individually coded to the capability area the observation aligned to, providing structure to the observations. The practice of coding observations is consistent with national best practice and will further enable an analysis of the provided information.

The coded observations are then validated against additional incident information that was collated as part of the AAR process.



Data Analysis

Once responses were received, they were coded and themed as:

- **Observation/Suggestion:** Was the response stating something of note had occurred or was offered as a suggestion to sustain or improve an aspect of operations.
- **Tactical/Systemic:** Was the response describing an event that could have potentially been resolved within the chain of command at the incident or organisational level, or implies a more complex, integrated solution is needed.
- Responses were then further coded against DFES' Capability Framework, the POiSTED capability model (Refer to Appendix B – POiSTED), depending on whether the observation was classified as a tactical or systemic observation.

Systemic Observations

Systemic observations refer to issues that appear to have a root cause in organisational policy, process, or understanding. The SEMC Emergency Management Capability Framework reflects the inputs required to prevent, prepare for, respond to, and recover from emergency events. It includes seven capability areas and 33 core capabilities. Each core capability is underpinned by several achievement objectives.

Tactical Observations

Tactical observations are defined as observations that could have been influenced within the chain of command of the incident/s or addressed within existing DFES processes, rather than systemic issues which appear to have a root cause in policy, process, or understanding.

The POiSTED capability model is a methodological analysis of how an organisation develops, employs, and resources a capability to achieve a desired effect. A capability-based approach is an important foundation in which organisations can strengthen their ability to drive change and shape evolution. Capability, results from the combination of a variety of fundamental inputs, in this instance People, Organisation, information, Support and Facilities, Training, Equipment and Doctrine (POiSTED).



Insights

Insights are a deduction drawn from evidence collected (observations), that require further consideration. These insights occur when there are multiple observations, that are similarly themed. Insights may also be developed when a single observation poses a high risk to personnel or DFES as an organisation.

Insights may also identify an opportunity for further analysis. Insights can be positive or negative and can contribute to reinforcing positive behaviour or changing practices. An insight defines the issue, not the solution.

The Insights below are themed against the SEMC Emergency Management Capability Framework.





Adverse Fire Weather Event – Community Report

Theme	#	Insight	Lesson	
Emergency Response				
Agency interoperability	I-1	Staff worked well together on the fire ground, regardless of which agency they belonged to, indicating a shared purpose.	Sustain	
	I-2	Interagency collaboration in the management teams worked well, resulting in a common approach to the tasking.	Sustain	
	I-3	There were inefficiencies in communications with, reporting to and coordinating resources between agencies, resulting from differences in DFES, DBCA, and LG Regional and administrative boundaries.	Improve	
Command, control, and coordination	I-4	Generally, pre-deployment notification and mobilisation advice worked well, however some confusion was reported as PFT personnel were deployed outside of their on-call roster and some specific deployment advice was received with insufficient time to prepare. While not the specific remit of DFES, early advice notification to volunteers may also be beneficial.	Improve	L-2
	I-5	PFTs planned leave cancellation was managed well in respective agencies resulting in rapid deployment of resources (including LG and volunteers).	Sustain	L-2
	I-6	State-wide preparedness was well considered resulting in appropriate and timely deployment.	Sustain	L-1
	I-7	Support, including advice, aerial asset allocation and logistics from SOC was identified as positive.	Sustain	L-1
	I-8	In some instances, at the incident level, direct State-level involvement was seen as an overreach and was unappreciated and/or unwanted by local resources, resulting in confusion and angst, specifically around the standing down of resources.	Improve	L-1
	I-9	Where State-level involvement is required, local knowledge and resources (including personnel) are already in situ and should be valued and used appropriately.	Improve	
	I-10	At times communications from the IMT to the fire ground were not clear, complete, or timely, resulting in reduced effectiveness of resource deployment.	Improve	L-3
	I-11	The fire ground is a busy location that can be hampered by communication hardware breakdown and poor operational practices, which impacts the ability to transfer information promptly. The use of QR codes and Google Drive was identified to have worked well in some instances.	Improve	L-3
	I-12	Information sharing between the various aspects of the command, control, and co-ordination (SOC, MOC/ROC, IMT) structure was at times disjointed. This resulted in some mixed messages and confusion.	Improve	L-3
	I-13	Collaborative meetings at all levels across SOC, MOC/ROC, and IMT are beneficial to keep stakeholders updated and information is easier to pass between agencies.	Sustain	L-3
	I-14	There are inconsistencies in data collection and management (retention and accessibility). Ad-hoc methodology works, though is not efficient or effective in the long-term and reduces the capability to be used for strategic purposes.	Improve	L-3



Adverse Fire Weather Event – Community Report

Theme	#	Insight	Lesson	
Situational assessment	I-15	The use of Main Roads to assess roads was helpful and may alleviate the need for inexperienced personnel to undertake this task.	Sustain	
Planning and Mitigation				
Ecosystem management	I-16	While fuel loads were varied, due to the weather conditions, the fires were almost impossible to control, during the escalation phase.	Note	
	I-17	Fuel load was high in some areas with mitigation activities not having occurred for up to 13 years.	Note	
	I-18	Mitigation programs were reported as being sufficient for relevant programs, under 'normal' fire conditions.	Note	
Resources				
Equipment/critical resources	I-19	Loss of power reduced the ability to maintain communications and other essential services.	Note	L-4
	I-20	The location of the Incident Control Centre (ICC) and IMT was not appropriate in all instances resulting in danger to the occupants and reduced communications capability.	Improve	L-4
	I-21	Different types of connections of water assets (including contractors), resulted in time-wasted and reduced effectiveness.	Improve	L-4
	I-22	The level of use and proficiency of WebEOC is not optimal, resulting in the reduced ability to record resource deployments, monitor updates/decisions, and track requests.	Improve	
	I-23	The deployment of smaller PFT was found to be more effective than larger PFTs, resulting in the ability to remain agile and provide mechanisms by which the state could support multiple incidents.	Improve	
Community Involvement				
Public information	I-24	Identification of and contact with spontaneous volunteers/homeowners who remain on the fireground should be considered in planning, so they are provided with the means to ensure they have situational awareness.	Improve	
	I-25	Communication with the public should be current, accurate, relevant, and timely. This messaging should be coordinated with other government agencies, using various forms of media and SMS information for appropriate preparedness and ongoing communications.	Improve	L-5
	I-26	Live streaming community meetings was advantageous and enables more access to those who may not be able to attend in person.	Sustain	L-5
	I-27	Timely messaging should be prioritised to assist with community awareness, which would likely assist in the ability of members of the public to make informed and appropriate decisions, where necessary. Forums, such as community meetings (online and in person) worked well.	Note	L-5
Governance				



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Theme	#	Insight	Lesson	
Legislation	I-28	Legislative restrictions (Covid-19, LG approvals and land type) resulted in a delayed deployment of volunteers, causing some confusion.	Note	
	I-29	DFES' capacity for response increased once they were designated the responsible agency. This should be considered early enough to allow the appropriate resources to be deployed, to ensure maximum benefit to the incident.	Note	
Analysis and Continuous Improvement				
Lessons Management	I-30	Post Incident Assessments are not always completed, and if they are, there is limited feedback from personnel involved, resulting in reduced awareness of positive or negative feedback, and the ability of personnel to modify practices.	Improve	L-6
	I-31	Debriefs are beneficial for all agencies and personnel (staff and volunteers) involved in the incident and detail good information. All efforts should be made to ensure this is carried out, with all parties invited to be involved, documented, and retained in a central repository.	Improve	L-6



Lessons

A lesson presents new or enhanced explicit knowledge for the organisation. The lesson may be positive or negative.

Whilst this report focusses on the main lessons arising from the AFWE preparedness and response, all submissions and analysis have been retained for potential future use and may be drawn upon to enable DFES to develop further insight into operational performance on an ongoing basis.

Lessons are identified where there is a conclusion with a determined root cause based on the analysis of one or more insights, and available courses of action, that can either sustain a positive action or address an area for improvement.

Through the conduct of this Community Report, specific lessons were identified regarding command, control, coordination, equipment/critical resources, public information, and lesson management; these represent new explicit knowledge and understanding of the organisation.

The **six lessons** developed through the conduct of this review are provided below:

LESSON 1: PRE-EMPTIVE PREPARATION

Preliminary preparations made by the SOC, MOC, and ROCs based on the predicted weather, relating to resource stand-by and deployment, were deemed successful and should be considered for future events.

The preparedness model implemented by the SOC to pre-empt the incident/s, early notification to pre-formed teams and the support provided, was mostly positive.

To take measures of placing (additional) staff on the ground, and aerial assets, including requesting further Eastern States-based resources, e.g., LATs on call and deploying those assets early provided invaluable benefits. The ability to implement this activity enabled staff to prepare and deploy well in advance, even if they were not already on-call.

The deployment of fewer personnel to fill positions in the IMTs in areas based on need was positive and allowed for the deployment of 'lite' versions to multiple areas to assist, rather than sending the whole team to one location that may not have required it.

While the practice identified was mostly positive, a potential area for improvement is to increase the information exchange to ensure that operational knowledge is maximised through all levels.



LESSON 2: EARLY COMMUNICATIONS TO PRE-FORMED TEAMS

Personnel involved in the pre-formed teams were able to deploy with little notice, even those not on-call. While this was successful, there should be a more coordinated roll out of the information to ensure sufficient information is provided to those attending.

Whilst not always possible, pre-deployment information should be available with enough notice for personnel to make plans and arrangements. This is particularly important with those being deployed outside of their usual on-call roster.

Notifications were made promptly to ensure staff readiness. While this is important and enabled the successful deployment of required personnel, the level of operational understanding of what was occurring at the time of deployment could be an area of improvement. Specific information on ICC locations, roadblocks, and incident location (size and relative to transit routes) are all examples of information that would serve a member well when reporting to an incident.

Volunteers form a large part of the response and should also be included in pre-deployment advice, to ensure they possess the requisite information. Information about the concerns of the community should be used in a way that brings awareness, however, must also avoid creating unnecessary panic. Should a similar weather event occur again, volunteers should receive advance notifications of the weather conditions to ensure their preparedness.

LESSON 3: ROLE CLARITY OF COMMUNICATION LINES

Improved communication is imperative during incidents, for not only battling bushfires but for planning and resource deployment.

Communication and transfer of information, in all its forms, at all levels remains an ongoing challenge and is an area that could be improved.

Poor communication in the form of the dissemination of information during these events resulted in personnel at different levels continuously seeking the same information, and decisions being made with varying levels of knowledge. To avoid this issue, each section needs to ensure (e.g., Planning, Logistics, etc) maintain contact with its counterparts (within the SOC, MOC/ROCs and IMT) for information-sharing purposes, and to avoid duplication of effort. This information is available in the DFES Western Australia Fire and Emergency Service (WAFES) Manual and should be used as the basis for all activity within the chain of command.

Observations relating to meetings being held with stakeholders and managers indicated a positive shift in communication, enabling consistent information to be shared with multiple persons simultaneously, thereby increasing the knowledge held by those involved. A positive example was the meeting rhythm between the respective IC, Operations Area Manager (OAM), Duty Chief Superintendent (DCS) and DAC, this provided a common operating picture at all levels of command. A wider adoption of this would also further enable the effective dissemination of information.



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If these meetings were attended by personnel through the various command, control, and coordination structures, the ability to provide clear information to various levels concurrently, would be streamlined and less likely to require duplication of effort to get messages to where they need to be. This would be further enhanced by using various communication methods, including online, telephone, and in-person.

LESSON 4: CONTINGENCY PLANS FOR IDENTIFIED LOCATIONS

Facilities at or close to the fireground need to ensure they are in safe identified locations, with contingency plans in place.

Resources at the fire ground are exposed to more risk than anywhere else in the operation, which can hinder response efforts.

The location of all incident-related facilities must carefully consider the size, scale, and potential of the incident. Contingency plans need to be considered early and reviewed as required, to enable early intervention or sourcing of equipment to maintain communications, power, and other essential services. This issue has been noted in previous reports.

There were several observations identified relating to the location of some of the ICCs. Observations identified varied from smoke and heat in one ICC location, to the ICC location being far away. Decisions relating to the location of ICCs should consider workplace health and safety standards and the proximity of the ICC locations to the bushfires. These should be reviewed and communicated to all relevant stakeholders.

LESSON 5: PLANNED AND COORDINATED COMMUNITY COMMUNICATION

There is an opportunity for improvement when it comes to community messaging to ensure consistent, timely, coordinated, and current messaging is always used.

Information released to the public during response and recovery was predominantly effective, however, varied. There were some inconsistencies in messaging, though the different types of media options used should be sustained.

Good communication with the public and other agencies should be maintained. In consideration of the level of spontaneous volunteers and those from other agencies, it is important to ensure that public communications during response and recovery are made regularly and are consistent. This at times had not been the case, resulting in some confusion and frustration.

Observations relating to the live streaming of community meetings were identified as being beneficial. This could be broadened out to be incorporated through the levels of command, control, and coordination, to allow for a wider reach of communications amongst a larger number of personnel, providing better situational awareness and a common operating picture.

There were a limited number of observations citing ‘word of mouth’ as the mechanism to inform the community of the bushfire. A common way in which the locals within the community found out about the bushfire, was the ability to identify smoke. While several methods were used to send alerts and



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warnings, research into other potential methodologies could be made to see if there are any additional ways of advising the community of incidents that could be used, rather than relying on them to see smoke to then start making enquiries.

LESSON 6: WIDER ENGAGEMENT AT EVENT LOCATIONS

Learning opportunities are present during and after all incidents and should be actioned and embraced more widely.

It is important for all involved to have a voice and be able to provide and capture information, whilst also learning from their own and others' experiences. This unprecedented event provided a valuable platform for learning and should be used for this purpose.

Personnel involved in various aspects of the AFWE incidents indicated that not all were provided with the opportunity to contribute to AARs, and/or debriefs were not always completed. There is also an understanding that where these may have occurred, not all would have had access to the findings/comments of what went well, and where they could be improved. There were a few comments indicating that debriefs had occurred in some areas, however, this should always be the case. This is to ensure the maximum opportunity to gain the greatest understanding of what had occurred during the incident is taken.

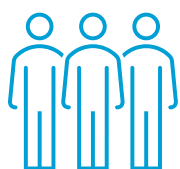
To assist further, it is also important to hold debriefs or provide a conduit for the agencies, volunteers, and community members to contribute to this initiative. External agencies were involved in hot debriefs in at least one of the locations, which was identified as positive in the ability to gain and understand all activities that occurred. This may be able to be replicated in the future to ensure holistic understanding and feedback.



Tactical Observations – POiSTED

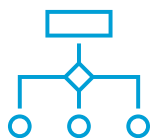
Although the focus of this review was determining what went well and what could be improved at an organisational level against the SEMC Emergency Management Capability Framework, valuable feedback was received about opportunities to sustain and improve operations at the tactical level. Tactical observations are defined as those that could have been influenced within the chain of command for the incident or addressed within existing DFES processes, rather than systemic issues which appear to have a root cause in policy, process, or understanding.

The POiSTED capability model (Appendix B – POiSTED) has been adopted to assist in theming and classifying tactical observations; these observations are less likely to generate Insights and Lessons but are captured so they can be included in regular themed reviews across different capability areas and hazards to identify recurring opportunities that can be addressed.



People

Multiple observations were received relating to everyone digging in and getting the job done. All involved worked together, regardless of who they worked (or volunteered) for. This is a theme identified in multiple reports. Due to the nature of the incident, all parties involved are there to do a job and protect life and property to the best of their ability.



Organisation

Multiple observations relate to the command, control, and coordination aspects and the lack of clarity around what was being done by the various levels. This is further detailed in the insights and lessons in this report.



Information

Some localised communications issues were reported at the tactical level; these are covered in more detail in the insights above relating to public information and agency interoperability. Information sharing is paramount in all instances, not just large, complex incidents.



Support and Facilities

It is not unusual to receive observations on accommodation and catering, however, these were limited in this information collection. There was some information pertaining from one source indicating local resources should be used in the first instance to reduce the need for accommodation. While this is not always possible, given the size of the incidents, it is an option that may be considered.



Training

Observations coded against Training in the POiSTED capability framework are reasonably plentiful. The positions in the command, control and coordination structure, machine operation, and data entry were just some of the training needs identified. Observations captured will be collated and distributed to the relevant areas for consideration of future training opportunities.

WebEOC was of note, resulting in the identification of training needs to ensure people are appropriately equipped to use the system. Where this was lacking, the impost was on trained individuals to record actions over and above their specific position remit. The ability to have dedicated people who can review the actions/requests and close the loop on these when completed is also something that was considered beneficial.



Equipment

Equipment observations, ranging from issues with radio use to not having enough equipment on site, to too many appliances, to the good use of aerial assets. These observations will be considered for use by relevant areas and along with suggestions may be available for DFES training units to identify any shortcomings in current training, and, or capabilities.



Doctrine

No observations were captured and themed under the doctrine heading. It is likely any issues with doctrine would be captured in other sections as an opportunity to change practice which will drive changes to doctrine, rather than specifically Doctrine related.



Next Steps

To ensure DFES can capitalise on the Insights and Lessons identified through this review process, the report, once approved, will move to the action 'development' stage.

This process involves a representative subject matter expert group that will review the Insights and Lessons identified in this report and workshop potential actions to improve or sustain DFES' operations in the nominated capability areas.

These identified actions will be prioritised in terms of impact and effort required and aligned to DFES business and strategic planning processes to ensure actions are considered in due course by the DFES Operational Service Delivery Committee (OSDC) and the DFES Corporate Executive (CorpEx). Once approved, actions will be tracked and prioritised alongside other organisational needs.

If there are any Insights, Lessons, or Actions identified through the DFES Lessons Management process that may be more directly applicable to other emergency management partners, DFES will share these findings with our partners and provide support where appropriate.

Supplementary Report – Calgardup Bushfire (554503)





The Calgardup Bushfire in the Shire of Augusta Margaret River was reported on 8 December 2021 at 09:49hrs. The fire was initially managed by the DBCA however despite attempts to control it, it escalated, and control was handed over to DFES at 09:00hrs on 9 December 2021. The After Action Review is included as a supplementary report to the Adverse Fire Weather Event on 3–6 February 2022 due to the short timeframes and rapid implementation of lessons learned from Calgardup.

Calgardup Executive Summary

Due to the predicted weather conditions, the State had already formed a SOC which allowed the coordination and implementation of multiple mitigation measures in the region on 7 December 2021. Chief among these measures were the forming of early deployment teams in case of a Level 2 Incident, and the raising of the FRRA to Moderate prompting multiple preparedness measures in the Region. These activities allowed an early response to the bushfire and ensured losses were reduced as much as possible.

The bushfire was first reported via a triple zero call at 09:49hrs on 8 December 2021, locating the fire in the Leeuwin Naturalist National Park (LNNP) near the Mammoth Cave Centre, off Caves Road Calgardup in the Shire of Augusta Margaret River. Whilst initially under the control of the DBCA due to it being in DBCA managed land, the fire escalated over the proceeding 24 hours breaking containment lines and was declared a Level 3 Incident at 08:15hrs on 9 December 2021. DFES took over control of the bushfire at 09:00hrs the same day.

The ecology and topography of the area significantly impacted the ability of resources to actively fight the fire; the caves system in the area hampered the use of fireground machinery. For this reason, air resources were deployed and two LATs together with other aerial assets developed containment lines and conducted suppression operations. Whilst firefighting efforts on the ground continued, including backburning operations, an Emergency Warning was issued at 13:49hrs on 8 December 2021 and an evacuation centre were opened at the Margaret River Recreation Centre shortly after supporting over 69 people.

The fire was noted as being contained and controlled late on 11 December 2021, by then approximately 7832 hectares had been impacted principally around the areas of Mammoth Cave, Lakes Cave and Giant Cave and the Boranup Forest. Local knowledge advised that areas within the Boranup Forest, specifically an area known as ‘Kodak Corner’, would cause the greatest impact on the local community. On 11 December 2021 WAPF declared that the bushfire appeared deliberately lit.

Control was handed back to the Shire of Augusta Margaret River on 12 December 2021 for transition to recovery, following this a Recovery Plan was developed and jointly signed by the Shire of Augusta Margaret River and the Margaret River Busselton Tourism Association. Recovery actions included:

- Joint Aboriginal management of the national park in perpetuity.
- Resources to restore and sustain the park.
- Reinstatement of the Nindup Plain, including privately held Blue Gum Plantations.
- Visitor facilities, education, and management.
- Future fire management.



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- Financial sustenance for businesses whose income will be significantly affected by the bushfire.
- Forest rehabilitation.
- Infrastructure and physical assets damaged.

Observations from this incident made note of the effectiveness of early actions and preparedness, and that significantly more damage would have occurred without the early intervention of local, State, and aerial assets that were coordinated by the SOC and ROC.



Calgardup Bushfire Timeline

Prior to the bushfire occurring in the Shire of Augusta Margaret River on 8 December 2021 at 09:49hrs, the State had already raised the FRRR to Moderate which instigated multiple preparedness measures on 6-7 December 2021. This included forming a team for deployment in the event of a Level 2 Incident. By putting preparation measures in place, the State was able to respond to the bushfire promptly and was able to mitigate losses before the fires commenced, by having a response tactic in place, based on lessons learned from previous bushfires.

Date	Time	Occurrence
Monday 06/12/2021		State Operations Centre State FRRR Moderate
Tuesday 07/12/2021		Regional Operation Centre LSW Region FRRR Moderate
Wednesday 08/12/2021	09:49hrs	Fire Danger Rating - HIGH 000 Fire reported - ComCen Started in the Shire of Augusta Margaret River
	11:42hrs	Level 2 Incident Declaration
Thursday 09/12/2021		Fire Danger Rating - VERY HIGH Regional Operation Centre LSW Region FRRR Major Level 3 Incident Declaration Section 13 issued, DFES assumes control
Friday 10/12/2021		Fire Danger Rating - LOW-MODERATE
Saturday 11/12/2021		Fire Danger Rating - LOW-MODERATE
Sunday 12/12/2021	13:00hrs	Fire Danger Rating - HIGH Incident downgraded to a Level 2 Incident
Monday 13/12/2021	12:00hrs	Section 13 Revoked Transfer of incident control to DBCA
	15:00hrs	IC Intends to downgrade and transfer incident control to the Shire of Augusta-Margaret River
	16:40hrs	Incident downgraded to a Level 1 Incident
Tuesday 08/02/2022	10:26hrs	Incident Closed

Overview

Figure 23: Calgardup Bushfire Map

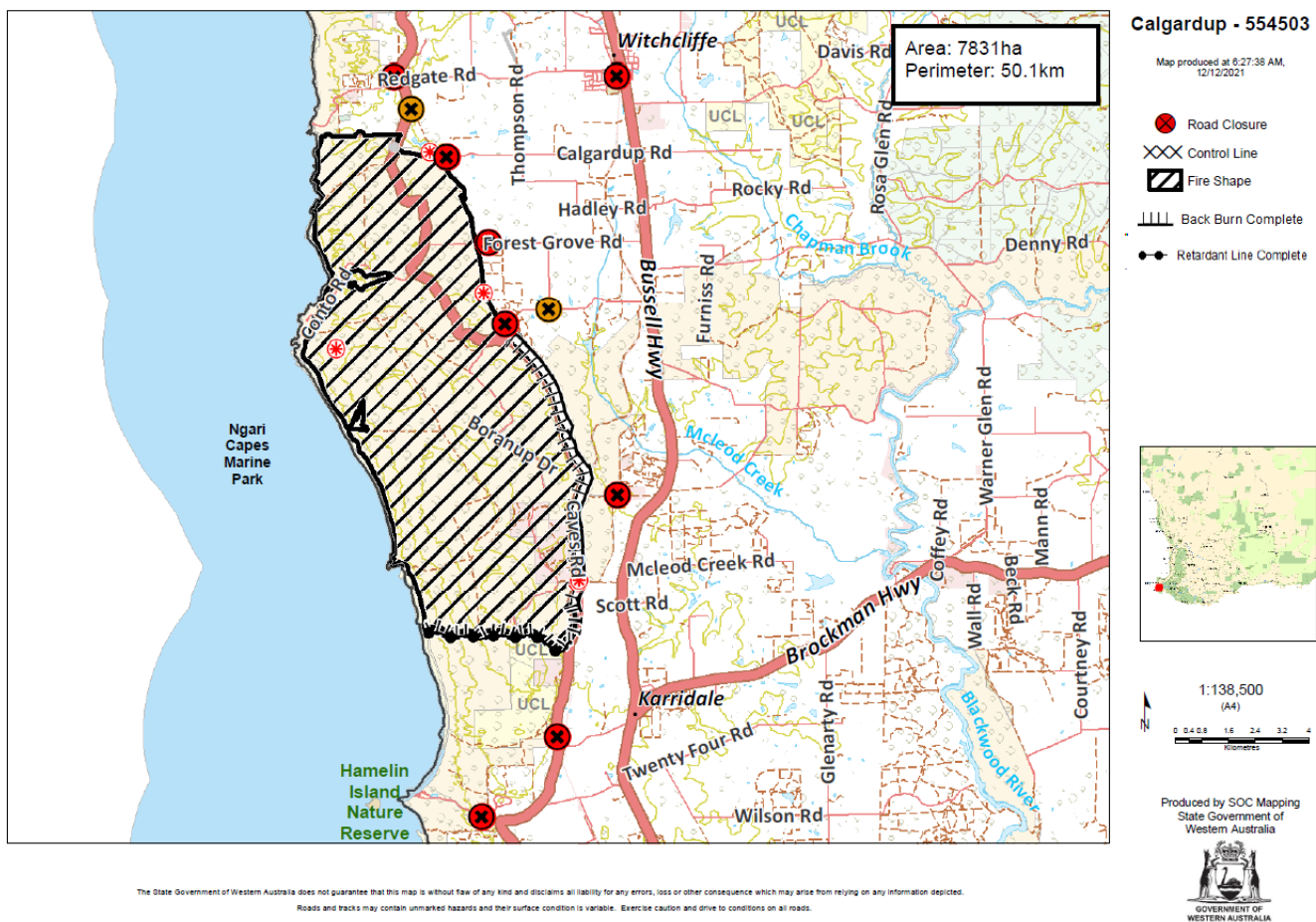


Image source -DFES



Calgardup Bushfire Overview

The Calgardup bushfire was reported via a triple zero call made on 8 December 2021 at 09:49hrs. The caller reported a bushfire in the LNNP near the Mammoth Cave Centre, off Caves Road Calgardup, in the Shire of Augusta Margaret River.

The bushfire was initially under the control of the DBCA as the bushfire started within DBCA-managed land tenure. The bushfire was declared a Level 2 Incident at 11:42hrs on 8 December 2021, after breaking containment lines along Forest Grove Road and Contos Road. Despite ongoing control efforts, the bushfire further escalated and was declared a Level 3 Incident at 08:15hrs on 9 December 2021, with DFES then declared the controlling agency shortly after.

The forecast temperature for that Friday was expected to reach 30 degrees Celsius with Northerly winds shifting to Westerly, before a late afternoon South-Westerly sea breeze. The FDR for the Shire of Augusta Margaret River was listed at High and there was no TFB in place on the day.

Firefighting efforts were impacted by the sensitivities of the area, such as the complex Cave ecology, which reduced the ability to deploy fireground machinery. Initial assessments indicated that tracking the bushfire was not achievable, and the LATs was utilised to develop containment lines to the South and South East of the bushfire. Two LATs were used during the firefighting operations together with other aerial assets.

The bushfire was bounded by the coastline to the west and the Bussell Highway to the East. Containment lines were established along Caves Road to Grace Road to secure the eastern boundary. Edging was undertaken along the western side of Caves Road. The northern boundary was reinforced east of Redgate Beach through to Caves Road. The southern boundary was reinforced along Boranup and Grace Road, East of Caves Road. Some backburning operations were undertaken to ensure the security of the bushfire perimeter.

The bushfire went to an Emergency Warning at 13:49hrs on 8 December 2021. An evacuation centre was opened at the Margaret River Recreation Centre at 15:15hrs on 8 December 2021 with approximately 69 people registering at the centre. An additional 12 people found temporary accommodation, eight people stayed inside the evacuation centre and five people in other areas surrounding the evacuation centre as they were accompanied by pets.

An Incident Support Group (ISG) was established with the first meeting occurring on 8 December 2021 at 17:00hrs. The ISG was stood down at 18:00hrs on 11 December 2021 with the understanding that further meetings could be called if required. The Emergency Warning was downgraded to a Watch and Act at 19:04hrs on 11 December 2021. The bushfire was noted as being contained but not yet controlled at the Incident Support Group Meeting at 17:00hrs on 11 December 2021. The Evacuation Centre was still on standby from 11 December 2021, until it was officially stood down at 08:00hrs on 12 December 2021.

The bushfire impacted approximately 7832 hectares of land with a perimeter of 50 km. A media statement released by the WAPF on 11 December 2021 stated the bushfire appeared deliberately lit. The main areas impacted included the areas in and around Mammoth Cave, Lakes Cave and Giant Cave as well as the Boranup (Karri) Forest. Local knowledge indicated that it is the loss of areas within the



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Boranup Forest, particularly the area known as 'Kodak Corner', that will have the most significant impact on the local community.

The Local Recovery Coordination Group was activated and met for the first time on 9 December 2021. A second meeting was held at 16:30hrs on 12 December 2021. A Recovery Plan for the Boranup Forest and the LNNP was developed and jointly signed by the Shire of Augusta Margaret River and the Margaret River Busselton Tourism Association (dated 12 December 2021). The plan outlined recovery actions around:

- Joint Aboriginal management of the national park in perpetuity
- Resources to restore and sustain the park
- Reinstatement of the Nindup Plain, including privately held Blue Gum Plantations
- Visitor facilities, education, and management
- Future bushfire management
- Financial sustenance for businesses whose income will be significantly affected by the bushfire
- Forest rehabilitation
- Infrastructure and physical assets damaged

The bushfire that occurred in Calgardup on 8 December 2021, experienced many similar observations to that of the AFWE. These observations have been captured against the Insights and Lessons in the main body of this report and will be retained and may be used for operational improvements in the future as required.

Calgardup Bushfire Images

Figure 24: Calgardup Bushfire



Image source -DFES

Figure 25: Calgardup Bushfire



Image source -DFES

Figure 26: Calgardup Bushfire



Image source -DFES

Appendices





Appendix A – Glossary

Acronym	Meaning
AAR	After Action Review
AFAC	Australasian Fire and Emergency Service Authorities Council
AFWE	Adverse Fire Weather Event
AHIMS	All Hazards Information Management System
AHLG	All Hazards Liaison Group
AIDR	Australian Institute for Disaster Relief
BCoE	Bushfire Centre of Excellence
BFB	Bush Fire Brigade
BoM	Bureau of Meteorology
CBFCO	Chief Bush Fire Control Officer
CFRS	Career Fire and Rescue Service
ComCen	Communications Centre
CorpEx	Corporate Executive
DAC	Duty Assistant Commissioner
DBCA	Department of Biodiversity, Conservation and Attractions
DCS	Duty Chief Superintendent
DFES	Department Fire and Emergency Services
DoC	Department of Communities
ESNO	Essential Services Network Operators
FDR	Fire Danger Rating
FES	Fire and Emergency Services
FRRA	Forecast Risk & Resource Assessment
GM	Goldfields Midlands
GS	Great Southern
HRRA	Heightened Readiness and Risk Actions
IC	Incident Controller
ICC	Incident Control Centre
ICV	Incident Control Vehicle
IMT	Incident Management Team
ISG	Incident Support Group
LAT	Large Air Tanker
LG	Local Government



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Acronym	Meaning
LNNP	Leeuwin-Naturaliste National Park
LSW	Lower South West
MOC	Metropolitan Operations Centre
NRSC	National Resource Sharing Centre
OAM	Operations Area Manager
OASG	Operational Area Support Group
OPB	Operational Preparedness Briefing
OILL	Observations, Insights, Lessons, Lessons Learned
OSDC	Operational Service Delivery Committee
PFT	Pre-Formed Team
POiSTED	Personnel, Organisation, Information, Support, Training, Equipment, Doctrine
RDA	Rapid Damage Assessment
RDO	Rostered Day Off
ROC	Regional Operations Centre
SDO	State Duty Officer (Parks and Wildlife)
SEMC	State Emergency Management Committee
SES	State Emergency Service
SOC	State Operations Centre
SW	South West
TF	Task Force
TFB	Total Fire Ban
TWS	Telephone Warning System
UGS	Upper Great Southern
USAR	Urban Search and Rescue
VCP	Vehicle Control Points
VFES	Volunteer Fire and Emergency Service
VFRS	Volunteer Fire and Rescue Service
WAFES	Western Australian Fire and Emergency Service
WALGA	Western Australian Local Government Association
WAPF	Western Australia Police Force
WebEOC	Web Based Emergency Operations Centre



Appendix B – POiSTED

DFES is currently developing a POiSTED capability model specific to the organisation as part of ongoing capability review activities. In the interim, the definitions of each capability element as defined by the Noetic Group have been used in this analysis and are summarised below.

Noetic Note – '[A framework for integrating military equipment into law enforcement capabilities](#)' May 2017.

Inputs	Definition
People	Recruiting, developing, and retaining the necessary people with appropriate skills to manage all operational and corporate activities.
Organisation	Ensuring that each capability has a clear place in the chain of command and that accountabilities are clearly defined.
information	Information and communications technology including hardware, software, communications systems, data, and networks.
Support and Facilities	The infrastructure and services that are integral to the operations of each capability.
Training	Individual and collective training is required to ensure that personnel and organizations can realize their capability.
Equipment	Major systems, task-specific equipment, and general equipment.
Doctrine	Collective knowledge has been structured and systematized to facilitate its application in practice and prepared for dissemination in a way appropriate for its intended audience.



FOR A **SAFER STATE**